EMAX LABORATORIES, INC.

1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Date: 06-07-2018
EMAX Batch No.: 18E042

Attn: Laura Madsen

ARCADIS
1410 Rocly Ridge Dr #330
Roseville CA 95661

Subject: Laboratory Report
Project: PG&E TOPOCK-GMP

Enclosed is the Laboratory report for samples received on 05/04/18.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW-54-085-EB-Q218	E042-01	05/04/18	WATER	CHROMIUM HEXAVALENT BY IC
MW-54-085-Q218	E042-02	05/04/18	WATER	CHROMIUM HEXAVALENT BY IC
				SPECIFIC CONDUCTANCE
				DISSOLVED METALS BY ICP-MS
MW-54-140-EB-Q218	E042-03	05/04/18	WATER	CHROMIUM HEXAVALENT BY IC
MW-54-140-Q218	E042-04	05/04/18	WATER	CHROMIUM HEXAVALENT BY IC
				SPECIFIC CONDUCTANCE
				DISSOLVED METALS BY ICP-MS
MW-54-195-EB-Q218	E042-05	05/04/18	WATER	CHROMIUM HEXAVALENT BY IC
MW-54-195-Q218	E042-06	05/04/18	WATER	CHROMIUM HEXAVALENT BY IC
				SPECIFIC CONDUCTANCE
				DISSOLVED METALS BY ICP-MS
MW-55-045-EB-Q218	E042-07	05/03/18	WATER	CHROMIUM HEXAVALENT BY IC
MW-55-045-Q218	E042-08	05/03/18	WATER	CHROMIUM HEXAVALENT BY IC
				SPECIFIC CONDUCTANCE
				DISSOLVED CHROMIUM
MW-55-120-Q218	E042-09	05/03/18	WATER	CHROMIUM HEXAVALENT BY IC
				SPECIFIC CONDUCTANCE
				DISSOLVED CHROMIUM
MW-56D-Q218	E042-10	05/02/18	WATER	CHROMIUM HEXAVALENT BY IC
				SPECIFIC CONDUCTANCE
				DISSOLVED CHROMIUM
MW-56M-Q218	E042-11	05/02/18	WATER	CHROMIUM HEXAVALENT BY IC
				SPECIFIC CONDUCTANCE
				DISSOLVED CHROMIUM
MW-56S-Q218	E042-12	05/02/18	WATER	CHROMIUM HEXAVALENT BY IC
				SPECIFIC CONDUCTANCE
				DISSOLVED CHROMIUM

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912017-13
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

CHAIN OF COUSTODY

EMAX Laboratories, Inc.	1835 W. 205th Street, Torrance, CA 90501 Tel # : 310-618-8889 FAX#: 310-618-0818 Email: info@emaxlabs.com	PO NUMBER: RC000753.801D SAMPLE STORAGE	EMAX CONTROL NO. 18E042 PROJECT CODE:

CLIENT Arcadis	MATRIX CODE	PRESERVATIVE CODE	TAT
PROJECT PG&E Topock - GMP	DW=Drinking Water	IC = Ice	☐ Rush __24__hrs.
COORDINATOR Dan Bush	GW=Ground Water	HC = HCl	☐ Rush __48_hrs
TEL 916-786-3302 FAX EMAIL dan.bush@arcadis.com daniel.moore@critigen.com	WW=Waste Water	HN=HNO3	☐ Rush_72_hrs
SEND REPORT TO Dan Bush	SD=Solid Waste SL=Sludge	SH=NaO3	☑ 7 days
COMPANY Arcadis	SS=Soil/ Sediment	ST=Na2S2O3	☐ 14 days
ADDRESS 1410 Rocly Ridge Dr #330, Roseville, CA 95661	WP=Wipes PP=Pure Products	ZA=Zinc Acetate	☐ 21 days
	AR=Air	HS=H2SO4	
EMAX PM Andy Mai	O=	N=(NH4)2, SO4, NH4, OH	

ANALYSIS REQUIRED (columns A–J):
A = Cr(IV) FF (EPA 218.6) (NH4)2SO4/NH4OH; B = Cr(IV) FF (EPA 218.6) (NH4)2SO4/NH4OH (2 X 250 mL; C = Alkalinity, Total as CaCO3 (SM 2320 B); D = Chloride, Sulfate (EPA 300.0); E = Total Dissolved Solids (SM 2540 C); F = Specific Conductance (EPA 120.1); G = Dissolved Metals FF (SW 6020) (As, Cr, Mn); H = Dissolved Metals FF (SW 6020) (Cr); I, J = (blank)

LAB	SAMPLE ID (CLIENT)	LOCATION	DATE	TIME	NO.	SIZE	TYPE	MATRIX CODE	QC	A (IC,N)	B (IC,N)	C (IC)	D (IC)	E (IC)	F (IC)	G (HN)	H (HN)	I	J	COMMENTS
* 1	MW-54-085-EB-Q218		5/4/2018	7:37	1	mL, 2x 125 mL	Poly	GW		X										
* 2	MW-54-085-Q218		5/4/2018	8:01	4	mL, 2x 125 mL	Poly	GW			X				X	X				
* 3	MW-54-140-EB-Q218		5/4/2018	7:00	1	mL, 2x 125 mL	Poly	GW		X										
* 4	MW-54-140-Q218		5/4/2018	8:06	4	mL, 2x 125 mL	Poly	GW			X				X	X				
* 5	MW-54-195-EB-Q218		5/4/2018	8:20	1	mL, 2x 125 mL	Poly	GW		X										
* 6	MW-54-195-Q218		5/4/2018	8:54	4	mL, 2x 125 mL	Poly	GW			X				X	X				
* 7	MW-55-045-EB-Q218		5/3/2018	12:25	1	mL, 2x 125 mL	Poly	GW		X										
* 8	MW-55-045-Q218		5/3/2018	13:08	4	mL, 2x 125 mL	Poly	GW			X				X		X			
* 9	MW-55-120-Q218		5/3/2018	13:53	4	mL, 2x 125 mL	Poly	GW			X				X		X			
10	MW-56D-Q218		5/2/2018	14:46	3	mL, 2x 125 mL	Poly	GW		X					X		X			

Instructions	Cooler #	Temp. (°C)	Sample #s
	1	3.3	
	2	2.9	

SAMPLER Gantt Jeffers | COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Gantt Jeffers [signature]	5.4.18	~~1400~~ 1725	[signature]

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs. TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.	1835 W. 205th Street, Torrance, CA 90501 Tel # : 310-618-8889 FAX#: 310-618-0818 Email: info@emaxlabs.com	PO NUMBER: RC000753.801D SAMPLE STORAGE	EMAX CONTROL NO. 18E042 PROJECT CODE:

CLIENT Arcadis		MATRIX CODE	PRESERVATIVE CODE
PROJECT PG&E Topock - GMP		DW=Drinking Water	IC = Ice
COORDINATOR Dan Bush		GW=Ground Water	HC = HCl
TEL 916-786-3302 FAX	EMAIL dan.bush@arcadis.com daniel.moore@critigen.com	WW=Waste Water	HN=HNO3
SEND REPORT TO Dan Bush		SD=Solid Waste SL=Sludge	SH=NaO3
COMPANY Arcadis		SS=Soil/ Sediment	ST=Na2S2O3
ADDRESS 1410 Rocly Ridge Dr #330, Roseville, CA 95661		WP=Wipes PP=Pure Products	ZA=Zinc Acetate
		AR=Air	HS=H2SO4
EMAX PM Andy Mai		O=	N=(NH4)2, SO4, NH4, OH

ANALYSIS REQUIRED:
1. Cr(IV) FF (EPA 218.6) (NH4)2SO4/NH4OH
2. Cr(IV) FF (EPA 218.6) (NH4)2SO4/NH4OH (2 X 250 mL
3. Alkalinity, Total as CaCO3 (SM 2320 B)
4. Chloride, Sulfate (EPA 300.0)
5. Total Dissolved Solids (SM 2540 C)
6. Specific Conductance (EPA 120.1)
7. Dissolved Metals FF (SW 6020) (As, Cr, Mn)
8. Dissolved Metals FF (SW 6020) (Cr)

TAT:
- [ ] Rush __24__hrs.
- [ ] Rush __48_hrs
- [ ] Rush_72_hrs
- [x] 7 days
- [ ] 14 days
- [ ] 21 days

LAB	SAMPLE ID CLIENT	LOCATION	DATE	TIME	NO.	SIZE	TYPE	MATRIX CODE	QC	IC,N	IC,N	IC	IC	IC	IC	HN	HN	HN	COMMENTS
1	MW-56M-Q218		5/2/2018	14:46	3	mL, 500 mL	Poly	GW		X					X		X		
2	MW-56S-Q218		5/2/2018	15:08	3	mL, 500 mL	Poly	GW		X					X		X		
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

11 ~~12~~ AM 5/4

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER Gantt Jeffers

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Gantt Jeffers [signature]	5.4.18	~~1400~~ 1725	[signature]

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs. TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

SAMPLE RECEIPT FORM 1

Reference: EMAX-SM02 Rev.9
Form: SM02F1

Type of Delivery	Airbill / Tracking Number	ECN 18E042	
☐ Fedex ☐ UPS ☐ GSO ☐ Others		Recipient Necy	
☐ EMAX Courier ☒ Client Delivery		Date 05/04/18	Time 17:25

COC INSPECTION

☒ Client Name	☒ Client PM/FC	☒ Sampler Name	☒ Sampling Date/Time	☒ Sample ID	☒ Matrix
☒ Address	☒ Tel # / Fax #	☒ Courier Signature	☒ Analysis Required	☒ Preservative (if any)	☒ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: ______

PACKAGING INSPECTION

Container	☒ Cooler	☐ Box	☐ Other		
Condition	☐ Custody Seal	☒ Intact	☐ Damaged		
Packaging	☐ Bubble Pack	☐ Styrofoam	☐ Popcorn	☒ Sufficient	☒ Plastic Bag
Temperatures	☒ Cooler 1 3.3 °C	☒ Cooler 2 2.9 °C	☐ Cooler 3 ___ °C	☐ Cooler 4 ___ °C	☐ Cooler 5 ___ °C
(Cool, ≤6 °C but not frozen)	☐ Cooler 6 ___ °C	☐ Cooler 7 ___ °C	☐ Cooler 8 ___ °C	☐ Cooler 9 ___ °C	☐ Cooler 10 ___ °C
Thermometer:	*A - S/N* ___	*B - S/N* 1505555[illegible]22	*C - S/N* ___	*D - S/N* 150555430	

Comments: ☐ Temperature is out of range. PM was informed IMMEDIATELY.

Note: ______

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
4, 6	9, 12-15	D10		R1

05/4/18

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS: ① Sample 10 has two collection times. '14:46', '15:08'.
② Bottles received not EMAX containers.
Label on Metals containers read Metals only

☐ Continue to next page.

LEGEND:

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Sample Management
D1	Analysis is not indicated in ______	D13	Out of Holding Time	R1	Proceed as indicated in ☐ COC ☐ Label
D2	Analysis mismatch COC vs label	D14	Bubble is >6mm	R2	Refer to attached instruction
D3	Sample ID mismatch COC vs label	D15	No trip blank in cooler	R3	Cancel the analysis
D4	Sample ID is not indicated in ______	D16	Preservation not indicated in ______	R4	Use vial with smallest bubble first
D5	Container -[improper] [leaking] [broken]	D17	Preservation mismatch COC vs label	R5	Log-in with latest sampling date and time+1 min
D6	Date/Time is not indicated in ______	D18	Insufficient chemical preservative	R6	Adjust pH as necessary
D7	Date/Time mismatch COC vs label	D19	Insufficient Sample	R7	Filter and preserved as necessary
D8	Sample listed in COC is not received	D20	No filtration info for dissolved analysis	R8	______
D9	Sample received is not listed in COC	D21	No sample for moisture determination	R9	______
D10	No initial/date on corrections in COC/label	D22	______	R10	______
D11	Container count mismatch COC vs received	D23	______	R11	______
D12	Container size mismatch COC vs received	D24	______	R12	______

REVIEWS:

Sample Labeling ______ Date 05/04/18 5/4/18

SRF ______ Date 5/4/18

PM ______ Date 5/4/18

EMAX Laboratories, Inc. 1835 W. 205th St., Torrance, Ca 90501

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

ARCADIS

PG&E TOPOCK-GMP

METHOD SW6020A
TOTAL AND DISSOLVED METALS BY ICP-MS

SDG#: 18E042

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 18E042

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

A total of five (5) water samples were received on 05/04/18 to be analyzed for Dissolved Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were satisfied. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. IME015WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. IME015WL/IME015WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of MS/MSD was analyzed. Chromium was within MS QC limits in E042-12M/S. Refer to Matrix QC summary form for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 18E042

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

A total of three (3) water samples were received on 05/04/18 to be analyzed for Dissolved Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were satisfied. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. IME015WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. IME015WL/IME015WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE
DISSOLVED METALS BY ICP-MS

Client : ARCADIS
Project : PG&E TOPOCK-GMP

SDG NO. : 18E042
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IME015WB	1.00	NA	05/11/1814:33	05/10/1810:06	F6E07042	F6E07040	IME015W	Method Blank
LCS1W	IME015WL	1.00	NA	05/11/1814:37	05/10/1810:06	F6E07043	F6E07040	IME015W	Lab Control Sample (LCS)
LCD1W	IME015WC	1.00	NA	05/11/1814:42	05/10/1810:06	F6E07044	F6E07040	IME015W	LCS Duplicate
MW-54-085-Q218	E042-02	1.00	NA	05/11/1815:36	05/10/1810:06	F6E07056	F6E07051	IME015W	Field Sample
MW-54-140-Q218	E042-04	1.00	NA	05/11/1815:41	05/10/1810:06	F6E07057	F6E07051	IME015W	Field Sample
MW-54-195-Q218	E042-06	1.00	NA	05/11/1815:45	05/10/1810:06	F6E07058	F6E07051	IME015W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ARCADIS	Date Collected: 05/04/18 08:01
Project : PG&E TOPOCK-GMP	Date Received: 05/04/18
SDG NO. : 18E042	Date Extracted: 05/10/18 10:06
Sample ID: MW-54-085-Q218	Date Analyzed: 05/11/18 15:36
Lab Samp ID: E042-02	Dilution Factor: 1
Lab File ID: F6E07056	Matrix: WATER
Ext Btch ID: IME015W	% Moisture: NA
Calib. Ref.: F6E07051	Instrument ID: F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	4.34	1.00	0.200
Chromium	ND	1.00	0.200
Manganese	556	10.0	0.200

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml
Prepared by : MCande Analyzed by:LVicto

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	05/04/18 08:06
Project	: PG&E TOPOCK-GMP	Date Received:	05/04/18
SDG NO.	: 18E042	Date Extracted:	05/10/18 10:06
Sample ID:	MW-54-140-Q218	Date Analyzed:	05/11/18 15:41
Lab Samp ID:	E042-04	Dilution Factor:	1
Lab File ID:	F6E07057	Matrix:	WATER
Ext Btch ID:	IME015W	% Moisture:	NA
Calib. Ref.:	F6E07051	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	3.14	1.00	0.200
Chromium	ND	1.00	0.200
Manganese	103	10.0	0.200

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml　　Final Volume:50ml
Prepared by : MCande　　Analyzed by:LVicto

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ARCADIS	Date Collected: 05/04/18 08:54
Project : PG&E TOPOCK-GMP	Date Received: 05/04/18
SDG NO. : 18E042	Date Extracted: 05/10/18 10:06
Sample ID: MW-54-195-Q218	Date Analyzed: 05/11/18 15:45
Lab Samp ID: E042-06	Dilution Factor: 1
Lab File ID: F6E07058	Matrix: WATER
Ext Btch ID: IME015W	% Moisture: NA
Calib. Ref.: F6E07051	Instrument ID: F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	1.01	1.00	0.200
Chromium	ND	1.00	0.200
Manganese	232	10.0	0.200

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml
Prepared by : MCande Analyzed by:LVicto

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ARCADIS	Date Collected: NA
Project : PG&E TOPOCK-GMP	Date Received: NA
SDG NO. : 18E042	Date Extracted: 05/10/18 10:06
Sample ID: MBLK1W	Date Analyzed: 05/11/18 14:33
Lab Samp ID: IME015WB	Dilution Factor: 1
Lab File ID: F6E07042	Matrix: WATER
Ext Btch ID: IME015W	% Moisture: NA
Calib. Ref.: F6E07040	Instrument ID: F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	1.00	0.200
Chromium	ND	1.00	0.200
Manganese	ND	10.0	0.200

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 50ml Final Volume:50ml

Prepared by : MCande Analyzed by:LVicto

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1.00	1.00	1.00
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IME015WB	IME015WL	IME015WC
LAB FILE ID	: F6E07042	F6E07043	F6E07044
DATE PREPARED	: 05/10/18 10:06	05/10/18 10:06	05/10/18 10:06
DATE ANALYZED	: 05/11/18 14:33	05/11/18 14:37	05/11/18 14:42
PREP BATCH	: IME015W	IME015W	IME015W
CALIBRATION REF:	F6E07040	F6E07040	F6E07040

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Arsenic	ND	30	30.7	102	30	28.6	95	7	85-115	20
Chromium	ND	30	30.9	103	30	29.0	97	6	85-115	20
Manganese	ND	30	32.0	107	30	30.0	100	6	85-115	20

LAB CHRONICLE
DISSOLVED METALS BY ICP-MS

Client : ARCADIS
Project : PG&E TOPOCK-GMP

SDG NO. : 18E042
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IME015WB	1.00	NA	05/11/1814:33	05/10/1810:06	F6E07042	F6E07040	IME015W	Method Blank
LCS1W	IME015WL	1.00	NA	05/11/1814:37	05/10/1810:06	F6E07043	F6E07040	IME015W	Lab Control Sample (LCS)
LCD1W	IME015WC	1.00	NA	05/11/1814:42	05/10/1810:06	F6E07044	F6E07040	IME015W	LCS Duplicate
MW-55-045-Q218	E042-08	1.00	NA	05/11/1815:50	05/10/1810:06	F6E07059	F6E07051	IME015W	Field Sample
MW-55-120-Q218	E042-09	1.00	NA	05/11/1815:54	05/10/1810:06	F6E07060	F6E07051	IME015W	Field Sample
MW-56D-Q218	E042-10	1.00	NA	05/11/1815:59	05/10/1810:06	F6E07061	F6E07051	IME015W	Field Sample
MW-56M-Q218	E042-11	1.00	NA	05/11/1816:03	05/10/1810:06	F6E07062	F6E07051	IME015W	Field Sample
MW-56S-Q218MS	E042-12M	1.00	NA	05/11/1816:17	05/10/1810:06	F6E07065	F6E07063	IME015W	Matrix Spike Sample (MS)
MW-56S-Q218MSD	E042-12S	1.00	NA	05/11/1816:21	05/10/1810:06	F6E07066	F6E07063	IME015W	MS Duplicate (MSD)
MW-56S-Q218	E042-12	1.00	NA	05/11/1816:31	05/10/1810:06	F6E07068	F6E07063	IME015W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	05/03/18 13:08
Project	: PG&E TOPOCK-GMP	Date Received:	05/04/18
SDG NO.	: 18E042	Date Extracted:	05/10/18 10:06
Sample ID:	MW-55-045-Q218	Date Analyzed:	05/11/18 15:50
Lab Samp ID:	E042-08	Dilution Factor:	1
Lab File ID:	F6E07059	Matrix:	WATER
Ext Btch ID:	IME015W	% Moisture:	NA
Calib. Ref.:	F6E07051	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml
Prepared by : MCande Analyzed by:LVicto

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ARCADIS	Date Collected: 05/03/18 13:53
Project : PG&E TOPOCK-GMP	Date Received: 05/04/18
SDG NO. : 18E042	Date Extracted: 05/10/18 10:06
Sample ID: MW-55-120-Q218	Date Analyzed: 05/11/18 15:54
Lab Samp ID: E042-09	Dilution Factor: 1
Lab File ID: F6E07060	Matrix: WATER
Ext Btch ID: IME015W	% Moisture: NA
Calib. Ref.: F6E07051	Instrument ID: F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	8.35	1.00	0.200

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 50ml   Final Volume:50ml

Prepared by : MCande   Analyzed by:LVicto

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ARCADIS	Date Collected: 05/02/18 14:46
Project : PG&E TOPOCK-GMP	Date Received: 05/04/18
SDG NO. : 18E042	Date Extracted: 05/10/18 10:06
Sample ID: MW-56D-Q218	Date Analyzed: 05/11/18 15:59
Lab Samp ID: E042-10	Dilution Factor: 1
Lab File ID: F6E07061	Matrix: WATER
Ext Btch ID: IME015W	% Moisture: NA
Calib. Ref.: F6E07051	Instrument ID: F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml
Prepared by : MCande Analyzed by:LVicto

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ARCADIS	Date Collected: 05/02/18 14:46
Project : PG&E TOPOCK-GMP	Date Received: 05/04/18
SDG NO. : 18E042	Date Extracted: 05/10/18 10:06
Sample ID: MW-56M-Q218	Date Analyzed: 05/11/18 16:03
Lab Samp ID: E042-11	Dilution Factor: 1
Lab File ID: F6E07062	Matrix: WATER
Ext Btch ID: IME015W	% Moisture: NA
Calib. Ref.: F6E07051	Instrument ID: F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml   Final Volume:50ml
Prepared by : MCande   Analyzed by:LVicto

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ARCADIS	Date Collected: 05/02/18 15:08
Project : PG&E TOPOCK-GMP	Date Received: 05/04/18
SDG NO. : 18E042	Date Extracted: 05/10/18 10:06
Sample ID: MW-56S-Q218	Date Analyzed: 05/11/18 16:31
Lab Samp ID: E042-12	Dilution Factor: 1
Lab File ID: F6E07068	Matrix: WATER
Ext Btch ID: IME015W	% Moisture: NA
Calib. Ref.: F6E07063	Instrument ID: F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml
Prepared by : MCande Analyzed by:LVicto

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	NA
Project	: PG&E TOPOCK-GMP	Date Received:	NA
SDG NO.	: 18E042	Date Extracted:	05/10/18 10:06
Sample ID:	MBLK1W	Date Analyzed:	05/11/18 14:33
Lab Samp ID:	IME015WB	Dilution Factor:	1
Lab File ID:	F6E07042	Matrix:	WATER
Ext Btch ID:	IME015W	% Moisture:	NA
Calib. Ref.:	F6E07040	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 50ml — Final Volume:50ml

Prepared by : MCande — Analyzed by:LVicto

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1.00	1.00	1.00
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IME015WB	IME015WL	IME015WC
LAB FILE ID	: F6E07042	F6E07043	F6E07044
DATE PREPARED	: 05/10/18 10:06	05/10/18 10:06	05/10/18 10:06
DATE ANALYZED	: 05/11/18 14:33	05/11/18 14:37	05/11/18 14:42
PREP BATCH	: IME015W	IME015W	IME015W
CALIBRATION REF:	F6E07040	F6E07040	F6E07040

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Chromium	ND	30	30.9	103	30	29.0	97	6	85-115	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MW-56S-Q218	MW-56S-Q218MS	MW-56S-Q218MSD
LAB SAMPLE ID	: E042-12	E042-12M	E042-12S
LAB FILE ID	: F6E07068	F6E07065	F6E07066
DATE PREPARED	: 05/10/18 10:06	05/10/18 10:06	05/10/18 10:06
DATE ANALYZED	: 05/11/18 16:31	05/11/18 16:17	05/11/18 16:21
PREP BATCH	: IME015W	IME015W	IME015W
CALIBRATION REF:	F6E07063	F6E07063	F6E07063

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpikeAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Chromium	ND	30	28.4	94.7	30	27.5	91.7	3	75-125	20

PSResult - Parent Sample Result

ICP-MS QC CHECK TABLE

QC	S4	ICV	CCV	ICSAB	ICSA
Limit%		90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	100	60	50	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	100	30	50	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 05/11/18 11:42

End Date: 05/11/18 18:54

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

Book #: AF6-022

Instrument No.: F6

Analytical Batch: IF6E07

Analytical Sequence: F6E07

Method File: EM6020R2

Micropipette ID: ☐ 142781004

Micropipette ID: ☐ ICP-06

Micropipette ID: ☐ 339362028

Micropipette ID: ☑ GFAA-07

Micropipette ID: ☑ 339342032

Micropipette ID: ☑ 542780515

Micropipette ID: ☑ 542761827

Micropipette ID: ☐

SOP #	Rev. #
☑ EMAX-6020	9
☐ EMAX-200.8	5
☐ EMAX-	
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B.13.30.02	MRL1 (1)	SM6B.13.49.02
S1	↓ 31.01	MRL2 (0.5)	SM6B.14.09.02
S2	SM6B.14.04.01	MRL3 (LAT)	↓ 10.01
S3	SM6B.13.31.02	MRL4	NA
S4	SM6B.14.04.02	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	SM6B.13.40.02
S7	↓	Post-Spike 1	SM6A.007.05.03
ICV	SM6B.13.41.01	Post-Spike 2	↓ 05.04
CCV	↓ 40.01	Post-Spike 3	NA
ICSA	SM6B.14.14.01	Post-Spike 4	↓
ICSAB	↓ 14.02		
6020 TUNE SOLN.	SM6B.13.28.02		
200.8 TUNE SOLN.	↓ 29.01		

Analyzed By: LV

Date: 05/11/18

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 18E042
Method : METHOD SW6020A
Sequence : IF6E07
InstrumentID: F6

	ICV				ICSA			ICSAB		
Lab Samp ID :	ICV				ICSA			ICSAB		
QC Limit :	%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :	F6E07009				F6E07013			F6E07014		
DateAnalyed :	05/11/1812:04				05/11/1812:22			05/11/1812:27		

Parameter	Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium	28.28	30	1.14	94	.4908	0	>0	20.96	20	105
Beryllium	28.76	30	0.99	96	4.557E-05	0	<0.1	20.3	20	101
Boron	29.24	30	1.82	97	.6444	0	<5.0	19.6	20	98
Sodium	28390	30000	0.74	95	99680	100000	100	99310	100000	99
Magnesium	28550	30000	0.85	95	101200	100000	101	99660	100000	100
Aluminum	28260	30000	0.72	94	100200	100000	100	98740	100000	99
Silicon	2911	3000	0.74	97	9.136	0	<20	209.5	200	105
Phosphorus	277.4	300	0.56	92	108900	100000	109	106700	100000	107
Potassium	29110	30000	0.68	97	103000	100000	103	102300	100000	102
Calcium	28830	30000	0.32	96	99690	100000	100	99300	100000	99
Titanium	288.5	300	0.42	96	2201	2000	110	2196	2000	110
Vanadium	290.1	300	0.87	97	-.112	0	<0.5	20.11	20	101
Chromium T	283.2	300	0.78	94	.1771	0	<0.2	20.07	20	100
Manganese	1871	2000	0.90	94	.3509	0	>0.2	20.21	20	101
Iron	29150	30000	0.75	97	98060	100000	98	98440	100000	98
Cobalt	299.1	300	1.19	100	.2251	0	>0.2	20.56	20	103
Nickel	304	300	0.43	101	.2993	0	>0.2	20.58	20	103
Copper	290.5	300	0.40	97	.9084	0	>0.5	21.39	20	107
Zinc	274.8	300	0.49	92	3.899	0	<10	22.53	20	113
Arsenic	286.7	300	0.76	96	.2383	0	>0.2	20.13	20	101
Selenium	286.2	300	1.07	95	.1653	0	<0.3	21.41	20	107
Strontium	286.7	300	1.15	96	.8803	0	<1.0	20.63	20	103
Zirconium	25.69	30	0.41	86*	.2312	0	<2.0	6.608	20	33*
Molybdenum	297.4	300	0.55	99	2042	2000	102	2085	2000	104
Silver	28.07	30	1.27	94	.02557	0	<0.2	19.72	20	99
Cadmium	297.4	300	0.68	99	.1701	0	<0.2	20.31	20	102
Tin	297.4	300	0.54	99	.08236	0	<0.2	19.86	20	99
Antimony	56.69	60	1.30	94	.05553	0	<0.5	20.49	20	102
Barium	293.6	300	2.81	98	.101	0	<0.5	20.29	20	101
Tungsten	46.33	30	1.18	154*	.2226	0	<1.0	19.59	20	98
Thallium	276.2	300	1.43	92	.007339	0	<0.2	19.14	20	96
Lead	280.8	300	1.50	94	.1007	0	>0.1	19.27	20	96
Uranium	278.5	300	0.99	93	.01128	0	<0.1	19.68	20	98

| Unit: ug/L
| T: Target analyte
| EV: Expected Value
| Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 18E042
Method : METHOD SW6020A
Sequence : IF6E07
Instrument ID: F6

CCV SampleID		: CCV1			CCV3			CCV4			CCV5			CCV6		
CCV DataFileID		: F6E07016			F6E07040			F6E07051			F6E07063			F6E07075		
CCV DateTime		: 05/11/18 12:36			05/11/18 14:24			05/11/18 15:14			05/11/18 16:08			05/11/18 17:02		
PARAMETER	CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium	25	25.2	101	2.27	24.8	99	2.77	24.7	99	2.26	28.6	114*	0.65	25.4	101	[illegible]
Beryllium	25	25.3	101	1.29	24.5	98	0.53	24.3	97	1.67	23.8	95	0.39	24.4	98	2.33
Boron	50	50.7	101	1.13	48.4	97	2.30	48.6	97	2.04	58.6	117*	1.77	52.5	105	1.92
Sodium	25000	25200	101	1.37	25600	103	0.49	25100	100	2.08	26300	105	0.72	25200	101	0.93
Magnesium	25000	24600	98	1.04	24700	99	0.45	24900	99	0.94	23900	95	0.62	24100	96	0.87
Aluminum	25000	24700	99	0.48	24800	99	0.23	25000	100	0.90	24300	97	1.22	24400	98	1.41
Silicon	2500	2500	100	0.85	2580	103	1.06	2580	103	1.60	2740	110	0.77	2670	107	1.46
Phosphorus	250	235	94	1.00	240	96	1.50	244	98	1.67	251	100	1.13	247	99	1.52
Potassium	25000	25200	101	0.66	25900	103	1.25	25800	103	0.98	25700	103	0.46	26000	104	0.29
Calcium	25000	25200	101	0.60	25100	101	0.61	24900	100	1.14	25400	101	1.03	25100	100	0.79
Titanium	250	250	100	0.26	251	100	0.37	252	101	0.70	254	101	0.89	252	101	1.23
Vanadium	250	251	100	1.27	250	100	1.00	250	100	0.52	245	98	0.99	249	100	0.72
Chromium T	250	246	98	1.28	242	97	0.50	244	98	0.99	236	95	0.42	240	96	0.67
Manganese	1500	1470	98	0.27	1470	98	0.94	1480	99	0.58	1450	97	0.86	1460	98	0.78
Iron	25000	25100	100	0.53	25000	100	0.23	24700	99	0.62	24800	99	0.44	24900	99	[illegible]
Cobalt	250	250	100	0.32	250	100	0.44	252	101	0.88	253	101	0.83	254	102	1.32
Nickel	250	255	102	0.85	252	101	0.37	251	101	0.23	245	98	0.13	248	99	0.61
Copper	250	245	98	0.51	244	98	0.86	243	97	1.03	233	93	1.19	239	96	1.18
Zinc	250	234	94	0.59	233	93	1.05	233	93	0.80	227	91	0.69	228	91	1.09
Arsenic	250	248	99	0.06	245	98	0.66	243	97	0.80	242	97	0.06	245	98	0.70
Selenium	250	249	99	1.37	245	98	0.78	243	97	1.80	238	95	0.10	242	97	1.12
Strontium	250	246	98	0.74	247	99	0.30	247	99	0.83	248	99	0.20	249	99	[illegible]
Zirconium	25	0.797	3*	0.61	1.47	6*	7.44	0.597	2*	1.24	0.573	2*	1.29	0.564	2*	[illegible]
Molybdenum	250	253	101	1.95	251	100	0.33	254	102	1.34	254	102	0.99	254	101	[illegible]
Silver	25	25.0	100	1.58	24.8	99	0.81	24.7	99	0.94	24.7	99	0.91	24.7	99	0.54
Cadmium	250	250	100	1.31	246	98	0.27	246	98	0.48	244	98	0.83	244	98	1.02
Tin	250	254	101	1.28	251	101	0.24	252	101	1.30	253	101	1.26	254	102	0.63
Antimony	50	49.9	100	1.42	49.3	99	0.33	49.2	98	0.91	48.8	98	0.98	48.9	98	0.74
Barium	500	509	102	0.63	504	101	0.82	504	101	1.17	506	101	0.58	508	102	1.30
Tungsten	25	0.0546	0*	6.52	0.0335	0*	9.13	0.0358	0*	4.43	0.0507	0*	20.34	0.0381	0*	3.48
Thallium	250	233	93	1.28	237	95	0.64	234	94	0.48	232	93	0.79	236	95	1.26
Lead	250	239	96	0.71	244	98	1.05	243	97	0.61	241	96	0.13	243	97	1.56
Uranium	250	234	94	1.26	243	97	0.73	244	98	0.76	244	97	0.69	248	99	1.23

| Unit: ug/L
| T: Target analyte
| %Rec QC Limit: 90-110
| RSD QC Limit: <5
| CCV EV: CCV Expected Value ug/L
| Comment: * Out of QC limit

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 18E042
Method : SW6020A
Sequence : IF6E07
Instrument ID: F6

CB SampleID		: ICB		CCB1		CCB3		CCB4		CCB5	
CB DataFileID		: F6E07010		F6E07017		F6E07041		F6E07052		F6E07064	
CB DateTime		: 05/11/1812:08		05/11/1812:40		05/11/1814:28		05/11/1815:18		05/11/1816:12	
PARAMETER	LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium	0	0.05	>0	0.003	>0	0.06	>0	0.08	>0	4	>0
Beryllium	0.1	0.005	<0.1	0.002	<0.1	0.002	<0.1	0.006	<0.1	0.002	<0.1
Boron	5.0	0.05	<5.0	0.03	<5.0	0.2	<5.0	0.4	<5.0	7	>5.0
Sodium	50	5	<50	10	<50	5	<50	8	<50	1000	>50
Magnesium	10	0.3	<10	0.6	<10	0.5	<10	0.8	<10	0.8	<10
Aluminum	20	0.4	<20	0.4	<20	0.5	<20	0.7	<20	0.7	<20
Silicon	20	1.0	<20	1	<20	0.9	<20	1	<20	3	<20
Phosphorus	25	9	<25	20	<25	20	<25	20	<25	10	<25
Potassium	20	2	<20	10	<20	7	<20	5	<20	9	<20
Calcium	25	0.7	<25	0.6	<25	1	<25	1	<25	2	<25
Titanium	0.5	0.05	<0.5	0.01	<0.5	0.05	<0.5	0.08	<0.5	0.04	<0.5
Vanadium	0.5	0.1	<0.5	0.04	<0.5	0.10	<0.5	0.06	<0.5	0.08	<0.5
Chromium T	0.2	0.05	<0.2	0.06	<0.2	0.09	<0.2	0.09	<0.2	0.2	<0.2
Manganese	0.2	0.01	<0.2	0.02	<0.2	0.02	<0.2	0.01	<0.2	0.005	<0.2
Iron	10	2	<10	2	<10	2	<10	2	<10	2	<10
Cobalt	0.2	0.02	<0.2	0.003	<0.2	0.006	<0.2	0.009	<0.2	0.008	<0.2
Nickel	0.2	0.003	<0.2	0.003	<0.2	0.005	<0.2	0.004	<0.2	0.006	<0.2
Copper	0.5	0.1	<0.5	0.2	<0.5	0.02	<0.5	0.009	<0.5	0.1	<0.5
Zinc	10	0.2	<10	0.2	<10	0.2	<10	0.2	<10	0.08	<10
Arsenic	0.2	0.04	<0.2	0.03	<0.2	0.02	<0.2	0.04	<0.2	0.01	<0.2
Selenium	0.3	0.09	<0.3	0.07	<0.3	0.03	<0.3	0.05	<0.3	0.06	<0.3
Strontium	1.0	0.005	<1.0	0.003	<1.0	0.01	<1.0	0.01	<1.0	0.1	<1.0
Zirconium	2.0	0.004	<2.0	0.008	<2.0	0.002	<2.0	0.009	<2.0	0.008	<2.0
Molybdenum	0.5	0.2	<0.5	0.2	<0.5	0.1	<0.5	0.1	<0.5	0.1	<0.5
Silver	0.2	0.001	<0.2	0.002	<0.2	0.0001	<0.2	0.002	<0.2	0.005	<0.2
Cadmium	0.2	0.009	<0.2	0.002	<0.2	0.006	<0.2	0.005	<0.2	0.004	<0.2
Tin	0.2	0.3	>0.2	0.2	<0.2	0.1	<0.2	0.1	<0.2	0.1	<0.2
Antimony	0.5	0.03	<0.5	0.01	<0.5	0.01	<0.5	0.04	<0.5	0.02	<0.5
Barium	0.5	0.02	<0.5	0.008	<0.5	0.02	<0.5	0.02	<0.5	0.02	<0.5
Tungsten	1.0	0.07	<1.0	0.007	<1.0	0.002	<1.0	0.004	<1.0	0.006	<1.0
Thallium	0.2	0.04	<0.2	0.03	<0.2	0.04	<0.2	0.03	<0.2	0.03	<0.2
Lead	0.1	0.04	<0.1	0.02	<0.1	0.02	<0.1	0.02	<0.1	0.01	<0.1
Uranium	0.1	0.07	<0.1	0.05	<0.1	0.05	<0.1	0.06	<0.1	0.06	<0.1

CB SampleID		: CCB6	
CB DataFileID		: F6E07076	
CB DateTime		: 05/11/1817:07	
PARAMETER	LOD	RESULT	< LOD >
Lithium	0	0.9	>0
Beryllium	0.1	0.004	<0.1
Boron	5.0	4	<5.0
Sodium	50	300	>50
Magnesium	10	1	<10
Aluminum	20	0.7	<20
Silicon	20	3	<20
Phosphorus	25	10	<25
Potassium	20	3	<20
Calcium	25	2	<25
Titanium	0.5	0.04	<0.5
Vanadium	0.5	0.1	<0.5
Chromium T	0.2	0.1	<0.2
Manganese	0.2	0.005	<0.2
Iron	10	2	<10
Cobalt	0.2	0.009	<0.2
Nickel	0.2	0.01	<0.2
Copper	0.5	0.4	<0.5
Zinc	10	0.2	<10

Arsenic	0.2	0.04	<0.2
Selenium	0.3	0.04	<0.3
Strontium	1.0	0.10	<1.0
Zirconium	2.0	0.008	<2.0
Molybdenum	0.5	0.1	<0.5
Silver	0.2	0.001	<0.2
Cadmium	0.2	0.005	<0.2
Tin	0.2	0.1	<0.2
Antimony	0.5	0.02	<0.5
Barium	0.5	0.03	<0.5
Tungsten	1.0	0.002	<1.0
Thallium	0.2	0.03	<0.2
Lead	0.1	0.01	<0.1
Uranium	0.1	0.06	<0.1

| Unit: ug/L
| CB: Calibration Blank
| T: Target analyte
| Acceptance Criteria: CCB Result <LOD
| Comment:

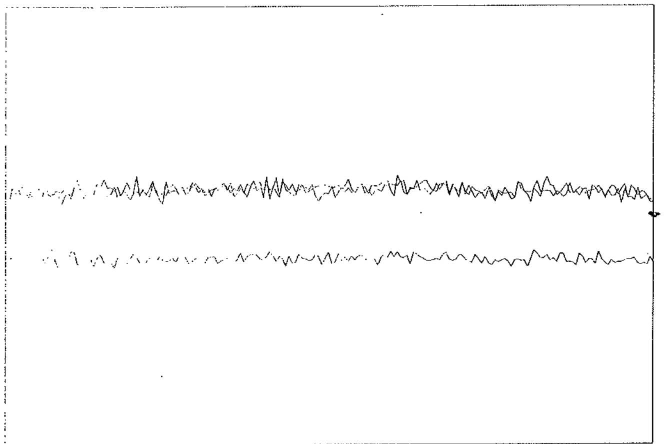
	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		TUNBEG	Start of TUNE						
2	C:\ICPCHEM\1\METHODS\TN6020_C.M	Tun6	1301	F6E07001	6020tunchk		1.000				
3	C:\ICPCHEM\1\METHODS\TN200_8C.M	Tun2	1302	F6E07002	200.8tunchk		1.000				
4		Keyword		TUNEND	End of TUNE						
5		Keyword		CALBEG	Start of CALIB						
6	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalBlk	1101	F6E07003	BLNK		Level 1				
7	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalBlk	1201	F6E07004	S0		Level 1				
8	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1104	F6E07005	S1 0.5		Level 2				
9	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1105	F6E07006	S2 50		Level 3				
10	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1106	F6E07007	S3 250		Level 4				
11	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1107	F6E07008	S4 500		Level 5				
12	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICV1	1204	F6E07009	ICV		1.000				
13	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICB	1201	F6E07010	ICB		1.000				
14	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1305	F6E07011	MRLE1101	1/100/10 ppb	1.000				
15	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1306	F6E07012	MRLE1102	0.5/50/4 ppb	1.000				
16	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-A	1303	F6E07013	ICSA		1.000				
17	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-AB	1304	F6E07014	ICSAB		1.000				
18	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1207	F6E07015	MRLE1103	500 ppb CAT	1.000				
19	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E07016	CCV1		1.000				
20	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E07017	CCB1		1.000				
21		Keyword		CALEND	End of CALIB						
22		Keyword		SMPLBEG	Start of SMPL						
23	C:\ICPCHEM\1\METHODS\EM6020R2.M	MBS	2101	F6E07018	IME016SB		1.000				
24	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCSS	2102	F6E07019	IME016SL		1.000				
25	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCSS	2103	F6E07020	IME016SC		1.000				
26	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2104	F6E07021	E059-01M CaSr↑	Sb Cr Mn	1.000				
27	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2105	F6E07022	E059-01S		1.000				
28	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2106	F6E07023	E059-01A ✓		1.000				
29	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2107	F6E07024	E059-01		1.000				
30	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2108	F6E07025	E059-01J		5.000				
31	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2109	F6E07026	E059-02 CaSr↑		1.000				
32	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2110	F6E07027	E059-03		1.000				
33	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E07028	CCV2		1.000				
34	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E07029	CCB2		1.000				
35	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3104	F6E07030	E002-06N	TOT	1.000				
36	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3105	F6E07031	E002-06N	DISS	1.000				
37	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3106	F6E07032	E002-06	TOT from bottle	1.000				
38	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2111	F6E07033	E059-01M		10.00				
39	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2112	F6E07034	E059-01S		10.00				
40	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2201	F6E07035	E059-01A		10.00				
41	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2202	F6E07036	E059-01I		10.00				
42	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2203	F6E07037	E059-01J		50.00				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
43	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2204	F6E07038	E059-02I		10.00				
44	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2205	F6E07039	E059-03I		10.00				
45	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E07040	CCV3		1.000				
46	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E07041	CCB3		1.000				
47	C:\ICPCHEM\1\METHODS\EM6020R2.M	MBW	2206	F6E07042	IME015WB		1.000				
48	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	2207	F6E07043	IME015WL		1.000				
49	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	2208	F6E07044	IME015WC		1.000				
50	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2209	F6E07045	TXE006WB		1.000				
51	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2210	F6E07046	E034-01M		1.000				
52	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2211	F6E07047	E034-01S Ba×		1.000				
53	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2212	F6E07048	E034-01A Ba ok✓		1.000				
54	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2301	F6E07049	E034-01		1.000				
55	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2302	F6E07050	E034-01J		5.000				
56	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E07051	CCV4		1.000				
57	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E07052	CCB4		1.000				
58	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3107	F6E07053	E012-01N	TOT from bottle	1.000				
59	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3108	F6E07054	E012-02N	TOT from bottle	1.000				
60	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3109	F6E07055	E012-04N	TOT from bottle	1.000				
61	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2303	F6E07056	E042-02		1.000				
62	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2304	F6E07057	E042-04		1.000				
63	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2305	F6E07058	E042-06		1.000				
64	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2306	F6E07059	E042-08		1.000				
65	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2307	F6E07060	E042-09		1.000				
66	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2308	F6E07061	E042-10		1.000				
67	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2309	F6E07062	E042-11		1.000				
68	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E07063	CCV5		1.000				
69	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E07064	CCB5		1.000				
70	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2310	F6E07065	E042-12M } Cr ok✓		1.000				
71	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2311	F6E07066	E042-12S		1.000				
72	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2312	F6E07067	E042-12A		1.000				
73	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2401	F6E07068	E042-12		1.000				
74	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2402	F6E07069	E042-12J		5.000				
75	C:\ICPCHEM\1\METHODS\EM6020R2.M	MBW	2403	F6E07070	IME012WB		1.000				
76	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	2404	F6E07071	IME012WL		1.000				
77	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	2405	F6E07072	IME012WC		1.000				
78	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2406	F6E07073	E020-01R	DISS	1.000				
79	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2407	F6E07074	E020-02R	DISS	1.000				
80	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E07075	CCV6		1.000				
81	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E07076	CCB6		1.000				
82	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2408	F6E07077	E020-03M } Cr ok✓	DISS	1.000				
83	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2409	F6E07078	E020-03S	DISS	1.000				
84	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2410	F6E07079	E020-03A	DISS	1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
85	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2411	F6E07080	E020-03R	DISS	1.000				
86	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2412	F6E07081	E020-03J	DISS	5.000				
87	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2501	F6E07082	E020-04R	DISS	1.000				
88	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2502	F6E07083	E020-05R	DISS	1.000				
89	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2503	F6E07084	E020-06R	DISS	1.000				
90	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2504	F6E07085	E020-07R	DISS	1.000				
91	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2505	F6E07086	E020-01R	TOT	1.000				
92	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E07087	CCV7		1.000				
93	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E07088	CCB7		1.000				
94	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2506	F6E07089	E020-02R	TOT	1.000				
95	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2507	F6E07090	E020-03M Cr ok✓	TOT	1.000				
96	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2508	F6E07091	E020-03S	TOT	1.000				
97	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2509	F6E07092	E020-03A	TOT	1.000				
98	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2510	F6E07093	E020-03R	TOT	1.000				
99	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2511	F6E07094	E020-03J	TOT	5.000				
100	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2512	F6E07095	E020-04R	TOT	1.000				
101	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3101	F6E07096	E020-05R	TOT	1.000				
102	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3102	F6E07097	E020-06R	TOT	1.000				
103	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3103	F6E07098	E020-07R	TOT	1.000				
104	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E07099	CCV8		1.000				
105	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E07100	CCB8		1.000				
106		Keyword		StandBy							
107		Keyword		SMPLEND	End of SMPL						
108		Keyword		End	End of Sequence						
109		Keyword		BLKBEG	Start of BLANK						
110		Keyword		BLKEND	End of BLANK						
111		Keyword		ERRBEG	Start of ERRTERM						
112		Keyword		ERREND	End of ERRTERM						

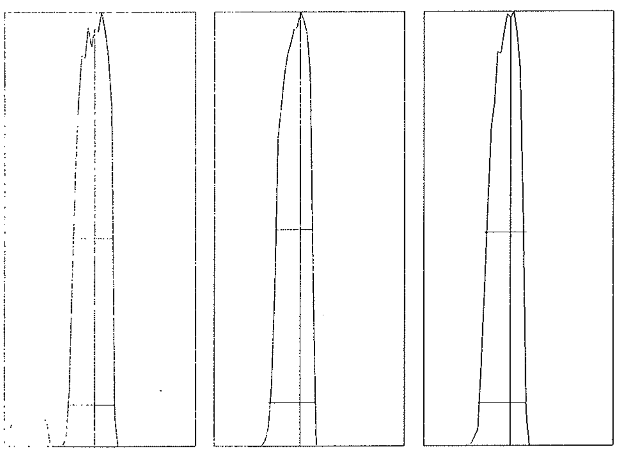
Tune Report

Tune File : NORM.U
Comment : IF6E07



Integration Time: 0.1000 sec
Sampling Period: 0.6200 sec
n: 200
Oxide: 156/140 1.376%
Doubly Charged: 70/140 1.650%

m/z	Range	Count	Mean	RSD%	Background
7	20,000	11221.0	11558.4	2.12	3.90
89	50,000	27677.0	29196.7	1.95	4.80
205	50,000	20613.0	21206.8	1.99	12.90
156/140	2	1.281%	1.392%	6.10	
70/140	2	1.441%	1.356%	5.61	



m/z:	7	89	205
Height:	3,276	8,846	6,211
Axis:	6.95	88.90	204.90
W-50%:	0.65	0.60	0.65
W-10%:	0.7500	0.7500	0.7500

Integration Time: 0.0300 sec
Acquisition Time: 10.1600 sec

Y axis : Linear

Generated : May 11, 2018 11:02:39
Printed : May 11, 2018 11:02:41

Tune Report

Tune File : NORM.U
Comment : IE6E07

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1500 W	Extract 1	:	0 V	AMU Gain	:	129
RF Matching	:	1.74 V	Extract 2	:	-140 V	AMU Offset	:	125
Smpl Depth	:	8 mm	Omega Bias-ce	:	-24 V	Axis Gain	:	0.9993
Torch-H	:	-1 mm	Omega Lens-ce	:	-0.2 V	Axis Offset	:	-0.08
Torch-V	:	-0.2 mm	Cell Entrance	:	-30 V	QP Bias	:	-3 V
Carrier Gas	:	0.9 L/min	QP Focus	:	2 V			
Makeup Gas	:	0.14 L/min	Cell Exit	:	-36 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	2080 V
Sample Pump	:	--- rps	OctP RF	:	169 V	Pulse HV	:	1480 V
S/C Temp	:	2 degC	OctP Bias	:	-6 V			

===Reaction Cell===

Reaction Mode	:	OFF						
H2 Gas	:	0 mL/min	He Gas	:	0 mL/min	Optional Gas	:	--- %

Generated : May 11, 2018 11:02:39
Printed : May 11, 2018 11:02:43

Last Calib: May 11, 2018 12:02 pm
Calibration Type: External Calibration Method
Calibration Title:
Weighting Method: 1/(SD*SD)
Mass Interpolation Fit for VIS: Point to Point
Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Multi Tune: #1 h2.u
#2 he.u
#3 norm.u

=== Standard Files ===
<Data Correction>
Bkg File: ---
Rejected Masses: ---
Interference Correction: ON

	Data File	Sample Name	Date Acquired
1	c:\data\if62018\e\if6e07.b\f6e07004.d\f6e07004.d#	S0	May 11 2018 11:42 am
2	c:\data\if62018\e\if6e07.b\f6e07005.d\f6e07005.d#	S1 0.5	May 11 2018 11:46 am
3	c:\data\if62018\e\if6e07.b\f6e07006.d\f6e07006.d#	S2 50	May 11 2018 11:51 am
4	c:\data\if62018\e\if6e07.b\f6e07007.d\f6e07007.d#	S3 250	May 11 2018 11:56 am
5	c:\data\if62018\e\if6e07.b\f6e07008.d\f6e07008.d#	S4 500	May 11 2018 12:00 pm
6	---		
7	---		
8	---		
9	---		
10	---		
11	---		
12	---		
13	---		
14	---		
15	---		
16	---		
17	---		
18	---		
19	---		
20	---		

Calibration - C:\DATA\IF62018\E\IF6E07.B\EM6020R2.C

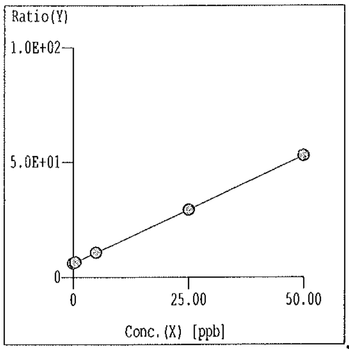
=== ISTD Table ===

Fix ISTD Conc: ON

	Step	Mass	Element	VIS	Units	All Levels
1	3	6	Li		ppb	100.0
2	1	45	Sc		ppb	100.0
3	2	45	Sc		ppb	100.0
4	3	45	Sc		ppb	100.0
5	1	72	Ge		ppb	100.0
6	2	72	Ge		ppb	100.0
7	3	72	Ge		ppb	100.0
8	3	115	In		ppb	100.0
9	3	159	Tb		ppb	100.0
10	3	209	Bi		ppb	100.0

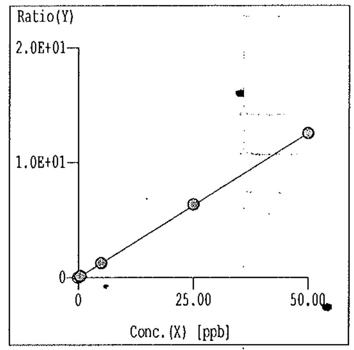
=== Graph Detail ===

Step Mass Element ISTD Unit
(3) 7 Li 6 ppb



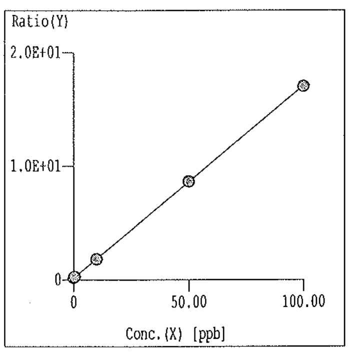
Curve Fit: Y=aX+b
r = 1.0000
Y = 9.325E-001*X +6.057E+000
X = 1.072E+000*Y -6.496E+000
DL = 7.815E-02 ppb
BEC = 6.496 ppb

Step Mass Element ISTD Unit
(3) 9 Be 6 ppb



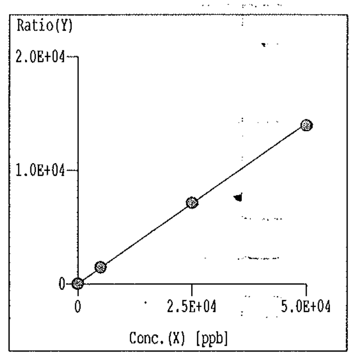
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.503E-001*X +1.565E-003
X = 3.996E+000*Y -6.252E-003
DL = 8.507E-03 ppb
BEC = 6.252E-03 ppb

Step Mass Element ISTD Unit
(3) 11 B 6 ppb



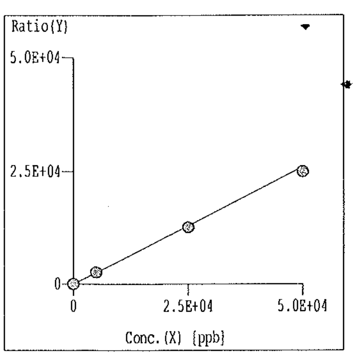
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.690E-001*X +1.678E-001
X = 5.918E+000*Y -9.931E-001
DL = 3.805E-01 ppb
BEC = 9.931E-01 ppb

Step Mass Element ISTD Unit
(1) 23 Na 45 ppb



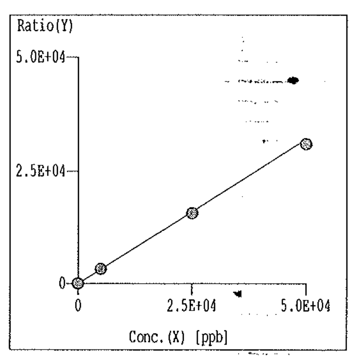
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.823E-001*X +3.396E+001
X = 3.543E+000*Y -1.203E+002
DL = 5.331 ppb
BEC = 120.3 ppb

Step Mass Element ISTD Unit
(3) 24 Mg 45 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 5.199E-001*X +2.187E-001
X = 1.923E+000*Y -4.207E-001
DL = 1.305E-01 ppb
BEC = 4.207E-01 ppb

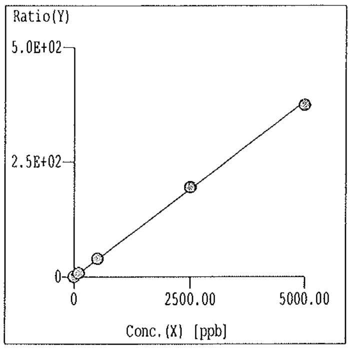
Step Mass Element ISTD Unit
(3) 27 Al 45 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.399E-001*X +9.594E-002
X = 1.563E+000*Y -1.499E-001
DL = 1.241E-02 ppb
BEC = 1.499E-01 ppb

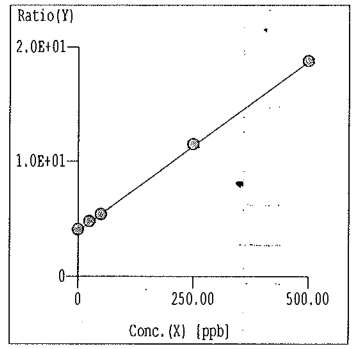
=== Graph Detail ===

Step Mass Element ISTD Unit
(1) 28 Si 45 ppb



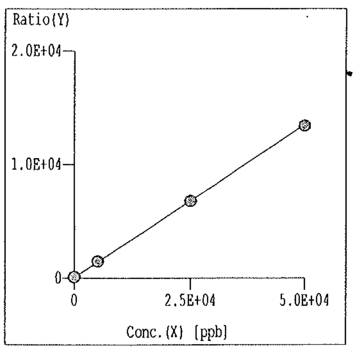
Curve Fit: Y=aX+b
r = 0.9998
Y = 7.630E-002*X +2.096E-001
X = 1.311E+001*Y -2.748E+000
DL = 2.008E-01 ppb
BEC = 2.748 ppb

Step Mass Element ISTD Unit
(3) 31 P 45 ppb



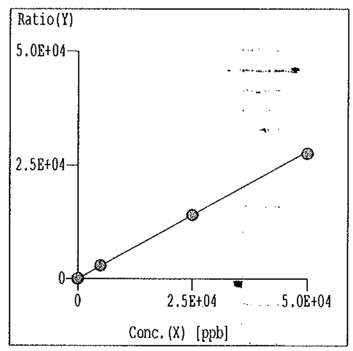
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.957E-002*X +3.914E+000
X = 3.382E+001*Y -1.324E+002
DL = 9.834 ppb
BEC = 132.4 ppb

Step Mass Element ISTD Unit
(2) 39 K 45 ppb



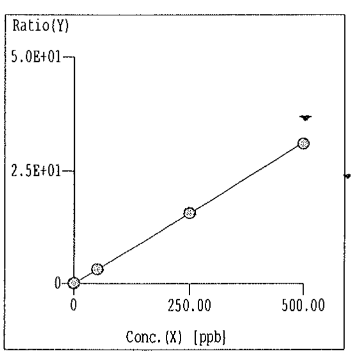
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.688E-001*X +8.294E+001
X = 3.720E+000*Y -3.085E+002
DL = 6.894 ppb
BEC = 308.5 ppb

Step Mass Element ISTD Unit
(1) 40 Ca 45 ppb



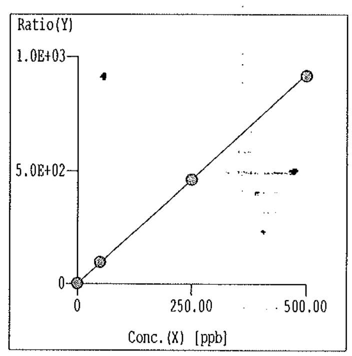
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.613E-001*X +2.104E+000
X = 1.782E+000*Y -3.749E+000
DL = 1.599E-01 ppb
BEC = 3.749 ppb

Step Mass Element ISTD Unit
(3) 47 Ti 45 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.255E-002*X +1.434E-002
X = 1.599E+001*Y -2.293E-001
DL = 1.008E-01 ppb
BEC = 2.293E-01 ppb

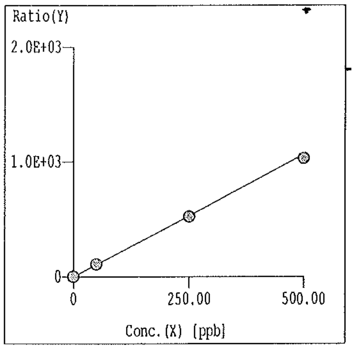
Step Mass Element ISTD Unit
(2) 51 V 45 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.848E+000*X +1.375E+000
X = 5.410E-001*Y -7.437E-001
DL = 3.588E-02 ppb
BEC = 7.437E-01 ppb

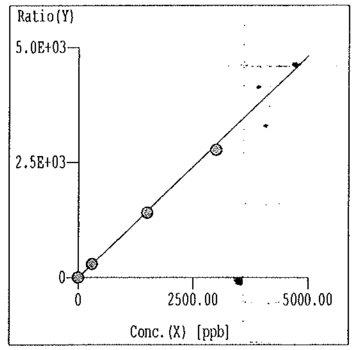
=== Graph Detail ===

Step Mass Element ISTD Unit
(2) 52 Cr 45 ppb



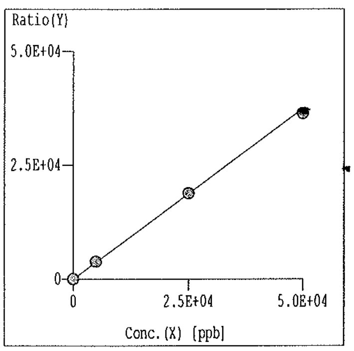
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.122E+000*X +8.968E-001
X = 4.712E-001*Y -4.225E-001
DL = 3.302E-02 ppb
BEC = 4.225E-01 ppb

Step Mass Element ISTD Unit
(3) 55 Mn 45 ppb



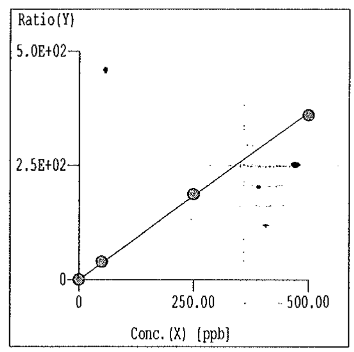
Curve Fit: Y=aX+b
r = 1.0000
Y = 9.633E-001*X +2.484E-001
X = 1.038E+000*Y -2.578E-001
DL = 4.321E-02 ppb
BEC = 2.578E-01 ppb

Step Mass Element ISTD Unit
(1) 56 Fe 45 ppb



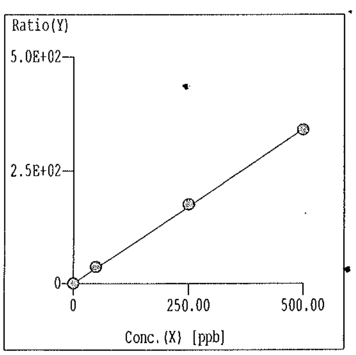
Curve Fit: Y=aX+b
r = 0.9999
Y = 7.470E-001*X +5.708E-001
X = 1.339E+000*Y -7.641E-001
DL = 8.936E-02 ppb
BEC = 7.641E-01 ppb

Step Mass Element ISTD Unit
(3) 59 Co 45 ppb



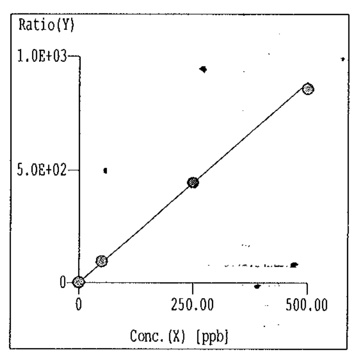
Curve Fit: Y=aX+b
r = 0.9998
Y = 7.324E-001*X +1.616E-002
X = 1.365E+000*Y -2.207E-002
DL = 3.165E-03 ppb
BEC = 2.207E-02 ppb

Step Mass Element ISTD Unit
(2) 60 Ni 45 ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 6.830E-001*X +3.770E-002
X = 1.464E+000*Y -5.520E-002
DL = 6.178E-03 ppb
BEC = 5.520E-02 ppb

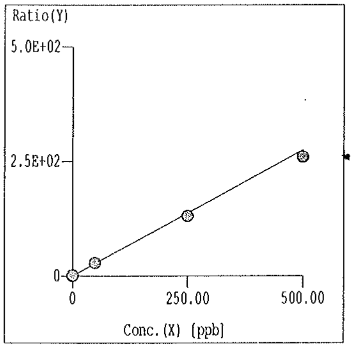
Step Mass Element ISTD Unit
(2) 63 Cu 45 ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 1.773E+000*X +4.467E-001
X = 5.641E-001*Y -2.520E-001
DL = 5.837E-03 ppb
BEC = 2.520E-01 ppb

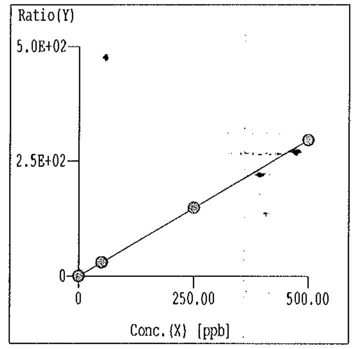
=== Graph Detail ===

Step Mass Element ISTD Unit
(3) 66 Zn 72 ppb



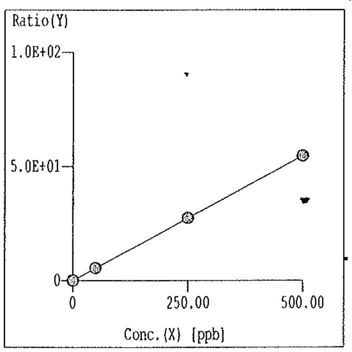
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.481E-001*X +2.144E-001
X = 1.824E+000*Y -3.912E-001
DL = 5.201E-02 ppb
BEC = 3.912E-01 ppb

Step Mass Element ISTD Unit
(2) 75 As 72 ppb



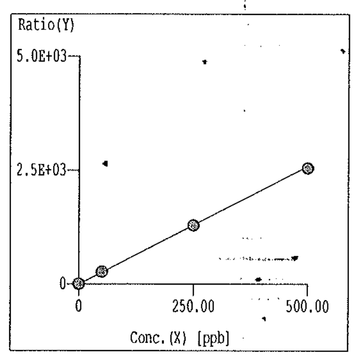
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.917E-001*X +1.652E-001
X = 1.690E+000*Y -2.791E-001
DL = 2.539E-02 ppb
BEC = 2.791E-01 ppb

Step Mass Element ISTD Unit
(1) 78 Se 72 ppb



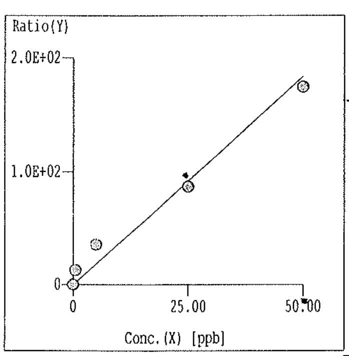
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.093E-001*X +3.961E-003
X = 9.152E+000*Y -3.625E-002
DL = 5.452E-03 ppb
BEC = 3.625E-02 ppb

Step Mass Element ISTD Unit
(3) 88 Sr 72 ppb



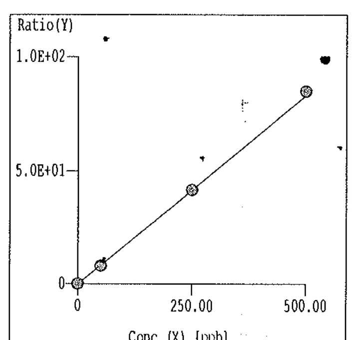
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.179E+000*X +1.114E-001
X = 1.931E-001*Y -2.151E-002
DL = 3.385E-03 ppb
BEC = 2.151E-02 ppb

Step Mass Element ISTD Unit
(3) 90 Zr 72 ppb



Curve Fit: Y=aX+b
r = 0.9949
Y = 3.673E+000*X +5.439E-002
X = 2.723E-001*Y -1.481E-002
DL = 3.048E-03 ppb
BEC = 1.481E-02 ppb

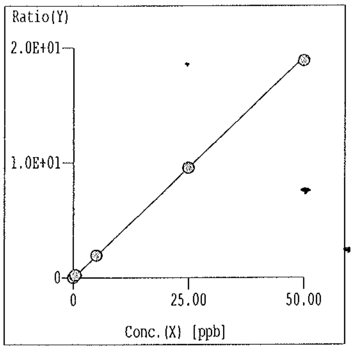
Step Mass Element ISTD Unit
(3) 95 Mo 115 ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 1.662E-001*X +2.072E-003
X = 6.016E+000*Y -1.246E-002
DL = 4.940E-03 ppb
BEC = 1.246E-02 ppb

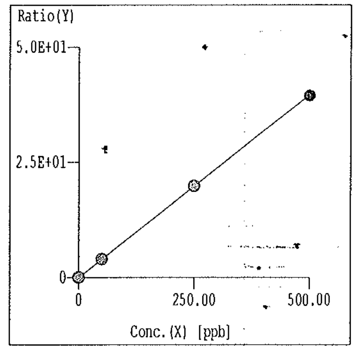
=== Graph Detail ===

Step Mass Element ISTD Unit
(3) 107 Ag 115 ppb



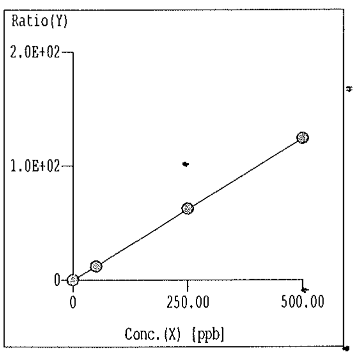
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.829E-001*X +1.522E-003
X = 2.612E+000*Y -3.975E-003
DL = 2.799E-03 ppb
BEC = 3.975E-03 ppb

Step Mass Element ISTD Unit
(3) 111 Cd 115 ppb



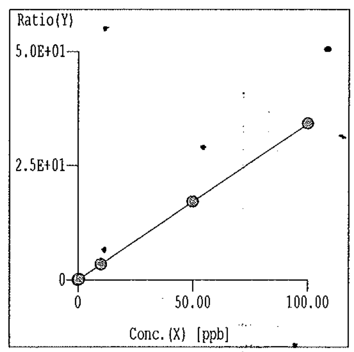
Curve Fit: Y=aX+b
r = 1.0000
Y = 7.923E-002*X +1.534E-003
X = 1.262E+001*Y -1.936E-002
DL = 1.409E-02 ppb
BEC = 1.936E-02 ppb

Step Mass Element ISTD Unit
(3) 118 Sn 115 ppb



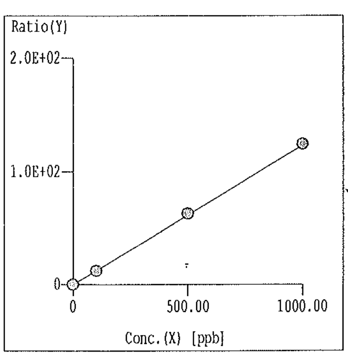
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.474E-001*X +1.047E-002
X = 4.043E+000*Y -4.233E-002
DL = 1.470E-02 ppb
BEC = 4.233E-02 ppb

Step Mass Element ISTD Unit
(3) 121 Sb 115 ppb



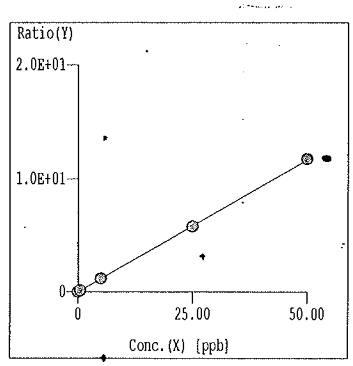
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.412E-001*X +4.683E-003
X = 2.931E+000*Y -1.372E-002
DL = 1.082E-02 ppb
BEC = 1.372E-02 ppb

Step Mass Element ISTD Unit
(3) 137 Ba 115 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.231E-001*X +1.300E-003
X = 8.123E+000*Y -1.056E-002
DL = 2.036E-03 ppb
BEC = 1.056E-02 ppb

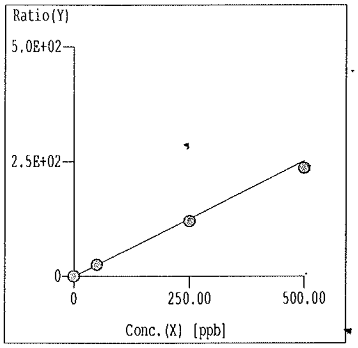
Step Mass Element ISTD Unit
(3) 182 W 159 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 2.336E-001*X +2.474E-003
X = 4.280E+000*Y -1.059E-002
DL = 6.514E-03 ppb
BEC = 1.059E-02 ppb

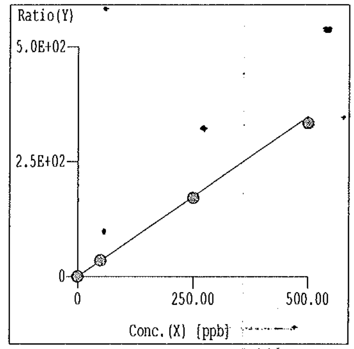
=== Graph Detail ===

Step Mass Element	ISTD	Unit
(3) 205 Tl	159	ppb



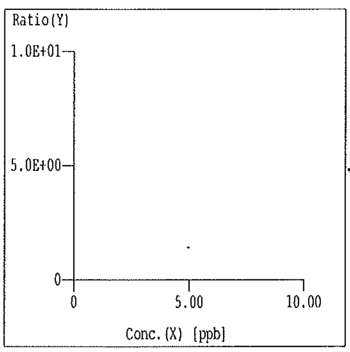
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.024E-001*X +1.298E-003
X = 1.990E+000*Y -2.583E-003
DL = 2.768E-03 ppb
BEC = 2.583E-03 ppb

Step Mass Element	ISTD	Unit
(3) 208 Pb	159	ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 6.962E-001*X +7.153E-003
X = 1.436E+000*Y -1.027E-002
DL = 3.044E-03 ppb
BEC = 1.027E-02 ppb

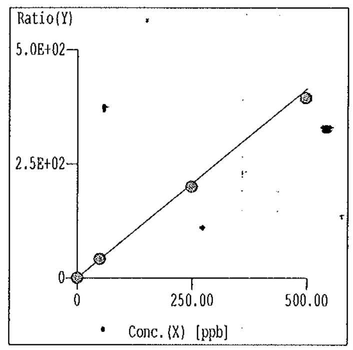
Step Mass Element	ISTD	Unit
(3) 232 Th	209	ppb



Curve Fit: Excluded
r = 0.0000

DL = --- ppb
BEC = --- ppb

Step Mass Element	ISTD	Unit
(3) 238 U	159	ppb



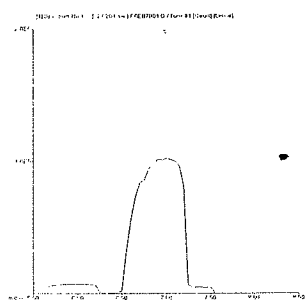
Curve Fit: Y=aX+b
r = 1.0000
Y = 8.303E-001*X +7.301E-004
X = 1.204E+000*Y -8.793E-004
DL = 7.422E-04 ppb
BEC = 8.793E-04 ppb

6020 QC Tune Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07001.D
Date Acquired:	May 11 2018 11:11 am
Acq. Method:	TN6020_C.M
Operator:	LVicto
Sample Name:	6020tunchk
Misc Info:	
Vial Number:	1301
Current Method:	C:\ICPCHEM\1\METHODS\TN6020_C.M

RSD (%)

Element	Actual	Required	Flag
7 Li	4.00	5.00	
59 Co	2.97	5.00	
115 In	3.24	5.00	
205 Tl	4.87	5.00	



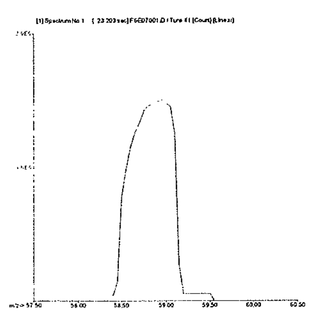
7 Li

Mass Calib.

Actual: 7.00
Required: 6.90 - 7.10
Flag:

Peak Width-10%

Actual: 0.65
Limit 0.90
Flag:



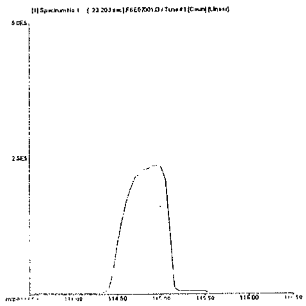
59 Co

Mass Calib.

Actual: 58.90
Required: 58.90 - 59.10
Flag:

Peak Width-10%

Actual: 0.55
Limit 0.90
Flag:



115 In

Mass Calib.

Actual: 114.90

Required: 114.90 - 115.10

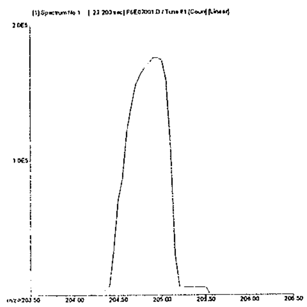
Flag:

Peak Width-10%

Actual: 0.55

Limit 0.90

Flag:



205 Tl

Mass Calib.

Actual: 204.90

Required: 204.90 - 205.10

Flag:

Peak Width-10%

Actual: 0.55

Limit 0.90

Flag:

Calibration Blank QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07003
Date Acquired:	May 11 2018 11:37 am
Operator:	LVicto
Sample Name:	BLNK
Misc Info:	
Vial Number:	1101
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2
Last Cal Update:	May 11 2018 11:27 am
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1182126.00	A	26090.00	2.21
7	Li	72298.23	P	1263.00	1.75
9	Be	22.22	P	5.09	22.91
11	B	2075.76	P	303.60	14.63
23	Na	331433.69	P	1330.00	0.40
24	Mg	4569.73	P	222.30	4.86
27	Al	2189.14	P	160.70	7.34
28	Si	3193.82	P	15.23	0.48
31	P	83182.41	P	853.30	1.03
39	K	184961.41	P	1130.00	0.61
40	Ca	24668.60	P	245.10	0.99
45	Sc	1014376.00	A	11210.00	1.11
45	Sc	215696.00	P	2585.00	1.20
45	Sc	2057031.00	A	32350.00	1.57
47	Ti	345.66	P	90.68	26.23
51	V	2626.25	P	43.89	1.67
52	Cr	1819.68	P	38.82	2.13
55	Mn	4778.70	P	162.40	3.40
56	Fe	4819.94	P	374.10	7.76
59	Co	318.90	P	3.85	1.21
60	Ni	88.67	P	2.40	2.71
63	Cu	994.48	P	21.34	2.15
66	Zn	381.13	P	11.71	3.07
72	Ge	214162.00	P	907.90	0.42
72	Ge	101864.70	P	1145.00	1.12
72	Ge	415004.19	P	4147.00	1.00
75	As	176.67	P	3.53	2.00
78	Se	9.33	P	2.91	31.14
88	Sr	481.14	P	1.92	0.40
90	Zr	250.01	P	26.67	10.67
95	Mo	53.34	P	5.77	10.83
107	Ag	25.56	P	5.09	19.93
111	Cd	19.72	P	9.58	48.57
115	In	2562302.00	A	41570.00	1.62
118	Sn	250.01	P	13.33	5.33
121	Sb	160.01	P	8.82	5.51
137	Ba	25.56	P	8.39	32.83
159	Tb	3598924.00	A	52520.00	1.46
182	W	104.45	P	11.71	11.21
205	Tl	67.78	P	10.71	15.80
208	Pb	240.01	P	49.10	20.46
209	Bi	2250101.00	A	21560.00	0.96
235	U	24.45	P	13.88	56.78
238	U	37.78	P	1.93	5.10

Calibration Blank QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07004
Date Acquired:	May 11 2018 11:42 am
Operator:	LVicto
Sample Name:	S0
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2
Last Cal Update:	May 11 2018 11:40 am
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1156944.00	A	23120.00	2.00
7	Li	70079.41	P	1220.00	1.74
9	Be	17.78	P	8.39	47.19
11	B	2007.98	P	229.10	11.41
23	Na	326669.31	P	264.70	0.08
24	Mg	4271.85	P	398.10	9.32
27	Al	1949.08	P	15.03	0.77
28	Si	2009.09	P	65.45	3.26
31	P	83124.35	P	426.80	0.51
39	K	176867.00	P	1311.00	0.74
40	Ca	20166.30	P	409.60	2.03
45	Sc	963897.88	A	13600.00	1.41
45	Sc	213583.41	P	1991.00	0.93
45	Sc	2034837.00	A	41220.00	2.03
47	Ti	224.45	P	41.94	18.69
51	V	2749.60	P	46.14	1.68
52	Cr	1800.79	P	57.39	3.19
55	Mn	4744.25	P	209.90	4.42
56	Fe	5472.61	P	228.60	4.18
59	Co	325.57	P	15.75	4.84
60	Ni	79.56	P	3.36	4.22
63	Cu	944.93	P	9.25	0.98
66	Zn	311.13	P	40.19	12.92
72	Ge	207470.20	P	1600.00	0.77
72	Ge	100121.50	P	725.70	0.72
72	Ge	406311.59	P	4124.00	1.02
75	As	160.89	P	4.91	3.05
78	Se	8.22	P	0.38	4.68
88	Sr	450.02	P	20.28	4.51
90	Zr	208.90	P	15.75	7.54
95	Mo	52.22	P	6.94	13.29
107	Ag	33.33	P	8.82	26.46
111	Cd	26.43	P	9.31	35.21
115	In	2486219.00	A	22740.00	0.91
118	Sn	226.68	P	31.80	14.03
121	Sb	118.89	P	31.51	26.50
137	Ba	32.22	P	1.93	5.97
159	Tb	3505934.00	A	90120.00	2.57
182	W	91.11	P	16.78	18.42
205	Tl	43.33	P	17.32	39.97
208	Pb	244.45	P	29.88	12.22
209	Bi	2156402.00	A	39640.00	1.84
235	U	23.33	P	14.53	62.27
238	U	25.56	P	7.70	30.12

Calibration Standard QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07005.D\F6E07005.D#
Date Acquired:	May 11 2018 11:46 am
Operator:	LVicto
Sample Name:	S1 0.5
Misc Info:	
Vial Number:	1104
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	May 11 2018 11:45 am
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1197778.00	A	20360.00	1.70
7 Li	78249.35	P	472.80	0.60
9 Be	1533.46	P	54.58	3.56
11 B	3184.88	P	332.60	10.44
23 Na	469672.31	P	444.10	0.09
24 Mg	574456.69	P	7445.00	1.30
27 Al	692743.19	P	10530.00	1.52
28 Si	79120.88	P	1307.00	1.65
31 P	99342.02	P	324.00	0.33
39 K	208799.70	P	865.50	0.41
40 Ca	426509.41	P	2772.00	0.65
45 Sc	976083.19	A	21180.00	2.17
45 Sc	215842.91	P	3366.00	1.56
45 Sc	2076161.00	A	48530.00	2.34
47 Ti	1001.18	P	22.69	2.27
51 V	5213.38	P	73.41	1.41
52 Cr	4274.64	P	50.68	1.19
55 Mn	16228.18	P	312.00	1.92
56 Fe	428611.19	P	5821.00	1.36
59 Co	8781.78	P	187.80	2.14
60 Ni	932.70	P	24.58	2.64
63 Cu	3220.15	P	45.11	1.40
66 Zn	6349.35	P	73.56	1.16
72 Ge	209494.70	P	2659.00	1.27
72 Ge	101472.00	P	1787.00	1.76
72 Ge	411126.19	P	6371.00	1.55
75 As	501.35	P	13.38	2.67
78 Se	119.78	P	10.34	8.63
88 Sr	11607.19	P	170.00	1.46
90 Zr	52598.16	P	1655.00	3.15
95 Mo	2108.01	P	98.98	4.70
107 Ag	5600.16	P	28.77	0.51
111 Cd	1104.08	P	26.10	2.36
115 In	2530505.00	A	55770.00	2.20
118 Sn	3516.11	P	53.37	1.52
121 Sb	4358.61	P	135.10	3.10
137 Ba	1677.94	P	27.76	1.65
159 Tb	3538419.00	A	88870.00	2.51
182 W	3954.05	P	149.80	3.79
205 Tl	9522.59	P	24.62	0.26
208 Pb	13340.87	P	115.90	0.87
209 Bi	2197745.00	A	58620.00	2.67
235 U	125.56	P	28.74	22.89
238 U	15145.84	P	171.70	1.13

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6 Li	1197777.90	1.70	1156944.40	103.5	60 -	125	
45 Sc	976083.19	2.17	963897.88	101.3	60 -	125	
45 Sc	215842.92	1.56	213583.44	101.1	60 -	125	
45 Sc	2076160.80	2.34	2034836.60	102.0	60 -	125	
72 Ge	209494.67	1.27	207470.16	101.0	60 -	125	
72 Ge	101471.97	1.76	100121.55	101.3	60 -	125	
72 Ge	411126.16	1.55	406311.59	101.2	60 -	125	
115 In	2530505.50	2.20	2486219.30	101.8	60 -	125	
159 Tb	3538418.80	2.51	3505933.80	100.9	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File: C:\DATA\IF62018\E\IF6E07.B\F6E07006.D\F6E07006.D#
Date Acquired: May 11 2018 11:51 am
Operator: LVicto
Sample Name: S2 50
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 11 2018 11:49 am
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1192239.00	A	14120.00	1.18
7	Li	127614.00	P	2480.00	1.94
9	Be	14875.38	P	360.90	2.43
11	B	21534.58	P	568.50	2.64
23	Na	14937510.00	A	176800.00	1.18
24	Mg	54582500.00	A	1030000.00	1.89
27	Al	67047200.00	A	779800.00	1.16
28	Si	399795.50	P	1912.00	0.48
31	P	112818.50	P	1413.00	1.25
39	K	3253785.00	A	56150.00	1.73
40	Ca	29120480.00	A	169100.00	0.58
45	Sc	1018246.00	A	6645.00	0.65
45	Sc	221130.20	P	1456.00	0.66
45	Sc	2094060.00	A	22090.00	1.05
47	Ti	66052.73	P	980.30	1.48
51	V	212353.59	P	2662.00	1.25
52	Cr	241052.91	P	1958.00	0.81
55	Mn	6124008.00	A	93960.00	1.53
56	Fe	38912800.00	A	206600.00	0.53
59	Co	815820.38	P	8182.00	1.00
60	Ni	81442.63	P	452.70	0.56
63	Cu	207677.91	P	1814.00	0.87
66	Zn	116801.20	P	1478.00	1.27
72	Ge	215142.70	P	202.50	0.09
72	Ge	103378.00	P	421.60	0.41
72	Ge	410596.09	P	6247.00	1.52
75	As	30941.48	P	463.60	1.50
78	Se	11780.54	P	129.00	1.10
88	Sr	1097976.00	A	13130.00	1.20
90	Zr	145335.30	P	343.40	0.24
95	Mo	199493.91	P	1060.00	0.53
107	Ag	48182.91	P	951.00	1.97
111	Cd	99032.71	P	1313.00	1.33
115	In	2491621.00	A	36610.00	1.47
118	Sn	299798.09	P	2136.00	0.71
121	Sb	84762.50	P	518.60	0.61
137	Ba	301475.59	P	3196.00	1.06
159	Tb	3524731.00	A	37890.00	1.08
182	W	41628.06	P	385.40	0.93
205	Tl	890894.88	P	9584.00	1.08
208	Pb	1238811.00	P	12970.00	1.05
209	Bi	2164083.00	A	44360.00	2.05
235	U	10524.55	P	194.80	1.85
238	U	1462743.00	A	20340.00	1.39

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1192239.00	1.18	1156944.40	103.1	60 -	125	
45	Sc	1018246.40	0.65	963897.88	105.6	60 -	125	
45	Sc	221130.25	0.66	213583.44	103.5	60 -	125	
45	Sc	2094060.40	1.05	2034836.60	102.9	60 -	125	
72	Ge	215142.70	0.09	207470.16	103.7	60 -	125	
72	Ge	103377.95	0.41	100121.55	103.3	60 -	125	
72	Ge	410596.09	1.52	406311.59	101.1	60 -	125	
115	In	2491621.50	1.47	2486219.30	100.2	60 -	125	
159	Tb	3524730.80	1.08	3505933.80	100.5	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07007.D\F6E07007.D#
Date Acquired:	May 11 2018 11:56 am
Operator:	LVicto
Sample Name:	S3 250
Misc Info:	
Vial Number:	1106
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	May 11 2018 11:54 am
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1144298.00	A	9949.00	0.87
7	Li	335006.81	P	4827.00	1.44
9	Be	72368.22	P	1677.00	2.32
11	B	98642.61	P	1002.00	1.02
23	Na	71637848.00	A	971300.00	1.36
24	Mg	263751900.00	A	4836000.00	1.83
27	Al	326818300.00	A	5906000.00	1.81
28	Si	1956939.00	A	12910.00	0.66
31	P	239839.80	P	2651.00	1.11
39	K	14882440.00	A	186400.00	1.25
40	Ca	140615390.00	A	569600.00	0.41
45	Sc	1006870.00	A	13080.00	1.30
45	Sc	219465.09	P	2090.00	0.95
45	Sc	2091211.00	A	61660.00	2.95
47	Ti	327309.50	P	3976.00	1.21
51	V	1013955.00	A	9311.00	0.92
52	Cr	1149449.00	A	13440.00	1.17
55	Mn	29339440.00	A	400100.00	1.36
56	Fe	188520190.00	A	1486000.00	0.79
59	Co	3893060.00	A	42720.00	1.10
60	Ni	384740.31	P	3492.00	0.91
63	Cu	972733.63	M	10650.00	1.09
66	Zn	527030.63	P	6127.00	1.16
72	Ge	209988.20	P	1210.00	0.58
72	Ge	101117.10	P	546.80	0.54
72	Ge	404954.91	P	6672.00	1.65
75	As	150053.50	P	1771.00	1.18
78	Se	57338.92	P	684.20	1.19
88	Sr	5188539.00	A	84280.00	1.62
90	Zr	351011.31	P	5578.00	1.59
95	Mo	996559.88	A	15610.00	1.57
107	Ag	228194.59	P	2725.00	1.19
111	Cd	474878.41	P	5397.00	1.14
115	In	2396133.00	A	24270.00	1.01
118	Sn	1491712.00	A	27920.00	1.87
121	Sb	409077.59	P	3705.00	0.91
137	Ba	1504684.00	A	20310.00	1.35
159	Tb	3443594.00	A	38450.00	1.12
182	W	199179.09	P	1722.00	0.86
205	Tl	4125986.00	A	92560.00	2.24
208	Pb	5882680.00	A	95260.00	1.62
209	Bi	2025042.00	A	22970.00	1.13
235	U	50091.06	P	112.80	0.23
238	U	6874275.00	A	21660.00	0.32

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1144298.10	0.87	1156944.40	98.9	60 -	125	
45	Sc	1006870.00	1.30	963897.88	104.5	60 -	125	
45	Sc	219465.08	0.95	213583.44	102.8	60 -	125	
45	Sc	2091211.00	2.95	2034836.60	102.8	60 -	125	
72	Ge	209988.23	0.58	207470.16	101.2	60 -	125	
72	Ge	101117.13	0.54	100121.55	101.0	60 -	125	
72	Ge	404954.91	1.65	406311.59	99.7	60 -	125	
115	In	2396132.80	1.01	2486219.30	96.4	60 -	125	
159	Tb	3443594.00	1.12	3505933.80	98.2	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File: C:\DATA\IF62018\E\IF6E07.B\F6E07008.D\F6E07008.D#
Date Acquired: May 11 2018 12:00 pm
Operator: LVicto
Sample Name: S4 500
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 11 2018 11:58 am
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1130553.00	A	15190.00	1.34
7	Li	595733.81	P	8347.00	1.40
9	Be	141308.30	P	1236.00	0.87
11	B	192047.41	P	2683.00	1.40
23	Na	143926590.00	A	793200.00	0.55
24	Mg	527198690.00	A	9427000.00	1.79
27	Al	653022980.00	A	11230000.00	1.72
28	Si	3849018.00	A	9671.00	0.25
31	P	396792.31	P	2634.00	0.66
39	K	29734350.00	A	564000.00	1.90
40	Ca	284014590.00	A	262500.00	0.09
45	Sc	1032264.00	A	3693.00	0.36
45	Sc	221936.80	P	967.10	0.44
45	Sc	2115844.00	A	32920.00	1.56
47	Ti	654755.50	P	7362.00	1.12
51	V	2033055.00	A	4375.00	0.22
52	Cr	2280610.00	A	9365.00	0.41
55	Mn	58451800.00	A	1088000.00	1.86
56	Fe	374235390.00	A	1671000.00	0.45
59	Co	7612754.00	A	108000.00	1.42
60	Ni	755094.31	P	3721.00	0.49
63	Cu	1902201.00	A	19770.00	1.04
66	Zn	1045055.00	A	14640.00	1.40
72	Ge	209662.00	P	1056.00	0.50
72	Ge	101036.30	P	260.30	0.26
72	Ge	403943.69	P	4026.00	1.00
75	As	298667.00	P	1504.00	0.50
78	Se	114410.90	P	1154.00	1.01
88	Sr	10268420.00	A	149100.00	1.45
90	Zr	704228.69	P	8937.00	1.27
95	Mo	2002119.00	A	16200.00	0.81
107	Ag	444986.09	P	5790.00	1.30
111	Cd	928834.00	M	16040.00	1.73
115	In	2360905.00	A	29280.00	1.24
118	Sn	2923848.00	A	25100.00	0.86
121	Sb	806871.81	P	5940.00	0.74
137	Ba	2930916.00	A	30680.00	1.05
159	Tb	3394352.00	A	35870.00	1.06
182	W	398795.19	P	2936.00	0.74
205	Tl	7983307.00	A	123400.00	1.55
208	Pb	11293200.00	A	80430.00	0.71
209	Bi	1968420.00	A	44380.00	2.25
235	U	98606.68	P	1593.00	1.62
238	U	13382830.00	A	172600.00	1.29

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1130552.80	1.34	1156944.40	97.7	60 -	125	
45	Sc	1032264.40	0.36	963897.88	107.1	60 -	125	
45	Sc	221936.84	0.44	213583.44	103.9	60 -	125	
45	Sc	2115843.80	1.56	2034836.60	104.0	60 -	125	
72	Ge	209662.02	0.50	207470.16	101.1	60 -	125	
72	Ge	101036.30	0.26	100121.55	100.9	60 -	125	
72	Ge	403943.66	1.00	406311.59	99.4	60 -	125	
115	In	2360905.30	1.24	2486219.30	95.0	60 -	125	
159	Tb	3394352.50	1.06	3505933.80	96.8	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICV QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07009.D\F6E07009.D#
Date Acquired:	May 11 2018 12:04 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	ICV
Misc Info:	
Vial Number:	1204
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	ICV1
Dilution Factor:	1.00

QC Elements

Element		Conc.		CPS	Conc. RSD(%)	Expected	QC Range(%)		Flag
7	Li	28.28	ppb	384914.4	1.14	30.00	90 -	110	
9	Be	28.76	ppb	85456.1	0.99	30.00	90 -	110	
11	B	29.24	ppb	60617.8	1.82	30.00	90 -	110	
23	Na	28390.00	ppb	84786592.0	0.74	30000.00	90 -	110	
24	Mg	28550.00	ppb	322219490.0	0.85	30000.00	90 -	110	
27	Al	28260.00	ppb	392557180.0	0.72	30000.00	90 -	110	
28	Si	2911.00	ppb	2342094.0	0.74	3000.00	90 -	110	
31	P	277.40	ppb	263017.7	0.56	300.00	90 -	110	
39	K	29110.00	ppb	17731380.0	0.68	30000.00	90 -	110	
40	Ca	28830.00	ppb	170504900.0	0.32	30000.00	90 -	110	
47	Ti	288.50	ppb	392033.7	0.42	300.00	90 -	110	
51	V	290.10	ppb	1205129.0	0.87	300.00	90 -	110	
52	Cr	283.20	ppb	1349545.0	0.78	300.00	90 -	110	
55	Mn	1871.00	ppb	39127912.0	0.90	2000.00	90 -	110	
56	Fe	29150.00	ppb	229399200.0	0.75	30000.00	90 -	110	
59	Co	299.10	ppb	4756186.0	1.19	300.00	90 -	110	
60	Ni	304.00	ppb	465598.9	0.43	300.00	90 -	110	
63	Cu	290.50	ppb	1155605.0	0.40	300.00	90 -	110	
66	Zn	274.80	ppb	639079.4	0.49	300.00	90 -	110	
75	As	286.70	ppb	177009.4	0.76	300.00	90 -	110	
78	Se	286.20	ppb	68073.1	1.07	300.00	90 -	110	
88	Sr	286.70	ppb	6290055.0	1.15	300.00	90 -	110	
90	Zr	25.69	ppb	400008.2	0.41	30.00	90 -	110	Fail
95	Mo	297.40	ppb	1215318.0	0.55	300.00	90 -	110	
107	Ag	28.07	ppb	264158.2	1.27	30.00	90 -	110	
111	Cd	297.40	ppb	579294.9	0.68	300.00	90 -	110	
118	Sn	297.40	ppb	1808393.0	0.54	300.00	90 -	110	
121	Sb	56.69	ppb	475451.1	1.30	60.00	90 -	110	
137	Ba	293.60	ppb	888153.0	2.81	300.00	90 -	110	
182	W	46.33	ppb	389339.6	1.18	30.00	90 -	110	Fail
205	Tl	276.20	ppb	4989352.0	1.43	300.00	90 -	110	
208	Pb	280.80	ppb	7031054.0	1.50	300.00	90 -	110	
235	U	0.53	ppb	16890.2	1.44	2.20	90 -	110	Fail
238	U	278.50	ppb	8318144.0	0.99	300.00	90 -	110	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1186988.5	2.23	1156944.40	102.6	60 -	125	
45	Sc	1053585.4	0.24	963897.88	109.3	60 -	125	
45	Sc	224187.3	0.72	213583.44	105.0	60 -	125	
45	Sc	2170738.0	0.54	2034836.60	106.7	60 -	125	
72	Ge	217685.3	0.71	207470.16	104.9	60 -	125	
72	Ge	104246.4	1.31	100121.55	104.1	60 -	125	
72	Ge	423597.4	0.67	406311.59	104.3	60 -	125	
115	In	2457942.8	1.95	2486219.30	98.9	60 -	125	
159	Tb	3596649.5	2.75	3505933.80	102.6	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

3 :Element Failures　　0 :Max. Number of Failures Allowed
0 :ISTD Failures　　0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

ICB QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07010.D\F6E07010.D#
Date Acquired:	May 11 2018 12:08 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	ICB
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	ICB
Dilution Factor:	1.00

QC Elements

Element		Conc.		CPS	Conc RSD(%)	High Limit	Flag
7	Li	0.0489	ppb	75214.7	163.51	0.20	
9	Be	0.0046	ppb	33.3	41.67	0.10	
11	B	-0.0501	ppb	1962.4	282.04	5.00	
23	Na	4.8490	ppb	353689.4	50.59	40.00	
24	Mg	0.2773	ppb	7601.0	35.68	10.00	
27	Al	0.3990	ppb	7357.6	18.14	20.00	
28	Si	0.9612	ppb	2831.5	31.63	20.00	
31	P	-8.8490	ppb	76496.7	11.22	10.00	
39	K	-2.1020	ppb	184519.6	163.23	20.00	
40	Ca	0.7281	ppb	25158.3	8.54	25.00	
47	Ti	0.0489	ppb	364.5	102.02	0.50	
51	V	-0.1126	ppb	2612.5	11.56	0.50	
52	Cr	-0.0497	ppb	1772.8	4.39	0.20	
55	Mn	0.0129	ppb	5462.3	10.03	0.20	
56	Fe	1.7550	ppb	18839.2	1.65	10.00	
59	Co	0.0170	ppb	600.0	29.05	0.20	
60	Ni	0.0035	ppb	89.8	129.70	0.20	
63	Cu	0.1222	ppb	1485.6	13.13	0.40	
66	Zn	-0.2382	ppb	347.8	7.20	2.00	
75	As	0.0382	ppb	194.7	26.22	0.20	
78	Se	0.0921	ppb	29.8	11.77	0.20	
90	Zr	0.0036	ppb	281.1	61.05	2.00	
95	Mo	0.1629	ppb	745.6	3.39	0.40	
107	Ag	0.0010	ppb	48.9	158.64	0.20	
111	Cd	0.0088	ppb	56.8	180.36	0.20	
118	Sn	0.2911	ppb	2109.1	2.22	0.20	Fail
121	Sb	0.0325	ppb	403.4	11.14	0.40	
137	Ba	0.0177	ppb	88.9	27.06	0.20	
182	W	0.0720	ppb	682.3	9.29	1.00	
205	Tl	0.0378	ppb	717.8	6.58	0.20	
208	Pb	0.0352	ppb	1120.1	11.82	0.10	
235	U	0.0002	ppb	25.6	154.07	1.00	
238	U	0.0690	ppb	2051.3	7.09	0.10	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1232366.0	0.74	1156944.40	106.5	60 - 125	
45	Sc	1001336.9	2.15	963897.88	103.9	60 - 125	
45	Sc	224021.0	0.49	213583.44	104.9	60 - 125	
45	Sc	2094720.8	0.09	2034836.60	102.9	60 - 125	
72	Ge	212460.0	0.87	207470.16	102.4	60 - 125	
72	Ge	103650.2	1.16	100121.55	103.5	60 - 125	
72	Ge	414946.4	0.58	406311.59	102.1	60 - 125	
115	In	2557245.3	1.04	2486219.30	102.9	60 - 125	
159	Tb	3534921.3	0.36	3505933.80	100.8	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07011.D\F6E07011.D#
Date Acquired:	May 11 2018 12:13 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	MRLE1101
Misc Info:	1/100/10 ppb
Vial Number:	1305
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element		Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7	Li	# 3	6	88483.4	0.0000	0.9884	ppb	5.44	50.00	
9	Be	# 3	6	3138.2	0.0000	0.9833	ppb	4.10	50.00	
11	B	# 3	6	23363.8	0.0000	9.9160	ppb	2.21	100.00	
23	Na	# 1	45	650483.9	0.0000	103.5000	ppb	6.10	50000.00	
24	Mg	# 3	45	1185226.0	0.0000	104.9000	ppb	0.13	50000.00	
27	Al	# 3	45	1437111.0	0.0000	103.6000	ppb	0.40	50000.00	
28	Si	# 1	45	81666.5	0.0000	101.2000	ppb	2.44	5000.00	
31	P	# 3	45	111413.7	0.0000	41.6900	ppb	5.54	500.00	
39	K	# 2	45	248702.2	0.0000	99.9900	ppb	5.53	50000.00	
40	Ca	# 1	45	687921.0	0.0000	115.3000	ppb	2.09	50000.00	
47	Ti	# 3	45	1806.8	0.0000	1.1050	ppb	3.66	500.00	
51	V	# 2	45	7110.6	0.0000	0.9549	ppb	3.47	500.00	
52	Cr	# 2	45	6785.3	0.0000	0.9891	ppb	1.36	500.00	
55	Mn	# 3	45	27325.7	0.0000	1.0530	ppb	2.44	3000.00	
56	Fe	# 1	45	868209.2	0.0000	112.1000	ppb	3.28	50000.00	
59	Co	# 3	45	17856.8	0.0000	1.1040	ppb	0.56	500.00	
60	Ni	# 2	45	1788.3	0.0000	1.1010	ppb	4.00	500.00	
63	Cu	# 2	45	5575.7	0.0000	1.1370	ppb	1.95	500.00	
66	Zn	# 3	72	23620.6	0.0000	9.7070	ppb	0.46	500.00	
75	As	# 2	72	800.9	0.0000	1.0070	ppb	1.83	500.00	
78	Se	# 1	72	258.4	0.0000	1.0550	ppb	4.30	500.00	
88	Sr	# 3	72	45496.6	0.0000	2.0370	ppb	1.12	500.00	
90	Zr	# 3	72	50489.8	0.0000	3.2060	ppb	0.84	50.00	
95	Mo	# 3	115	4387.5	0.0000	0.9979	ppb	1.40	500.00	
107	Ag	# 3	115	10537.6	0.0000	1.0500	ppb	2.83	50.00	
111	Cd	# 3	115	2243.1	0.0000	1.0650	ppb	6.81	500.00	
118	Sn	# 3	115	7149.8	0.0000	1.0640	ppb	0.94	500.00	
121	Sb	# 3	115	8942.0	0.0000	0.9895	ppb	1.97	500.00	
137	Ba	# 3	115	3247.2	0.0000	0.9992	ppb	2.14	1000.00	
182	W	# 3	159	15653.9	0.0000	1.8420	ppb	3.21	50.00	
205	Tl	# 3	159	18732.6	0.0000	1.0280	ppb	2.35	500.00	
208	Pb	# 3	159	26543.5	0.0000	1.0430	ppb	1.12	500.00	
235	U	# 3	159	260.0	0.0000	0.0076	ppb	14.96	30.00	
238	U	# 3	159	30297.7	0.0000	1.0080	ppb	2.19	500.00	

ISTD Elements

Element		Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	# 3	1267958.10	2.60	1156944.40	109.6	60 - 125	
45	Sc	# 1	1030276.90	3.06	963897.88	106.9	60 - 125	
45	Sc	# 2	226497.86	1.09	213583.44	106.0	60 - 125	
45	Sc	# 3	2165341.50	1.97	2034836.60	106.4	60 - 125	
72	Ge	# 1	216616.72	0.84	207470.16	104.4	60 - 125	
72	Ge	# 2	105254.32	1.16	100121.55	105.1	60 - 125	
72	Ge	# 3	426732.75	1.09	406311.59	105.0	60 - 125	
115	In	# 3	2612704.00	1.72	2486219.30	105.1	60 - 125	
159	Tb	# 3	3618618.30	2.12	3505933.80	103.2	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Pass
ISTD:	Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07012.D\F6E07012.D#
Date Acquired:	May 11 2018 12:17 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	MRLE1102
Misc Info:	0.5/50/4 ppb
Vial Number:	1306
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	81064.2	0.0000	0.4309	ppb	9.47	50.00	
9 Be	# 3	6	1565.7	0.0000	0.4925	ppb	5.75	50.00	
11 B	# 3	6	2909.3	0.0000	0.3806	ppb	46.69	100.00	
23 Na	# 1	45	494248.0	0.0000	53.7200	ppb	3.89	50000.00	
24 Mg	# 3	45	594859.3	0.0000	53.3900	ppb	0.53	50000.00	
27 Al	# 3	45	734462.1	0.0000	53.8300	ppb	0.89	50000.00	
28 Si	# 1	45	5904.8	0.0000	4.9450	ppb	4.65	5000.00	
31 P	# 3	45	77633.2	0.0000	-8.8550	ppb	26.72	500.00	
39 K	# 2	45	218079.5	0.0000	55.0800	ppb	12.85	50000.00	
40 Ca	# 1	45	321580.0	0.0000	53.2000	ppb	1.20	50000.00	
47 Ti	# 3	45	1062.3	0.0000	0.5693	ppb	6.18	500.00	
51 V	# 2	45	5207.6	0.0000	0.5189	ppb	0.49	500.00	
52 Cr	# 2	45	4306.4	0.0000	0.4868	ppb	2.85	500.00	
55 Mn	# 3	45	16086.9	0.0000	0.5277	ppb	1.69	3000.00	
56 Fe	# 1	45	436977.1	0.0000	57.3800	ppb	0.67	50000.00	
59 Co	# 3	45	8958.6	0.0000	0.5533	ppb	2.56	500.00	
60 Ni	# 2	45	941.1	0.0000	0.5623	ppb	1.58	500.00	
63 Cu	# 2	45	3242.8	0.0000	0.5679	ppb	2.79	500.00	
66 Zn	# 3	72	8739.5	0.0000	3.4400	ppb	1.03	500.00	
75 As	# 2	72	525.1	0.0000	0.5868	ppb	6.25	500.00	
78 Se	# 1	72	132.0	0.0000	0.5341	ppb	14.73	500.00	
88 Sr	# 3	72	11635.0	0.0000	0.5184	ppb	1.23	500.00	
90 Zr	# 3	72	1083.4	0.0000	0.0561	ppb	8.94	50.00	
95 Mo	# 3	115	2251.4	0.0000	0.5132	ppb	1.90	500.00	
107 Ag	# 3	115	4863.2	0.0000	0.4890	ppb	2.31	50.00	
111 Cd	# 3	115	1113.4	0.0000	0.5263	ppb	9.89	500.00	
118 Sn	# 3	115	3762.9	0.0000	0.5479	ppb	4.21	500.00	
121 Sb	# 3	115	4301.9	0.0000	0.4753	ppb	5.19	500.00	
137 Ba	# 3	115	1674.6	0.0000	0.5174	ppb	2.76	1000.00	
182 W	# 3	159	242.2	0.0000	0.0187	ppb	2.75	50.00	
205 Tl	# 3	159	9670.5	0.0000	0.5402	ppb	0.83	500.00	
208 Pb	# 3	159	13662.1	0.0000	0.5431	ppb	1.70	500.00	
235 U	# 3	159	131.1	0.0000	0.0036	ppb	31.82	30.00	
238 U	# 3	159	15040.2	0.0000	0.5099	ppb	0.56	500.00	

ISTD Elements

Element	Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	1255082.30	1.61	1156944.40	108.5	60 - 125	
45 Sc	# 1	1006172.30	1.68	963897.88	104.4	60 - 125	
45 Sc	# 2	223159.97	1.44	213583.44	104.5	60 - 125	
45 Sc	# 3	2126136.80	0.67	2034836.60	104.5	60 - 125	
72 Ge	# 1	211616.05	1.42	207470.16	102.0	60 - 125	
72 Ge	# 2	102489.94	1.33	100121.55	102.4	60 - 125	
72 Ge	# 3	416125.13	0.98	406311.59	102.4	60 - 125	
115 In	# 3	2576712.50	1.56	2486219.30	103.6	60 - 125	
159 Tb	# 3	3546371.50	1.39	3505933.80	101.2	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICS-A QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07013.D\F6E07013.D#
Date Acquired:	May 11 2018 12:22 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	ICSA
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element		Conc.		CPS	Conc RSD(%)	High Limit	Flag
7	Li	0.49	ppb	73353.9	12.90	---	
9	Be	0.00	ppb	17.8	7878.00	---	
11	B	0.64	ppb	3114.9	23.26	---	
23	Na	99680.00	ppb	278622590.0	1.49	120000.00	
24	Mg	101200.00	ppb	1073320000.0	1.18	120000.00	
27	Al	100200.00	ppb	1308183000.0	0.97	120000.00	
28	Si	9.14	ppb	8970.6	7.50	---	
31	P	108900.00	ppb	65768620.0	0.87	---	
39	K	103000.00	ppb	60203500.0	0.59	120000.00	
40	Ca	99690.00	ppb	553466500.0	0.48	120000.00	
47	Ti	2201.00	ppb	2807343.0	0.35	2400.00	
51	V	-0.11	ppb	2531.6	6.43	---	
52	Cr	0.18	ppb	2759.4	9.58	---	
55	Mn	0.35	ppb	11956.3	2.29	---	
56	Fe	98060.00	ppb	724428220.0	0.97	120000.00	
59	Co	0.23	ppb	3692.8	1.87	---	
60	Ni	0.30	ppb	525.1	0.94	---	
63	Cu	0.91	ppb	4462.3	7.80	---	
66	Zn	3.90	ppb	9627.9	3.05	---	
75	As	0.24	ppb	307.8	12.77	---	
78	Se	0.17	ppb	43.1	8.46	---	
88	Sr	0.88	ppb	19119.8	0.57	---	
90	Zr	0.23	ppb	3700.6	6.28	---	
95	Mo	2042.00	ppb	7934101.0	1.22	2400.00	
107	Ag	0.03	ppb	264.5	16.93	---	
111	Cd	0.17	ppb	350.2	60.79	---	
118	Sn	0.08	ppb	721.2	5.94	---	
121	Sb	0.06	ppb	552.3	10.32	---	
137	Ba	0.10	ppb	321.1	7.19	---	
182	W	0.22	ppb	1820.2	3.91	---	
205	Tl	0.01	ppb	166.7	13.56	---	
208	Pb	0.10	ppb	2581.3	3.53	---	
235	U	0.00	ppb	23.3	304.82	---	
238	U	0.01	ppb	337.8	19.72	---	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1125931.1	0.51	1156944.40	97.3	60 - 125	
45	Sc	989017.9	0.81	963897.88	102.6	60 - 125	
45	Sc	216860.2	0.94	213583.44	101.5	60 - 125	
45	Sc	2039299.8	1.89	2034836.60	100.2	60 - 125	
72	Ge	195756.9	1.92	207470.16	94.4	60 - 125	
72	Ge	100573.3	1.42	100121.55	100.5	60 - 125	
72	Ge	409380.9	0.81	406311.59	100.8	60 - 125	
115	In	2337985.5	0.62	2486219.30	94.0	60 - 125	
159	Tb	3342176.5	1.14	3505933.80	95.3	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07014.D\F6E07014.D#
Date Acquired:	May 11 2018 12:27 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	ICSAB
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element		Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)		Flag
7	Li	20.96	ppb	299338.9	0.65	20.00	80 -	120	
9	Be	20.30	ppb	59425.6	0.67	20.00	80 -	120	
11	B	19.60	ppb	40686.8	0.72	20.00	80 -	120	
23	Na	99310.00	ppb	300983200.0	1.48	100000.00	80 -	120	
24	Mg	99660.00	ppb	1128491000.0	0.53	100000.00	80 -	120	
27	Al	98740.00	ppb	1376124000.0	0.63	100000.00	80 -	120	
28	Si	209.50	ppb	173660.3	1.93	200.00	80 -	120	
31	P	106700.00	ppb	68805712.0	0.78	100000.00	80 -	120	
39	K	102300.00	ppb	64332280.0	0.12	100000.00	80 -	120	
40	Ca	99300.00	ppb	597731970.0	1.04	100000.00	80 -	120	
47	Ti	2196.00	ppb	2992665.0	0.59	2000.00	80 -	120	
51	V	20.11	ppb	89919.1	0.36	20.00	80 -	120	
52	Cr	20.07	ppb	101497.1	0.87	20.00	80 -	120	
55	Mn	20.21	ppb	429356.1	0.06	20.00	80 -	120	
56	Fe	98440.00	ppb	788537410.0	1.34	100000.00	80 -	120	
59	Co	20.56	ppb	328352.4	0.09	20.00	80 -	120	
60	Ni	20.58	ppb	32886.2	0.58	20.00	80 -	120	
63	Cu	21.39	ppb	89510.7	0.49	20.00	80 -	120	
66	Zn	22.53	ppb	53382.6	0.44	20.00	80 -	120	
75	As	20.13	ppb	13138.3	0.52	20.00	80 -	120	
78	Se	21.41	ppb	4974.6	1.85	20.00	80 -	120	
88	Sr	20.63	ppb	454497.0	0.33	20.00	80 -	120	
90	Zr	6.61	ppb	103371.6	0.53	20.00	80 -	120	Fail
95	Mo	2085.00	ppb	8416032.0	0.64	2000.00	80 -	120	
107	Ag	19.72	ppb	183453.4	0.31	20.00	80 -	120	
111	Cd	20.31	ppb	39122.3	0.91	20.00	80 -	120	
118	Sn	19.86	ppb	119564.7	0.30	20.00	80 -	120	
121	Sb	20.49	ppb	169915.6	0.55	20.00	80 -	120	
137	Ba	20.29	ppb	60697.9	1.10	20.00	80 -	120	
182	W	19.59	ppb	160951.4	0.76	20.00	80 -	120	
205	Tl	19.14	ppb	338101.7	0.60	20.00	80 -	120	
208	Pb	19.27	ppb	472029.6	0.82	20.00	80 -	120	
235	U	0.13	ppb	4033.0	1.69	0.14	80 -	120	
238	U	19.68	ppb	574407.5	0.16	19.86	80 -	120	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1169083.9	0.40	1156944.40	101.0	60 -	125	
45	Sc	1072583.6	2.70	963897.88	111.3	60 -	125	
45	Sc	233348.4	1.25	213583.44	109.3	60 -	125	
45	Sc	2177905.5	1.41	2034836.60	107.0	60 -	125	
72	Ge	212335.4	1.71	207470.16	102.3	60 -	125	
72	Ge	108787.9	0.56	100121.55	108.7	60 -	125	
72	Ge	424968.5	0.62	406311.59	104.6	60 -	125	
115	In	2428868.0	0.48	2486219.30	97.7	60 -	125	
159	Tb	3515836.5	1.18	3505933.80	100.3	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07015.D\F6E07015.D#
Date Acquired:	May 11 2018 12:31 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	MRLE1103
Misc Info:	500 ppb CAT
Vial Number:	1207
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	73594.4	0.0000	-0.0230	ppb	484.59	50.00	
9 Be	# 3	6	26.7	0.0000	0.0025	ppb	42.05	50.00	
11 B	# 3	6	2394.7	0.0000	0.1695	ppb	92.39	100.00	
23 Na	# 1	45	1944958.0	0.0000	540.5000	ppb	0.52	50000.00	
24 Mg	# 3	45	5804368.0	0.0000	514.7000	ppb	1.66	50000.00	
27 Al	# 3	45	7089764.0	0.0000	511.0000	ppb	1.23	50000.00	
28 Si	# 1	45	3046.0	0.0000	1.0820	ppb	22.34	5000.00	
31 P	# 3	45	71222.7	0.0000	-21.2100	ppb	13.43	500.00	
39 K	# 2	45	525250.8	0.0000	553.7000	ppb	0.92	50000.00	
40 Ca	# 1	45	3042572.0	0.0000	516.1000	ppb	0.30	50000.00	
47 Ti	# 3	45	828.9	0.0000	0.3819	ppb	10.61	500.00	
51 V	# 2	45	2757.2	0.0000	-0.0855	ppb	8.48	500.00	
52 Cr	# 2	45	1709.2	0.0000	-0.0672	ppb	4.29	500.00	
55 Mn	# 3	45	4429.7	0.0000	-0.0457	ppb	9.20	3000.00	
56 Fe	# 1	45	4148839.0	0.0000	531.9000	ppb	0.94	50000.00	
59 Co	# 3	45	291.1	0.0000	-0.0037	ppb	67.54	500.00	
60 Ni	# 2	45	66.7	0.0000	-0.0121	ppb	20.65	500.00	
63 Cu	# 2	45	5047.1	0.0000	1.0040	ppb	7.63	500.00	
66 Zn	# 3	72	636.7	0.0000	-0.1146	ppb	35.02	500.00	
75 As	# 2	72	161.1	0.0000	-0.0186	ppb	140.28	500.00	
78 Se	# 1	72	14.2	0.0000	0.0237	ppb	23.75	500.00	
88 Sr	# 3	72	810.0	0.0000	0.0157	ppb	8.21	500.00	
90 Zr	# 3	72	254.5	0.0000	0.0017	ppb	191.04	50.00	
95 Mo	# 3	115	2765.9	0.0000	0.6271	ppb	2.24	500.00	
107 Ag	# 3	115	68.9	0.0000	0.0029	ppb	47.20	50.00	
111 Cd	# 3	115	11.9	0.0000	-0.0136	ppb	25.99	500.00	
118 Sn	# 3	115	566.7	0.0000	0.0457	ppb	20.13	500.00	
121 Sb	# 3	115	315.6	0.0000	0.0218	ppb	33.56	500.00	
137 Ba	# 3	115	71.1	0.0000	0.0116	ppb	21.91	1000.00	
182 W	# 3	159	272.2	0.0000	0.0221	ppb	21.16	50.00	
205 Tl	# 3	159	128.9	0.0000	0.0046	ppb	24.70	500.00	
208 Pb	# 3	159	622.3	0.0000	0.0148	ppb	18.22	500.00	
235 U	# 3	159	21.1	0.0000	0.0001	ppb	355.93	30.00	
238 U	# 3	159	274.5	0.0000	0.0084	ppb	6.23	500.00	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	1219317.40	1.64	1156944.40	105.4	60 - 125	
45 Sc	# 1	1042684.90	0.49	963897.88	108.2	60 - 125	
45 Sc	# 2	226636.41	0.46	213583.44	106.1	60 - 125	
45 Sc	# 3	2167558.00	0.98	2034836.60	106.5	60 - 125	
72 Ge	# 1	217020.50	0.47	207470.16	104.6	60 - 125	
72 Ge	# 2	104515.93	0.34	100121.55	104.4	60 - 125	
72 Ge	# 3	420545.97	1.45	406311.59	103.5	60 - 125	
115 In	# 3	2602400.50	0.90	2486219.30	104.7	60 - 125	
159 Tb	# 3	3568664.00	1.39	3505933.80	101.8	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

0 :Element Failures   0 :Max. Number of Failures Allowed
0 :ISTD Failures   0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07016.D\F6E07016.D#
Date Acquired:	May 11 2018 12:36 pm
Operator:	LVicto
Sample Name:	CCV1
Misc Info:	
Vial Number:	1206
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	May 11 2018 12:02 pm
Sample Type:	CCV
Total Dil Factor:	1.00

QC Elements

Element		Conc.		RSD(%)	Expected	QC Range(%)		Flag
7	Li	25.21	ppb	2.27	25.00	90 -	110	
9	Be	25.28	ppb	1.29	25.00	90 -	110	
11	B	50.65	ppb	1.13	50.00	90 -	110	
23	Na	25190.00	ppb	1.37	25000.00	90 -	110	
24	Mg	24610.00	ppb	1.04	25000.00	90 -	110	
27	Al	24740.00	ppb	0.48	25000.00	90 -	110	
28	Si	2500.00	ppb	0.85	2500.00	90 -	110	
31	P	234.90	ppb	1.00	250.00	90 -	110	
39	K	25250.00	ppb	0.66	25000.00	90 -	110	
40	Ca	25200.00	ppb	0.60	25000.00	90 -	110	
47	Ti	249.80	ppb	0.26	250.00	90 -	110	
51	V	250.50	ppb	1.27	250.00	90 -	110	
52	Cr	246.10	ppb	1.28	250.00	90 -	110	
55	Mn	1469.00	ppb	0.27	1500.00	90 -	110	
56	Fe	25110.00	ppb	0.53	25000.00	90 -	110	
59	Co	250.10	ppb	0.32	250.00	90 -	110	
60	Ni	254.70	ppb	0.85	250.00	90 -	110	
63	Cu	245.00	ppb	0.51	250.00	90 -	110	
66	Zn	234.10	ppb	0.59	250.00	90 -	110	
75	As	248.20	ppb	0.06	250.00	90 -	110	
78	Se	248.70	ppb	1.37	250.00	90 -	110	
88	Sr	245.80	ppb	0.74	250.00	90 -	110	
90	Zr	0.80	ppb	0.61	25.00	90 -	110	Fail
95	Mo	252.80	ppb	1.95	250.00	90 -	110	
107	Ag	24.97	ppb	1.58	25.00	90 -	110	
111	Cd	249.70	ppb	1.31	250.00	90 -	110	
118	Sn	253.70	ppb	1.28	250.00	90 -	110	
121	Sb	49.90	ppb	1.42	50.00	90 -	110	
137	Ba	509.40	ppb	0.63	500.00	90 -	110	
182	W	0.05	ppb	6.52	25.00	90 -	110	Fail
205	Tl	233.20	ppb	1.28	250.00	90 -	110	
208	Pb	238.90	ppb	0.71	250.00	90 -	110	
235	U	1.64	ppb	0.82	1.80	90 -	110	
238	U	233.80	ppb	1.26	250.00	90 -	110	

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1179612.10	1.29	1156944.40	102.0	60 -	125	
45	Sc	1054272.80	0.75	963897.88	109.4	60 -	125	
45	Sc	232628.77	1.42	213583.44	108.9	60 -	125	
45	Sc	2206542.00	0.26	2034836.60	108.4	60 -	125	
72	Ge	220346.30	0.44	207470.16	106.2	60 -	125	
72	Ge	107516.55	0.90	100121.55	107.4	60 -	125	
72	Ge	430832.84	0.82	406311.59	106.0	60 -	125	
115	In	2517898.00	1.97	2486219.30	101.3	60 -	125	
159	Tb	3652083.30	0.74	3505033.80	104.2	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

2 :Element Failures   0 :Max. Number of Failures Allowed
0 :ISTD Failures   0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07017.D\F6E07017.D#
Date Acquired:	May 11 2018 12:40 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	CCB1
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element		Conc.		CPS	Conc RSD(%)	High Limit	Flag
7	Li	0.0035	ppb	74068.6	2782.40	0.20	
9	Be	0.0022	ppb	25.6	202.25	0.10	
11	B	-0.0260	ppb	1990.2	773.72	5.00	
23	Na	14.9300	ppb	392381.0	7.00	40.00	
24	Mg	0.5967	ppb	11305.7	11.41	10.00	
27	Al	0.4027	ppb	7548.8	16.60	20.00	
28	Si	1.2050	ppb	3099.4	15.35	20.00	
31	P	-20.5000	ppb	70710.5	19.61	10.00	Fail
39	K	10.0100	ppb	194280.6	55.26	20.00	
40	Ca	0.6332	ppb	25276.3	17.67	25.00	
47	Ti	-0.0106	ppb	293.3	250.52	0.50	
51	V	-0.0373	ppb	2962.5	38.40	0.50	
52	Cr	-0.0612	ppb	1740.1	3.04	0.20	
55	Mn	-0.0203	ppb	4891.0	53.27	0.20	
56	Fe	1.5560	ppb	17809.1	3.22	10.00	
59	Co	0.0030	ppb	391.1	119.30	0.20	
60	Ni	0.0030	ppb	90.2	82.04	0.20	
63	Cu	0.1898	ppb	1776.6	6.00	0.40	
66	Zn	-0.2363	ppb	355.6	0.48	2.00	
75	As	0.0261	ppb	190.7	68.30	0.20	
78	Se	0.0696	ppb	24.9	11.13	0.20	
88	Sr	0.0025	ppb	521.1	26.75	0.20	
90	Zr	-0.0082	ppb	101.1	18.94	2.00	
95	Mo	0.1771	ppb	815.6	4.85	0.40	
107	Ag	0.0015	ppb	54.4	60.70	0.20	
111	Cd	-0.0023	ppb	34.7	618.98	0.20	
118	Sn	0.1507	ppb	1235.7	10.66	0.20	
121	Sb	0.0131	ppb	236.7	15.64	0.40	
137	Ba	0.0076	ppb	57.8	37.94	0.20	
182	W	0.0071	ppb	146.7	22.93	1.00	
205	Tl	0.0268	ppb	525.6	8.58	0.20	
208	Pb	0.0225	ppb	812.3	9.32	0.10	
235	U	0.0004	ppb	30.0	104.69	1.00	
238	U	0.0482	ppb	1450.1	0.54	0.10	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1222395.3	2.62	1156944.40	105.7	60 - 125	
45	Sc	1027791.3	0.77	963897.88	106.6	60 - 125	
45	Sc	226926.8	1.24	213583.44	106.2	60 - 125	
45	Sc	2139472.0	2.83	2034836.60	105.1	60 - 125	
72	Ge	215155.5	0.52	207470.16	103.7	60 - 125	
72	Ge	105602.4	0.52	100121.55	105.5	60 - 125	
72	Ge	418832.2	1.63	406311.59	103.1	60 - 125	
115	In	2589344.3	1.97	2486219.30	104.1	60 - 125	
159	Tb	3558750.8	1.41	3505933.80	101.5	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCV QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07040.D\F6E07040.D#
Date Acquired:	May 11 2018 02:24 pm
Operator:	LVicto
Sample Name:	CCV3
Misc Info:	
Vial Number:	1206
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	May 11 2018 12:02 pm
Sample Type:	CCV
Total Dil Factor:	1.00

QC Elements

Element		Conc.		RSD(%)	Expected	QC Range(%)		Flag
7	Li	24.83	ppb	2.77	25.00	90 -	110	
9	Be	24.47	ppb	0.53	25.00	90 -	110	
11	B	48.38	ppb	2.30	50.00	90 -	110	
23	Na	25630.00	ppb	0.49	25000.00	90 -	110	
24	Mg	24700.00	ppb	0.45	25000.00	90 -	110	
27	Al	24820.00	ppb	0.23	25000.00	90 -	110	
28	Si	2583.00	ppb	1.06	2500.00	90 -	110	
31	P	239.90	ppb	1.50	250.00	90 -	110	
39	K	25870.00	ppb	1.25	25000.00	90 -	110	
40	Ca	25150.00	ppb	0.61	25000.00	90 -	110	
47	Ti	251.10	ppb	0.37	250.00	90 -	110	
51	V	249.80	ppb	1.00	250.00	90 -	110	
52	Cr	242.10	ppb	0.50	250.00	90 -	110	
55	Mn	1466.00	ppb	0.94	1500.00	90 -	110	
56	Fe	25030.00	ppb	0.23	25000.00	90 -	110	
59	Co	250.20	ppb	0.44	250.00	90 -	110	
60	Ni	251.60	ppb	0.37	250.00	90 -	110	
63	Cu	244.10	ppb	0.86	250.00	90 -	110	
66	Zn	232.60	ppb	1.05	250.00	90 -	110	
75	As	245.30	ppb	0.66	250.00	90 -	110	
78	Se	245.40	ppb	0.78	250.00	90 -	110	
88	Sr	247.10	ppb	0.30	250.00	90 -	110	
90	Zr	1.47	ppb	7.44	25.00	90 -	110	Fail
95	Mo	250.60	ppb	0.33	250.00	90 -	110	
107	Ag	24.82	ppb	0.81	25.00	90 -	110	
111	Cd	246.20	ppb	0.27	250.00	90 -	110	
118	Sn	251.50	ppb	0.24	250.00	90 -	110	
121	Sb	49.30	ppb	0.33	50.00	90 -	110	
137	Ba	504.00	ppb	0.82	500.00	90 -	110	
182	W	0.03	ppb	9.13	25.00	90 -	110	Fail
205	Tl	237.30	ppb	0.64	250.00	90 -	110	
208	Pb	243.90	ppb	1.05	250.00	90 -	110	
235	U	1.67	ppb	1.64	1.80	90 -	110	
238	U	242.80	ppb	0.73	250.00	90 -	110	

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1237562.10	2.73	1156944.40	107.0	60 -	125	
45	Sc	986233.00	1.74	963897.88	102.3	60 -	125	
45	Sc	226684.45	0.68	213583.44	106.1	60 -	125	
45	Sc	2194736.80	1.29	2034836.60	107.9	60 -	125	
72	Ge	207551.47	1.66	207470.16	100.0	60 -	125	
72	Ge	105122.44	1.20	100121.55	105.0	60 -	125	
72	Ge	426551.28	1.79	406311.59	105.0	60 -	125	
115	In	2501507.80	1.16	2486219.30	100.6	60 -	125	
159	Tb	3619789.00	2.00	3505933.80	103.2	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07041.D\F6E07041.D#
Date Acquired:	May 11 2018 02:28 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	CCB3
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element		Conc.		CPS	Conc RSD(%)	High Limit	Flag
7	Li	-0.0584	ppb	77242.0	116.68	0.20	
9	Be	0.0024	ppb	27.8	93.56	0.10	
11	B	-0.1612	ppb	1807.9	26.59	5.00	
23	Na	-5.3200	ppb	331189.0	24.85	40.00	
24	Mg	0.5088	ppb	10353.9	22.60	10.00	
27	Al	0.5059	ppb	8989.9	17.85	20.00	
28	Si	0.8721	ppb	2818.2	28.93	20.00	
31	P	-19.1700	ppb	71754.0	11.96	10.00	Fail
39	K	-6.8830	ppb	183132.2	91.27	20.00	
40	Ca	1.0910	ppb	27717.3	2.45	25.00	
47	Ti	-0.0478	ppb	243.3	41.75	0.50	
51	V	-0.0982	ppb	2694.7	9.92	0.50	
52	Cr	-0.0929	ppb	1579.7	11.36	0.20	
55	Mn	-0.0183	ppb	4944.3	101.36	0.20	
56	Fe	1.5240	ppb	17437.4	3.99	10.00	
59	Co	0.0062	ppb	444.5	38.34	0.20	
60	Ni	-0.0055	ppb	76.7	65.06	0.20	
63	Cu	0.0207	ppb	1091.6	36.94	0.40	
66	Zn	-0.2461	ppb	332.2	10.86	2.00	
75	As	0.0150	ppb	180.7	40.57	0.20	
78	Se	0.0307	ppb	15.8	13.93	0.20	
88	Sr	0.0112	ppb	707.8	22.84	0.20	
90	Zr	-0.0025	ppb	189.1	319.69	2.00	
95	Mo	0.1263	ppb	593.4	4.60	0.40	
107	Ag	-0.0001	ppb	37.8	802.18	0.20	
111	Cd	-0.0060	ppb	27.1	191.19	0.20	
118	Sn	0.1325	ppb	1112.3	7.92	0.20	
121	Sb	0.0147	ppb	250.0	35.08	0.40	
137	Ba	0.0161	ppb	84.4	12.99	0.20	
182	W	-0.0016	ppb	74.5	206.58	1.00	
205	Tl	0.0353	ppb	674.5	1.77	0.20	
208	Pb	0.0207	ppb	762.3	2.50	0.10	
235	U	0.0003	ppb	28.9	112.74	1.00	
238	U	0.0527	ppb	1574.6	2.63	0.10	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1286862.1	1.35	1156944.40	111.2	60 - 125	
45	Sc	1020341.1	1.05	963897.88	105.9	60 - 125	
45	Sc	225900.1	1.55	213583.44	105.8	60 - 125	
45	Sc	2144500.3	1.54	2034836.60	105.4	60 - 125	
72	Ge	215672.8	0.27	207470.16	104.0	60 - 125	
72	Ge	103822.6	1.79	100121.55	103.7	60 - 125	
72	Ge	418026.2	0.41	406311.59	102.9	60 - 125	
115	In	2573008.8	0.39	2486219.30	103.5	60 - 125	
159	Tb	3540267.8	1.01	3505933.80	101.0	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07042.D\F6E07042.D#
Date Acquired:	May 11 2018 02:33 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	IME015WB
Misc Info:	
Vial Number:	2206
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	MBW
Dilution Factor:	1.00

QC Elements

Element		Conc.		CPS	Conc RSD(%)	High Limit	Flag
7	Li	-0.0290	ppb	77941.2	178.23	1.00	
9	Be	0.0033	ppb	31.1	123.87	0.50	
11	B	0.4372	ppb	3119.3	35.06	5.00	
23	Na	20.1400	ppb	399808.9	3.49	50.00	
24	Mg	4.3360	ppb	53177.1	0.92	50.00	
27	Al	2.8280	ppb	40977.5	1.26	50.00	
28	Si	2.9930	ppb	4417.0	8.28	25.00	
31	P	-17.2700	ppb	73156.4	13.78	25.00	
39	K	-2.3860	ppb	184033.3	223.93	50.00	
40	Ca	20.2600	ppb	135871.5	0.57	50.00	
47	Ti	0.0364	ppb	356.7	110.56	1.00	
51	V	-0.0911	ppb	2696.7	25.56	0.50	
52	Cr	-0.1015	ppb	1523.6	0.68	0.50	
55	Mn	0.0367	ppb	6099.2	21.60	0.50	
56	Fe	2.0260	ppb	21015.5	1.32	50.00	
59	Co	0.0024	ppb	385.6	132.05	0.50	
60	Ni	0.0107	ppb	100.7	5.59	0.50	
63	Cu	0.1748	ppb	1691.7	7.91	0.50	
66	Zn	1.2890	ppb	3868.4	3.80	10.00	
75	As	-0.0031	ppb	170.4	849.33	0.50	
78	Se	0.0276	ppb	14.9	52.27	0.50	
88	Sr	0.0676	ppb	1936.9	6.52	1.00	
90	Zr	0.0088	ppb	363.4	62.35	2.50	
95	Mo	0.0283	ppb	174.5	2.64	1.00	
107	Ag	-0.0006	ppb	33.3	140.56	0.50	
111	Cd	-0.0059	ppb	27.4	149.58	0.50	
118	Sn	0.0205	ppb	400.0	14.57	0.50	
121	Sb	0.0389	ppb	462.2	4.25	0.50	
137	Ba	0.2242	ppb	743.4	3.95	0.50	
182	W	-0.0025	ppb	66.7	95.21	1.00	
205	Tl	0.0079	ppb	186.7	18.97	0.50	
208	Pb	0.0421	ppb	1285.6	3.70	0.50	
235	U	0.0000	ppb	17.8	1883.00	---	
238	U	0.0118	ppb	372.2	23.75	0.50	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1292389.3	1.79	1156944.40	111.7	60 - 125	
45	Sc	1008404.4	0.52	963897.88	104.6	60 - 125	
45	Sc	223673.6	1.75	213583.44	104.7	60 - 125	
45	Sc	2150522.5	2.03	2034836.60	105.7	60 - 125	
72	Ge	213585.3	0.12	207470.16	102.9	60 - 125	
72	Ge	104390.9	1.80	100121.55	104.3	60 - 125	
72	Ge	420057.1	1.57	406311.59	103.4	60 - 125	
115	In	2573078.3	2.27	2486219.30	103.5	60 - 125	
159	Tb	3526358.8	1.40	3505933.80	100.6	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

LCS QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07043.D\F6E07043.D#
Date Acquired:	May 11 2018 02:37 pm
Operator:	LVicto
Sample Name:	IME015WL
Misc Info:	
Vial Number:	2207
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	LCS
Final Dil Factor:	1.00

Analyte Elements

Element		CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7	Li	424717.69	30.59	ppb	0.19	30.00	80 - 120	
9	Be	91282.55	29.69	ppb	0.93	30.00	80 - 120	
11	B	63029.90	29.38	ppb	0.86	30.00	80 - 120	
23	Na	9282916.00	3184.00	ppb	0.96	3000.00	80 - 120	
24	Mg	34550380.00	3182.00	ppb	0.71	3000.00	80 - 120	
27	Al	42378620.00	3171.00	ppb	0.46	3000.00	80 - 120	
28	Si	3449.40	1.80	ppb	2.37	3000.00	80 - 120	Fail
31	P	71419.41	-16.68	ppb	15.90	300.00	80 - 120	Fail
39	K	2111539.00	3292.00	ppb	0.34	3000.00	80 - 120	
40	Ca	17727650.00	3170.00	ppb	0.61	3000.00	80 - 120	
47	Ti	41081.45	31.22	ppb	0.83	30.00	80 - 120	
51	V	127481.60	30.87	ppb	0.69	30.00	80 - 120	
52	Cr	144881.80	30.87	ppb	0.84	30.00	80 - 120	
55	Mn	648707.88	31.99	ppb	0.84	30.00	80 - 120	
56	Fe	23823780.00	3204.00	ppb	0.37	3000.00	80 - 120	
59	Co	496973.41	32.47	ppb	0.42	30.00	80 - 120	
60	Ni	48290.32	32.36	ppb	1.13	30.00	80 - 120	
63	Cu	125030.40	32.08	ppb	0.83	30.00	80 - 120	
66	Zn	134316.09	60.57	ppb	0.42	60.00	80 - 120	
75	As	18367.02	30.67	ppb	0.39	30.00	80 - 120	
78	Se	7010.82	30.75	ppb	0.25	30.00	80 - 120	
88	Sr	652481.13	31.32	ppb	0.66	30.00	80 - 120	
90	Zr	341.13	0.01	ppb	18.40	20.00	80 - 120	Fail
95	Mo	121462.50	29.62	ppb	0.32	30.00	80 - 120	
107	Ag	297675.09	31.52	ppb	1.00	30.00	80 - 120	
111	Cd	58713.12	30.02	ppb	1.38	30.00	80 - 120	
118	Sn	181322.80	29.68	ppb	0.30	30.00	80 - 120	
121	Sb	251069.30	29.82	ppb	0.89	30.00	80 - 120	
137	Ba	89276.02	29.39	ppb	1.05	30.00	80 - 120	
182	W	111.12	0.00	ppb	80.42	30.00	80 - 120	Fail
205	Tl	539536.88	31.31	ppb	0.90	30.00	80 - 120	
208	Pb	727455.31	30.46	ppb	0.80	30.00	80 - 120	
235	U	1864.64	0.06	ppb	6.36	0.21	80 - 120	Fail
238	U	893146.00	31.37	ppb	0.63	29.79	80 - 120	

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1227993.40	1.20	1156944.40	106.1	60 - 125	
45	Sc	995257.50	0.74	963897.88	103.3	60 - 125	
45	Sc	218149.48	1.34	213583.44	102.1	60 - 125	
45	Sc	2088328.80	0.85	2034836.60	102.6	60 - 125	
72	Ge	208428.11	0.49	207470.16	100.5	60 - 125	
72	Ge	100307.35	0.51	100121.55	100.2	60 - 125	
72	Ge	401964.16	1.91	406311.59	98.9	60 - 125	
115	In	2466400.50	0.94	2486219.30	99.2	60 - 125	
159	Tb	3429321.50	1.53	3505933.80	97.8	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

5 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

LCS QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07044.D\F6E07044.D#
Date Acquired:	May 11 2018 02:42 pm
Operator:	LVicto
Sample Name:	IME015WC
Misc Info:	
Vial Number:	2208
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	LCS
Final Dil Factor:	1.00

Analyte Elements

Element		CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7	Li	428154.91	28.96	ppb	0.69	30.00	80 - 120	
9	Be	90348.30	27.87	ppb	0.39	30.00	80 - 120	
11	B	62662.71	27.65	ppb	0.13	30.00	80 - 120	
23	Na	9013998.00	3042.00	ppb	1.91	3000.00	80 - 120	
24	Mg	34403248.00	2973.00	ppb	1.33	3000.00	80 - 120	
27	Al	42106752.00	2956.00	ppb	1.23	3000.00	80 - 120	
28	Si	5111.04	3.89	ppb	5.25	3000.00	80 - 120	Fail
31	P	71254.55	-24.08	ppb	5.42	300.00	80 - 120	Fail
39	K	2096851.00	3056.00	ppb	0.68	3000.00	80 - 120	
40	Ca	17005340.00	2997.00	ppb	1.36	3000.00	80 - 120	
47	Ti	40777.38	29.06	ppb	0.10	30.00	80 - 120	
51	V	127875.50	29.10	ppb	0.28	30.00	80 - 120	
52	Cr	144544.50	28.95	ppb	0.46	30.00	80 - 120	
55	Mn	647971.81	29.96	ppb	1.05	30.00	80 - 120	
56	Fe	22822320.00	3025.00	ppb	0.82	3000.00	80 - 120	
59	Co	493765.09	30.27	ppb	0.80	30.00	80 - 120	
60	Ni	48171.06	30.37	ppb	0.69	30.00	80 - 120	
63	Cu	124691.90	30.09	ppb	0.32	30.00	80 - 120	
66	Zn	136794.70	58.22	ppb	0.77	60.00	80 - 120	
75	As	18235.98	28.57	ppb	1.55	30.00	80 - 120	
78	Se	6729.79	29.08	ppb	1.46	30.00	80 - 120	
88	Sr	647166.88	29.32	ppb	0.56	30.00	80 - 120	
90	Zr	371.13	0.01	ppb	12.89	20.00	80 - 120	Fail
95	Mo	120844.60	27.90	ppb	0.84	30.00	80 - 120	
107	Ag	294268.41	29.50	ppb	1.04	30.00	80 - 120	
111	Cd	58275.72	28.22	ppb	0.33	30.00	80 - 120	
118	Sn	179484.50	27.81	ppb	0.41	30.00	80 - 120	
121	Sb	252134.80	28.36	ppb	0.91	30.00	80 - 120	
137	Ba	89093.18	27.77	ppb	0.71	30.00	80 - 120	
182	W	104.45	0.00	ppb	70.48	30.00	80 - 120	Fail
205	Tl	531780.50	29.41	ppb	0.58	30.00	80 - 120	
208	Pb	722505.38	28.82	ppb	0.26	30.00	80 - 120	
235	U	1797.97	0.06	ppb	4.07	0.21	80 - 120	Fail
238	U	880273.38	29.46	ppb	0.37	29.79	80 - 120	

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1294940.90	0.77	1156944.40	111.9	60 - 125	
45	Sc	1009697.20	0.78	963897.88	104.8	60 - 125	
45	Sc	231850.75	1.11	213583.44	108.6	60 - 125	
45	Sc	2226067.00	1.96	2034836.60	109.4	60 - 125	
72	Ge	211539.25	0.91	207470.16	102.0	60 - 125	
72	Ge	106835.85	0.75	100121.55	106.7	60 - 125	
72	Ge	425846.91	1.30	406311.59	104.8	60 - 125	
115	In	2604855.30	1.27	2486219.30	104.8	60 - 125	
159	Tb	3599188.80	0.96	3505933.80	102.7	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

5 :Element Failures	0 :Max. Number of Failures Allowed
0 :ISTD Failures	0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

CCV QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07051.D\F6E07051.D#
Date Acquired:	May 11 2018 03:14 pm
Operator:	LVicto
Sample Name:	CCV4
Misc Info:	
Vial Number:	1206
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	May 11 2018 12:02 pm
Sample Type:	CCV
Total Dil Factor:	1.00

QC Elements

Element		Conc.		RSD(%)	Expected	QC Range(%)		Flag
7	Li	24.75	ppb	2.26	25.00	90 -	110	
9	Be	24.32	ppb	1.67	25.00	90 -	110	
11	B	48.57	ppb	2.04	50.00	90 -	110	
23	Na	25110.00	ppb	2.08	25000.00	90 -	110	
24	Mg	24860.00	ppb	0.94	25000.00	90 -	110	
27	Al	24970.00	ppb	0.90	25000.00	90 -	110	
28	Si	2576.00	ppb	1.60	2500.00	90 -	110	
31	P	243.80	ppb	1.67	250.00	90 -	110	
39	K	25850.00	ppb	0.98	25000.00	90 -	110	
40	Ca	24940.00	ppb	1.14	25000.00	90 -	110	
47	Ti	251.60	ppb	0.70	250.00	90 -	110	
51	V	249.70	ppb	0.52	250.00	90 -	110	
52	Cr	244.20	ppb	0.99	250.00	90 -	110	
55	Mn	1478.00	ppb	0.58	1500.00	90 -	110	
56	Fe	24670.00	ppb	0.62	25000.00	90 -	110	
59	Co	252.20	ppb	0.88	250.00	90 -	110	
60	Ni	251.40	ppb	0.23	250.00	90 -	110	
63	Cu	242.90	ppb	1.03	250.00	90 -	110	
66	Zn	232.80	ppb	0.80	250.00	90 -	110	
75	As	242.90	ppb	0.80	250.00	90 -	110	
78	Se	243.00	ppb	1.80	250.00	90 -	110	
88	Sr	247.10	ppb	0.83	250.00	90 -	110	
90	Zr	0.60	ppb	1.24	25.00	90 -	110	Fail
95	Mo	254.10	ppb	1.34	250.00	90 -	110	
107	Ag	24.73	ppb	0.94	25.00	90 -	110	
111	Cd	245.90	ppb	0.48	250.00	90 -	110	
118	Sn	251.90	ppb	1.30	250.00	90 -	110	
121	Sb	49.25	ppb	0.91	50.00	90 -	110	
137	Ba	503.90	ppb	1.17	500.00	90 -	110	
182	W	0.04	ppb	4.43	25.00	90 -	110	Fail
205	Tl	234.30	ppb	0.48	250.00	90 -	110	
208	Pb	242.70	ppb	0.61	250.00	90 -	110	
235	U	1.69	ppb	1.20	1.80	90 -	110	
238	U	244.30	ppb	0.76	250.00	90 -	110	

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1222019.00	2.14	1156944.40	105.6	60 -	125	
45	Sc	1009890.70	1.66	963897.88	104.8	60 -	125	
45	Sc	224400.31	0.42	213583.44	105.1	60 -	125	
45	Sc	2151627.80	0.29	2034836.60	105.7	60 -	125	
72	Ge	207534.17	2.39	207470.16	100.0	60 -	125	
72	Ge	105159.98	1.14	100121.55	105.0	60 -	125	
72	Ge	418948.94	0.54	406311.59	103.1	60 -	125	
115	In	2449771.80	1.27	2486219.30	98.5	60 -	125	
159	Tb	3559805.80	1.70	3505933.80	101.5	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: **Fail**
ISTD: **Pass**

CCB QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07052.D\F6E07052.D#
Date Acquired:	May 11 2018 03:18 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	CCB
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0847	ppb	74680.6	34.70	0.20	
9 Be	0.0062	ppb	38.9	19.70	0.10	
11 B	0.4051	ppb	2945.9	60.55	5.00	
23 Na	-7.7480	ppb	324205.5	12.74	40.00	
24 Mg	0.7529	ppb	12826.9	19.82	10.00	
27 Al	0.6759	ppb	11108.9	15.80	20.00	
28 Si	1.4370	ppb	3257.1	14.70	20.00	
31 P	-15.7800	ppb	72538.6	13.69	10.00	Fail
39 K	-5.3010	ppb	183227.7	82.19	20.00	
40 Ca	1.0180	ppb	27302.1	0.86	25.00	
47 Ti	0.0832	ppb	408.5	251.08	0.50	
51 V	-0.0648	ppb	2820.7	15.32	0.50	
52 Cr	-0.0913	ppb	1580.3	2.56	0.20	
55 Mn	0.0132	ppb	5492.3	115.85	0.20	
56 Fe	1.5610	ppb	17721.0	6.26	10.00	
59 Co	0.0088	ppb	474.5	58.33	0.20	
60 Ni	-0.0038	ppb	78.9	47.19	0.20	
63 Cu	-0.0087	ppb	969.4	59.14	0.40	
66 Zn	-0.2369	ppb	345.6	5.85	2.00	
75 As	0.0389	ppb	194.4	26.29	0.20	
78 Se	0.0484	ppb	20.0	30.63	0.20	
88 Sr	0.0111	ppb	688.9	46.76	0.20	
90 Zr	-0.0088	ppb	90.0	2.03	2.00	
95 Mo	0.1221	ppb	563.4	5.32	0.40	
107 Ag	0.0024	ppb	61.1	72.26	0.20	
111 Cd	0.0051	ppb	48.9	58.84	0.20	
118 Sn	0.1476	ppb	1184.5	10.61	0.20	
121 Sb	0.0371	ppb	436.7	11.40	0.40	
137 Ba	0.0206	ppb	96.7	22.48	0.20	
182 W	-0.0040	ppb	53.3	36.76	1.00	
205 Tl	0.0338	ppb	632.3	0.71	0.20	
208 Pb	0.0237	ppb	816.7	10.95	0.10	
235 U	0.0000	ppb	18.9	527.35	1.00	
238 U	0.0582	ppb	1695.7	7.82	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1249222.3	1.54	1156944.40	108.0	60 - 125	
45 Sc	1020353.8	0.83	963897.88	105.9	60 - 125	
45 Sc	224802.5	0.53	213583.44	105.3	60 - 125	
45 Sc	2104807.8	1.61	2034836.60	103.4	60 - 125	
72 Ge	216220.5	0.15	207470.16	104.2	60 - 125	
72 Ge	103315.5	1.50	100121.55	103.2	60 - 125	
72 Ge	408397.1	1.32	406311.59	100.5	60 - 125	
115 In	2519505.5	0.96	2486219.30	101.3	60 - 125	
159 Tb	3456329.0	0.59	3505933.80	98.6	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07056.D\F6E07056.D#
Date Acquired:	May 11 2018 03:36 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-02
Misc Info:	
Vial Number:	2303
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	3242405.0	0.0000	343.7000	ppb	0.97	50.00	>LRS
9 Be	# 3	6	28.9	0.0000	0.0055	ppb	104.79	50.00	
11 B	# 3	6	1872559.0	0.0000	1115.0000	ppb	1.10	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	621515580.0	0.0000	59970.0000	ppb	0.67	50000.00	>LRS
27 Al	# 3	45	61154.2	0.0000	4.6450	ppb	2.17	50000.00	
28 Si	# 1	45	10582240.0	0.0000	14220.0000	ppb	1.46	5000.00	>LRS
31 P	# 3	45	92455.9	0.0000	24.5000	ppb	3.59	500.00	
39 K	# 2	45	6735309.0	0.0000	11510.0000	ppb	0.34	50000.00	
40 Ca	# 1	45	677689090.0	0.0000	123800.0000	ppb	1.08	50000.00	>LRS
47 Ti	# 3	45	3850.6	0.0000	2.8580	ppb	3.05	500.00	
51 V	# 2	45	8073.8	0.0000	1.3170	ppb	0.89	500.00	
52 Cr	# 2	45	2770.9	0.0000	0.1934	ppb	2.45	500.00	
55 Mn	# 3	45	10683780.0	0.0000	556.1000	ppb	0.11	3000.00	
56 Fe	# 1	45	510754.6	0.0000	69.3800	ppb	0.96	50000.00	
59 Co	# 3	45	9057.5	0.0000	0.5982	ppb	2.15	500.00	
60 Ni	# 2	45	3161.0	0.0000	2.1280	ppb	1.28	500.00	
63 Cu	# 2	45	2352.4	0.0000	0.3741	ppb	3.56	500.00	
66 Zn	# 3	72	17690.0	0.0000	8.6620	ppb	2.04	500.00	
75 As	# 2	72	2507.3	0.0000	4.3450	ppb	0.73	500.00	
78 Se	# 1	72	36.2	0.0000	0.1426	ppb	9.11	500.00	
88 Sr	# 3	72	59837660.0	0.0000	3241.0000	ppb	0.40	500.00	>LRS
90 Zr	# 3	72	458.9	0.0000	0.0202	ppb	10.18	50.00	
95 Mo	# 3	115	169209.7	0.0000	48.3400	ppb	0.70	500.00	
107 Ag	# 3	115	111.1	0.0000	0.0098	ppb	13.94	50.00	
111 Cd	# 3	115	8.2	0.0000	-0.0144	ppb	186.57	500.00	
118 Sn	# 3	115	433.4	0.0000	0.0409	ppb	9.10	500.00	
121 Sb	# 3	115	1101.2	0.0000	0.1396	ppb	7.47	500.00	
137 Ba	# 3	115	115933.5	0.0000	44.7200	ppb	0.83	1000.00	
182 W	# 3	159	18208.4	0.0000	2.6460	ppb	0.22	50.00	
205 Tl	# 3	159	4367.5	0.0000	0.2937	ppb	3.63	500.00	
208 Pb	# 3	159	1463.4	0.0000	0.0614	ppb	3.12	500.00	
235 U	# 3	159	618.9	0.0000	0.0233	ppb	2.61	30.00	
238 U	# 3	159	79464.3	0.0000	3.2620	ppb	0.71	500.00	

ISTD Elements

Element	Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	992943.75	2.43	1156944.40	85.8	60 - 125	
45 Sc	# 1	974915.50	0.68	963897.88	101.1	60 - 125	
45 Sc	# 2	211969.13	0.91	213583.44	99.2	60 - 125	
45 Sc	# 3	1993613.30	1.51	2034836.60	98.0	60 - 125	
72 Ge	# 1	185376.66	0.62	207470.16	89.4	60 - 125	
72 Ge	# 2	91644.65	1.51	100121.55	91.5	60 - 125	
72 Ge	# 3	356475.03	1.37	406311.59	87.7	60 - 125	
115 In	# 3	2105263.00	0.84	2486219.30	84.7	60 - 125	
159 Tb	# 3	2933565.30	1.98	3505933.80	83.7	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

7 :Element Failures — 0 :Max. Number of Failures Allowed

0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07057.D\F6E07057.D#		
Date Acquired:	May 11 2018 03:41 pm		
Acq. Method:	EM6020R2.M		
Operator:	LVicto		
Sample Name:	E042-04		
Misc Info:			
Vial Number:	2304		
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M		
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C		
Last Cal. Update:	May 11 2018 12:02 pm		
Sample Type:	Sample	Tune #	Name
Dilution Factor:	1.00	#1	h2.u
Autodil Factor:	Undiluted	#2	he.u
Final Dil Factor:	1.00	#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	6686964.0	0.0000	792.5000	ppb	0.82	50.00	>LRS
9 Be	# 3	6	26.7	0.0000	0.0057	ppb	56.64	50.00	
11 B	# 3	6	2700802.0	0.0000	1780.0000	ppb	0.50	100.00	>LRS
23 Na	# 1	45	--------	----	---------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	177008800.0	0.0000	18090.0000	ppb	1.11	50000.00	
27 Al	# 3	45	67144.7	0.0000	5.4250	ppb	2.55	50000.00	
28 Si	# 1	45	9652397.0	0.0000	14410.0000	ppb	1.41	5000.00	>LRS
31 P	# 3	45	92711.7	0.0000	34.2600	ppb	2.70	500.00	
39 K	# 2	45	12118850.0	0.0000	21640.0000	ppb	1.47	50000.00	
40 Ca	# 1	45	764244930.0	0.0000	155100.0000	ppb	1.23	50000.00	>LRS
47 Ti	# 3	45	3681.7	0.0000	2.8980	ppb	5.49	500.00	
51 V	# 2	45	9134.6	0.0000	1.6630	ppb	1.72	500.00	
52 Cr	# 2	45	2860.5	0.0000	0.2339	ppb	7.42	500.00	
55 Mn	# 3	45	1873284.0	0.0000	103.1000	ppb	0.23	3000.00	
56 Fe	# 1	45	59368.8	0.0000	8.2910	ppb	1.77	50000.00	
59 Co	# 3	45	6988.5	0.0000	0.4849	ppb	1.86	500.00	
60 Ni	# 2	45	1537.2	0.0000	1.0410	ppb	3.18	500.00	
63 Cu	# 2	45	3795.4	0.0000	0.7909	ppb	4.86	500.00	
66 Zn	# 3	72	18302.9	0.0000	9.4880	ppb	1.08	500.00	
75 As	# 2	72	1770.8	0.0000	3.1360	ppb	1.69	500.00	
78 Se	# 1	72	71.8	0.0000	0.3480	ppb	10.59	500.00	
88 Sr	# 3	72	60055660.0	0.0000	3431.0000	ppb	1.07	500.00	>LRS
90 Zr	# 3	72	280.0	0.0000	0.0077	ppb	53.36	50.00	
95 Mo	# 3	115	165779.6	0.0000	50.9100	ppb	0.95	500.00	
107 Ag	# 3	115	121.1	0.0000	0.0122	ppb	4.10	50.00	
111 Cd	# 3	115	64.4	0.0000	0.0221	ppb	19.24	500.00	
118 Sn	# 3	115	346.7	0.0000	0.0292	ppb	3.46	500.00	
121 Sb	# 3	115	1010.1	0.0000	0.1374	ppb	5.37	500.00	
137 Ba	# 3	115	114369.2	0.0000	47.4200	ppb	0.43	1000.00	
182 W	# 3	159	8655.3	0.0000	1.3550	ppb	1.43	50.00	
205 Tl	# 3	159	6975.4	0.0000	0.5090	ppb	0.73	500.00	
208 Pb	# 3	159	815.6	0.0000	0.0329	ppb	3.51	500.00	
235 U	# 3	159	2251.4	0.0000	0.0935	ppb	2.52	30.00	
238 U	# 3	159	318195.3	0.0000	14.1200	ppb	0.65	500.00	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	897535.81	2.04	1156944.40	77.6	60 - 125	
45 Sc	# 1	877741.63	0.27	963897.88	91.1	60 - 125	
45 Sc	# 2	205352.78	0.95	213583.44	96.1	60 - 125	
45 Sc	# 3	1882068.30	1.66	2034836.60	92.5	60 - 125	
72 Ge	# 1	171072.92	0.94	207470.16	82.5	60 - 125	
72 Ge	# 2	87628.04	1.52	100121.55	87.5	60 - 125	
72 Ge	# 3	338050.72	1.83	406311.59	83.2	60 - 125	
115 In	# 3	1958855.40	1.59	2486219.30	78.8	60 - 125	
159 Tb	# 3	2713823.00	1.24	3505933.80	77.4	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

6 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07058.D\F6E07058.D#
Date Acquired:	May 11 2018 03:45 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-06
Misc Info:	
Vial Number:	2305
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element		Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7	Li	# 3	6	8845380.0	0.0000	1126.0000	ppb	0.54	50.00	>LRS
9	Be	# 3	6	20.0	0.0000	0.0033	ppb	269.91	50.00	
11	B	# 3	6	4251296.0	0.0000	3002.0000	ppb	0.34	100.00	>LRS
23	Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24	Mg	# 3	45	43230368.0	0.0000	4242.0000	ppb	0.77	50000.00	
27	Al	# 3	45	72720.5	0.0000	5.6490	ppb	2.68	50000.00	
28	Si	# 1	45	6425277.0	0.0000	9357.0000	ppb	1.72	5000.00	>LRS
31	P	# 3	45	91870.9	0.0000	26.2100	ppb	5.42	500.00	
39	K	# 2	45	19673260.0	0.0000	33420.0000	ppb	0.51	50000.00	
40	Ca	# 1	45	603990590.0	0.0000	119600.0000	ppb	1.89	50000.00	>LRS
47	Ti	# 3	45	2667.0	0.0000	1.9470	ppb	5.00	500.00	
51	V	# 2	45	4021.9	0.0000	0.2593	ppb	3.34	500.00	
52	Cr	# 2	45	3008.1	0.0000	0.2307	ppb	2.99	500.00	
55	Mn	# 3	45	4385813.0	0.0000	232.1000	ppb	0.50	3000.00	
56	Fe	# 1	45	538087.8	0.0000	79.3000	ppb	1.55	50000.00	
59	Co	# 3	45	7468.8	0.0000	0.4984	ppb	0.82	500.00	
60	Ni	# 2	45	1208.3	0.0000	0.7601	ppb	2.47	500.00	
63	Cu	# 2	45	1518.5	0.0000	0.1429	ppb	4.77	500.00	
66	Zn	# 3	72	7373.2	0.0000	3.4670	ppb	1.80	500.00	
75	As	# 2	72	691.8	0.0000	1.0150	ppb	7.52	500.00	
78	Se	# 1	72	33.6	0.0000	0.1434	ppb	13.01	500.00	
88	Sr	# 3	72	57501312.0	0.0000	3184.0000	ppb	0.42	500.00	>LRS
90	Zr	# 3	72	416.7	0.0000	0.0177	ppb	15.83	50.00	
95	Mo	# 3	115	383628.8	0.0000	114.4000	ppb	0.72	500.00	
107	Ag	# 3	115	176.7	0.0000	0.0189	ppb	29.63	50.00	
111	Cd	# 3	115	71.0	0.0000	0.0251	ppb	147.27	500.00	
118	Sn	# 3	115	344.5	0.0000	0.0268	ppb	26.86	500.00	
121	Sb	# 3	115	1526.8	0.0000	0.2081	ppb	4.42	500.00	
137	Ba	# 3	115	92348.9	0.0000	37.1800	ppb	1.06	1000.00	
182	W	# 3	159	9778.3	0.0000	1.5110	ppb	1.28	50.00	
205	Tl	# 3	159	66.7	0.0000	0.0022	ppb	71.41	500.00	
208	Pb	# 3	159	1479.0	0.0000	0.0669	ppb	6.31	500.00	
235	U	# 3	159	195.6	0.0000	0.0075	ppb	20.25	30.00	
238	U	# 3	159	21442.5	0.0000	0.9377	ppb	1.61	500.00	

ISTD Elements

Element		Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	# 3	837727.81	1.26	1156944.40	72.4	60 - 125	
45	Sc	# 1	899672.88	1.30	963897.88	93.3	60 - 125	
45	Sc	# 2	216969.88	1.71	213583.44	101.6	60 - 125	
45	Sc	# 3	1959615.00	1.27	2034836.60	96.3	60 - 125	
72	Ge	# 1	171197.89	2.62	207470.16	82.5	60 - 125	
72	Ge	# 2	90363.14	1.80	100121.55	90.3	60 - 125	
72	Ge	# 3	348670.06	1.01	406311.59	85.8	60 - 125	
115	In	# 3	2016965.00	1.00	2486219.30	81.1	60 - 125	
159	Tb	# 3	2751507.80	1.25	3505933.80	78.5	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

6 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07059.D\F6E07059.D#
Date Acquired:	May 11 2018 03:50 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-08
Misc Info:	
Vial Number:	2306
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	875285.2	0.0000	72.8000	ppb	0.82	50.00	>LRS
9 Be	# 3	6	36.7	0.0000	0.0061	ppb	89.83	50.00	
11 B	# 3	6	1085314.0	0.0000	541.7000	ppb	1.11	100.00	>LRS
23 Na	# 1	45	690429120.0	0.0000	223300.0000	ppb	1.93	50000.00	>LRS
24 Mg	# 3	45	89440280.0	0.0000	7690.0000	ppb	0.15	50000.00	
27 Al	# 3	45	197611.1	0.0000	13.6500	ppb	0.87	50000.00	
28 Si	# 1	45	12843320.0	0.0000	15370.0000	ppb	1.77	5000.00	>LRS
31 P	# 3	45	87391.5	0.0000	-0.2139	ppb	558.20	500.00	
39 K	# 2	45	3146497.0	0.0000	4651.0000	ppb	1.09	50000.00	
40 Ca	# 1	45	203664700.0	0.0000	33130.0000	ppb	0.98	50000.00	
47 Ti	# 3	45	4748.7	0.0000	3.1640	ppb	1.19	500.00	
51 V	# 2	45	22378.3	0.0000	4.3870	ppb	0.61	500.00	
52 Cr	# 2	45	2017.0	0.0000	-0.0198	ppb	42.33	500.00	
55 Mn	# 3	45	16135110.0	0.0000	748.6000	ppb	0.83	3000.00	
56 Fe	# 1	45	498990.3	0.0000	60.2400	ppb	1.88	50000.00	
59 Co	# 3	45	3851.7	0.0000	0.2131	ppb	1.70	500.00	
60 Ni	# 2	45	494.5	0.0000	0.2515	ppb	3.76	500.00	
63 Cu	# 2	45	2556.7	0.0000	0.3591	ppb	3.85	500.00	
66 Zn	# 3	72	5215.5	0.0000	1.9020	ppb	1.69	500.00	
75 As	# 2	72	3839.4	0.0000	5.8300	ppb	2.03	500.00	
78 Se	# 1	72	29.6	0.0000	0.0859	ppb	9.43	500.00	
88 Sr	# 3	72	15205030.0	0.0000	707.4000	ppb	0.56	500.00	>LRS
90 Zr	# 3	72	556.7	0.0000	0.0218	ppb	28.89	50.00	
95 Mo	# 3	115	161559.0	0.0000	39.9900	ppb	1.43	500.00	
107 Ag	# 3	115	65.6	0.0000	0.0031	ppb	86.70	50.00	
111 Cd	# 3	115	22.6	0.0000	-0.0076	ppb	178.75	500.00	
118 Sn	# 3	115	222.2	0.0000	-0.0054	ppb	64.94	500.00	
121 Sb	# 3	115	840.1	0.0000	0.0875	ppb	6.88	500.00	
137 Ba	# 3	115	1704967.0	0.0000	569.9000	ppb	0.68	1000.00	
182 W	# 3	159	108228.9	0.0000	13.6500	ppb	0.56	50.00	
205 Tl	# 3	159	14007.8	0.0000	0.8191	ppb	1.67	500.00	
208 Pb	# 3	159	1465.6	0.0000	0.0518	ppb	6.74	500.00	
235 U	# 3	159	932.3	0.0000	0.0306	ppb	3.79	30.00	
238 U	# 3	159	124258.3	0.0000	4.4100	ppb	0.62	500.00	

ISTD Elements

Element	Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	1183594.60	1.64	1156944.40	102.3	60 - 125	
45 Sc	# 1	1095101.80	2.19	963897.88	113.6	60 - 125	
45 Sc	# 2	235998.75	0.65	213583.44	110.5	60 - 125	
45 Sc	# 3	2236908.50	1.69	2034836.60	109.9	60 - 125	
72 Ge	# 1	221402.47	1.12	207470.16	106.7	60 - 125	
72 Ge	# 2	106234.91	1.66	100121.55	106.1	60 - 125	
72 Ge	# 3	415022.38	1.00	406311.59	102.1	60 - 125	
115 In	# 3	2430108.00	1.59	2486219.30	97.7	60 - 125	
159 Tb	# 3	3392475.50	1.42	3505933.80	96.8	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

5 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07060.D\F6E07060.D#		
Date Acquired:	May 11 2018 03:54 pm		
Acq. Method:	EM6020R2.M		
Operator:	LVicto		
Sample Name:	E042-09		
Misc Info:			
Vial Number:	2307		
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M		
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C		
Last Cal. Update:	May 11 2018 12:02 pm		
Sample Type:	Sample	Tune #	Name
Dilution Factor:	1.00	#1	h2.u
Autodil Factor:	Undiluted	#2	he.u
Final Dil Factor:	1.00	#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	4860254.0	0.0000	525.9000	ppb	0.88	50.00	>LRS
9 Be	# 3	6	11.1	0.0000	-0.0017	ppb	203.31	50.00	
11 B	# 3	6	2683198.0	0.0000	1621.0000	ppb	1.60	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	16328790.0	0.0000	1546.0000	ppb	1.20	50000.00	
27 Al	# 3	45	81679.2	0.0000	6.1320	ppb	5.91	50000.00	
28 Si	# 1	45	9026267.0	0.0000	12250.0000	ppb	2.49	5000.00	>LRS
31 P	# 3	45	87687.5	0.0000	13.6800	ppb	21.08	500.00	
39 K	# 2	45	11601180.0	0.0000	19690.0000	ppb	0.88	50000.00	
40 Ca	# 1	45	391009790.0	0.0000	72120.0000	ppb	1.88	50000.00	>LRS
47 Ti	# 3	45	3383.8	0.0000	2.4330	ppb	5.87	500.00	
51 V	# 2	45	16045.1	0.0000	3.2800	ppb	1.24	500.00	
52 Cr	# 2	45	40168.3	0.0000	8.3500	ppb	0.61	500.00	
55 Mn	# 3	45	83919.7	0.0000	4.0310	ppb	0.88	5000.00	
56 Fe	# 1	45	45239.6	0.0000	5.5080	ppb	3.99	50000.00	
59 Co	# 3	45	3281.6	0.0000	0.1986	ppb	7.72	500.00	
60 Ni	# 2	45	594.0	0.0000	0.3479	ppb	5.37	500.00	
63 Cu	# 2	45	1919.7	0.0000	0.2500	ppb	3.54	500.00	
66 Zn	# 3	72	4753.1	0.0000	1.9640	ppb	3.90	500.00	
75 As	# 2	72	3979.7	0.0000	6.8000	ppb	1.13	500.00	
78 Se	# 1	72	125.3	0.0000	0.5665	ppb	16.49	500.00	
88 Sr	# 3	72	36348700.0	0.0000	1906.0000	ppb	0.10	500.00	>LRS
90 Zr	# 3	72	346.7	0.0000	0.0108	ppb	65.83	50.00	
95 Mo	# 3	115	155266.6	0.0000	43.2700	ppb	1.28	500.00	
107 Ag	# 3	115	76.7	0.0000	0.0053	ppb	33.97	50.00	
111 Cd	# 3	115	43.3	0.0000	0.0059	ppb	179.59	500.00	
118 Sn	# 3	115	265.6	0.0000	0.0074	ppb	135.31	500.00	
121 Sb	# 3	115	666.7	0.0000	0.0768	ppb	5.15	500.00	
137 Ba	# 3	115	118393.1	0.0000	44.5400	ppb	0.54	1000.00	
182 W	# 3	159	15152.3	0.0000	2.1490	ppb	2.67	50.00	
205 Tl	# 3	159	965.6	0.0000	0.0614	ppb	4.42	500.00	
208 Pb	# 3	159	644.5	0.0000	0.0206	ppb	10.10	500.00	
235 U	# 3	159	540.0	0.0000	0.0198	ppb	3.12	30.00	
238 U	# 3	159	68588.9	0.0000	2.7500	ppb	0.66	500.00	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	979109.06	2.26	1156944.40	84.6	60 - 125	
45 Sc	# 1	966012.56	2.01	963897.88	100.2	60 - 125	
45 Sc	# 2	215746.28	1.17	213583.44	101.0	60 - 125	
45 Sc	# 3	2031168.90	1.37	2034836.60	99.8	60 - 125	
72 Ge	# 1	190280.06	0.69	207470.16	91.7	60 - 125	
72 Ge	# 2	95023.51	1.71	100121.55	94.9	60 - 125	
72 Ge	# 3	368326.59	0.94	406311.59	90.7	60 - 125	
115 In	# 3	2158520.00	0.89	2486219.30	86.8	60 - 125	
159 Tb	# 3	3003546.30	1.15	3505933.80	85.7	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

6 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07061.D\F6E07061.D#		
Date Acquired:	May 11 2018 03:59 pm		
Acq. Method:	EM6020R2.M		
Operator:	LVicto		
Sample Name:	E042-10		
Misc Info:			
Vial Number:	2308		
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M		
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C		
Last Cal. Update:	May 11 2018 12:02 pm		
Sample Type:	Sample	Tune #	Name
Dilution Factor:	1.00	#1	h2.u
Autodil Factor:	Undiluted	#2	he.u
Final Dil Factor:	1.00	#3	norm.u

QC Elements

Element		Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7	Li	# 3	6	8985526.0	0.0000	1241.0000	ppb	0.82	50.00	>LRS
9	Be	# 3	6	16.7	0.0000	0.0023	ppb	193.24	50.00	
11	B	# 3	6	3645766.0	0.0000	2792.0000	ppb	0.36	100.00	>LRS
23	Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24	Mg	# 3	45	772587900.0	0.0000	77220.0000	ppb	0.56	50000.00	>LRS
27	Al	# 3	45	62536.6	0.0000	4.9280	ppb	0.04	50000.00	
28	Si	# 1	45	9497744.0	0.0000	14210.0000	ppb	0.45	5000.00	>LRS
31	P	# 3	45	132517.4	0.0000	100.6000	ppb	1.92	500.00	
39	K	# 2	45	23080870.0	0.0000	40200.0000	ppb	0.13	50000.00	
40	Ca	# 1	45	2003568000.0	0.0000	407600.0000	ppb	0.58	50000.00	>LRS
47	Ti	# 3	45	4476.4	0.0000	3.4900	ppb	1.82	500.00	
51	V	# 2	45	4847.3	0.0000	0.4935	ppb	0.38	500.00	
52	Cr	# 2	45	2501.6	0.0000	0.1336	ppb	9.93	500.00	
55	Mn	# 3	45	11500790.0	0.0000	620.1000	ppb	0.12	3000.00	
56	Fe	# 1	45	4729781.0	0.0000	722.3000	ppb	0.60	50000.00	
59	Co	# 3	45	15765.5	0.0000	1.0960	ppb	0.27	500.00	
60	Ni	# 2	45	1082.5	0.0000	0.6928	ppb	4.04	500.00	
63	Cu	# 2	45	2481.1	0.0000	0.4085	ppb	3.45	500.00	
66	Zn	# 3	72	10271.7	0.0000	5.2620	ppb	1.34	500.00	
75	As	# 2	72	2250.0	0.0000	4.1790	ppb	0.80	500.00	
78	Se	# 1	72	49.3	0.0000	0.2372	ppb	9.93	500.00	
88	Sr	# 3	72	185629410.0	0.0000	10810.0000	ppb	0.97	500.00	>LRS
90	Zr	# 3	72	480.0	0.0000	0.0246	ppb	3.48	50.00	
95	Mo	# 3	115	143535.8	0.0000	44.9300	ppb	0.49	500.00	
107	Ag	# 3	115	192.2	0.0000	0.0221	ppb	13.26	50.00	
111	Cd	# 3	115	102.6	0.0000	0.0483	ppb	78.12	500.00	
118	Sn	# 3	115	450.0	0.0000	0.0523	ppb	9.16	500.00	
121	Sb	# 3	115	867.8	0.0000	0.1187	ppb	8.66	500.00	
137	Ba	# 3	115	95112.4	0.0000	40.1900	ppb	0.75	1000.00	
182	W	# 3	159	5095.6	0.0000	0.8174	ppb	2.61	50.00	
205	Tl	# 3	159	76.7	0.0000	0.0032	ppb	58.70	500.00	
208	Pb	# 3	159	1322.3	0.0000	0.0619	ppb	2.27	500.00	
235	U	# 3	159	200.0	0.0000	0.0080	ppb	15.00	30.00	
238	U	# 3	159	18943.1	0.0000	0.8653	ppb	1.75	500.00	

ISTD Elements

Element		Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	# 3	772507.44	1.99	1156944.40	66.8	60 - 125	
45	Sc	# 1	875687.88	0.81	963897.88	90.8	60 - 125	
45	Sc	# 2	211988.42	2.17	213583.44	99.3	60 - 125	
45	Sc	# 3	1924469.40	2.03	2034836.60	94.6	60 - 125	
72	Ge	# 1	165158.94	0.97	207470.16	79.6	60 - 125	
72	Ge	# 2	85292.91	1.50	100121.55	85.2	60 - 125	
72	Ge	# 3	331459.41	0.91	406311.59	81.6	60 - 125	
115	In	# 3	1921582.60	1.29	2486219.30	77.3	60 - 125	
159	Tb	# 3	2633622.00	1.44	3505933.80	75.1	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

7 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07062.D\F6E07062.D#
Date Acquired:	May 11 2018 04:03 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-11
Misc Info:	
Vial Number:	2309
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	6329564.0	0.0000	758.0000	ppb	2.39	50.00	>LRS
9 Be	# 3	6	44.4	0.0000	0.0137	ppb	28.16	50.00	
11 B	# 3	6	2853264.0	0.0000	1901.0000	ppb	2.25	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	998000770.0	0.0000	93860.0000	ppb	0.57	50000.00	>LRS
27 Al	# 3	45	40926.0	0.0000	2.9770	ppb	0.33	50000.00	
28 Si	# 1	45	11359300.0	0.0000	15450.0000	ppb	0.16	5000.00	>LRS
31 P	# 3	45	100185.4	0.0000	33.3700	ppb	14.06	500.00	
39 K	# 2	45	12287680.0	0.0000	20300.0000	ppb	0.77	50000.00	
40 Ca	# 1	45	2075851000.0	0.0000	383800.0000	ppb	0.72	50000.00	>LRS
47 Ti	# 3	45	4552.0	0.0000	3.3300	ppb	3.56	500.00	
51 V	# 2	45	4334.2	0.0000	0.3137	ppb	4.90	500.00	
52 Cr	# 2	45	2141.9	0.0000	0.0326	ppb	9.20	500.00	
55 Mn	# 3	45	14065260.0	0.0000	713.7000	ppb	0.64	3000.00	
56 Fe	# 1	45	21078670.0	0.0000	2928.0000	ppb	0.38	50000.00	
59 Co	# 3	45	15876.7	0.0000	1.0380	ppb	2.81	500.00	
60 Ni	# 2	45	647.1	0.0000	0.3720	ppb	3.01	500.00	
63 Cu	# 2	45	831.4	0.0000	-0.0405	ppb	10.23	500.00	
66 Zn	# 3	72	7600.0	0.0000	3.5070	ppb	0.80	500.00	
75 As	# 2	72	395.6	0.0000	0.4523	ppb	2.07	500.00	
78 Se	# 1	72	34.4	0.0000	0.1361	ppb	17.84	500.00	
88 Sr	# 3	72	166562400.0	0.0000	9043.0000	ppb	0.18	500.00	>LRS
90 Zr	# 3	72	817.8	0.0000	0.0478	ppb	7.59	50.00	
95 Mo	# 3	115	32166.6	0.0000	9.3590	ppb	0.68	500.00	
107 Ag	# 3	115	158.9	0.0000	0.0161	ppb	18.57	50.00	
111 Cd	# 3	115	97.3	0.0000	0.0401	ppb	39.18	500.00	
118 Sn	# 3	115	328.9	0.0000	0.0220	ppb	51.07	500.00	
121 Sb	# 3	115	480.0	0.0000	0.0544	ppb	5.96	500.00	
137 Ba	# 3	115	126729.2	0.0000	49.8400	ppb	0.85	1000.00	
182 W	# 3	159	1213.4	0.0000	0.1716	ppb	2.07	50.00	
205 Tl	# 3	159	47.8	0.0000	0.0008	ppb	97.97	500.00	
208 Pb	# 3	159	465.6	0.0000	0.0132	ppb	5.11	500.00	
235 U	# 3	159	262.2	0.0000	0.0098	ppb	6.71	30.00	
238 U	# 3	159	32162.4	0.0000	1.3580	ppb	1.16	500.00	

ISTD Elements

Element	Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	888277.25	2.72	1156944.40	76.8	60 - 125	
45 Sc	# 1	963646.13	1.65	963897.88	100.0	60 - 125	
45 Sc	# 2	221768.33	0.37	213583.44	103.8	60 - 125	
45 Sc	# 3	2045230.10	1.77	2034836.60	100.5	60 - 125	
72 Ge	# 1	183132.86	1.63	207470.16	88.3	60 - 125	
72 Ge	# 2	91407.26	0.99	100121.55	91.3	60 - 125	
72 Ge	# 3	355634.81	0.78	406311.59	87.5	60 - 125	
115 In	# 3	2064925.60	1.12	2486219.30	83.1	60 - 125	
159 Tb	# 3	2850867.80	1.71	3505933.80	81.3	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

7 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

CCV QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07063.D\F6E07063.D#
Date Acquired:	May 11 2018 04:08 pm
Operator:	LVicto
Sample Name:	CCV5
Misc Info:	
Vial Number:	1206
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	May 11 2018 12:02 pm
Sample Type:	CCV
Total Dil Factor:	1.00

QC Elements

Element		Conc.		RSD(%)	Expected	QC Range(%)		Flag
7	Li	28.58	ppb	0.65	25.00	90 -	110	Fail
9	Be	23.84	ppb	0.39	25.00	90 -	110	
11	B	58.62	ppb	1.77	50.00	90 -	110	Fail
23	Na	26310.00	ppb	0.72	25000.00	90 -	110	
24	Mg	23870.00	ppb	0.62	25000.00	90 -	110	
27	Al	24320.00	ppb	1.22	25000.00	90 -	110	
28	Si	2739.00	ppb	0.77	2500.00	90 -	110	
31	P	251.20	ppb	1.13	250.00	90 -	110	
39	K	25670.00	ppb	0.46	25000.00	90 -	110	
40	Ca	25360.00	ppb	1.03	25000.00	90 -	110	
47	Ti	253.60	ppb	0.89	250.00	90 -	110	
51	V	244.60	ppb	0.99	250.00	90 -	110	
52	Cr	236.50	ppb	0.42	250.00	90 -	110	
55	Mn	1449.00	ppb	0.86	1500.00	90 -	110	
56	Fe	24780.00	ppb	0.44	25000.00	90 -	110	
59	Co	253.00	ppb	0.83	250.00	90 -	110	
60	Ni	245.10	ppb	0.13	250.00	90 -	110	
63	Cu	233.40	ppb	1.19	250.00	90 -	110	
66	Zn	226.70	ppb	0.69	250.00	90 -	110	
75	As	241.70	ppb	0.06	250.00	90 -	110	
78	Se	238.40	ppb	0.10	250.00	90 -	110	
88	Sr	247.80	ppb	0.20	250.00	90 -	110	
90	Zr	0.57	ppb	1.29	25.00	90 -	110	Fail
95	Mo	253.90	ppb	0.99	250.00	90 -	110	
107	Ag	24.66	ppb	0.91	25.00	90 -	110	
111	Cd	244.00	ppb	0.83	250.00	90 -	110	
118	Sn	252.60	ppb	1.26	250.00	90 -	110	
121	Sb	48.82	ppb	0.98	50.00	90 -	110	
137	Ba	506.00	ppb	0.58	500.00	90 -	110	
182	W	0.05	ppb	20.34	25.00	90 -	110	Fail
205	Tl	232.40	ppb	0.79	250.00	90 -	110	
208	Pb	240.70	ppb	0.13	250.00	90 -	110	
235	U	1.70	ppb	0.97	1.80	90 -	110	
238	U	243.70	ppb	0.69	250.00	90 -	110	

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1233752.00	1.28	1156944.40	106.6	60 -	125	
45	Sc	1130482.60	0.67	963897.88	117.3	60 -	125	
45	Sc	251061.02	0.19	213583.44	117.5	60 -	125	
45	Sc	2250111.80	1.50	2034836.60	110.6	60 -	125	
72	Ge	238451.03	1.33	207470.16	114.9	60 -	125	
72	Ge	115072.09	0.32	100121.55	114.9	60 -	125	
72	Ge	439324.53	0.62	406311.59	108.1	60 -	125	
115	In	2550770.50	1.37	2486219.30	102.6	60 -	125	
159	Tb	3603448.80	0.54	3505933.80	102.8	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07064.D\F6E07064.D#
Date Acquired:	May 11 2018 04:12 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	CCB5
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element		Conc.		CPS	Conc RSD(%)	High Limit	Flag
7	Li	3.6270	ppb	119803.8	4.36	0.20	Fail
9	Be	-0.0024	ppb	12.2	111.05	0.10	
11	B	6.8150	ppb	16740.7	6.28	5.00	Fail
23	Na	1139.0000	ppb	3650469.0	3.27	40.00	Fail
24	Mg	0.8336	ppb	14197.0	12.79	10.00	
27	Al	0.6784	ppb	11539.2	10.96	20.00	
28	Si	3.2040	ppb	4660.9	9.20	20.00	
31	P	-13.1000	ppb	76798.0	11.51	10.00	Fail
39	K	-9.3850	ppb	190257.5	66.03	20.00	
40	Ca	2.2160	ppb	34371.2	9.30	25.00	
47	Ti	-0.0369	ppb	262.2	12.85	0.50	
51	V	-0.0795	ppb	2904.3	15.68	0.50	
52	Cr	-0.1521	ppb	1357.8	3.39	0.20	
55	Mn	-0.0048	ppb	5307.8	281.41	0.20	
56	Fe	2.1510	ppb	22353.0	3.21	10.00	
59	Co	0.0082	ppb	482.2	25.06	0.20	
60	Ni	-0.0057	ppb	80.0	79.42	0.20	
63	Cu	0.1361	ppb	1628.5	10.08	0.40	
66	Zn	-0.0788	ppb	732.3	6.63	2.00	
75	As	-0.0109	ppb	172.2	218.48	0.20	
78	Se	0.0607	ppb	23.1	7.72	0.20	
88	Sr	0.1043	ppb	2787.0	6.93	0.20	
90	Zr	-0.0083	ppb	102.2	20.94	2.00	
95	Mo	0.1324	ppb	628.9	6.32	0.40	
107	Ag	0.0048	ppb	87.8	29.17	0.20	
111	Cd	-0.0038	ppb	32.3	82.13	0.20	
118	Sn	0.1304	ppb	1116.8	9.98	0.20	
121	Sb	0.0177	ppb	280.0	5.82	0.40	
137	Ba	0.0247	ppb	113.3	17.77	0.20	
182	W	0.0061	ppb	138.9	69.62	1.00	
205	Tl	0.0313	ppb	604.5	7.96	0.20	
208	Pb	0.0109	ppb	522.2	8.01	0.10	
235	U	0.0002	ppb	23.3	193.01	1.00	
238	U	0.0563	ppb	1686.8	6.85	0.10	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1269357.0	1.04	1156944.40	109.7	60 - 125	
45	Sc	1026837.7	1.28	963897.88	106.5	60 - 125	
45	Sc	236640.2	1.25	213583.44	110.8	60 - 125	
45	Sc	2178060.3	0.83	2034836.60	107.0	60 - 125	
72	Ge	218162.4	0.61	207470.16	105.2	60 - 125	
72	Ge	108455.5	1.92	100121.55	108.3	60 - 125	
72	Ge	427740.0	1.49	406311.59	105.3	60 - 125	
115	In	2612314.5	1.09	2486219.30	105.1	60 - 125	
159	Tb	3550085.3	1.50	3505933.80	101.3	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07065.D\F6E07065.D#
Date Acquired:	May 11 2018 04:17 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-12M
Misc Info:	
Vial Number:	2310
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	4052024.0	0.0000	429.6000	ppb	0.67	50.00	>LRS
9 Be	# 3	6	78898.9	0.0000	31.6300	ppb	1.11	50.00	
11 B	# 3	6	3390960.0	0.0000	2013.0000	ppb	0.57	100.00	>LRS
23 Na	# 1	45	3022413100.0	0.0000	1092000.0000	ppb	0.19	50000.00	>LRS
24 Mg	# 3	45	872234880.0	0.0000	79990.0000	ppb	0.48	50000.00	>LRS
27 Al	# 3	45	37609940.0	0.0000	2802.0000	ppb	0.77	50000.00	
28 Si	# 1	45	11573910.0	0.0000	15470.0000	ppb	0.24	5000.00	>LRS
31 P	# 3	45	147388.7	0.0000	105.3000	ppb	2.38	500.00	
39 K	# 2	45	8575637.0	0.0000	14160.0000	ppb	0.29	50000.00	
40 Ca	# 1	45	1124548000.0	0.0000	204300.0000	ppb	0.60	50000.00	>LRS
47 Ti	# 3	45	43685.7	0.0000	33.0800	ppb	1.70	500.00	
51 V	# 2	45	126476.6	0.0000	30.3000	ppb	0.29	500.00	
52 Cr	# 2	45	134853.3	0.0000	28.4000	ppb	0.03	500.00	
55 Mn	# 3	45	16734200.0	0.0000	828.1000	ppb	1.33	3000.00	
56 Fe	# 1	45	86577920.0	0.0000	11820.0000	ppb	0.41	50000.00	
59 Co	# 3	45	455379.5	0.0000	29.6300	ppb	1.34	500.00	
60 Ni	# 2	45	43447.9	0.0000	28.8000	ppb	0.36	500.00	
63 Cu	# 2	45	108094.8	0.0000	27.4100	ppb	0.45	500.00	
66 Zn	# 3	72	122360.5	0.0000	58.5100	ppb	0.52	500.00	
75 As	# 2	72	21762.5	0.0000	37.7200	ppb	0.59	500.00	
78 Se	# 1	72	6752.5	0.0000	31.6300	ppb	0.80	500.00	
88 Sr	# 3	72	65016352.0	0.0000	3312.0000	ppb	0.14	500.00	>LRS
90 Zr	# 3	72	6497.2	0.0000	0.4519	ppb	0.61	50.00	
95 Mo	# 3	115	221619.0	0.0000	59.3400	ppb	0.59	500.00	
107 Ag	# 3	115	246000.0	0.0000	28.5900	ppb	0.87	50.00	
111 Cd	# 3	115	50690.9	0.0000	28.4600	ppb	0.50	500.00	
118 Sn	# 3	115	161986.4	0.0000	29.1100	ppb	0.59	500.00	
121 Sb	# 3	115	228443.6	0.0000	29.7900	ppb	0.27	500.00	
137 Ba	# 3	115	305836.4	0.0000	110.6000	ppb	0.16	1000.00	
182 W	# 3	159	1106.8	0.0000	0.1408	ppb	12.14	50.00	
205 Tl	# 3	159	450738.1	0.0000	28.6700	ppb	0.51	500.00	
208 Pb	# 3	159	607457.4	0.0000	27.8800	ppb	0.55	500.00	
235 U	# 3	159	4568.7	0.0000	0.1650	ppb	1.75	30.00	
238 U	# 3	159	1190253.0	0.0000	45.8100	ppb	0.82	500.00	

ISTD Elements

Element	Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	996430.00	1.33	1156944.40	86.1	60 - 125	
45 Sc	# 1	980592.88	1.24	963897.88	101.7	60 - 125	
45 Sc	# 2	220442.86	1.21	213583.44	103.2	60 - 125	
45 Sc	# 3	2097320.50	1.34	2034836.60	103.1	60 - 125	
72 Ge	# 1	195158.39	1.35	207470.16	94.1	60 - 125	
72 Ge	# 2	96796.18	1.48	100121.55	96.7	60 - 125	
72 Ge	# 3	378999.94	0.92	406311.59	93.3	60 - 125	
115 In	# 3	2246558.00	0.66	2486219.30	90.4	60 - 125	
159 Tb	# 3	3128867.00	1.13	3505933.80	89.2	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

7 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07066.D\F6E07066.D#
Date Acquired:	May 11 2018 04:21 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-12S
Misc Info:	
Vial Number:	2311
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element		Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7	Li	# 3	6	4006214.0	0.0000	423.2000	ppb	1.24	50.00	>LRS
9	Be	# 3	6	76866.6	0.0000	30.7100	ppb	0.38	50.00	
11	B	# 3	6	3351446.0	0.0000	1983.0000	ppb	0.51	100.00	>LRS
23	Na	# 1	45	2963546900.0	0.0000	1067000.0000	ppb	0.51	50000.00	>LRS
24	Mg	# 3	45	865723710.0	0.0000	79220.0000	ppb	0.28	50000.00	>LRS
27	Al	# 3	45	36676008.0	0.0000	2726.0000	ppb	0.28	50000.00	
28	Si	# 1	45	11410100.0	0.0000	15200.0000	ppb	0.65	5000.00	>LRS
31	P	# 3	45	146305.9	0.0000	103.1000	ppb	1.81	500.00	
39	K	# 2	45	8442949.0	0.0000	13870.0000	ppb	1.01	50000.00	
40	Ca	# 1	45	1109574000.0	0.0000	200900.0000	ppb	0.90	50000.00	>LRS
47	Ti	# 3	45	43275.4	0.0000	32.6800	ppb	1.92	500.00	
51	V	# 2	45	124544.8	0.0000	29.6700	ppb	0.42	500.00	
52	Cr	# 2	45	131538.0	0.0000	27.5500	ppb	0.14	500.00	
55	Mn	# 3	45	16554140.0	0.0000	817.2000	ppb	0.41	3000.00	
56	Fe	# 1	45	85459480.0	0.0000	11630.0000	ppb	0.75	50000.00	
59	Co	# 3	45	441951.3	0.0000	28.6900	ppb	0.66	500.00	
60	Ni	# 2	45	42479.6	0.0000	28.0200	ppb	0.57	500.00	
63	Cu	# 2	45	104822.8	0.0000	26.4400	ppb	0.54	500.00	
66	Zn	# 3	72	120466.9	0.0000	57.5300	ppb	1.05	500.00	
75	As	# 2	72	21438.9	0.0000	36.5500	ppb	0.25	500.00	
78	Se	# 1	72	6512.8	0.0000	30.3300	ppb	0.97	500.00	
88	Sr	# 3	72	64232872.0	0.0000	3268.0000	ppb	0.59	500.00	>LRS
90	Zr	# 3	72	6632.8	0.0000	0.4610	ppb	2.35	50.00	
95	Mo	# 3	115	217493.6	0.0000	57.9200	ppb	0.04	500.00	
107	Ag	# 3	115	241184.0	0.0000	27.8900	ppb	1.36	50.00	
111	Cd	# 3	115	49779.8	0.0000	27.7900	ppb	0.96	500.00	
118	Sn	# 3	115	158612.4	0.0000	28.3500	ppb	0.67	500.00	
121	Sb	# 3	115	224931.4	0.0000	29.1800	ppb	0.97	500.00	
137	Ba	# 3	115	301135.4	0.0000	108.3000	ppb	0.91	1000.00	
182	W	# 3	159	977.8	0.0000	0.1220	ppb	2.55	50.00	
205	Tl	# 3	159	440892.6	0.0000	27.7900	ppb	0.42	500.00	
208	Pb	# 3	159	592685.6	0.0000	26.9500	ppb	0.30	500.00	
235	U	# 3	159	4624.3	0.0000	0.1655	ppb	0.34	30.00	
238	U	# 3	159	1171496.0	0.0000	44.6800	ppb	0.72	500.00	

ISTD Elements

Element			CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	# 3	999745.50	1.24	1156944.40	86.4	60 - 125	
45	Sc	# 1	983991.88	2.04	963897.88	102.1	60 - 125	
45	Sc	# 2	221557.27	0.55	213583.44	103.7	60 - 125	
45	Sc	# 3	2102059.80	1.39	2034836.60	103.3	60 - 125	
72	Ge	# 1	196276.16	0.87	207470.16	94.6	60 - 125	
72	Ge	# 2	98389.58	0.31	100121.55	98.3	60 - 125	
72	Ge	# 3	379472.06	0.58	406311.59	93.4	60 - 125	
115	In	# 3	2258697.50	1.22	2486219.30	90.8	60 - 125	
159	Tb	# 3	3157972.80	0.80	3505933.80	90.1	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

7 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07067.D\F6E07067.D#
Date Acquired:	May 11 2018 04:26 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-12A
Misc Info:	
Vial Number:	2312
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element		Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7	Li	# 3	6	4023927.0	0.0000	422.4000	ppb	0.81	50.00	>LRS
9	Be	# 3	6	78301.6	0.0000	31.0900	ppb	1.31	50.00	
11	B	# 3	6	3377064.0	0.0000	1986.0000	ppb	1.13	100.00	>LRS
23	Na	# 1	45	3054759900.0	0.0000	1084000.0000	ppb	0.72	50000.00	>LRS
24	Mg	# 3	45	871572670.0	0.0000	79360.0000	ppb	0.37	50000.00	>LRS
27	Al	# 3	45	37985952.0	0.0000	2810.0000	ppb	0.55	50000.00	
28	Si	# 1	45	11796280.0	0.0000	15490.0000	ppb	0.16	5000.00	>LRS
31	P	# 3	45	148059.0	0.0000	104.7000	ppb	2.84	500.00	
39	K	# 2	45	8629481.0	0.0000	14070.0000	ppb	0.86	50000.00	
40	Ca	# 1	45	1141755000.0	0.0000	203800.0000	ppb	0.51	50000.00	>LRS
47	Ti	# 3	45	43975.3	0.0000	33.0600	ppb	1.33	500.00	
51	V	# 2	45	128189.8	0.0000	30.3200	ppb	0.97	500.00	
52	Cr	# 2	45	135164.4	0.0000	28.1000	ppb	0.97	500.00	
55	Mn	# 3	45	16744950.0	0.0000	822.6000	ppb	0.55	3000.00	
56	Fe	# 1	45	88020008.0	0.0000	11810.0000	ppb	0.48	50000.00	
59	Co	# 3	45	455263.4	0.0000	29.4100	ppb	0.69	500.00	
60	Ni	# 2	45	43910.2	0.0000	28.7400	ppb	1.52	500.00	
63	Cu	# 2	45	108087.2	0.0000	27.0600	ppb	0.76	500.00	
66	Zn	# 3	72	123724.3	0.0000	58.8800	ppb	0.83	500.00	
75	As	# 2	72	21789.2	0.0000	37.2400	ppb	1.05	500.00	
78	Se	# 1	72	6900.5	0.0000	31.4000	ppb	0.89	500.00	
88	Sr	# 3	72	64965080.0	0.0000	3294.0000	ppb	0.21	500.00	>LRS
90	Zr	# 3	72	6528.3	0.0000	0.4518	ppb	3.44	50.00	
95	Mo	# 3	115	222806.7	0.0000	59.5400	ppb	1.06	500.00	
107	Ag	# 3	115	240460.0	0.0000	27.8900	ppb	1.57	50.00	
111	Cd	# 3	115	50500.7	0.0000	28.2900	ppb	0.61	500.00	
118	Sn	# 3	115	163032.1	0.0000	29.2400	ppb	1.18	500.00	
121	Sb	# 3	115	214393.4	0.0000	27.9000	ppb	1.48	500.00	
137	Ba	# 3	115	307329.1	0.0000	110.9000	ppb	0.75	1000.00	
182	W	# 3	159	995.6	0.0000	0.1248	ppb	1.14	50.00	
205	Tl	# 3	159	457024.6	0.0000	28.8900	ppb	0.82	500.00	
208	Pb	# 3	159	608190.0	0.0000	27.7400	ppb	0.50	500.00	
235	U	# 3	159	4468.7	0.0000	0.1604	ppb	2.98	30.00	
238	U	# 3	159	1196460.0	0.0000	45.7700	ppb	0.98	500.00	

ISTD Elements

Element		Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	# 3	1006141.40	1.51	1156944.40	87.0	60 - 125	
45	Sc	# 1	998121.56	1.92	963897.88	103.6	60 - 125	
45	Sc	# 2	223273.56	1.15	213583.44	104.5	60 - 125	
45	Sc	# 3	2112406.00	1.49	2034836.60	103.8	60 - 125	
72	Ge	# 1	200883.47	1.52	207470.16	96.8	60 - 125	
72	Ge	# 2	98144.77	0.63	100121.55	98.0	60 - 125	
72	Ge	# 3	380868.16	1.18	406311.59	93.7	60 - 125	
115	In	# 3	2251240.50	1.35	2486219.30	90.5	60 - 125	
159	Tb	# 3	3148217.50	1.07	3505933.80	89.8	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

7 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07068.D\F6E07068.D#
Date Acquired:	May 11 2018 04:31 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-12
Misc Info:	
Vial Number:	2401
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	3774914.0	0.0000	395.8000	ppb	1.39	50.00	>LRS
9 Be	# 3	6	94.4	0.0000	0.0313	ppb	4.22	50.00	
11 B	# 3	6	3346004.0	0.0000	1967.0000	ppb	0.98	100.00	>LRS
23 Na	# 1	45	2983762900.0	0.0000	1075000.0000	ppb	1.03	50000.00	>LRS
24 Mg	# 3	45	849330300.0	0.0000	76960.0000	ppb	1.28	50000.00	>LRS
27 Al	# 3	45	143909.6	0.0000	10.4400	ppb	2.23	50000.00	
28 Si	# 1	45	11537760.0	0.0000	15370.0000	ppb	0.14	5000.00	>LRS
31 P	# 3	45	151020.6	0.0000	108.3000	ppb	1.88	500.00	
39 K	# 2	45	6752760.0	0.0000	11010.0000	ppb	0.70	50000.00	
40 Ca	# 1	45	1111110000.0	0.0000	201300.0000	ppb	0.07	50000.00	>LRS
47 Ti	# 3	45	4847.6	0.0000	3.4220	ppb	2.09	500.00	
51 V	# 2	45	5223.6	0.0000	0.5295	ppb	5.00	500.00	
52 Cr	# 2	45	2354.6	0.0000	0.0772	ppb	6.19	500.00	
55 Mn	# 3	45	16259260.0	0.0000	794.9000	ppb	0.61	3000.00	
56 Fe	# 1	45	65147288.0	0.0000	8869.0000	ppb	0.60	50000.00	
59 Co	# 3	45	11710.5	0.0000	0.7312	ppb	0.23	500.00	
60 Ni	# 2	45	1488.8	0.0000	0.9267	ppb	1.54	500.00	
63 Cu	# 2	45	3724.9	0.0000	0.6946	ppb	2.68	500.00	
66 Zn	# 3	72	11601.6	0.0000	5.1580	ppb	1.68	500.00	
75 As	# 2	72	3954.1	0.0000	6.5590	ppb	1.57	500.00	
78 Se	# 1	72	69.3	0.0000	0.2885	ppb	9.21	500.00	
88 Sr	# 3	72	64674512.0	0.0000	3274.0000	ppb	0.49	500.00	>LRS
90 Zr	# 3	72	6403.8	0.0000	0.4423	ppb	1.83	50.00	
95 Mo	# 3	115	108111.5	0.0000	28.9500	ppb	0.57	500.00	
107 Ag	# 3	115	117.8	0.0000	0.0097	ppb	9.10	50.00	
111 Cd	# 3	115	80.2	0.0000	0.0256	ppb	92.35	500.00	
118 Sn	# 3	115	430.0	0.0000	0.0351	ppb	13.36	500.00	
121 Sb	# 3	115	2269.1	0.0000	0.2824	ppb	8.28	500.00	
137 Ba	# 3	115	229951.9	0.0000	83.1700	ppb	0.49	1000.00	
182 W	# 3	159	1027.9	0.0000	0.1293	ppb	5.07	50.00	
205 Tl	# 3	159	83.3	0.0000	0.0027	ppb	35.73	500.00	
208 Pb	# 3	159	2778.0	0.0000	0.1166	ppb	0.91	500.00	
235 U	# 3	159	2940.4	0.0000	0.1055	ppb	1.36	30.00	
238 U	# 3	159	400252.1	0.0000	15.3300	ppb	0.83	500.00	

ISTD Elements

Element	Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	1006094.40	0.58	1156944.40	87.0	60 - 125	
45 Sc	# 1	983393.13	1.31	963897.88	102.0	60 - 125	
45 Sc	# 2	222027.58	1.75	213583.44	104.0	60 - 125	
45 Sc	# 3	2122719.80	0.90	2034836.60	104.3	60 - 125	
72 Ge	# 1	195428.81	1.21	207470.16	94.2	60 - 125	
72 Ge	# 2	97736.34	1.76	100121.55	97.6	60 - 125	
72 Ge	# 3	381416.94	0.38	406311.59	93.9	60 - 125	
115 In	# 3	2245613.80	0.67	2486219.30	90.3	60 - 125	
159 Tb	# 3	3144667.80	0.15	3505933.80	89.7	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

7 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07069.D\F6E07069.D#
Date Acquired:	May 11 2018 04:35 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-12J
Misc Info:	
Vial Number:	2402
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	5.00
Autodil Factor:	Undiluted
Final Dil Factor:	5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	924317.2	0.0000	80.6000	ppb	1.33	50.00	>LRS
9 Be	# 3	6	24.4	0.0000	0.0023	ppb	112.49	50.00	
11 B	# 3	6	787328.7	0.0000	408.4000	ppb	0.16	100.00	>LRS
23 Na	# 1	45	644818300.0	0.0000	217800.0000	ppb	1.87	50000.00	>LRS
24 Mg	# 3	45	186647300.0	0.0000	16700.0000	ppb	0.46	50000.00	
27 Al	# 3	45	43908.2	0.0000	3.0420	ppb	8.25	50000.00	
28 Si	# 1	45	2517719.0	0.0000	3146.0000	ppb	0.81	5000.00	
31 P	# 3	45	92389.3	0.0000	13.0000	ppb	12.48	500.00	
39 K	# 2	45	1599031.0	0.0000	2298.0000	ppb	1.13	50000.00	
40 Ca	# 1	45	240404300.0	0.0000	40860.0000	ppb	1.06	50000.00	
47 Ti	# 3	45	1174.5	0.0000	0.6442	ppb	5.14	500.00	
51 V	# 2	45	3787.2	0.0000	0.1541	ppb	12.48	500.00	
52 Cr	# 2	45	1461.2	0.0000	-0.1208	ppb	1.18	500.00	
55 Mn	# 3	45	3636587.0	0.0000	175.3000	ppb	0.62	3000.00	
56 Fe	# 1	45	14567750.0	0.0000	1860.0000	ppb	1.27	50000.00	
59 Co	# 3	45	2625.9	0.0000	0.1447	ppb	6.39	500.00	
60 Ni	# 2	45	382.2	0.0000	0.1900	ppb	5.09	500.00	
63 Cu	# 2	45	1827.9	0.0000	0.1999	ppb	6.43	500.00	
66 Zn	# 3	72	4194.1	0.0000	1.4570	ppb	0.66	500.00	
75 As	# 2	72	974.7	0.0000	1.2990	ppb	4.26	500.00	
78 Se	# 1	72	26.9	0.0000	0.0776	ppb	31.30	500.00	
88 Sr	# 3	72	14211040.0	0.0000	662.7000	ppb	0.65	500.00	>LRS
90 Zr	# 3	72	1489.0	0.0000	0.0832	ppb	8.83	50.00	
95 Mo	# 3	115	23745.7	0.0000	5.7690	ppb	0.70	500.00	
107 Ag	# 3	115	65.6	0.0000	0.0030	ppb	69.80	50.00	
111 Cd	# 3	115	12.2	0.0000	-0.0131	ppb	77.08	500.00	
118 Sn	# 3	115	278.9	0.0000	0.0033	ppb	103.92	500.00	
121 Sb	# 3	115	726.7	0.0000	0.0724	ppb	1.24	500.00	
137 Ba	# 3	115	51257.6	0.0000	16.8400	ppb	1.46	1000.00	
182 W	# 3	159	358.9	0.0000	0.0341	ppb	7.42	50.00	
205 Tl	# 3	159	42.2	0.0000	-0.0001	ppb	558.47	500.00	
208 Pb	# 3	159	704.5	0.0000	0.0191	ppb	16.04	500.00	
235 U	# 3	159	671.2	0.0000	0.0215	ppb	12.86	30.00	
238 U	# 3	159	90944.7	0.0000	3.1820	ppb	0.90	500.00	

ISTD Elements

Element	Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	1138117.10	1.20	1156944.40	98.4	60 - 125	
45 Sc	# 1	1048057.40	0.51	963897.88	108.7	60 - 125	
45 Sc	# 2	228219.08	0.74	213583.44	106.9	60 - 125	
45 Sc	# 3	2149762.80	0.45	2034836.60	105.6	60 - 125	
72 Ge	# 1	216177.53	0.72	207470.16	104.2	60 - 125	
72 Ge	# 2	104382.01	1.20	100121.55	104.3	60 - 125	
72 Ge	# 3	414001.53	1.39	406311.59	101.9	60 - 125	
115 In	# 3	2471539.80	2.27	2486219.30	99.4	60 - 125	
159 Tb	# 3	3441419.80	1.01	3505933.80	98.2	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

4 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

CCV QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07075.D\F6E07075.D#
Date Acquired:	May 11 2018 05:02 pm
Operator:	LVicto
Sample Name:	CCV6
Misc Info:	
Vial Number:	1206
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	May 11 2018 12:02 pm
Sample Type:	CCV
Total Dil Factor:	1.00

QC Elements

Element		Conc.		RSD(%)	Expected	QC Range(%)		Flag
7	Li	25.35	ppb	2.80	25.00	90 -	110	
9	Be	24.38	ppb	2.33	25.00	90 -	110	
11	B	52.53	ppb	1.92	50.00	90 -	110	
23	Na	25190.00	ppb	0.93	25000.00	90 -	110	
24	Mg	24100.00	ppb	0.87	25000.00	90 -	110	
27	Al	24410.00	ppb	1.41	25000.00	90 -	110	
28	Si	2667.00	ppb	1.46	2500.00	90 -	110	
31	P	246.60	ppb	1.52	250.00	90 -	110	
39	K	25960.00	ppb	0.29	25000.00	90 -	110	
40	Ca	25100.00	ppb	0.79	25000.00	90 -	110	
47	Ti	251.90	ppb	1.23	250.00	90 -	110	
51	V	248.80	ppb	0.72	250.00	90 -	110	
52	Cr	240.00	ppb	0.67	250.00	90 -	110	
55	Mn	1464.00	ppb	0.78	1500.00	90 -	110	
56	Fe	24860.00	ppb	0.62	25000.00	90 -	110	
59	Co	254.20	ppb	1.32	250.00	90 -	110	
60	Ni	247.70	ppb	0.61	250.00	90 -	110	
63	Cu	239.40	ppb	1.18	250.00	90 -	110	
66	Zn	228.30	ppb	1.09	250.00	90 -	110	
75	As	245.30	ppb	0.70	250.00	90 -	110	
78	Se	241.50	ppb	1.12	250.00	90 -	110	
88	Sr	248.60	ppb	0.80	250.00	90 -	110	
90	Zr	0.56	ppb	1.46	25.00	90 -	110	Fail
95	Mo	253.70	ppb	1.26	250.00	90 -	110	
107	Ag	24.70	ppb	0.54	25.00	90 -	110	
111	Cd	243.90	ppb	1.02	250.00	90 -	110	
118	Sn	254.30	ppb	0.63	250.00	90 -	110	
121	Sb	48.86	ppb	0.74	50.00	90 -	110	
137	Ba	507.70	ppb	1.30	500.00	90 -	110	
182	W	0.04	ppb	8.48	25.00	90 -	110	Fail
205	Tl	236.50	ppb	1.26	250.00	90 -	110	
208	Pb	242.60	ppb	1.56	250.00	90 -	110	
235	U	1.71	ppb	1.10	1.80	90 -	110	
238	U	247.90	ppb	1.23	250.00	90 -	110	

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1188669.00	1.94	1156944.40	102.7	60 -	125	
45	Sc	1038120.30	1.12	963897.88	107.7	60 -	125	
45	Sc	228014.58	0.34	213583.44	106.8	60 -	125	
45	Sc	2172351.80	1.24	2034836.60	106.8	60 -	125	
72	Ge	219253.84	1.27	207470.16	105.7	60 -	125	
72	Ge	105987.61	0.79	100121.55	105.9	60 -	125	
72	Ge	424736.47	1.77	406311.59	104.5	60 -	125	
115	In	2483130.80	1.91	2486219.30	99.9	60 -	125	
159	Tb	3554050.00	0.77	3505933.80	101.4	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07076.D\F6E07076.D#
Date Acquired:	May 11 2018 05:07 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	CCB6
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element		Conc.		CPS	Conc RSD(%)	High Limit	Flag
7	Li	0.8845	ppb	84047.0	4.28	0.20	Fail
9	Be	0.0043	ppb	32.2	100.66	0.10	
11	B	4.4180	ppb	11153.3	10.50	5.00	
23	Na	276.0000	ppb	1102338.0	3.31	40.00	Fail
24	Mg	1.0560	ppb	16344.7	10.83	10.00	
27	Al	0.7441	ppb	12179.7	12.63	20.00	
28	Si	3.0760	ppb	4378.6	2.08	20.00	
31	P	-12.7100	ppb	75378.3	17.91	10.00	Fail
39	K	2.7100	ppb	186059.4	124.94	20.00	
40	Ca	1.8980	ppb	31234.2	4.88	25.00	
47	Ti	-0.0363	ppb	257.8	101.16	0.50	
51	V	0.1183	ppb	3542.9	11.92	0.50	
52	Cr	-0.1370	ppb	1347.4	3.55	0.20	
55	Mn	-0.0053	ppb	5183.3	86.53	0.20	
56	Fe	1.8980	ppb	19595.6	3.63	10.00	
59	Co	0.0091	ppb	486.7	26.93	0.20	
60	Ni	-0.0145	ppb	61.8	23.66	0.20	
63	Cu	0.4101	ppb	2609.6	5.62	0.40	Fail
66	Zn	-0.1857	ppb	470.0	4.45	2.00	
75	As	0.0440	ppb	195.3	71.26	0.20	
78	Se	0.0368	ppb	16.7	36.21	0.20	
88	Sr	0.0998	ppb	2619.2	7.68	0.20	
90	Zr	-0.0082	ppb	101.1	10.22	2.00	
95	Mo	0.1381	ppb	638.9	8.39	0.40	
107	Ag	0.0012	ppb	51.1	77.76	0.20	
111	Cd	-0.0051	ppb	28.7	183.32	0.20	
118	Sn	0.1421	ppb	1164.5	3.68	0.20	
121	Sb	0.0247	ppb	334.5	8.00	0.40	
137	Ba	0.0344	ppb	141.1	18.80	0.20	
182	W	-0.0020	ppb	70.0	66.67	1.00	
205	Tl	0.0349	ppb	652.3	5.85	0.20	
208	Pb	0.0134	ppb	571.1	12.87	0.10	
235	U	0.0004	ppb	30.0	121.99	1.00	
238	U	0.0569	ppb	1663.5	4.08	0.10	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1221298.1	2.11	1156944.40	105.6	60 - 125	
45	Sc	985624.1	1.73	963897.88	102.3	60 - 125	
45	Sc	222409.8	1.43	213583.44	104.1	60 - 125	
45	Sc	2131150.3	1.57	2034836.60	104.7	60 - 125	
72	Ge	209085.2	0.91	207470.16	100.8	60 - 125	
72	Ge	102295.1	1.94	100121.55	102.2	60 - 125	
72	Ge	417216.1	1.20	406311.59	102.7	60 - 125	
115	In	2551546.8	1.47	2486219.30	102.6	60 - 125	
159	Tb	3467563.5	1.87	3505933.80	98.9	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

4 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

EMAX LABORATORIES INC.

DIGESTION LOG
for
ICP-MS METALS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # 1707186-6B-7286

All samples pH<2

Book #: EIM-069
Batch: 1MED15W
Matrix: water
Digestor ID: E

SOP #	Rev. #
☐ EMAX-200.8	5
☑ EMAX-6020	9
☐ EMAX-	

Start	Temp	End	Temp
	91.5 °C		92.3 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SMCA-007-05-03	0.15
LCS-2	↓ -05-04	0.15
MS	same spike soln and vol. as	LCS 1 and 2
Blank Soil (Bead)	N/A	N/A
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SMA-006-09-20	0.5+1.0
HCl	↓ -08-09	0.25+0.25
H_2O_2	N/A	N/A
HNO_3(1:1)	N/A	N/A
pH Strip (0-14)	HC661354	N/A
Digestate Location	Metals	
Extract Location	N/A	

☑ Reagent Water ID: SMSA-013-13-05

☑ Thermometer ID: 150590610/E29

☑ Pipette ID: 23936031?

☐ Pipette ID:

☐ Pipette ID:

☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask

☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask

Prepared By: MC

Standard Added By: MC Witnessed By: LV

Extract Rcvd By: LV Checked By: MC

EMAX LABORATORIES, INC.

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
18IME015W01	IME015WB	50	ml	5/10/18 9:21	50	50	50	1	
18IME015W02	IME015WL	50	ml	5/10/18 9:21	50	50	50	1	
18IME015W03	IME015WC	50	ml	5/10/18 9:21	50	50	50	1	
18IME015W04	E042-02	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W05	E042-04	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W06	E042-06	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W07	E042-08	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W08	E042-09	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W09	E042-10	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W10	E042-11	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W11	E042-12	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W12	E042-12M	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W13	E042-12S	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W14	TXE006WB	10	ml	5/10/18 9:21	50	50	50	5	TCLP
18IME015W15	E034-01	10	ml	5/10/18 9:21	50	50	50	5	TCLP
18IME015W16	E034-01M	10	ml	5/10/18 9:21	50	50	50	5	TCLP
18IME015W17	E034-01S	10	ml	5/10/18 9:21	50	50	50	5	TCLP

MC
5/10/18

Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 5/10/18 10:06 Prepared By: MCande

☑ Digestion Ended @ 5/10/18 12:25 Checked By: LV

Comments: Date 5/10/18

SOP EMAX-6020 Rev. 9

LABORATORY REPORT FOR

ARCADIS

PG&E TOPOCK-GMP

WET CHEMICAL ANALYSES

SDG#: 18E042

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 18E042

METHOD E120.1
SPECIFIC CONDUCTANCE

A total of eight (8) water samples were received on 05/04/18 to be analyzed for Specific Conductance in accordance with Method E120.1 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as specified by the method. All calibration requirements were within acceptance criteria.

Matrix QC Sample
Sample duplicate was analyzed and RPD was within expected value.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

E120.1
SPECIFIC CONDUCTANCE

Client : ARCADIS
Project : PG&E TOPOCK-GMP
Batch No. : 18E042

Matrix : WATER
InstrumentID : D4

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (umhos/cm)	PREP FACTOR	MOIST (%)	RL (umhos/cm)	MDL (umhos/cm)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MW-54-085-Q218	E042-02	7390	1	NA	2	2	05/11/1810:51	NA	18ECE00201	18ECE002	ECE002W	05/04/1808:01	05/04/18
MW-54-085-Q218DUP	E042-02D	7400	1	NA	2	2	05/11/1810:52	NA	18ECE00202	18ECE002	ECE002W	05/04/1808:01	05/04/18
MW-54-140-Q218	E042-04	11300	1	NA	2	2	05/11/1810:55	NA	18ECE00203	18ECE002	ECE002W	05/04/1808:06	05/04/18
MW-54-195-Q218	E042-06	17200	1	NA	2	2	05/11/1810:56	NA	18ECE00204	18ECE002	ECE002W	05/04/1808:54	05/04/18
MW-55-045-Q218	E042-08	1250	1	NA	2	2	05/11/1810:57	NA	18ECE00205	18ECE002	ECE002W	05/03/1813:08	05/04/18
MW-55-120-Q218	E042-09	6710	1	NA	2	2	05/11/1810:58	NA	18ECE00206	18ECE002	ECE002W	05/03/1813:53	05/04/18
MW-56D-Q218	E042-10	19000	1	NA	2	2	05/11/1810:59	NA	18ECE00207	18ECE002	ECE002W	05/02/1814:46	05/04/18
MW-56M-Q218	E042-11	12600	1	NA	2	2	05/11/1811:00	NA	18ECE00208	18ECE002	ECE002W	05/02/1814:46	05/04/18
MW-56S-Q218	E042-12	5110	1	NA	2	2	05/11/1811:01	NA	18ECE00209	18ECE002	ECE002W	05/02/1815:08	05/04/18

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E120.1

MATRIX	: WATER	
DILUTION FACTOR:	1	1
SAMPLE ID	: MW-54-085-Q218	MW-54-085-Q218DUP
LAB SAMPLE ID	: E042-02	E042-02D
LAB FILE ID	: 18ECE00201	18ECE00202
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/11/1810:51	05/11/1810:52
PREP BATCH	: ECE002W	ECE002W
CALIBRATION REF:	18ECE002	18ECE002

ACCESSION:

PARAMETER	PARENT RESULT (umhos/cm)	DUP RESULT (umhos/cm)	RPD (%)	MAX RPD (%)
Specific Conductivity	7390	7400	0	5

EMAX LABORATORIES, INC.

FileID: 18ECE002W

SPECIFIC CONDUCTANCE ANALYSIS LOG

PrepBatchID	LabSampleID	Aliquot (ml)	Temp (°C)	AnalysisDateTime	Found Conc.	Conductivity	Unit	Notes
18ECE00201	E042-02	20	24.9	5/11/18 10:51	7390	7390	uS/cm	
18ECE00202	E042-02D	20	24.9	5/11/18 10:52	7400	7400	uS/cm	
18ECE00203	E042-04	20	24.9	5/11/18 10:55	11290	11300	uS/cm	
18ECE00204	E042-06	20	24.8	5/11/18 10:56	17160	17200	uS/cm	
18ECE00205	E042-08	20	24.8	5/11/18 10:57	1253	1250	uS/cm	
18ECE00206	E042-09	20	24.8	5/11/18 10:58	6710	6710	uS/cm	
18ECE00207	E042-10	20	24.8	5/11/18 10:59	18970	19000	uS/cm	
18ECE00208	E042-11	20	24.8	5/11/18 11:00	12610	12600	uS/cm	
18ECE00209	E042-12	20	24.7	5/11/18 11:01	5110	5110	uS/cm	
18ECE00210	E405-01	20	24.7	5/11/18 11:02	2240	2240	uS/cm	
18ECE00211	E405-03	20	24.7	5/11/18 11:03	405	405	uS/cm	

YA 05/11/18

Calibration of Conductivity Meter — InstrumentID: D4

CAL Standard ID		Conc.(µS/cm)	Reading	DateTime
ICAL1	SW1-01-928	9.36	9.36	5/11/18 10:29
ICAL2	SW1-01-958	999	999	5/11/18 10:30
ICAL3	SW1-01-924	9968	9970	5/11/18 10:31
ICAL4	SW1-01-931	99672	99700	5/11/18 10:32
CCS	SW1-01-961	1412	1411	5/11/18 10:33
ICV	SW1-01-793	431	446	5/11/18 10:35

Calibration Temp (°C): 25.0 Thermometer ID: 111862324

☑ Verified Cell Constant (K) @ 1 S/cm

LOQ = 9.36 uS/cm

CV Acceptance Limits: 407 457

QC Check	Result(µS/cm)	Expected Val	QC Check
CCS	1411	1412	%Rec=99.9
ICV	446	407-457	PASS
E042-02D	7400	7390	RPD=0

☑ Sample(s) is/are filtered upon receipt

☐ Sample(s) is/are analyzed upon receipt

pH strip Lot#: HC727135 Snapseal Lot#: 30917011

0.45 micron filter Lot#: 71610103

Comment:

Conductivity reading is automatically compensated to 25°C.

☑ EMAX-2510B Rev. 5 Analyzed By: YAquin

☑ EMAX-120.1 Rev. 7 Checked By: YA

☐ EMAX-9050 Rev. 3 Date: 05/11/18

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 18E042

METHOD E218.6
HEXAVALENT CHROMIUM

A total of twelve (12) water samples were received on 05/04/18 to be analyzed for Hexavalent Chromium in accordance with Method E218.6 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. Hexavalent Chromium was not detected in HCE013WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. HCE013WL/HCE013WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, ten (10) sets of MS and two (2) sets of MS/MSD were analyzed.

- Percent recovery for Hexavalent Chromium was within MS QC limits in -01M, -03M, -04IM, -05M, -06IM, -07M, -09M, -10IM, -11IM and -12M.
- Hexavalent Chromium was within MS QC limits in E042-02M/S.
- Hexavalent Chromium was within MS QC limits in E042-08M/S.

Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

Samples E042-04, -06, -10 and -11 were reported from 5X dilution due to matrix interference.

SAMPLE RESULTS

METHOD E218.6
HEXAVALENT CHROMIUM

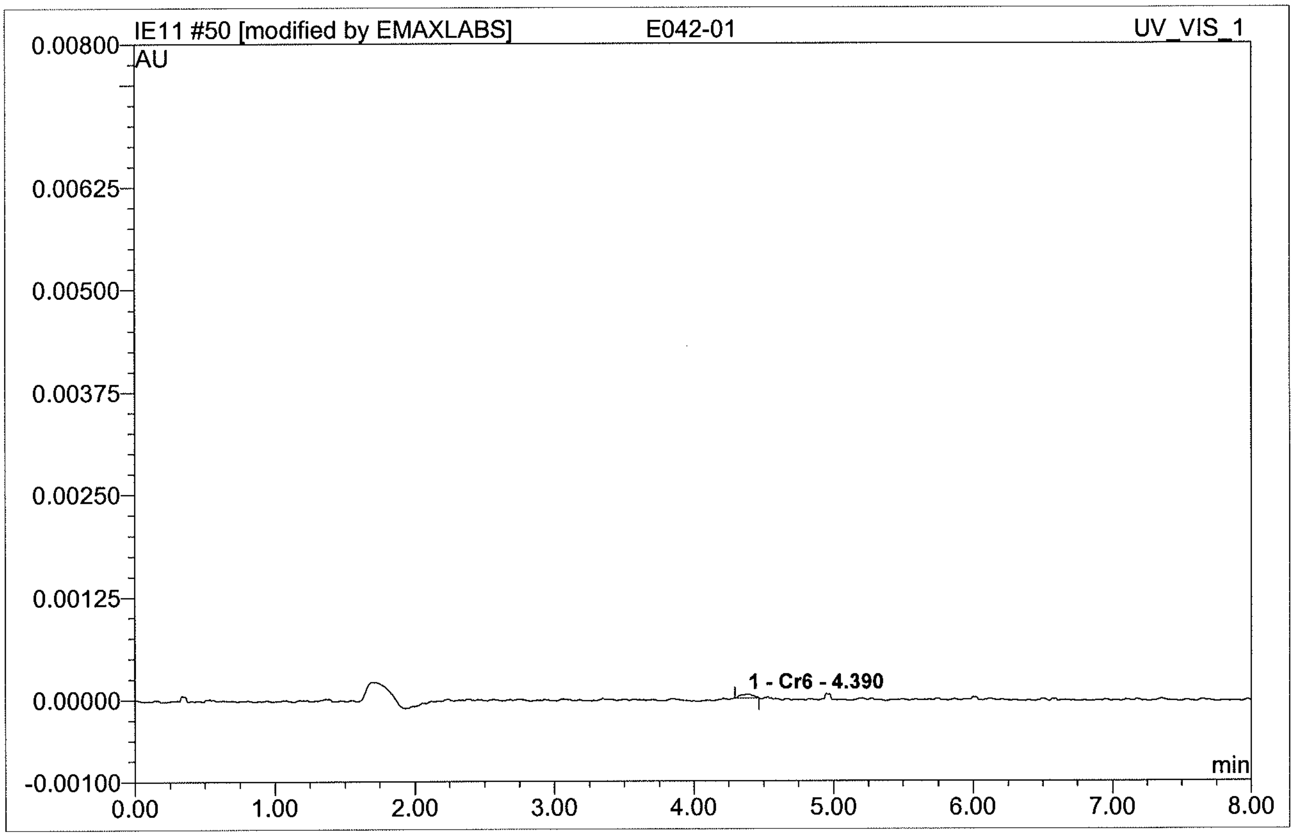
Client : ARCADIS
Project : PG&E TOPOCK-GMP
Batch No. : 18E042

Matrix : WATER
InstrumentID : 59

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N. FACTOR	MOIST (%)	LOQ (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HCE013WB	ND	1	NA	0.2	0.1	05/10/1811:42	NA	IE11015	IE11013	HCE013W	NA	NA
LCS1W	HCE013WL	1.99	1	NA	0.2	0.1	05/10/1811:52	NA	IE11016	IE11013	HCE013W	NA	NA
LCD1W	HCE013WC	1.98	1	NA	0.2	0.1	05/10/1812:03	NA	IE11017	IE11013	HCE013W	NA	NA
MW-54-085-Q218	E042-02	ND	1	NA	0.2	0.1	05/10/1812:13	NA	IE11018	IE11013	HCE013W	05/04/1808:01	05/04/18
MW-54-085-Q218MS	E042-02M	0.994	1	NA	0.2	0.1	05/10/1812:24	NA	IE11019	IE11013	HCE013W	05/04/1808:01	05/04/18
MW-54-085-Q218MSD	E042-02S	0.990	1	NA	0.2	0.1	05/10/1812:34	NA	IE11020	IE11013	HCE013W	05/04/1808:01	05/04/18
MW-55-045-Q218	E042-08	ND	1	NA	0.2	0.1	05/10/1813:50	NA	IE11027	IE11025	HCE013W	05/03/1813:08	05/04/18
MW-55-045-Q218MS	E042-08M	1.06	1	NA	0.2	0.1	05/10/1814:00	NA	IE11028	IE11025	HCE013W	05/03/1813:08	05/04/18
MW-55-045-Q218MSD	E042-08S	1.08	1	NA	0.2	0.1	05/10/1814:11	NA	IE11029	IE11025	HCE013W	05/03/1813:08	05/04/18
MW-55-120-Q218	E042-09	8.00	1	NA	0.2	0.1	05/10/1814:22	NA	IE11030	IE11025	HCE013W	05/03/1813:53	05/04/18
MW-55-120-Q218MS	E042-09M	9.99	1	NA	0.2	0.1	05/10/1814:38	NA	IE11031	IE11025	HCE013W	05/03/1813:53	05/04/18
MW-56S-Q218	E042-12	ND	1	NA	0.2	0.1	05/10/1815:30	NA	IE11036	IE11025	HCE013W	05/02/1815:08	05/04/18
MW-56S-Q218MS	E042-12M	1.04	1	NA	0.2	0.1	05/10/1816:01	NA	IE11039	IE11037	HCE013W	05/02/1815:08	05/04/18
MW-54-140-Q218	E042-04I	ND	5	NA	1	0.5	05/10/1816:12	NA	IE11040	IE11037	HCE013W	05/04/1808:06	05/04/18
MW-54-140-Q218MS	E042-04IM	4.95	5	NA	1	0.5	05/10/1816:22	NA	IE11041	IE11037	HCE013W	05/04/1808:06	05/04/18
MW-54-195-Q218	E042-06I	ND	5	NA	1	0.5	05/10/1816:32	NA	IE11042	IE11037	HCE013W	05/04/1808:54	05/04/18
MW-54-195-Q218MS	E042-06IM	5.09	5	NA	1	0.5	05/10/1816:43	NA	IE11043	IE11037	HCE013W	05/04/1808:54	05/04/18
MW-56D-Q218	E042-10I	ND	5	NA	1	0.5	05/10/1816:53	NA	IE11044	IE11037	HCE013W	05/02/1814:46	05/04/18
MW-56D-Q218MS	E042-10IM	5.03	5	NA	1	0.5	05/10/1817:04	NA	IE11045	IE11037	HCE013W	05/02/1814:46	05/04/18
MW-56M-Q218	E042-11I	ND	5	NA	1	0.5	05/10/1817:14	NA	IE11046	IE11037	HCE013W	05/02/1814:46	05/04/18
MW-56M-Q218MS	E042-11IM	4.99	5	NA	1	0.5	05/10/1817:24	NA	IE11047	IE11037	HCE013W	05/02/1814:46	05/04/18
MW-54-085-EB-Q218	E042-01	ND	1	NA	0.2	0.1	05/10/1817:56	NA	IE11050	IE11048	HCE013W	05/04/1807:37	05/04/18
MW-54-085-EB-Q218MS	E042-01M	1.09	1	NA	0.2	0.1	05/10/1818:06	NA	IE11051	IE11048	HCE013W	05/04/1807:37	05/04/18
MW-54-140-EB-Q218	E042-03	ND	1	NA	0.2	0.1	05/10/1818:16	NA	IE11052	IE11048	HCE013W	05/04/1807:00	05/04/18
MW-54-140-EB-Q218MS	E042-03M	1.07	1	NA	0.2	0.1	05/10/1818:27	NA	IE11053	IE11048	HCE013W	05/04/1807:00	05/04/18
MW-54-195-EB-Q218	E042-05	ND	1	NA	0.2	0.1	05/10/1818:37	NA	IE11054	IE11048	HCE013W	05/04/1808:20	05/04/18
MW-54-195-EB-Q218MS	E042-05M	1.09	1	NA	0.2	0.1	05/10/1818:48	NA	IE11055	IE11048	HCE013W	05/04/1808:20	05/04/18
MW-55-045-EB-Q218	E042-07	ND	1	NA	0.2	0.1	05/10/1818:58	NA	IE11056	IE11048	HCE013W	05/03/1812:25	05/04/18
MW-55-045-EB-Q218MS	E042-07M	1.08	1	NA	0.2	0.1	05/10/1819:08	NA	IE11057	IE11048	HCE013W	05/03/1812:25	05/04/18

IE11 050 E042-01

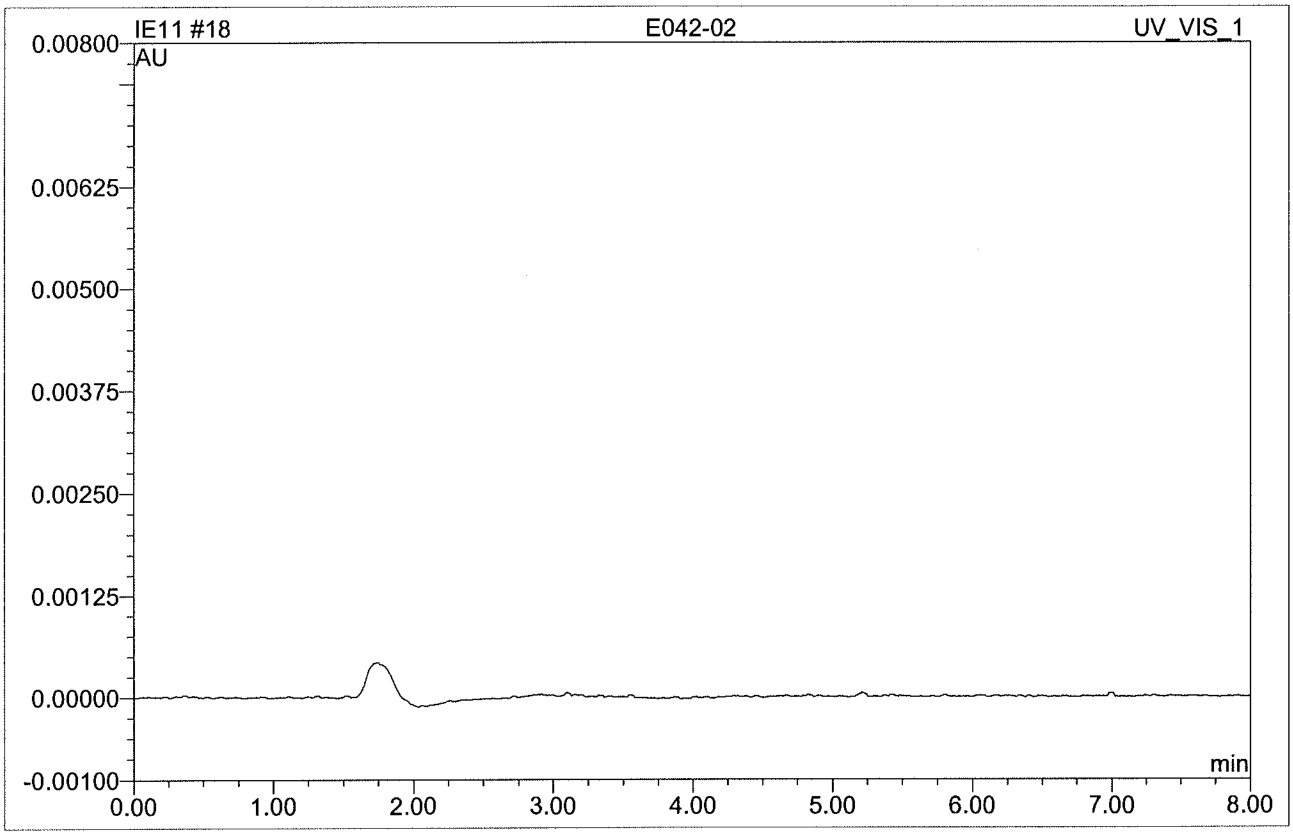
Sample Name:	**E042-01**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 17:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.39	Cr6	0.0000530	0.0000055	100.00	0.097	BMB*
Total:			0.000	0.000	100.00	0.097	

IE11 018 E042-02

Sample Name:	**E042-02**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 12:13**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



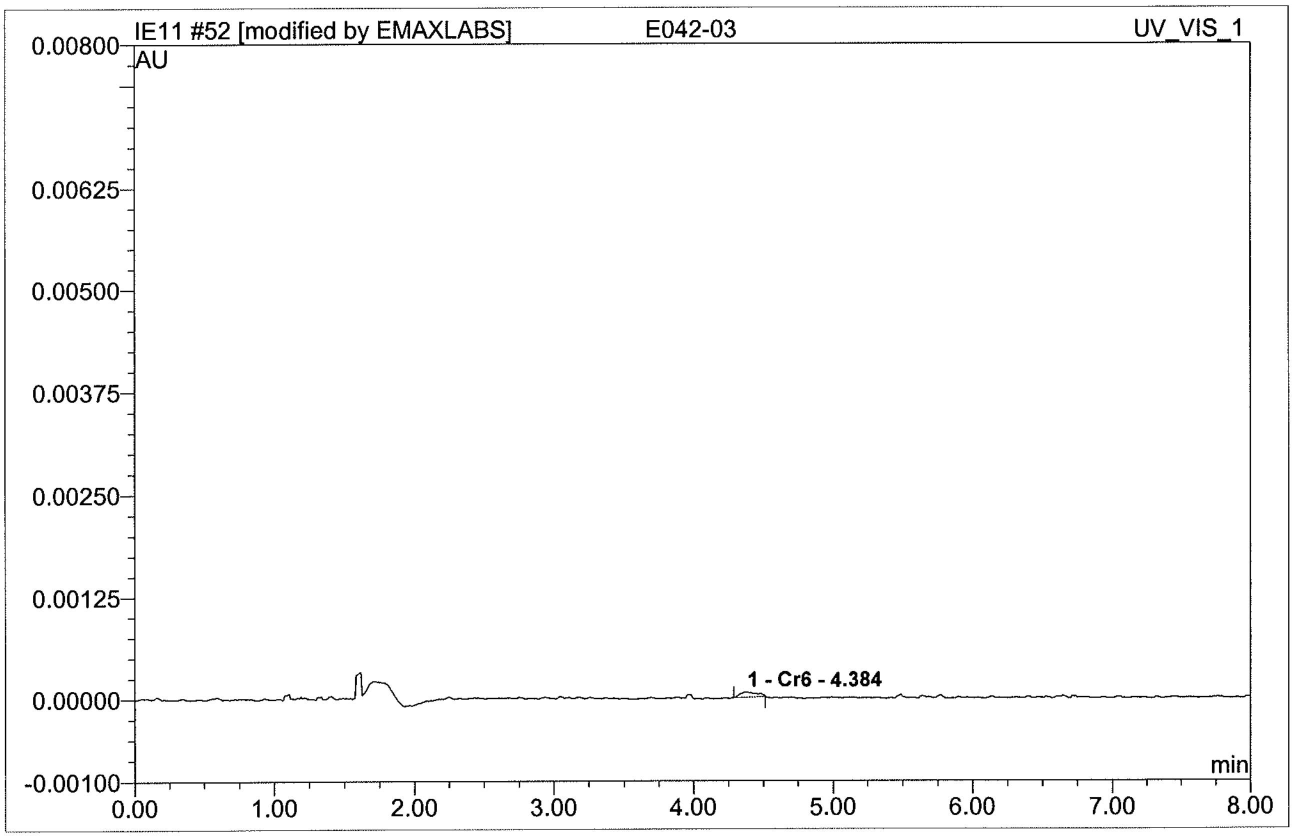
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 052 E042-03

Sample Name:	**E042-03**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 18:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

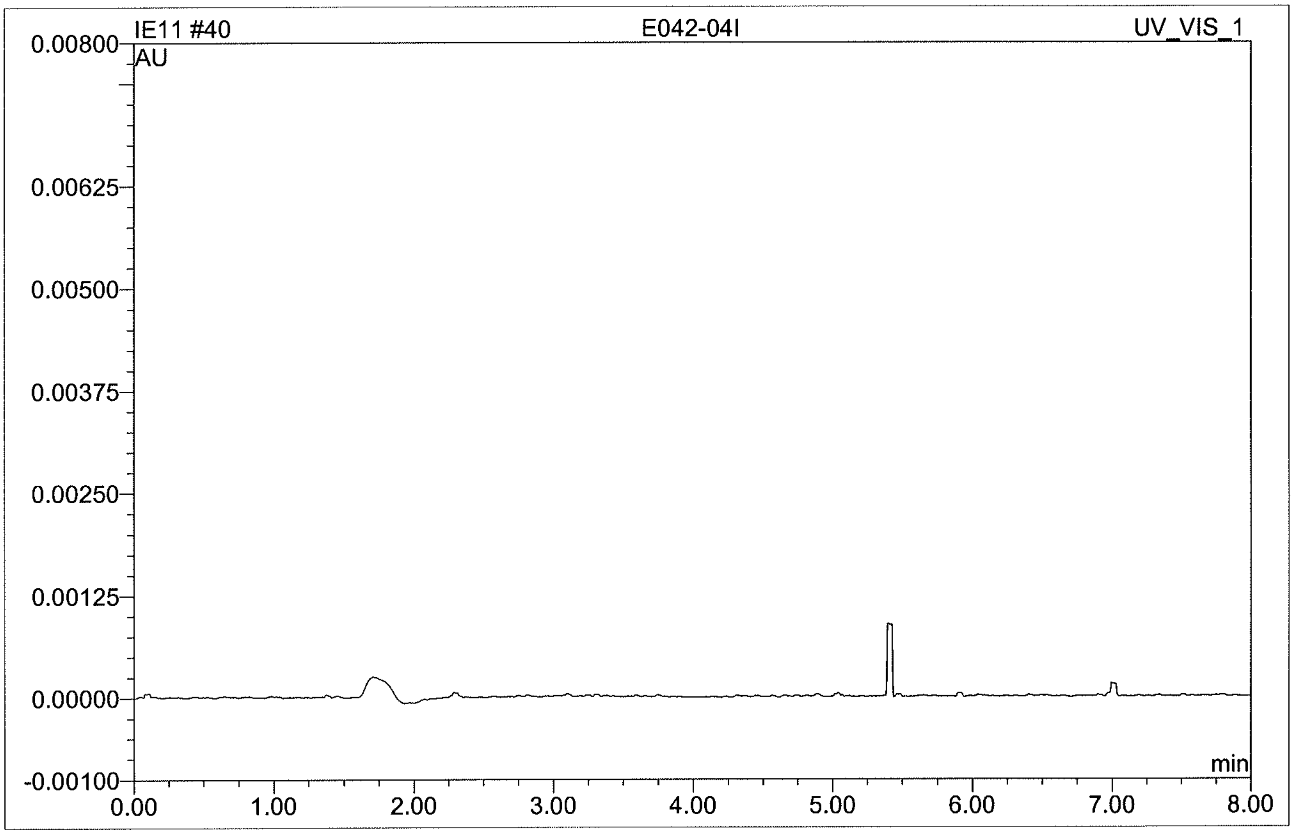


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.38	Cr6	0.0000650	0.0000088	100.00	0.128	BMB*
Total:			0.000	0.000	100.00	0.128	

IE11 040 E042-04I

D=5

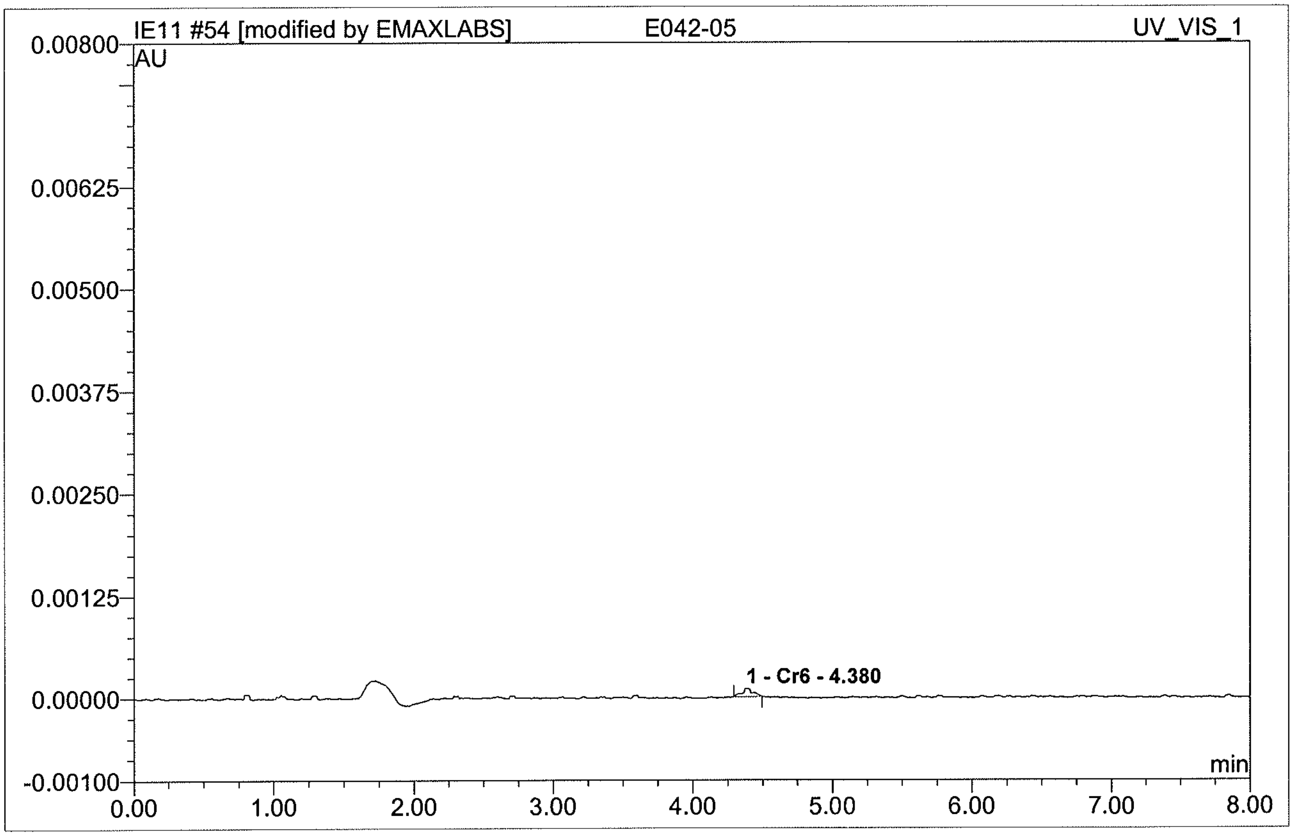
Sample Name:	**E042-04I**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**5**
Recording Time:	**5/10/2018 16:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 054 E042-05

Sample Name:	**E042-05**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 18:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.38	Cr6	0.0000960	0.0000089	100.00	0.128	BMB*
Total:			0.000	0.000	100.00	0.128	

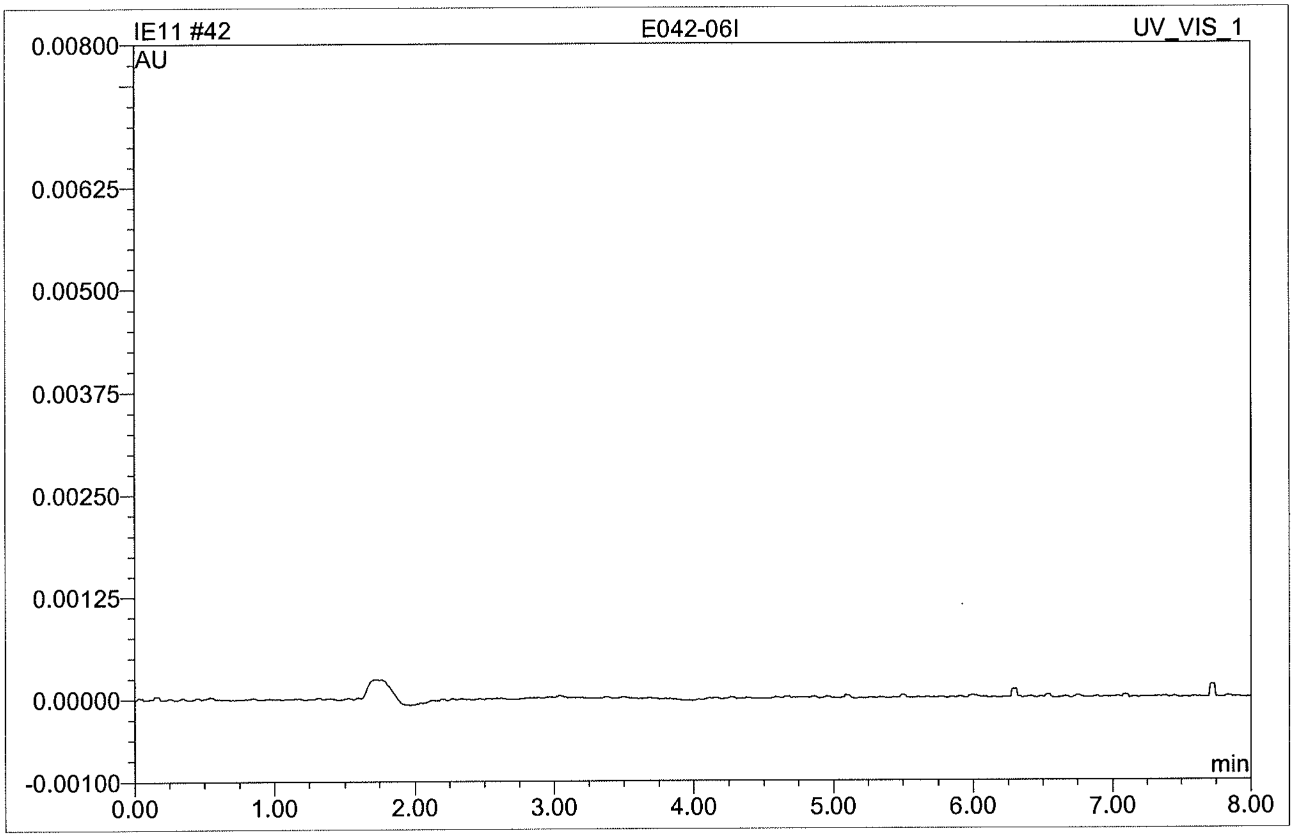
Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 042 E042-06I

D=5

Sample Name:	**E042-06I**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**5**
Recording Time:	**5/10/2018 16:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



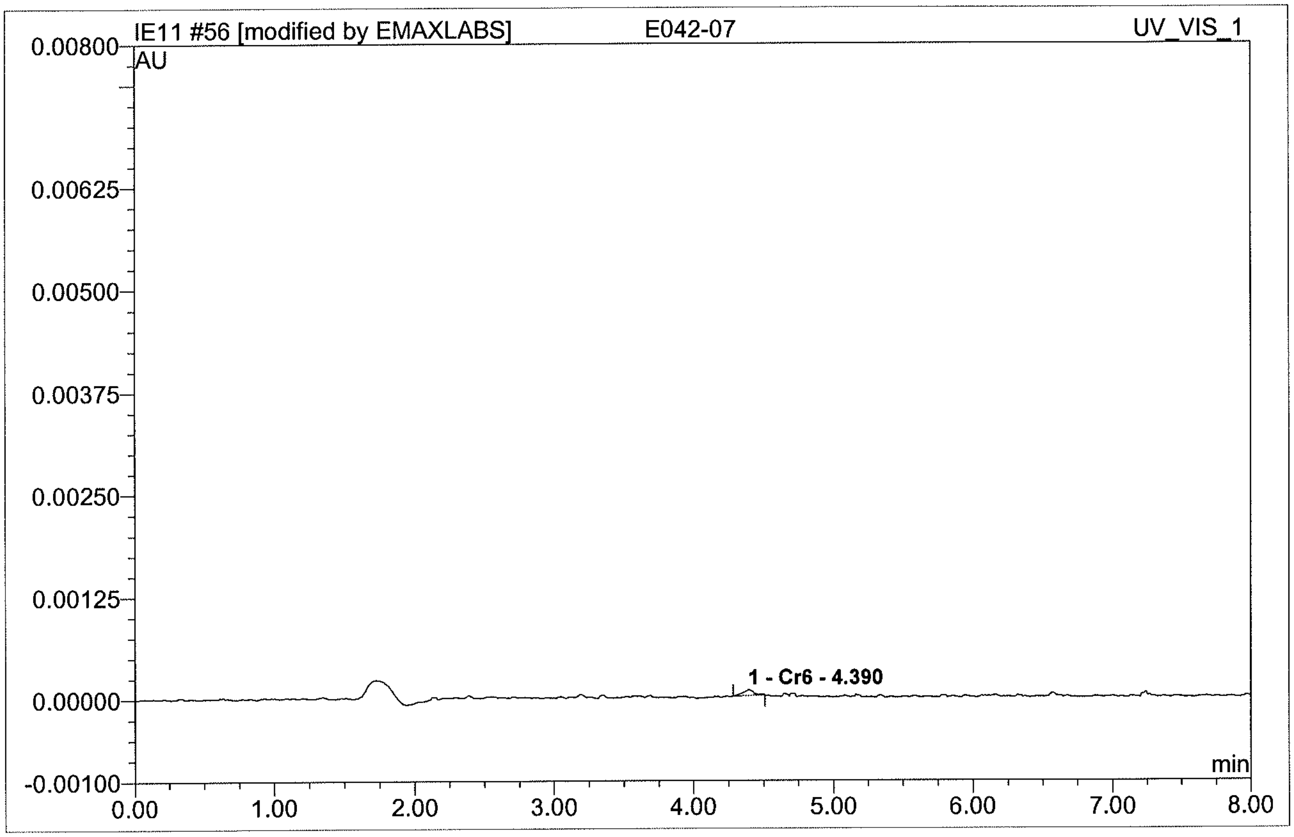
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 056 E042-07

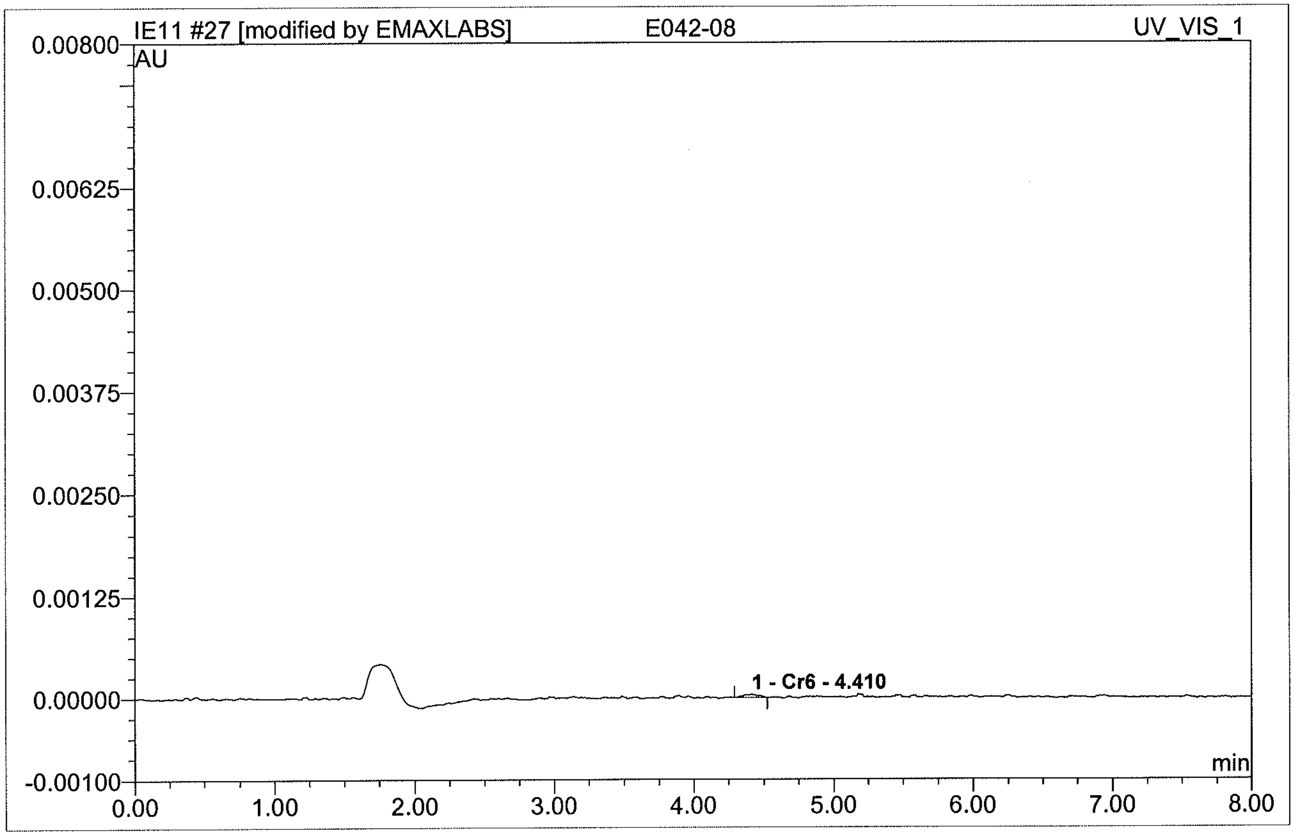
Sample Name:	**E042-07**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 18:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.39	Cr6	0.0000730	0.0000064	100.00	0.106	BMB*
Total:			0.000	0.000	100.00	0.106	

IE11 027 E042-08

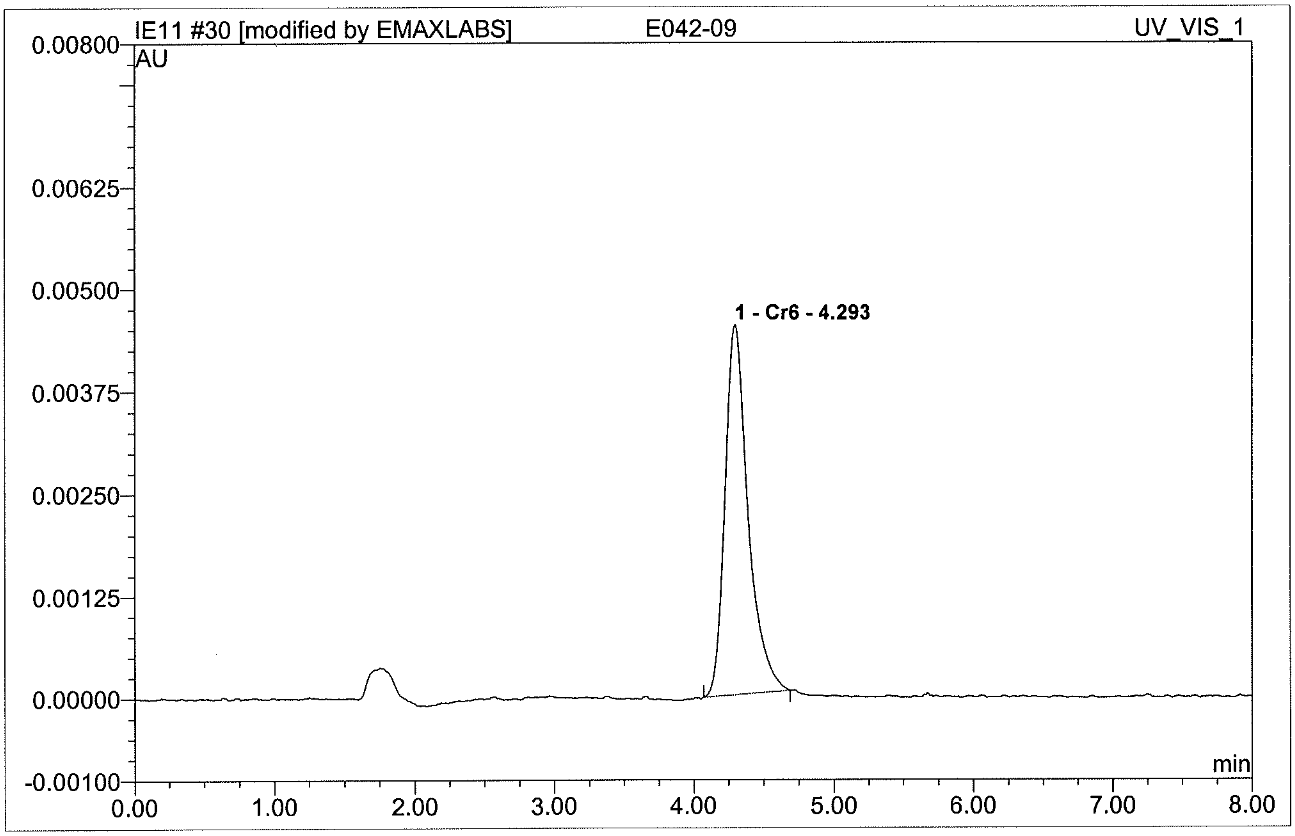
Sample Name:	**E042-08**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 13:50**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.41	Cr6	0.0000390	0.0000048	100.00	0.091	BMB*
Total:			0.000	0.000	100.00	0.091	

IE11 030 E042-09

Sample Name:	**E042-09**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 14:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

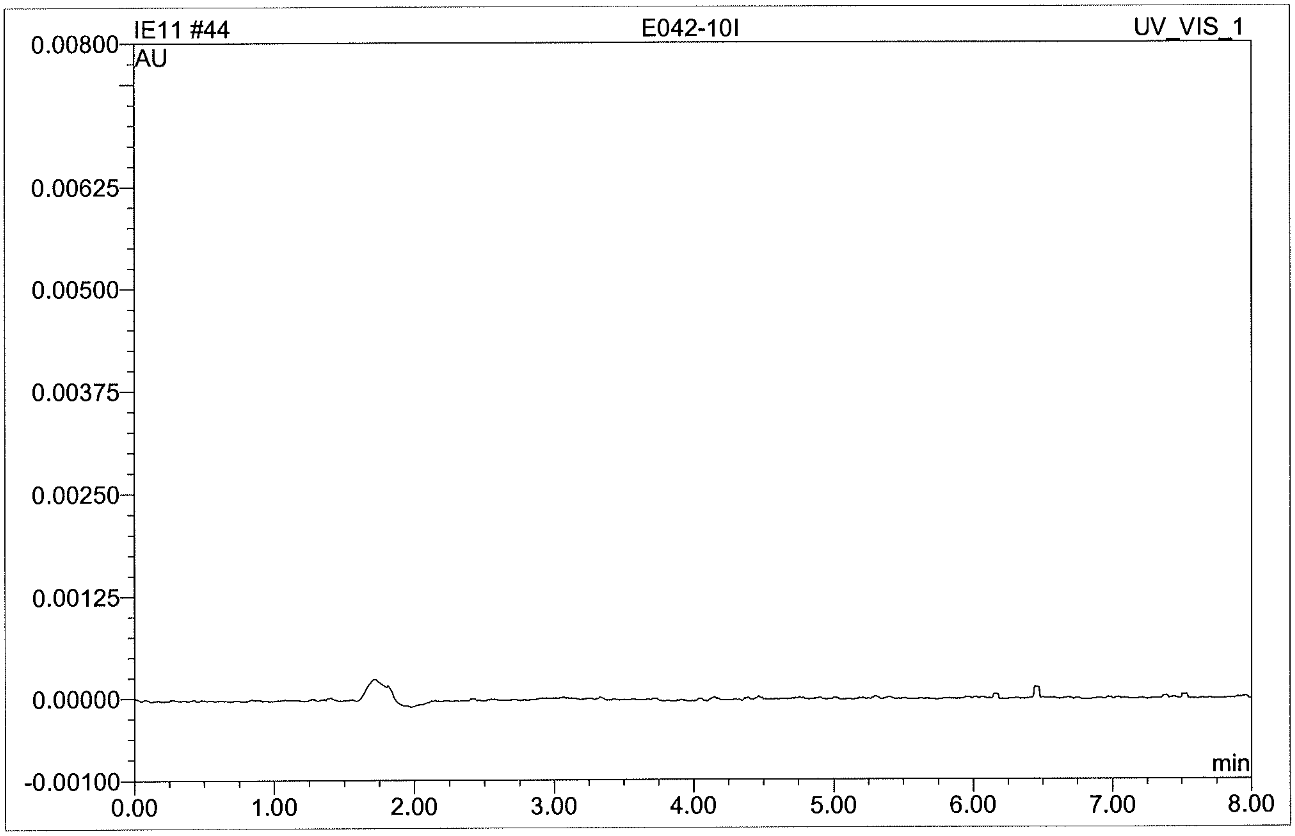


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.29	Cr6	0.0045210	0.0008659	100.00	7.997	BMB*
Total:			0.005	0.001	100.00	7.997	

IE11 044 E042-10I

D=5

Sample Name:	**E042-10I**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**5**
Recording Time:	**5/10/2018 16:53**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

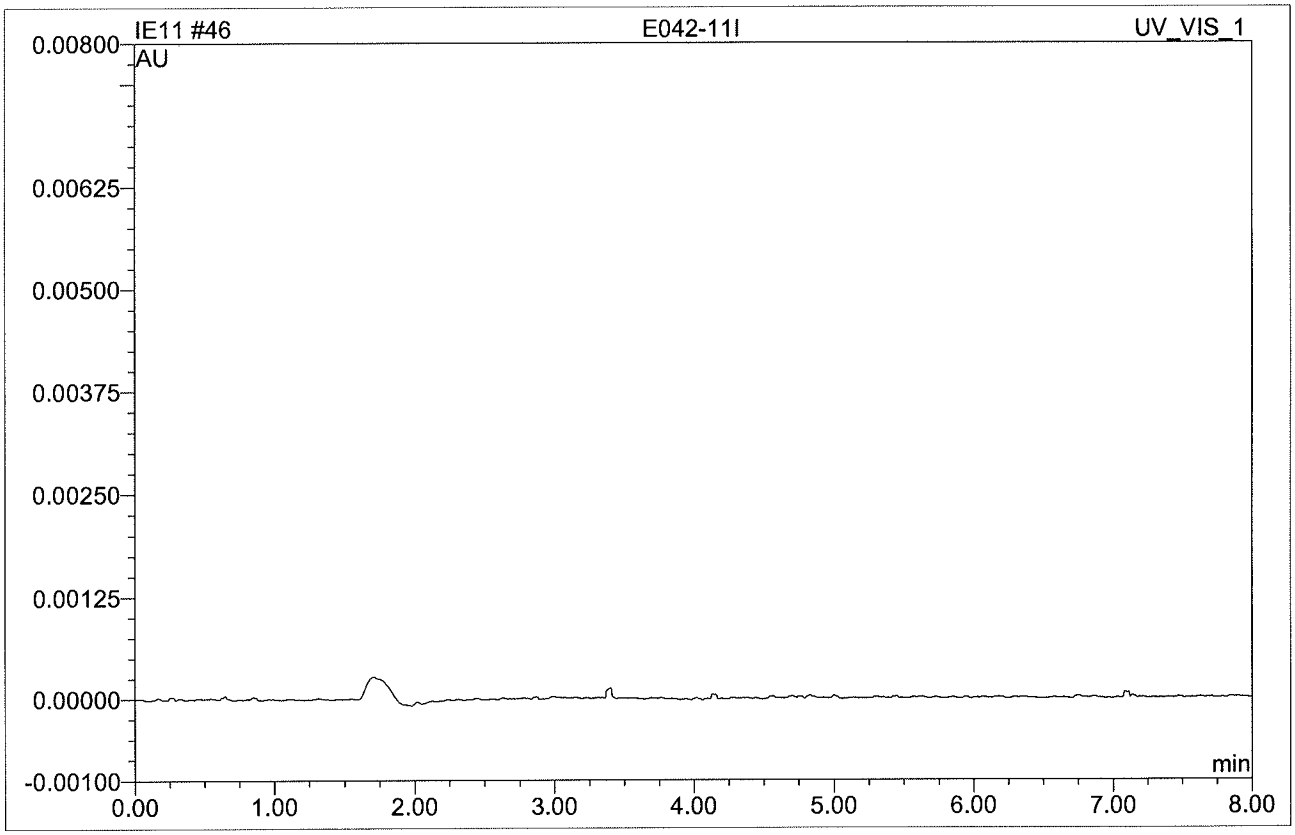


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 046 E042-11I

D=5

Sample Name:	**E042-11I**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**5**
Recording Time:	**5/10/2018 17:14**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



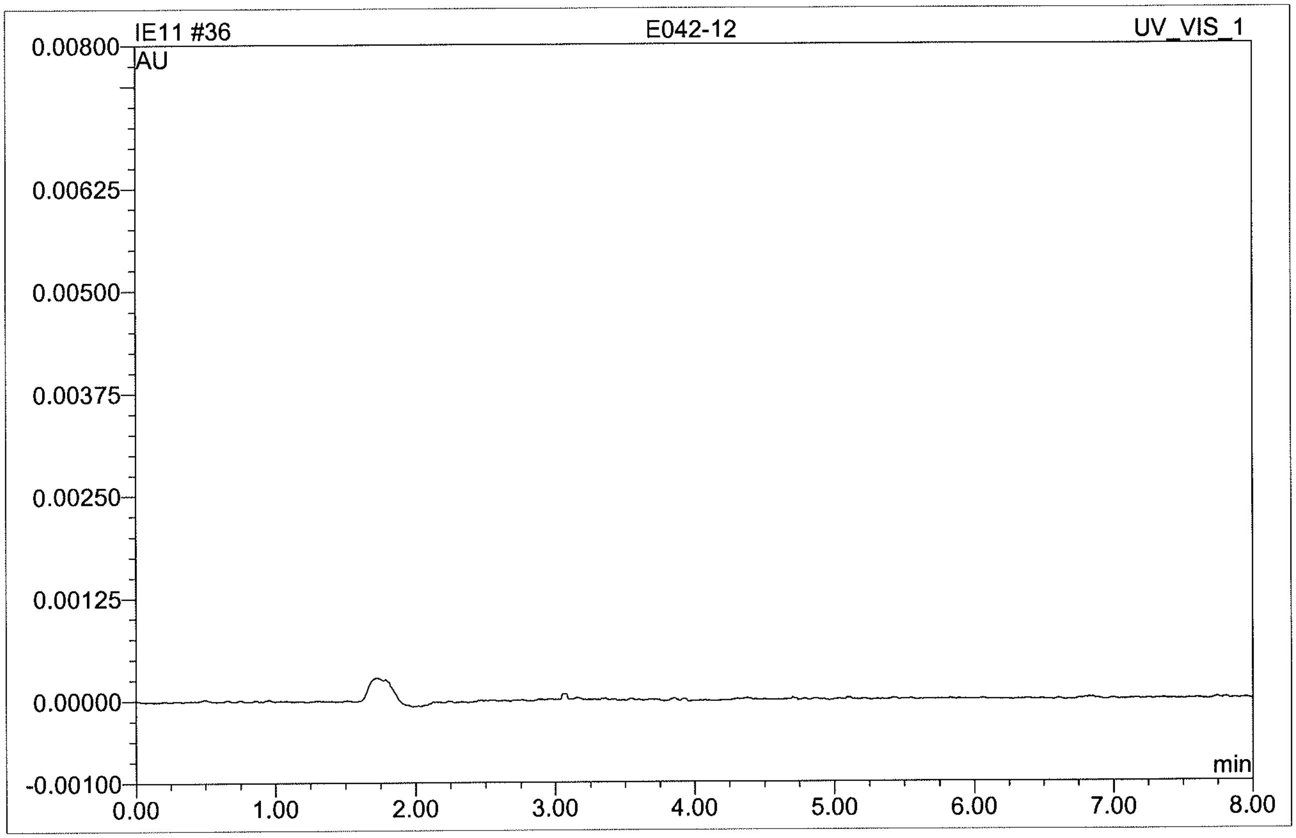
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 036 E042-12

Sample Name:	**E042-12**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 15:30**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: HCE013WB	HCE013WL	HCE013WC
LAB FILE ID	: IE11015	IE11016	IE11017
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 05/10/1811:42	05/10/1811:52	05/10/1812:03
PREP BATCH	: HCE013W	HCE013W	HCE013W
CALIBRATION REF:	IE11013	IE11013	IE11013

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpkAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
HEXAVALENT CHROMIUM	ND	2.00	1.99	99.5	2.00	1.98	99.0	1	90-110	20

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR:	1	1
SAMPLE ID	: MW-54-085-EB-Q218	MW-54-085-EB-Q218MS
LAB SAMPLE ID	: E042-01	E042-01M
LAB FILE ID	: IE11050	IE11051
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1817:56	05/10/1818:06
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF:	IE11048	IE11048

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.00	1.09	109	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MW-54-085-Q218	MW-54-085-Q218MS	MW-54-085-Q218MSD
LAB SAMPLE ID	: E042-02	E042-02M	E042-02S
LAB FILE ID	: IE11018	IE11019	IE11020
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 05/10/1812:13	05/10/1812:24	05/10/1812:34
PREP BATCH	: HCE013W	HCE013W	HCE013W
CALIBRATION REF:	IE11013	IE11013	IE11013

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpkAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
HEXAVALENT CHROMIUM	ND	1.00	0.994	99.4	1.00	0.990	99.0	0	90-110	20

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-54-140-EB-Q218	MW-54-140-EB-Q218MS
LAB SAMPLE ID	: E042-03	E042-03M
LAB FILE ID	: IE11052	IE11053
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1818:16	05/10/1818:27
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF	: IE11048	IE11048

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.00	1.07	107	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-54-140-Q218	MW-54-140-Q218MS
LAB SAMPLE ID	: E042-04I	E042-04IM
LAB FILE ID	: IE11040	IE11041
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1816:12	05/10/1816:22
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF	: IE11037	IE11037

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5.00	4.95	99.0	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-54-195-EB-Q218	MW-54-195-EB-Q218MS
LAB SAMPLE ID	: E042-05	E042-05M
LAB FILE ID	: IE11054	IE11055
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1818:37	05/10/1818:48
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF	: IE11048	IE11048

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.00	1.09	109	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR:	5	5
SAMPLE ID	: MW-54-195-Q218	MW-54-195-Q218MS
LAB SAMPLE ID	: E042-06I	E042-06IM
LAB FILE ID	: IE11042	IE11043
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1816:32	05/10/1816:43
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF:	IE11037	IE11037

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5.00	5.09	102	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR:	1	1
SAMPLE ID	: MW-55-045-EB-Q218	MW-55-045-EB-Q218MS
LAB SAMPLE ID	: E042-07	E042-07M
LAB FILE ID	: IE11056	IE11057
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1818:58	05/10/1819:08
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF:	IE11048	IE11048

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.00	1.08	108	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MW-55-045-Q218	MW-55-045-Q218MS	MW-55-045-Q218MSD
LAB SAMPLE ID	: E042-08	E042-08M	E042-08S
LAB FILE ID	: IE11027	IE11028	IE11029
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 05/10/1813:50	05/10/1814:00	05/10/1814:11
PREP BATCH	: HCE013W	HCE013W	HCE013W
CALIBRATION REF:	IE11025	IE11025	IE11025

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpkAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
HEXAVALENT CHROMIUM	ND	1.00	1.06	106	1.00	1.08	108	2	90-110	20

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR:	1	1
SAMPLE ID	: MW-55-120-Q218	MW-55-120-Q218MS
LAB SAMPLE ID	: E042-09	E042-09M
LAB FILE ID	: IE11030	IE11031
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1814:22	05/10/1814:38
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF:	IE11025	IE11025

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	8.00	2.00	9.99	99.5	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-56D-Q218	MW-56D-Q218MS
LAB SAMPLE ID	: E042-10I	E042-10IM
LAB FILE ID	: IE11044	IE11045
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1816:53	05/10/1817:04
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF	: IE11037	IE11037

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5.00	5.03	101	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR:	5	5
SAMPLE ID	: MW-56M-Q218	MW-56M-Q218MS
LAB SAMPLE ID	: E042-11I	E042-11IM
LAB FILE ID	: IE11046	IE11047
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1817:14	05/10/1817:24
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF:	IE11037	IE11037

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5.00	4.99	99.8	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-56S-Q218	MW-56S-Q218MS
LAB SAMPLE ID	: E042-12	E042-12M
LAB FILE ID	: IE11036	IE11039
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1815:30	05/10/1816:01
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF	: IE11025	IE11037

ACCESSION:

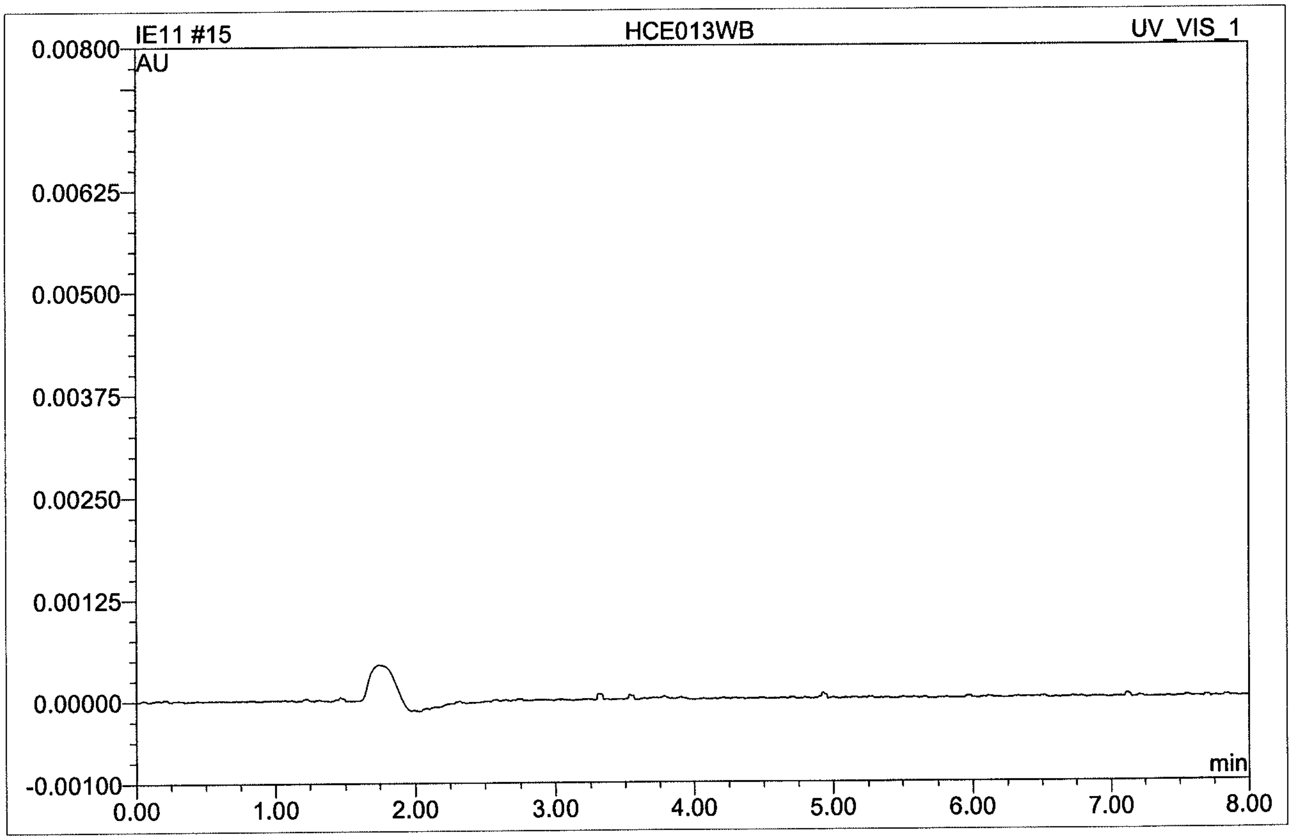
PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.00	1.04	104	90-110

PS: Parent Sample MS: Matrix Spike

QC DATA

IE11 015 HCE013WB

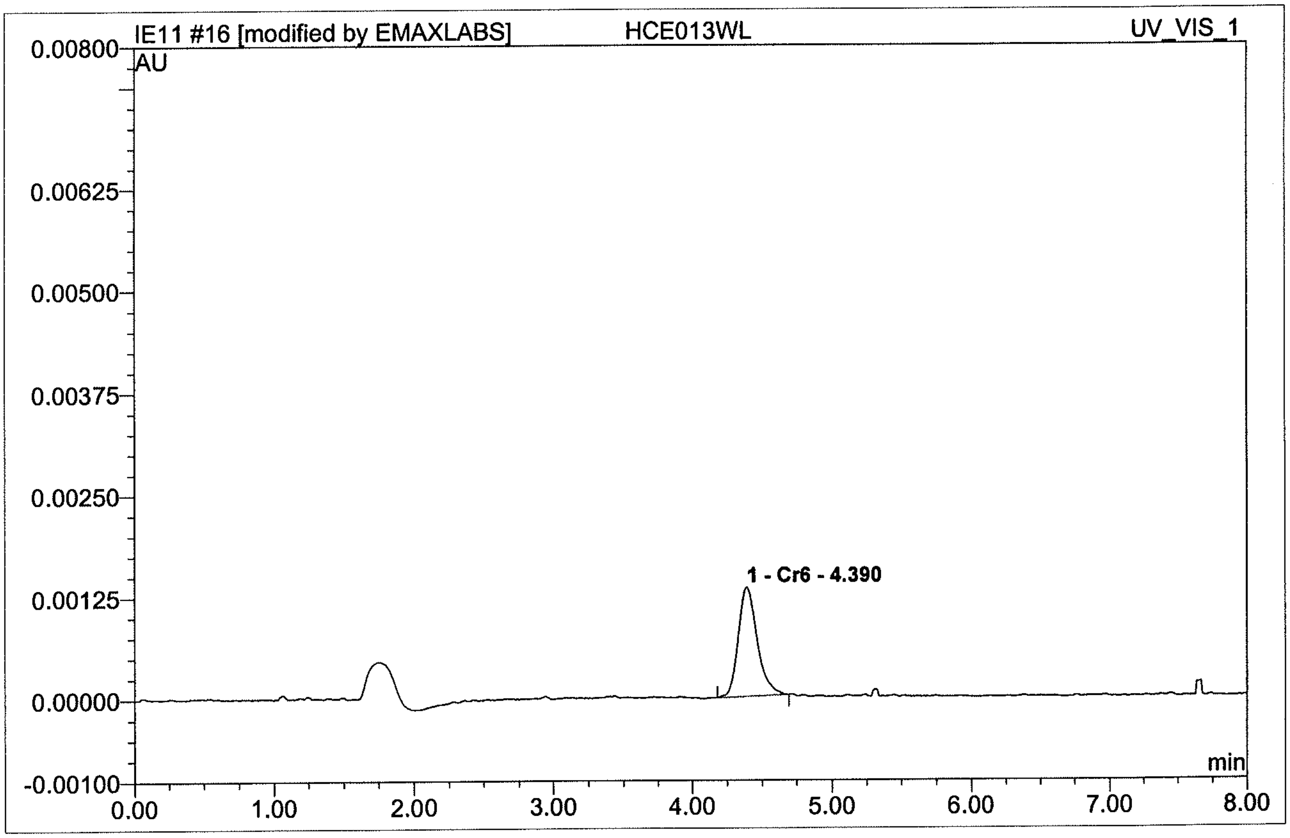
Sample Name:	**HCE013WB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 11:42** ✓	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 016 HCE013WL

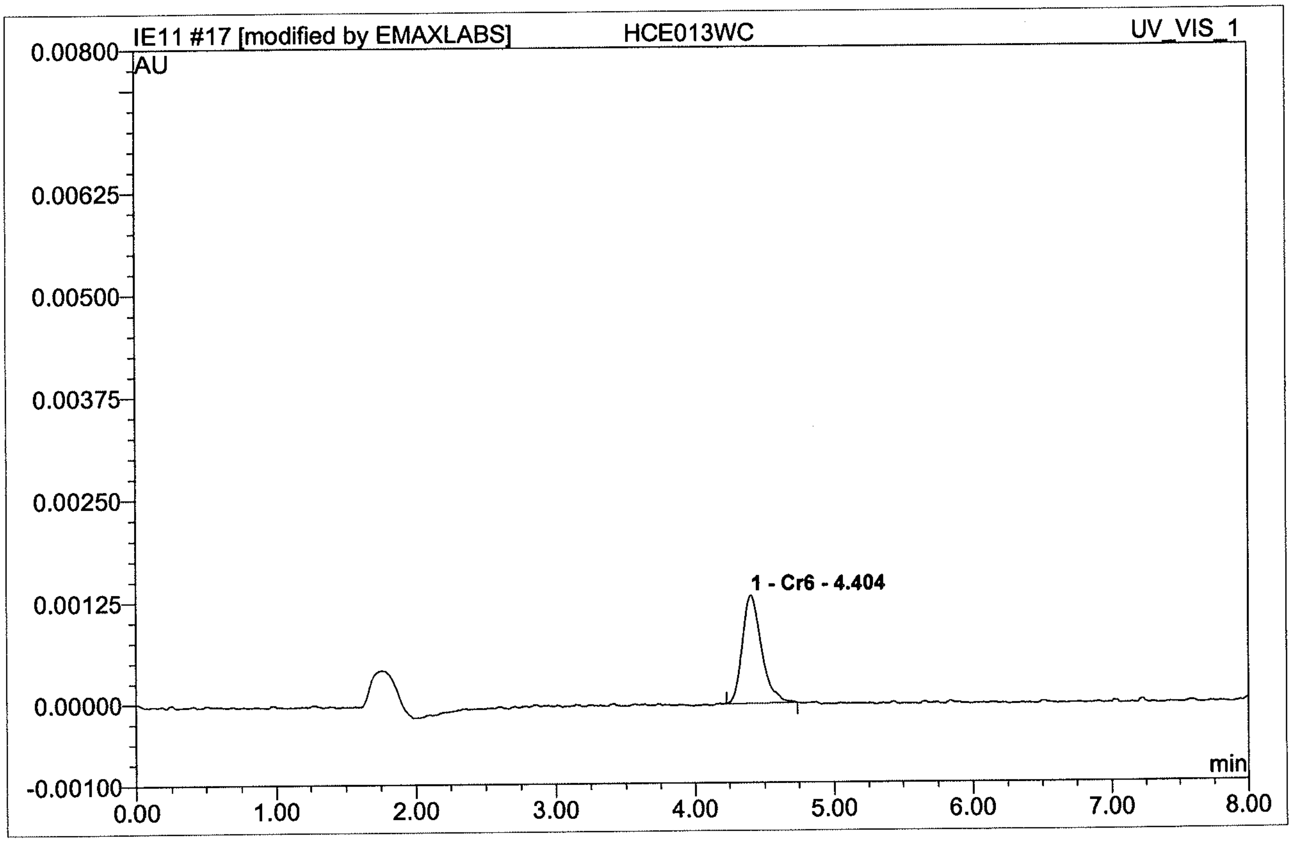
Sample Name:	**HCE013WL**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 11:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.39	Cr6	0.0013380	0.0002113	100.00	1.986	BMB*
Total:			0.001	0.000	100.00	1.986	

IE11 017 HCE013WC

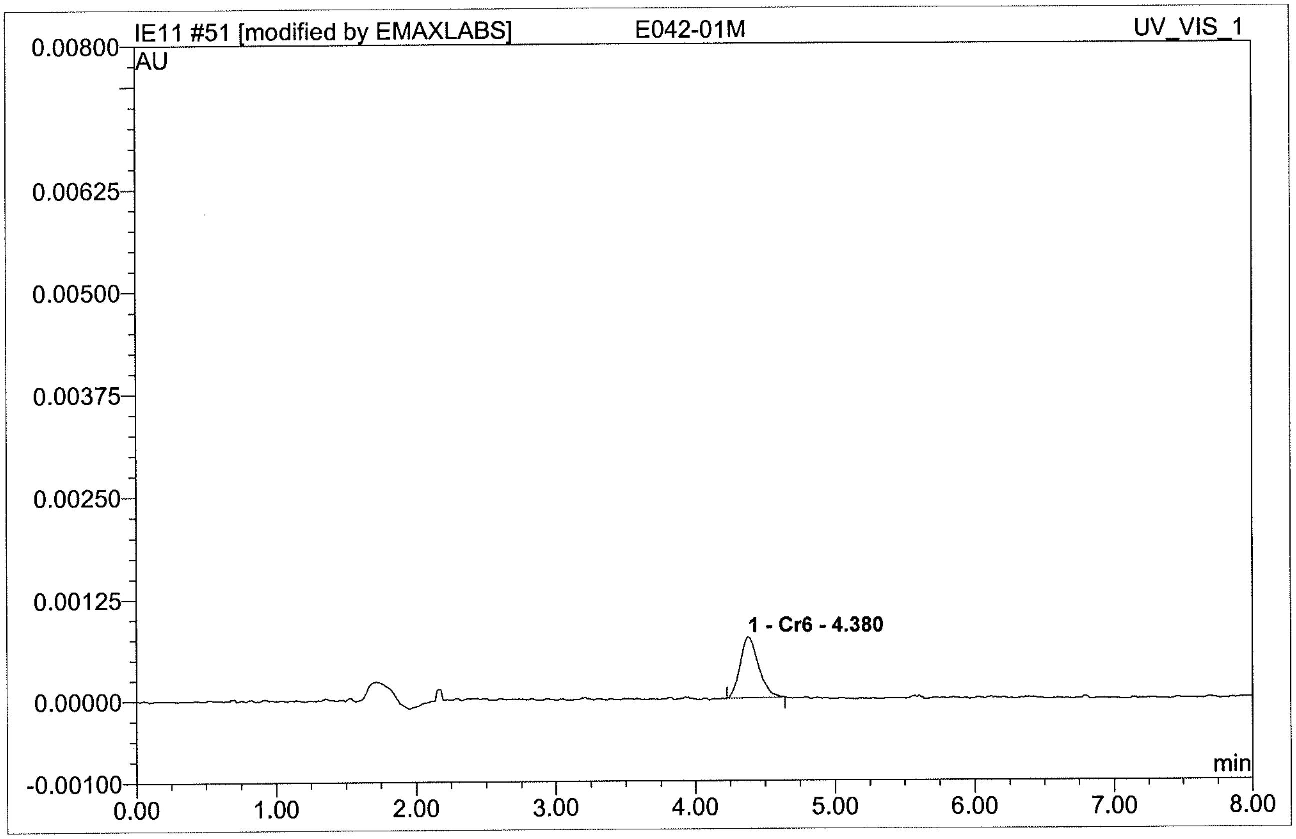
Sample Name:	**HCE013WC**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 12:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.40	Cr6	0.0013240	0.0002106	100.00	1.980	BMB*
Total:			0.001	0.000	100.00	1.980	

IE11 051 E042-01M

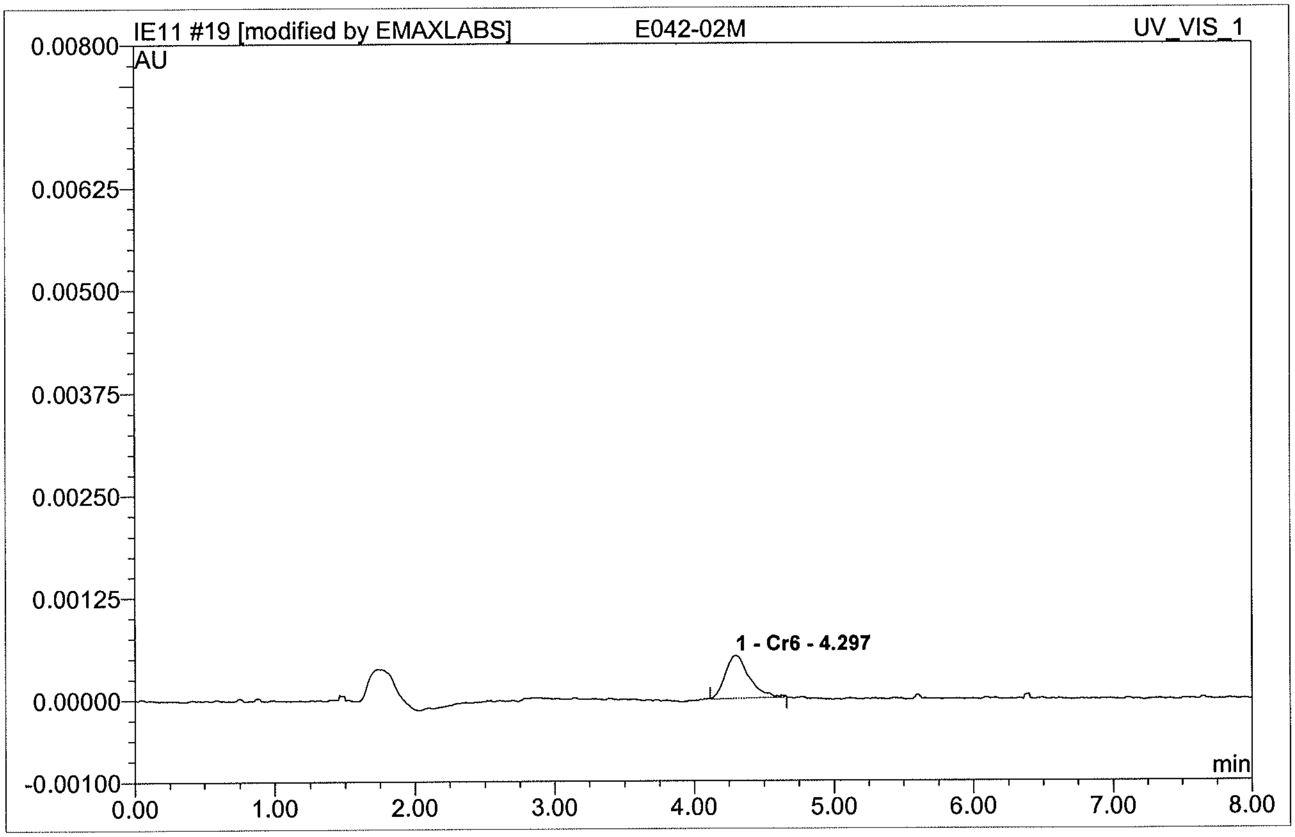
Sample Name:	**E042-01M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 18:06**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.38	Cr6	0.0007460	0.0001134	100.00	1.088	BMB*
Total:			0.001	0.000	100.00	1.088	

IE11 019 E042-02M

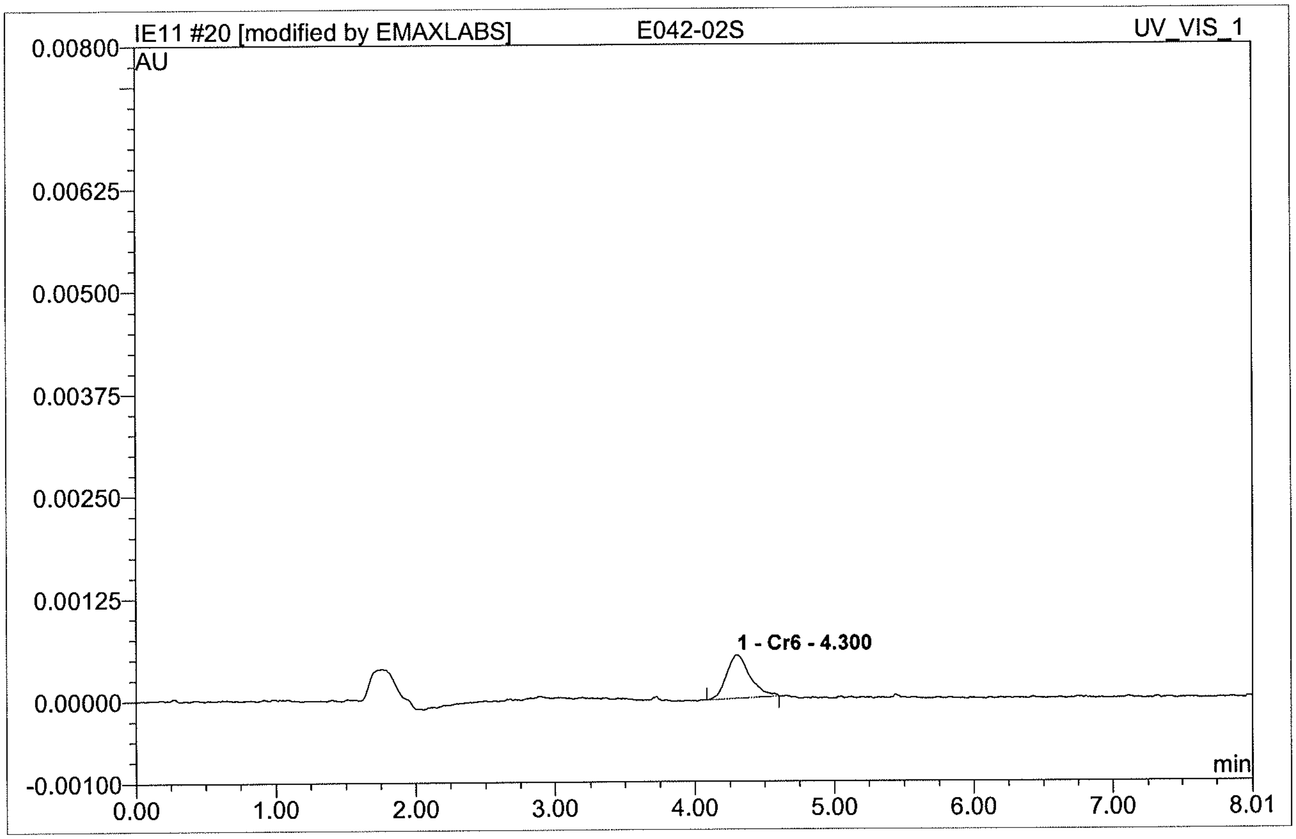
Sample Name:	**E042-02M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 12:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.30	Cr6	0.0005240	0.0001032	100.00	0.994	BMB*
Total:			0.001	0.000	100.00	0.994	

IE11 020 E042-02S

Sample Name:	**E042-02S**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 12:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.01**	*Sample Amount:*	**1.0000**



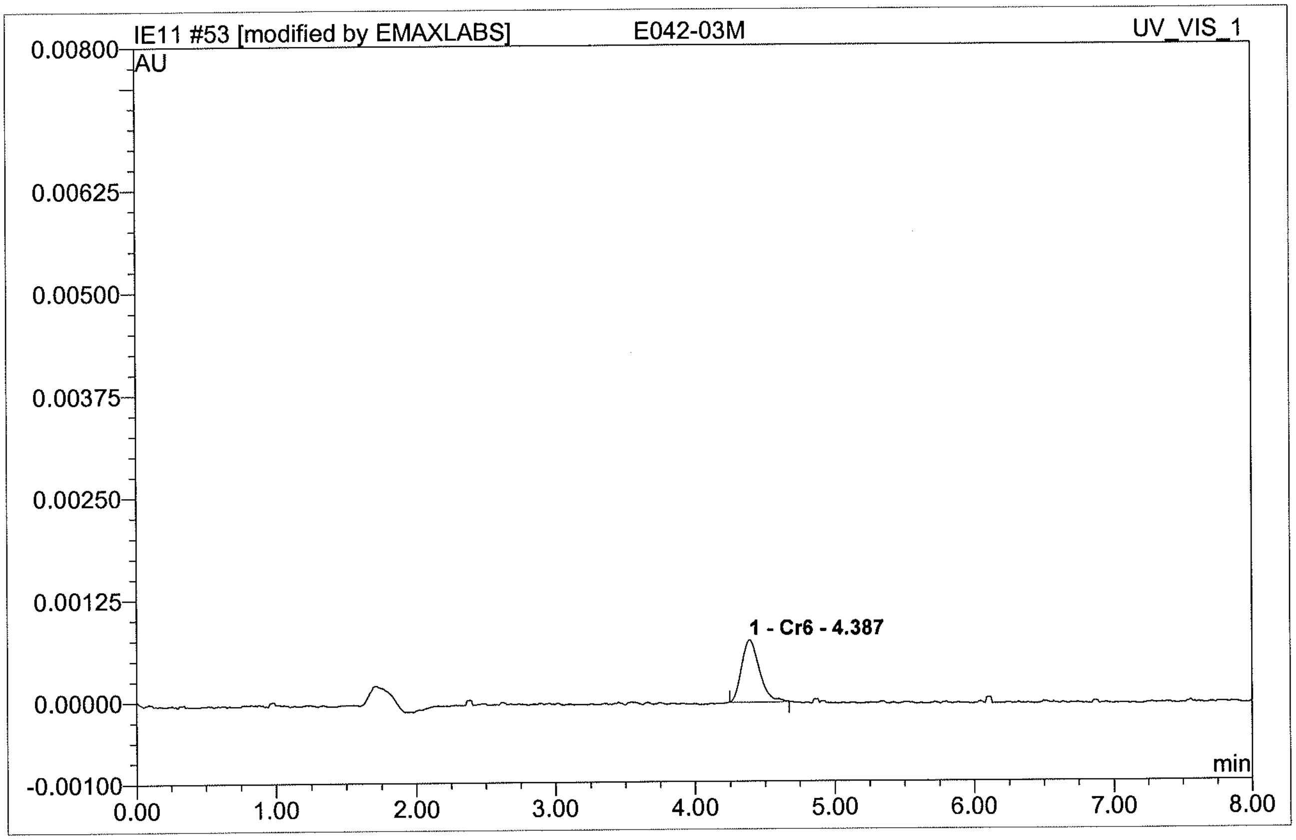
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.30	Cr6	0.0005280	0.0001027	100.00	0.990	BMB* ✓
Total:			0.001	0.000	100.00	0.990	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 053 E042-03M

Sample Name:	**E042-03M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 18:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

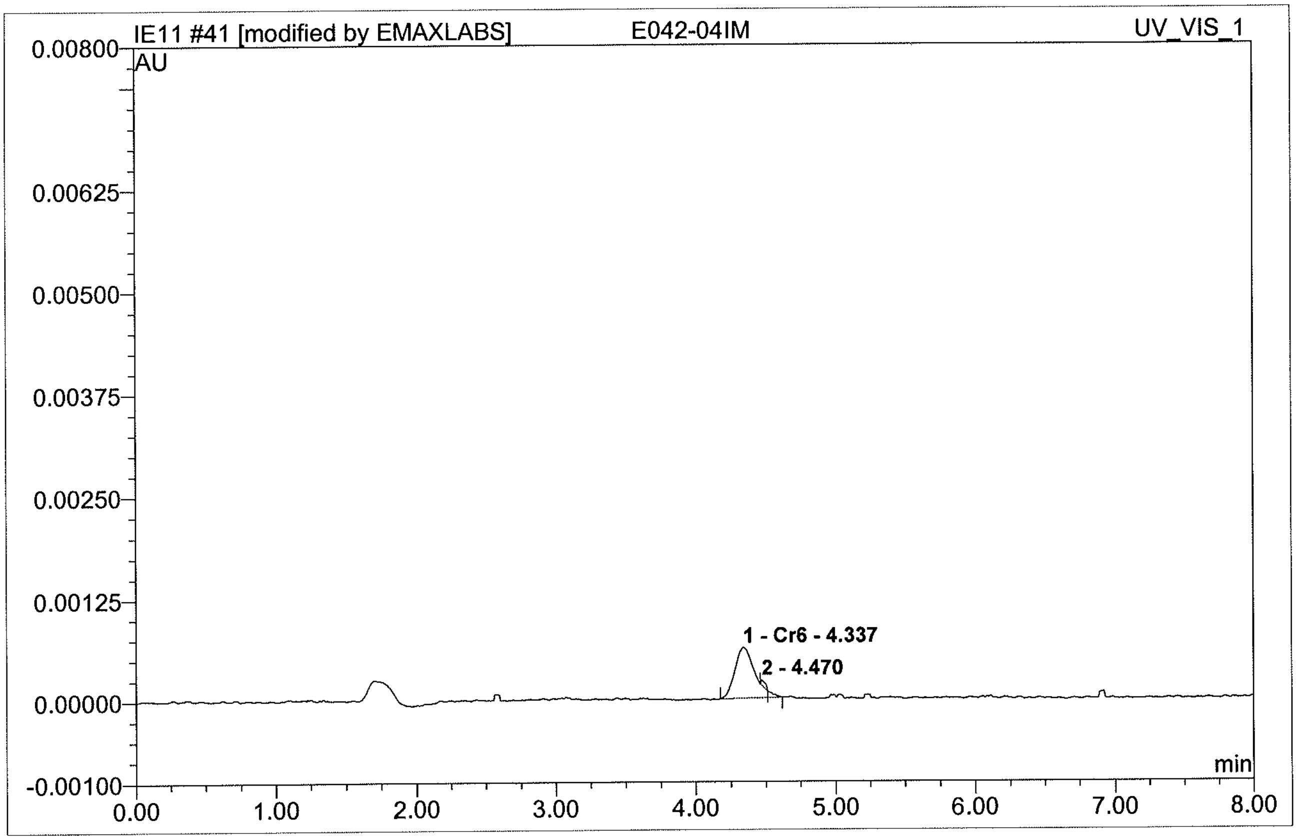


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.39	Cr6	0.0007580	0.0001116	100.00	1.071	BMB*
Total:			0.001	0.000	100.00	1.071	

IE11 041 E042-04IM

D=5

Sample Name:	**E042-04IM**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**5**
Recording Time:	**5/10/2018 16:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



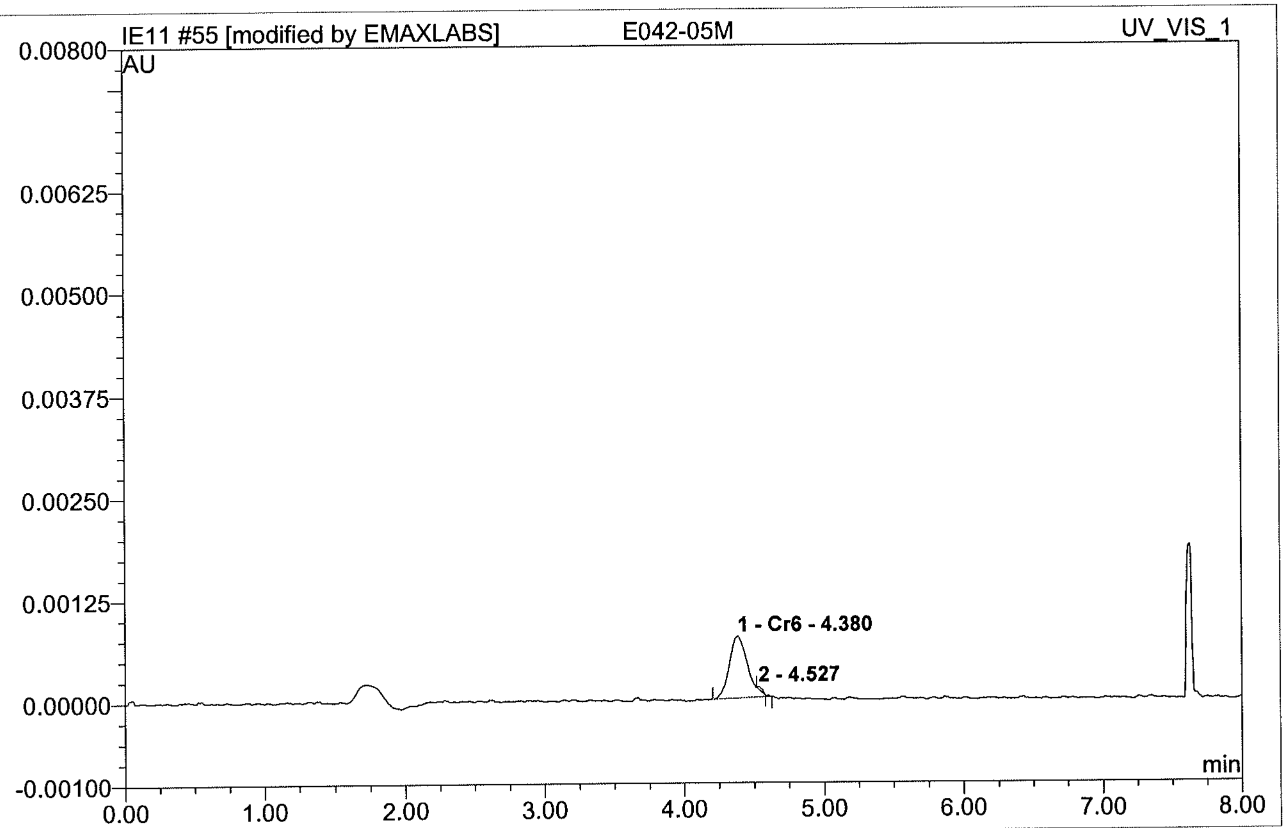
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.34	Cr6	0.0006210	0.0001028	97.34	4.955	BMB*
2	4.47	n.a.	0.0000700	0.0000028	2.66	n.a.	Rd*
Total:			0.001	0.000	100.00	4.955	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 055 E042-05M

Sample Name:	**E042-05M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 18:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

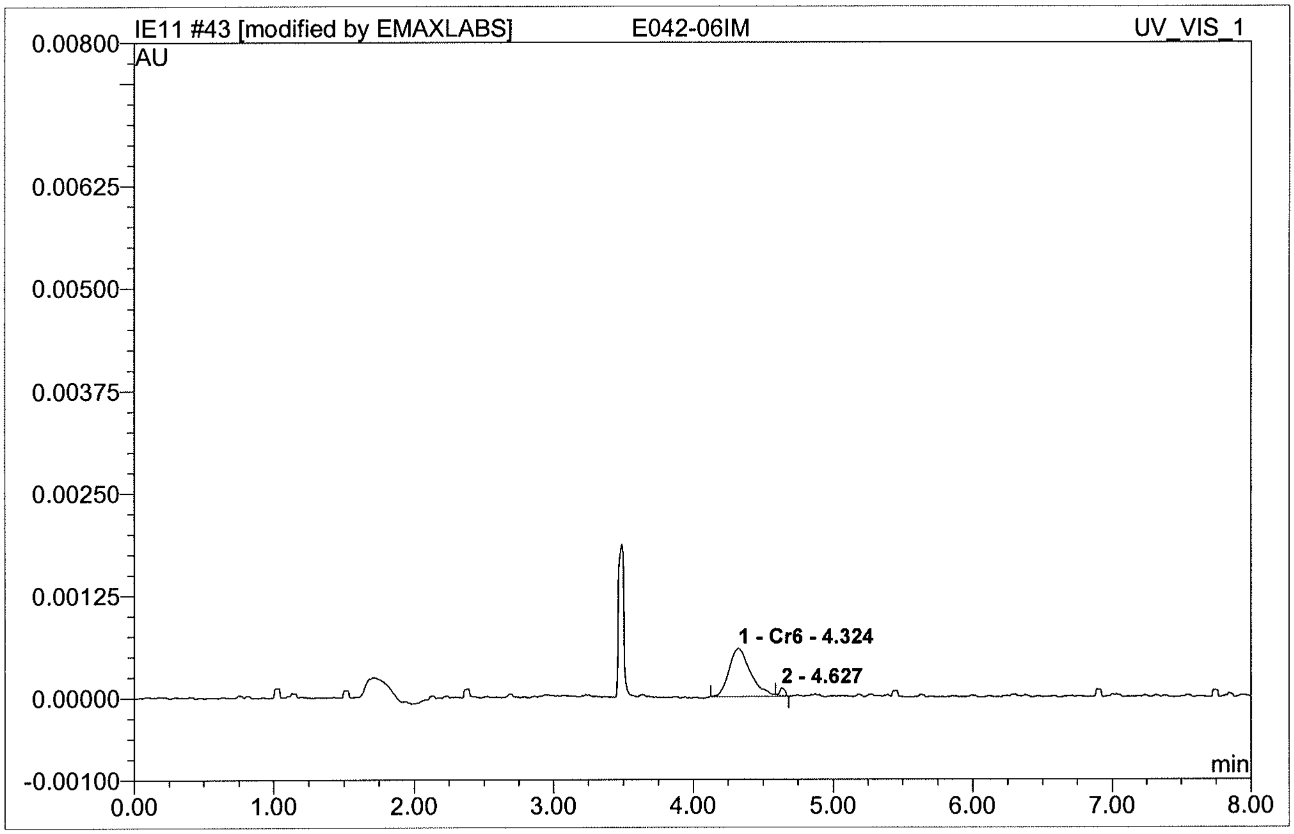


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.38	Cr6	0.0007520	0.0001134	98.64	1.088	BMB*
2	4.53	n.a.	0.0000280	0.0000016	1.36	n.a.	Rd*
Total:			0.001	0.000	100.00	1.088	

IE11 043 E042-06IM

D=5

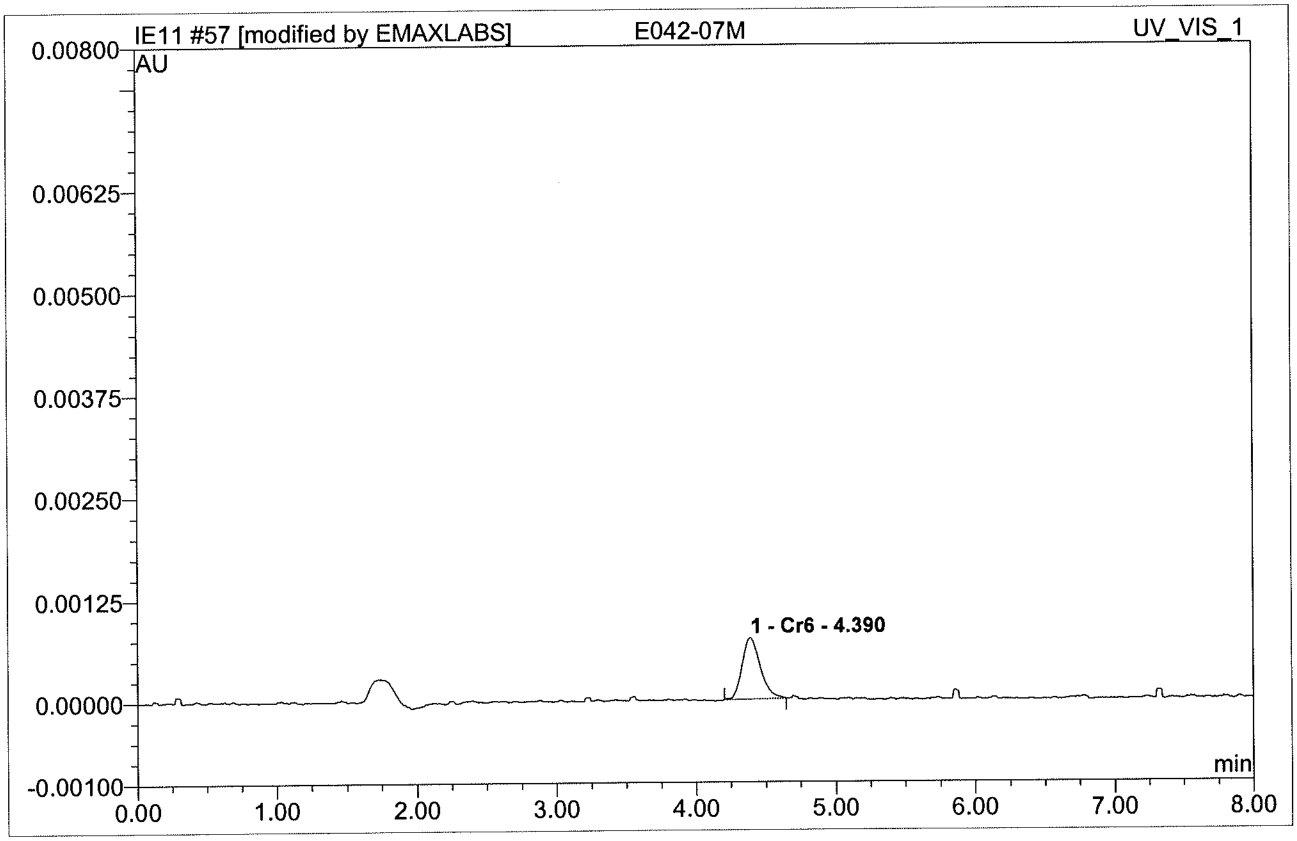
Sample Name:	**E042-06IM**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**5**
Recording Time:	**5/10/2018 16:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.32	Cr6	0.0005880	0.0001058	96.71	5.090	BMB*
2	4.63	n.a.	0.0000840	0.0000036	3.29	n.a.	Rd*
Total:			0.001	0.000	100.00	5.090	

IE11 057 E042-07M

Sample Name:	**E042-07M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 19:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



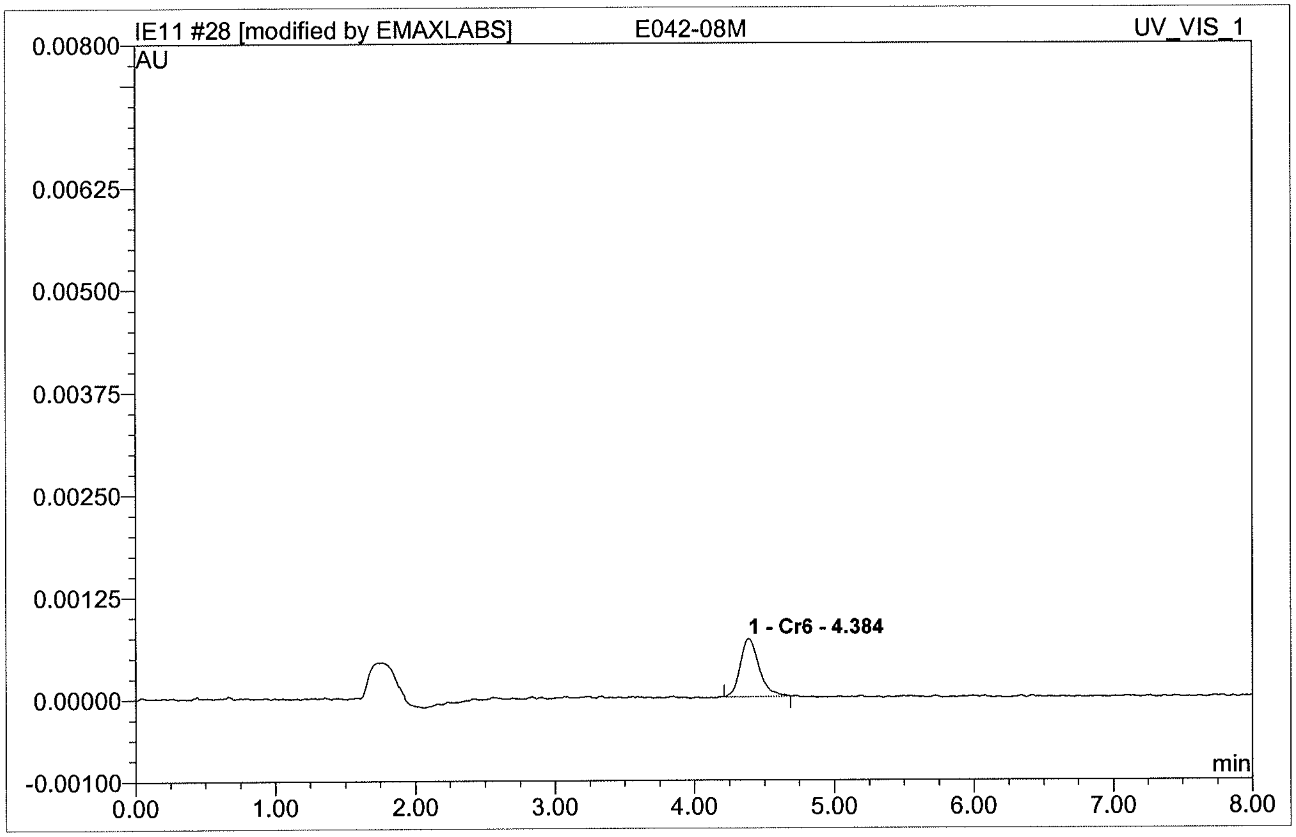
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.39	Cr6	0.0007490	0.0001126	100.00	1.080	BMB*
Total:			0.001	0.000	100.00	1.080	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 028 E042-08M

Sample Name:	**E042-08M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 14:00**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



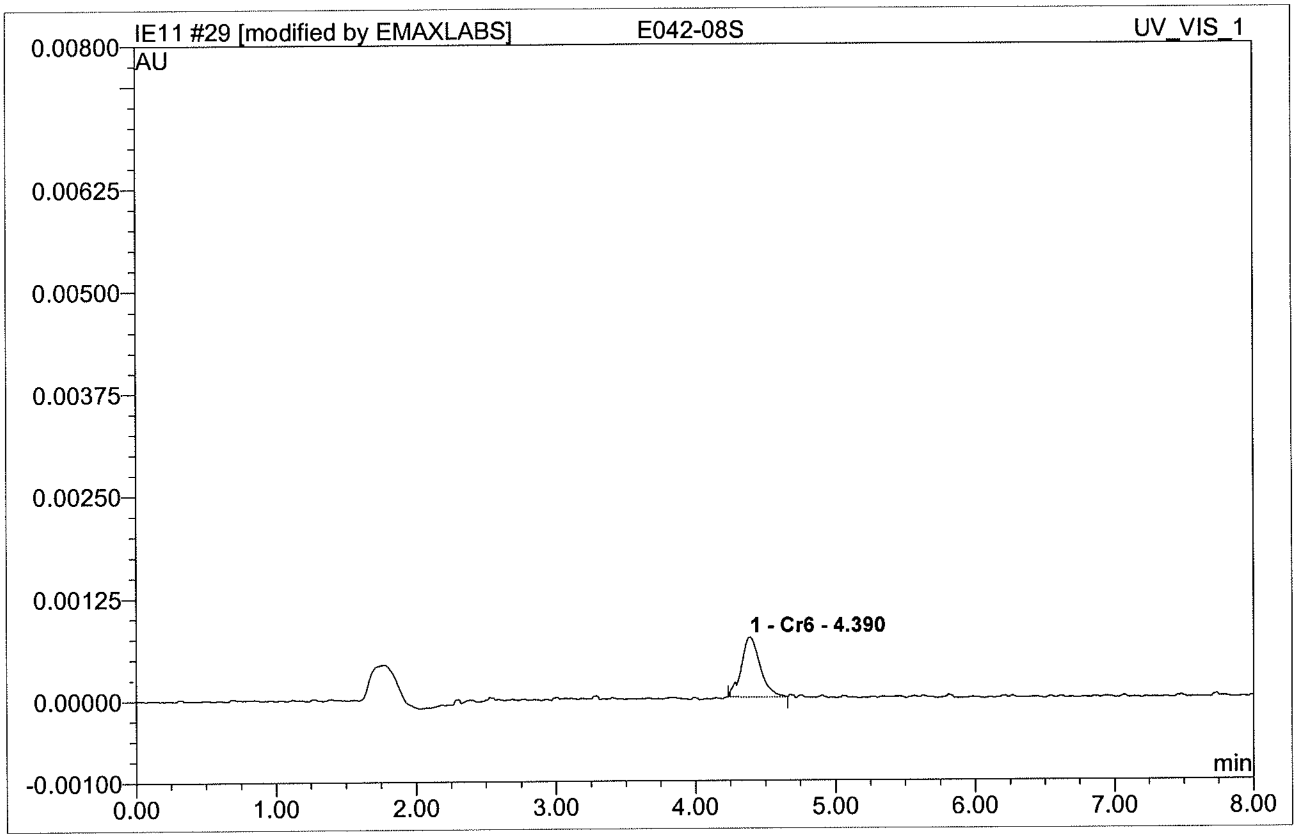
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.38	Cr6	0.0007090	0.0001108	100.00	1.064	BMB*
Total:			0.001	0.000	100.00	1.064	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 029 E042-08S

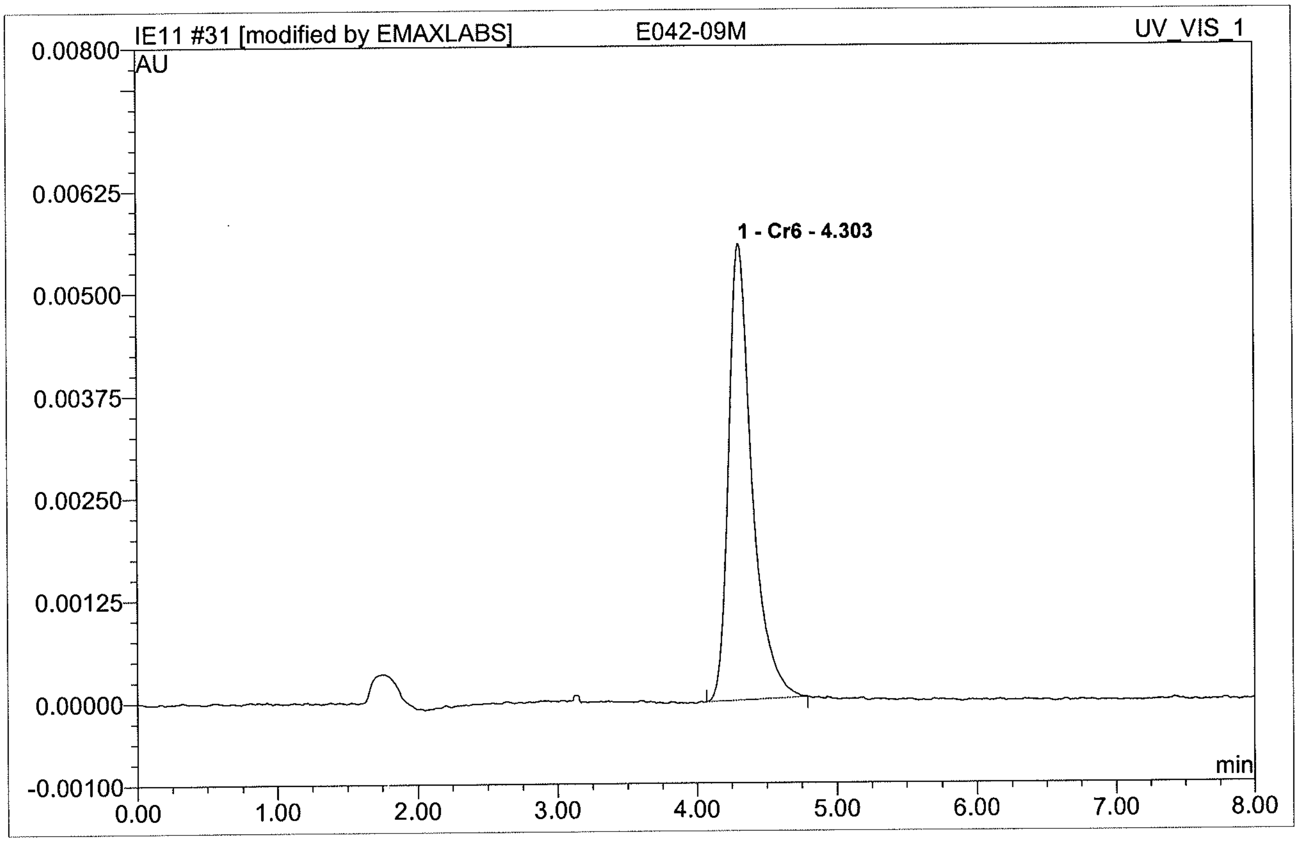
Sample Name:	**E042-08S**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 14:11**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.39	Cr6	0.0007300	0.0001128	100.00	1.082	BMB*
Total:			0.001	0.000	100.00	1.082	

IE11 031 E042-09M

Sample Name:	**E042-09M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 14:38**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

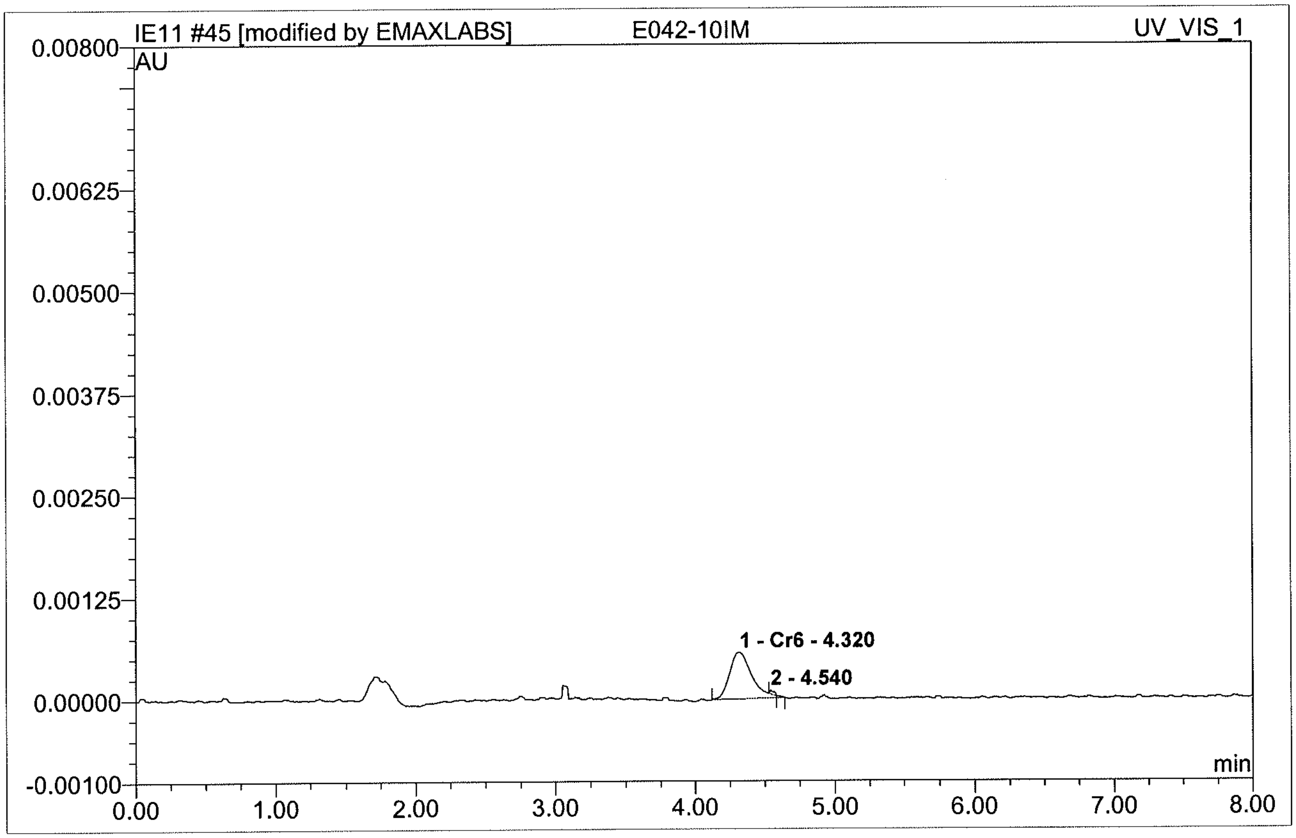


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.30	Cr6	0.0055730	0.0010828	100.00	9.987	BMB*
Total:			0.006	0.001	100.00	9.987	

IE11 045 E042-10IM

D=5

Sample Name:	**E042-10IM**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**5**
Recording Time:	**5/10/2018 17:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

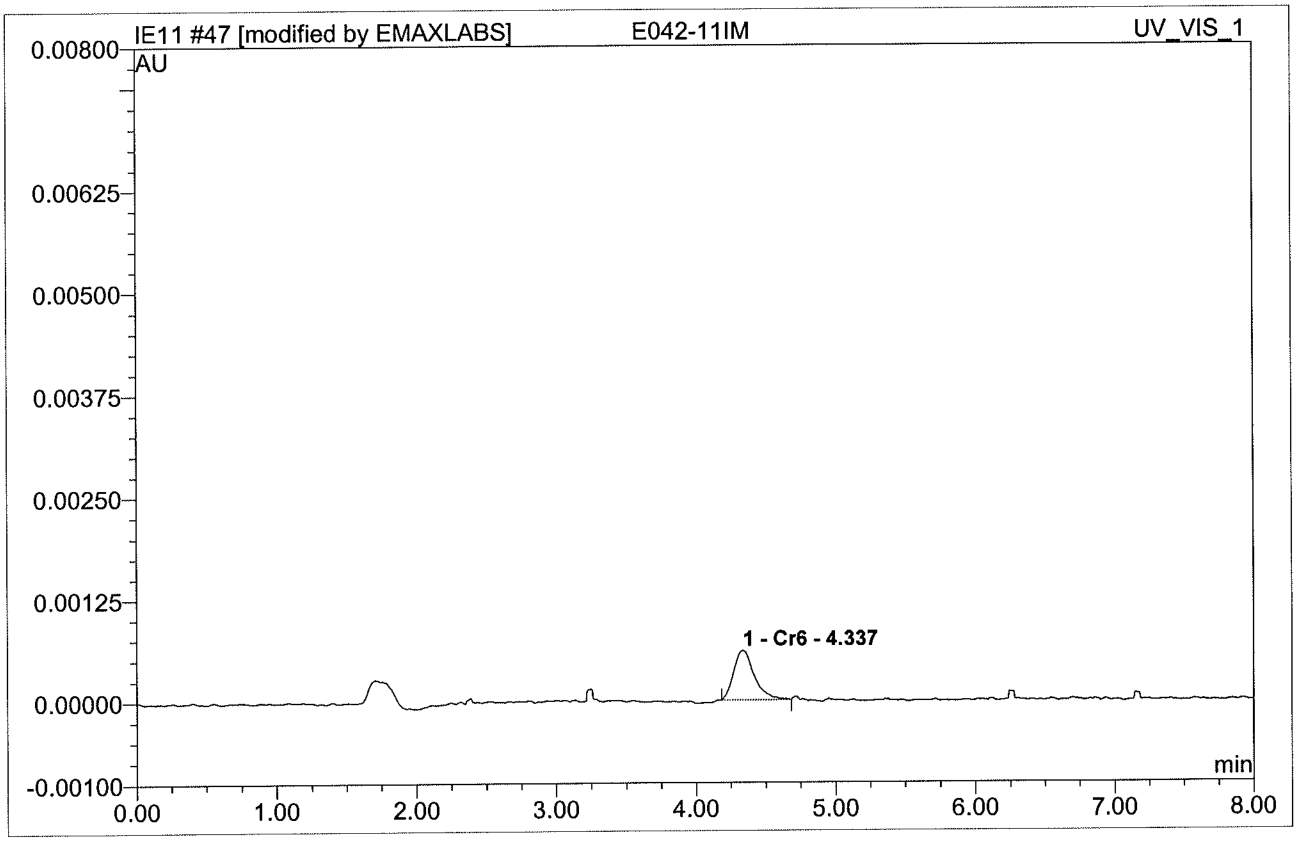


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.32	Cr6	0.0005650	0.0001044	98.37	5.025	BMB*
2	4.54	n.a.	0.0000470	0.0000017	1.63	n.a.	Rd*
Total:			0.001	0.000	100.00	5.025	

IE11 047 E042-11IM

D=5

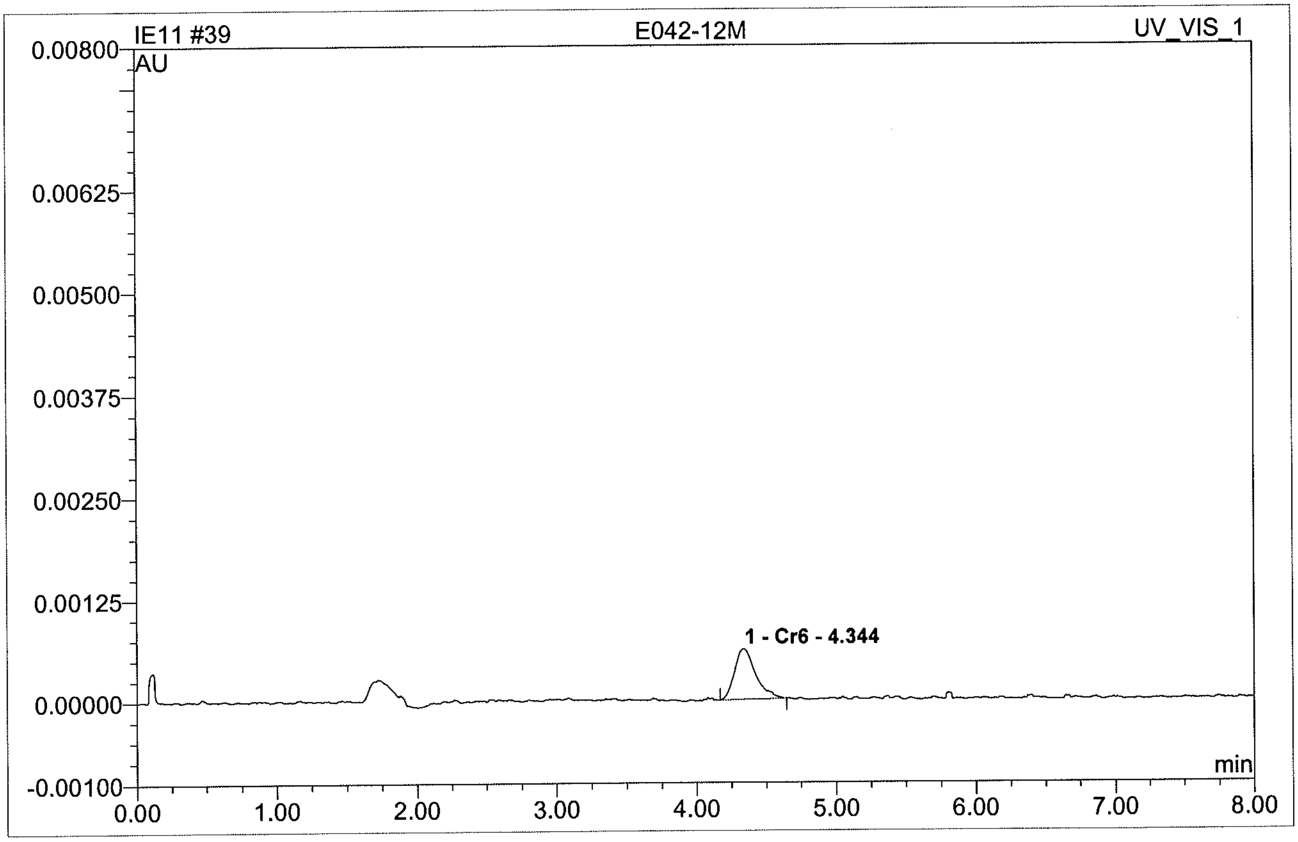
Sample Name:	**E042-11IM**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**5**
Recording Time:	**5/10/2018 17:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.34	Cr6	0.0006040	0.0001035	100.00	4.987	BMB*
Total:			0.001	0.000	100.00	4.987	

IE11 039 E042-12M

Sample Name:	**E042-12M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 16:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.34	Cr6	0.0006190	0.0001084	100.00	1.042	BMB
Total:			0.001	0.000	100.00	1.042	

INITIAL CALIBRATION(S)

IC RESULT FORM CalVersion : CR6.E10/IE10 (2018)

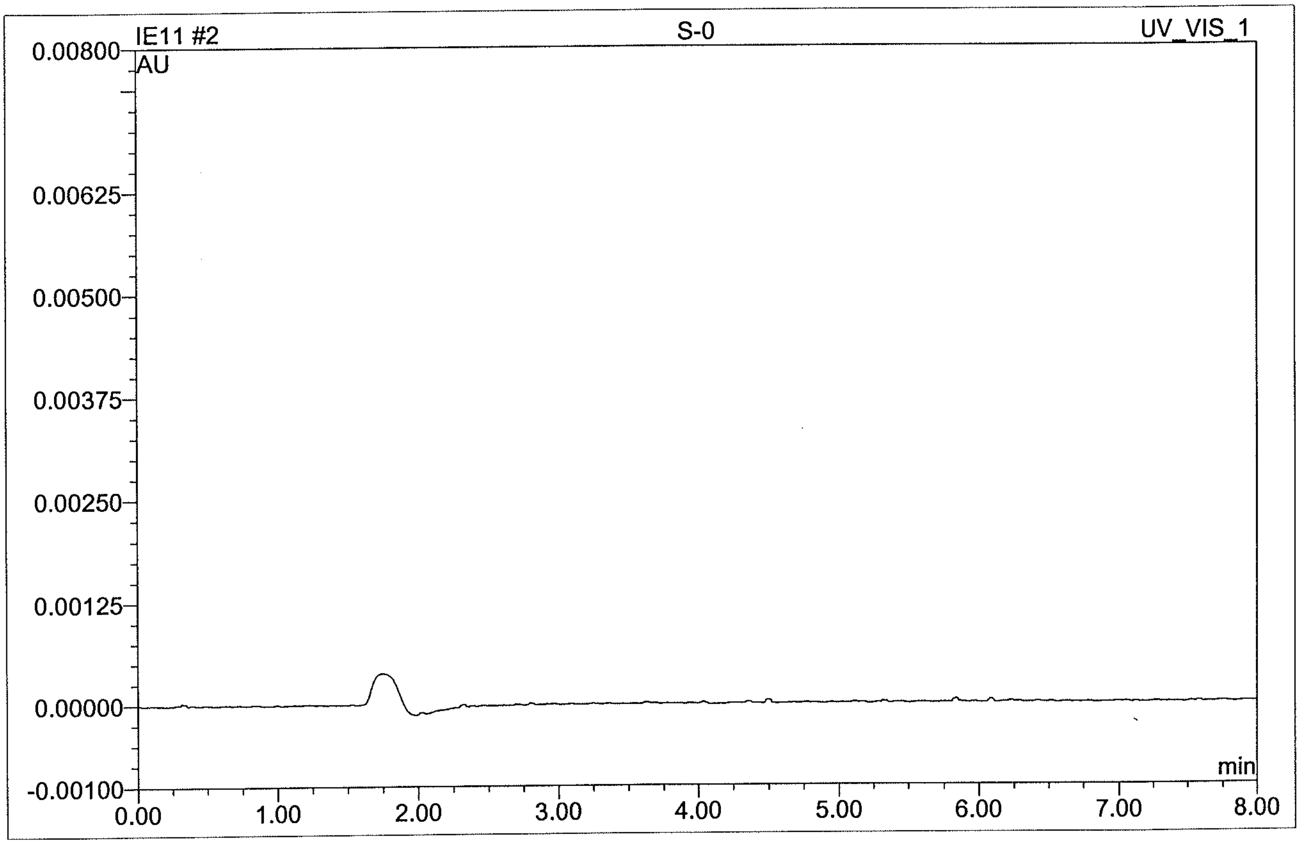
LFID	LSID	SelCmp	Cr6	DateTime	DF
IE11001	IB	C	ND	05/10/1809:15	1
IE11002	S-0	C	ND	05/10/1809:25	1
IE11003	S-1	C	0.209	05/10/1809:35	1
IE11004	S-2	C	0.502	05/10/1809:46	1
IE11005	S-3	C	1.014	05/10/1809:56	1
IE11006	S-4	C	1.983	05/10/1810:07	1
IE11007	S-5	C	4.927	05/10/1810:17	1
IE11008	S-6	C	7.420	05/10/1810:27	1
IE11009	S-7	C	10.098	05/10/1810:38	1
IE11010	ICV	C	99%	05/10/1810:48	1
IE11011	ICB	C	ND	05/10/1810:59	1
IE11012	LOW LEVEL	C	0.201	05/10/1811:11	1

Method: IC59E10
Solvent: buffer (SW4-04-16-01)

LE
5/24/18

IE11 002 S-0

Sample Name:	**S-0**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 9:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

LE
5/24/18

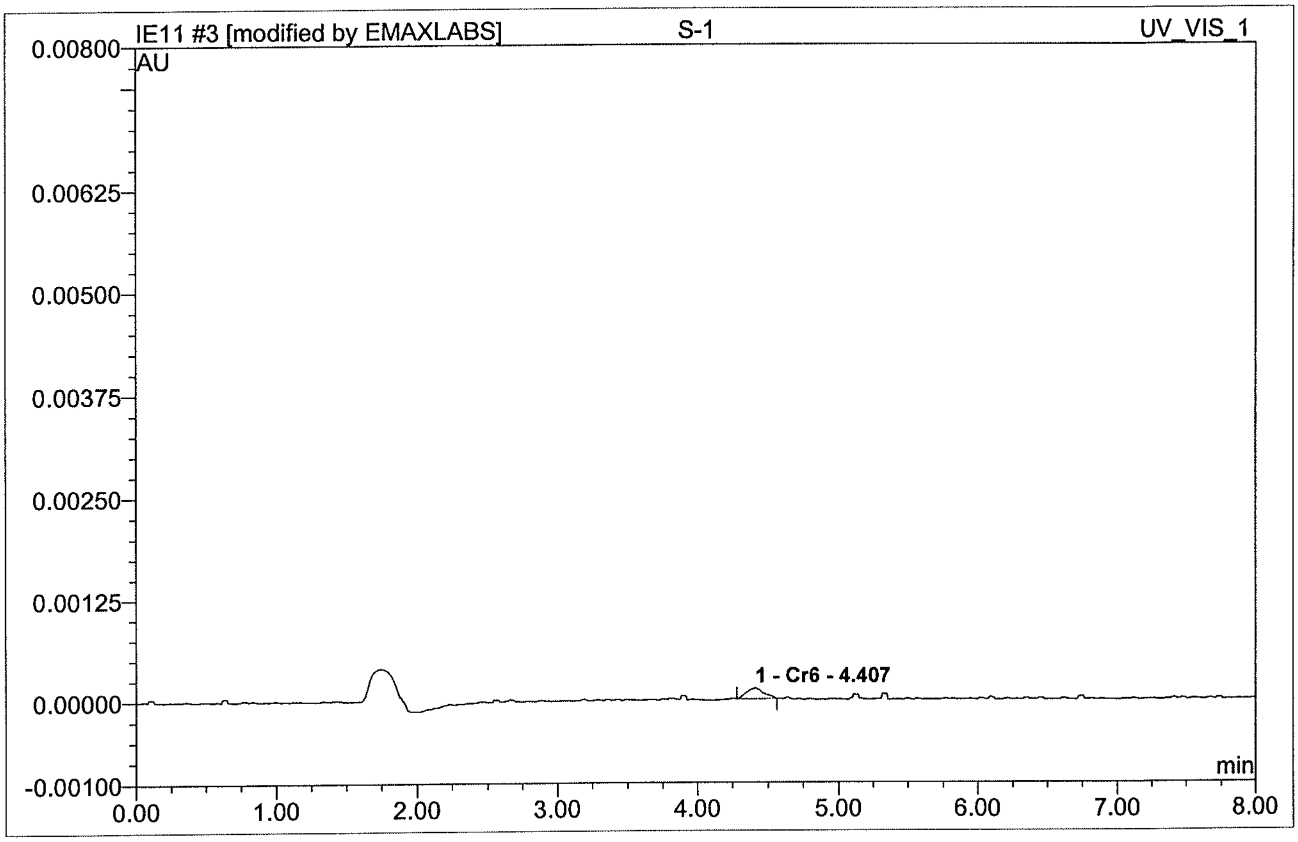
Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 003 S-1

0.2 PPB

Sample Name:	**S-1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 9:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.41	Cr6	0.0001300	0.0000177	100.00	0.209	BMB*
Total:			0.000	0.000	100.00	0.209	

LE 5/24/18

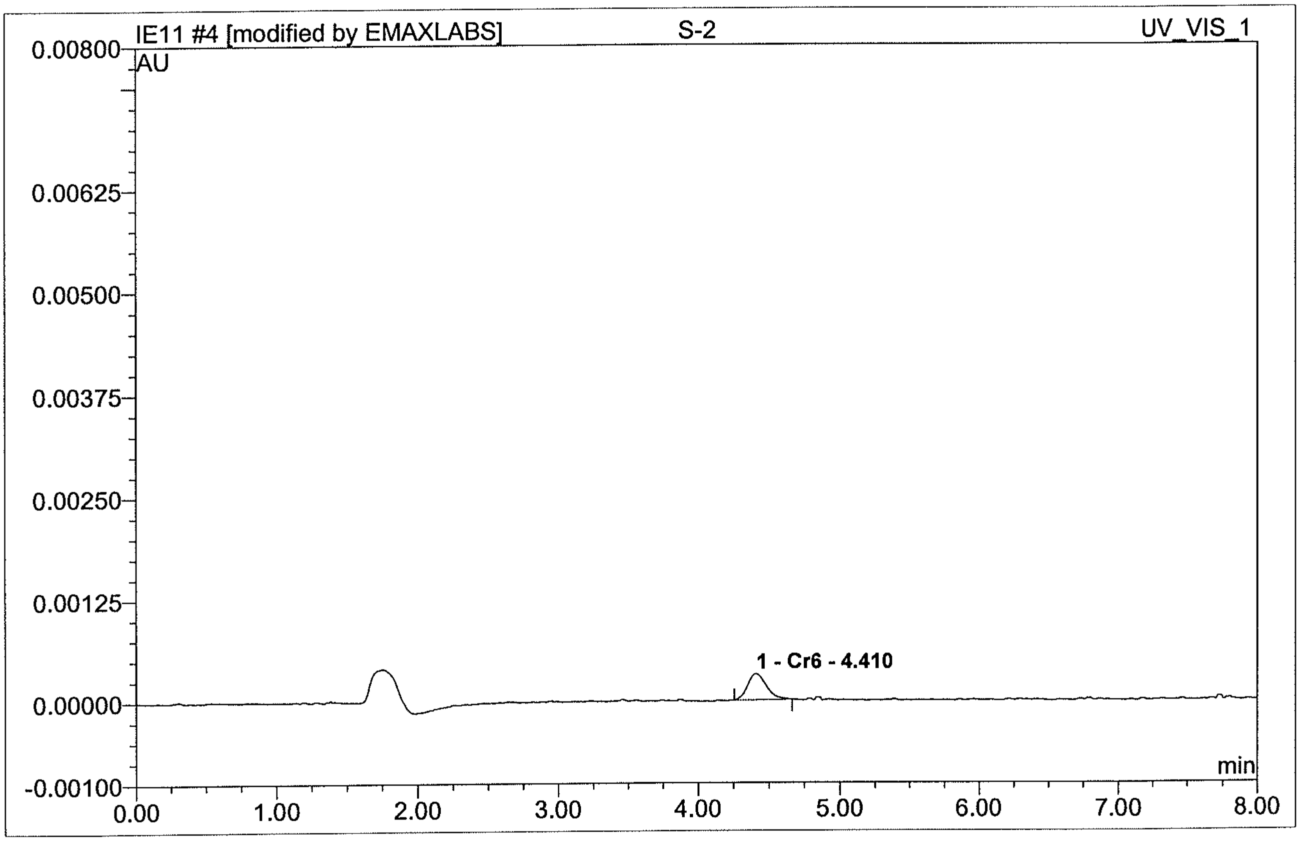
Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 004 S-2

0.5 PPB

Sample Name:	**S-2**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 9:46**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.41	Cr6	0.0003190	0.0000496	100.00	0.502	BMB* ✓
Total:			0.000	0.000	100.00	0.502	

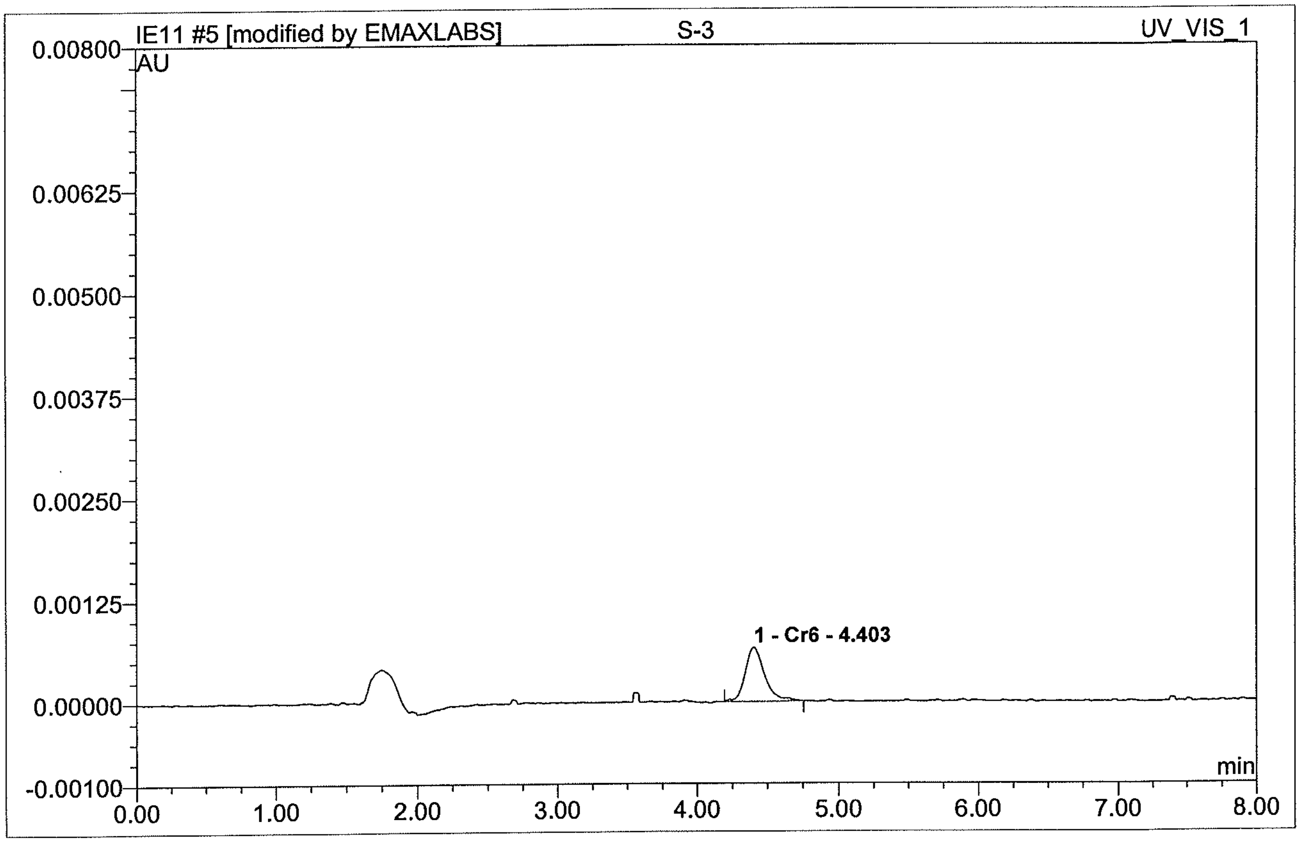
LE 5/24/18

Report/Integration

IE11 005 S-3

1.0 PPB

Sample Name:	**S-3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 9:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.40	Cr6	0.0006580	0.0001053	100.00	1.014	BMB*
Total:			0.001	0.000	100.00	1.014	

LE 5/24/18

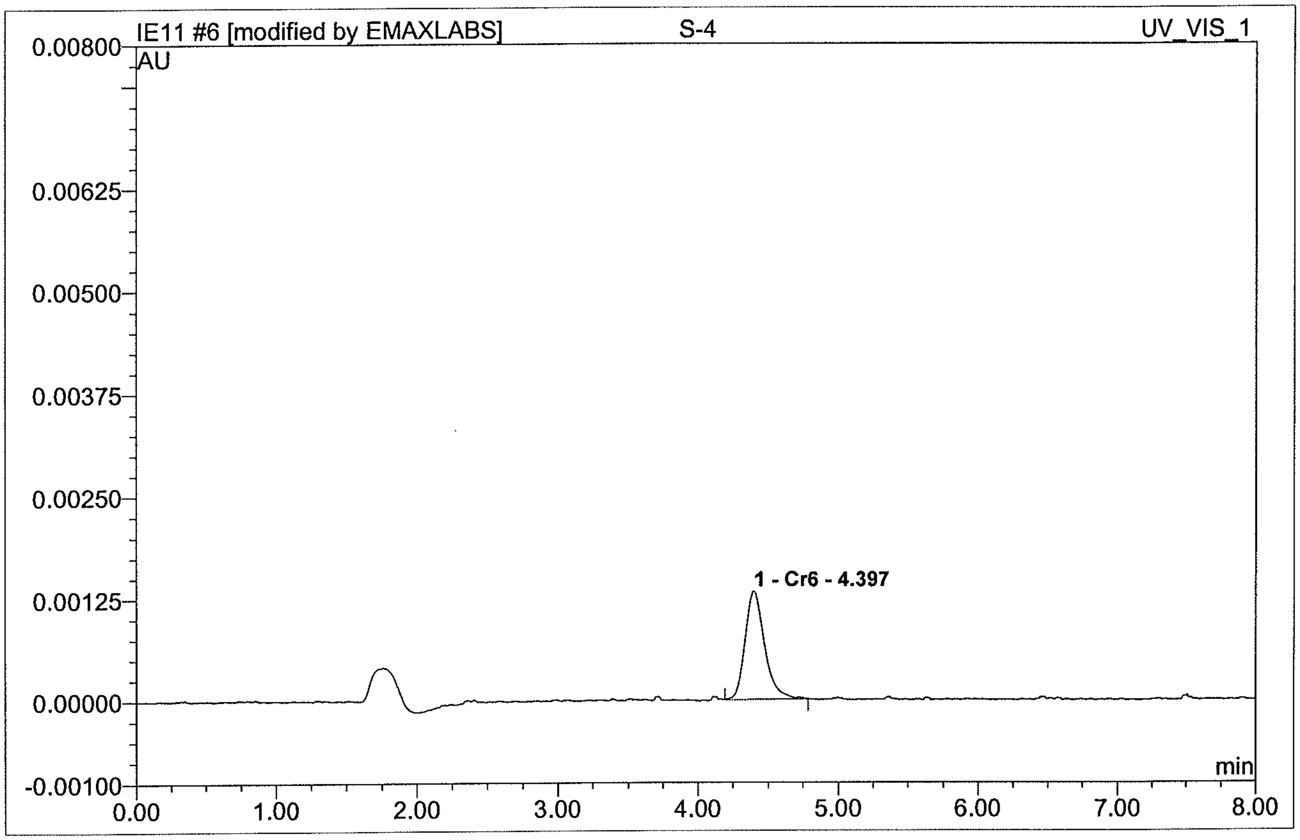
Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

Report/Integration

IE11 006 S-4

2.0 PPB

Sample Name:	**S-4**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 10:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.40	Cr6	0.0013230	0.0002109	100.00	1.983	BMB*
Total:			0.001	0.000	100.00	1.983	

LB 5/24/18

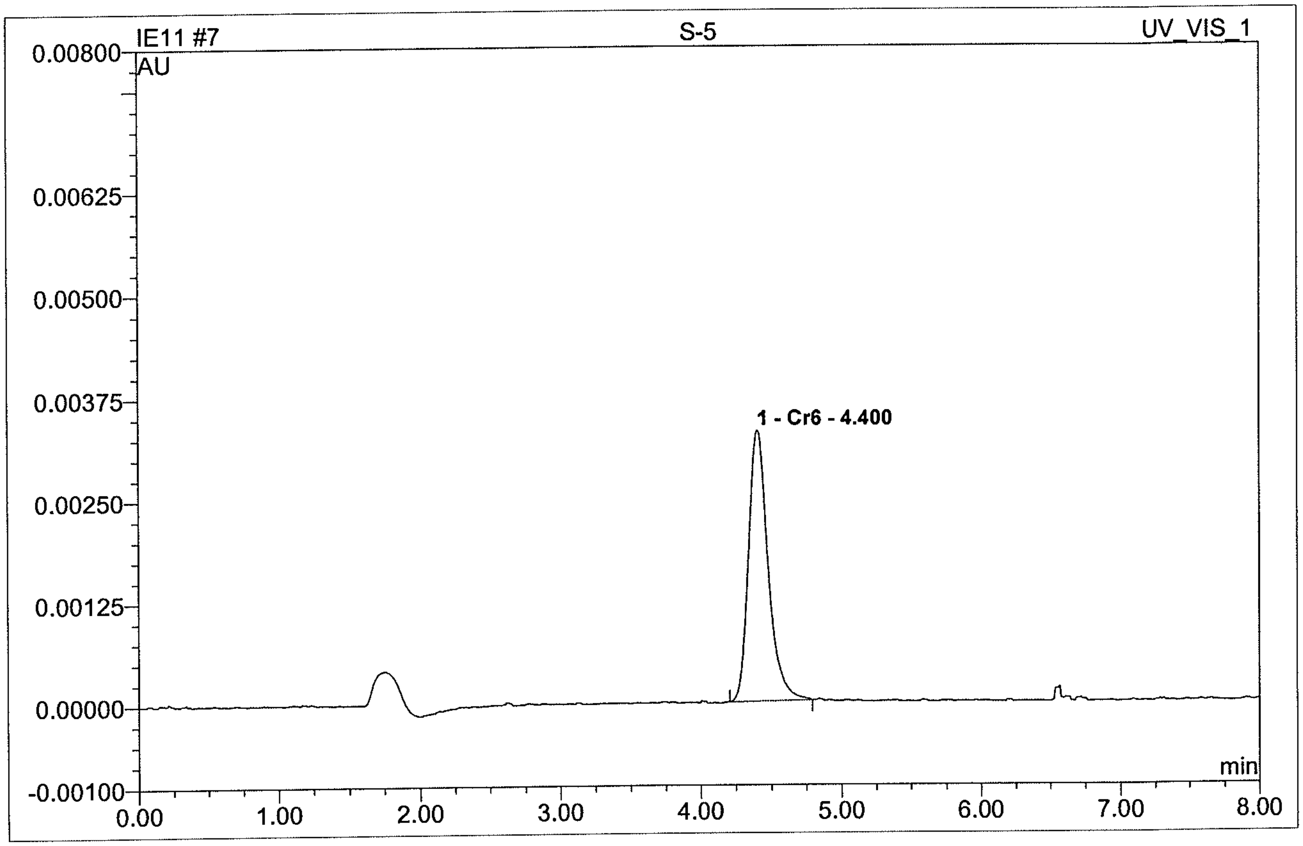
Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

Report/Integration

IE11 007 S-5

5.0 PPB

Sample Name:	**S-5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 10:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.40	Cr6	0.0033070	0.0005315	100.00	4.927	BMB ✓
Total:			0.003	0.001	100.00	4.927	

LE 5/24/18

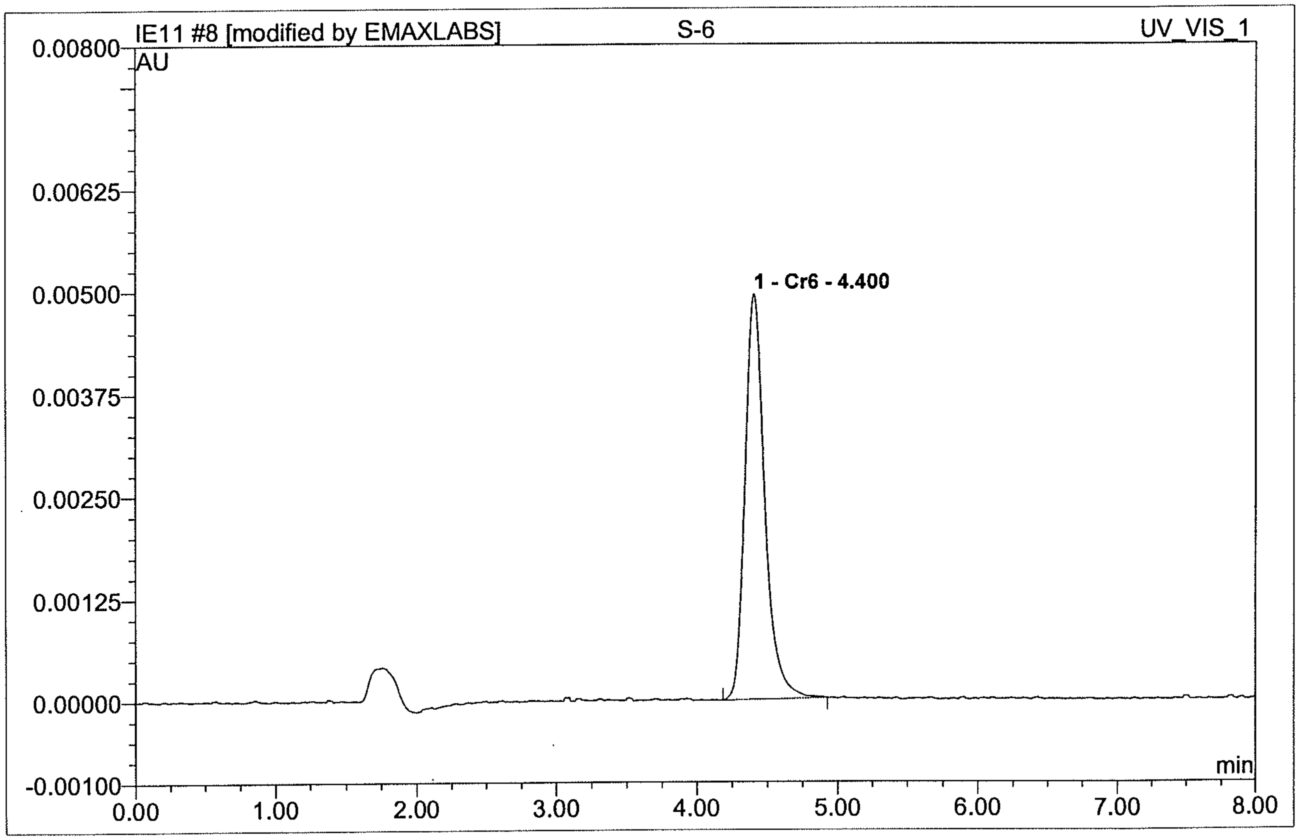
Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 008 S-6

7.5 PPB

Sample Name:	**S-6**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 10:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.40	Cr6	0.0049470	0.0008031	100.00	7.420	BMB*
Total:			0.005	0.001	100.00	7.420	

LE 5/24/18

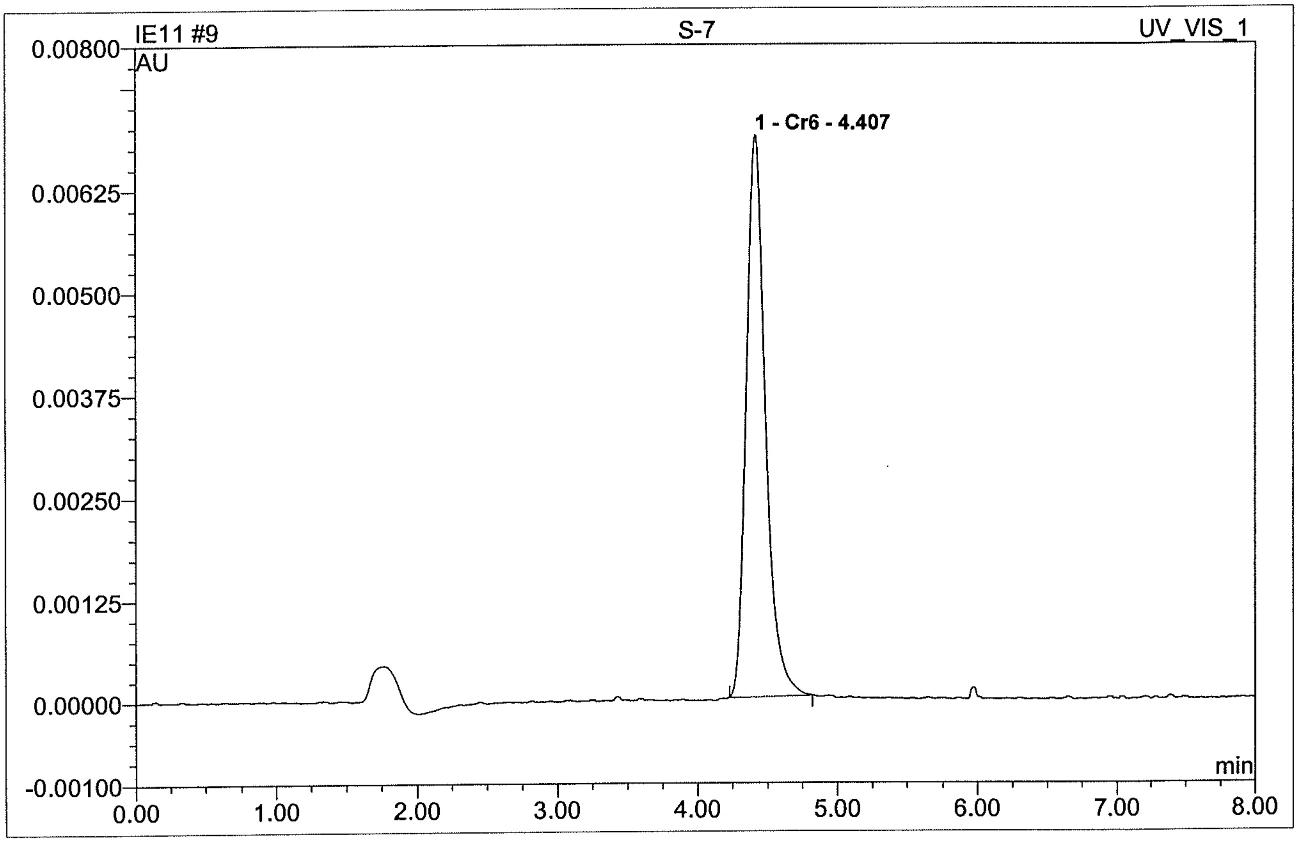
Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

Report/Integration

IE11 009 S-7

10 PPB

Sample Name:	**S-7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 10:38**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.41	Cr6	0.0068540	0.0010949	100.00	10.098	BMB
Total:			0.007	0.001	100.00	10.098	

LE 5/24/18

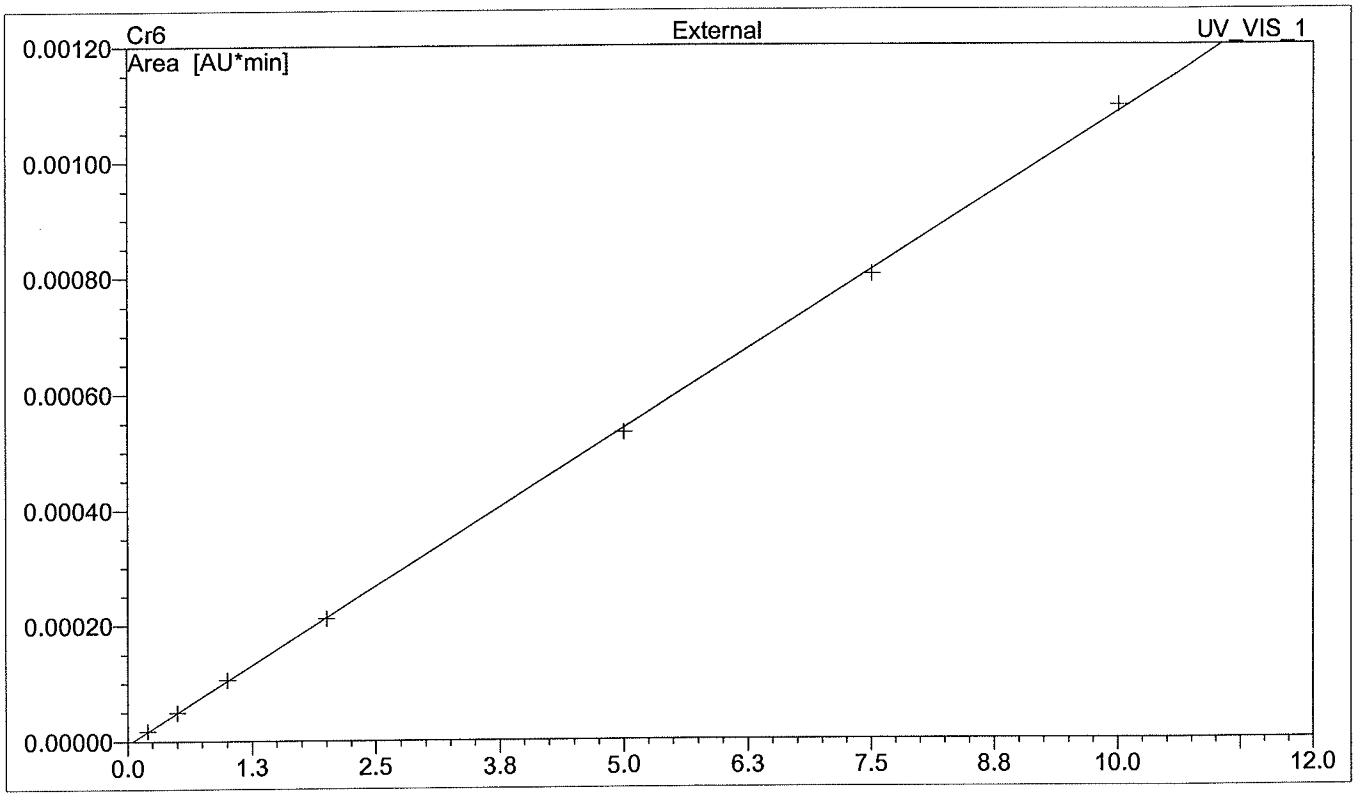
Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

9 S-7

10 PPB

Sample Name:	**S-7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/10/2018 10:38**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square	Offset	Slope	Curve
1	4.41	Cr6	0LOff	7	0.9998	-0.0000051	0.0001089	0.0000
Average:					0.9998	0.0000	0.0001	0.0000

LR 5/24/18

SECOND SOURCE VERIFICATION

IC RESULT FORM CalVersion : CR6.E10/IE10 (2018)

LFID	LSID	SelCmp	Cr6	DateTime	DF
IE11001	IB	C	ND	05/10/1809:15	1
IE11002	S-0	C	ND	05/10/1809:25	1
IE11003	S-1	C	0.209	05/10/1809:35	1
IE11004	S-2	C	0.502	05/10/1809:46	1
IE11005	S-3	C	1.014	05/10/1809:56	1
IE11006	S-4	C	1.983	05/10/1810:07	1
IE11007	S-5	C	4.927	05/10/1810:17	1
IE11008	S-6	C	7.420	05/10/1810:27	1
IE11009	S-7	C	10.098	05/10/1810:38	1
IE11010	ICV	C	99%	05/10/1810:48	1
IE11011	ICB	C	ND	05/10/1810:59	1
IE11012	LOW LEVEL	C	0.201	05/10/1811:11	1

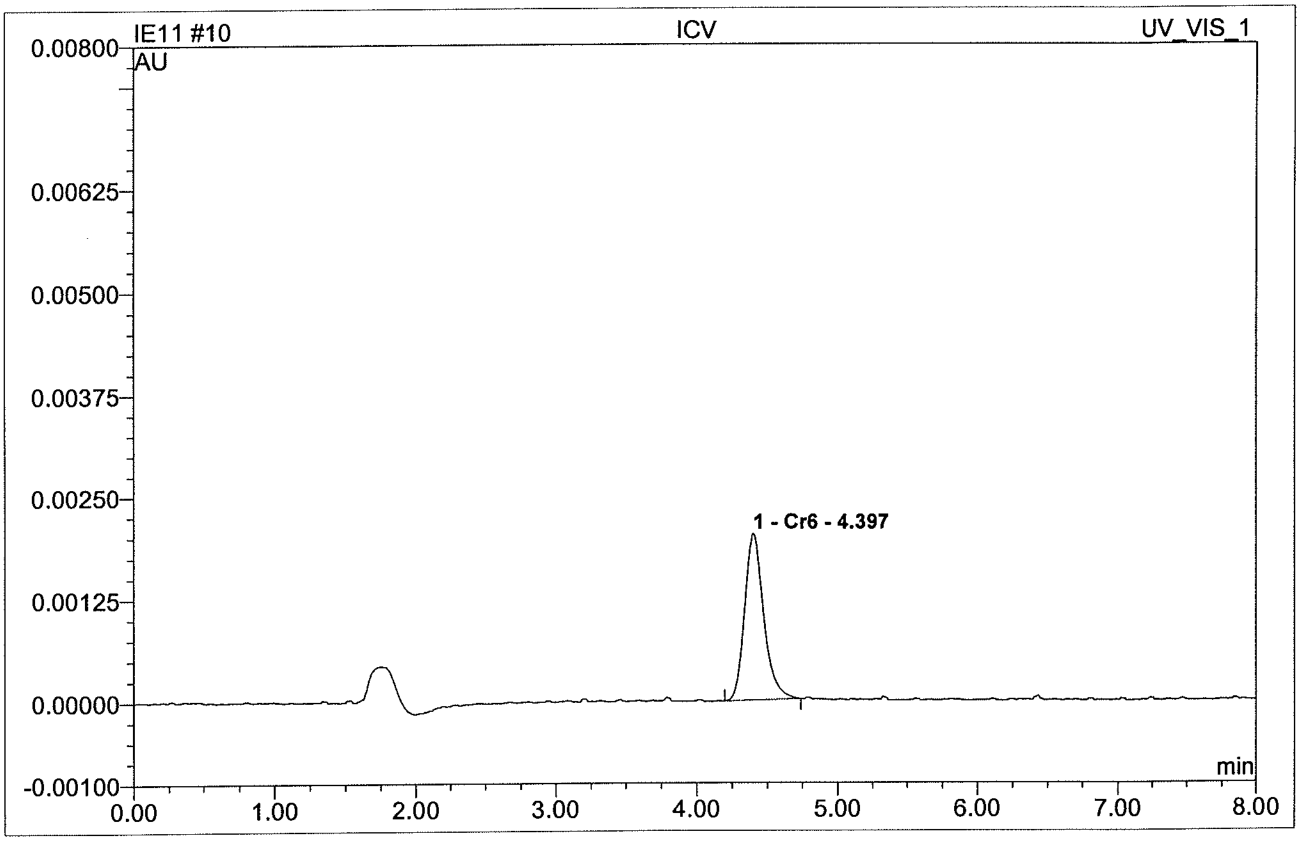
Method: IC59E10
Solvent: buffer (SW4-04-16-01)

LE 5/24/18

IE11 010 ICV

3.0 PPB

Sample Name:	**ICV**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 10:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.40	Cr6	0.0020210	0.0003193	100.00	2.978	BMB ✓
Total:			0.002	0.000	100.00	2.978	

$$\text{conc.} = \frac{\text{Area} - \text{offset}}{\text{slope}} = 2.978 \text{ ppb}$$

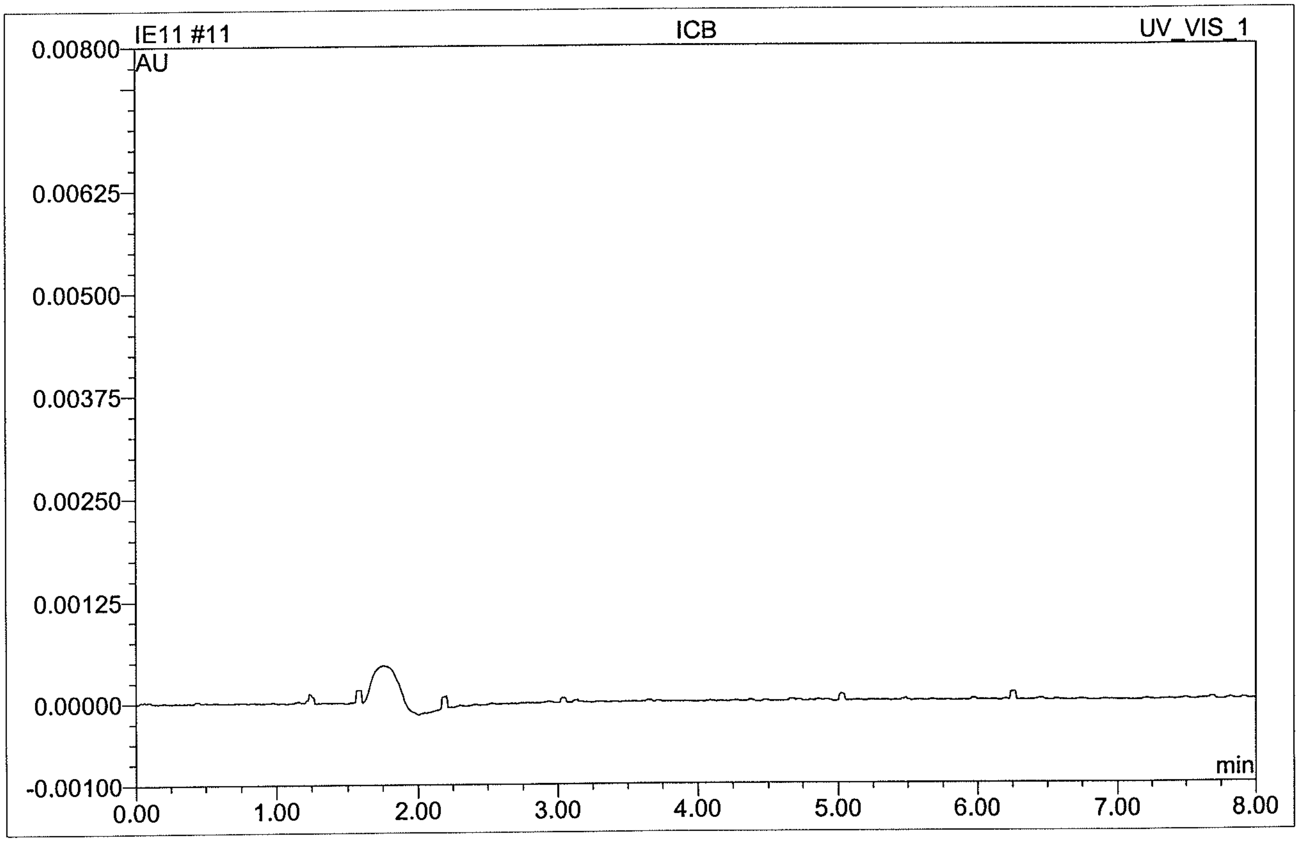
LE 5/24/18

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

Report/Integration

IE11 011 ICB

Sample Name:	**ICB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 10:59**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

LS
5/24/18

DAILY CALIBRATION(S)

Continuing Calibration Summary Form

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG : 18E042
Method : E218.6
QuantMethod : IC59E10
InstrumentID: 59
Parameter : HEXAVALENT CHROMIUM

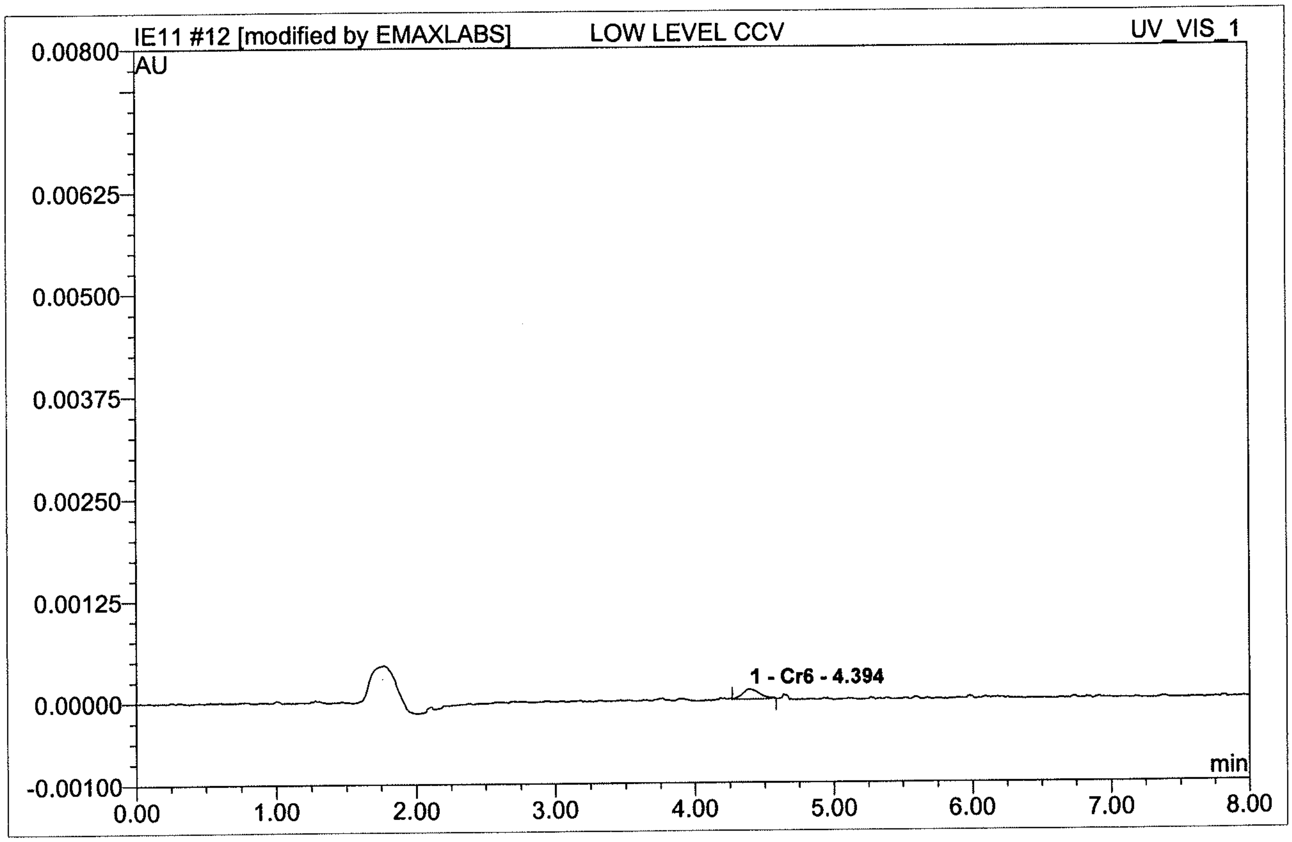
LFID	LSID	DF	Expected	Result	Unit	%Rec	AnalysisDateTime
IE11012	LOW CCV	1	0.2	0.201	ug/L	101	05/10/1811:11
IE11013	CCV1	1	2	1.984	ug/L	99	05/10/1811:21
IE11025	CCV3	1	2	1.991	ug/L	100	05/10/1813:26
IE11037	CCV5	1	2	1.968	ug/L	98	05/10/1815:40
IE11048	CCV7	1	2	1.997	ug/L	100	05/10/1817:35
IE11058	CCV9	1	2	1.974	ug/L	99	05/10/1819:19

CCV Acceptance Criteria: 95-105%

IE11 012 LOW LEVEL CCV

0.2 PPB

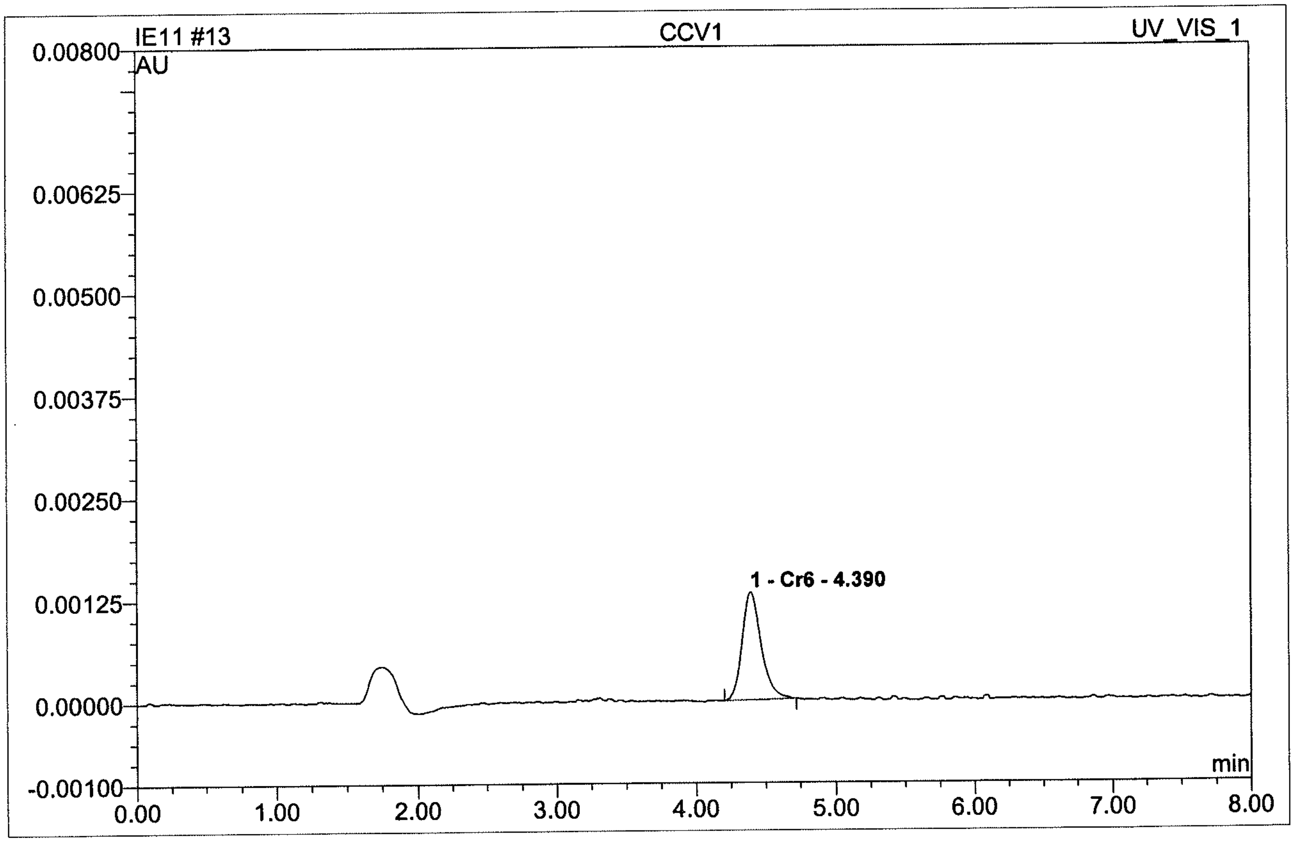
Sample Name:	**LOW LEVEL CCV**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 11:11**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.39	Cr6	0.0001210	0.0000168	100.00	0.201	BMB*
Total:			0.000	0.000	100.00	0.201	

IE11 013 CCV1

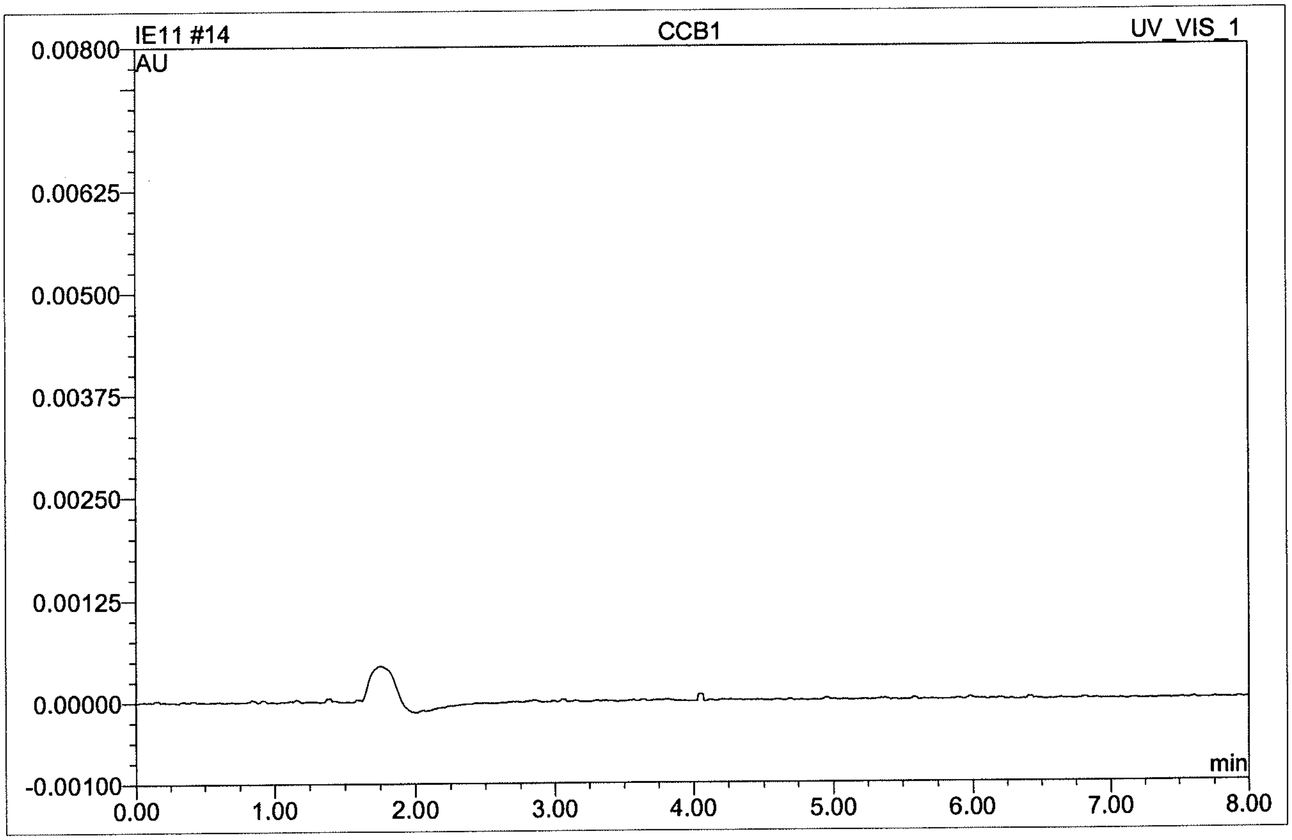
Sample Name:	**CCV1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 11:21**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.39	Cr6	0.0013160	0.0002110	100.00	1.984	BMB
Total:			0.001	0.000	100.00	1.984	

IE11 014 CCB1

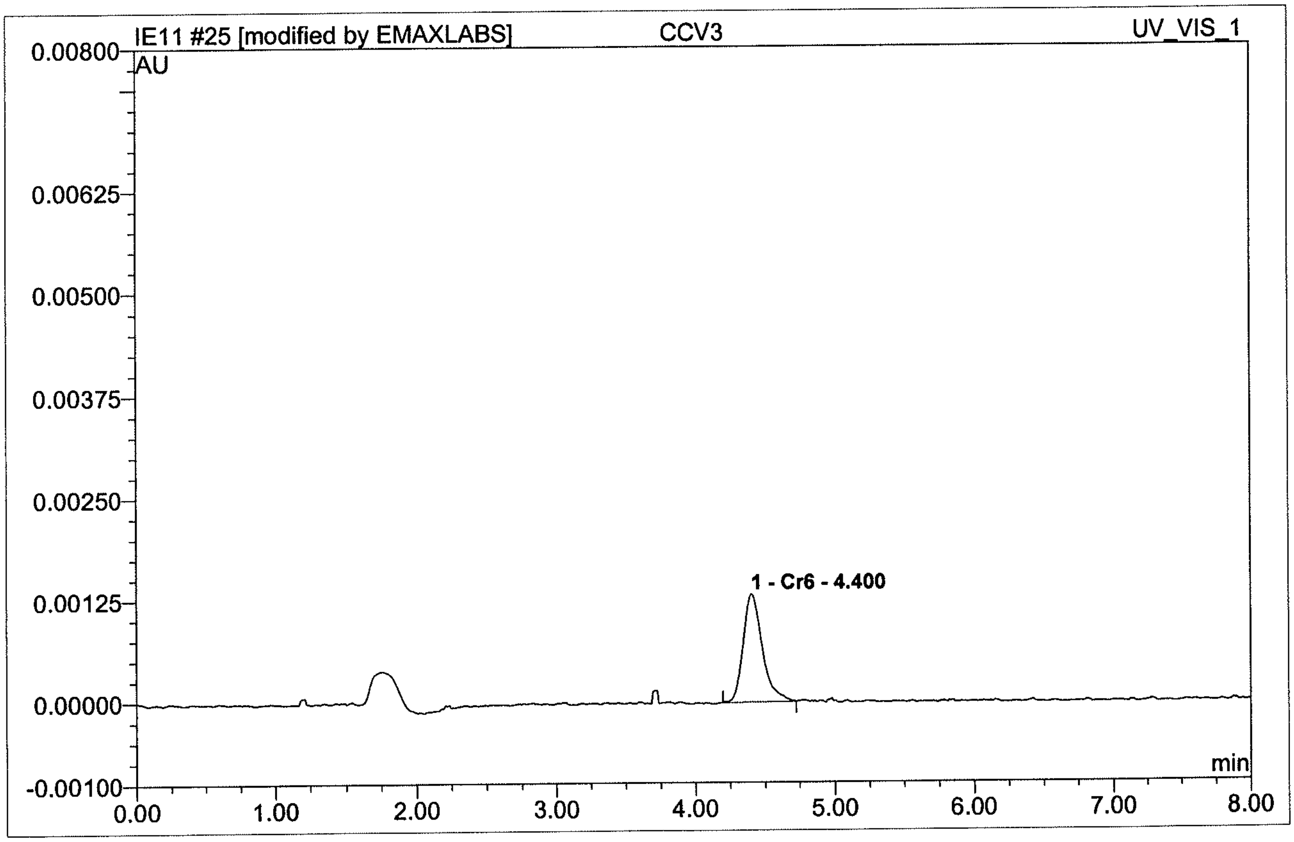
Sample Name:	**CCB1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 11:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 025 CCV3

Sample Name:	**CCV3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 13:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



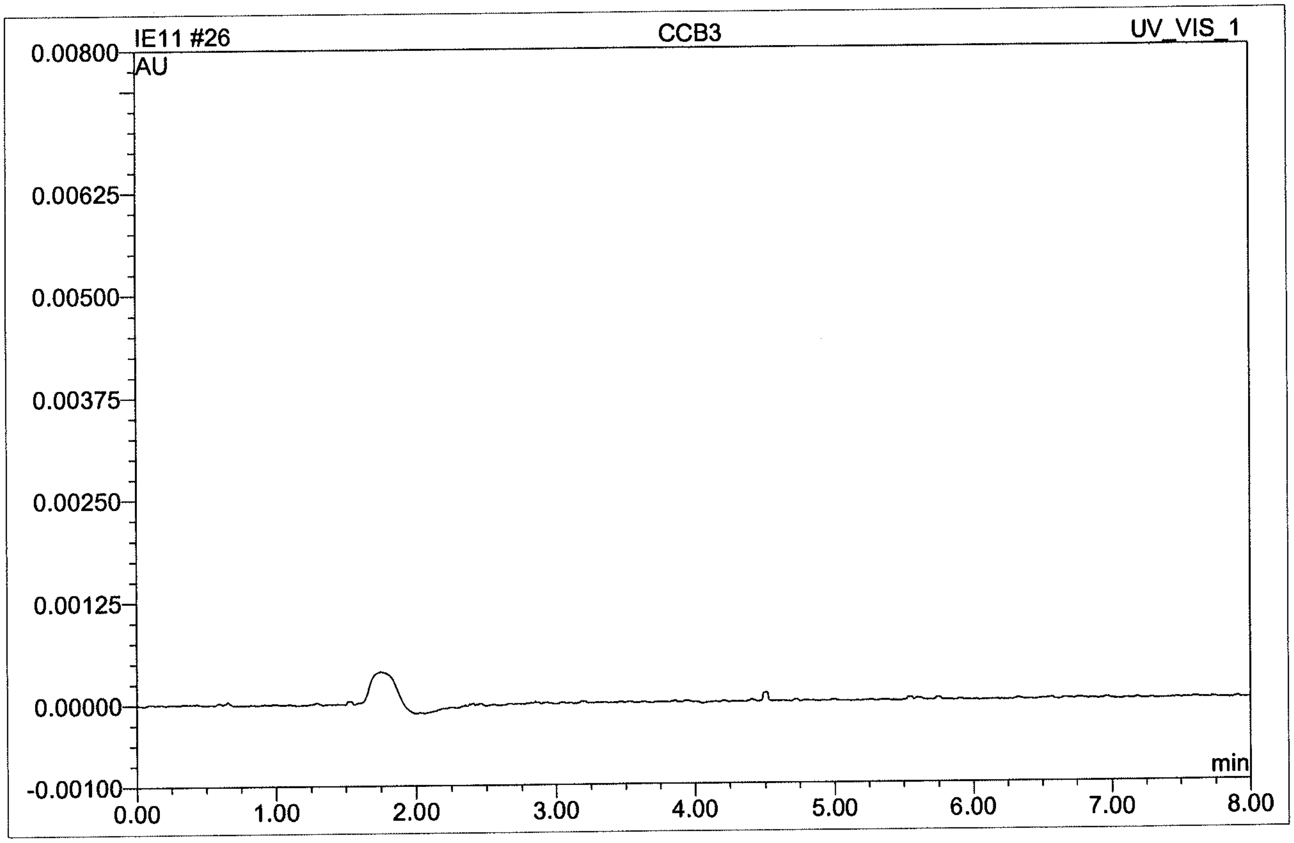
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.40	Cr6	0.0013200	0.0002118	100.00	1.991	BMB*
Total:			0.001	0.000	100.00	1.991	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 026 CCB3

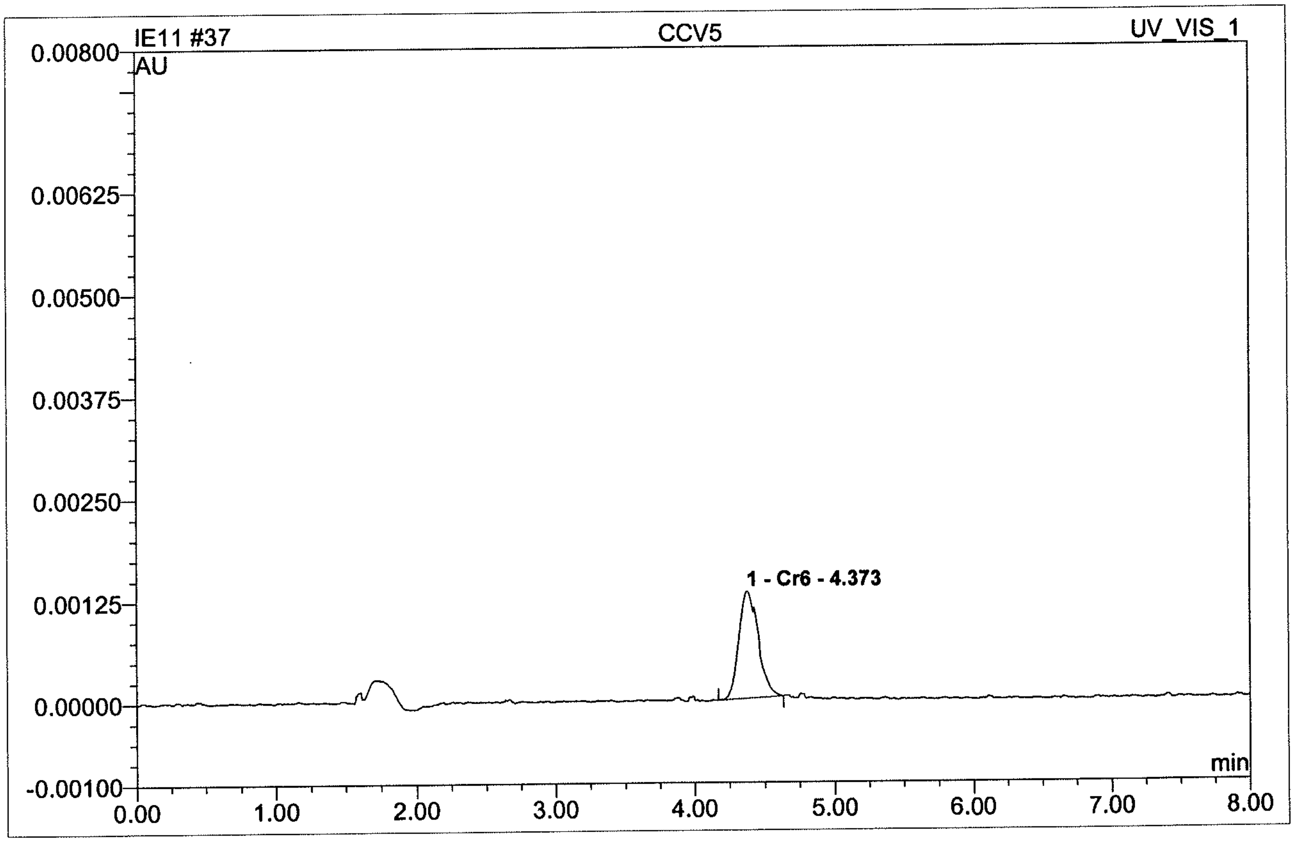
Sample Name:	**CCB3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 13:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 037 CCV5

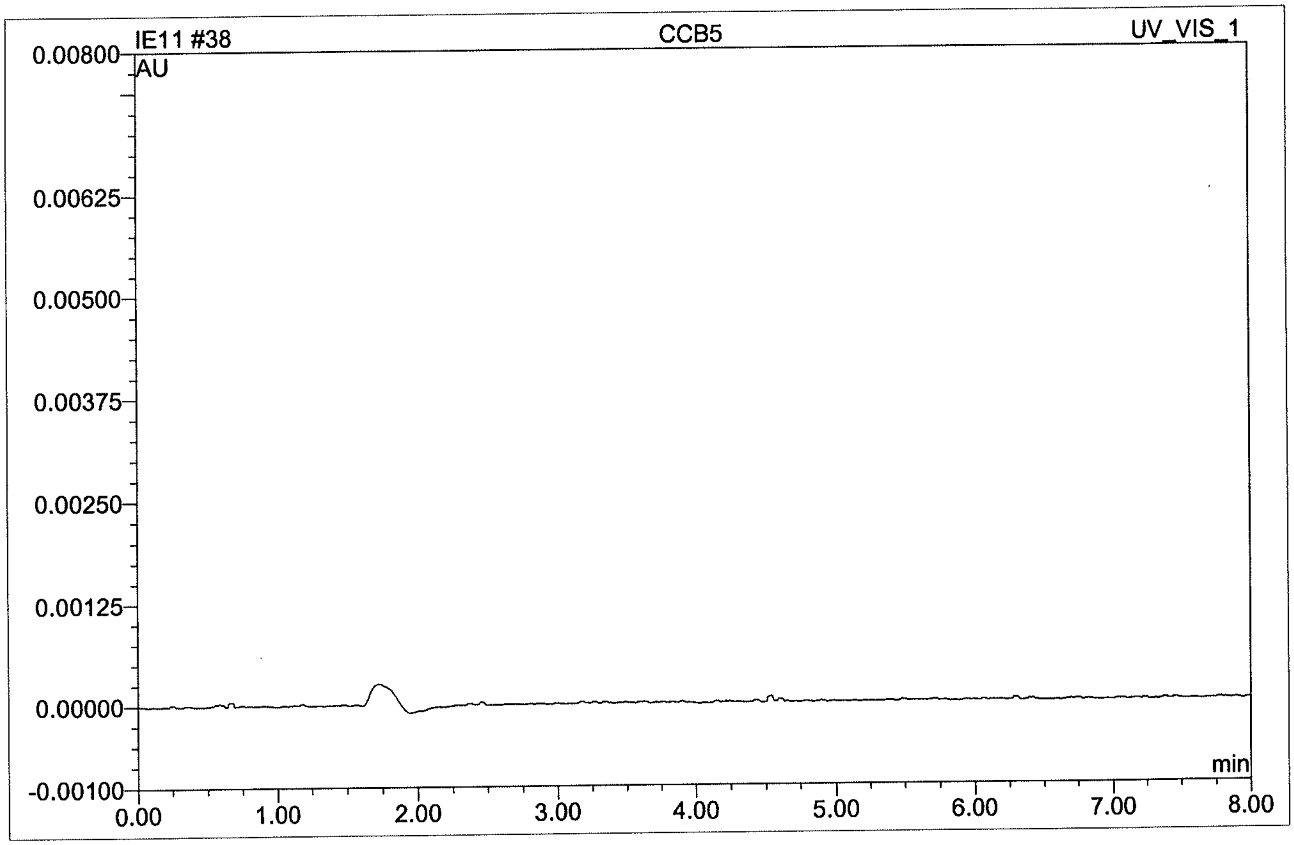
Sample Name:	**CCV5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 15:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.37	Cr6	0.0013110	0.0002093	100.00	1.968	BMB
Total:			0.001	0.000	100.00	1.968	

IE11 038 CCB5

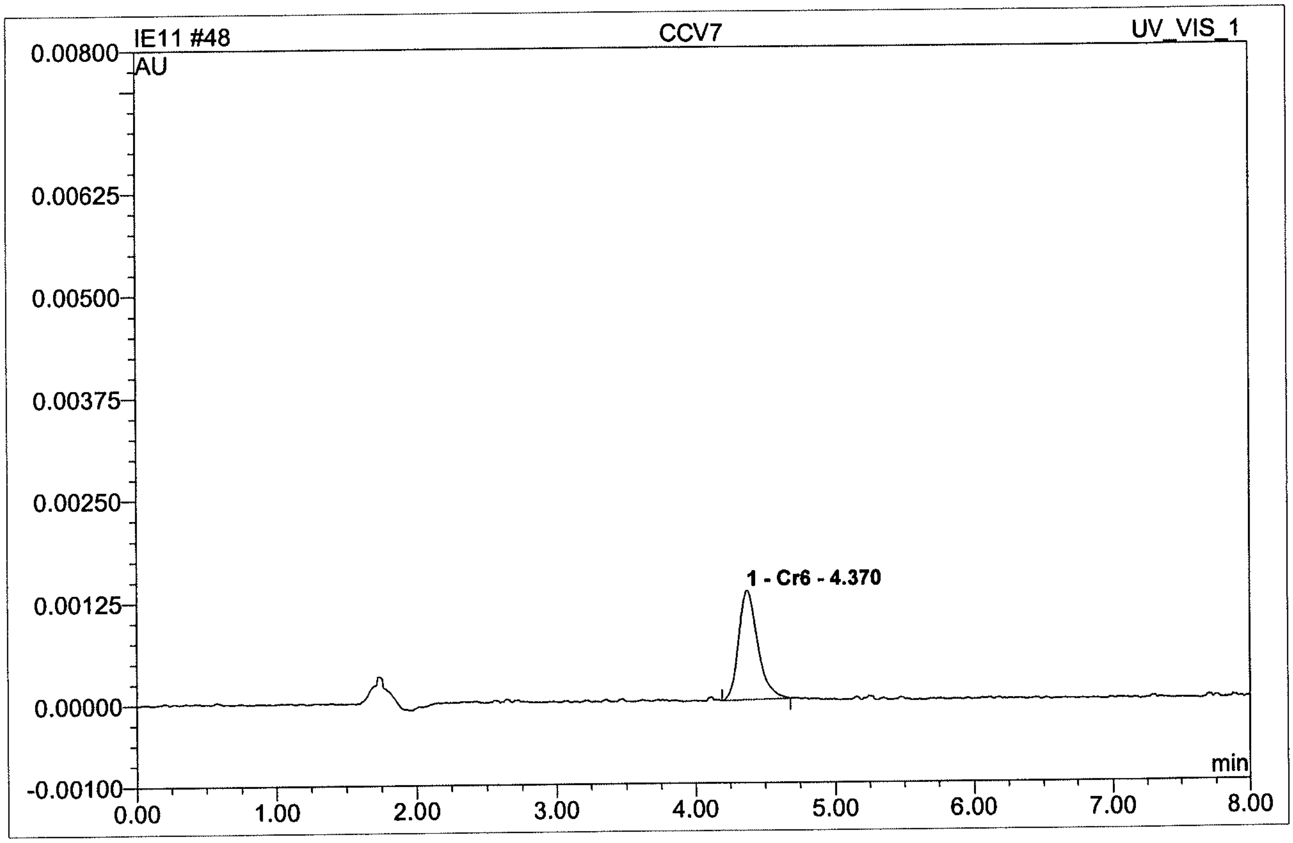
Sample Name:	**CCB5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 15:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 048 CCV7

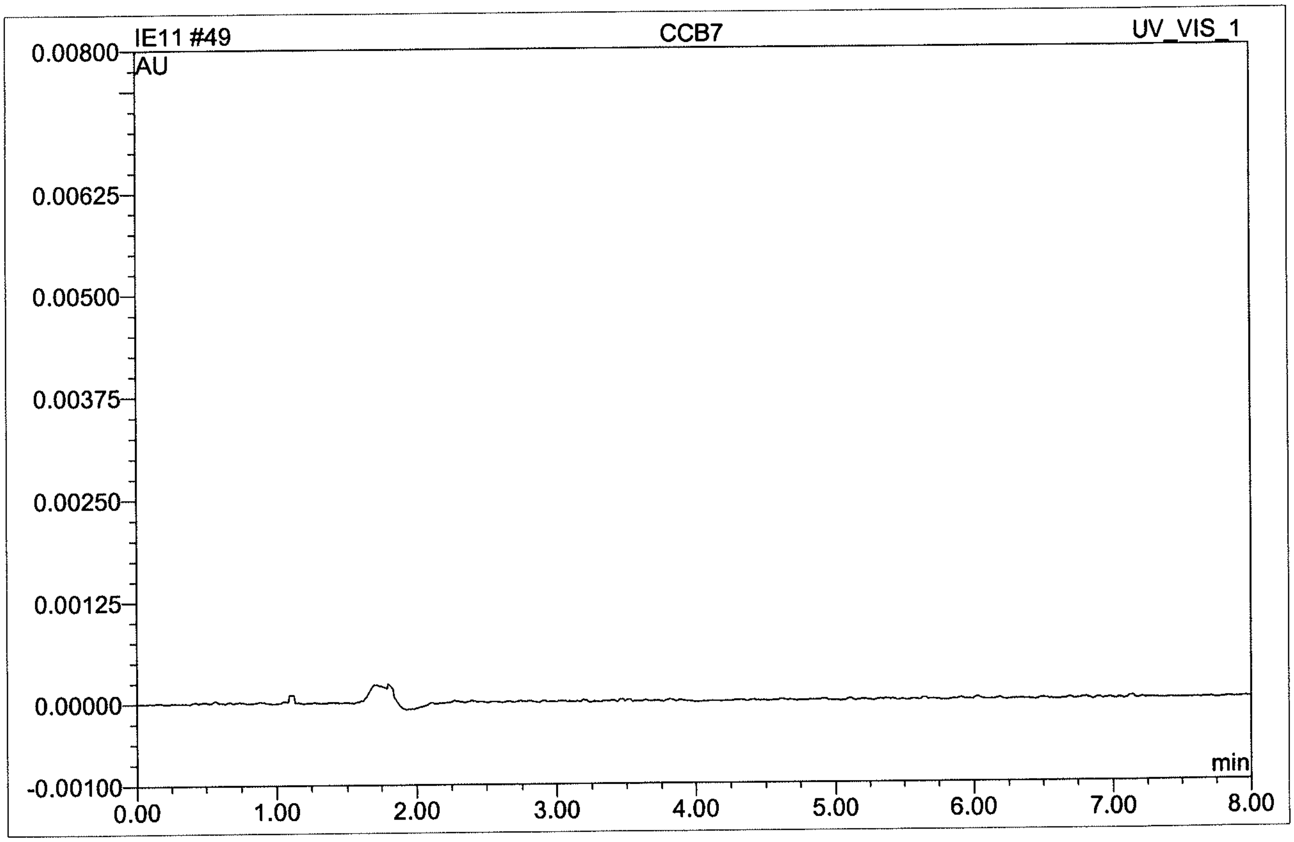
Sample Name:	**CCV7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 17:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.37	Cr6	0.0013330	0.0002124	100.00	1.997	BMB
Total:			0.001	0.000	100.00	1.997	

IE11 049 CCB7

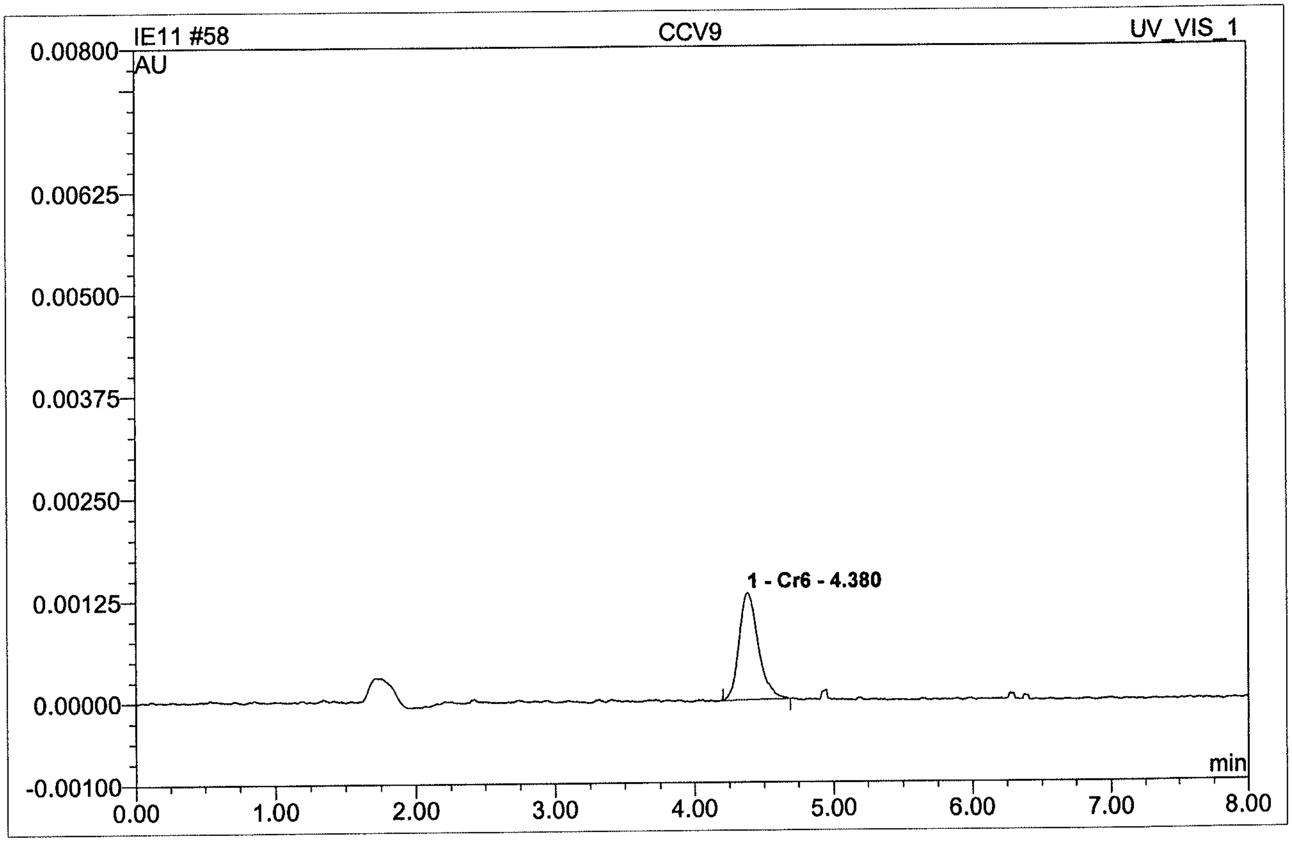
Sample Name:	**CCB7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 17:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 058 CCV9

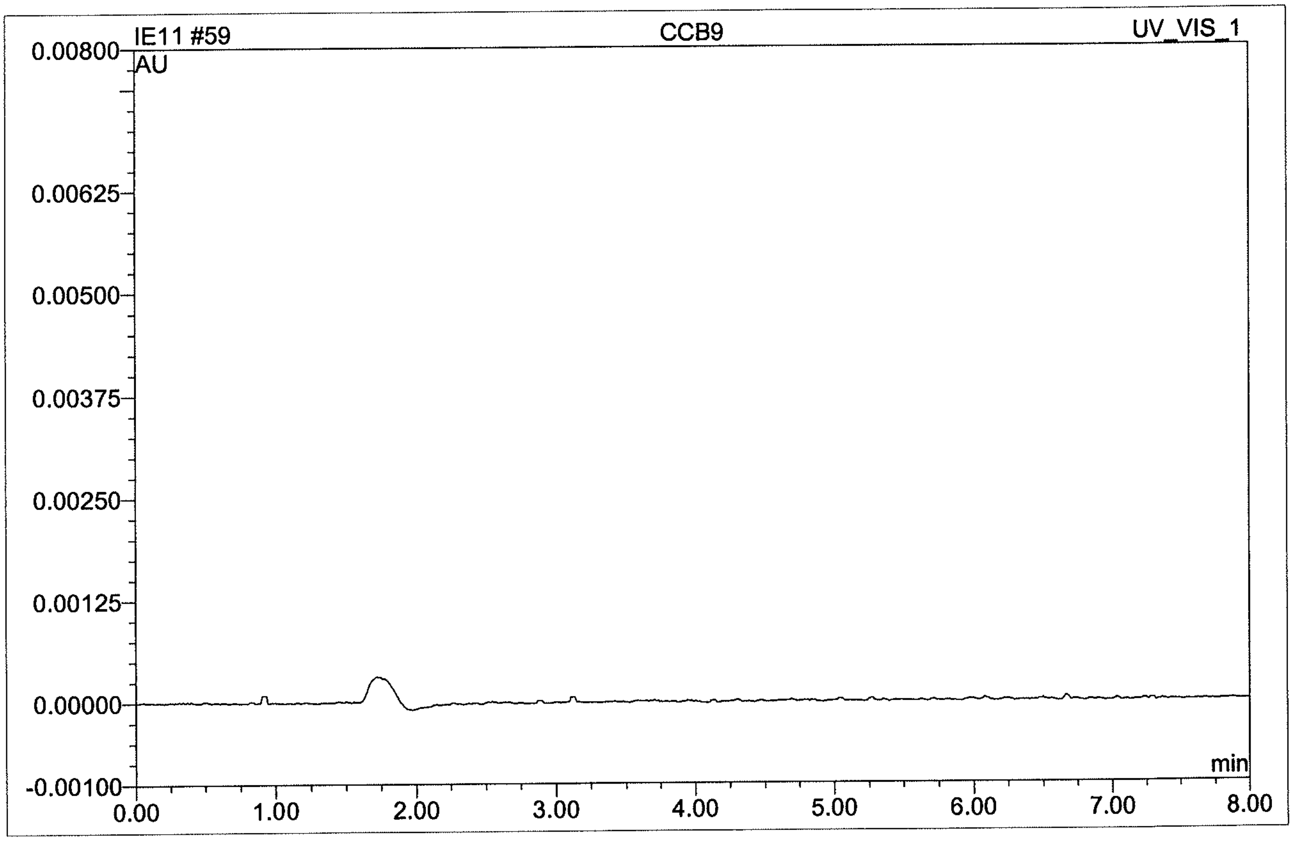
Sample Name:	**CCV9**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 19:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.38	Cr6	0.0013110	0.0002099	100.00	1.974	BMB
Total:			0.001	0.000	100.00	1.974	

IE11 059 CCB9

Sample Name:	**CCB9**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 19:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
HEXAVALENT CHROMIUM IC

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

1,5 Diphenylcarbohydrazide : 0.5 g SW9A-04-049

MeOH : 100 ml SW1A-006-07-09

H_2SO_4 : 28 ml ↓ -08-20

$(NH_4)_2SO_4$: 66 g SW9A-04-054

NH_4OH : 13 ml ↓ -048

☐ **pH Adjusted Water ID #:**
(range 9.3-9.5)

☑ **Buffer** (10 mL → 100 mL) SW4-04-16-01

Reagent Water ID #: RW1-17-004

Linear Range (ppb): S0-0
S1-0.2
S2-0.5
S3-1.0
S4-2.0
S5-5.0
S6-7.5
S7-10.0

HCE013W: E042

HCE015W: E091

Column: Dionex Ionpac AS7(4x250 mm) serial 17082129?
guard column: Dionex Ionpac NG1 (4x35 mm) serial 16102413?
wavelength: 530 nm
flow rate: 1.0 mL/min
injection: 250 uL

Book #: A59-043

Instrument No.: 59

Pipette ID: SW9A-04-017 ✓
SW9A-04-025 ✓
SW9A-04-052 ✓

Balance ID: 10601202

Analytical Sequence: IE11

Method File: IC59E10

Analytical Batch: HCE013W/015W

SOP #	Rev. #
☑ EMAX-218.6	6
☑ EMAX-7199	5
☐ EMAX-	

STANDARDS ID	
ICAL	SW6B-001-10-01
ICV	-10-02
CCV	-10-04
LCS	-10-05
MS	-06-25 (100 ppb)

Low Level CCV SW6B-001-10-03 (0.20 ppb)

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ CHROMELEON	
☐	

5 mL vial kit Lot #: 038008 Snap-Seal Container

0.45 µm filter lot #: 71610103 4 oz: 21117007

0.2 µm filter lot #: 1.5 oz: 21117007

Analyzed By: AS

Date: 5/10/18

Sequence: IE11
Operator: EMAXLABS

Printed: 5/11/2018 7:14:35 AM

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2018
Timebase: DX600
#Samples: 77

Created: 5/11/2018 7:12:58 AM by EMAXLABS
Last Update: 5/11/2018 7:12:58 AM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
1	IE11	001	IB	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:15:05 AM	1.0000	BUFFER
2	IE11	002	S-0	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:25:30 AM	1.0000	
3	IE11	003	S-1	Standard	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:35:54 AM	1.0000	0.2 PPB
4	IE11	004	S-2	Standard	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:46:19 AM	1.0000	0.5 PPB
5	IE11	005	S-3	Standard	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:56:43 AM	1.0000	1.0 PPB
6	IE11	006	S-4	Standard	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:07:07 AM	1.0000	2.0 PPB
7	IE11	007	S-5	Standard	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:17:32 AM	1.0000	5.0 PPB
8	IE11	008	S-6	Standard	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:27:55 AM	1.0000	7.5 PPB
9	IE11	009	S-7	Standard	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:38:20 AM	1.0000	10 PPB
10	IE11	010	ICV	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:48:57 AM	1.0000	3.0 PPB
11	IE11	011	ICB	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:59:21 AM	1.0000	
12	IE11	012	LOW LEVEL CCV	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 11:11:13 AM	1.0000	0.2 PPB
13	IE11	013	CCV1	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 11:21:37 AM	1.0000	
14	IE11	014	CCB1	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 11:32:02 AM	1.0000	
15	IE11	015	HCE013WB	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 11:42:26 AM	1.0000	
16	IE11	016	HCE013WL	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 11:52:50 AM	1.0000	
17	IE11	017	HCE013WC	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 12:03:14 PM	1.0000	
18	IE11	018	E042-02	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 12:13:38 PM	1.0000	
19	IE11	019	E042-02M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 12:24:02 PM	1.0000	
20	IE11	020	E042-02S	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 12:34:50 PM	1.0000	
21	IE11	021	E042-04	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 12:45:15 PM	1.0000	
22	IE11	022	E042-04M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 12:55:39 PM	1.0000	
23	IE11	023	E042-06	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 1:06:04 PM	1.0000	
24	IE11	024	E042-06M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 1:16:28 PM	1.0000	
25	IE11	025	CCV3	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 1:26:52 PM	1.0000	
26	IE11	026	CCB3	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 1:37:16 PM	1.0000	
27	IE11	027	E042-08	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 1:50:09 PM	1.0000	

FINAL AS

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2018
Timebase: DX600
#Samples: 77

Created: 5/11/2018 7:12:58 AM by EMAXLABS
Last Update: 5/11/2018 7:12:58 AM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
28	IE11	028	E042-08M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 2:00:33 PM	1.0000	
29	IE11	029	E042-08S	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 2:11:40 PM	1.0000	
30	IE11	030	E042-09	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 2:22:04 PM	1.0000	
31	IE11	031	E042-09M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 2:38:29 PM	1.0000	
32	IE11	032	E042-10	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 2:48:53 PM	1.0000	
33	IE11	033	E042-10M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 2:59:17 PM	1.0000	
34	IE11	034	E042-11	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 3:09:41 PM	1.0000	
35	IE11	035	E042-11M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 3:20:06 PM	1.0000	
36	IE11	036	E042-12	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 3:30:30 PM	1.0000	
37	IE11	037	CCV5	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 3:40:54 PM	1.0000	
38	IE11	038	CCB5	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 3:51:18 PM	1.0000	
39	IE11	039	E042-12M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 4:01:42 PM	1.0000	
40	IE11	040	E042-04I	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 4:12:06 PM	5.0000	D=5
41	IE11	041	E042-04IM	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 4:22:31 PM	5.0000	D=5
42	IE11	042	E042-06I	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 4:32:55 PM	5.0000	D=5
43	IE11	043	E042-06IM	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 4:43:19 PM	5.0000	D=5
44	IE11	044	E042-10I	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 4:53:43 PM	5.0000	D=5
45	IE11	045	E042-10IM	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 5:04:07 PM	5.0000	D=5
46	IE11	046	E042-11I	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 5:14:31 PM	5.0000	D=5
47	IE11	047	E042-11IM	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 5:24:55 PM	5.0000	D=5
48	IE11	048	CCV7	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 5:35:19 PM	1.0000	
49	IE11	049	CCB7	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 5:45:43 PM	1.0000	
50	IE11	050	E042-01	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 5:56:07 PM	1.0000	
51	IE11	051	E042-01M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 6:06:32 PM	1.0000	
52	IE11	052	E042-03	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 6:16:56 PM	1.0000	
53	IE11	053	E042-03M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 6:27:20 PM	1.0000	
54	IE11	054	E042-05	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 6:37:45 PM	1.0000	

FINAL AS

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2018
Timebase: DX600
#Samples: 77

Created: 5/11/2018 7:12:58 AM by EMAXLABS
Last Update: 5/11/2018 7:12:58 AM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
55	IE11	055	E042-05M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 6:48:09 PM	1.0000	
56	IE11	056	E042-07	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 6:58:33 PM	1.0000	
57	IE11	057	E042-07M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 7:08:57 PM	1.0000	
58	IE11	058	CCV9	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 7:19:21 PM	1.0000	
59	IE11	059	CCB9	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 7:29:45 PM	1.0000	
60	IE11	060	HCE015WB	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 7:40:09 PM	1.0000	
61	IE11	061	HCE015WL	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 7:50:34 PM	1.0000	
62	IE11	062	HCE015WC	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 8:00:58 PM	1.0000	
63	IE11	063	E091-01	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 8:11:22 PM	1.0000	
64	IE11	064	E091-01M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 8:21:46 PM	1.0000	
65	IE11	065	E091-01S	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 8:32:10 PM	1.0000	
66	IE11	066	E091-02	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 8:42:34 PM	1.0000	
67	IE11	067	E091-03	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 8:52:59 PM	1.0000	
68	IE11	068	E091-04	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:03:23 PM	1.0000	
69	IE11	069	E091-05	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:13:47 PM	1.0000	
70	IE11	070	CCV11	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:24:11 PM	1.0000	
71	IE11	071	CCB11	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:34:35 PM	1.0000	
72	IE11	072	E091-06	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:45:00 PM	1.0000	
73	IE11	073	E091-07	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:55:24 PM	1.0000	
74	IE11	074	E091-08	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:05:48 PM	1.0000	
75	IE11	075	E091-09	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:16:13 PM	1.0000	
76	IE11	076	CCV13	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:26:37 PM	1.0000	
77	IE11	077	CCB13	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:37:01 PM	1.0000	

FINAL
AS

SAMPLE PRESERVATION LOG(S)

EMAX LABORATORIES, INC.

pH ADJUSTMENTS/SAMPLE PRESERVATION LOG FOR HEXAVALENT CHROMIUM

Book #: PHC-017

SOP ☑ EMAX-218.6 Rev. 6 ☐ EMAX-7199 Rev. 5

Matrix: W Start Date: 5/7/18 Time: 12:45 End Date: 5/7/18 Time: ~~16:29~~ 17:15

Sample Prep ID	Lab Sample ID	Initial pH	Final pH	Notes
01	E042-01	9.36	9.36	no adjustment needed; G
02	-02	9.15	9.15	
03	-03	9.31	9.31	
04	-04	9.16	9.16	
05	-05	9.31	9.31	
06	-06	9.25	9.25	
07	-07	9.30	9.30	
08	-08	9.35	9.35	
09	-09	9.21	9.21	
10	-10	9.01	9.01	
11	-11	8.39	9.10	0.400 mL added →40 mL; G
12	-12	8.43	9.12	0.400 mL added →40 mL; G
13	E480-02	9.50	9.50	no adjustment needed; G
14	E482-01	9.50	9.50	
15				
16				
17				
18				
19				
20			AS	
21			5/7/18	
22				
23				
24				
25				

Standards	ID	pH
Buffer 7	SW1-01-945	7.00
Buffer 10	-965	10.01
Check pH Buffer (8)	-972	7.97
pH meter	F7	

Reagent	Standard ID #
NaOH	SW4-03-49-02
$(NH_4)_2SO_4/NH_4OH$	~~SW4-03-49-02~~ AS 5/7/18
Reagent Water	

Legend:

Color	Texture	Clarity	Artifacts
Bu = Blue Bl = Black	Cs = Coarse	Cr = Clear	Rk = Rocks
Bn = Brown Gn = Green	Md = Medium	Cy = Cloudy	Sl = Shale
Og = Orange Rd = Red	Fn = Fine	Td = Turbid	Vg = Vegetation
Yw = Yellow			

☑ Samples were received with preservation

Comments:

Prepared By: AS

Standard Added By: AS

Checked By: AS

RETENTION TIME WINDOW

RETENTION TIME WINDOW
METHOD 218.6/7199

Lab Name:	EMAX	**METHOD**:	EMAX-218.6/7199
Instrument ID:	DX500IC59	**IC COLUMN:**	AS7/AG7 / AS7/NG1
		COLUMN SIZE:	4x250mm

Compound	Ical Mean RT	from	to	Retention Time Window
CHROMIUM VI	**4.40**	4.19	4.62	**0.213**

IC59E10

LB 5/24/18

EMAX LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889

Date: 07-10-2018
EMAX Batch No.: 18E042_R1

Attn: Laura Madsen

ARCADIS
1410 Rocly Ridge Dr #330
Roseville CA 95661

Subject: Revised Laboratory Report
Project: PG&E TOPOCK-GMP

Enclosed is the Laboratory report for samples received on 05/04/18.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW-54-085-EB-Q218	E042-01	05/04/18	WATER	CHROMIUM HEXAVALENT BY IC
MW-54-085-Q218	E042-02	05/04/18	WATER	CHROMIUM HEXAVALENT BY IC SPECIFIC CONDUCTANCE DISSOLVED METALS BY ICP-MS
MW-54-140-EB-Q218	E042-03	05/04/18	WATER	CHROMIUM HEXAVALENT BY IC
MW-54-140-Q218	E042-04	05/04/18	WATER	CHROMIUM HEXAVALENT BY IC SPECIFIC CONDUCTANCE DISSOLVED METALS BY ICP-MS
MW-54-195-EB-Q218	E042-05	05/04/18	WATER	CHROMIUM HEXAVALENT BY IC
MW-54-195-Q218	E042-06	05/04/18	WATER	CHROMIUM HEXAVALENT BY IC SPECIFIC CONDUCTANCE DISSOLVED METALS BY ICP-MS
MW-55-045-EB-Q218	E042-07	05/03/18	WATER	CHROMIUM HEXAVALENT BY IC
MW-55-045-Q218	E042-08	05/03/18	WATER	CHROMIUM HEXAVALENT BY IC SPECIFIC CONDUCTANCE DISSOLVED CHROMIUM
MW-55-120-Q218	E042-09	05/03/18	WATER	CHROMIUM HEXAVALENT BY IC SPECIFIC CONDUCTANCE DISSOLVED CHROMIUM
MW-56D-Q218	E042-10	05/02/18	WATER	CHROMIUM HEXAVALENT BY IC SPECIFIC CONDUCTANCE DISSOLVED CHROMIUM
MW-56M-Q218	E042-11	05/02/18	WATER	CHROMIUM HEXAVALENT BY IC SPECIFIC CONDUCTANCE DISSOLVED CHROMIUM
MW-56S-Q218	E042-12	05/02/18	WATER	CHROMIUM HEXAVALENT BY IC SPECIFIC CONDUCTANCE DISSOLVED CHROMIUM

The results are summarized on the following pages.

This report was revised to update the case narratives to confirm collection time for sample E042-10.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912017-13
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

CHAIN OF CUSTODY

EMAX Laboratories, Inc.
1835 W. 205th Street, Torrance, CA 90501
Tel # : 310-618-8889 FAX#: 310-618-0818
Email: info@emaxlabs.com

PO NUMBER: RC000753.801D
SAMPLE STORAGE

EMAX CONTROL NO. 18E042

PROJECT CODE:

CLIENT	Arcadis
PROJECT	PG&E Topock - GMP
COORDINATOR	Dan Bush
TEL	916-786-3302
FAX	
EMAIL	dan.bush@arcadis.com; daniel.moore@critigen.com
SEND REPORT TO	Dan Bush
COMPANY	Arcadis
ADDRESS	1410 Rocly Ridge Dr #330, Roseville, CA 95661
EMAX PM	Andy Mai

MATRIX CODE	PRESERVATIVE CODE
DW=Drinking Water	IC = Ice
GW=Ground Water	HC = HCl
WW=Waste Water	HN=HNO3
SD=Solid Waste SL=Sludge	SH=NaO3
SS=Soil/ Sediment	ST=Na2S2O3
WP=Wipes PP=Pure Products	ZA=Zinc Acetate
AR=Air	HS=H2SO4
O=	N=(NH4)2, SO4, NH4, OH

ANALYSIS REQUIRED:
1. Cr(IV) FF (EPA 218.6) (NH4)2SO4/NH4OH
2. Cr(IV) FF (EPA 218.6) (NH4)2SO4/NH4OH (2 X 250 mL
3. Alkalinity, Total as CaCO3 (SM 2320 B)
4. Chloride, Sulfate (EPA 300.0)
5. Total Dissolved Solids (SM 2540 C)
6. Specific Conductance (EPA 120.1)
7. Dissolved Metals FF (SW 6020) (As, Cr, Mn)
8. Dissolved Metals FF (SW 6020) (Cr)

TAT:
- [ ] Rush __24__hrs.
- [ ] Rush __48_hrs
- [ ] Rush_72_hrs
- [x] 7 days
- [ ] 14 days
- [ ] 21 days

LAB	SAMPLE ID (CLIENT)	LOCATION	DATE	TIME	NO.	SIZE	TYPE	MATRIX CODE	QC	1 (IC,N)	2 (IC,N)	3 (IC)	4 (IC)	5 (IC)	6 (IC)	7 (HN)	8 (HN)			COMMENTS
* 1	MW-54-085-EB-Q218		5/4/2018	7:37	1	mL, 2x 125 mL	Poly	GW		X										
* 2	MW-54-085-Q218		5/4/2018	8:01	4	mL, 2x 125 mL	Poly	GW			X				X	X				
* 3	MW-54-140-EB-Q218		5/4/2018	7:00	1	mL, 2x 125 mL	Poly	GW		X										
* 4	MW-54-140-Q218		5/4/2018	8:06	4	mL, 2x 125 mL	Poly	GW			X				X	X				
* 5	MW-54-195-EB-Q218		5/4/2018	8:20	1	mL, 2x 125 mL	Poly	GW		X										
* 6	MW-54-195-Q218		5/4/2018	8:54	4	mL, 2x 125 mL	Poly	GW			X				X	X				
* 7	MW-55-045-EB-Q218		5/3/2018	12:25	1	mL, 2x 125 mL	Poly	GW		X										
* 8	MW-55-045-Q218		5/3/2018	13:08	4	mL, 2x 125 mL	Poly	GW			X				X		X			
* 9	MW-55-120-Q218		5/3/2018	13:53	4	mL, 2x 125 mL	Poly	GW			X				X		X			
10	MW-56D-Q218		5/2/2018	14:46	3	mL, 2x 125 mL	Poly	GW		X					X		X			

Instructions

Cooler #	Temp. (°C)	Sample #s
1	3.3	
2	2.9	

SAMPLER Gantt Jeffers

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Gantt Jeffers [signature]	5.4.18	~~1400~~ 1725	[signature]

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs. TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

CHAIN OF CUSTODY

EMAX Laboratories, Inc.	1835 W. 205th Street, Torrance, CA 90501 Tel # : 310-618-8889 FAX#: 310-618-0818 Email: info@emaxlabs.com	**PO NUMBER: RC000753.801D** SAMPLE STORAGE	**EMAX CONTROL NO.** 18E042 **PROJECT CODE:**

CLIENT Arcadis	MATRIX CODE	PRESERVATIVE CODE	TAT
PROJECT PG&E Topock - GMP	DW=Drinking Water	IC = Ice	☐ Rush __24__hrs.
COORDINATOR Dan Bush	GW=Ground Water	HC = HCl	☐ Rush __48_hrs
TEL 916-786-3302 FAX EMAIL dan.bush@arcadis.com daniel.moore@critigen.com	WW=Waste Water	HN=HNO3	☐ Rush_72_hrs
SEND REPORT TO Dan Bush	SD=Solid Waste SL=Sludge	SH=NaO3	☑ 7 days
COMPANY Arcadis	SS=Soil/ Sediment	ST=Na2S2O3	☐ 14 days
ADDRESS 1410 Rocly Ridge Dr #330, Roseville, CA 95661	WP=Wipes PP=Pure Products	ZA=Zinc Acetate	☐ 21 days
	AR=Air	HS=H2SO4	
EMAX PM Andy Mai	O=	N=(NH4)2, SO4, NH4, OH	

ANALYSIS REQUIRED:
1. Cr(IV) FF (EPA 218.6) (NH4)2SO4/NH4OH
2. Cr(IV) FF (EPA 218.6) (NH4)2SO4/NH4OH (2 X 250 mL
3. Alkalinity, Total as CaCO3 (SM 2320 B)
4. Chloride, Sulfate (EPA 300.0)
5. Total Dissolved Solids (SM 2540 C)
6. Specific Conductance (EPA 120.1)
7. Dissolved Metals FF (SW 6020) (As, Cr, Mn)
8. Dissolved Metals FF (SW 6020) (Cr)

LAB	SAMPLE ID CLIENT	LOCATION	DATE	TIME	NO.	SIZE	TYPE	MATRIX CODE	QC	1 IC,N	2 IC,N	3 IC	4 IC	5 IC	6 IC	7 HN	8 HN	HN	COMMENTS
1	MW-56M-Q218		5/2/2018	14:46	3	mL, 500 mL	Poly	GW		X					X		X		
2	MW-56S-Q218		5/2/2018	15:08	3	mL, 500 mL	Poly	GW		X					X		X		
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

11 7/12 Am5/4

Instructions

Cooler #	Temp. (°C)	Sample #s

SAMPLER Gantt Jeffers

COURIER/AIRBILL

RELINQUISHED BY	Date	Time	RECEIVED BY
Gantt Jeffers [signature]	5.4.18	~~1400~~ 1725	[signature]

NOTICE: Turn-around-time (TAT) for samples shall not begin untill all discrepancies have been resolved. For samples received and discrepacies resolved after 1500 hrs. TAT shall start at 0800 hrs the next business day. The client is responsible for all cost associted with sample disposal. Samples shall be disposed of as soon as practical (but not prior to fifteen (15) calendar days) after issuance of analytical report unless a different sample disposal schedule is pre-arranged with EMAX. Disposal fee for samples defined by CA Title 22 as non-hazardous shall be $5.00 per sample. EMAX will return hazardous samples to the client at the client's expense unless directed in writing otherwise.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 18E042	
☐ Fedex ☐ UPS ☐ GSO ☐ Others		Recipient Necy	
☐ EMAX Courier ☒ Client Delivery		Date 05/04/18	Time 17:25

COC INSPECTION

☒ Client Name	☒ Client PM/FC	☒ Sampler Name	☒ Sampling Date/Time	☒ Sample ID	☒ Matrix
☒ Address	☒ Tel # / Fax #	☒ Courier Signature	☒ Analysis Required	☒ Preservative (if any)	☒ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note:

PACKAGING INSPECTION

Container	☒ Cooler	☐ Box	☐ Other		
Condition	☐ Custody Seal	☒ Intact	☐ Damaged		
Packaging	☐ Bubble Pack	☐ Styrofoam	☐ Popcorn	☒ Sufficient	☒ Plastic Bag
Temperatures	☒ Cooler 1 3.3 °C	☒ Cooler 2 2.9 °C	☐ Cooler 3 ___ °C	☐ Cooler 4 ___ °C	☐ Cooler 5 ___ °C
(Cool, ≤6 °C but not frozen)	☐ Cooler 6 ___ °C	☐ Cooler 7 ___ °C	☐ Cooler 8 ___ °C	☐ Cooler 9 ___ °C	☐ Cooler 10 ___ °C
Thermometer:	*A - S/N* ___	*B - S/N* 1505555??2	*C - S/N* ___	*D - S/N* 1505554?30	

Comments: ☐ Temperature is out of range. PM was informed IMMEDIATELY.

Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
4,6	9, 12-15	D10		R1

05/4/18

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

NOTES/OBSERVATIONS: ① Sample 10 has two collection times. '14:46', '15:08'.
② Bottles received not EMAX containers.
Label on Metals containers read Metals only

☐ Continue to next page.

LEGEND:

Code	Description- Sample Management	Code	Description-Sample Management	Code	Description-Sample Management
D1	Analysis is not indicated in ___	D13	Out of Holding Time	R1	Proceed as indicated in ☐ COC ☐ Label
D2	Analysis mismatch COC vs label	D14	Bubble is >6mm	R2	Refer to attached instruction
D3	Sample ID mismatch COC vs label	D15	No trip blank in cooler	R3	Cancel the analysis
D4	Sample ID is not indicated in ___	D16	Preservation not indicated in ___	R4	Use vial with smallest bubble first
D5	Container -[improper] [leaking] [broken]	D17	Preservation mismatch COC vs label	R5	Log-in with latest sampling date and time+1 min
D6	Date/Time is not indicated in ___	D18	Insufficient chemical preservative	R6	Adjust pH as necessary
D7	Date/Time mismatch COC vs label	D19	Insufficient Sample	R7	Filter and preserved as necessary
D8	Sample listed in COC is not received	D20	No filtration info for dissolved analysis	R8	
D9	Sample received is not listed in COC	D21	No sample for moisture determination	R9	
D10	No initial/date on corrections in COC/label	D22		R10	
D11	Container count mismatch COC vs received	D23		R11	
D12	Container size mismatch COC vs received	D24		R12	

REVIEWS:

Sample Labeling ___ Date 05/04/18 | 5/4/18

SRF ___ Date 5/4/18

PM ___ Date 5/4/18

EMAX Laboratories, Inc. 1835 W. 205th St., Torrance, Ca 90501

Kim Tran

From: Tina Rice [Tina.Rice@critigen.com]
Sent: Tuesday, July 10, 2018 1:00 PM
To: Kim Tran
Cc: Daniel Moore; Madsen, Laura
Subject: Hinkley SDG 18E042

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Kim,

It was noted on the Sample Receipt form that the sample MW-56D-Q218 (lab sample 10) had two collection times - 14:46 and 15:08. The actual sample time is 14:46. Could you make an addition to the Case Narrative confirming that?

Thank you!
Tina

Tina Rice
Database Analyst

CRITIGEN

Tina.Rice@critigen.com
1 360 600 3562 Direct
1 360 600 3562 Mobile

critigen.com
critigen.co.uk

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

ARCADIS

PG&E TOPOCK-GMP

METHOD SW6020A
TOTAL AND DISSOLVED METALS BY ICP-MS

SDG#: 18E042

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 18E042

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

A total of five (5) water samples were received on 05/04/18 to be analyzed for Dissolved Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were satisfied. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. IME015WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. IME015WL/IME015WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of MS/MSD was analyzed. Chromium was within MS QC limits in E042-12M/S. Refer to Matrix QC summary form for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

Sample 18E042-10 (MW-56D-Q218) collection time was confirmed by client to be 1446.

REVISED

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 18E042

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

A total of three (3) water samples were received on 05/04/18 to be analyzed for Dissolved Metals by ICP-MS in accordance with Method SW6020A and project specific requirements.

Holding Time
Samples were digested and analyzed within the prescribed holding time.

Calibration
Initial Calibration was established as prescribed by the method and was verified using a secondary source(ICV). Interference checks were performed and results were within required limits. Continuing calibration verifications and continuing calibration blanks were carried out at the frequency specified by the project. All calibration requirements were satisfied. MRL was analyzed as required by the project.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. IME015WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. IME015WL/IME015WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was provided on this SDG.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

LAB CHRONICLE

DISSOLVED METALS BY ICP-MS

Client : ARCADIS
Project : PG&E TOPOCK-GMP

SDG NO. : 18E042
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IME015WB	1.00	NA	05/11/1814:33	05/10/1810:06	F6E07042	F6E07040	IME015W	Method Blank
LCS1W	IME015WL	1.00	NA	05/11/1814:37	05/10/1810:06	F6E07043	F6E07040	IME015W	Lab Control Sample (LCS)
LCD1W	IME015WC	1.00	NA	05/11/1814:42	05/10/1810:06	F6E07044	F6E07040	IME015W	LCS Duplicate
MW-54-085-Q218	E042-02	1.00	NA	05/11/1815:36	05/10/1810:06	F6E07056	F6E07051	IME015W	Field Sample
MW-54-140-Q218	E042-04	1.00	NA	05/11/1815:41	05/10/1810:06	F6E07057	F6E07051	IME015W	Field Sample
MW-54-195-Q218	E042-06	1.00	NA	05/11/1815:45	05/10/1810:06	F6E07058	F6E07051	IME015W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	05/04/18 08:01
Project	: PG&E TOPOCK-GMP	Date Received:	05/04/18
SDG NO.	: 18E042	Date Extracted:	05/10/18 10:06
Sample ID:	MW-54-085-Q218	Date Analyzed:	05/11/18 15:36
Lab Samp ID:	E042-02	Dilution Factor:	1
Lab File ID:	F6E07056	Matrix:	WATER
Ext Btch ID:	IME015W	% Moisture:	NA
Calib. Ref.:	F6E07051	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	4.34	1.00	0.200
Chromium	ND	1.00	0.200
Manganese	556	10.0	0.200

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml   Final Volume:50ml
Prepared by : MCande   Analyzed by:LVicto

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	05/04/18 08:06
Project	: PG&E TOPOCK-GMP	Date Received:	05/04/18
SDG NO.	: 18E042	Date Extracted:	05/10/18 10:06
Sample ID:	MW-54-140-Q218	Date Analyzed:	05/11/18 15:41
Lab Samp ID:	E042-04	Dilution Factor:	1
Lab File ID:	F6E07057	Matrix:	WATER
Ext Btch ID:	IME015W	% Moisture:	NA
Calib. Ref.:	F6E07051	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	3.14	1.00	0.200
Chromium	ND	1.00	0.200
Manganese	103	10.0	0.200

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 50ml   Final Volume:50ml

Prepared by : MCande   Analyzed by:LVicto

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 18E042
Sample ID: MW-54-195-Q218
Lab Samp ID: E042-06
Lab File ID: F6E07058
Ext Btch ID: IME015W
Calib. Ref.: F6E07051

Date Collected: 05/04/18 08:54
Date Received: 05/04/18
Date Extracted: 05/10/18 10:06
Date Analyzed: 05/11/18 15:45
Dilution Factor: 1
Matrix: WATER
% Moisture: NA
Instrument ID: F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	1.01	1.00	0.200
Chromium	ND	1.00	0.200
Manganese	232	10.0	0.200

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml
Final Volume:50ml
Prepared by : MCande
Analyzed by:LVicto

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ARCADIS	Date Collected: NA
Project : PG&E TOPOCK-GMP	Date Received: NA
SDG NO. : 18E042	Date Extracted: 05/10/18 10:06
Sample ID: MBLK1W	Date Analyzed: 05/11/18 14:33
Lab Samp ID: IME015WB	Dilution Factor: 1
Lab File ID: F6E07042	Matrix: WATER
Ext Btch ID: IME015W	% Moisture: NA
Calib. Ref.: F6E07040	Instrument ID: F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	1.00	0.200
Chromium	ND	1.00	0.200
Manganese	ND	10.0	0.200

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml
Prepared by : MCande Analyzed by:LVicto

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1.00	1.00	1.00
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IME015WB	IME015WL	IME015WC
LAB FILE ID	: F6E07042	F6E07043	F6E07044
DATE PREPARED	: 05/10/18 10:06	05/10/18 10:06	05/10/18 10:06
DATE ANALYZED	: 05/11/18 14:33	05/11/18 14:37	05/11/18 14:42
PREP BATCH	: IME015W	IME015W	IME015W
CALIBRATION REF:	F6E07040	F6E07040	F6E07040

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Arsenic	ND	30	30.7	102	30	28.6	95	7	85-115	20
Chromium	ND	30	30.9	103	30	29.0	97	6	85-115	20
Manganese	ND	30	32.0	107	30	30.0	100	6	85-115	20

LAB CHRONICLE
DISSOLVED METALS BY ICP-MS

Client : ARCADIS
Project : PG&E TOPOCK-GMP

SDG NO. : 18E042
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IME015WB	1.00	NA	05/11/1814:33	05/10/1810:06	F6E07042	F6E07040	IME015W	Method Blank
LCS1W	IME015WL	1.00	NA	05/11/1814:37	05/10/1810:06	F6E07043	F6E07040	IME015W	Lab Control Sample (LCS)
LCD1W	IME015WC	1.00	NA	05/11/1814:42	05/10/1810:06	F6E07044	F6E07040	IME015W	LCS Duplicate
MW-55-045-Q218	E042-08	1.00	NA	05/11/1815:50	05/10/1810:06	F6E07059	F6E07051	IME015W	Field Sample
MW-55-120-Q218	E042-09	1.00	NA	05/11/1815:54	05/10/1810:06	F6E07060	F6E07051	IME015W	Field Sample
MW-56D-Q218	E042-10	1.00	NA	05/11/1815:59	05/10/1810:06	F6E07061	F6E07051	IME015W	Field Sample
MW-56M-Q218	E042-11	1.00	NA	05/11/1816:03	05/10/1810:06	F6E07062	F6E07051	IME015W	Field Sample
MW-56S-Q218MS	E042-12M	1.00	NA	05/11/1816:17	05/10/1810:06	F6E07065	F6E07063	IME015W	Matrix Spike Sample (MS)
MW-56S-Q218MSD	E042-12S	1.00	NA	05/11/1816:21	05/10/1810:06	F6E07066	F6E07063	IME015W	MS Duplicate (MSD)
MW-56S-Q218	E042-12	1.00	NA	05/11/1816:31	05/10/1810:06	F6E07068	F6E07063	IME015W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ARCADIS	Date Collected: 05/03/18 13:08
Project : PG&E TOPOCK-GMP	Date Received: 05/04/18
SDG NO. : 18E042	Date Extracted: 05/10/18 10:06
Sample ID: MW-55-045-Q218	Date Analyzed: 05/11/18 15:50
Lab Samp ID: E042-08	Dilution Factor: 1
Lab File ID: F6E07059	Matrix: WATER
Ext Btch ID: IME015W	% Moisture: NA
Calib. Ref.: F6E07051	Instrument ID: F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml
Prepared by : MCande Analyzed by:LVicto

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	05/03/18 13:53
Project	: PG&E TOPOCK-GMP	Date Received:	05/04/18
SDG NO.	: 18E042	Date Extracted:	05/10/18 10:06
Sample ID:	MW-55-120-Q218	Date Analyzed:	05/11/18 15:54
Lab Samp ID:	E042-09	Dilution Factor:	1
Lab File ID:	F6E07060	Matrix:	WATER
Ext Btch ID:	IME015W	% Moisture:	NA
Calib. Ref.:	F6E07051	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	8.35	1.00	0.200

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml Final Volume:50ml
Prepared by : MCande Analyzed by:LVicto

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ARCADIS	Date Collected: 05/02/18 14:46
Project : PG&E TOPOCK-GMP	Date Received: 05/04/18
SDG NO. : 18E042	Date Extracted: 05/10/18 10:06
Sample ID: MW-56D-Q218	Date Analyzed: 05/11/18 15:59
Lab Samp ID: E042-10	Dilution Factor: 1
Lab File ID: F6E07061	Matrix: WATER
Ext Btch ID: IME015W	% Moisture: NA
Calib. Ref.: F6E07051	Instrument ID: F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 50ml — Final Volume:50ml

Prepared by : MCande — Analyzed by:LVicto

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ARCADIS	Date Collected: 05/02/18 14:46
Project : PG&E TOPOCK-GMP	Date Received: 05/04/18
SDG NO. : 18E042	Date Extracted: 05/10/18 10:06
Sample ID: MW-56M-Q218	Date Analyzed: 05/11/18 16:03
Lab Samp ID: E042-11	Dilution Factor: 1
Lab File ID: F6E07062	Matrix: WATER
Ext Btch ID: IME015W	% Moisture: NA
Calib. Ref.: F6E07051	Instrument ID: F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

Note: Detection limits are reported relative to sample result significant figures.

Sample Amount : 50ml   Final Volume:50ml
Prepared by : MCande   Analyzed by:LVicto

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ARCADIS	Date Collected:	05/02/18 15:08
Project	: PG&E TOPOCK-GMP	Date Received:	05/04/18
SDG NO.	: 18E042	Date Extracted:	05/10/18 10:06
Sample ID:	MW-56S-Q218	Date Analyzed:	05/11/18 16:31
Lab Samp ID:	E042-12	Dilution Factor:	1
Lab File ID:	F6E07068	Matrix:	WATER
Ext Btch ID:	IME015W	% Moisture:	NA
Calib. Ref.:	F6E07063	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml   Final Volume:50ml
Prepared by : MCande   Analyzed by:LVicto

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client : ARCADIS	Date Collected: NA
Project : PG&E TOPOCK-GMP	Date Received: NA
SDG NO. : 18E042	Date Extracted: 05/10/18 10:06
Sample ID: MBLK1W	Date Analyzed: 05/11/18 14:33
Lab Samp ID: IME015WB	Dilution Factor: 1
Lab File ID: F6E07042	Matrix: WATER
Ext Btch ID: IME015W	% Moisture: NA
Calib. Ref.: F6E07040	Instrument ID: F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	ND	1.00	0.200

Note: Detection limits are reported relative to sample result significant figures.
Sample Amount : 50ml   Final Volume:50ml
Prepared by : MCande   Analyzed by:LVicto

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1.00	1.00	1.00
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IME015WB	IME015WL	IME015WC
LAB FILE ID	: F6E07042	F6E07043	F6E07044
DATE PREPARED	: 05/10/18 10:06	05/10/18 10:06	05/10/18 10:06
DATE ANALYZED	: 05/11/18 14:33	05/11/18 14:37	05/11/18 14:42
PREP BATCH	: IME015W	IME015W	IME015W
CALIBRATION REF:	F6E07040	F6E07040	F6E07040

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Chromium	ND	30	30.9	103	30	29.0	97	6	85-115	20

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MW-56S-Q218	MW-56S-Q218MS	MW-56S-Q218MSD
LAB SAMPLE ID	: E042-12	E042-12M	E042-12S
LAB FILE ID	: F6E07068	F6E07065	F6E07066
DATE PREPARED	: 05/10/18 10:06	05/10/18 10:06	05/10/18 10:06
DATE ANALYZED	: 05/11/18 16:31	05/11/18 16:17	05/11/18 16:21
PREP BATCH	: IME015W	IME015W	IME015W
CALIBRATION REF:	F6E07063	F6E07063	F6E07063

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpikeAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Chromium	ND	30	28.4	94.7	30	27.5	91.7	3	75-125	20

PSResult - Parent Sample Result

ICP-MS QC CHECK TABLE

QC	S4	ICV	CCV	ICSAB	ICSA
Limit%		90-110	90-110	80-120	80-120
Comp	ug/L	ug/L	ug/L	ug/L	ug/L
Al	50000	30000	25000	100000	100000
Sb	100	60	50	20	0
As	500	300	250	20	0
Ba	1000	300	500	20	0
Be	50	30	25	20	0
B	100	30	50	20	0
Cd	500	300	250	20	0
Ca	50000	30000	25000	100000	100000
Cr	500	300	250	20	0
Co	500	300	250	20	0
Cu	500	300	250	20	0
Fe	50000	30000	25000	100000	100000
Li	50	30	25	20	0
Pb	500	300	250	20	0
Mg	50000	30000	25000	100000	100000
Mn	3000	2000	1500	20	0
Mo	500	300	250	2000	2000
Ni	500	300	250	20	0
P	500	300	250	100000	100000
K	50000	30000	25000	100000	100000
Se	500	300	250	20	0
Si	5000	3000	2500	200	0
Ag	50	30	25	20	0
Na	50000	30000	25000	100000	100000
Sr	500	300	250	20	0
Tl	500	300	250	20	0
Sn	500	300	250	20	0
Ti	500	300	250	2000	2000
W	50	30	25	20	0
V	500	300	250	20	0
U	500	300	250	20	0
Zn	500	300	250	20	0
Zr	50	30	25	20	0

LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Start Date: 05/11/18 11:42

End Date: 05/11/18 18:54

Comments:

All soil/solid samples are diluted at 10x dilution prior to analysis.

Filter Lot #: NA

Book #: AF6-022

Instrument No.: F6

Analytical Batch: IF6E07

Analytical Sequence: F6E07

Method File: EM6020R2

Micropipette ID: ☐ 142781004

Micropipette ID: ☐ ICP-06

Micropipette ID: ☐ 339362028

Micropipette ID: ☑ GFAA-07

Micropipette ID: ☑ 339342032

Micropipette ID: ☑ 542780515

Micropipette ID: ☑ 542761827

Micropipette ID: ☐

SOP #	Rev. #
☑ EMAX-6020	9
☐ EMAX-200.8	5
☐ EMAX-	
☐ EMAX-	
☐ EMAX-	

STANDARDS ID		STANDARDS ID	
S0	SM6B.13.30.02	MRL1 (1)	SM6B.13.49.02
S1	↓ 31.01	MRL2 (0.5)	SM6B.14.09.02
S2	SM6B.14.04.01	MRL3 (LAT)	↓ 10.01
S3	SM6B.13.31.02	MRL4	NA
S4	SM6B.14.04.02	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	SM6B.13.40.02
S7	↓	Post-Spike 1	SM6A.007.05.03
ICV	SM6B.13.41.01	Post-Spike 2	↓ 05.04
CCV	↓ 40.01	Post-Spike 3	NA
ICSA	SM6B.14.14.01	Post-Spike 4	↓
ICSAB	↓ 14.02		
6020 TUNE SOLN.	SM6B.13.28.02		
200.8 TUNE SOLN.	↓ 29.01		

Analyzed By: LV

Date: 05/11/18

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 18E042
Method : METHOD SW6020A
Sequence : IF6E07
InstrumentID: F6

Lab Samp ID :	ICV	ICSA	ICSAB
QC Limit :	%R:90-110/RSD:<5	%R:80-120/<LOD	%R:80-120
Lab File ID :	F6E07009	F6E07013	F6E07014
DateAnalyed :	05/11/1812:04	05/11/1812:22	05/11/1812:27

Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		28.28	30	1.14	94	.4908	0	>0	20.96	20	105
Beryllium		28.76	30	0.99	96	4.557E-05	0	<0.1	20.3	20	101
Boron		29.24	30	1.82	97	.6444	0	<5.0	19.6	20	98
Sodium		28390	30000	0.74	95	99680	100000	100	99310	100000	99
Magnesium		28550	30000	0.85	95	101200	100000	101	99660	100000	100
Aluminum		28260	30000	0.72	94	100200	100000	100	98740	100000	99
Silicon		2911	3000	0.74	97	9.136	0	<20	209.5	200	105
Phosphorus		277.4	300	0.56	92	108900	100000	109	106700	100000	107
Potassium		29110	30000	0.68	97	103000	100000	103	102300	100000	102
Calcium		28830	30000	0.32	96	99690	100000	100	99300	100000	99
Titanium		288.5	300	0.42	96	2201	2000	110	2196	2000	110
Vanadium		290.1	300	0.87	97	-.112	0	<0.5	20.11	20	101
Chromium	T	283.2	300	0.78	94	.1771	0	<0.2	20.07	20	100
Manganese		1871	2000	0.90	94	.3509	0	>0.2	20.21	20	101
Iron		29150	30000	0.75	97	98060	100000	98	98440	100000	98
Cobalt		299.1	300	1.19	100	.2251	0	>0.2	20.56	20	103
Nickel		304	300	0.43	101	.2993	0	>0.2	20.58	20	103
Copper		290.5	300	0.40	97	.9084	0	>0.5	21.39	20	107
Zinc		274.8	300	0.49	92	3.899	0	<10	22.53	20	113
Arsenic		286.7	300	0.76	96	.2383	0	>0.2	20.13	20	101
Selenium		286.2	300	1.07	95	.1653	0	<0.3	21.41	20	107
Strontium		286.7	300	1.15	96	.8803	0	<1.0	20.63	20	103
Zirconium		25.69	30	0.41	86*	.2312	0	<2.0	6.608	20	33*
Molybdenum		297.4	300	0.55	99	2042	2000	102	2085	2000	104
Silver		28.07	30	1.27	94	.02557	0	<0.2	19.72	20	99
Cadmium		297.4	300	0.68	99	.1701	0	<0.2	20.31	20	102
Tin		297.4	300	0.54	99	.08236	0	<0.2	19.86	20	99
Antimony		56.69	60	1.30	94	.05553	0	<0.5	20.49	20	102
Barium		293.6	300	2.81	98	.101	0	<0.5	20.29	20	101
Tungsten		46.33	30	1.18	154*	.2226	0	<1.0	19.59	20	98
Thallium		276.2	300	1.43	92	.007339	0	<0.2	19.14	20	96
Lead		280.8	300	1.50	94	.1007	0	>0.1	19.27	20	96
Uranium		278.5	300	0.99	93	.01128	0	<0.1	19.68	20	98

| Unit: ug/L
| T: Target analyte
| EV: Expected Value
| Comment: * Out of QC limit

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 18E042
Method : METHOD SW6020A
Sequence : IF6E07
Instrument ID: F6

CCV SampleID		: CCV1			CCV3			CCV4			CCV5			CCV6		
CCV DataFileID		: F6E07016			F6E07040			F6E07051			F6E07063			F6E07075		
CCV DateTime		: 05/11/18 12:36			05/11/18 14:24			05/11/18 15:14			05/11/18 16:08			05/11/18 17:02		
PARAMETER	CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium	25	25.2	101	2.27	24.8	99	2.77	24.7	99	2.26	28.6	114*	0.65	25.4	101	[illegible]
Beryllium	25	25.3	101	1.29	24.5	98	0.53	24.3	97	1.67	23.8	95	0.39	24.4	98	2.33
Boron	50	50.7	101	1.13	48.4	97	2.30	48.6	97	2.04	58.6	117*	1.77	52.5	105	1.92
Sodium	25000	25200	101	1.37	25600	103	0.49	25100	100	2.08	26300	105	0.72	25200	101	0.93
Magnesium	25000	24600	98	1.04	24700	99	0.45	24900	99	0.94	23900	95	0.62	24100	96	0.87
Aluminum	25000	24700	99	0.48	24800	99	0.23	25000	100	0.90	24300	97	1.22	24400	98	1.41
Silicon	2500	2500	100	0.85	2580	103	1.06	2580	103	1.60	2740	110	0.77	2670	107	1.46
Phosphorus	250	235	94	1.00	240	96	1.50	244	98	1.67	251	100	1.13	247	99	1.52
Potassium	25000	25200	101	0.66	25900	103	1.25	25800	103	0.98	25700	103	0.46	26000	104	0.29
Calcium	25000	25200	101	0.60	25100	101	0.61	24900	100	1.14	25400	101	1.03	25100	100	0.79
Titanium	250	250	100	0.26	251	100	0.37	252	101	0.70	254	101	0.89	252	101	1.23
Vanadium	250	251	100	1.27	250	100	1.00	250	100	0.52	245	98	0.99	249	100	0.72
Chromium T	250	246	98	1.28	242	97	0.50	244	98	0.99	236	95	0.42	240	96	0.67
Manganese	1500	1470	98	0.27	1470	98	0.94	1480	99	0.58	1450	97	0.86	1460	98	0.78
Iron	25000	25100	100	0.53	25000	100	0.23	24700	99	0.62	24800	99	0.44	24900	99	[illegible]
Cobalt	250	250	100	0.32	250	100	0.44	252	101	0.88	253	101	0.83	254	102	1.32
Nickel	250	255	102	0.85	252	101	0.37	251	101	0.23	245	98	0.13	248	99	0.61
Copper	250	245	98	0.51	244	98	0.86	243	97	1.03	233	93	1.19	239	96	1.18
Zinc	250	234	94	0.59	233	93	1.05	233	93	0.80	227	91	0.69	228	91	1.09
Arsenic	250	248	99	0.06	245	98	0.66	243	97	0.80	242	97	0.06	245	98	0.70
Selenium	250	249	99	1.37	245	98	0.78	243	97	1.80	238	95	0.10	242	97	1.12
Strontium	250	246	98	0.74	247	99	0.30	247	99	0.83	248	99	0.20	249	99	[illegible]
Zirconium	25	0.797	3*	0.61	1.47	6*	7.44	0.597	2*	1.24	0.573	2*	1.29	0.564	2*	[illegible]
Molybdenum	250	253	101	1.95	251	100	0.33	254	102	1.34	254	102	0.99	254	101	[illegible]
Silver	25	25.0	100	1.58	24.8	99	0.81	24.7	99	0.94	24.7	99	0.91	24.7	99	0.54
Cadmium	250	250	100	1.31	246	98	0.27	246	98	0.48	244	98	0.83	244	98	1.02
Tin	250	254	101	1.28	251	101	0.24	252	101	1.30	253	101	1.26	254	102	0.63
Antimony	50	49.9	100	1.42	49.3	99	0.33	49.2	98	0.91	48.8	98	0.98	48.9	98	0.74
Barium	500	509	102	0.63	504	101	0.82	504	101	1.17	506	101	0.58	508	102	1.30
Tungsten	25	0.0546	0*	6.52	0.0335	0*	9.13	0.0358	0*	4.43	0.0507	0*	20.34	0.0381	0*	3.48
Thallium	250	233	93	1.28	237	95	0.64	234	94	0.48	232	93	0.79	236	95	1.26
Lead	250	239	96	0.71	244	98	1.05	243	97	0.61	241	96	0.13	243	97	1.56
Uranium	250	234	94	1.26	243	97	0.73	244	98	0.76	244	97	0.69	248	99	1.23

| Unit: ug/L
| T: Target analyte
| %Rec QC Limit: 90-110
| RSD QC Limit: <5
| CCV EV: CCV Expected Value ug/L
| Comment: * Out of QC limit

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG NO. : 18E042
Method : SW6020A
Sequence : IF6E07
Instrument ID: F6

CB SampleID		: ICB		CCB1		CCB3		CCB4		CCB5	
CB DataFileID		: F6E07010		F6E07017		F6E07041		F6E07052		F6E07064	
CB DateTime		: 05/11/1812:08		05/11/1812:40		05/11/1814:28		05/11/1815:18		05/11/1816:12	
PARAMETER	LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium	0	0.05	>0	0.003	>0	0.06	>0	0.08	>0	4	>0
Beryllium	0.1	0.005	<0.1	0.002	<0.1	0.002	<0.1	0.006	<0.1	0.002	<0.1
Boron	5.0	0.05	<5.0	0.03	<5.0	0.2	<5.0	0.4	<5.0	7	>5.0
Sodium	50	5	<50	10	<50	5	<50	8	<50	1000	>50
Magnesium	10	0.3	<10	0.6	<10	0.5	<10	0.8	<10	0.8	<10
Aluminum	20	0.4	<20	0.4	<20	0.5	<20	0.7	<20	0.7	<20
Silicon	20	1.0	<20	1	<20	0.9	<20	1	<20	3	<20
Phosphorus	25	9	<25	20	<25	20	<25	20	<25	10	<25
Potassium	20	2	<20	10	<20	7	<20	5	<20	9	<20
Calcium	25	0.7	<25	0.6	<25	1	<25	1	<25	2	<25
Titanium	0.5	0.05	<0.5	0.01	<0.5	0.05	<0.5	0.08	<0.5	0.04	<0.5
Vanadium	0.5	0.1	<0.5	0.04	<0.5	0.10	<0.5	0.06	<0.5	0.08	<0.5
Chromium T	0.2	0.05	<0.2	0.06	<0.2	0.09	<0.2	0.09	<0.2	0.2	<0.2
Manganese	0.2	0.01	<0.2	0.02	<0.2	0.02	<0.2	0.01	<0.2	0.005	<0.2
Iron	10	2	<10	2	<10	2	<10	2	<10	2	<10
Cobalt	0.2	0.02	<0.2	0.003	<0.2	0.006	<0.2	0.009	<0.2	0.008	<0.2
Nickel	0.2	0.003	<0.2	0.003	<0.2	0.005	<0.2	0.004	<0.2	0.006	<0.2
Copper	0.5	0.1	<0.5	0.2	<0.5	0.02	<0.5	0.009	<0.5	0.1	<0.5
Zinc	10	0.2	<10	0.2	<10	0.2	<10	0.2	<10	0.08	<10
Arsenic	0.2	0.04	<0.2	0.03	<0.2	0.02	<0.2	0.04	<0.2	0.01	<0.2
Selenium	0.3	0.09	<0.3	0.07	<0.3	0.03	<0.3	0.05	<0.3	0.06	<0.3
Strontium	1.0	0.005	<1.0	0.003	<1.0	0.01	<1.0	0.01	<1.0	0.1	<1.0
Zirconium	2.0	0.004	<2.0	0.008	<2.0	0.002	<2.0	0.009	<2.0	0.008	<2.0
Molybdenum	0.5	0.2	<0.5	0.2	<0.5	0.1	<0.5	0.1	<0.5	0.1	<0.5
Silver	0.2	0.001	<0.2	0.002	<0.2	0.0001	<0.2	0.002	<0.2	0.005	<0.2
Cadmium	0.2	0.009	<0.2	0.002	<0.2	0.006	<0.2	0.005	<0.2	0.004	<0.2
Tin	0.2	0.3	>0.2	0.2	<0.2	0.1	<0.2	0.1	<0.2	0.1	<0.2
Antimony	0.5	0.03	<0.5	0.01	<0.5	0.01	<0.5	0.04	<0.5	0.02	<0.5
Barium	0.5	0.02	<0.5	0.008	<0.5	0.02	<0.5	0.02	<0.5	0.02	<0.5
Tungsten	1.0	0.07	<1.0	0.007	<1.0	0.002	<1.0	0.004	<1.0	0.006	<1.0
Thallium	0.2	0.04	<0.2	0.03	<0.2	0.04	<0.2	0.03	<0.2	0.03	<0.2
Lead	0.1	0.04	<0.1	0.02	<0.1	0.02	<0.1	0.02	<0.1	0.01	<0.1
Uranium	0.1	0.07	<0.1	0.05	<0.1	0.05	<0.1	0.06	<0.1	0.06	<0.1

CB SampleID		: CCB6	
CB DataFileID		: F6E07076	
CB DateTime		: 05/11/1817:07	
PARAMETER	LOD	RESULT	< LOD >
Lithium	0	0.9	>0
Beryllium	0.1	0.004	<0.1
Boron	5.0	4	<5.0
Sodium	50	300	>50
Magnesium	10	1	<10
Aluminum	20	0.7	<20
Silicon	20	3	<20
Phosphorus	25	10	<25
Potassium	20	3	<20
Calcium	25	2	<25
Titanium	0.5	0.04	<0.5
Vanadium	0.5	0.1	<0.5
Chromium T	0.2	0.1	<0.2
Manganese	0.2	0.005	<0.2
Iron	10	2	<10
Cobalt	0.2	0.009	<0.2
Nickel	0.2	0.01	<0.2
Copper	0.5	0.4	<0.5
Zinc	10	0.2	<10

Arsenic	0.2	0.04	<0.2
Selenium	0.3	0.04	<0.3
Strontium	1.0	0.10	<1.0
Zirconium	2.0	0.008	<2.0
Molybdenum	0.5	0.1	<0.5
Silver	0.2	0.001	<0.2
Cadmium	0.2	0.005	<0.2
Tin	0.2	0.1	<0.2
Antimony	0.5	0.02	<0.5
Barium	0.5	0.03	<0.5
Tungsten	1.0	0.002	<1.0
Thallium	0.2	0.03	<0.2
Lead	0.1	0.01	<0.1
Uranium	0.1	0.06	<0.1

| Unit: ug/L
| CB: Calibration Blank
| T: Target analyte
| Acceptance Criteria: CCB Result <LOD
| Comment:

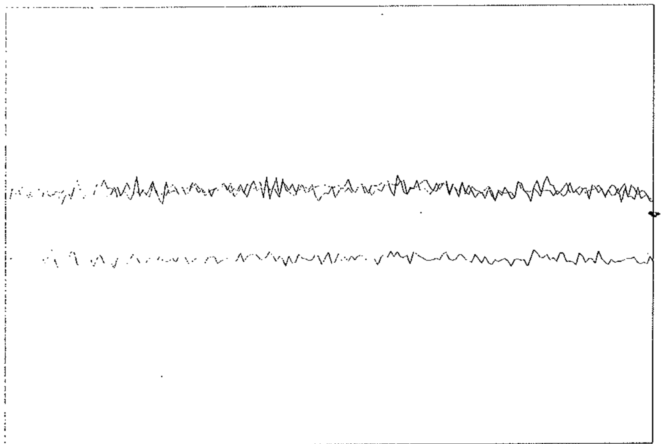
	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		TUNBEG	Start of TUNE						
2	C:\ICPCHEM\1\METHODS\TN6020_C.M	Tun6	1301	F6E07001	6020tunchk		1.000				
3	C:\ICPCHEM\1\METHODS\TN200_8C.M	Tun2	1302	F6E07002	200.8tunchk		1.000				
4		Keyword		TUNEND	End of TUNE						
5		Keyword		CALBEG	Start of CALIB						
6	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalBlk	1101	F6E07003	BLNK		Level 1				
7	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalBlk	1201	F6E07004	S0		Level 1				
8	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1104	F6E07005	S1 0.5		Level 2				
9	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1105	F6E07006	S2 50		Level 3				
10	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1106	F6E07007	S3 250		Level 4				
11	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1107	F6E07008	S4 500		Level 5				
12	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICV1	1204	F6E07009	ICV		1.000				
13	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICB	1201	F6E07010	ICB		1.000				
14	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1305	F6E07011	MRLE1101	1/100/10 ppb	1.000				
15	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1306	F6E07012	MRLE1102	0.5/50/4 ppb	1.000				
16	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-A	1303	F6E07013	ICSA		1.000				
17	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-AB	1304	F6E07014	ICSAB		1.000				
18	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1207	F6E07015	MRLE1103	500 ppb CAT	1.000				
19	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E07016	CCV1		1.000				
20	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E07017	CCB1		1.000				
21		Keyword		CALEND	End of CALIB						
22		Keyword		SMPLBEG	Start of SMPL						
23	C:\ICPCHEM\1\METHODS\EM6020R2.M	MBS	2101	F6E07018	IME016SB		1.000				
24	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCSS	2102	F6E07019	IME016SL		1.000				
25	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCSS	2103	F6E07020	IME016SC		1.000				
26	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2104	F6E07021	E059-01M Ca Sr ↑	Sb Cr Mn	1.000				
27	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2105	F6E07022	E059-01S		1.000				
28	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2106	F6E07023	E059-01A ✓		1.000				
29	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2107	F6E07024	E059-01		1.000				
30	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2108	F6E07025	E059-01J		5.000				
31	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2109	F6E07026	E059-02 Ca Sr ↑		1.000				
32	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2110	F6E07027	E059-03		1.000				
33	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E07028	CCV2		1.000				
34	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E07029	CCB2		1.000				
35	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3104	F6E07030	E002-06N	TOT	1.000				
36	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3105	F6E07031	E002-06N	DISS	1.000				
37	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3106	F6E07032	E002-06	TOT from bottle	1.000				
38	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2111	F6E07033	E059-01M		10.00				
39	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2112	F6E07034	E059-01S		10.00				
40	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2201	F6E07035	E059-01A		10.00				
41	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2202	F6E07036	E059-01I		10.00				
42	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2203	F6E07037	E059-01J		50.00				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
43	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2204	F6E07038	E059-02I		10.00				
44	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2205	F6E07039	E059-03I		10.00				
45	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E07040	CCV3		1.000				
46	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E07041	CCB3		1.000				
47	C:\ICPCHEM\1\METHODS\EM6020R2.M	MBW	2206	F6E07042	IME015WB		1.000				
48	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	2207	F6E07043	IME015WL		1.000				
49	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	2208	F6E07044	IME015WC		1.000				
50	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2209	F6E07045	TXE006WB		1.000				
51	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2210	F6E07046	E034-01M		1.000				
52	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2211	F6E07047	E034-01S Ba x		1.000				
53	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2212	F6E07048	E034-01A Ba ok✓		1.000				
54	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2301	F6E07049	E034-01		1.000				
55	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2302	F6E07050	E034-01J		5.000				
56	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E07051	CCV4		1.000				
57	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E07052	CCB4		1.000				
58	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3107	F6E07053	E012-01N	TOT from bottle	1.000				
59	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3108	F6E07054	E012-02N	TOT from bottle	1.000				
60	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3109	F6E07055	E012-04N	TOT from bottle	1.000				
61	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2303	F6E07056	E042-02		1.000				
62	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2304	F6E07057	E042-04		1.000				
63	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2305	F6E07058	E042-06		1.000				
64	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2306	F6E07059	E042-08		1.000				
65	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2307	F6E07060	E042-09		1.000				
66	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2308	F6E07061	E042-10		1.000				
67	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2309	F6E07062	E042-11		1.000				
68	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E07063	CCV5		1.000				
69	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E07064	CCB5		1.000				
70	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2310	F6E07065	E042-12M Cr ok✓		1.000				
71	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2311	F6E07066	E042-12S		1.000				
72	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2312	F6E07067	E042-12A		1.000				
73	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2401	F6E07068	E042-12		1.000				
74	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2402	F6E07069	E042-12J		5.000				
75	C:\ICPCHEM\1\METHODS\EM6020R2.M	MBW	2403	F6E07070	IME012WB		1.000				
76	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	2404	F6E07071	IME012WL		1.000				
77	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	2405	F6E07072	IME012WC		1.000				
78	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2406	F6E07073	E020-01R	DISS	1.000				
79	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2407	F6E07074	E020-02R	DISS	1.000				
80	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E07075	CCV6		1.000				
81	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E07076	CCB6		1.000				
82	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2408	F6E07077	E020-03M Cr ok✓	DISS	1.000				
83	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2409	F6E07078	E020-03S	DISS	1.000				
84	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2410	F6E07079	E020-03A	DISS	1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
85	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2411	F6E07080	E020-03R	DISS	1.000				
86	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2412	F6E07081	E020-03J	DISS	5.000				
87	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2501	F6E07082	E020-04R	DISS	1.000				
88	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2502	F6E07083	E020-05R	DISS	1.000				
89	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2503	F6E07084	E020-06R	DISS	1.000				
90	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2504	F6E07085	E020-07R	DISS	1.000				
91	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2505	F6E07086	E020-01R	TOT	1.000				
92	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E07087	CCV7		1.000				
93	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E07088	CCB7		1.000				
94	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2506	F6E07089	E020-02R	TOT	1.000				
95	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2507	F6E07090	E020-03M cr ok✓	TOT	1.000				
96	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2508	F6E07091	E020-03S	TOT	1.000				
97	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2509	F6E07092	E020-03A	TOT	1.000				
98	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2510	F6E07093	E020-03R	TOT	1.000				
99	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2511	F6E07094	E020-03J	TOT	5.000				
100	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2512	F6E07095	E020-04R	TOT	1.000				
101	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3101	F6E07096	E020-05R	TOT	1.000				
102	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3102	F6E07097	E020-06R	TOT	1.000				
103	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	3103	F6E07098	E020-07R	TOT	1.000				
104	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E07099	CCV8		1.000				
105	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E07100	CCB8		1.000				
106		Keyword		StandBy							
107		Keyword		SMPLEND	End of SMPL						
108		Keyword		End	End of Sequence						
109		Keyword		BLKBEG	Start of BLANK						
110		Keyword		BLKEND	End of BLANK						
111		Keyword		ERRBEG	Start of ERRTERM						
112		Keyword		ERREND	End of ERRTERM						

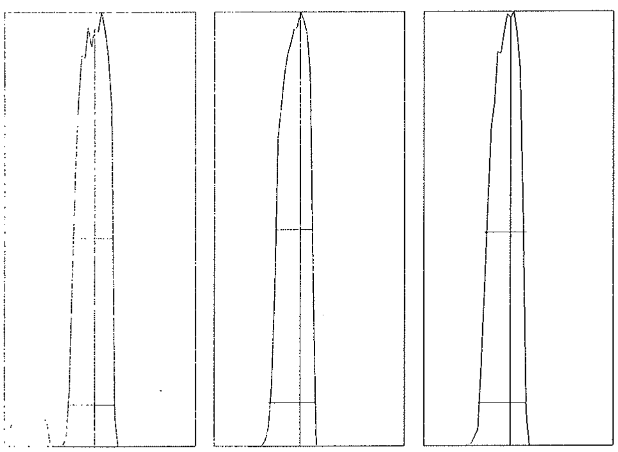
Tune Report

Tune File : NORM.U
Comment : IF6E07



Integration Time: 0.1000 sec
Sampling Period: 0.6200 sec
n: 200
Oxide: 156/140 1.376%
Doubly Charged: 70/140 1.650%

m/z	Range	Count	Mean	RSD%	Background
7	20,000	11221.0	11558.4	2.12	3.90
89	50,000	27677.0	29196.7	1.95	4.80
205	50,000	20613.0	21206.8	1.99	12.90
156/140	2	1.281%	1.392%	6.10	
70/140	2	1.441%	1.356%	5.61	



m/z:	7	89	205
Height:	3,276	8,846	6,211
Axis:	6.95	88.90	204.90
W-50%:	0.65	0.60	0.65
W-10%:	0.7500	0.7500	0.7500

Integration Time: 0.0300 sec
Acquisition Time: 10.1600 sec

Y axis : Linear

Generated : May 11, 2018 11:02:39
Printed : May 11, 2018 11:02:41

Tune Report

Tune File : NORM.U
Comment : IE6E07

Tuning Parameters

===Plasma Condition===

RF Power	:	1500 W
RF Matching	:	1.74 V
Smpl Depth	:	8 mm
Torch-H	:	-1 mm
Torch-V	:	-0.2 mm
Carrier Gas	:	0.9 L/min
Makeup Gas	:	0.14 L/min
Optional Gas	:	--- %
Nebulizer Pump	:	0.1 rps
Sample Pump	:	--- rps
S/C Temp	:	2 degC

===Ion Lenses===

Extract 1	:	0 V
Extract 2	:	-140 V
Omega Bias-ce	:	-24 V
Omega Lens-ce	:	-0.2 V
Cell Entrance	:	-30 V
QP Focus	:	2 V
Cell Exit	:	-36 V

===Octopole Parameters===

OctP RF	:	169 V
OctP Bias	:	-6 V

===Q-Pole Parameters===

AMU Gain	:	129
AMU Offset	:	125
Axis Gain	:	0.9993
Axis Offset	:	-0.08
QP Bias	:	-3 V

===Detector Parameters===

Discriminator	:	8 mV
Analog HV	:	2080 V
Pulse HV	:	1480 V

===Reaction Cell===

Reaction Mode	:	OFF
H2 Gas	:	0 mL/min
He Gas	:	0 mL/min
Optional Gas	:	--- %

Generated : May 11, 2018 11:02:39
Printed : May 11, 2018 11:02:43

Last Calib: May 11, 2018 12:02 pm
Calibration Type: External Calibration Method
Calibration Title:
Weighting Method: 1/(SD*SD)
Mass Interpolation Fit for VIS: Point to Point
Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Multi Tune: #1 h2.u
#2 he.u
#3 norm.u

=== Standard Files ===
<Data Correction>
Bkg File: ---
Rejected Masses: ---
Interference Correction: ON

	Data File	Sample Name	Date Acquired
1	c:\data\if62018\e\if6e07.b\f6e07004.d\f6e07004.d#	S0	May 11 2018 11:42 am
2	c:\data\if62018\e\if6e07.b\f6e07005.d\f6e07005.d#	S1 0.5	May 11 2018 11:46 am
3	c:\data\if62018\e\if6e07.b\f6e07006.d\f6e07006.d#	S2 50	May 11 2018 11:51 am
4	c:\data\if62018\e\if6e07.b\f6e07007.d\f6e07007.d#	S3 250	May 11 2018 11:56 am
5	c:\data\if62018\e\if6e07.b\f6e07008.d\f6e07008.d#	S4 500	May 11 2018 12:00 pm
6	---		
7	---		
8	---		
9	---		
10	---		
11	---		
12	---		
13	---		
14	---		
15	---		
16	---		
17	---		
18	---		
19	---		
20	---		

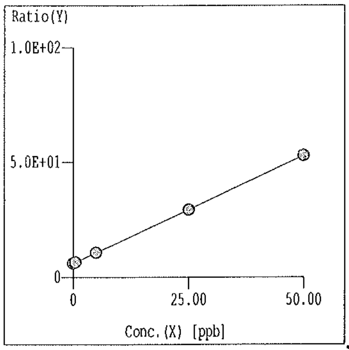
=== ISTD Table ===

Fix ISTD Conc: ON

	Step	Mass	Element	VIS	Units	All Levels
1	3	6	Li		ppb	100.0
2	1	45	Sc		ppb	100.0
3	2	45	Sc		ppb	100.0
4	3	45	Sc		ppb	100.0
5	1	72	Ge		ppb	100.0
6	2	72	Ge		ppb	100.0
7	3	72	Ge		ppb	100.0
8	3	115	In		ppb	100.0
9	3	159	Tb		ppb	100.0
10	3	209	Bi		ppb	100.0

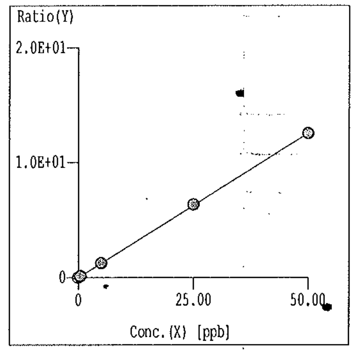
=== Graph Detail ===

Step Mass Element ISTD Unit
(3) 7 Li 6 ppb



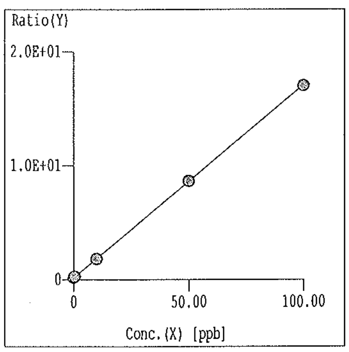
Curve Fit: Y=aX+b
r = 1.0000
Y = 9.325E-001*X +6.057E+000
X = 1.072E+000*Y -6.496E+000
DL = 7.815E-02 ppb
BEC = 6.496 ppb

Step Mass Element ISTD Unit
(3) 9 Be 6 ppb



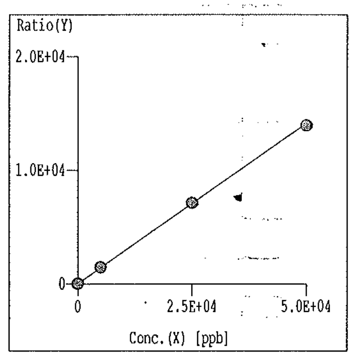
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.503E-001*X +1.565E-003
X = 3.996E+000*Y -6.252E-003
DL = 8.507E-03 ppb
BEC = 6.252E-03 ppb

Step Mass Element ISTD Unit
(3) 11 B 6 ppb



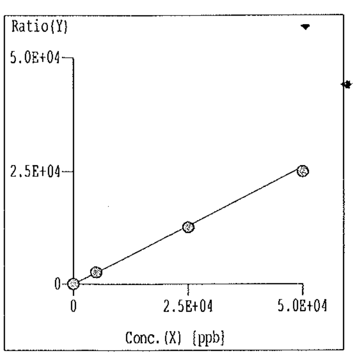
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.690E-001*X +1.678E-001
X = 5.918E+000*Y -9.931E-001
DL = 3.805E-01 ppb
BEC = 9.931E-01 ppb

Step Mass Element ISTD Unit
(1) 23 Na 45 ppb



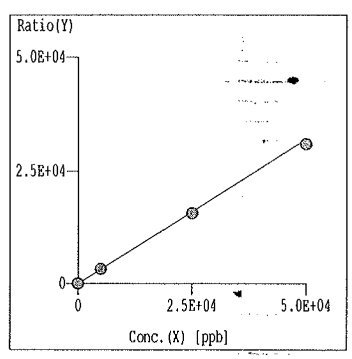
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.823E-001*X +3.396E+001
X = 3.543E+000*Y -1.203E+002
DL = 5.331 ppb
BEC = 120.3 ppb

Step Mass Element ISTD Unit
(3) 24 Mg 45 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 5.199E-001*X +2.187E-001
X = 1.923E+000*Y -4.207E-001
DL = 1.305E-01 ppb
BEC = 4.207E-01 ppb

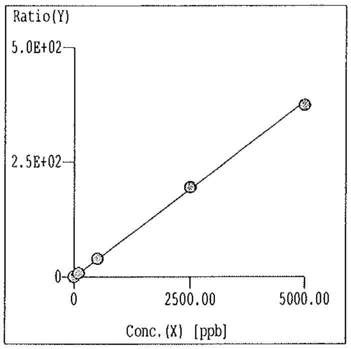
Step Mass Element ISTD Unit
(3) 27 Al 45 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.399E-001*X +9.594E-002
X = 1.563E+000*Y -1.499E-001
DL = 1.241E-02 ppb
BEC = 1.499E-01 ppb

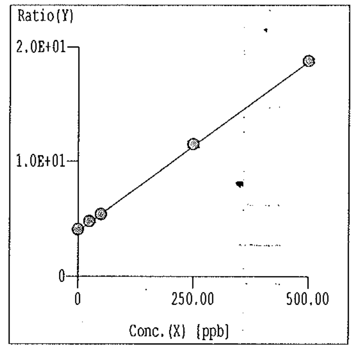
=== Graph Detail ===

Step Mass Element ISTD Unit
(1) 28 Si 45 ppb



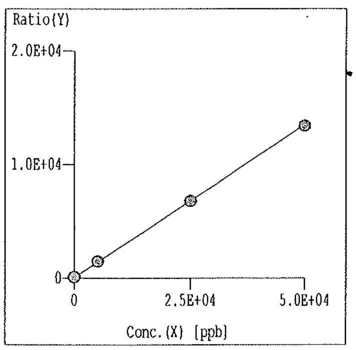
Curve Fit: Y=aX+b
r = 0.9998
Y = 7.630E-002*X +2.096E-001
X = 1.311E+001*Y -2.748E+000
DL = 2.008E-01 ppb
BEC = 2.748 ppb

Step Mass Element ISTD Unit
(3) 31 P 45 ppb



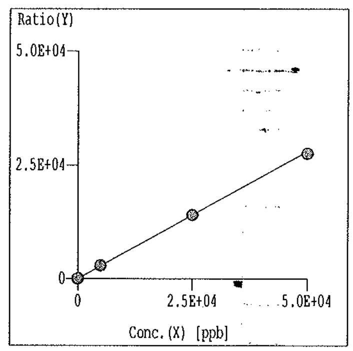
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.957E-002*X +3.914E+000
X = 3.382E+001*Y -1.324E+002
DL = 9.834 ppb
BEC = 132.4 ppb

Step Mass Element ISTD Unit
(2) 39 K 45 ppb



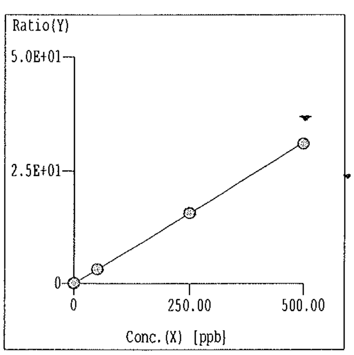
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.688E-001*X +8.294E+001
X = 3.720E+000*Y -3.085E+002
DL = 6.894 ppb
BEC = 308.5 ppb

Step Mass Element ISTD Unit
(1) 40 Ca 45 ppb



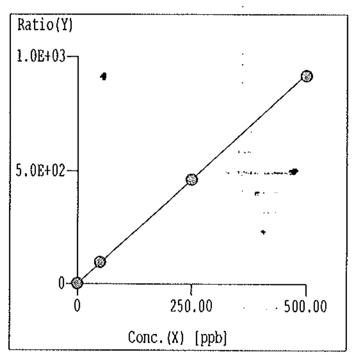
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.613E-001*X +2.104E+000
X = 1.782E+000*Y -3.749E+000
DL = 1.599E-01 ppb
BEC = 3.749 ppb

Step Mass Element ISTD Unit
(3) 47 Ti 45 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.255E-002*X +1.434E-002
X = 1.599E+001*Y -2.293E-001
DL = 1.008E-01 ppb
BEC = 2.293E-01 ppb

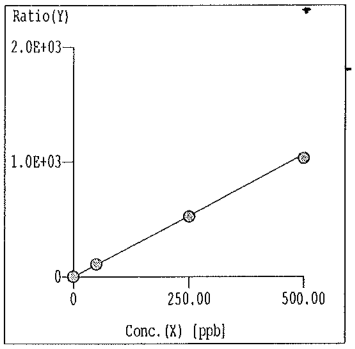
Step Mass Element ISTD Unit
(2) 51 V 45 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.848E+000*X +1.375E+000
X = 5.410E-001*Y -7.437E-001
DL = 3.588E-02 ppb
BEC = 7.437E-01 ppb

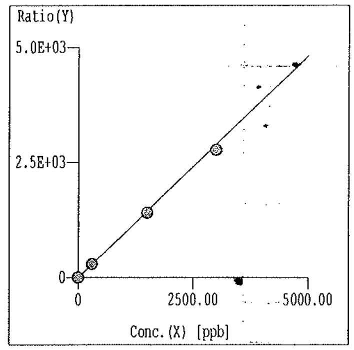
=== Graph Detail ===

Step Mass Element ISTD Unit
(2) 52 Cr 45 ppb



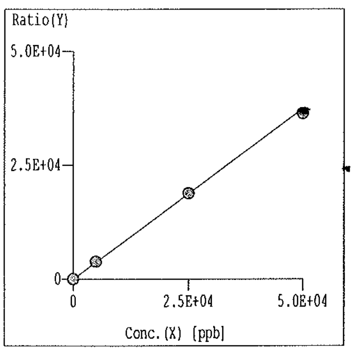
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.122E+000*X +8.968E-001
X = 4.712E-001*Y -4.225E-001
DL = 3.302E-02 ppb
BEC = 4.225E-01 ppb

Step Mass Element ISTD Unit
(3) 55 Mn 45 ppb



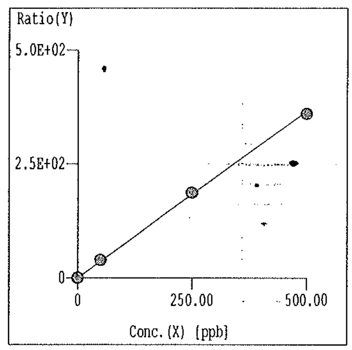
Curve Fit: Y=aX+b
r = 1.0000
Y = 9.633E-001*X +2.484E-001
X = 1.038E+000*Y -2.578E-001
DL = 4.321E-02 ppb
BEC = 2.578E-01 ppb

Step Mass Element ISTD Unit
(1) 56 Fe 45 ppb



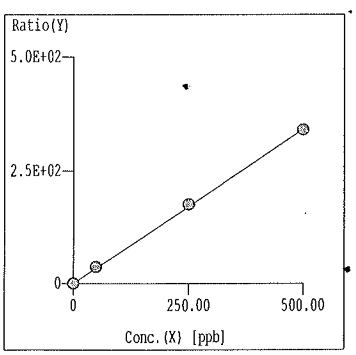
Curve Fit: Y=aX+b
r = 0.9999
Y = 7.470E-001*X +5.708E-001
X = 1.339E+000*Y -7.641E-001
DL = 8.936E-02 ppb
BEC = 7.641E-01 ppb

Step Mass Element ISTD Unit
(3) 59 Co 45 ppb



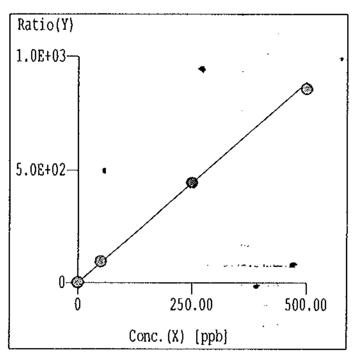
Curve Fit: Y=aX+b
r = 0.9998
Y = 7.324E-001*X +1.616E-002
X = 1.365E+000*Y -2.207E-002
DL = 3.165E-03 ppb
BEC = 2.207E-02 ppb

Step Mass Element ISTD Unit
(2) 60 Ni 45 ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 6.830E-001*X +3.770E-002
X = 1.464E+000*Y -5.520E-002
DL = 6.178E-03 ppb
BEC = 5.520E-02 ppb

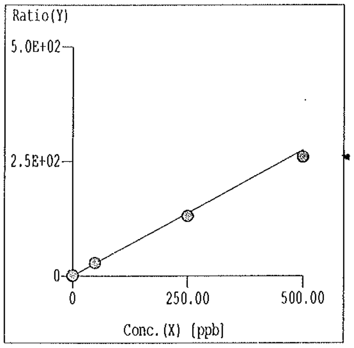
Step Mass Element ISTD Unit
(2) 63 Cu 45 ppb



Curve Fit: Y=aX+b
r = 0.9998
Y = 1.773E+000*X +4.467E-001
X = 5.641E-001*Y -2.520E-001
DL = 5.837E-03 ppb
BEC = 2.520E-01 ppb

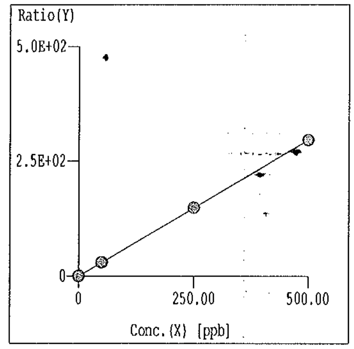
=== Graph Detail ===

Step Mass Element ISTD Unit
(3) 66 Zn 72 ppb



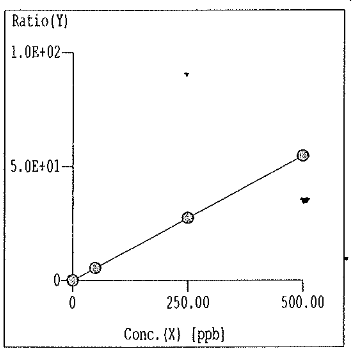
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.481E-001*X +2.144E-001
X = 1.824E+000*Y -3.912E-001
DL = 5.201E-02 ppb
BEC = 3.912E-01 ppb

Step Mass Element ISTD Unit
(2) 75 As 72 ppb



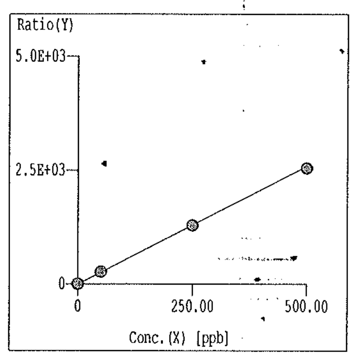
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.917E-001*X +1.652E-001
X = 1.690E+000*Y -2.791E-001
DL = 2.539E-02 ppb
BEC = 2.791E-01 ppb

Step Mass Element ISTD Unit
(1) 78 Se 72 ppb



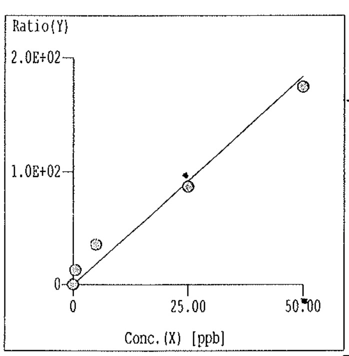
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.093E-001*X +3.961E-003
X = 9.152E+000*Y -3.625E-002
DL = 5.452E-03 ppb
BEC = 3.625E-02 ppb

Step Mass Element ISTD Unit
(3) 88 Sr 72 ppb



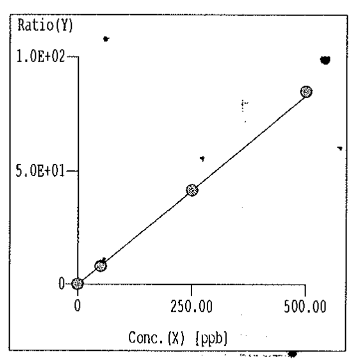
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.179E+000*X +1.114E-001
X = 1.931E-001*Y -2.151E-002
DL = 3.385E-03 ppb
BEC = 2.151E-02 ppb

Step Mass Element ISTD Unit
(3) 90 Zr 72 ppb



Curve Fit: Y=aX+b
r = 0.9949
Y = 3.673E+000*X +5.439E-002
X = 2.723E-001*Y -1.481E-002
DL = 3.048E-03 ppb
BEC = 1.481E-02 ppb

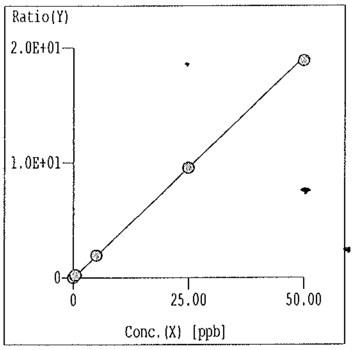
Step Mass Element ISTD Unit
(3) 95 Mo 115 ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 1.662E-001*X +2.072E-003
X = 6.016E+000*Y -1.246E-002
DL = 4.940E-03 ppb
BEC = 1.246E-02 ppb

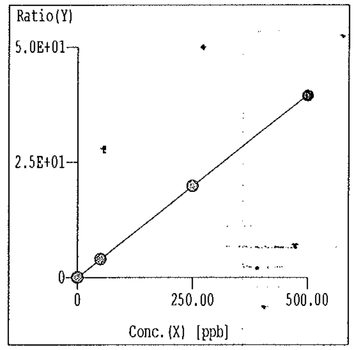
=== Graph Detail ===

Step Mass Element ISTD Unit
(3) 107 Ag 115 ppb



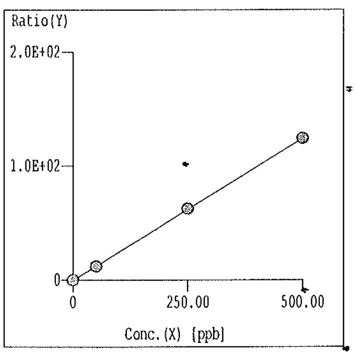
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.829E-001*X +1.522E-003
X = 2.612E+000*Y -3.975E-003
DL = 2.799E-03 ppb
BEC = 3.975E-03 ppb

Step Mass Element ISTD Unit
(3) 111 Cd 115 ppb



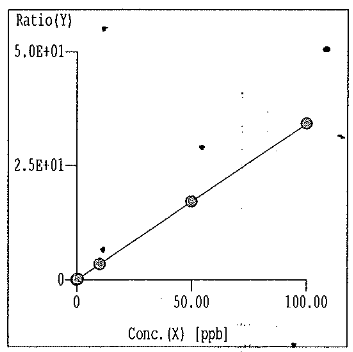
Curve Fit: Y=aX+b
r = 1.0000
Y = 7.923E-002*X +1.534E-003
X = 1.262E+001*Y -1.936E-002
DL = 1.409E-02 ppb
BEC = 1.936E-02 ppb

Step Mass Element ISTD Unit
(3) 118 Sn 115 ppb



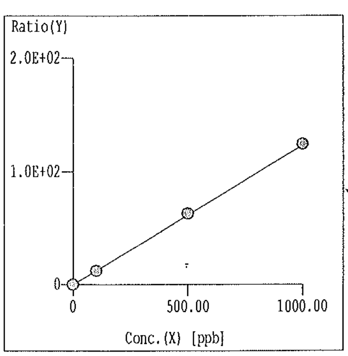
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.474E-001*X +1.047E-002
X = 4.043E+000*Y -4.233E-002
DL = 1.470E-02 ppb
BEC = 4.233E-02 ppb

Step Mass Element ISTD Unit
(3) 121 Sb 115 ppb



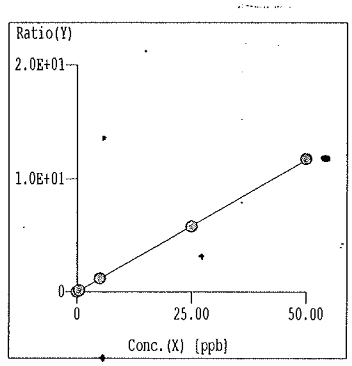
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.412E-001*X +4.683E-003
X = 2.931E+000*Y -1.372E-002
DL = 1.082E-02 ppb
BEC = 1.372E-02 ppb

Step Mass Element ISTD Unit
(3) 137 Ba 115 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 1.231E-001*X +1.300E-003
X = 8.123E+000*Y -1.056E-002
DL = 2.036E-03 ppb
BEC = 1.056E-02 ppb

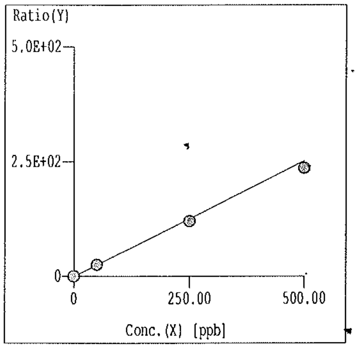
Step Mass Element ISTD Unit
(3) 182 W 159 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 2.336E-001*X +2.474E-003
X = 4.280E+000*Y -1.059E-002
DL = 6.514E-03 ppb
BEC = 1.059E-02 ppb

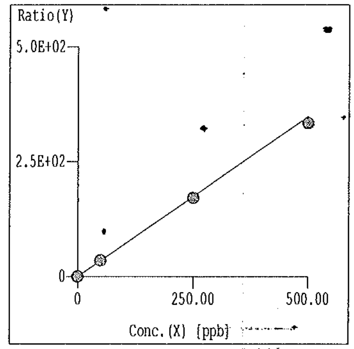
=== Graph Detail ===

Step Mass Element ISTD Unit
(3) 205 Tl 159 ppb



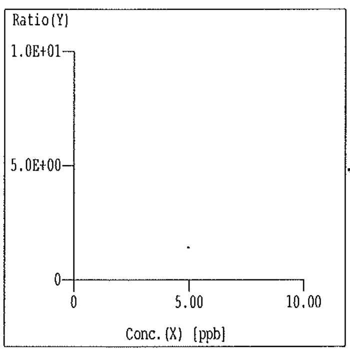
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.024E-001*X +1.298E-003
X = 1.990E+000*Y -2.583E-003
DL = 2.768E-03 ppb
BEC = 2.583E-03 ppb

Step Mass Element ISTD Unit
(3) 208 Pb 159 ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 6.962E-001*X +7.153E-003
X = 1.436E+000*Y -1.027E-002
DL = 3.044E-03 ppb
BEC = 1.027E-02 ppb

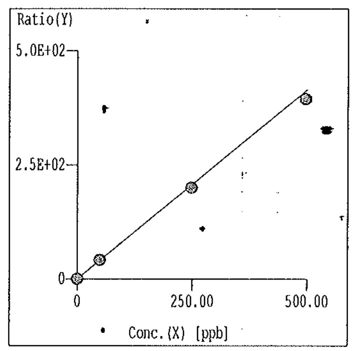
Step Mass Element ISTD Unit
(3) 232 Th 209 ppb



Curve Fit: Excluded
r = 0.0000

DL = --- ppb
BEC = --- ppb

Step Mass Element ISTD Unit
(3) 238 U 159 ppb



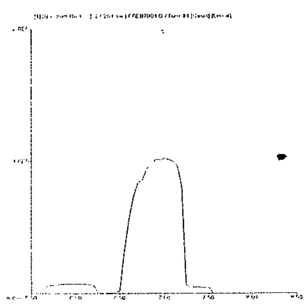
Curve Fit: Y=aX+b
r = 1.0000
Y = 8.303E-001*X +7.301E-004
X = 1.204E+000*Y -8.793E-004
DL = 7.422E-04 ppb
BEC = 8.793E-04 ppb

6020 QC Tune Report

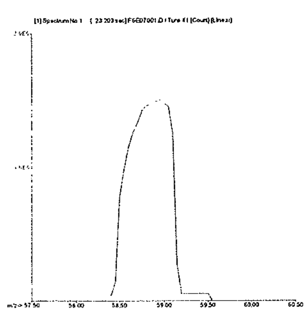
Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07001.D
Date Acquired:	May 11 2018 11:11 am
Acq. Method:	TN6020_C.M
Operator:	LVicto
Sample Name:	6020tunchk
Misc Info:	
Vial Number:	1301
Current Method:	C:\ICPCHEM\1\METHODS\TN6020_C.M

RSD (%)

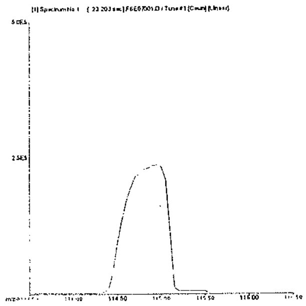
Element	Actual	Required	Flag
7 Li	4.00	5.00	
59 Co	2.97	5.00	
115 In	3.24	5.00	
205 Tl	4.87	5.00	



7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width-10%
Actual: 0.65
Limit 0.90
Flag:



59 Co
Mass Calib.
Actual: 58.90
Required: 58.90 - 59.10
Flag:
Peak Width-10%
Actual: 0.55
Limit 0.90
Flag:



115 In

Mass Calib.

Actual: 114.90

Required: 114.90 - 115.10

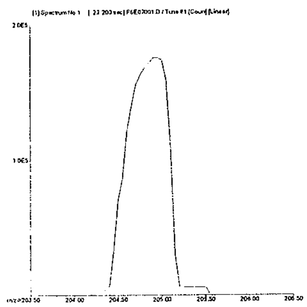
Flag:

Peak Width-10%

Actual: 0.55

Limit 0.90

Flag:



205 Tl

Mass Calib.

Actual: 204.90

Required: 204.90 - 205.10

Flag:

Peak Width-10%

Actual: 0.55

Limit 0.90

Flag:

Calibration Blank QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07003
Date Acquired:	May 11 2018 11:37 am
Operator:	LVicto
Sample Name:	BLNK
Misc Info:	
Vial Number:	1101
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2
Last Cal Update:	May 11 2018 11:27 am
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1182126.00	A	26090.00	2.21
7	Li	72298.23	P	1263.00	1.75
9	Be	22.22	P	5.09	22.91
11	B	2075.76	P	303.60	14.63
23	Na	331433.69	P	1330.00	0.40
24	Mg	4569.73	P	222.30	4.86
27	Al	2189.14	P	160.70	7.34
28	Si	3193.82	P	15.23	0.48
31	P	83182.41	P	853.30	1.03
39	K	184961.41	P	1130.00	0.61
40	Ca	24668.60	P	245.10	0.99
45	Sc	1014376.00	A	11210.00	1.11
45	Sc	215696.00	P	2585.00	1.20
45	Sc	2057031.00	A	32350.00	1.57
47	Ti	345.66	P	90.68	26.23
51	V	2626.25	P	43.89	1.67
52	Cr	1819.68	P	38.82	2.13
55	Mn	4778.70	P	162.40	3.40
56	Fe	4819.94	P	374.10	7.76
59	Co	318.90	P	3.85	1.21
60	Ni	88.67	P	2.40	2.71
63	Cu	994.48	P	21.34	2.15
66	Zn	381.13	P	11.71	3.07
72	Ge	214162.00	P	907.90	0.42
72	Ge	101864.70	P	1145.00	1.12
72	Ge	415004.19	P	4147.00	1.00
75	As	176.67	P	3.53	2.00
78	Se	9.33	P	2.91	31.14
88	Sr	481.14	P	1.92	0.40
90	Zr	250.01	P	26.67	10.67
95	Mo	53.34	P	5.77	10.83
107	Ag	25.56	P	5.09	19.93
111	Cd	19.72	P	9.58	48.57
115	In	2562302.00	A	41570.00	1.62
118	Sn	250.01	P	13.33	5.33
121	Sb	160.01	P	8.82	5.51
137	Ba	25.56	P	8.39	32.83
159	Tb	3598924.00	A	52520.00	1.46
182	W	104.45	P	11.71	11.21
205	Tl	67.78	P	10.71	15.80
208	Pb	240.01	P	49.10	20.46
209	Bi	2250101.00	A	21560.00	0.96
235	U	24.45	P	13.88	56.78
238	U	37.78	P	1.93	5.10

Calibration Blank QC Report

Data File: C:\DATA\IF62018\E\IF6E07.B\F6E07004
Date Acquired: May 11 2018 11:42 am
Operator: LVicto
Sample Name: S0
Misc Info:
Vial Number: 1201
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2
Last Cal Update: May 11 2018 11:40 am
Sample Type: CalBlk
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1156944.00	A	23120.00	2.00
7	Li	70079.41	P	1220.00	1.74
9	Be	17.78	P	8.39	47.19
11	B	2007.98	P	229.10	11.41
23	Na	326669.31	P	264.70	0.08
24	Mg	4271.85	P	398.10	9.32
27	Al	1949.08	P	15.03	0.77
28	Si	2009.09	P	65.45	3.26
31	P	83124.35	P	426.80	0.51
39	K	176867.00	P	1311.00	0.74
40	Ca	20166.30	P	409.60	2.03
45	Sc	963897.88	A	13600.00	1.41
45	Sc	213583.41	P	1991.00	0.93
45	Sc	2034837.00	A	41220.00	2.03
47	Ti	224.45	P	41.94	18.69
51	V	2749.60	P	46.14	1.68
52	Cr	1800.79	P	57.39	3.19
55	Mn	4744.25	P	209.90	4.42
56	Fe	5472.61	P	228.60	4.18
59	Co	325.57	P	15.75	4.84
60	Ni	79.56	P	3.36	4.22
63	Cu	944.93	P	9.25	0.98
66	Zn	311.13	P	40.19	12.92
72	Ge	207470.20	P	1600.00	0.77
72	Ge	100121.50	P	725.70	0.72
72	Ge	406311.59	P	4124.00	1.02
75	As	160.89	P	4.91	3.05
78	Se	8.22	P	0.38	4.68
88	Sr	450.02	P	20.28	4.51
90	Zr	208.90	P	15.75	7.54
95	Mo	52.22	P	6.94	13.29
107	Ag	33.33	P	8.82	26.46
111	Cd	26.43	P	9.31	35.21
115	In	2486219.00	A	22740.00	0.91
118	Sn	226.68	P	31.80	14.03
121	Sb	118.89	P	31.51	26.50
137	Ba	32.22	P	1.93	5.97
159	Tb	3505934.00	A	90120.00	2.57
182	W	91.11	P	16.78	18.42
205	Tl	43.33	P	17.32	39.97
208	Pb	244.45	P	29.88	12.22
209	Bi	2156402.00	A	39640.00	1.84
235	U	23.33	P	14.53	62.27
238	U	25.56	P	7.70	30.12

Calibration Standard QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07005.D\F6E07005.D#
Date Acquired:	May 11 2018 11:46 am
Operator:	LVicto
Sample Name:	S1 0.5
Misc Info:	
Vial Number:	1104
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	May 11 2018 11:45 am
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1197778.00	A	20360.00	1.70
7	Li	78249.35	P	472.80	0.60
9	Be	1533.46	P	54.58	3.56
11	B	3184.88	P	332.60	10.44
23	Na	469672.31	P	444.10	0.09
24	Mg	574456.69	P	7445.00	1.30
27	Al	692743.19	P	10530.00	1.52
28	Si	79120.88	P	1307.00	1.65
31	P	99342.02	P	324.00	0.33
39	K	208799.70	P	865.50	0.41
40	Ca	426509.41	P	2772.00	0.65
45	Sc	976083.19	A	21180.00	2.17
45	Sc	215842.91	P	3366.00	1.56
45	Sc	2076161.00	A	48530.00	2.34
47	Ti	1001.18	P	22.69	2.27
51	V	5213.38	P	73.41	1.41
52	Cr	4274.64	P	50.68	1.19
55	Mn	16228.18	P	312.00	1.92
56	Fe	428611.19	P	5821.00	1.36
59	Co	8781.78	P	187.80	2.14
60	Ni	932.70	P	24.58	2.64
63	Cu	3220.15	P	45.11	1.40
66	Zn	6349.35	P	73.56	1.16
72	Ge	209494.70	P	2659.00	1.27
72	Ge	101472.00	P	1787.00	1.76
72	Ge	411126.19	P	6371.00	1.55
75	As	501.35	P	13.38	2.67
78	Se	119.78	P	10.34	8.63
88	Sr	11607.19	P	170.00	1.46
90	Zr	52598.16	P	1655.00	3.15
95	Mo	2108.01	P	98.98	4.70
107	Ag	5600.16	P	28.77	0.51
111	Cd	1104.08	P	26.10	2.36
115	In	2530505.00	A	55770.00	2.20
118	Sn	3516.11	P	53.37	1.52
121	Sb	4358.61	P	135.10	3.10
137	Ba	1677.94	P	27.76	1.65
159	Tb	3538419.00	A	88870.00	2.51
182	W	3954.05	P	149.80	3.79
205	Tl	9522.59	P	24.62	0.26
208	Pb	13340.87	P	115.90	0.87
209	Bi	2197745.00	A	58620.00	2.67
235	U	125.56	P	28.74	22.89
238	U	15145.84	P	171.70	1.13

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1197777.90	1.70	1156944.40	103.5	60 -	125	
45	Sc	976083.19	2.17	963897.88	101.3	60 -	125	
45	Sc	215842.92	1.56	213583.44	101.1	60 -	125	
45	Sc	2076160.80	2.34	2034836.60	102.0	60 -	125	
72	Ge	209494.67	1.27	207470.16	101.0	60 -	125	
72	Ge	101471.97	1.76	100121.55	101.3	60 -	125	
72	Ge	411126.16	1.55	406311.59	101.2	60 -	125	
115	In	2530505.50	2.20	2486219.30	101.8	60 -	125	
159	Tb	3538418.80	2.51	3505933.80	100.9	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

--- :Element Failures   --- :Max. Number of Failures Allowed
0 :ISTD Failures   0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07006.D\F6E07006.D#
Date Acquired:	May 11 2018 11:51 am
Operator:	LVicto
Sample Name:	S2 50
Misc Info:	
Vial Number:	1105
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	May 11 2018 11:49 am
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1192239.00	A	14120.00	1.18
7	Li	127614.00	P	2480.00	1.94
9	Be	14875.38	P	360.90	2.43
11	B	21534.58	P	568.50	2.64
23	Na	14937510.00	A	176800.00	1.18
24	Mg	54582500.00	A	1030000.00	1.89
27	Al	67047200.00	A	779800.00	1.16
28	Si	399795.50	P	1912.00	0.48
31	P	112818.50	P	1413.00	1.25
39	K	3253785.00	A	56150.00	1.73
40	Ca	29120480.00	A	169100.00	0.58
45	Sc	1018246.00	A	6645.00	0.65
45	Sc	221130.20	P	1456.00	0.66
45	Sc	2094060.00	A	22090.00	1.05
47	Ti	66052.73	P	980.30	1.48
51	V	212353.59	P	2662.00	1.25
52	Cr	241052.91	P	1958.00	0.81
55	Mn	6124008.00	A	93960.00	1.53
56	Fe	38912800.00	A	206600.00	0.53
59	Co	815820.38	P	8182.00	1.00
60	Ni	81442.63	P	452.70	0.56
63	Cu	207677.91	P	1814.00	0.87
66	Zn	116801.20	P	1478.00	1.27
72	Ge	215142.70	P	202.50	0.09
72	Ge	103378.00	P	421.60	0.41
72	Ge	410596.09	P	6247.00	1.52
75	As	30941.48	P	463.60	1.50
78	Se	11780.54	P	129.00	1.10
88	Sr	1097976.00	A	13130.00	1.20
90	Zr	145335.30	P	343.40	0.24
95	Mo	199493.91	P	1060.00	0.53
107	Ag	48182.91	P	951.00	1.97
111	Cd	99032.71	P	1313.00	1.33
115	In	2491621.00	A	36610.00	1.47
118	Sn	299798.09	P	2136.00	0.71
121	Sb	84762.50	P	518.60	0.61
137	Ba	301475.59	P	3196.00	1.06
159	Tb	3524731.00	A	37890.00	1.08
182	W	41628.06	P	385.40	0.93
205	Tl	890894.88	P	9584.00	1.08
208	Pb	1238811.00	P	12970.00	1.05
209	Bi	2164083.00	A	44360.00	2.05
235	U	10524.55	P	194.80	1.85
238	U	1462743.00	A	20340.00	1.39

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1192239.00	1.18	1156944.40	103.1	60 - 125	
45	Sc	1018246.40	0.65	963897.88	105.6	60 - 125	
45	Sc	221130.25	0.66	213583.44	103.5	60 - 125	
45	Sc	2094060.40	1.05	2034836.60	102.9	60 - 125	
72	Ge	215142.70	0.09	207470.16	103.7	60 - 125	
72	Ge	103377.95	0.41	100121.55	103.3	60 - 125	
72	Ge	410596.09	1.52	406311.59	101.1	60 - 125	
115	In	2491621.50	1.47	2486219.30	100.2	60 - 125	
159	Tb	3524730.80	1.08	3505933.80	100.5	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07007.D\F6E07007.D#
Date Acquired:	May 11 2018 11:56 am
Operator:	LVicto
Sample Name:	S3 250
Misc Info:	
Vial Number:	1106
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	May 11 2018 11:54 am
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1144298.00	A	9949.00	0.87
7	Li	335006.81	P	4827.00	1.44
9	Be	72368.22	P	1677.00	2.32
11	B	98642.61	P	1002.00	1.02
23	Na	71637848.00	A	971300.00	1.36
24	Mg	263751900.00	A	4836000.00	1.83
27	Al	326818300.00	A	5906000.00	1.81
28	Si	1956939.00	A	12910.00	0.66
31	P	239839.80	P	2651.00	1.11
39	K	14882440.00	A	186400.00	1.25
40	Ca	140615390.00	A	569600.00	0.41
45	Sc	1006870.00	A	13080.00	1.30
45	Sc	219465.09	P	2090.00	0.95
45	Sc	2091211.00	A	61660.00	2.95
47	Ti	327309.50	P	3976.00	1.21
51	V	1013955.00	A	9311.00	0.92
52	Cr	1149449.00	A	13440.00	1.17
55	Mn	29339440.00	A	400100.00	1.36
56	Fe	188520190.00	A	1486000.00	0.79
59	Co	3893060.00	A	42720.00	1.10
60	Ni	384740.31	P	3492.00	0.91
63	Cu	972733.63	M	10650.00	1.09
66	Zn	527030.63	P	6127.00	1.16
72	Ge	209988.20	P	1210.00	0.58
72	Ge	101117.10	P	546.80	0.54
72	Ge	404954.91	P	6672.00	1.65
75	As	150053.50	P	1771.00	1.18
78	Se	57338.92	P	684.20	1.19
88	Sr	5188539.00	A	84280.00	1.62
90	Zr	351011.31	P	5578.00	1.59
95	Mo	996559.88	A	15610.00	1.57
107	Ag	228194.59	P	2725.00	1.19
111	Cd	474878.41	P	5397.00	1.14
115	In	2396133.00	A	24270.00	1.01
118	Sn	1491712.00	A	27920.00	1.87
121	Sb	409077.59	P	3705.00	0.91
137	Ba	1504684.00	A	20310.00	1.35
159	Tb	3443594.00	A	38450.00	1.12
182	W	199179.09	P	1722.00	0.86
205	Tl	4125986.00	A	92560.00	2.24
208	Pb	5882680.00	A	95260.00	1.62
209	Bi	2025042.00	A	22970.00	1.13
235	U	50091.06	P	112.80	0.23
238	U	6874275.00	A	21660.00	0.32

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1144298.10	0.87	1156944.40	98.9	60 -	125	
45	Sc	1006870.00	1.30	963897.88	104.5	60 -	125	
45	Sc	219465.08	0.95	213583.44	102.8	60 -	125	
45	Sc	2091211.00	2.95	2034836.60	102.8	60 -	125	
72	Ge	209988.23	0.58	207470.16	101.2	60 -	125	
72	Ge	101117.13	0.54	100121.55	101.0	60 -	125	
72	Ge	404954.91	1.65	406311.59	99.7	60 -	125	
115	In	2396132.80	1.01	2486219.30	96.4	60 -	125	
159	Tb	3443594.00	1.12	3505933.80	98.2	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File: C:\DATA\IF62018\E\IF6E07.B\F6E07008.D\F6E07008.D#
Date Acquired: May 11 2018 12:00 pm
Operator: LVicto
Sample Name: S4 500
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 11 2018 11:58 am
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1130553.00	A	15190.00	1.34
7	Li	595733.81	P	8347.00	1.40
9	Be	141308.30	P	1236.00	0.87
11	B	192047.41	P	2683.00	1.40
23	Na	143926590.00	A	793200.00	0.55
24	Mg	527198690.00	A	9427000.00	1.79
27	Al	653022980.00	A	11230000.00	1.72
28	Si	3849018.00	A	9671.00	0.25
31	P	396792.31	P	2634.00	0.66
39	K	29734350.00	A	564000.00	1.90
40	Ca	284014590.00	A	262500.00	0.09
45	Sc	1032264.00	A	3693.00	0.36
45	Sc	221936.80	P	967.10	0.44
45	Sc	2115844.00	A	32920.00	1.56
47	Ti	654755.50	P	7362.00	1.12
51	V	2033055.00	A	4375.00	0.22
52	Cr	2280610.00	A	9365.00	0.41
55	Mn	58451800.00	A	1088000.00	1.86
56	Fe	374235390.00	A	1671000.00	0.45
59	Co	7612754.00	A	108000.00	1.42
60	Ni	755094.31	P	3721.00	0.49
63	Cu	1902201.00	A	19770.00	1.04
66	Zn	1045055.00	A	14640.00	1.40
72	Ge	209662.00	P	1056.00	0.50
72	Ge	101036.30	P	260.30	0.26
72	Ge	403943.69	P	4026.00	1.00
75	As	298667.00	P	1504.00	0.50
78	Se	114410.90	P	1154.00	1.01
88	Sr	10268420.00	A	149100.00	1.45
90	Zr	704228.69	P	8937.00	1.27
95	Mo	2002119.00	A	16200.00	0.81
107	Ag	444986.09	P	5790.00	1.30
111	Cd	928834.00	M	16040.00	1.73
115	In	2360905.00	A	29280.00	1.24
118	Sn	2923848.00	A	25100.00	0.86
121	Sb	806871.81	P	5940.00	0.74
137	Ba	2930916.00	A	30680.00	1.05
159	Tb	3394352.00	A	35870.00	1.06
182	W	398795.19	P	2936.00	0.74
205	Tl	7983307.00	A	123400.00	1.55
208	Pb	11293200.00	A	80430.00	0.71
209	Bi	1968420.00	A	44380.00	2.25
235	U	98606.68	P	1593.00	1.62
238	U	13382830.00	A	172600.00	1.29

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1130552.80	1.34	1156944.40	97.7	60 -	125	
45	Sc	1032264.40	0.36	963897.88	107.1	60 -	125	
45	Sc	221936.84	0.44	213583.44	103.9	60 -	125	
45	Sc	2115843.80	1.56	2034836.60	104.0	60 -	125	
72	Ge	209662.02	0.50	207470.16	101.1	60 -	125	
72	Ge	101036.30	0.26	100121.55	100.9	60 -	125	
72	Ge	403943.66	1.00	406311.59	99.4	60 -	125	
115	In	2360905.30	1.24	2486219.30	95.0	60 -	125	
159	Tb	3394352.50	1.06	3505933.80	96.8	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

--- :Element Failures --- :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICV QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07009.D\F6E07009.D#
Date Acquired:	May 11 2018 12:04 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	ICV
Misc Info:	
Vial Number:	1204
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	ICV1
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc. RSD(%)	Expected	QC Range(%)	Flag
7 Li	28.28	ppb	384914.4	1.14	30.00	90 - 110	
9 Be	28.76	ppb	85456.1	0.99	30.00	90 - 110	
11 B	29.24	ppb	60617.8	1.82	30.00	90 - 110	
23 Na	28390.00	ppb	84786592.0	0.74	30000.00	90 - 110	
24 Mg	28550.00	ppb	322219490.0	0.85	30000.00	90 - 110	
27 Al	28260.00	ppb	392557180.0	0.72	30000.00	90 - 110	
28 Si	2911.00	ppb	2342094.0	0.74	3000.00	90 - 110	
31 P	277.40	ppb	263017.7	0.56	300.00	90 - 110	
39 K	29110.00	ppb	17731380.0	0.68	30000.00	90 - 110	
40 Ca	28830.00	ppb	170504900.0	0.32	30000.00	90 - 110	
47 Ti	288.50	ppb	392033.7	0.42	300.00	90 - 110	
51 V	290.10	ppb	1205129.0	0.87	300.00	90 - 110	
52 Cr	283.20	ppb	1349545.0	0.78	300.00	90 - 110	
55 Mn	1871.00	ppb	39127912.0	0.90	2000.00	90 - 110	
56 Fe	29150.00	ppb	229399200.0	0.75	30000.00	90 - 110	
59 Co	299.10	ppb	4756186.0	1.19	300.00	90 - 110	
60 Ni	304.00	ppb	465598.9	0.43	300.00	90 - 110	
63 Cu	290.50	ppb	1155605.0	0.40	300.00	90 - 110	
66 Zn	274.80	ppb	639079.4	0.49	300.00	90 - 110	
75 As	286.70	ppb	177009.4	0.76	300.00	90 - 110	
78 Se	286.20	ppb	68073.1	1.07	300.00	90 - 110	
88 Sr	286.70	ppb	6290055.0	1.15	300.00	90 - 110	
90 Zr	25.69	ppb	400008.2	0.41	30.00	90 - 110	Fail
95 Mo	297.40	ppb	1215318.0	0.55	300.00	90 - 110	
107 Ag	28.07	ppb	264158.2	1.27	30.00	90 - 110	
111 Cd	297.40	ppb	579294.9	0.68	300.00	90 - 110	
118 Sn	297.40	ppb	1808393.0	0.54	300.00	90 - 110	
121 Sb	56.69	ppb	475451.1	1.30	60.00	90 - 110	
137 Ba	293.60	ppb	888153.0	2.81	300.00	90 - 110	
182 W	46.33	ppb	389339.6	1.18	30.00	90 - 110	Fail
205 Tl	276.20	ppb	4989352.0	1.43	300.00	90 - 110	
208 Pb	280.80	ppb	7031054.0	1.50	300.00	90 - 110	
235 U	0.53	ppb	16890.2	1.44	2.20	90 - 110	Fail
238 U	278.50	ppb	8318144.0	0.99	300.00	90 - 110	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1186988.5	2.23	1156944.40	102.6	60 - 125	
45 Sc	1053585.4	0.24	963897.88	109.3	60 - 125	
45 Sc	224187.3	0.72	213583.44	105.0	60 - 125	
45 Sc	2170738.0	0.54	2034836.60	106.7	60 - 125	
72 Ge	217685.3	0.71	207470.16	104.9	60 - 125	
72 Ge	104246.4	1.31	100121.55	104.1	60 - 125	
72 Ge	423597.4	0.67	406311.59	104.3	60 - 125	
115 In	2457942.8	1.95	2486219.30	98.9	60 - 125	
159 Tb	3596649.5	2.75	3505933.80	102.6	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

3 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

ICB QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07010.D\F6E07010.D#
Date Acquired:	May 11 2018 12:08 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	ICB
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	ICB
Dilution Factor:	1.00

QC Elements

Element		Conc.		CPS	Conc RSD(%)	High Limit	Flag
7	Li	0.0489	ppb	75214.7	163.51	0.20	
9	Be	0.0046	ppb	33.3	41.67	0.10	
11	B	-0.0501	ppb	1962.4	282.04	5.00	
23	Na	4.8490	ppb	353689.4	50.59	40.00	
24	Mg	0.2773	ppb	7601.0	35.68	10.00	
27	Al	0.3990	ppb	7357.6	18.14	20.00	
28	Si	0.9612	ppb	2831.5	31.63	20.00	
31	P	-8.8490	ppb	76496.7	11.22	10.00	
39	K	-2.1020	ppb	184519.6	163.23	20.00	
40	Ca	0.7281	ppb	25158.3	8.54	25.00	
47	Ti	0.0489	ppb	364.5	102.02	0.50	
51	V	-0.1126	ppb	2612.5	11.56	0.50	
52	Cr	-0.0497	ppb	1772.8	4.39	0.20	
55	Mn	0.0129	ppb	5462.3	10.03	0.20	
56	Fe	1.7550	ppb	18839.2	1.65	10.00	
59	Co	0.0170	ppb	600.0	29.05	0.20	
60	Ni	0.0035	ppb	89.8	129.70	0.20	
63	Cu	0.1222	ppb	1485.6	13.13	0.40	
66	Zn	-0.2382	ppb	347.8	7.20	2.00	
75	As	0.0382	ppb	194.7	26.22	0.20	
78	Se	0.0921	ppb	29.8	11.77	0.20	
90	Zr	0.0036	ppb	281.1	61.05	2.00	
95	Mo	0.1629	ppb	745.6	3.39	0.40	
107	Ag	0.0010	ppb	48.9	158.64	0.20	
111	Cd	0.0088	ppb	56.8	180.36	0.20	
118	Sn	0.2911	ppb	2109.1	2.22	0.20	Fail
121	Sb	0.0325	ppb	403.4	11.14	0.40	
137	Ba	0.0177	ppb	88.9	27.06	0.20	
182	W	0.0720	ppb	682.3	9.29	1.00	
205	Tl	0.0378	ppb	717.8	6.58	0.20	
208	Pb	0.0352	ppb	1120.1	11.82	0.10	
235	U	0.0002	ppb	25.6	154.07	1.00	
238	U	0.0690	ppb	2051.3	7.09	0.10	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1232366.0	0.74	1156944.40	106.5	60 - 125	
45	Sc	1001336.9	2.15	963897.88	103.9	60 - 125	
45	Sc	224021.0	0.49	213583.44	104.9	60 - 125	
45	Sc	2094720.8	0.09	2034836.60	102.9	60 - 125	
72	Ge	212460.0	0.87	207470.16	102.4	60 - 125	
72	Ge	103650.2	1.16	100121.55	103.5	60 - 125	
72	Ge	414946.4	0.58	406311.59	102.1	60 - 125	
115	In	2557245.3	1.04	2486219.30	102.9	60 - 125	
159	Tb	3534921.3	0.36	3505933.80	100.8	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07011.D\F6E07011.D#
Date Acquired:	May 11 2018 12:13 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	MRLE1101
Misc Info:	1/100/10 ppb
Vial Number:	1305
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	88483.4	0.0000	0.9884	ppb	5.44	50.00	
9 Be	# 3	6	3138.2	0.0000	0.9833	ppb	4.10	50.00	
11 B	# 3	6	23363.8	0.0000	9.9160	ppb	2.21	100.00	
23 Na	# 1	45	650483.9	0.0000	103.5000	ppb	6.10	50000.00	
24 Mg	# 3	45	1185226.0	0.0000	104.9000	ppb	0.13	50000.00	
27 Al	# 3	45	1437111.0	0.0000	103.6000	ppb	0.40	50000.00	
28 Si	# 1	45	81666.5	0.0000	101.2000	ppb	2.44	5000.00	
31 P	# 3	45	111413.7	0.0000	41.6900	ppb	5.54	500.00	
39 K	# 2	45	248702.2	0.0000	99.9900	ppb	5.53	50000.00	
40 Ca	# 1	45	687921.0	0.0000	115.3000	ppb	2.09	50000.00	
47 Ti	# 3	45	1806.8	0.0000	1.1050	ppb	3.66	500.00	
51 V	# 2	45	7110.6	0.0000	0.9549	ppb	3.47	500.00	
52 Cr	# 2	45	6785.3	0.0000	0.9891	ppb	1.36	500.00	
55 Mn	# 3	45	27325.7	0.0000	1.0530	ppb	2.44	3000.00	
56 Fe	# 1	45	868209.2	0.0000	112.1000	ppb	3.28	50000.00	
59 Co	# 3	45	17856.8	0.0000	1.1040	ppb	0.56	500.00	
60 Ni	# 2	45	1788.3	0.0000	1.1010	ppb	4.00	500.00	
63 Cu	# 2	45	5575.7	0.0000	1.1370	ppb	1.95	500.00	
66 Zn	# 3	72	23620.6	0.0000	9.7070	ppb	0.46	500.00	
75 As	# 2	72	800.9	0.0000	1.0070	ppb	1.83	500.00	
78 Se	# 1	72	258.4	0.0000	1.0550	ppb	4.30	500.00	
88 Sr	# 3	72	45496.6	0.0000	2.0370	ppb	1.12	500.00	
90 Zr	# 3	72	50489.8	0.0000	3.2060	ppb	0.84	50.00	
95 Mo	# 3	115	4387.5	0.0000	0.9979	ppb	1.40	500.00	
107 Ag	# 3	115	10537.6	0.0000	1.0500	ppb	2.83	50.00	
111 Cd	# 3	115	2243.1	0.0000	1.0650	ppb	6.81	500.00	
118 Sn	# 3	115	7149.8	0.0000	1.0640	ppb	0.94	500.00	
121 Sb	# 3	115	8942.0	0.0000	0.9895	ppb	1.97	500.00	
137 Ba	# 3	115	3247.2	0.0000	0.9992	ppb	2.14	1000.00	
182 W	# 3	159	15653.9	0.0000	1.8420	ppb	3.21	50.00	
205 Tl	# 3	159	18732.6	0.0000	1.0280	ppb	2.35	500.00	
208 Pb	# 3	159	26543.5	0.0000	1.0430	ppb	1.12	500.00	
235 U	# 3	159	260.0	0.0000	0.0076	ppb	14.96	30.00	
238 U	# 3	159	30297.7	0.0000	1.0080	ppb	2.19	500.00	

ISTD Elements

Element	Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	1267958.10	2.60	1156944.40	109.6	60 - 125	
45 Sc	# 1	1030276.90	3.06	963897.88	106.9	60 - 125	
45 Sc	# 2	226497.86	1.09	213583.44	106.0	60 - 125	
45 Sc	# 3	2165341.50	1.97	2034836.60	106.4	60 - 125	
72 Ge	# 1	216616.72	0.84	207470.16	104.4	60 - 125	
72 Ge	# 2	105254.32	1.16	100121.55	105.1	60 - 125	
72 Ge	# 3	426732.75	1.09	406311.59	105.0	60 - 125	
115 In	# 3	2612704.00	1.72	2486219.30	105.1	60 - 125	
159 Tb	# 3	3618618.30	2.12	3505933.80	103.2	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Pass
ISTD:	Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07012.D\F6E07012.D#
Date Acquired:	May 11 2018 12:17 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	MRLE1102
Misc Info:	0.5/50/4 ppb
Vial Number:	1306
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element		Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7	Li	# 3	6	81064.2	0.0000	0.4309	ppb	9.47	50.00	
9	Be	# 3	6	1565.7	0.0000	0.4925	ppb	5.75	50.00	
11	B	# 3	6	2909.3	0.0000	0.3806	ppb	46.69	100.00	
23	Na	# 1	45	494248.0	0.0000	53.7200	ppb	3.89	50000.00	
24	Mg	# 3	45	594859.3	0.0000	53.3900	ppb	0.53	50000.00	
27	Al	# 3	45	734462.1	0.0000	53.8300	ppb	0.89	50000.00	
28	Si	# 1	45	5904.8	0.0000	4.9450	ppb	4.65	5000.00	
31	P	# 3	45	77633.2	0.0000	-8.8550	ppb	26.72	500.00	
39	K	# 2	45	218079.5	0.0000	55.0800	ppb	12.85	50000.00	
40	Ca	# 1	45	321580.0	0.0000	53.2000	ppb	1.20	50000.00	
47	Ti	# 3	45	1062.3	0.0000	0.5693	ppb	6.18	500.00	
51	V	# 2	45	5207.6	0.0000	0.5189	ppb	0.49	500.00	
52	Cr	# 2	45	4306.4	0.0000	0.4868	ppb	2.85	500.00	
55	Mn	# 3	45	16086.9	0.0000	0.5277	ppb	1.69	3000.00	
56	Fe	# 1	45	436977.1	0.0000	57.3800	ppb	0.67	50000.00	
59	Co	# 3	45	8958.6	0.0000	0.5533	ppb	2.56	500.00	
60	Ni	# 2	45	941.1	0.0000	0.5623	ppb	1.58	500.00	
63	Cu	# 2	45	3242.8	0.0000	0.5679	ppb	2.79	500.00	
66	Zn	# 3	72	8739.5	0.0000	3.4400	ppb	1.03	500.00	
75	As	# 2	72	525.1	0.0000	0.5868	ppb	6.25	500.00	
78	Se	# 1	72	132.0	0.0000	0.5341	ppb	14.73	500.00	
88	Sr	# 3	72	11635.0	0.0000	0.5184	ppb	1.23	500.00	
90	Zr	# 3	72	1083.4	0.0000	0.0561	ppb	8.94	50.00	
95	Mo	# 3	115	2251.4	0.0000	0.5132	ppb	1.90	500.00	
107	Ag	# 3	115	4863.2	0.0000	0.4890	ppb	2.31	50.00	
111	Cd	# 3	115	1113.4	0.0000	0.5263	ppb	9.89	500.00	
118	Sn	# 3	115	3762.9	0.0000	0.5479	ppb	4.21	500.00	
121	Sb	# 3	115	4301.9	0.0000	0.4753	ppb	5.19	500.00	
137	Ba	# 3	115	1674.6	0.0000	0.5174	ppb	2.76	1000.00	
182	W	# 3	159	242.2	0.0000	0.0187	ppb	2.75	50.00	
205	Tl	# 3	159	9670.5	0.0000	0.5402	ppb	0.83	500.00	
208	Pb	# 3	159	13662.1	0.0000	0.5431	ppb	1.70	500.00	
235	U	# 3	159	131.1	0.0000	0.0036	ppb	31.82	30.00	
238	U	# 3	159	15040.2	0.0000	0.5099	ppb	0.56	500.00	

ISTD Elements

Element			CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	# 3	1255082.30	1.61	1156944.40	108.5	60 - 125	
45	Sc	# 1	1006172.30	1.68	963897.88	104.4	60 - 125	
45	Sc	# 2	223159.97	1.44	213583.44	104.5	60 - 125	
45	Sc	# 3	2126136.80	0.67	2034836.60	104.5	60 - 125	
72	Ge	# 1	211616.05	1.42	207470.16	102.0	60 - 125	
72	Ge	# 2	102489.94	1.33	100121.55	102.4	60 - 125	
72	Ge	# 3	416125.13	0.98	406311.59	102.4	60 - 125	
115	In	# 3	2576712.50	1.56	2486219.30	103.6	60 - 125	
159	Tb	# 3	3546371.50	1.39	3505933.80	101.2	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

0 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICS-A QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07013.D\F6E07013.D#
Date Acquired:	May 11 2018 12:22 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	ICSA
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element		Conc.		CPS	Conc RSD(%)	High Limit	Flag
7	Li	0.49	ppb	73353.9	12.90	---	
9	Be	0.00	ppb	17.8	7878.00	---	
11	B	0.64	ppb	3114.9	23.26	---	
23	Na	99680.00	ppb	278622590.0	1.49	120000.00	
24	Mg	101200.00	ppb	1073320000.0	1.18	120000.00	
27	Al	100200.00	ppb	1308183000.0	0.97	120000.00	
28	Si	9.14	ppb	8970.6	7.50	---	
31	P	108900.00	ppb	65768620.0	0.87	---	
39	K	103000.00	ppb	60203500.0	0.59	120000.00	
40	Ca	99690.00	ppb	553466500.0	0.48	120000.00	
47	Ti	2201.00	ppb	2807343.0	0.35	2400.00	
51	V	-0.11	ppb	2531.6	6.43	---	
52	Cr	0.18	ppb	2759.4	9.58	---	
55	Mn	0.35	ppb	11956.3	2.29	---	
56	Fe	98060.00	ppb	724428220.0	0.97	120000.00	
59	Co	0.23	ppb	3692.8	1.87	---	
60	Ni	0.30	ppb	525.1	0.94	---	
63	Cu	0.91	ppb	4462.3	7.80	---	
66	Zn	3.90	ppb	9627.9	3.05	---	
75	As	0.24	ppb	307.8	12.77	---	
78	Se	0.17	ppb	43.1	8.46	---	
88	Sr	0.88	ppb	19119.8	0.57	---	
90	Zr	0.23	ppb	3700.6	6.28	---	
95	Mo	2042.00	ppb	7934101.0	1.22	2400.00	
107	Ag	0.03	ppb	264.5	16.93	---	
111	Cd	0.17	ppb	350.2	60.79	---	
118	Sn	0.08	ppb	721.2	5.94	---	
121	Sb	0.06	ppb	552.3	10.32	---	
137	Ba	0.10	ppb	321.1	7.19	---	
182	W	0.22	ppb	1820.2	3.91	---	
205	Tl	0.01	ppb	166.7	13.56	---	
208	Pb	0.10	ppb	2581.3	3.53	---	
235	U	0.00	ppb	23.3	304.82	---	
238	U	0.01	ppb	337.8	19.72	---	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1125931.1	0.51	1156944.40	97.3	60 - 125	
45	Sc	989017.9	0.81	963897.88	102.6	60 - 125	
45	Sc	216860.2	0.94	213583.44	101.5	60 - 125	
45	Sc	2039299.8	1.89	2034836.60	100.2	60 - 125	
72	Ge	195756.9	1.92	207470.16	94.4	60 - 125	
72	Ge	100573.3	1.42	100121.55	100.5	60 - 125	
72	Ge	409380.9	0.81	406311.59	100.8	60 - 125	
115	In	2337985.5	0.62	2486219.30	94.0	60 - 125	
159	Tb	3342176.5	1.14	3505933.80	95.3	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07014.D\F6E07014.D#
Date Acquired:	May 11 2018 12:27 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	ICSAB
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element		Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)		Flag
7	Li	20.96	ppb	299338.9	0.65	20.00	80 -	120	
9	Be	20.30	ppb	59425.6	0.67	20.00	80 -	120	
11	B	19.60	ppb	40686.8	0.72	20.00	80 -	120	
23	Na	99310.00	ppb	300983200.0	1.48	100000.00	80 -	120	
24	Mg	99660.00	ppb	1128491000.0	0.53	100000.00	80 -	120	
27	Al	98740.00	ppb	1376124000.0	0.63	100000.00	80 -	120	
28	Si	209.50	ppb	173660.3	1.93	200.00	80 -	120	
31	P	106700.00	ppb	68805712.0	0.78	100000.00	80 -	120	
39	K	102300.00	ppb	64332280.0	0.12	100000.00	80 -	120	
40	Ca	99300.00	ppb	597731970.0	1.04	100000.00	80 -	120	
47	Ti	2196.00	ppb	2992665.0	0.59	2000.00	80 -	120	
51	V	20.11	ppb	89919.1	0.36	20.00	80 -	120	
52	Cr	20.07	ppb	101497.1	0.87	20.00	80 -	120	
55	Mn	20.21	ppb	429356.1	0.06	20.00	80 -	120	
56	Fe	98440.00	ppb	788537410.0	1.34	100000.00	80 -	120	
59	Co	20.56	ppb	328352.4	0.09	20.00	80 -	120	
60	Ni	20.58	ppb	32886.2	0.58	20.00	80 -	120	
63	Cu	21.39	ppb	89510.7	0.49	20.00	80 -	120	
66	Zn	22.53	ppb	53382.6	0.44	20.00	80 -	120	
75	As	20.13	ppb	13138.3	0.52	20.00	80 -	120	
78	Se	21.41	ppb	4974.6	1.85	20.00	80 -	120	
88	Sr	20.63	ppb	454497.0	0.33	20.00	80 -	120	
90	Zr	6.61	ppb	103371.6	0.53	20.00	80 -	120	Fail
95	Mo	2085.00	ppb	8416032.0	0.64	2000.00	80 -	120	
107	Ag	19.72	ppb	183453.4	0.31	20.00	80 -	120	
111	Cd	20.31	ppb	39122.3	0.91	20.00	80 -	120	
118	Sn	19.86	ppb	119564.7	0.30	20.00	80 -	120	
121	Sb	20.49	ppb	169915.6	0.55	20.00	80 -	120	
137	Ba	20.29	ppb	60697.9	1.10	20.00	80 -	120	
182	W	19.59	ppb	160951.4	0.76	20.00	80 -	120	
205	Tl	19.14	ppb	338101.7	0.60	20.00	80 -	120	
208	Pb	19.27	ppb	472029.6	0.82	20.00	80 -	120	
235	U	0.13	ppb	4033.0	1.69	0.14	80 -	120	
238	U	19.68	ppb	574407.5	0.16	19.86	80 -	120	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1169083.9	0.40	1156944.40	101.0	60 -	125	
45	Sc	1072583.6	2.70	963897.88	111.3	60 -	125	
45	Sc	233348.4	1.25	213583.44	109.3	60 -	125	
45	Sc	2177905.5	1.41	2034836.60	107.0	60 -	125	
72	Ge	212335.4	1.71	207470.16	102.3	60 -	125	
72	Ge	108787.9	0.56	100121.55	108.7	60 -	125	
72	Ge	424968.5	0.62	406311.59	104.6	60 -	125	
115	In	2428868.0	0.48	2486219.30	97.7	60 -	125	
159	Tb	3515836.5	1.18	3505933.80	100.3	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

1 :Element Failures	0 :Max. Number of Failures Allowed
0 :ISTD Failures	0 :Max. Number of ISTD Failures Allowed

Data Results:
- Analytes: Fail
- ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07015.D\F6E07015.D#
Date Acquired:	May 11 2018 12:31 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	MRLE1103
Misc Info:	500 ppb CAT
Vial Number:	1207
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	73594.4	0.0000	-0.0230	ppb	484.59	50.00	
9 Be	# 3	6	26.7	0.0000	0.0025	ppb	42.05	50.00	
11 B	# 3	6	2394.7	0.0000	0.1695	ppb	92.39	100.00	
23 Na	# 1	45	1944958.0	0.0000	540.5000	ppb	0.52	50000.00	
24 Mg	# 3	45	5804368.0	0.0000	514.7000	ppb	1.66	50000.00	
27 Al	# 3	45	7089764.0	0.0000	511.0000	ppb	1.23	50000.00	
28 Si	# 1	45	3046.0	0.0000	1.0820	ppb	22.34	5000.00	
31 P	# 3	45	71222.7	0.0000	-21.2100	ppb	13.43	500.00	
39 K	# 2	45	525250.8	0.0000	553.7000	ppb	0.92	50000.00	
40 Ca	# 1	45	3042572.0	0.0000	516.1000	ppb	0.30	50000.00	
47 Ti	# 3	45	828.9	0.0000	0.3819	ppb	10.61	500.00	
51 V	# 2	45	2757.2	0.0000	-0.0855	ppb	8.48	500.00	
52 Cr	# 2	45	1709.2	0.0000	-0.0672	ppb	4.29	500.00	
55 Mn	# 3	45	4429.7	0.0000	-0.0457	ppb	9.20	3000.00	
56 Fe	# 1	45	4148839.0	0.0000	531.9000	ppb	0.94	50000.00	
59 Co	# 3	45	291.1	0.0000	-0.0037	ppb	67.54	500.00	
60 Ni	# 2	45	66.7	0.0000	-0.0121	ppb	20.65	500.00	
63 Cu	# 2	45	5047.1	0.0000	1.0040	ppb	7.63	500.00	
66 Zn	# 3	72	636.7	0.0000	-0.1146	ppb	35.02	500.00	
75 As	# 2	72	161.1	0.0000	-0.0186	ppb	140.28	500.00	
78 Se	# 1	72	14.2	0.0000	0.0237	ppb	23.75	500.00	
88 Sr	# 3	72	810.0	0.0000	0.0157	ppb	8.21	500.00	
90 Zr	# 3	72	254.5	0.0000	0.0017	ppb	191.04	50.00	
95 Mo	# 3	115	2765.9	0.0000	0.6271	ppb	2.24	500.00	
107 Ag	# 3	115	68.9	0.0000	0.0029	ppb	47.20	50.00	
111 Cd	# 3	115	11.9	0.0000	-0.0136	ppb	25.99	500.00	
118 Sn	# 3	115	566.7	0.0000	0.0457	ppb	20.13	500.00	
121 Sb	# 3	115	315.6	0.0000	0.0218	ppb	33.56	500.00	
137 Ba	# 3	115	71.1	0.0000	0.0116	ppb	21.91	1000.00	
182 W	# 3	159	272.2	0.0000	0.0221	ppb	21.16	50.00	
205 Tl	# 3	159	128.9	0.0000	0.0046	ppb	24.70	500.00	
208 Pb	# 3	159	622.3	0.0000	0.0148	ppb	18.22	500.00	
235 U	# 3	159	21.1	0.0000	0.0001	ppb	355.93	30.00	
238 U	# 3	159	274.5	0.0000	0.0084	ppb	6.23	500.00	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	1219317.40	1.64	1156944.40	105.4	60 - 125	
45 Sc	# 1	1042684.90	0.49	963897.88	108.2	60 - 125	
45 Sc	# 2	226636.41	0.46	213583.44	106.1	60 - 125	
45 Sc	# 3	2167558.00	0.98	2034836.60	106.5	60 - 125	
72 Ge	# 1	217020.50	0.47	207470.16	104.6	60 - 125	
72 Ge	# 2	104515.93	0.34	100121.55	104.4	60 - 125	
72 Ge	# 3	420545.97	1.45	406311.59	103.5	60 - 125	
115 In	# 3	2602400.50	0.90	2486219.30	104.7	60 - 125	
159 Tb	# 3	3568664.00	1.39	3505933.80	101.8	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07016.D\F6E07016.D#
Date Acquired:	May 11 2018 12:36 pm
Operator:	LVicto
Sample Name:	CCV1
Misc Info:	
Vial Number:	1206
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	May 11 2018 12:02 pm
Sample Type:	CCV
Total Dil Factor:	1.00

QC Elements

Element		Conc.		RSD(%)	Expected	QC Range(%)		Flag
7	Li	25.21	ppb	2.27	25.00	90 -	110	
9	Be	25.28	ppb	1.29	25.00	90 -	110	
11	B	50.65	ppb	1.13	50.00	90 -	110	
23	Na	25190.00	ppb	1.37	25000.00	90 -	110	
24	Mg	24610.00	ppb	1.04	25000.00	90 -	110	
27	Al	24740.00	ppb	0.48	25000.00	90 -	110	
28	Si	2500.00	ppb	0.85	2500.00	90 -	110	
31	P	234.90	ppb	1.00	250.00	90 -	110	
39	K	25250.00	ppb	0.66	25000.00	90 -	110	
40	Ca	25200.00	ppb	0.60	25000.00	90 -	110	
47	Ti	249.80	ppb	0.26	250.00	90 -	110	
51	V	250.50	ppb	1.27	250.00	90 -	110	
52	Cr	246.10	ppb	1.28	250.00	90 -	110	
55	Mn	1469.00	ppb	0.27	1500.00	90 -	110	
56	Fe	25110.00	ppb	0.53	25000.00	90 -	110	
59	Co	250.10	ppb	0.32	250.00	90 -	110	
60	Ni	254.70	ppb	0.85	250.00	90 -	110	
63	Cu	245.00	ppb	0.51	250.00	90 -	110	
66	Zn	234.10	ppb	0.59	250.00	90 -	110	
75	As	248.20	ppb	0.06	250.00	90 -	110	
78	Se	248.70	ppb	1.37	250.00	90 -	110	
88	Sr	245.80	ppb	0.74	250.00	90 -	110	
90	Zr	0.80	ppb	0.61	25.00	90 -	110	Fail
95	Mo	252.80	ppb	1.95	250.00	90 -	110	
107	Ag	24.97	ppb	1.58	25.00	90 -	110	
111	Cd	249.70	ppb	1.31	250.00	90 -	110	
118	Sn	253.70	ppb	1.28	250.00	90 -	110	
121	Sb	49.90	ppb	1.42	50.00	90 -	110	
137	Ba	509.40	ppb	0.63	500.00	90 -	110	
182	W	0.05	ppb	6.52	25.00	90 -	110	Fail
205	Tl	233.20	ppb	1.28	250.00	90 -	110	
208	Pb	238.90	ppb	0.71	250.00	90 -	110	
235	U	1.64	ppb	0.82	1.80	90 -	110	
238	U	233.80	ppb	1.26	250.00	90 -	110	

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1179612.10	1.29	1156944.40	102.0	60 -	125	
45	Sc	1054272.80	0.75	963897.88	109.4	60 -	125	
45	Sc	232628.77	1.42	213583.44	108.9	60 -	125	
45	Sc	2206542.00	0.26	2034836.60	108.4	60 -	125	
72	Ge	220346.30	0.44	207470.16	106.2	60 -	125	
72	Ge	107516.55	0.90	100121.55	107.4	60 -	125	
72	Ge	430832.84	0.82	406311.59	106.0	60 -	125	
115	In	2517898.00	1.97	2486219.30	101.3	60 -	125	
159	Tb	3652083.30	0.74	3505033.80	104.2	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07017.D\F6E07017.D#
Date Acquired:	May 11 2018 12:40 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	CCB1
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element		Conc.		CPS	Conc RSD(%)	High Limit	Flag
7	Li	0.0035	ppb	74068.6	2782.40	0.20	
9	Be	0.0022	ppb	25.6	202.25	0.10	
11	B	-0.0260	ppb	1990.2	773.72	5.00	
23	Na	14.9300	ppb	392381.0	7.00	40.00	
24	Mg	0.5967	ppb	11305.7	11.41	10.00	
27	Al	0.4027	ppb	7548.8	16.60	20.00	
28	Si	1.2050	ppb	3099.4	15.35	20.00	
31	P	-20.5000	ppb	70710.5	19.61	10.00	Fail
39	K	10.0100	ppb	194280.6	55.26	20.00	
40	Ca	0.6332	ppb	25276.3	17.67	25.00	
47	Ti	-0.0106	ppb	293.3	250.52	0.50	
51	V	-0.0373	ppb	2962.5	38.40	0.50	
52	Cr	-0.0612	ppb	1740.1	3.04	0.20	
55	Mn	-0.0203	ppb	4891.0	53.27	0.20	
56	Fe	1.5560	ppb	17809.1	3.22	10.00	
59	Co	0.0030	ppb	391.1	119.30	0.20	
60	Ni	0.0030	ppb	90.2	82.04	0.20	
63	Cu	0.1898	ppb	1776.6	6.00	0.40	
66	Zn	-0.2363	ppb	355.6	0.48	2.00	
75	As	0.0261	ppb	190.7	68.30	0.20	
78	Se	0.0696	ppb	24.9	11.13	0.20	
88	Sr	0.0025	ppb	521.1	26.75	0.20	
90	Zr	-0.0082	ppb	101.1	18.94	2.00	
95	Mo	0.1771	ppb	815.6	4.85	0.40	
107	Ag	0.0015	ppb	54.4	60.70	0.20	
111	Cd	-0.0023	ppb	34.7	618.98	0.20	
118	Sn	0.1507	ppb	1235.7	10.66	0.20	
121	Sb	0.0131	ppb	236.7	15.64	0.40	
137	Ba	0.0076	ppb	57.8	37.94	0.20	
182	W	0.0071	ppb	146.7	22.93	1.00	
205	Tl	0.0268	ppb	525.6	8.58	0.20	
208	Pb	0.0225	ppb	812.3	9.32	0.10	
235	U	0.0004	ppb	30.0	104.69	1.00	
238	U	0.0482	ppb	1450.1	0.54	0.10	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1222395.3	2.62	1156944.40	105.7	60 - 125	
45	Sc	1027791.3	0.77	963897.88	106.6	60 - 125	
45	Sc	226926.8	1.24	213583.44	106.2	60 - 125	
45	Sc	2139472.0	2.83	2034836.60	105.1	60 - 125	
72	Ge	215155.5	0.52	207470.16	103.7	60 - 125	
72	Ge	105602.4	0.52	100121.55	105.5	60 - 125	
72	Ge	418832.2	1.63	406311.59	103.1	60 - 125	
115	In	2589344.3	1.97	2486219.30	104.1	60 - 125	
159	Tb	3558750.8	1.41	3505933.80	101.5	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCV QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07040.D\F6E07040.D#
Date Acquired:	May 11 2018 02:24 pm
Operator:	LVicto
Sample Name:	CCV3
Misc Info:	
Vial Number:	1206
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	May 11 2018 12:02 pm
Sample Type:	CCV
Total Dil Factor:	1.00

QC Elements

Element		Conc.		RSD(%)	Expected	QC Range(%)		Flag
7	Li	24.83	ppb	2.77	25.00	90 -	110	
9	Be	24.47	ppb	0.53	25.00	90 -	110	
11	B	48.38	ppb	2.30	50.00	90 -	110	
23	Na	25630.00	ppb	0.49	25000.00	90 -	110	
24	Mg	24700.00	ppb	0.45	25000.00	90 -	110	
27	Al	24820.00	ppb	0.23	25000.00	90 -	110	
28	Si	2583.00	ppb	1.06	2500.00	90 -	110	
31	P	239.90	ppb	1.50	250.00	90 -	110	
39	K	25870.00	ppb	1.25	25000.00	90 -	110	
40	Ca	25150.00	ppb	0.61	25000.00	90 -	110	
47	Ti	251.10	ppb	0.37	250.00	90 -	110	
51	V	249.80	ppb	1.00	250.00	90 -	110	
52	Cr	242.10	ppb	0.50	250.00	90 -	110	
55	Mn	1466.00	ppb	0.94	1500.00	90 -	110	
56	Fe	25030.00	ppb	0.23	25000.00	90 -	110	
59	Co	250.20	ppb	0.44	250.00	90 -	110	
60	Ni	251.60	ppb	0.37	250.00	90 -	110	
63	Cu	244.10	ppb	0.86	250.00	90 -	110	
66	Zn	232.60	ppb	1.05	250.00	90 -	110	
75	As	245.30	ppb	0.66	250.00	90 -	110	
78	Se	245.40	ppb	0.78	250.00	90 -	110	
88	Sr	247.10	ppb	0.30	250.00	90 -	110	
90	Zr	1.47	ppb	7.44	25.00	90 -	110	Fail
95	Mo	250.60	ppb	0.33	250.00	90 -	110	
107	Ag	24.82	ppb	0.81	25.00	90 -	110	
111	Cd	246.20	ppb	0.27	250.00	90 -	110	
118	Sn	251.50	ppb	0.24	250.00	90 -	110	
121	Sb	49.30	ppb	0.33	50.00	90 -	110	
137	Ba	504.00	ppb	0.82	500.00	90 -	110	
182	W	0.03	ppb	9.13	25.00	90 -	110	Fail
205	Tl	237.30	ppb	0.64	250.00	90 -	110	
208	Pb	243.90	ppb	1.05	250.00	90 -	110	
235	U	1.67	ppb	1.64	1.80	90 -	110	
238	U	242.80	ppb	0.73	250.00	90 -	110	

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1237562.10	2.73	1156944.40	107.0	60 -	125	
45	Sc	986233.00	1.74	963897.88	102.3	60 -	125	
45	Sc	226684.45	0.68	213583.44	106.1	60 -	125	
45	Sc	2194736.80	1.29	2034836.60	107.9	60 -	125	
72	Ge	207551.47	1.66	207470.16	100.0	60 -	125	
72	Ge	105122.44	1.20	100121.55	105.0	60 -	125	
72	Ge	426551.28	1.79	406311.59	105.0	60 -	125	
115	In	2501507.80	1.16	2486219.30	100.6	60 -	125	
159	Tb	3619789.00	2.00	3505933.80	103.2	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: **Fail**
ISTD: **Pass**

CCB QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07041.D\F6E07041.D#
Date Acquired:	May 11 2018 02:28 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	CCB3
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0584	ppb	77242.0	116.68	0.20	
9 Be	0.0024	ppb	27.8	93.56	0.10	
11 B	-0.1612	ppb	1807.9	26.59	5.00	
23 Na	-5.3200	ppb	331189.0	24.85	40.00	
24 Mg	0.5088	ppb	10353.9	22.60	10.00	
27 Al	0.5059	ppb	8989.9	17.85	20.00	
28 Si	0.8721	ppb	2818.2	28.93	20.00	
31 P	-19.1700	ppb	71754.0	11.96	10.00	Fail
39 K	-6.8830	ppb	183132.2	91.27	20.00	
40 Ca	1.0910	ppb	27717.3	2.45	25.00	
47 Ti	-0.0478	ppb	243.3	41.75	0.50	
51 V	-0.0982	ppb	2694.7	9.92	0.50	
52 Cr	-0.0929	ppb	1579.7	11.36	0.20	
55 Mn	-0.0183	ppb	4944.3	101.36	0.20	
56 Fe	1.5240	ppb	17437.4	3.99	10.00	
59 Co	0.0062	ppb	444.5	38.34	0.20	
60 Ni	-0.0055	ppb	76.7	65.06	0.20	
63 Cu	0.0207	ppb	1091.6	36.94	0.40	
66 Zn	-0.2461	ppb	332.2	10.86	2.00	
75 As	0.0150	ppb	180.7	40.57	0.20	
78 Se	0.0307	ppb	15.8	13.93	0.20	
88 Sr	0.0112	ppb	707.8	22.84	0.20	
90 Zr	-0.0025	ppb	189.1	319.69	2.00	
95 Mo	0.1263	ppb	593.4	4.60	0.40	
107 Ag	-0.0001	ppb	37.8	802.18	0.20	
111 Cd	-0.0060	ppb	27.1	191.19	0.20	
118 Sn	0.1325	ppb	1112.3	7.92	0.20	
121 Sb	0.0147	ppb	250.0	35.08	0.40	
137 Ba	0.0161	ppb	84.4	12.99	0.20	
182 W	-0.0016	ppb	74.5	206.58	1.00	
205 Tl	0.0353	ppb	674.5	1.77	0.20	
208 Pb	0.0207	ppb	762.3	2.50	0.10	
235 U	0.0003	ppb	28.9	112.74	1.00	
238 U	0.0527	ppb	1574.6	2.63	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1286862.1	1.35	1156944.40	111.2	60 - 125	
45 Sc	1020341.1	1.05	963897.88	105.9	60 - 125	
45 Sc	225900.1	1.55	213583.44	105.8	60 - 125	
45 Sc	2144500.3	1.54	2034836.60	105.4	60 - 125	
72 Ge	215672.8	0.27	207470.16	104.0	60 - 125	
72 Ge	103822.6	1.79	100121.55	103.7	60 - 125	
72 Ge	418026.2	0.41	406311.59	102.9	60 - 125	
115 In	2573008.8	0.39	2486219.30	103.5	60 - 125	
159 Tb	3540267.8	1.01	3505933.80	101.0	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07042.D\F6E07042.D#
Date Acquired:	May 11 2018 02:33 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	IME015WB
Misc Info:	
Vial Number:	2206
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	MBW
Dilution Factor:	1.00

QC Elements

Element		Conc.		CPS	Conc RSD(%)	High Limit	Flag
7	Li	-0.0290	ppb	77941.2	178.23	1.00	
9	Be	0.0033	ppb	31.1	123.87	0.50	
11	B	0.4372	ppb	3119.3	35.06	5.00	
23	Na	20.1400	ppb	399808.9	3.49	50.00	
24	Mg	4.3360	ppb	53177.1	0.92	50.00	
27	Al	2.8280	ppb	40977.5	1.26	50.00	
28	Si	2.9930	ppb	4417.0	8.28	25.00	
31	P	-17.2700	ppb	73156.4	13.78	25.00	
39	K	-2.3860	ppb	184033.3	223.93	50.00	
40	Ca	20.2600	ppb	135871.5	0.57	50.00	
47	Ti	0.0364	ppb	356.7	110.56	1.00	
51	V	-0.0911	ppb	2696.7	25.56	0.50	
52	Cr	-0.1015	ppb	1523.6	0.68	0.50	
55	Mn	0.0367	ppb	6099.2	21.60	0.50	
56	Fe	2.0260	ppb	21015.5	1.32	50.00	
59	Co	0.0024	ppb	385.6	132.05	0.50	
60	Ni	0.0107	ppb	100.7	5.59	0.50	
63	Cu	0.1748	ppb	1691.7	7.91	0.50	
66	Zn	1.2890	ppb	3868.4	3.80	10.00	
75	As	-0.0031	ppb	170.4	849.33	0.50	
78	Se	0.0276	ppb	14.9	52.27	0.50	
88	Sr	0.0676	ppb	1936.9	6.52	1.00	
90	Zr	0.0088	ppb	363.4	62.35	2.50	
95	Mo	0.0283	ppb	174.5	2.64	1.00	
107	Ag	-0.0006	ppb	33.3	140.56	0.50	
111	Cd	-0.0059	ppb	27.4	149.58	0.50	
118	Sn	0.0205	ppb	400.0	14.57	0.50	
121	Sb	0.0389	ppb	462.2	4.25	0.50	
137	Ba	0.2242	ppb	743.4	3.95	0.50	
182	W	-0.0025	ppb	66.7	95.21	1.00	
205	Tl	0.0079	ppb	186.7	18.97	0.50	
208	Pb	0.0421	ppb	1285.6	3.70	0.50	
235	U	0.0000	ppb	17.8	1883.00	---	
238	U	0.0118	ppb	372.2	23.75	0.50	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1292389.3	1.79	1156944.40	111.7	60 - 125	
45	Sc	1008404.4	0.52	963897.88	104.6	60 - 125	
45	Sc	223673.6	1.75	213583.44	104.7	60 - 125	
45	Sc	2150522.5	2.03	2034836.60	105.7	60 - 125	
72	Ge	213585.3	0.12	207470.16	102.9	60 - 125	
72	Ge	104390.9	1.80	100121.55	104.3	60 - 125	
72	Ge	420057.1	1.57	406311.59	103.4	60 - 125	
115	In	2573078.3	2.27	2486219.30	103.5	60 - 125	
159	Tb	3526358.8	1.40	3505933.80	100.6	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

LCS QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07043.D\F6E07043.D#
Date Acquired:	May 11 2018 02:37 pm
Operator:	LVicto
Sample Name:	IME015WL
Misc Info:	
Vial Number:	2207
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	LCS
Final Dil Factor:	1.00

Analyte Elements

Element		CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7	Li	424717.69	30.59	ppb	0.19	30.00	80 - 120	
9	Be	91282.55	29.69	ppb	0.93	30.00	80 - 120	
11	B	63029.90	29.38	ppb	0.86	30.00	80 - 120	
23	Na	9282916.00	3184.00	ppb	0.96	3000.00	80 - 120	
24	Mg	34550380.00	3182.00	ppb	0.71	3000.00	80 - 120	
27	Al	42378620.00	3171.00	ppb	0.46	3000.00	80 - 120	
28	Si	3449.40	1.80	ppb	2.37	3000.00	80 - 120	Fail
31	P	71419.41	-16.68	ppb	15.90	300.00	80 - 120	Fail
39	K	2111539.00	3292.00	ppb	0.34	3000.00	80 - 120	
40	Ca	17727650.00	3170.00	ppb	0.61	3000.00	80 - 120	
47	Ti	41081.45	31.22	ppb	0.83	30.00	80 - 120	
51	V	127481.60	30.87	ppb	0.69	30.00	80 - 120	
52	Cr	144881.80	30.87	ppb	0.84	30.00	80 - 120	
55	Mn	648707.88	31.99	ppb	0.84	30.00	80 - 120	
56	Fe	23823780.00	3204.00	ppb	0.37	3000.00	80 - 120	
59	Co	496973.41	32.47	ppb	0.42	30.00	80 - 120	
60	Ni	48290.32	32.36	ppb	1.13	30.00	80 - 120	
63	Cu	125030.40	32.08	ppb	0.83	30.00	80 - 120	
66	Zn	134316.09	60.57	ppb	0.42	60.00	80 - 120	
75	As	18367.02	30.67	ppb	0.39	30.00	80 - 120	
78	Se	7010.82	30.75	ppb	0.25	30.00	80 - 120	
88	Sr	652481.13	31.32	ppb	0.66	30.00	80 - 120	
90	Zr	341.13	0.01	ppb	18.40	20.00	80 - 120	Fail
95	Mo	121462.50	29.62	ppb	0.32	30.00	80 - 120	
107	Ag	297675.09	31.52	ppb	1.00	30.00	80 - 120	
111	Cd	58713.12	30.02	ppb	1.38	30.00	80 - 120	
118	Sn	181322.80	29.68	ppb	0.30	30.00	80 - 120	
121	Sb	251069.30	29.82	ppb	0.89	30.00	80 - 120	
137	Ba	89276.02	29.39	ppb	1.05	30.00	80 - 120	
182	W	111.12	0.00	ppb	80.42	30.00	80 - 120	Fail
205	Tl	539536.88	31.31	ppb	0.90	30.00	80 - 120	
208	Pb	727455.31	30.46	ppb	0.80	30.00	80 - 120	
235	U	1864.64	0.06	ppb	6.36	0.21	80 - 120	Fail
238	U	893146.00	31.37	ppb	0.63	29.79	80 - 120	

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1227993.40	1.20	1156944.40	106.1	60 - 125	
45	Sc	995257.50	0.74	963897.88	103.3	60 - 125	
45	Sc	218149.48	1.34	213583.44	102.1	60 - 125	
45	Sc	2088328.80	0.85	2034836.60	102.6	60 - 125	
72	Ge	208428.11	0.49	207470.16	100.5	60 - 125	
72	Ge	100307.35	0.51	100121.55	100.2	60 - 125	
72	Ge	401964.16	1.91	406311.59	98.9	60 - 125	
115	In	2466400.50	0.94	2486219.30	99.2	60 - 125	
159	Tb	3429321.50	1.53	3505933.80	97.8	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

5 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

LCS QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07044.D\F6E07044.D#
Date Acquired:	May 11 2018 02:42 pm
Operator:	LVicto
Sample Name:	IME015WC
Misc Info:	
Vial Number:	2208
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	LCS
Final Dil Factor:	1.00

Analyte Elements

Element		CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7	Li	428154.91	28.96	ppb	0.69	30.00	80 - 120	
9	Be	90348.30	27.87	ppb	0.39	30.00	80 - 120	
11	B	62662.71	27.65	ppb	0.13	30.00	80 - 120	
23	Na	9013998.00	3042.00	ppb	1.91	3000.00	80 - 120	
24	Mg	34403248.00	2973.00	ppb	1.33	3000.00	80 - 120	
27	Al	42106752.00	2956.00	ppb	1.23	3000.00	80 - 120	
28	Si	5111.04	3.89	ppb	5.25	3000.00	80 - 120	Fail
31	P	71254.55	-24.08	ppb	5.42	300.00	80 - 120	Fail
39	K	2096851.00	3056.00	ppb	0.68	3000.00	80 - 120	
40	Ca	17005340.00	2997.00	ppb	1.36	3000.00	80 - 120	
47	Ti	40777.38	29.06	ppb	0.10	30.00	80 - 120	
51	V	127875.50	29.10	ppb	0.28	30.00	80 - 120	
52	Cr	144544.50	28.95	ppb	0.46	30.00	80 - 120	
55	Mn	647971.81	29.96	ppb	1.05	30.00	80 - 120	
56	Fe	22822320.00	3025.00	ppb	0.82	3000.00	80 - 120	
59	Co	493765.09	30.27	ppb	0.80	30.00	80 - 120	
60	Ni	48171.06	30.37	ppb	0.69	30.00	80 - 120	
63	Cu	124691.90	30.09	ppb	0.32	30.00	80 - 120	
66	Zn	136794.70	58.22	ppb	0.77	60.00	80 - 120	
75	As	18235.98	28.57	ppb	1.55	30.00	80 - 120	
78	Se	6729.79	29.08	ppb	1.46	30.00	80 - 120	
88	Sr	647166.88	29.32	ppb	0.56	30.00	80 - 120	
90	Zr	371.13	0.01	ppb	12.89	20.00	80 - 120	Fail
95	Mo	120844.60	27.90	ppb	0.84	30.00	80 - 120	
107	Ag	294268.41	29.50	ppb	1.04	30.00	80 - 120	
111	Cd	58275.72	28.22	ppb	0.33	30.00	80 - 120	
118	Sn	179484.50	27.81	ppb	0.41	30.00	80 - 120	
121	Sb	252134.80	28.36	ppb	0.91	30.00	80 - 120	
137	Ba	89093.18	27.77	ppb	0.71	30.00	80 - 120	
182	W	104.45	0.00	ppb	70.48	30.00	80 - 120	Fail
205	Tl	531780.50	29.41	ppb	0.58	30.00	80 - 120	
208	Pb	722505.38	28.82	ppb	0.26	30.00	80 - 120	
235	U	1797.97	0.06	ppb	4.07	0.21	80 - 120	Fail
238	U	880273.38	29.46	ppb	0.37	29.79	80 - 120	

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1294940.90	0.77	1156944.40	111.9	60 - 125	
45	Sc	1009697.20	0.78	963897.88	104.8	60 - 125	
45	Sc	231850.75	1.11	213583.44	108.6	60 - 125	
45	Sc	2226067.00	1.96	2034836.60	109.4	60 - 125	
72	Ge	211539.25	0.91	207470.16	102.0	60 - 125	
72	Ge	106835.85	0.75	100121.55	106.7	60 - 125	
72	Ge	425846.91	1.30	406311.59	104.8	60 - 125	
115	In	2604855.30	1.27	2486219.30	104.8	60 - 125	
159	Tb	3599188.80	0.96	3505933.80	102.7	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

5 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

CCV QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07051.D\F6E07051.D#
Date Acquired:	May 11 2018 03:14 pm
Operator:	LVicto
Sample Name:	CCV4
Misc Info:	
Vial Number:	1206
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	May 11 2018 12:02 pm
Sample Type:	CCV
Total Dil Factor:	1.00

QC Elements

Element		Conc.		RSD(%)	Expected	QC Range(%)		Flag
7	Li	24.75	ppb	2.26	25.00	90 -	110	
9	Be	24.32	ppb	1.67	25.00	90 -	110	
11	B	48.57	ppb	2.04	50.00	90 -	110	
23	Na	25110.00	ppb	2.08	25000.00	90 -	110	
24	Mg	24860.00	ppb	0.94	25000.00	90 -	110	
27	Al	24970.00	ppb	0.90	25000.00	90 -	110	
28	Si	2576.00	ppb	1.60	2500.00	90 -	110	
31	P	243.80	ppb	1.67	250.00	90 -	110	
39	K	25850.00	ppb	0.98	25000.00	90 -	110	
40	Ca	24940.00	ppb	1.14	25000.00	90 -	110	
47	Ti	251.60	ppb	0.70	250.00	90 -	110	
51	V	249.70	ppb	0.52	250.00	90 -	110	
52	Cr	244.20	ppb	0.99	250.00	90 -	110	
55	Mn	1478.00	ppb	0.58	1500.00	90 -	110	
56	Fe	24670.00	ppb	0.62	25000.00	90 -	110	
59	Co	252.20	ppb	0.88	250.00	90 -	110	
60	Ni	251.40	ppb	0.23	250.00	90 -	110	
63	Cu	242.90	ppb	1.03	250.00	90 -	110	
66	Zn	232.80	ppb	0.80	250.00	90 -	110	
75	As	242.90	ppb	0.80	250.00	90 -	110	
78	Se	243.00	ppb	1.80	250.00	90 -	110	
88	Sr	247.10	ppb	0.83	250.00	90 -	110	
90	Zr	0.60	ppb	1.24	25.00	90 -	110	Fail
95	Mo	254.10	ppb	1.34	250.00	90 -	110	
107	Ag	24.73	ppb	0.94	25.00	90 -	110	
111	Cd	245.90	ppb	0.48	250.00	90 -	110	
118	Sn	251.90	ppb	1.30	250.00	90 -	110	
121	Sb	49.25	ppb	0.91	50.00	90 -	110	
137	Ba	503.90	ppb	1.17	500.00	90 -	110	
182	W	0.04	ppb	4.43	25.00	90 -	110	Fail
205	Tl	234.30	ppb	0.48	250.00	90 -	110	
208	Pb	242.70	ppb	0.61	250.00	90 -	110	
235	U	1.69	ppb	1.20	1.80	90 -	110	
238	U	244.30	ppb	0.76	250.00	90 -	110	

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1222019.00	2.14	1156944.40	105.6	60 -	125	
45	Sc	1009890.70	1.66	963897.88	104.8	60 -	125	
45	Sc	224400.31	0.42	213583.44	105.1	60 -	125	
45	Sc	2151627.80	0.29	2034836.60	105.7	60 -	125	
72	Ge	207534.17	2.39	207470.16	100.0	60 -	125	
72	Ge	105159.98	1.14	100121.55	105.0	60 -	125	
72	Ge	418948.94	0.54	406311.59	103.1	60 -	125	
115	In	2449771.80	1.27	2486219.30	98.5	60 -	125	
159	Tb	3559805.80	1.70	3505933.80	101.5	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: **Fail**
ISTD: **Pass**

CCB QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07052.D\F6E07052.D#
Date Acquired:	May 11 2018 03:18 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	CCB
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0847	ppb	74680.6	34.70	0.20	
9 Be	0.0062	ppb	38.9	19.70	0.10	
11 B	0.4051	ppb	2945.9	60.55	5.00	
23 Na	-7.7480	ppb	324205.5	12.74	40.00	
24 Mg	0.7529	ppb	12826.9	19.82	10.00	
27 Al	0.6759	ppb	11108.9	15.80	20.00	
28 Si	1.4370	ppb	3257.1	14.70	20.00	
31 P	-15.7800	ppb	72538.6	13.69	10.00	Fail
39 K	-5.3010	ppb	183227.7	82.19	20.00	
40 Ca	1.0180	ppb	27302.1	0.86	25.00	
47 Ti	0.0832	ppb	408.5	251.08	0.50	
51 V	-0.0648	ppb	2820.7	15.32	0.50	
52 Cr	-0.0913	ppb	1580.3	2.56	0.20	
55 Mn	0.0132	ppb	5492.3	115.85	0.20	
56 Fe	1.5610	ppb	17721.0	6.26	10.00	
59 Co	0.0088	ppb	474.5	58.33	0.20	
60 Ni	-0.0038	ppb	78.9	47.19	0.20	
63 Cu	-0.0087	ppb	969.4	59.14	0.40	
66 Zn	-0.2369	ppb	345.6	5.85	2.00	
75 As	0.0389	ppb	194.4	26.29	0.20	
78 Se	0.0484	ppb	20.0	30.63	0.20	
88 Sr	0.0111	ppb	688.9	46.76	0.20	
90 Zr	-0.0088	ppb	90.0	2.03	2.00	
95 Mo	0.1221	ppb	563.4	5.32	0.40	
107 Ag	0.0024	ppb	61.1	72.26	0.20	
111 Cd	0.0051	ppb	48.9	58.84	0.20	
118 Sn	0.1476	ppb	1184.5	10.61	0.20	
121 Sb	0.0371	ppb	436.7	11.40	0.40	
137 Ba	0.0206	ppb	96.7	22.48	0.20	
182 W	-0.0040	ppb	53.3	36.76	1.00	
205 Tl	0.0338	ppb	632.3	0.71	0.20	
208 Pb	0.0237	ppb	816.7	10.95	0.10	
235 U	0.0000	ppb	18.9	527.35	1.00	
238 U	0.0582	ppb	1695.7	7.82	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1249222.3	1.54	1156944.40	108.0	60 - 125	
45 Sc	1020353.8	0.83	963897.88	105.9	60 - 125	
45 Sc	224802.5	0.53	213583.44	105.3	60 - 125	
45 Sc	2104807.8	1.61	2034836.60	103.4	60 - 125	
72 Ge	216220.5	0.15	207470.16	104.2	60 - 125	
72 Ge	103315.5	1.50	100121.55	103.2	60 - 125	
72 Ge	408397.1	1.32	406311.59	100.5	60 - 125	
115 In	2519505.5	0.96	2486219.30	101.3	60 - 125	
159 Tb	3456329.0	0.59	3505933.80	98.6	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

1 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07056.D\F6E07056.D#
Date Acquired:	May 11 2018 03:36 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-02
Misc Info:	
Vial Number:	2303
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	3242405.0	0.0000	343.7000	ppb	0.97	50.00	>LRS
9 Be	# 3	6	28.9	0.0000	0.0055	ppb	104.79	50.00	
11 B	# 3	6	1872559.0	0.0000	1115.0000	ppb	1.10	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	621515580.0	0.0000	59970.0000	ppb	0.67	50000.00	>LRS
27 Al	# 3	45	61154.2	0.0000	4.6450	ppb	2.17	50000.00	
28 Si	# 1	45	10582240.0	0.0000	14220.0000	ppb	1.46	5000.00	>LRS
31 P	# 3	45	92455.9	0.0000	24.5000	ppb	3.59	500.00	
39 K	# 2	45	6735309.0	0.0000	11510.0000	ppb	0.34	50000.00	
40 Ca	# 1	45	677689090.0	0.0000	123800.0000	ppb	1.08	50000.00	>LRS
47 Ti	# 3	45	3850.6	0.0000	2.8580	ppb	3.05	500.00	
51 V	# 2	45	8073.8	0.0000	1.3170	ppb	0.89	500.00	
52 Cr	# 2	45	2770.9	0.0000	0.1934	ppb	2.45	500.00	
55 Mn	# 3	45	10683780.0	0.0000	556.1000	ppb	0.11	3000.00	
56 Fe	# 1	45	510754.6	0.0000	69.3800	ppb	0.96	50000.00	
59 Co	# 3	45	9057.5	0.0000	0.5982	ppb	2.15	500.00	
60 Ni	# 2	45	3161.0	0.0000	2.1280	ppb	1.28	500.00	
63 Cu	# 2	45	2352.4	0.0000	0.3741	ppb	3.56	500.00	
66 Zn	# 3	72	17690.0	0.0000	8.6620	ppb	2.04	500.00	
75 As	# 2	72	2507.3	0.0000	4.3450	ppb	0.73	500.00	
78 Se	# 1	72	36.2	0.0000	0.1426	ppb	9.11	500.00	
88 Sr	# 3	72	59837660.0	0.0000	3241.0000	ppb	0.40	500.00	>LRS
90 Zr	# 3	72	458.9	0.0000	0.0202	ppb	10.18	50.00	
95 Mo	# 3	115	169209.7	0.0000	48.3400	ppb	0.70	500.00	
107 Ag	# 3	115	111.1	0.0000	0.0098	ppb	13.94	50.00	
111 Cd	# 3	115	8.2	0.0000	-0.0144	ppb	186.57	500.00	
118 Sn	# 3	115	433.4	0.0000	0.0409	ppb	9.10	500.00	
121 Sb	# 3	115	1101.2	0.0000	0.1396	ppb	7.47	500.00	
137 Ba	# 3	115	115933.5	0.0000	44.7200	ppb	0.83	1000.00	
182 W	# 3	159	18208.4	0.0000	2.6460	ppb	0.22	50.00	
205 Tl	# 3	159	4367.5	0.0000	0.2937	ppb	3.63	500.00	
208 Pb	# 3	159	1463.4	0.0000	0.0614	ppb	3.12	500.00	
235 U	# 3	159	618.9	0.0000	0.0233	ppb	2.61	30.00	
238 U	# 3	159	79464.3	0.0000	3.2620	ppb	0.71	500.00	

ISTD Elements

Element	Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	992943.75	2.43	1156944.40	85.8	60 - 125	
45 Sc	# 1	974915.50	0.68	963897.88	101.1	60 - 125	
45 Sc	# 2	211969.13	0.91	213583.44	99.2	60 - 125	
45 Sc	# 3	1993613.30	1.51	2034836.60	98.0	60 - 125	
72 Ge	# 1	185376.66	0.62	207470.16	89.4	60 - 125	
72 Ge	# 2	91644.65	1.51	100121.55	91.5	60 - 125	
72 Ge	# 3	356475.03	1.37	406311.59	87.7	60 - 125	
115 In	# 3	2105263.00	0.84	2486219.30	84.7	60 - 125	
159 Tb	# 3	2933565.30	1.98	3505933.80	83.7	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

7 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File: C:\DATA\IF62018\E\IF6E07.B\F6E07057.D\F6E07057.D#
Date Acquired: May 11 2018 03:41 pm
Acq. Method: EM6020R2.M
Operator: LVicto
Sample Name: E042-04
Misc Info:
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 11 2018 12:02 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	6686964.0	0.0000	792.5000	ppb	0.82	50.00	>LRS
9 Be	# 3	6	26.7	0.0000	0.0057	ppb	56.64	50.00	
11 B	# 3	6	2700802.0	0.0000	1780.0000	ppb	0.50	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	177008800.0	0.0000	18090.0000	ppb	1.11	50000.00	
27 Al	# 3	45	67144.7	0.0000	5.4250	ppb	2.55	50000.00	
28 Si	# 1	45	9652397.0	0.0000	14410.0000	ppb	1.41	5000.00	>LRS
31 P	# 3	45	92711.7	0.0000	34.2600	ppb	2.70	500.00	
39 K	# 2	45	12118850.0	0.0000	21640.0000	ppb	1.47	50000.00	
40 Ca	# 1	45	764244930.0	0.0000	155100.0000	ppb	1.23	50000.00	>LRS
47 Ti	# 3	45	3681.7	0.0000	2.8980	ppb	5.49	500.00	
51 V	# 2	45	9134.6	0.0000	1.6630	ppb	1.72	500.00	
52 Cr	# 2	45	2860.5	0.0000	0.2339	ppb	7.42	500.00	
55 Mn	# 3	45	1873284.0	0.0000	103.1000	ppb	0.23	3000.00	
56 Fe	# 1	45	59368.8	0.0000	8.2910	ppb	1.77	50000.00	
59 Co	# 3	45	6988.5	0.0000	0.4849	ppb	1.86	500.00	
60 Ni	# 2	45	1537.2	0.0000	1.0410	ppb	3.18	500.00	
63 Cu	# 2	45	3795.4	0.0000	0.7909	ppb	4.86	500.00	
66 Zn	# 3	72	18302.9	0.0000	9.4880	ppb	1.08	500.00	
75 As	# 2	72	1770.8	0.0000	3.1360	ppb	1.69	500.00	
78 Se	# 1	72	71.8	0.0000	0.3480	ppb	10.59	500.00	
88 Sr	# 3	72	60055660.0	0.0000	3431.0000	ppb	1.07	500.00	>LRS
90 Zr	# 3	72	280.0	0.0000	0.0077	ppb	53.36	50.00	
95 Mo	# 3	115	165779.6	0.0000	50.9100	ppb	0.95	500.00	
107 Ag	# 3	115	121.1	0.0000	0.0122	ppb	4.10	50.00	
111 Cd	# 3	115	64.4	0.0000	0.0221	ppb	19.24	500.00	
118 Sn	# 3	115	346.7	0.0000	0.0292	ppb	3.46	500.00	
121 Sb	# 3	115	1010.1	0.0000	0.1374	ppb	5.37	500.00	
137 Ba	# 3	115	114369.2	0.0000	47.4200	ppb	0.43	1000.00	
182 W	# 3	159	8655.3	0.0000	1.3550	ppb	1.43	50.00	
205 Tl	# 3	159	6975.4	0.0000	0.5090	ppb	0.73	500.00	
208 Pb	# 3	159	815.6	0.0000	0.0329	ppb	3.51	500.00	
235 U	# 3	159	2251.4	0.0000	0.0935	ppb	2.52	30.00	
238 U	# 3	159	318195.3	0.0000	14.1200	ppb	0.65	500.00	

ISTD Elements

Element	Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	897535.81	2.04	1156944.40	77.6	60 - 125	
45 Sc	# 1	877741.63	0.27	963897.88	91.1	60 - 125	
45 Sc	# 2	205352.78	0.95	213583.44	96.1	60 - 125	
45 Sc	# 3	1882068.30	1.66	2034836.60	92.5	60 - 125	
72 Ge	# 1	171072.92	0.94	207470.16	82.5	60 - 125	
72 Ge	# 2	87628.04	1.52	100121.55	87.5	60 - 125	
72 Ge	# 3	338050.72	1.83	406311.59	83.2	60 - 125	
115 In	# 3	1958855.40	1.59	2486219.30	78.8	60 - 125	
159 Tb	# 3	2713823.00	1.24	3505933.80	77.4	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

6 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07058.D\F6E07058.D#
Date Acquired:	May 11 2018 03:45 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-06
Misc Info:	
Vial Number:	2305
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element		Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7	Li	# 3	6	8845380.0	0.0000	1126.0000	ppb	0.54	50.00	>LRS
9	Be	# 3	6	20.0	0.0000	0.0033	ppb	269.91	50.00	
11	B	# 3	6	4251296.0	0.0000	3002.0000	ppb	0.34	100.00	>LRS
23	Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24	Mg	# 3	45	43230368.0	0.0000	4242.0000	ppb	0.77	50000.00	
27	Al	# 3	45	72720.5	0.0000	5.6490	ppb	2.68	50000.00	
28	Si	# 1	45	6425277.0	0.0000	9357.0000	ppb	1.72	5000.00	>LRS
31	P	# 3	45	91870.9	0.0000	26.2100	ppb	5.42	500.00	
39	K	# 2	45	19673260.0	0.0000	33420.0000	ppb	0.51	50000.00	
40	Ca	# 1	45	603990590.0	0.0000	119600.0000	ppb	1.89	50000.00	>LRS
47	Ti	# 3	45	2667.0	0.0000	1.9470	ppb	5.00	500.00	
51	V	# 2	45	4021.9	0.0000	0.2593	ppb	3.34	500.00	
52	Cr	# 2	45	3008.1	0.0000	0.2307	ppb	2.99	500.00	
55	Mn	# 3	45	4385813.0	0.0000	232.1000	ppb	0.50	3000.00	
56	Fe	# 1	45	538087.8	0.0000	79.3000	ppb	1.55	50000.00	
59	Co	# 3	45	7468.8	0.0000	0.4984	ppb	0.82	500.00	
60	Ni	# 2	45	1208.3	0.0000	0.7601	ppb	2.47	500.00	
63	Cu	# 2	45	1518.5	0.0000	0.1429	ppb	4.77	500.00	
66	Zn	# 3	72	7373.2	0.0000	3.4670	ppb	1.80	500.00	
75	As	# 2	72	691.8	0.0000	1.0150	ppb	7.52	500.00	
78	Se	# 1	72	33.6	0.0000	0.1434	ppb	13.01	500.00	
88	Sr	# 3	72	57501312.0	0.0000	3184.0000	ppb	0.42	500.00	>LRS
90	Zr	# 3	72	416.7	0.0000	0.0177	ppb	15.83	50.00	
95	Mo	# 3	115	383628.8	0.0000	114.4000	ppb	0.72	500.00	
107	Ag	# 3	115	176.7	0.0000	0.0189	ppb	29.63	50.00	
111	Cd	# 3	115	71.0	0.0000	0.0251	ppb	147.27	500.00	
118	Sn	# 3	115	344.5	0.0000	0.0268	ppb	26.86	500.00	
121	Sb	# 3	115	1526.8	0.0000	0.2081	ppb	4.42	500.00	
137	Ba	# 3	115	92348.9	0.0000	37.1800	ppb	1.06	1000.00	
182	W	# 3	159	9778.3	0.0000	1.5110	ppb	1.28	50.00	
205	Tl	# 3	159	66.7	0.0000	0.0022	ppb	71.41	500.00	
208	Pb	# 3	159	1479.0	0.0000	0.0669	ppb	6.31	500.00	
235	U	# 3	159	195.6	0.0000	0.0075	ppb	20.25	30.00	
238	U	# 3	159	21442.5	0.0000	0.9377	ppb	1.61	500.00	

ISTD Elements

Element		Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	# 3	837727.81	1.26	1156944.40	72.4	60 - 125	
45	Sc	# 1	899672.88	1.30	963897.88	93.3	60 - 125	
45	Sc	# 2	216969.88	1.71	213583.44	101.6	60 - 125	
45	Sc	# 3	1959615.00	1.27	2034836.60	96.3	60 - 125	
72	Ge	# 1	171197.89	2.62	207470.16	82.5	60 - 125	
72	Ge	# 2	90363.14	1.80	100121.55	90.3	60 - 125	
72	Ge	# 3	348670.06	1.01	406311.59	85.8	60 - 125	
115	In	# 3	2016965.00	1.00	2486219.30	81.1	60 - 125	
159	Tb	# 3	2751507.80	1.25	3505933.80	78.5	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

6 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07059.D\F6E07059.D#
Date Acquired:	May 11 2018 03:50 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-08
Misc Info:	
Vial Number:	2306
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	875285.2	0.0000	72.8000	ppb	0.82	50.00	>LRS
9 Be	# 3	6	36.7	0.0000	0.0061	ppb	89.83	50.00	
11 B	# 3	6	1085314.0	0.0000	541.7000	ppb	1.11	100.00	>LRS
23 Na	# 1	45	690429120.0	0.0000	223300.0000	ppb	1.93	50000.00	>LRS
24 Mg	# 3	45	89440280.0	0.0000	7690.0000	ppb	0.15	50000.00	
27 Al	# 3	45	197611.1	0.0000	13.6500	ppb	0.87	50000.00	
28 Si	# 1	45	12843320.0	0.0000	15370.0000	ppb	1.77	5000.00	>LRS
31 P	# 3	45	87391.5	0.0000	-0.2139	ppb	558.20	500.00	
39 K	# 2	45	3146497.0	0.0000	4651.0000	ppb	1.09	50000.00	
40 Ca	# 1	45	203664700.0	0.0000	33130.0000	ppb	0.98	50000.00	
47 Ti	# 3	45	4748.7	0.0000	3.1640	ppb	1.19	500.00	
51 V	# 2	45	22378.3	0.0000	4.3870	ppb	0.61	500.00	
52 Cr	# 2	45	2017.0	0.0000	-0.0198	ppb	42.33	500.00	
55 Mn	# 3	45	16135110.0	0.0000	748.6000	ppb	0.83	3000.00	
56 Fe	# 1	45	498990.3	0.0000	60.2400	ppb	1.88	50000.00	
59 Co	# 3	45	3851.7	0.0000	0.2131	ppb	1.70	500.00	
60 Ni	# 2	45	494.5	0.0000	0.2515	ppb	3.76	500.00	
63 Cu	# 2	45	2556.7	0.0000	0.3591	ppb	3.85	500.00	
66 Zn	# 3	72	5215.5	0.0000	1.9020	ppb	1.69	500.00	
75 As	# 2	72	3839.4	0.0000	5.8300	ppb	2.03	500.00	
78 Se	# 1	72	29.6	0.0000	0.0859	ppb	9.43	500.00	
88 Sr	# 3	72	15205030.0	0.0000	707.4000	ppb	0.56	500.00	>LRS
90 Zr	# 3	72	556.7	0.0000	0.0218	ppb	28.89	50.00	
95 Mo	# 3	115	161559.0	0.0000	39.9900	ppb	1.43	500.00	
107 Ag	# 3	115	65.6	0.0000	0.0031	ppb	86.70	50.00	
111 Cd	# 3	115	22.6	0.0000	-0.0076	ppb	178.75	500.00	
118 Sn	# 3	115	222.2	0.0000	-0.0054	ppb	64.94	500.00	
121 Sb	# 3	115	840.1	0.0000	0.0875	ppb	6.88	500.00	
137 Ba	# 3	115	1704967.0	0.0000	569.9000	ppb	0.68	1000.00	
182 W	# 3	159	108228.9	0.0000	13.6500	ppb	0.56	50.00	
205 Tl	# 3	159	14007.8	0.0000	0.8191	ppb	1.67	500.00	
208 Pb	# 3	159	1465.6	0.0000	0.0518	ppb	6.74	500.00	
235 U	# 3	159	932.3	0.0000	0.0306	ppb	3.79	30.00	
238 U	# 3	159	124258.3	0.0000	4.4100	ppb	0.62	500.00	

ISTD Elements

Element	Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	1183594.60	1.64	1156944.40	102.3	60 - 125	
45 Sc	# 1	1095101.80	2.19	963897.88	113.6	60 - 125	
45 Sc	# 2	235998.75	0.65	213583.44	110.5	60 - 125	
45 Sc	# 3	2236908.50	1.69	2034836.60	109.9	60 - 125	
72 Ge	# 1	221402.47	1.12	207470.16	106.7	60 - 125	
72 Ge	# 2	106234.91	1.66	100121.55	106.1	60 - 125	
72 Ge	# 3	415022.38	1.00	406311.59	102.1	60 - 125	
115 In	# 3	2430108.00	1.59	2486219.30	97.7	60 - 125	
159 Tb	# 3	3392475.50	1.42	3505933.80	96.8	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

5 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
- Analytes: Fail
- ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07060.D\F6E07060.D#
Date Acquired:	May 11 2018 03:54 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-09
Misc Info:	
Vial Number:	2307
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element		Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7	Li	# 3	6	4860254.0	0.0000	525.9000	ppb	0.88	50.00	>LRS
9	Be	# 3	6	11.1	0.0000	-0.0017	ppb	203.31	50.00	
11	B	# 3	6	2683198.0	0.0000	1621.0000	ppb	1.60	100.00	>LRS
23	Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24	Mg	# 3	45	16328790.0	0.0000	1546.0000	ppb	1.20	50000.00	
27	Al	# 3	45	81679.2	0.0000	6.1320	ppb	5.91	50000.00	
28	Si	# 1	45	9026267.0	0.0000	12250.0000	ppb	2.49	5000.00	>LRS
31	P	# 3	45	87687.5	0.0000	13.6800	ppb	21.08	500.00	
39	K	# 2	45	11601180.0	0.0000	19690.0000	ppb	0.88	50000.00	
40	Ca	# 1	45	391009790.0	0.0000	72120.0000	ppb	1.88	50000.00	>LRS
47	Ti	# 3	45	3383.8	0.0000	2.4330	ppb	5.87	500.00	
51	V	# 2	45	16045.1	0.0000	3.2800	ppb	1.24	500.00	
52	Cr	# 2	45	40168.3	0.0000	8.3500	ppb	0.61	500.00	
55	Mn	# 3	45	83919.7	0.0000	4.0310	ppb	0.88	5000.00	
56	Fe	# 1	45	45239.6	0.0000	5.5080	ppb	3.99	50000.00	
59	Co	# 3	45	3281.6	0.0000	0.1986	ppb	7.72	500.00	
60	Ni	# 2	45	594.0	0.0000	0.3479	ppb	5.37	500.00	
63	Cu	# 2	45	1919.7	0.0000	0.2500	ppb	3.54	500.00	
66	Zn	# 3	72	4753.1	0.0000	1.9640	ppb	3.90	500.00	
75	As	# 2	72	3979.7	0.0000	6.8000	ppb	1.13	500.00	
78	Se	# 1	72	125.3	0.0000	0.5665	ppb	16.49	500.00	
88	Sr	# 3	72	36348700.0	0.0000	1906.0000	ppb	0.10	500.00	>LRS
90	Zr	# 3	72	346.7	0.0000	0.0108	ppb	65.83	50.00	
95	Mo	# 3	115	155266.6	0.0000	43.2700	ppb	1.28	500.00	
107	Ag	# 3	115	76.7	0.0000	0.0053	ppb	33.97	50.00	
111	Cd	# 3	115	43.3	0.0000	0.0059	ppb	179.59	500.00	
118	Sn	# 3	115	265.6	0.0000	0.0074	ppb	135.31	500.00	
121	Sb	# 3	115	666.7	0.0000	0.0768	ppb	5.15	500.00	
137	Ba	# 3	115	118393.1	0.0000	44.5400	ppb	0.54	1000.00	
182	W	# 3	159	15152.3	0.0000	2.1490	ppb	2.67	50.00	
205	Tl	# 3	159	965.6	0.0000	0.0614	ppb	4.42	500.00	
208	Pb	# 3	159	644.5	0.0000	0.0206	ppb	10.10	500.00	
235	U	# 3	159	540.0	0.0000	0.0198	ppb	3.12	30.00	
238	U	# 3	159	68588.9	0.0000	2.7500	ppb	0.66	500.00	

ISTD Elements

Element		Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	# 3	979109.06	2.26	1156944.40	84.6	60 - 125	
45	Sc	# 1	966012.56	2.01	963897.88	100.2	60 - 125	
45	Sc	# 2	215746.28	1.17	213583.44	101.0	60 - 125	
45	Sc	# 3	2031168.90	1.37	2034836.60	99.8	60 - 125	
72	Ge	# 1	190280.06	0.69	207470.16	91.7	60 - 125	
72	Ge	# 2	95023.51	1.71	100121.55	94.9	60 - 125	
72	Ge	# 3	368326.59	0.94	406311.59	90.7	60 - 125	
115	In	# 3	2158520.00	0.89	2486219.30	86.8	60 - 125	
159	Tb	# 3	3003546.30	1.15	3505933.80	85.7	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

6 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07061.D\F6E07061.D#
Date Acquired:	May 11 2018 03:59 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-10
Misc Info:	
Vial Number:	2308
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	8985526.0	0.0000	1241.0000	ppb	0.82	50.00	>LRS
9 Be	# 3	6	16.7	0.0000	0.0023	ppb	193.24	50.00	
11 B	# 3	6	3645766.0	0.0000	2792.0000	ppb	0.36	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	772587900.0	0.0000	77220.0000	ppb	0.56	50000.00	>LRS
27 Al	# 3	45	62536.6	0.0000	4.9280	ppb	0.04	50000.00	
28 Si	# 1	45	9497744.0	0.0000	14210.0000	ppb	0.45	5000.00	>LRS
31 P	# 3	45	132517.4	0.0000	100.6000	ppb	1.92	500.00	
39 K	# 2	45	23080870.0	0.0000	40200.0000	ppb	0.13	50000.00	
40 Ca	# 1	45	2003568000.0	0.0000	407600.0000	ppb	0.58	50000.00	>LRS
47 Ti	# 3	45	4476.4	0.0000	3.4900	ppb	1.82	500.00	
51 V	# 2	45	4847.3	0.0000	0.4935	ppb	0.38	500.00	
52 Cr	# 2	45	2501.6	0.0000	0.1336	ppb	9.93	500.00	
55 Mn	# 3	45	11500790.0	0.0000	620.1000	ppb	0.12	3000.00	
56 Fe	# 1	45	4729781.0	0.0000	722.3000	ppb	0.60	50000.00	
59 Co	# 3	45	15765.5	0.0000	1.0960	ppb	0.27	500.00	
60 Ni	# 2	45	1082.5	0.0000	0.6928	ppb	4.04	500.00	
63 Cu	# 2	45	2481.1	0.0000	0.4085	ppb	3.45	500.00	
66 Zn	# 3	72	10271.7	0.0000	5.2620	ppb	1.34	500.00	
75 As	# 2	72	2250.0	0.0000	4.1790	ppb	0.80	500.00	
78 Se	# 1	72	49.3	0.0000	0.2372	ppb	9.93	500.00	
88 Sr	# 3	72	185629410.0	0.0000	10810.0000	ppb	0.97	500.00	>LRS
90 Zr	# 3	72	480.0	0.0000	0.0246	ppb	3.48	50.00	
95 Mo	# 3	115	143535.8	0.0000	44.9300	ppb	0.49	500.00	
107 Ag	# 3	115	192.2	0.0000	0.0221	ppb	13.26	50.00	
111 Cd	# 3	115	102.6	0.0000	0.0483	ppb	78.12	500.00	
118 Sn	# 3	115	450.0	0.0000	0.0523	ppb	9.16	500.00	
121 Sb	# 3	115	867.8	0.0000	0.1187	ppb	8.66	500.00	
137 Ba	# 3	115	95112.4	0.0000	40.1900	ppb	0.75	1000.00	
182 W	# 3	159	5095.6	0.0000	0.8174	ppb	2.61	50.00	
205 Tl	# 3	159	76.7	0.0000	0.0032	ppb	58.70	500.00	
208 Pb	# 3	159	1322.3	0.0000	0.0619	ppb	2.27	500.00	
235 U	# 3	159	200.0	0.0000	0.0080	ppb	15.00	30.00	
238 U	# 3	159	18943.1	0.0000	0.8653	ppb	1.75	500.00	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	772507.44	1.99	1156944.40	66.8	60 - 125	
45 Sc	# 1	875687.88	0.81	963897.88	90.8	60 - 125	
45 Sc	# 2	211988.42	2.17	213583.44	99.3	60 - 125	
45 Sc	# 3	1924469.40	2.03	2034836.60	94.6	60 - 125	
72 Ge	# 1	165158.94	0.97	207470.16	79.6	60 - 125	
72 Ge	# 2	85292.91	1.50	100121.55	85.2	60 - 125	
72 Ge	# 3	331459.41	0.91	406311.59	81.6	60 - 125	
115 In	# 3	1921582.60	1.29	2486219.30	77.3	60 - 125	
159 Tb	# 3	2633622.00	1.44	3505933.80	75.1	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

7 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07062.D\F6E07062.D#		
Date Acquired:	May 11 2018 04:03 pm		
Acq. Method:	EM6020R2.M		
Operator:	LVicto		
Sample Name:	E042-11		
Misc Info:			
Vial Number:	2309		
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M		
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C		
Last Cal. Update:	May 11 2018 12:02 pm		
Sample Type:	Sample	Tune #	Name
Dilution Factor:	1.00	#1	h2.u
Autodil Factor:	Undiluted	#2	he.u
Final Dil Factor:	1.00	#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	6329564.0	0.0000	758.0000	ppb	2.39	50.00	>LRS
9 Be	# 3	6	44.4	0.0000	0.0137	ppb	28.16	50.00	
11 B	# 3	6	2853264.0	0.0000	1901.0000	ppb	2.25	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	998000770.0	0.0000	93860.0000	ppb	0.57	50000.00	>LRS
27 Al	# 3	45	40926.0	0.0000	2.9770	ppb	0.33	50000.00	
28 Si	# 1	45	11359300.0	0.0000	15450.0000	ppb	0.16	5000.00	>LRS
31 P	# 3	45	100185.4	0.0000	33.3700	ppb	14.06	500.00	
39 K	# 2	45	12287680.0	0.0000	20300.0000	ppb	0.77	50000.00	
40 Ca	# 1	45	2075851000.0	0.0000	383800.0000	ppb	0.72	50000.00	>LRS
47 Ti	# 3	45	4552.0	0.0000	3.3300	ppb	3.56	500.00	
51 V	# 2	45	4334.2	0.0000	0.3137	ppb	4.90	500.00	
52 Cr	# 2	45	2141.9	0.0000	0.0326	ppb	9.20	500.00	
55 Mn	# 3	45	14065260.0	0.0000	713.7000	ppb	0.64	3000.00	
56 Fe	# 1	45	21078670.0	0.0000	2928.0000	ppb	0.38	50000.00	
59 Co	# 3	45	15876.7	0.0000	1.0380	ppb	2.81	500.00	
60 Ni	# 2	45	647.1	0.0000	0.3720	ppb	3.01	500.00	
63 Cu	# 2	45	831.4	0.0000	-0.0405	ppb	10.23	500.00	
66 Zn	# 3	72	7600.0	0.0000	3.5070	ppb	0.80	500.00	
75 As	# 2	72	395.6	0.0000	0.4523	ppb	2.07	500.00	
78 Se	# 1	72	34.4	0.0000	0.1361	ppb	17.84	500.00	
88 Sr	# 3	72	166562400.0	0.0000	9043.0000	ppb	0.18	500.00	>LRS
90 Zr	# 3	72	817.8	0.0000	0.0478	ppb	7.59	50.00	
95 Mo	# 3	115	32166.6	0.0000	9.3590	ppb	0.68	500.00	
107 Ag	# 3	115	158.9	0.0000	0.0161	ppb	18.57	50.00	
111 Cd	# 3	115	97.3	0.0000	0.0401	ppb	39.18	500.00	
118 Sn	# 3	115	328.9	0.0000	0.0220	ppb	51.07	500.00	
121 Sb	# 3	115	480.0	0.0000	0.0544	ppb	5.96	500.00	
137 Ba	# 3	115	126729.2	0.0000	49.8400	ppb	0.85	1000.00	
182 W	# 3	159	1213.4	0.0000	0.1716	ppb	2.07	50.00	
205 Tl	# 3	159	47.8	0.0000	0.0008	ppb	97.97	500.00	
208 Pb	# 3	159	465.6	0.0000	0.0132	ppb	5.11	500.00	
235 U	# 3	159	262.2	0.0000	0.0098	ppb	6.71	30.00	
238 U	# 3	159	32162.4	0.0000	1.3580	ppb	1.16	500.00	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	888277.25	2.72	1156944.40	76.8	60 - 125	
45 Sc	# 1	963646.13	1.65	963897.88	100.0	60 - 125	
45 Sc	# 2	221768.33	0.37	213583.44	103.8	60 - 125	
45 Sc	# 3	2045230.10	1.77	2034836.60	100.5	60 - 125	
72 Ge	# 1	183132.86	1.63	207470.16	88.3	60 - 125	
72 Ge	# 2	91407.26	0.99	100121.55	91.3	60 - 125	
72 Ge	# 3	355634.81	0.78	406311.59	87.5	60 - 125	
115 In	# 3	2064925.60	1.12	2486219.30	83.1	60 - 125	
159 Tb	# 3	2850867.80	1.71	3505933.80	81.3	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

7 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

CCV QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07063.D\F6E07063.D#
Date Acquired:	May 11 2018 04:08 pm
Operator:	LVicto
Sample Name:	CCV5
Misc Info:	
Vial Number:	1206
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	May 11 2018 12:02 pm
Sample Type:	CCV
Total Dil Factor:	1.00

QC Elements

Element		Conc.		RSD(%)	Expected	QC Range(%)		Flag
7	Li	28.58	ppb	0.65	25.00	90 -	110	Fail
9	Be	23.84	ppb	0.39	25.00	90 -	110	
11	B	58.62	ppb	1.77	50.00	90 -	110	Fail
23	Na	26310.00	ppb	0.72	25000.00	90 -	110	
24	Mg	23870.00	ppb	0.62	25000.00	90 -	110	
27	Al	24320.00	ppb	1.22	25000.00	90 -	110	
28	Si	2739.00	ppb	0.77	2500.00	90 -	110	
31	P	251.20	ppb	1.13	250.00	90 -	110	
39	K	25670.00	ppb	0.46	25000.00	90 -	110	
40	Ca	25360.00	ppb	1.03	25000.00	90 -	110	
47	Ti	253.60	ppb	0.89	250.00	90 -	110	
51	V	244.60	ppb	0.99	250.00	90 -	110	
52	Cr	236.50	ppb	0.42	250.00	90 -	110	
55	Mn	1449.00	ppb	0.86	1500.00	90 -	110	
56	Fe	24780.00	ppb	0.44	25000.00	90 -	110	
59	Co	253.00	ppb	0.83	250.00	90 -	110	
60	Ni	245.10	ppb	0.13	250.00	90 -	110	
63	Cu	233.40	ppb	1.19	250.00	90 -	110	
66	Zn	226.70	ppb	0.69	250.00	90 -	110	
75	As	241.70	ppb	0.06	250.00	90 -	110	
78	Se	238.40	ppb	0.10	250.00	90 -	110	
88	Sr	247.80	ppb	0.20	250.00	90 -	110	
90	Zr	0.57	ppb	1.29	25.00	90 -	110	Fail
95	Mo	253.90	ppb	0.99	250.00	90 -	110	
107	Ag	24.66	ppb	0.91	25.00	90 -	110	
111	Cd	244.00	ppb	0.83	250.00	90 -	110	
118	Sn	252.60	ppb	1.26	250.00	90 -	110	
121	Sb	48.82	ppb	0.98	50.00	90 -	110	
137	Ba	506.00	ppb	0.58	500.00	90 -	110	
182	W	0.05	ppb	20.34	25.00	90 -	110	Fail
205	Tl	232.40	ppb	0.79	250.00	90 -	110	
208	Pb	240.70	ppb	0.13	250.00	90 -	110	
235	U	1.70	ppb	0.97	1.80	90 -	110	
238	U	243.70	ppb	0.69	250.00	90 -	110	

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1233752.00	1.28	1156944.40	106.6	60 -	125	
45	Sc	1130482.60	0.67	963897.88	117.3	60 -	125	
45	Sc	251061.02	0.19	213583.44	117.5	60 -	125	
45	Sc	2250111.80	1.50	2034836.60	110.6	60 -	125	
72	Ge	238451.03	1.33	207470.16	114.9	60 -	125	
72	Ge	115072.09	0.32	100121.55	114.9	60 -	125	
72	Ge	439324.53	0.62	406311.59	108.1	60 -	125	
115	In	2550770.50	1.37	2486219.30	102.6	60 -	125	
159	Tb	3603448.80	0.54	3505933.80	102.8	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07064.D\F6E07064.D#
Date Acquired:	May 11 2018 04:12 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	CCB5
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element		Conc.		CPS	Conc RSD(%)	High Limit	Flag
7	Li	3.6270	ppb	119803.8	4.36	0.20	Fail
9	Be	-0.0024	ppb	12.2	111.05	0.10	
11	B	6.8150	ppb	16740.7	6.28	5.00	Fail
23	Na	1139.0000	ppb	3650469.0	3.27	40.00	Fail
24	Mg	0.8336	ppb	14197.0	12.79	10.00	
27	Al	0.6784	ppb	11539.2	10.96	20.00	
28	Si	3.2040	ppb	4660.9	9.20	20.00	
31	P	-13.1000	ppb	76798.0	11.51	10.00	Fail
39	K	-9.3850	ppb	190257.5	66.03	20.00	
40	Ca	2.2160	ppb	34371.2	9.30	25.00	
47	Ti	-0.0369	ppb	262.2	12.85	0.50	
51	V	-0.0795	ppb	2904.3	15.68	0.50	
52	Cr	-0.1521	ppb	1357.8	3.39	0.20	
55	Mn	-0.0048	ppb	5307.8	281.41	0.20	
56	Fe	2.1510	ppb	22353.0	3.21	10.00	
59	Co	0.0082	ppb	482.2	25.06	0.20	
60	Ni	-0.0057	ppb	80.0	79.42	0.20	
63	Cu	0.1361	ppb	1628.5	10.08	0.40	
66	Zn	-0.0788	ppb	732.3	6.63	2.00	
75	As	-0.0109	ppb	172.2	218.48	0.20	
78	Se	0.0607	ppb	23.1	7.72	0.20	
88	Sr	0.1043	ppb	2787.0	6.93	0.20	
90	Zr	-0.0083	ppb	102.2	20.94	2.00	
95	Mo	0.1324	ppb	628.9	6.32	0.40	
107	Ag	0.0048	ppb	87.8	29.17	0.20	
111	Cd	-0.0038	ppb	32.3	82.13	0.20	
118	Sn	0.1304	ppb	1116.8	9.98	0.20	
121	Sb	0.0177	ppb	280.0	5.82	0.40	
137	Ba	0.0247	ppb	113.3	17.77	0.20	
182	W	0.0061	ppb	138.9	69.62	1.00	
205	Tl	0.0313	ppb	604.5	7.96	0.20	
208	Pb	0.0109	ppb	522.2	8.01	0.10	
235	U	0.0002	ppb	23.3	193.01	1.00	
238	U	0.0563	ppb	1686.8	6.85	0.10	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1269357.0	1.04	1156944.40	109.7	60 - 125	
45	Sc	1026837.7	1.28	963897.88	106.5	60 - 125	
45	Sc	236640.2	1.25	213583.44	110.8	60 - 125	
45	Sc	2178060.3	0.83	2034836.60	107.0	60 - 125	
72	Ge	218162.4	0.61	207470.16	105.2	60 - 125	
72	Ge	108455.5	1.92	100121.55	108.3	60 - 125	
72	Ge	427740.0	1.49	406311.59	105.3	60 - 125	
115	In	2612314.5	1.09	2486219.30	105.1	60 - 125	
159	Tb	3550085.3	1.50	3505933.80	101.3	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

4 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07065.D\F6E07065.D#
Date Acquired:	May 11 2018 04:17 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-12M
Misc Info:	
Vial Number:	2310
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element		Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7	Li	# 3	6	4052024.0	0.0000	429.6000	ppb	0.67	50.00	>LRS
9	Be	# 3	6	78898.9	0.0000	31.6300	ppb	1.11	50.00	
11	B	# 3	6	3390960.0	0.0000	2013.0000	ppb	0.57	100.00	>LRS
23	Na	# 1	45	3022413100.0	0.0000	1092000.0000	ppb	0.19	50000.00	>LRS
24	Mg	# 3	45	872234880.0	0.0000	79990.0000	ppb	0.48	50000.00	>LRS
27	Al	# 3	45	37609940.0	0.0000	2802.0000	ppb	0.77	50000.00	
28	Si	# 1	45	11573910.0	0.0000	15470.0000	ppb	0.24	5000.00	>LRS
31	P	# 3	45	147388.7	0.0000	105.3000	ppb	2.38	500.00	
39	K	# 2	45	8575637.0	0.0000	14160.0000	ppb	0.29	50000.00	
40	Ca	# 1	45	1124548000.0	0.0000	204300.0000	ppb	0.60	50000.00	>LRS
47	Ti	# 3	45	43685.7	0.0000	33.0800	ppb	1.70	500.00	
51	V	# 2	45	126476.6	0.0000	30.3000	ppb	0.29	500.00	
52	Cr	# 2	45	134853.3	0.0000	28.4000	ppb	0.03	500.00	
55	Mn	# 3	45	16734200.0	0.0000	828.1000	ppb	1.33	3000.00	
56	Fe	# 1	45	86577920.0	0.0000	11820.0000	ppb	0.41	50000.00	
59	Co	# 3	45	455379.5	0.0000	29.6300	ppb	1.34	500.00	
60	Ni	# 2	45	43447.9	0.0000	28.8000	ppb	0.36	500.00	
63	Cu	# 2	45	108094.8	0.0000	27.4100	ppb	0.45	500.00	
66	Zn	# 3	72	122360.5	0.0000	58.5100	ppb	0.52	500.00	
75	As	# 2	72	21762.5	0.0000	37.7200	ppb	0.59	500.00	
78	Se	# 1	72	6752.5	0.0000	31.6300	ppb	0.80	500.00	
88	Sr	# 3	72	65016352.0	0.0000	3312.0000	ppb	0.14	500.00	>LRS
90	Zr	# 3	72	6497.2	0.0000	0.4519	ppb	0.61	50.00	
95	Mo	# 3	115	221619.0	0.0000	59.3400	ppb	0.59	500.00	
107	Ag	# 3	115	246000.0	0.0000	28.5900	ppb	0.87	50.00	
111	Cd	# 3	115	50690.9	0.0000	28.4600	ppb	0.50	500.00	
118	Sn	# 3	115	161986.4	0.0000	29.1100	ppb	0.59	500.00	
121	Sb	# 3	115	228443.6	0.0000	29.7900	ppb	0.27	500.00	
137	Ba	# 3	115	305836.4	0.0000	110.6000	ppb	0.16	1000.00	
182	W	# 3	159	1106.8	0.0000	0.1408	ppb	12.14	50.00	
205	Tl	# 3	159	450738.1	0.0000	28.6700	ppb	0.51	500.00	
208	Pb	# 3	159	607457.4	0.0000	27.8800	ppb	0.55	500.00	
235	U	# 3	159	4568.7	0.0000	0.1650	ppb	1.75	30.00	
238	U	# 3	159	1190253.0	0.0000	45.8100	ppb	0.82	500.00	

ISTD Elements

Element		Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	# 3	996430.00	1.33	1156944.40	86.1	60 - 125	
45	Sc	# 1	980592.88	1.24	963897.88	101.7	60 - 125	
45	Sc	# 2	220442.86	1.21	213583.44	103.2	60 - 125	
45	Sc	# 3	2097320.50	1.34	2034836.60	103.1	60 - 125	
72	Ge	# 1	195158.39	1.35	207470.16	94.1	60 - 125	
72	Ge	# 2	96796.18	1.48	100121.55	96.7	60 - 125	
72	Ge	# 3	378999.94	0.92	406311.59	93.3	60 - 125	
115	In	# 3	2246558.00	0.66	2486219.30	90.4	60 - 125	
159	Tb	# 3	3128867.00	1.13	3505933.80	89.2	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

7 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07066.D\F6E07066.D#
Date Acquired:	May 11 2018 04:21 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-12S
Misc Info:	
Vial Number:	2311
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element		Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7	Li	# 3	6	4006214.0	0.0000	423.2000	ppb	1.24	50.00	>LRS
9	Be	# 3	6	76866.6	0.0000	30.7100	ppb	0.38	50.00	
11	B	# 3	6	3351446.0	0.0000	1983.0000	ppb	0.51	100.00	>LRS
23	Na	# 1	45	2963546900.0	0.0000	1067000.0000	ppb	0.51	50000.00	>LRS
24	Mg	# 3	45	865723710.0	0.0000	79220.0000	ppb	0.28	50000.00	>LRS
27	Al	# 3	45	36676008.0	0.0000	2726.0000	ppb	0.28	50000.00	
28	Si	# 1	45	11410100.0	0.0000	15200.0000	ppb	0.65	5000.00	>LRS
31	P	# 3	45	146305.9	0.0000	103.1000	ppb	1.81	500.00	
39	K	# 2	45	8442949.0	0.0000	13870.0000	ppb	1.01	50000.00	
40	Ca	# 1	45	1109574000.0	0.0000	200900.0000	ppb	0.90	50000.00	>LRS
47	Ti	# 3	45	43275.4	0.0000	32.6800	ppb	1.92	500.00	
51	V	# 2	45	124544.8	0.0000	29.6700	ppb	0.42	500.00	
52	Cr	# 2	45	131538.0	0.0000	27.5500	ppb	0.14	500.00	
55	Mn	# 3	45	16554140.0	0.0000	817.2000	ppb	0.41	3000.00	
56	Fe	# 1	45	85459480.0	0.0000	11630.0000	ppb	0.75	50000.00	
59	Co	# 3	45	441951.3	0.0000	28.6900	ppb	0.66	500.00	
60	Ni	# 2	45	42479.6	0.0000	28.0200	ppb	0.57	500.00	
63	Cu	# 2	45	104822.8	0.0000	26.4400	ppb	0.54	500.00	
66	Zn	# 3	72	120466.9	0.0000	57.5300	ppb	1.05	500.00	
75	As	# 2	72	21438.9	0.0000	36.5500	ppb	0.25	500.00	
78	Se	# 1	72	6512.8	0.0000	30.3300	ppb	0.97	500.00	
88	Sr	# 3	72	64232872.0	0.0000	3268.0000	ppb	0.59	500.00	>LRS
90	Zr	# 3	72	6632.8	0.0000	0.4610	ppb	2.35	50.00	
95	Mo	# 3	115	217493.6	0.0000	57.9200	ppb	0.04	500.00	
107	Ag	# 3	115	241184.0	0.0000	27.8900	ppb	1.36	50.00	
111	Cd	# 3	115	49779.8	0.0000	27.7900	ppb	0.96	500.00	
118	Sn	# 3	115	158612.4	0.0000	28.3500	ppb	0.67	500.00	
121	Sb	# 3	115	224931.4	0.0000	29.1800	ppb	0.97	500.00	
137	Ba	# 3	115	301135.4	0.0000	108.3000	ppb	0.91	1000.00	
182	W	# 3	159	977.8	0.0000	0.1220	ppb	2.55	50.00	
205	Tl	# 3	159	440892.6	0.0000	27.7900	ppb	0.42	500.00	
208	Pb	# 3	159	592685.6	0.0000	26.9500	ppb	0.30	500.00	
235	U	# 3	159	4624.3	0.0000	0.1655	ppb	0.34	30.00	
238	U	# 3	159	1171496.0	0.0000	44.6800	ppb	0.72	500.00	

ISTD Elements

Element			CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	# 3	999745.50	1.24	1156944.40	86.4	60 - 125	
45	Sc	# 1	983991.88	2.04	963897.88	102.1	60 - 125	
45	Sc	# 2	221557.27	0.55	213583.44	103.7	60 - 125	
45	Sc	# 3	2102059.80	1.39	2034836.60	103.3	60 - 125	
72	Ge	# 1	196276.16	0.87	207470.16	94.6	60 - 125	
72	Ge	# 2	98389.58	0.31	100121.55	98.3	60 - 125	
72	Ge	# 3	379472.06	0.58	406311.59	93.4	60 - 125	
115	In	# 3	2258697.50	1.22	2486219.30	90.8	60 - 125	
159	Tb	# 3	3157972.80	0.80	3505933.80	90.1	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

7 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07067.D\F6E07067.D#		
Date Acquired:	May 11 2018 04:26 pm		
Acq. Method:	EM6020R2.M		
Operator:	LVicto		
Sample Name:	E042-12A		
Misc Info:			
Vial Number:	2312		
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M		
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C		
Last Cal. Update:	May 11 2018 12:02 pm		
Sample Type:	Sample	Tune #	Name
Dilution Factor:	1.00	#1	h2.u
Autodil Factor:	Undiluted	#2	he.u
Final Dil Factor:	1.00	#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	4023927.0	0.0000	422.4000	ppb	0.81	50.00	>LRS
9 Be	# 3	6	78301.6	0.0000	31.0900	ppb	1.31	50.00	
11 B	# 3	6	3377064.0	0.0000	1986.0000	ppb	1.13	100.00	>LRS
23 Na	# 1	45	3054759900.0	0.0000	1084000.0000	ppb	0.72	50000.00	>LRS
24 Mg	# 3	45	871572670.0	0.0000	79360.0000	ppb	0.37	50000.00	>LRS
27 Al	# 3	45	37985952.0	0.0000	2810.0000	ppb	0.55	50000.00	
28 Si	# 1	45	11796280.0	0.0000	15490.0000	ppb	0.16	5000.00	>LRS
31 P	# 3	45	148059.0	0.0000	104.7000	ppb	2.84	500.00	
39 K	# 2	45	8629481.0	0.0000	14070.0000	ppb	0.86	50000.00	
40 Ca	# 1	45	1141755000.0	0.0000	203800.0000	ppb	0.51	50000.00	>LRS
47 Ti	# 3	45	43975.3	0.0000	33.0600	ppb	1.33	500.00	
51 V	# 2	45	128189.8	0.0000	30.3200	ppb	0.97	500.00	
52 Cr	# 2	45	135164.4	0.0000	28.1000	ppb	0.97	500.00	
55 Mn	# 3	45	16744950.0	0.0000	822.6000	ppb	0.55	3000.00	
56 Fe	# 1	45	88020008.0	0.0000	11810.0000	ppb	0.48	50000.00	
59 Co	# 3	45	455263.4	0.0000	29.4100	ppb	0.69	500.00	
60 Ni	# 2	45	43910.2	0.0000	28.7400	ppb	1.52	500.00	
63 Cu	# 2	45	108087.2	0.0000	27.0600	ppb	0.76	500.00	
66 Zn	# 3	72	123724.3	0.0000	58.8800	ppb	0.83	500.00	
75 As	# 2	72	21789.2	0.0000	37.2400	ppb	1.05	500.00	
78 Se	# 1	72	6900.5	0.0000	31.4000	ppb	0.89	500.00	
88 Sr	# 3	72	64965080.0	0.0000	3294.0000	ppb	0.21	500.00	>LRS
90 Zr	# 3	72	6528.3	0.0000	0.4518	ppb	3.44	50.00	
95 Mo	# 3	115	222806.7	0.0000	59.5400	ppb	1.06	500.00	
107 Ag	# 3	115	240460.0	0.0000	27.8900	ppb	1.57	50.00	
111 Cd	# 3	115	50500.7	0.0000	28.2900	ppb	0.61	500.00	
118 Sn	# 3	115	163032.1	0.0000	29.2400	ppb	1.18	500.00	
121 Sb	# 3	115	214393.4	0.0000	27.9000	ppb	1.48	500.00	
137 Ba	# 3	115	307329.1	0.0000	110.9000	ppb	0.75	1000.00	
182 W	# 3	159	995.6	0.0000	0.1248	ppb	1.14	50.00	
205 Tl	# 3	159	457024.6	0.0000	28.8900	ppb	0.82	500.00	
208 Pb	# 3	159	608190.0	0.0000	27.7400	ppb	0.50	500.00	
235 U	# 3	159	4468.7	0.0000	0.1604	ppb	2.98	30.00	
238 U	# 3	159	1196460.0	0.0000	45.7700	ppb	0.98	500.00	

ISTD Elements

Element	Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	1006141.40	1.51	1156944.40	87.0	60 - 125	
45 Sc	# 1	998121.56	1.92	963897.88	103.6	60 - 125	
45 Sc	# 2	223273.56	1.15	213583.44	104.5	60 - 125	
45 Sc	# 3	2112406.00	1.49	2034836.60	103.8	60 - 125	
72 Ge	# 1	200883.47	1.52	207470.16	96.8	60 - 125	
72 Ge	# 2	98144.77	0.63	100121.55	98.0	60 - 125	
72 Ge	# 3	380868.16	1.18	406311.59	93.7	60 - 125	
115 In	# 3	2251240.50	1.35	2486219.30	90.5	60 - 125	
159 Tb	# 3	3148217.50	1.07	3505933.80	89.8	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

7 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07068.D\F6E07068.D#
Date Acquired:	May 11 2018 04:31 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-12
Misc Info:	
Vial Number:	2401
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	1.00
Autodil Factor:	Undiluted
Final Dil Factor:	1.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	3774914.0	0.0000	395.8000	ppb	1.39	50.00	>LRS
9 Be	# 3	6	94.4	0.0000	0.0313	ppb	4.22	50.00	
11 B	# 3	6	3346004.0	0.0000	1967.0000	ppb	0.98	100.00	>LRS
23 Na	# 1	45	2983762900.0	0.0000	1075000.0000	ppb	1.03	50000.00	>LRS
24 Mg	# 3	45	849330300.0	0.0000	76960.0000	ppb	1.28	50000.00	>LRS
27 Al	# 3	45	143909.6	0.0000	10.4400	ppb	2.23	50000.00	
28 Si	# 1	45	11537760.0	0.0000	15370.0000	ppb	0.14	5000.00	>LRS
31 P	# 3	45	151020.6	0.0000	108.3000	ppb	1.88	500.00	
39 K	# 2	45	6752760.0	0.0000	11010.0000	ppb	0.70	50000.00	
40 Ca	# 1	45	1111110000.0	0.0000	201300.0000	ppb	0.07	50000.00	>LRS
47 Ti	# 3	45	4847.6	0.0000	3.4220	ppb	2.09	500.00	
51 V	# 2	45	5223.6	0.0000	0.5295	ppb	5.00	500.00	
52 Cr	# 2	45	2354.6	0.0000	0.0772	ppb	6.19	500.00	
55 Mn	# 3	45	16259260.0	0.0000	794.9000	ppb	0.61	3000.00	
56 Fe	# 1	45	65147288.0	0.0000	8869.0000	ppb	0.60	50000.00	
59 Co	# 3	45	11710.5	0.0000	0.7312	ppb	0.23	500.00	
60 Ni	# 2	45	1488.8	0.0000	0.9267	ppb	1.54	500.00	
63 Cu	# 2	45	3724.9	0.0000	0.6946	ppb	2.68	500.00	
66 Zn	# 3	72	11601.6	0.0000	5.1580	ppb	1.68	500.00	
75 As	# 2	72	3954.1	0.0000	6.5590	ppb	1.57	500.00	
78 Se	# 1	72	69.3	0.0000	0.2885	ppb	9.21	500.00	
88 Sr	# 3	72	64674512.0	0.0000	3274.0000	ppb	0.49	500.00	>LRS
90 Zr	# 3	72	6403.8	0.0000	0.4423	ppb	1.83	50.00	
95 Mo	# 3	115	108111.5	0.0000	28.9500	ppb	0.57	500.00	
107 Ag	# 3	115	117.8	0.0000	0.0097	ppb	9.10	50.00	
111 Cd	# 3	115	80.2	0.0000	0.0256	ppb	92.35	500.00	
118 Sn	# 3	115	430.0	0.0000	0.0351	ppb	13.36	500.00	
121 Sb	# 3	115	2269.1	0.0000	0.2824	ppb	8.28	500.00	
137 Ba	# 3	115	229951.9	0.0000	83.1700	ppb	0.49	1000.00	
182 W	# 3	159	1027.9	0.0000	0.1293	ppb	5.07	50.00	
205 Tl	# 3	159	83.3	0.0000	0.0027	ppb	35.73	500.00	
208 Pb	# 3	159	2778.0	0.0000	0.1166	ppb	0.91	500.00	
235 U	# 3	159	2940.4	0.0000	0.1055	ppb	1.36	30.00	
238 U	# 3	159	400252.1	0.0000	15.3300	ppb	0.83	500.00	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	1006094.40	0.58	1156944.40	87.0	60 - 125	
45 Sc	# 1	983393.13	1.31	963897.88	102.0	60 - 125	
45 Sc	# 2	222027.58	1.75	213583.44	104.0	60 - 125	
45 Sc	# 3	2122719.80	0.90	2034836.60	104.3	60 - 125	
72 Ge	# 1	195428.81	1.21	207470.16	94.2	60 - 125	
72 Ge	# 2	97736.34	1.76	100121.55	97.6	60 - 125	
72 Ge	# 3	381416.94	0.38	406311.59	93.9	60 - 125	
115 In	# 3	2245613.80	0.67	2486219.30	90.3	60 - 125	
159 Tb	# 3	3144667.80	0.15	3505933.80	89.7	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

7 :Element Failures — 0 :Max. Number of Failures Allowed
0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07069.D\F6E07069.D#
Date Acquired:	May 11 2018 04:35 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	E042-12J
Misc Info:	
Vial Number:	2402
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	Sample
Dilution Factor:	5.00
Autodil Factor:	Undiluted
Final Dil Factor:	5.00

Tune #	Name
#1	h2.u
#2	he.u
#3	norm.u

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	924317.2	0.0000	80.6000	ppb	1.33	50.00	>LRS
9 Be	# 3	6	24.4	0.0000	0.0023	ppb	112.49	50.00	
11 B	# 3	6	787328.7	0.0000	408.4000	ppb	0.16	100.00	>LRS
23 Na	# 1	45	644818300.0	0.0000	217800.0000	ppb	1.87	50000.00	>LRS
24 Mg	# 3	45	186647300.0	0.0000	16700.0000	ppb	0.46	50000.00	
27 Al	# 3	45	43908.2	0.0000	3.0420	ppb	8.25	50000.00	
28 Si	# 1	45	2517719.0	0.0000	3146.0000	ppb	0.81	5000.00	
31 P	# 3	45	92389.3	0.0000	13.0000	ppb	12.48	500.00	
39 K	# 2	45	1599031.0	0.0000	2298.0000	ppb	1.13	50000.00	
40 Ca	# 1	45	240404300.0	0.0000	40860.0000	ppb	1.06	50000.00	
47 Ti	# 3	45	1174.5	0.0000	0.6442	ppb	5.14	500.00	
51 V	# 2	45	3787.2	0.0000	0.1541	ppb	12.48	500.00	
52 Cr	# 2	45	1461.2	0.0000	-0.1208	ppb	1.18	500.00	
55 Mn	# 3	45	3636587.0	0.0000	175.3000	ppb	0.62	3000.00	
56 Fe	# 1	45	14567750.0	0.0000	1860.0000	ppb	1.27	50000.00	
59 Co	# 3	45	2625.9	0.0000	0.1447	ppb	6.39	500.00	
60 Ni	# 2	45	382.2	0.0000	0.1900	ppb	5.09	500.00	
63 Cu	# 2	45	1827.9	0.0000	0.1999	ppb	6.43	500.00	
66 Zn	# 3	72	4194.1	0.0000	1.4570	ppb	0.66	500.00	
75 As	# 2	72	974.7	0.0000	1.2990	ppb	4.26	500.00	
78 Se	# 1	72	26.9	0.0000	0.0776	ppb	31.30	500.00	
88 Sr	# 3	72	14211040.0	0.0000	662.7000	ppb	0.65	500.00	>LRS
90 Zr	# 3	72	1489.0	0.0000	0.0832	ppb	8.83	50.00	
95 Mo	# 3	115	23745.7	0.0000	5.7690	ppb	0.70	500.00	
107 Ag	# 3	115	65.6	0.0000	0.0030	ppb	69.80	50.00	
111 Cd	# 3	115	12.2	0.0000	-0.0131	ppb	77.08	500.00	
118 Sn	# 3	115	278.9	0.0000	0.0033	ppb	103.92	500.00	
121 Sb	# 3	115	726.7	0.0000	0.0724	ppb	1.24	500.00	
137 Ba	# 3	115	51257.6	0.0000	16.8400	ppb	1.46	1000.00	
182 W	# 3	159	358.9	0.0000	0.0341	ppb	7.42	50.00	
205 Tl	# 3	159	42.2	0.0000	-0.0001	ppb	558.47	500.00	
208 Pb	# 3	159	704.5	0.0000	0.0191	ppb	16.04	500.00	
235 U	# 3	159	671.2	0.0000	0.0215	ppb	12.86	30.00	
238 U	# 3	159	90944.7	0.0000	3.1820	ppb	0.90	500.00	

ISTD Elements

Element	Tune	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	# 3	1138117.10	1.20	1156944.40	98.4	60 - 125	
45 Sc	# 1	1048057.40	0.51	963897.88	108.7	60 - 125	
45 Sc	# 2	228219.08	0.74	213583.44	106.9	60 - 125	
45 Sc	# 3	2149762.80	0.45	2034836.60	105.6	60 - 125	
72 Ge	# 1	216177.53	0.72	207470.16	104.2	60 - 125	
72 Ge	# 2	104382.01	1.20	100121.55	104.3	60 - 125	
72 Ge	# 3	414001.53	1.39	406311.59	101.9	60 - 125	
115 In	# 3	2471539.80	2.27	2486219.30	99.4	60 - 125	
159 Tb	# 3	3441419.80	1.01	3505933.80	98.2	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

4 :Element Failures
0 :ISTD Failures

0 :Max. Number of Failures Allowed
0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes:	Fail
ISTD:	Pass

CCV QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07075.D\F6E07075.D#
Date Acquired:	May 11 2018 05:02 pm
Operator:	LVicto
Sample Name:	CCV6
Misc Info:	
Vial Number:	1206
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	May 11 2018 12:02 pm
Sample Type:	CCV
Total Dil Factor:	1.00

QC Elements

Element		Conc.		RSD(%)	Expected	QC Range(%)		Flag
7	Li	25.35	ppb	2.80	25.00	90 -	110	
9	Be	24.38	ppb	2.33	25.00	90 -	110	
11	B	52.53	ppb	1.92	50.00	90 -	110	
23	Na	25190.00	ppb	0.93	25000.00	90 -	110	
24	Mg	24100.00	ppb	0.87	25000.00	90 -	110	
27	Al	24410.00	ppb	1.41	25000.00	90 -	110	
28	Si	2667.00	ppb	1.46	2500.00	90 -	110	
31	P	246.60	ppb	1.52	250.00	90 -	110	
39	K	25960.00	ppb	0.29	25000.00	90 -	110	
40	Ca	25100.00	ppb	0.79	25000.00	90 -	110	
47	Ti	251.90	ppb	1.23	250.00	90 -	110	
51	V	248.80	ppb	0.72	250.00	90 -	110	
52	Cr	240.00	ppb	0.67	250.00	90 -	110	
55	Mn	1464.00	ppb	0.78	1500.00	90 -	110	
56	Fe	24860.00	ppb	0.62	25000.00	90 -	110	
59	Co	254.20	ppb	1.32	250.00	90 -	110	
60	Ni	247.70	ppb	0.61	250.00	90 -	110	
63	Cu	239.40	ppb	1.18	250.00	90 -	110	
66	Zn	228.30	ppb	1.09	250.00	90 -	110	
75	As	245.30	ppb	0.70	250.00	90 -	110	
78	Se	241.50	ppb	1.12	250.00	90 -	110	
88	Sr	248.60	ppb	0.80	250.00	90 -	110	
90	Zr	0.56	ppb	1.46	25.00	90 -	110	Fail
95	Mo	253.70	ppb	1.26	250.00	90 -	110	
107	Ag	24.70	ppb	0.54	25.00	90 -	110	
111	Cd	243.90	ppb	1.02	250.00	90 -	110	
118	Sn	254.30	ppb	0.63	250.00	90 -	110	
121	Sb	48.86	ppb	0.74	50.00	90 -	110	
137	Ba	507.70	ppb	1.30	500.00	90 -	110	
182	W	0.04	ppb	8.48	25.00	90 -	110	Fail
205	Tl	236.50	ppb	1.26	250.00	90 -	110	
208	Pb	242.60	ppb	1.56	250.00	90 -	110	
235	U	1.71	ppb	1.10	1.80	90 -	110	
238	U	247.90	ppb	1.23	250.00	90 -	110	

ISTD Elements

Element		CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	1188669.00	1.94	1156944.40	102.7	60 -	125	
45	Sc	1038120.30	1.12	963897.88	107.7	60 -	125	
45	Sc	228014.58	0.34	213583.44	106.8	60 -	125	
45	Sc	2172351.80	1.24	2034836.60	106.8	60 -	125	
72	Ge	219253.84	1.27	207470.16	105.7	60 -	125	
72	Ge	105987.61	0.79	100121.55	105.9	60 -	125	
72	Ge	424736.47	1.77	406311.59	104.5	60 -	125	
115	In	2483130.80	1.91	2486219.30	99.9	60 -	125	
159	Tb	3554050.00	0.77	3505933.80	101.4	60 -	125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62018\E\IF6E07.B\F6E07076.D\F6E07076.D#
Date Acquired:	May 11 2018 05:07 pm
Acq. Method:	EM6020R2.M
Operator:	LVicto
Sample Name:	CCB6
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 11 2018 12:02 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element		Conc.		CPS	Conc RSD(%)	High Limit	Flag
7	Li	0.8845	ppb	84047.0	4.28	0.20	Fail
9	Be	0.0043	ppb	32.2	100.66	0.10	
11	B	4.4180	ppb	11153.3	10.50	5.00	
23	Na	276.0000	ppb	1102338.0	3.31	40.00	Fail
24	Mg	1.0560	ppb	16344.7	10.83	10.00	
27	Al	0.7441	ppb	12179.7	12.63	20.00	
28	Si	3.0760	ppb	4378.6	2.08	20.00	
31	P	-12.7100	ppb	75378.3	17.91	10.00	Fail
39	K	2.7100	ppb	186059.4	124.94	20.00	
40	Ca	1.8980	ppb	31234.2	4.88	25.00	
47	Ti	-0.0363	ppb	257.8	101.16	0.50	
51	V	0.1183	ppb	3542.9	11.92	0.50	
52	Cr	-0.1370	ppb	1347.4	3.55	0.20	
55	Mn	-0.0053	ppb	5183.3	86.53	0.20	
56	Fe	1.8980	ppb	19595.6	3.63	10.00	
59	Co	0.0091	ppb	486.7	26.93	0.20	
60	Ni	-0.0145	ppb	61.8	23.66	0.20	
63	Cu	0.4101	ppb	2609.6	5.62	0.40	Fail
66	Zn	-0.1857	ppb	470.0	4.45	2.00	
75	As	0.0440	ppb	195.3	71.26	0.20	
78	Se	0.0368	ppb	16.7	36.21	0.20	
88	Sr	0.0998	ppb	2619.2	7.68	0.20	
90	Zr	-0.0082	ppb	101.1	10.22	2.00	
95	Mo	0.1381	ppb	638.9	8.39	0.40	
107	Ag	0.0012	ppb	51.1	77.76	0.20	
111	Cd	-0.0051	ppb	28.7	183.32	0.20	
118	Sn	0.1421	ppb	1164.5	3.68	0.20	
121	Sb	0.0247	ppb	334.5	8.00	0.40	
137	Ba	0.0344	ppb	141.1	18.80	0.20	
182	W	-0.0020	ppb	70.0	66.67	1.00	
205	Tl	0.0349	ppb	652.3	5.85	0.20	
208	Pb	0.0134	ppb	571.1	12.87	0.10	
235	U	0.0004	ppb	30.0	121.99	1.00	
238	U	0.0569	ppb	1663.5	4.08	0.10	

ISTD Elements

Element		CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	1221298.1	2.11	1156944.40	105.6	60 - 125	
45	Sc	985624.1	1.73	963897.88	102.3	60 - 125	
45	Sc	222409.8	1.43	213583.44	104.1	60 - 125	
45	Sc	2131150.3	1.57	2034836.60	104.7	60 - 125	
72	Ge	209085.2	0.91	207470.16	100.8	60 - 125	
72	Ge	102295.1	1.94	100121.55	102.2	60 - 125	
72	Ge	417216.1	1.20	406311.59	102.7	60 - 125	
115	In	2551546.8	1.47	2486219.30	102.6	60 - 125	
159	Tb	3467563.5	1.87	3505933.80	98.9	60 - 125	

ISTD Ref File : C:\DATA\IF62018\E\IF6E07.B\F6E07004.D\F6E07004.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Nnumber of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

EMAX LABORATORIES INC.

DIGESTION LOG
for
ICP-MS METALS

Note: For samples, relevant QCs/Standards digested, refer to attached digestion sequence.

Comments:

Digestion Vessel Lot # 1707186-CB-7286

All samples pH < 2

Book #: EIM-069
Batch: 1MED15W
Matrix: water
Digestor ID: E

SOP #	Rev. #
☐ EMAX-200.8	5
☑ EMAX-6020	9
☐ EMAX-	

Start	Temp	End	Temp
	91.5 °C		92.3 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SMCA-007-05-03	0.15
LCS-2	↓ -05-04	0.15
MS	same spike soln and vol. as	LCS 1 and 2
Blank Soil (Bead)	N/A	N/A
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SMA-006-09-20	0.5+1.0
HCl	↓ -08-09	0.25+0.25
H_2O_2	N/A	N/A
HNO_3(1:1)	N/A	N/A
pH Strip (0-14)	HC661354	N/A
Digestate Location	Metals	
Extract Location	N/A	

☑ Reagent Water ID: SMSA-033-05
☑ Thermometer ID: 150590610/E29
☑ Pipette ID: 23936031 8
☐ Pipette ID:
☐ Pipette ID:
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask

Prepared By: MC
Standard Added By: MC   Witnessed By: LV
Extract Rcvd By: LV   Checked By: MC

EMAX LABORATORIES, INC.

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
18IME015W01	IME015WB	50	ml	5/10/18 9:21	50	50	50	1	
18IME015W02	IME015WL	50	ml	5/10/18 9:21	50	50	50	1	
18IME015W03	IME015WC	50	ml	5/10/18 9:21	50	50	50	1	
18IME015W04	E042-02	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W05	E042-04	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W06	E042-06	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W07	E042-08	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W08	E042-09	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W09	E042-10	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W10	E042-11	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W11	E042-12	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W12	E042-12M	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W13	E042-12S	50	ml	5/10/18 9:21	50	50	50	1	DISSOLVED
18IME015W14	TXE006WB	10	ml	5/10/18 9:21	50	50	50	5	TCLP
18IME015W15	E034-01	10	ml	5/10/18 9:21	50	50	50	5	TCLP
18IME015W16	E034-01M	10	ml	5/10/18 9:21	50	50	50	5	TCLP
18IME015W17	E034-01S	10	ml	5/10/18 9:21	50	50	50	5	TCLP

MC
5/10/18

Vd=digestate volume PrepFctr=(ExpAmt/Aliquot)*(Vd/ExpVd)

☑ Digestion Started @ 5/10/18 10:06 Prepared By: MCande

☑ Digestion Ended @ 5/10/18 12:25 Checked By: LV

Comments: Date 5/10/18

SOP EMAX-6020 Rev. 9

LABORATORY REPORT FOR

ARCADIS

PG&E TOPOCK-GMP

WET CHEMICAL ANALYSES

SDG#: 18E042

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 18E042

METHOD E120.1
SPECIFIC CONDUCTANCE

A total of eight (8) water samples were received on 05/04/18 to be analyzed for Specific Conductance in accordance with Method E120.1 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as specified by the method. All calibration requirements were within acceptance criteria.

Matrix QC Sample
Sample duplicate was analyzed and RPD was within expected value.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

Sample 18E042-10 (MW-56D-Q218) collection time was confirmed by client to be 1446.

REVISED

E120.1
SPECIFIC CONDUCTANCE

Client : ARCADIS
Project : PG&E TOPOCK-GMP
Batch No. : 18E042

Matrix : WATER
InstrumentID : D4

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (umhos/cm)	PREP FACTOR	MOIST (%)	RL (umhos/cm)	MDL (umhos/cm)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MW-54-085-Q218	E042-02	7390	1	NA	2	2	05/11/1810:51	NA	18ECE00201	18ECE002	ECE002W	05/04/1808:01	05/04/18
MW-54-085-Q218DUP	E042-02D	7400	1	NA	2	2	05/11/1810:52	NA	18ECE00202	18ECE002	ECE002W	05/04/1808:01	05/04/18
MW-54-140-Q218	E042-04	11300	1	NA	2	2	05/11/1810:55	NA	18ECE00203	18ECE002	ECE002W	05/04/1808:06	05/04/18
MW-54-195-Q218	E042-06	17200	1	NA	2	2	05/11/1810:56	NA	18ECE00204	18ECE002	ECE002W	05/04/1808:54	05/04/18
MW-55-045-Q218	E042-08	1250	1	NA	2	2	05/11/1810:57	NA	18ECE00205	18ECE002	ECE002W	05/03/1813:08	05/04/18
MW-55-120-Q218	E042-09	6710	1	NA	2	2	05/11/1810:58	NA	18ECE00206	18ECE002	ECE002W	05/03/1813:53	05/04/18
MW-56D-Q218	E042-10	19000	1	NA	2	2	05/11/1810:59	NA	18ECE00207	18ECE002	ECE002W	05/02/1814:46	05/04/18
MW-56M-Q218	E042-11	12600	1	NA	2	2	05/11/1811:00	NA	18ECE00208	18ECE002	ECE002W	05/02/1814:46	05/04/18
MW-56S-Q218	E042-12	5110	1	NA	2	2	05/11/1811:01	NA	18ECE00209	18ECE002	ECE002W	05/02/1815:08	05/04/18

EMAX QUALITY CONTROL DATA
SAMPLE DUPLICATE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E120.1

MATRIX	: WATER	
DILUTION FACTOR:	1	1
SAMPLE ID	: MW-54-085-Q218	MW-54-085-Q218DUP
LAB SAMPLE ID	: E042-02	E042-02D
LAB FILE ID	: 18ECE00201	18ECE00202
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/11/1810:51	05/11/1810:52
PREP BATCH	: ECE002W	ECE002W
CALIBRATION REF:	18ECE002	18ECE002

ACCESSION:

PARAMETER	PARENT RESULT (umhos/cm)	DUP RESULT (umhos/cm)	RPD (%)	MAX RPD (%)
Specific Conductivity	7390	7400	0	5

EMAX LABORATORIES, INC.

FileID: 18ECE002W

SPECIFIC CONDUCTANCE ANALYSIS LOG

PrepBatchID	LabSampleID	Aliquot (ml)	Temp (°C)	AnalysisDateTime	Found Conc.	Conductivity	Unit	Notes
18ECE00201	E042-02	20	24.9	5/11/18 10:51	7390	7390	uS/cm	
18ECE00202	E042-02D	20	24.9	5/11/18 10:52	7400	7400	uS/cm	
18ECE00203	E042-04	20	24.9	5/11/18 10:55	11290	11300	uS/cm	
18ECE00204	E042-06	20	24.8	5/11/18 10:56	17160	17200	uS/cm	
18ECE00205	E042-08	20	24.8	5/11/18 10:57	1253	1250	uS/cm	
18ECE00206	E042-09	20	24.8	5/11/18 10:58	6710	6710	uS/cm	
18ECE00207	E042-10	20	24.8	5/11/18 10:59	18970	19000	uS/cm	
18ECE00208	E042-11	20	24.8	5/11/18 11:00	12610	12600	uS/cm	
18ECE00209	E042-12	20	24.7	5/11/18 11:01	5110	5110	uS/cm	
18ECE00210	E405-01	20	24.7	5/11/18 11:02	2240	2240	uS/cm	
18ECE00211	E405-03	20	24.7	5/11/18 11:03	405	405	uS/cm	

YA 05/11/18

Calibration of Conductivity Meter — InstrumentID: D4

CAL Standard ID		Conc.(µS/cm)	Reading	DateTime
ICAL1	SW1-01-928	9.36	9.36	5/11/18 10:29
ICAL2	SW1-01-958	999	999	5/11/18 10:30
ICAL3	SW1-01-924	9968	9970	5/11/18 10:31
ICAL4	SW1-01-931	99672	99700	5/11/18 10:32
CCS	SW1-01-961	1412	1411	5/11/18 10:33
ICV	SW1-01-793	431	446	5/11/18 10:35

Calibration Temp (°C): 25.0 Thermometer ID: 111862324

☑ Verified Cell Constant (K) @ 1 S/cm

LOQ = 9.36 uS/cm

CV Acceptance Limits: 407 457

QC Check	Result(µS/cm)	Expected Val	QC Check
CCS	1411	1412	%Rec=99.9 ✓
ICV	446	407-457	PASS ✓
E042-02D	7400	7390	RPD=0 ✓

☑ Sample(s) is/are filtered upon receipt

☐ Sample(s) is/are analyzed upon receipt

pH strip Lot#: HC727135 Snapseal Lot#: 30917011

0.45 micron filter Lot#: 71610103

Comment:

Conductivity reading is automatically compensated to 25°C.

☑ EMAX-2510B Rev. 5 Analyzed By: YAquin

☑ EMAX-120.1 Rev. 7 Checked By: YA

☐ EMAX-9050 Rev. 3 Date: 05/11/18

CASE NARRATIVE

Client : ARCADIS

Project: PG&E TOPOCK-GMP

SDG : 18E042

METHOD E218.6
HEXAVALENT CHROMIUM

A total of twelve (12) water samples were received on 05/04/18 to be analyzed for Hexavalent Chromium in accordance with Method E218.6 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Calibration was performed as prescribed by the method and was verified using a secondary source (ICV). All calibration requirements were within acceptance criteria.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. Hexavalent Chromium was not detected in HCE013WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. HCE013WL/HCE013WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, ten (10) sets of MS and two (2) sets of MS/MSD were analyzed.
* Percent recovery for Hexavalent Chromium was within MS QC limits in -01M, -03M, -04IM, -05M, -06IM, -07M, -09M, -10IM, -11IM and -12M.
* Hexavalent Chromium was within MS QC limits in E042-02M/S.
* Hexavalent Chromium was within MS QC limits in E042-08M/S.
Refer to Matrix QC summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

Samples E042-04, -06, -10 and -11 were reported from 5X dilution due to matrix interference.

Sample 18E042-10 (MW-56D-Q218) collection time was confirmed by client to be 1446.

REVISED

SAMPLE RESULTS

METHOD E218.6
HEXAVALENT CHROMIUM

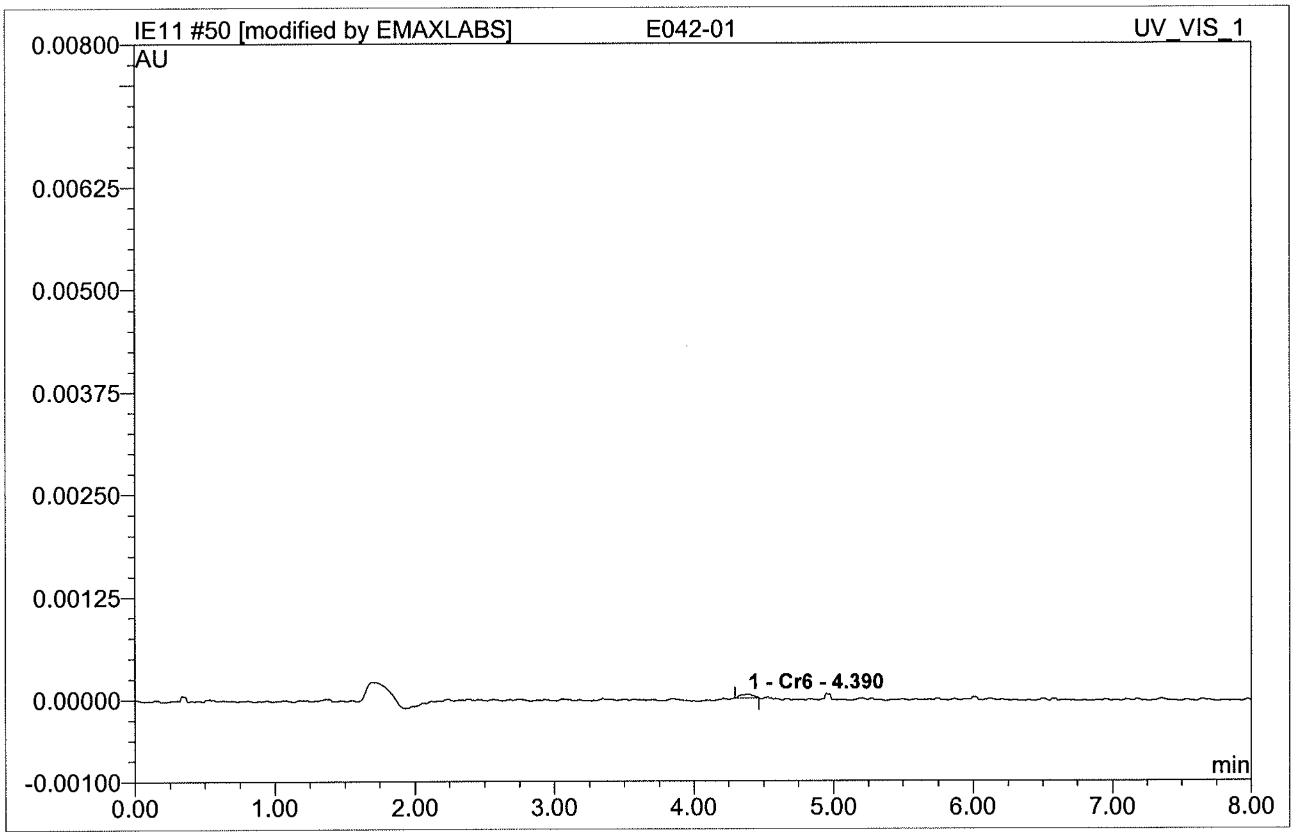
Client : ARCADIS
Project : PG&E TOPOCK-GMP
Batch No. : 18E042

Matrix : WATER
InstrumentID : 59

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N. FACTOR	MOIST (%)	LOQ (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HCE013WB	ND	1	NA	0.2	0.1	05/10/1811:42	NA	IE11015	IE11013	HCE013W	NA	NA
LCS1W	HCE013WL	1.99	1	NA	0.2	0.1	05/10/1811:52	NA	IE11016	IE11013	HCE013W	NA	NA
LCD1W	HCE013WC	1.98	1	NA	0.2	0.1	05/10/1812:03	NA	IE11017	IE11013	HCE013W	NA	NA
MW-54-085-Q218	E042-02	ND	1	NA	0.2	0.1	05/10/1812:13	NA	IE11018	IE11013	HCE013W	05/04/1808:01	05/04/18
MW-54-085-Q218MS	E042-02M	0.994	1	NA	0.2	0.1	05/10/1812:24	NA	IE11019	IE11013	HCE013W	05/04/1808:01	05/04/18
MW-54-085-Q218MSD	E042-02S	0.990	1	NA	0.2	0.1	05/10/1812:34	NA	IE11020	IE11013	HCE013W	05/04/1808:01	05/04/18
MW-55-045-Q218	E042-08	ND	1	NA	0.2	0.1	05/10/1813:50	NA	IE11027	IE11025	HCE013W	05/03/1813:08	05/04/18
MW-55-045-Q218MS	E042-08M	1.06	1	NA	0.2	0.1	05/10/1814:00	NA	IE11028	IE11025	HCE013W	05/03/1813:08	05/04/18
MW-55-045-Q218MSD	E042-08S	1.08	1	NA	0.2	0.1	05/10/1814:11	NA	IE11029	IE11025	HCE013W	05/03/1813:08	05/04/18
MW-55-120-Q218	E042-09	8.00	1	NA	0.2	0.1	05/10/1814:22	NA	IE11030	IE11025	HCE013W	05/03/1813:53	05/04/18
MW-55-120-Q218MS	E042-09M	9.99	1	NA	0.2	0.1	05/10/1814:38	NA	IE11031	IE11025	HCE013W	05/03/1813:53	05/04/18
MW-56S-Q218	E042-12	ND	1	NA	0.2	0.1	05/10/1815:30	NA	IE11036	IE11025	HCE013W	05/02/1815:08	05/04/18
MW-56S-Q218MS	E042-12M	1.04	1	NA	0.2	0.1	05/10/1816:01	NA	IE11039	IE11037	HCE013W	05/02/1815:08	05/04/18
MW-54-140-Q218	E042-04I	ND	5	NA	1	0.5	05/10/1816:12	NA	IE11040	IE11037	HCE013W	05/04/1808:06	05/04/18
MW-54-140-Q218MS	E042-04IM	4.95	5	NA	1	0.5	05/10/1816:22	NA	IE11041	IE11037	HCE013W	05/04/1808:06	05/04/18
MW-54-195-Q218	E042-06I	ND	5	NA	1	0.5	05/10/1816:32	NA	IE11042	IE11037	HCE013W	05/04/1808:54	05/04/18
MW-54-195-Q218MS	E042-06IM	5.09	5	NA	1	0.5	05/10/1816:43	NA	IE11043	IE11037	HCE013W	05/04/1808:54	05/04/18
MW-56D-Q218	E042-10I	ND	5	NA	1	0.5	05/10/1816:53	NA	IE11044	IE11037	HCE013W	05/02/1814:46	05/04/18
MW-56D-Q218MS	E042-10IM	5.03	5	NA	1	0.5	05/10/1817:04	NA	IE11045	IE11037	HCE013W	05/02/1814:46	05/04/18
MW-56M-Q218	E042-11I	ND	5	NA	1	0.5	05/10/1817:14	NA	IE11046	IE11037	HCE013W	05/02/1814:46	05/04/18
MW-56M-Q218MS	E042-11IM	4.99	5	NA	1	0.5	05/10/1817:24	NA	IE11047	IE11037	HCE013W	05/02/1814:46	05/04/18
MW-54-085-EB-Q218	E042-01	ND	1	NA	0.2	0.1	05/10/1817:56	NA	IE11050	IE11048	HCE013W	05/04/1807:37	05/04/18
MW-54-085-EB-Q218MS	E042-01M	1.09	1	NA	0.2	0.1	05/10/1818:06	NA	IE11051	IE11048	HCE013W	05/04/1807:37	05/04/18
MW-54-140-EB-Q218	E042-03	ND	1	NA	0.2	0.1	05/10/1818:16	NA	IE11052	IE11048	HCE013W	05/04/1807:00	05/04/18
MW-54-140-EB-Q218MS	E042-03M	1.07	1	NA	0.2	0.1	05/10/1818:27	NA	IE11053	IE11048	HCE013W	05/04/1807:00	05/04/18
MW-54-195-EB-Q218	E042-05	ND	1	NA	0.2	0.1	05/10/1818:37	NA	IE11054	IE11048	HCE013W	05/04/1808:20	05/04/18
MW-54-195-EB-Q218MS	E042-05M	1.09	1	NA	0.2	0.1	05/10/1818:48	NA	IE11055	IE11048	HCE013W	05/04/1808:20	05/04/18
MW-55-045-EB-Q218	E042-07	ND	1	NA	0.2	0.1	05/10/1818:58	NA	IE11056	IE11048	HCE013W	05/03/1812:25	05/04/18
MW-55-045-EB-Q218MS	E042-07M	1.08	1	NA	0.2	0.1	05/10/1819:08	NA	IE11057	IE11048	HCE013W	05/03/1812:25	05/04/18

IE11 050 E042-01

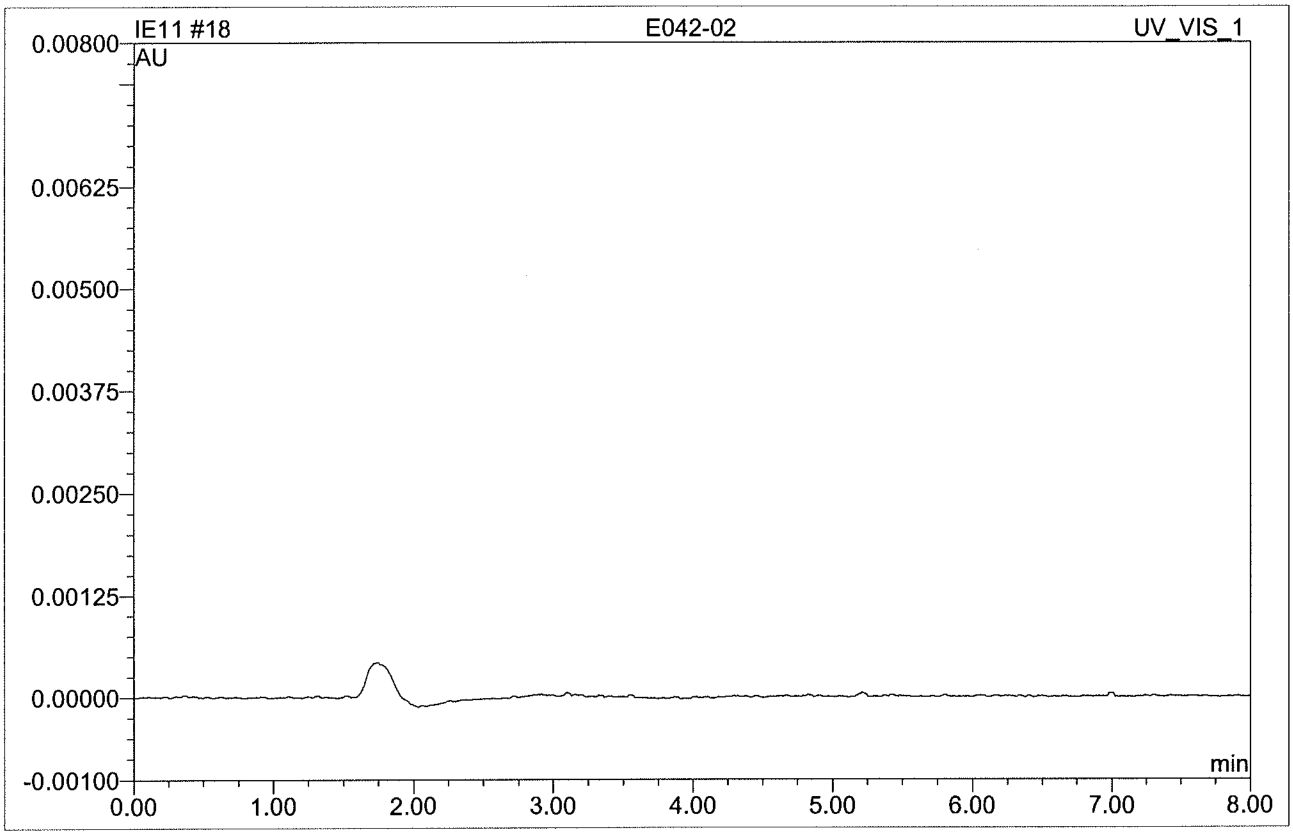
Sample Name:	**E042-01**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 17:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.39	Cr6	0.0000530	0.0000055	100.00	0.097	BMB*
Total:			0.000	0.000	100.00	0.097	

IE11 018 E042-02

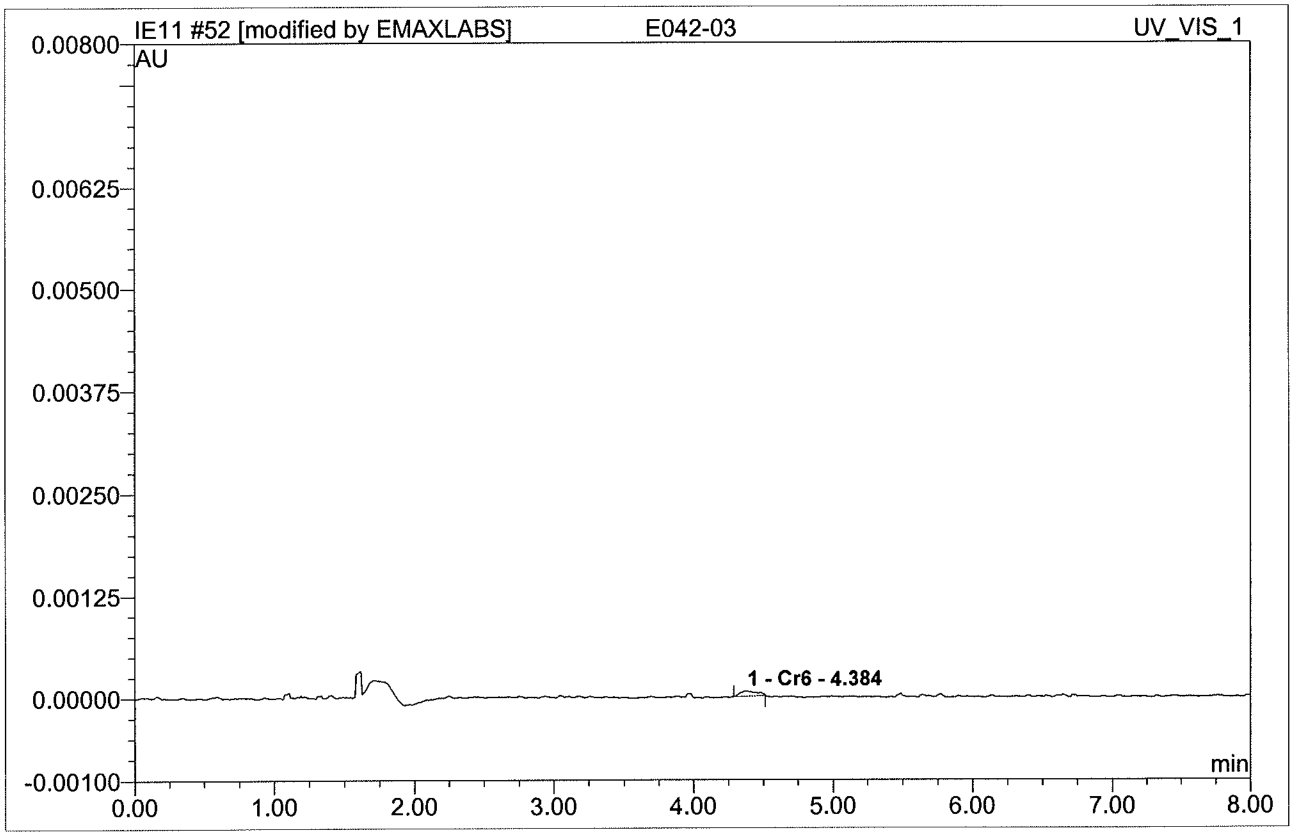
Sample Name:	**E042-02**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 12:13**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	✓

IE11 052 E042-03

Sample Name:	**E042-03**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 18:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

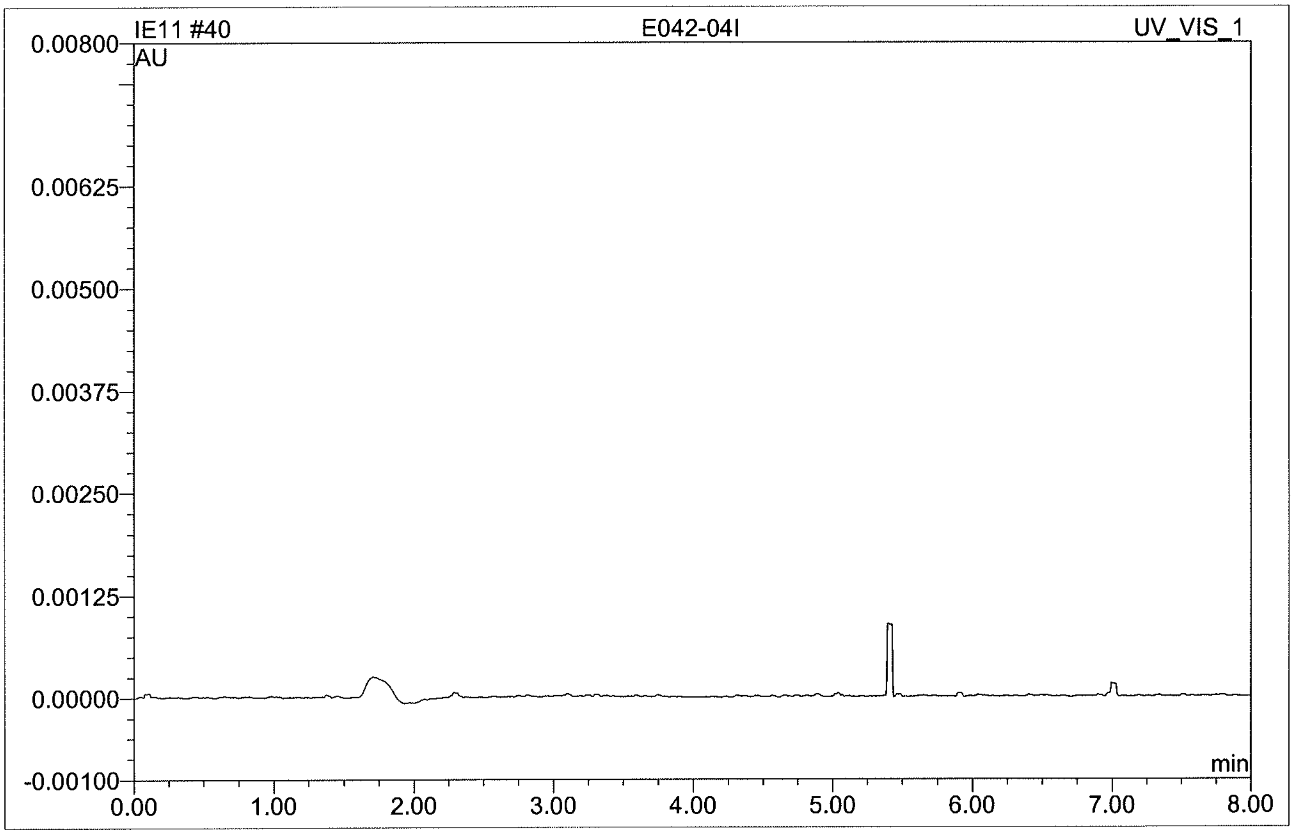


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.38	Cr6	0.0000650	0.0000088	100.00	0.128	BMB* ✓
Total:			0.000	0.000	100.00	0.128	

IE11 040 E042-04I

D=5

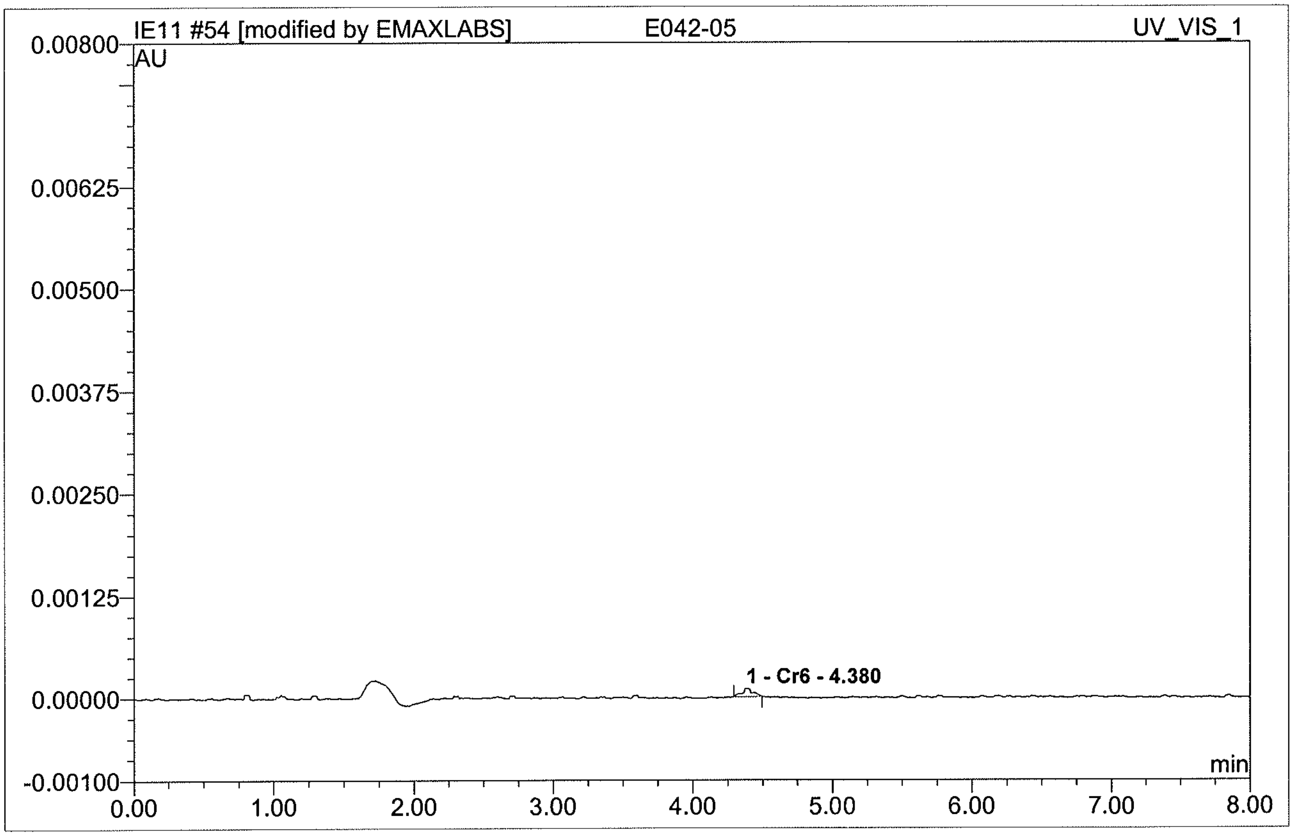
Sample Name:	**E042-04I**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**5**
Recording Time:	**5/10/2018 16:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 054 E042-05

Sample Name:	**E042-05**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 18:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

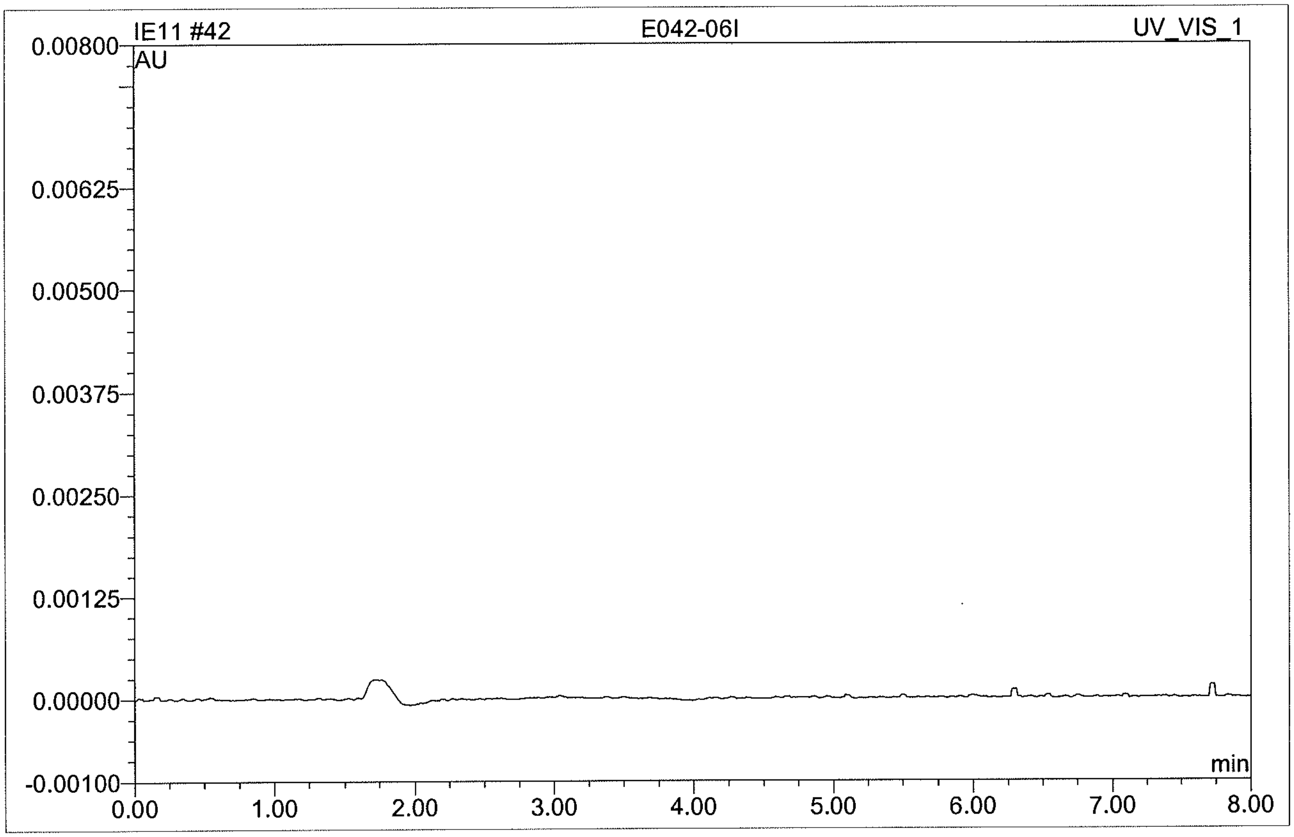


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.38	Cr6	0.0000960	0.0000089	100.00	0.128	BMB*
Total:			0.000	0.000	100.00	0.128	

IE11 042 E042-06I

D=5

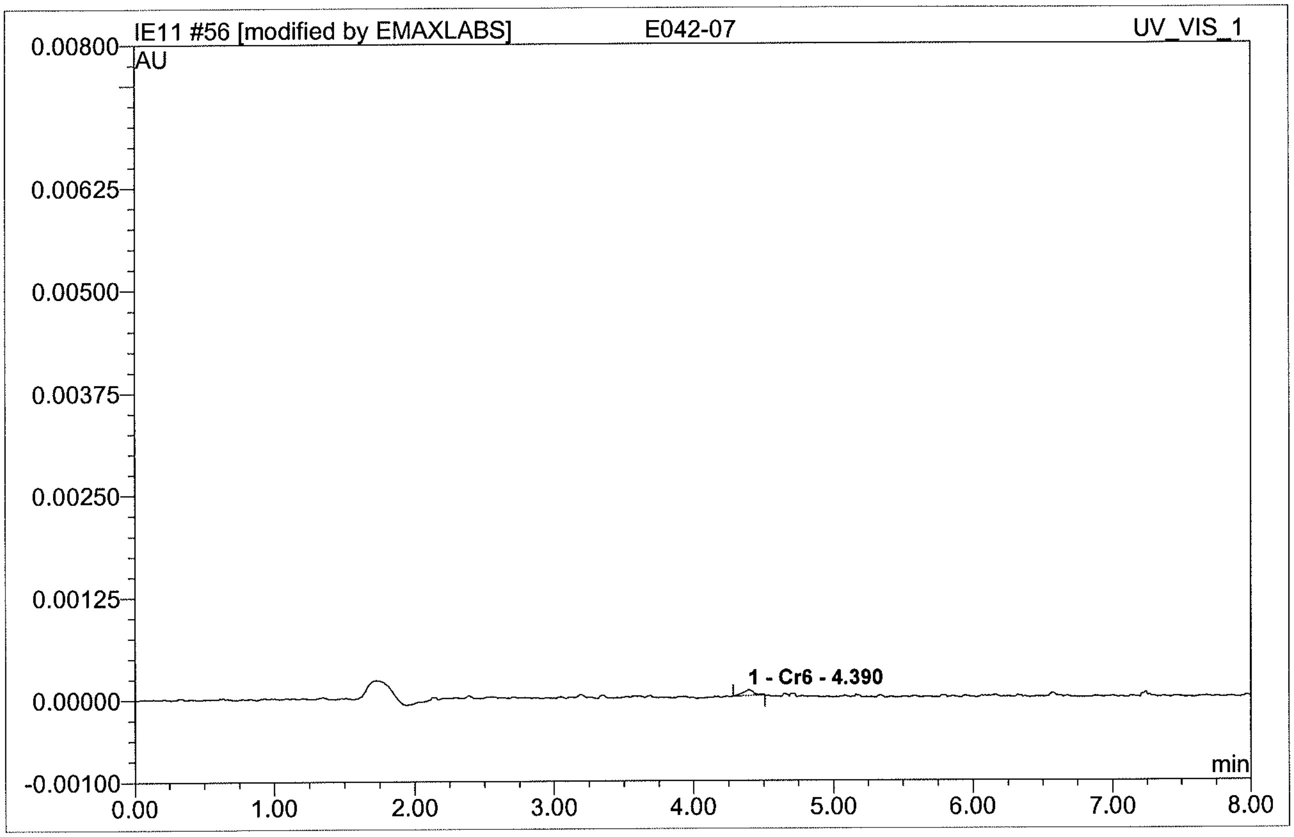
Sample Name:	**E042-06I**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**5**
Recording Time:	**5/10/2018 16:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 056 E042-07

Sample Name:	**E042-07**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 18:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



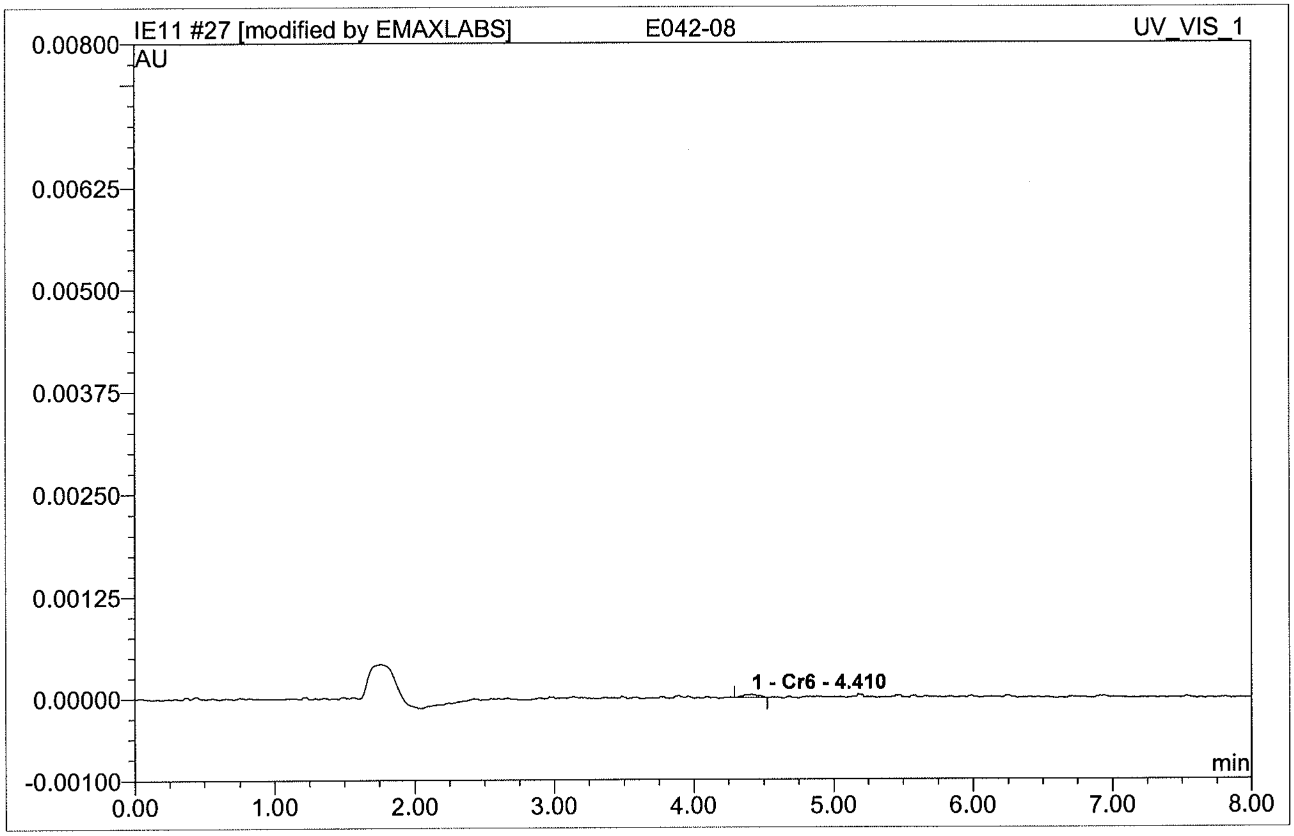
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.39	Cr6	0.0000730	0.0000064	100.00	0.106	BMB* ✓
Total:			0.000	0.000	100.00	0.106	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 027 E042-08

Sample Name:	**E042-08**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 13:50**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



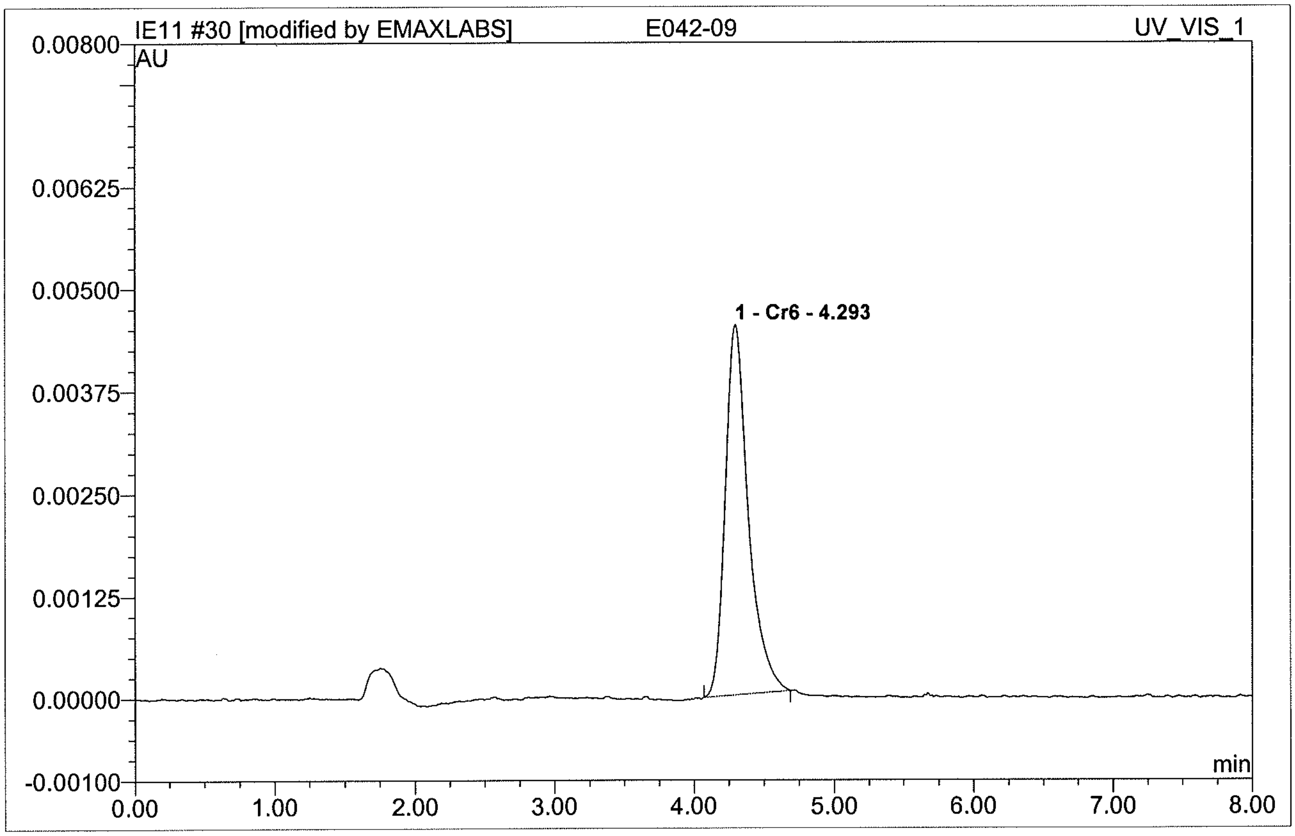
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.41	Cr6	0.0000390	0.0000048	100.00	0.091	BMB*
Total:			0.000	0.000	100.00	0.091	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 030 E042-09

Sample Name:	**E042-09**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 14:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

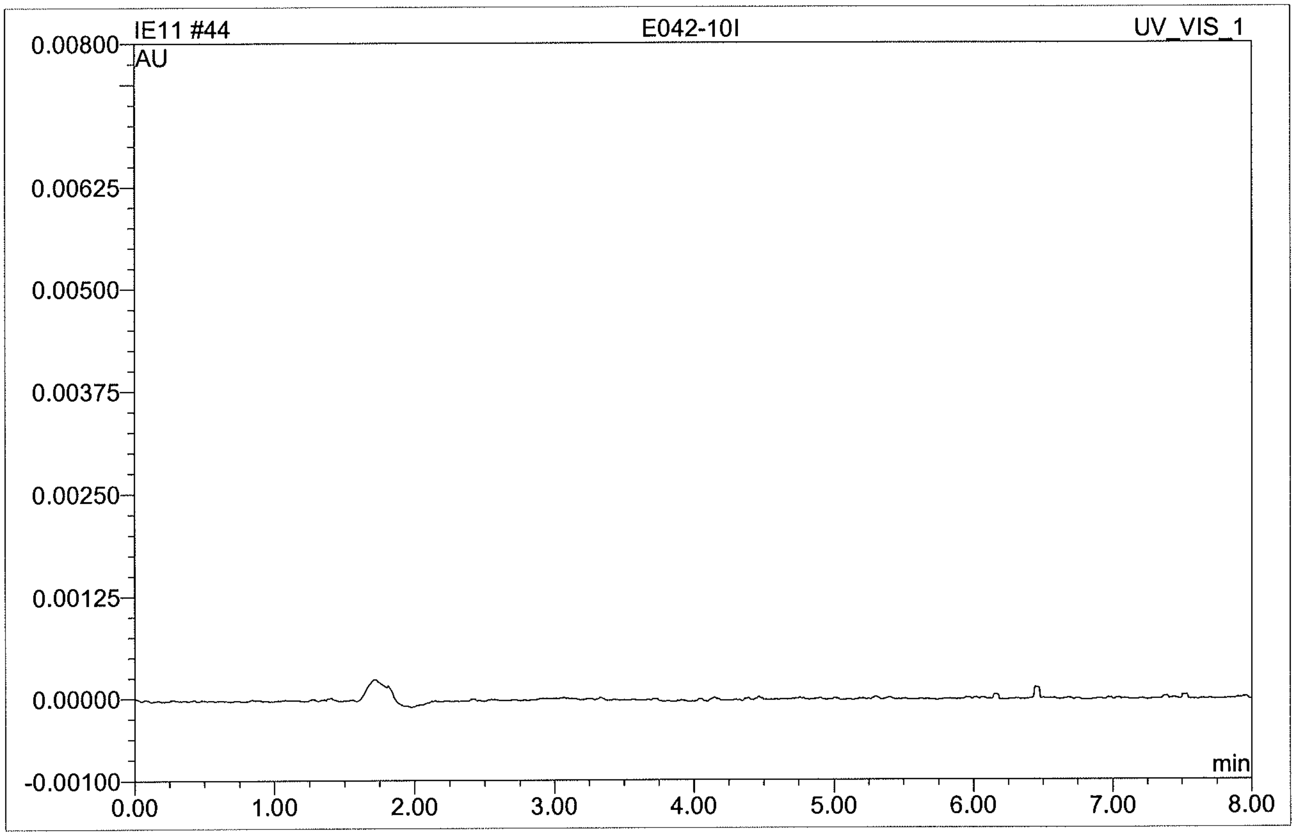


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.29	Cr6	0.0045210	0.0008659	100.00	7.997	BMB*
Total:			0.005	0.001	100.00	7.997	

IE11 044 E042-10I

D=5

Sample Name:	**E042-10I**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**5**
Recording Time:	**5/10/2018 16:53**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

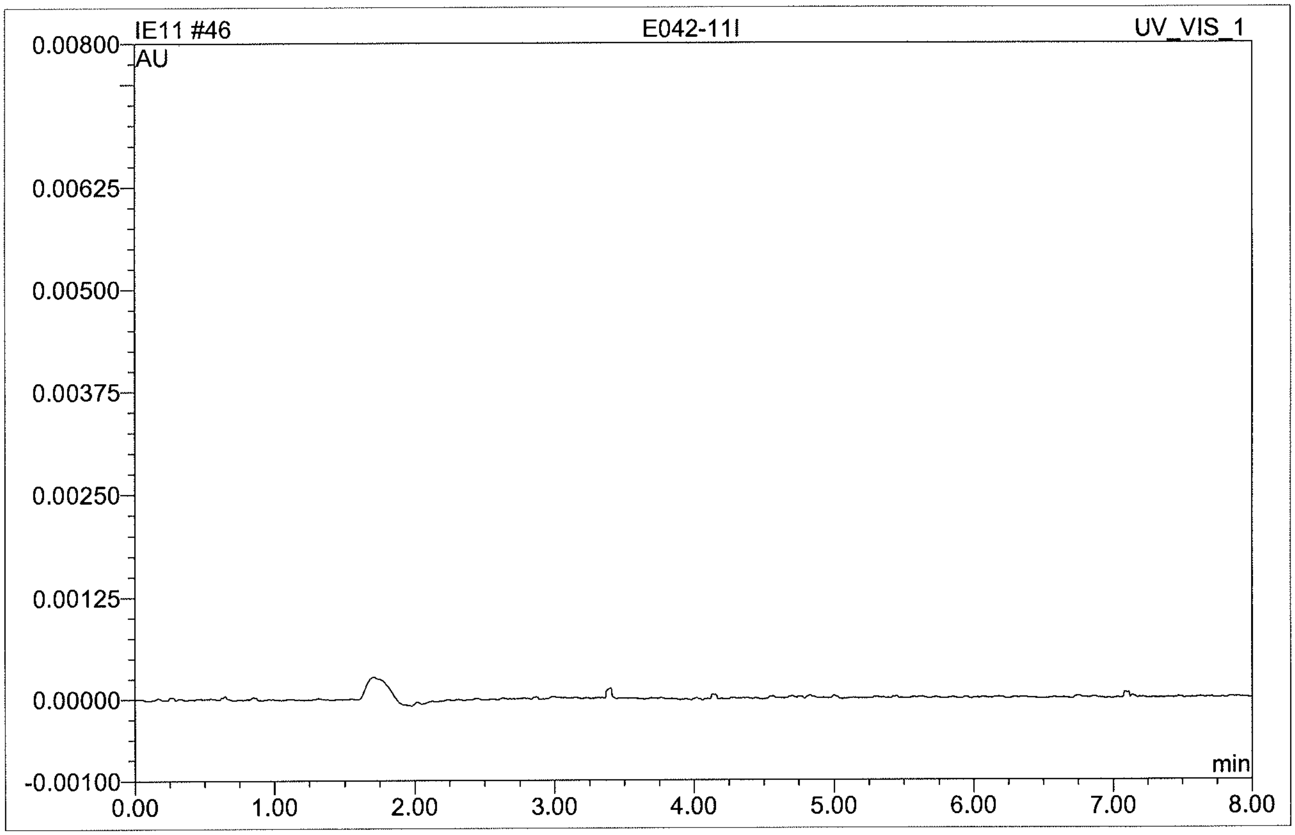


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 046 E042-11I

D=5

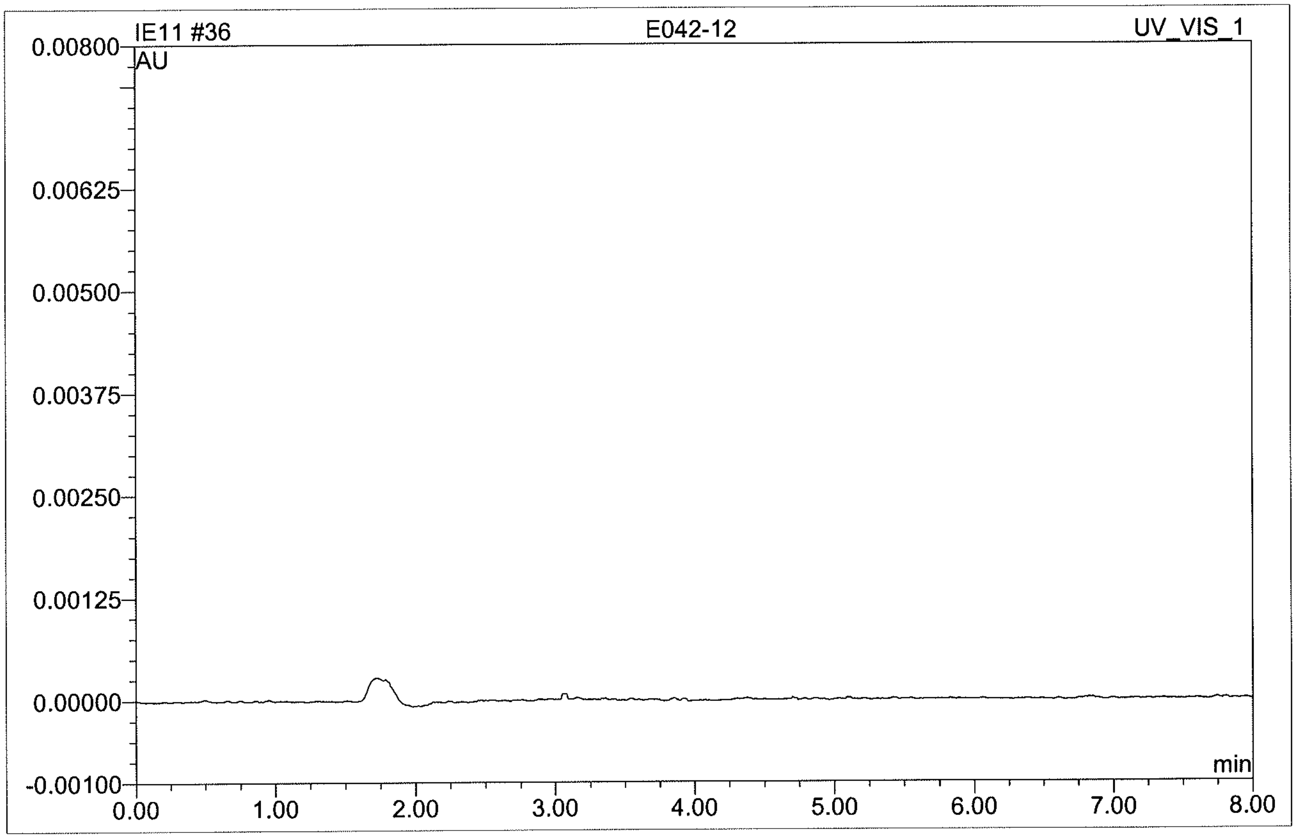
Sample Name:	**E042-11I**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**5**
Recording Time:	**5/10/2018 17:14**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 036 E042-12

Sample Name:	**E042-12**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 15:30**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: HCE013WB	HCE013WL	HCE013WC
LAB FILE ID	: IE11015	IE11016	IE11017
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 05/10/1811:42	05/10/1811:52	05/10/1812:03
PREP BATCH	: HCE013W	HCE013W	HCE013W
CALIBRATION REF:	IE11013	IE11013	IE11013

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpkAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
HEXAVALENT CHROMIUM	ND	2.00	1.99	99.5	2.00	1.98	99.0	1	90-110	20

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR:	1	1
SAMPLE ID	: MW-54-085-EB-Q218	MW-54-085-EB-Q218MS
LAB SAMPLE ID	: E042-01	E042-01M
LAB FILE ID	: IE11050	IE11051
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1817:56	05/10/1818:06
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF:	IE11048	IE11048

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.00	1.09	109	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MW-54-085-Q218	MW-54-085-Q218MS	MW-54-085-Q218MSD
LAB SAMPLE ID	: E042-02	E042-02M	E042-02S
LAB FILE ID	: IE11018	IE11019	IE11020
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 05/10/1812:13	05/10/1812:24	05/10/1812:34
PREP BATCH	: HCE013W	HCE013W	HCE013W
CALIBRATION REF:	IE11013	IE11013	IE11013

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpkAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
HEXAVALENT CHROMIUM	ND	1.00	0.994	99.4	1.00	0.990	99.0	0	90-110	20

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-54-140-EB-Q218	MW-54-140-EB-Q218MS
LAB SAMPLE ID	: E042-03	E042-03M
LAB FILE ID	: IE11052	IE11053
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1818:16	05/10/1818:27
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF	: IE11048	IE11048

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.00	1.07	107	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-54-140-Q218	MW-54-140-Q218MS
LAB SAMPLE ID	: E042-04I	E042-04IM
LAB FILE ID	: IE11040	IE11041
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1816:12	05/10/1816:22
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF	: IE11037	IE11037

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5.00	4.95	99.0	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-54-195-EB-Q218	MW-54-195-EB-Q218MS
LAB SAMPLE ID	: E042-05	E042-05M
LAB FILE ID	: IE11054	IE11055
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1818:37	05/10/1818:48
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF	: IE11048	IE11048

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.00	1.09	109	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-54-195-Q218	MW-54-195-Q218MS
LAB SAMPLE ID	: E042-06I	E042-06IM
LAB FILE ID	: IE11042	IE11043
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1816:32	05/10/1816:43
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF	: IE11037	IE11037

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5.00	5.09	102	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR:	1	1
SAMPLE ID	: MW-55-045-EB-Q218	MW-55-045-EB-Q218MS
LAB SAMPLE ID	: E042-07	E042-07M
LAB FILE ID	: IE11056	IE11057
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1818:58	05/10/1819:08
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF:	IE11048	IE11048

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.00	1.08	108	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER		% MOISTURE: NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: MW-55-045-Q218	MW-55-045-Q218MS	MW-55-045-Q218MSD
LAB SAMPLE ID	: E042-08	E042-08M	E042-08S
LAB FILE ID	: IE11027	IE11028	IE11029
DATE PREPARED	: NA	NA	NA
DATE ANALYZED	: 05/10/1813:50	05/10/1814:00	05/10/1814:11
PREP BATCH	: HCE013W	HCE013W	HCE013W
CALIBRATION REF:	IE11025	IE11025	IE11025

ACCESSION:

PARAMETERS	PSResult (ug/L)	SpkAmt (ug/L)	MSResult (ug/L)	MSRec (%)	SpikeAmt (ug/L)	MSDResult (ug/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
HEXAVALENT CHROMIUM	ND	1.00	1.06	106	1.00	1.08	108	2	90-110	20

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR:	1	1
SAMPLE ID	: MW-55-120-Q218	MW-55-120-Q218MS
LAB SAMPLE ID	: E042-09	E042-09M
LAB FILE ID	: IE11030	IE11031
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1814:22	05/10/1814:38
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF:	IE11025	IE11025

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	8.00	2.00	9.99	99.5	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-56D-Q218	MW-56D-Q218MS
LAB SAMPLE ID	: E042-10I	E042-10IM
LAB FILE ID	: IE11044	IE11045
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1816:53	05/10/1817:04
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF	: IE11037	IE11037

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5.00	5.03	101	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR:	5	5
SAMPLE ID	: MW-56M-Q218	MW-56M-Q218MS
LAB SAMPLE ID	: E042-11I	E042-11IM
LAB FILE ID	: IE11046	IE11047
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1817:14	05/10/1817:24
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF:	IE11037	IE11037

ACCESSION:

PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5.00	4.99	99.8	90-110

PS: Parent Sample MS: Matrix Spike

EMAX QUALITY CONTROL DATA
MATRIX SPIKE SAMPLE ANALYSIS

CLIENT : ARCADIS
PROJECT : PG&E TOPOCK-GMP
BATCH NO. : 18E042
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR:	1	1
SAMPLE ID	: MW-56S-Q218	MW-56S-Q218MS
LAB SAMPLE ID	: E042-12	E042-12M
LAB FILE ID	: IE11036	IE11039
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/10/1815:30	05/10/1816:01
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF:	IE11025	IE11037

ACCESSION:

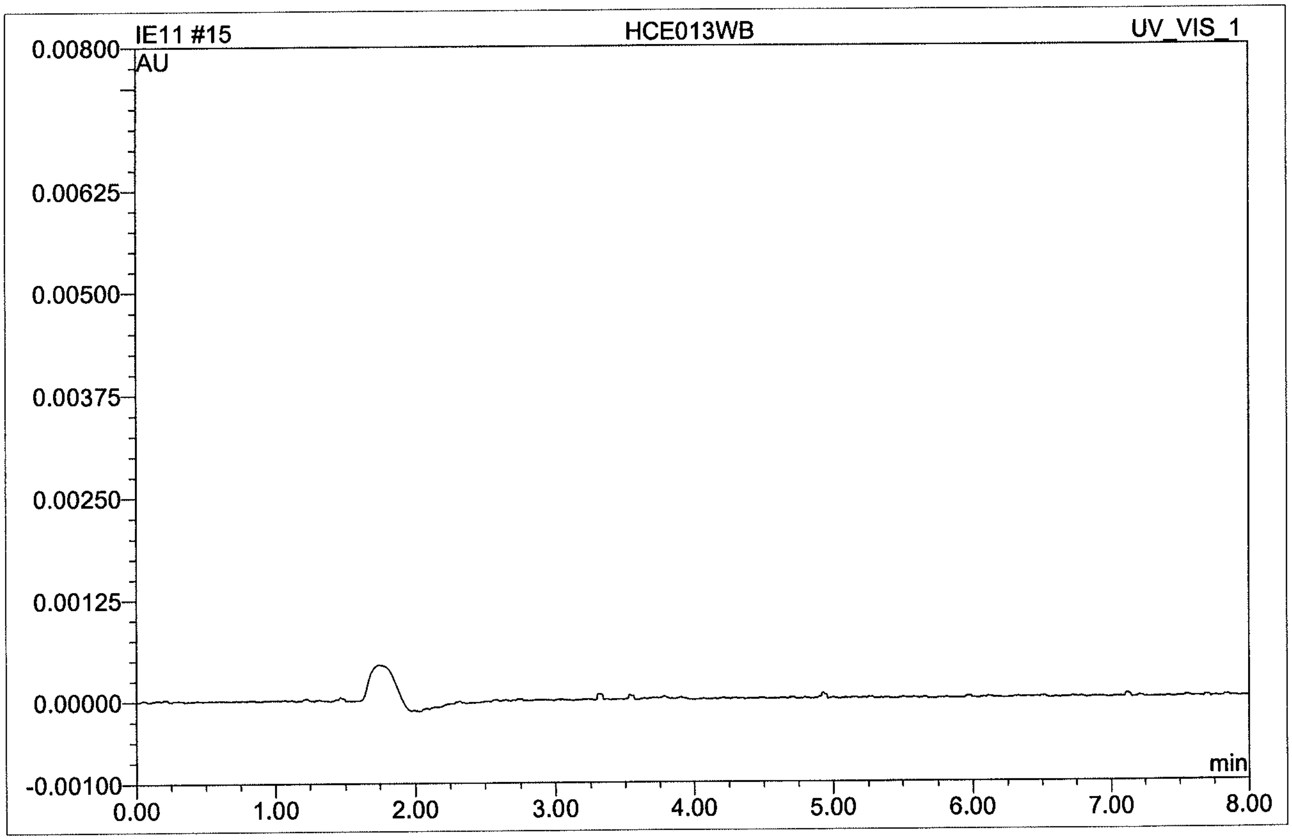
PARAMETER	PSResult (ug/L)	SPIKE AMT (ug/L)	MSResult (ug/L)	MSRec (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.00	1.04	104	90-110

PS: Parent Sample MS: Matrix Spike

QC DATA

IE11 015 HCE013WB

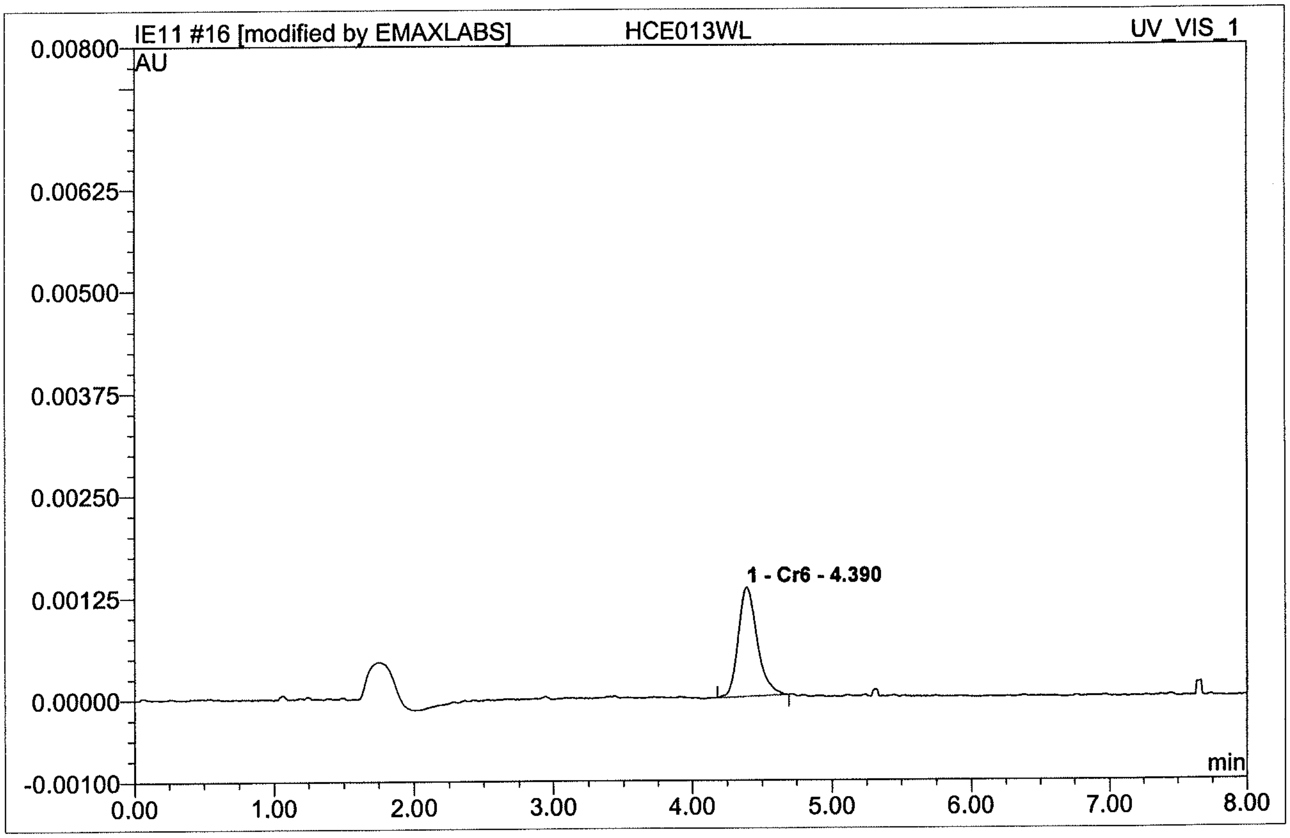
Sample Name:	**HCE013WB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 11:42**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 016 HCE013WL

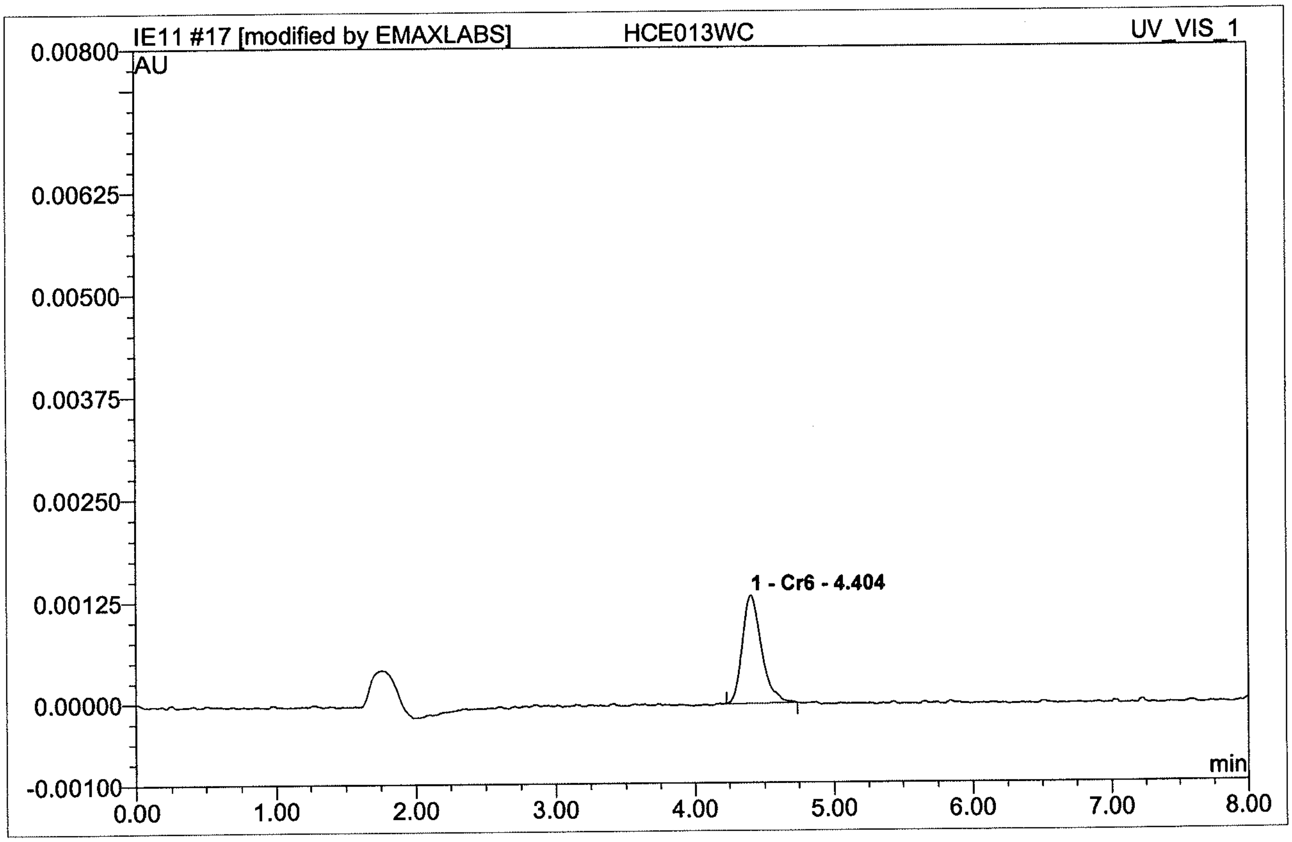
Sample Name:	**HCE013WL**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 11:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.39	Cr6	0.0013380	0.0002113	100.00	1.986	BMB*
Total:			0.001	0.000	100.00	1.986	

IE11 017 HCE013WC

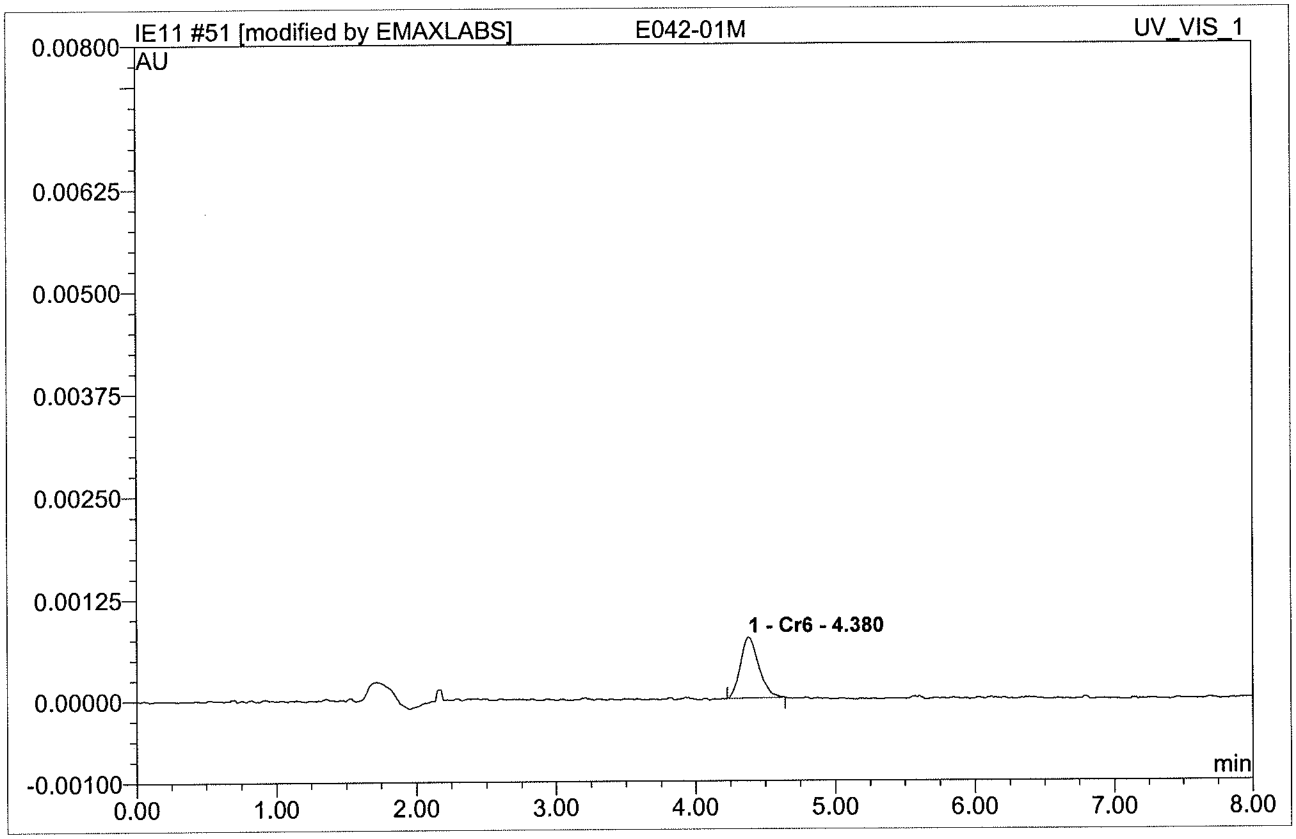
Sample Name:	**HCE013WC**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 12:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.40	Cr6	0.0013240	0.0002106	100.00	1.980	BMB*
Total:			0.001	0.000	100.00	1.980	

IE11 051 E042-01M

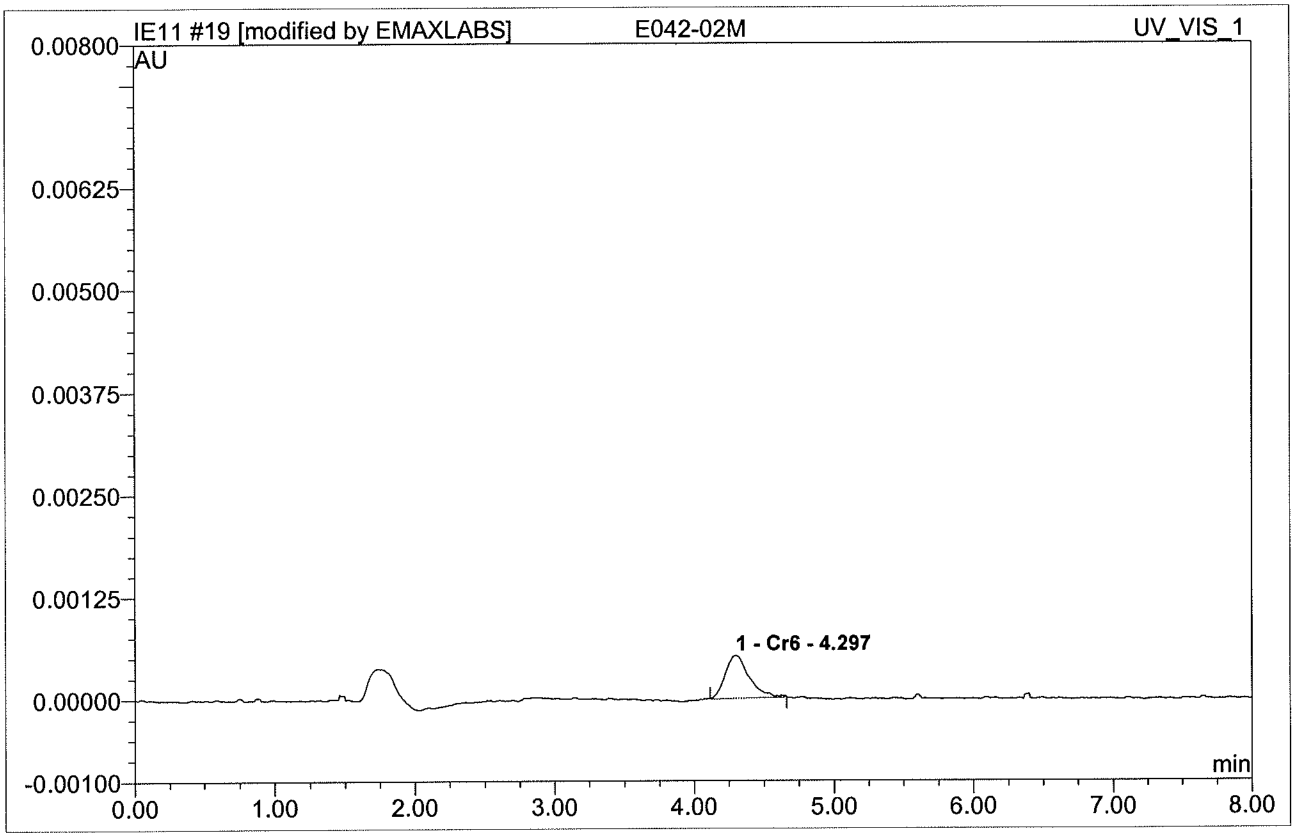
Sample Name:	**E042-01M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 18:06**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.38	Cr6	0.0007460	0.0001134	100.00	1.088	BMB*
Total:			0.001	0.000	100.00	1.088	

IE11 019 E042-02M

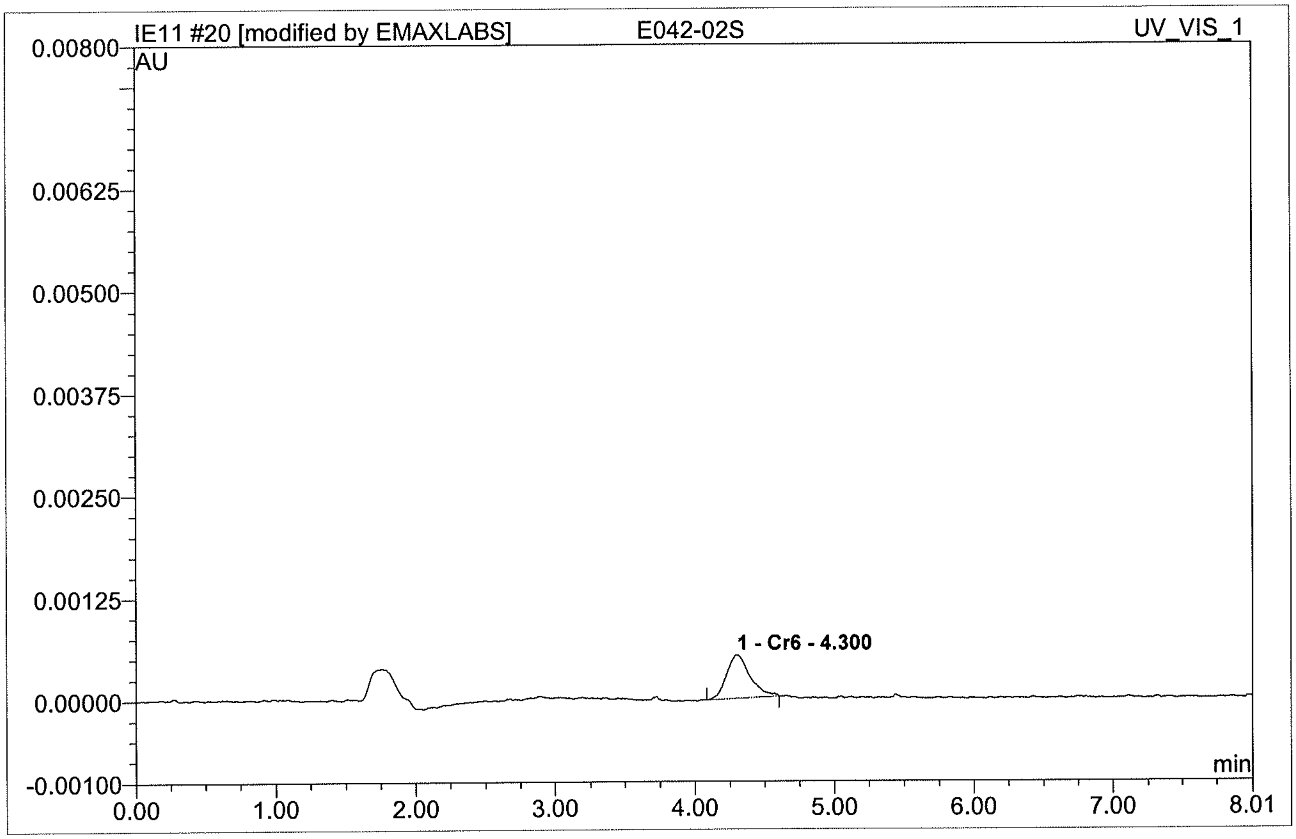
Sample Name:	**E042-02M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 12:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.30	Cr6	0.0005240	0.0001032	100.00	0.994	BMB*
Total:			0.001	0.000	100.00	0.994	

IE11 020 E042-02S

Sample Name:	**E042-02S**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 12:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.01**	*Sample Amount:*	**1.0000**



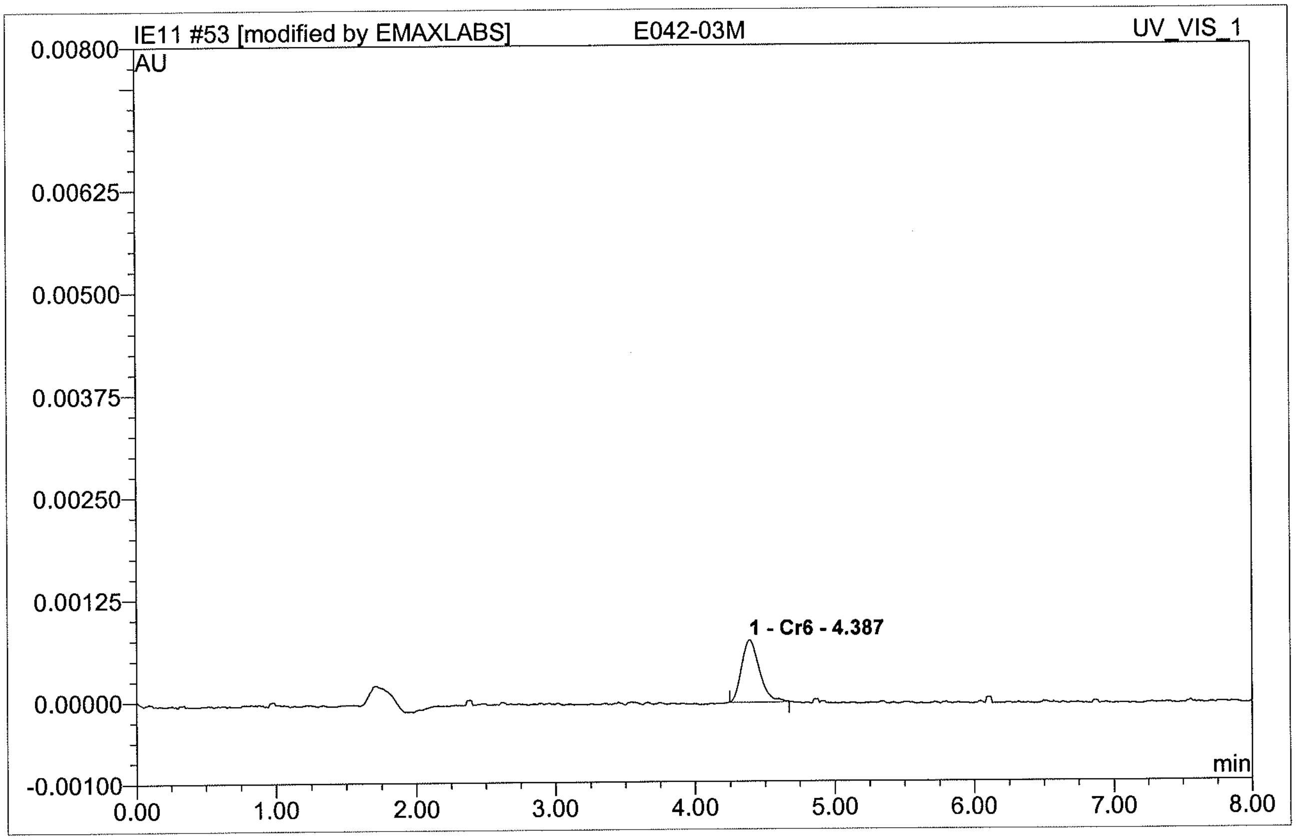
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.30	Cr6	0.0005280	0.0001027	100.00	0.990	BMB* ✓
Total:			0.001	0.000	100.00	0.990	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 053 E042-03M

Sample Name:	**E042-03M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 18:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.39	Cr6	0.0007580	0.0001116	100.00	1.071	BMB*
Total:			0.001	0.000	100.00	1.071	

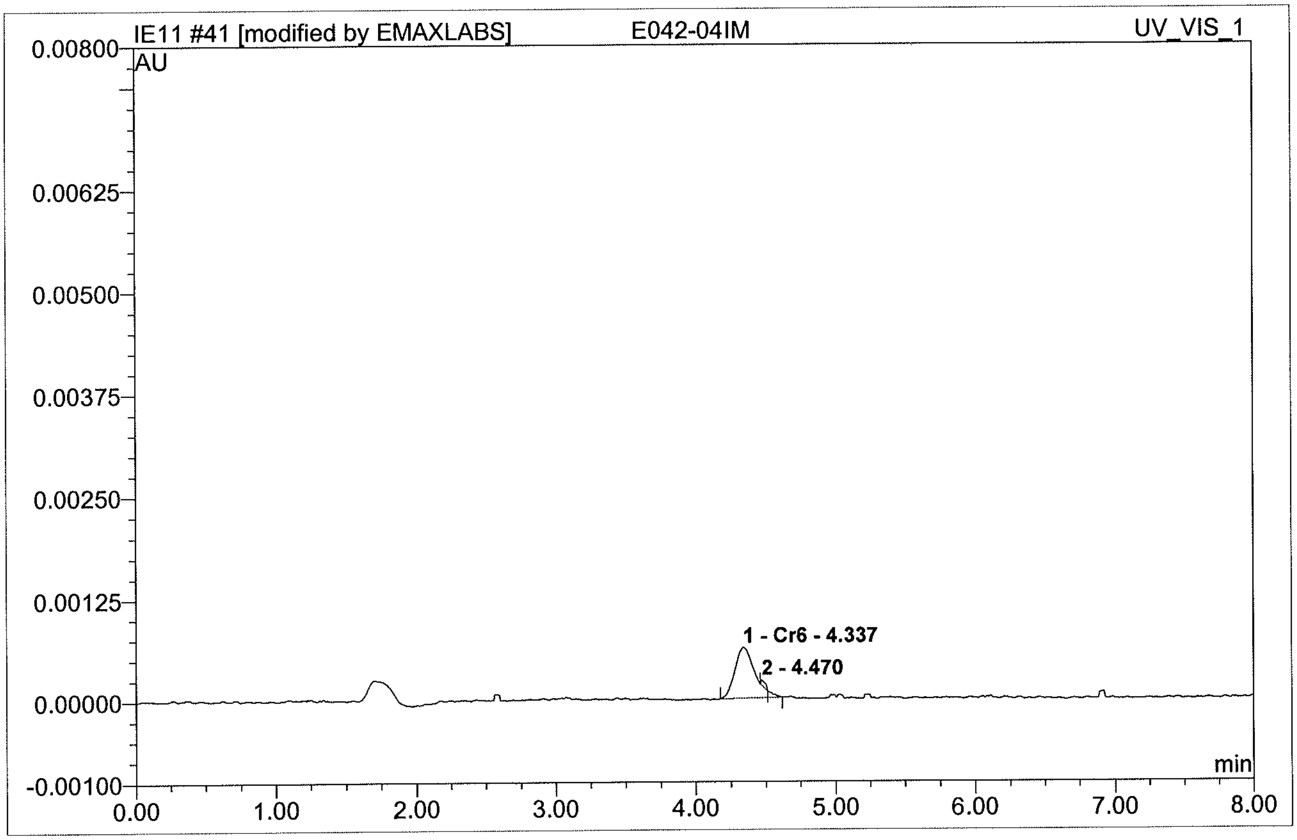
Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 041 E042-04IM

D=5

Sample Name:	**E042-04IM**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**5**
Recording Time:	**5/10/2018 16:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



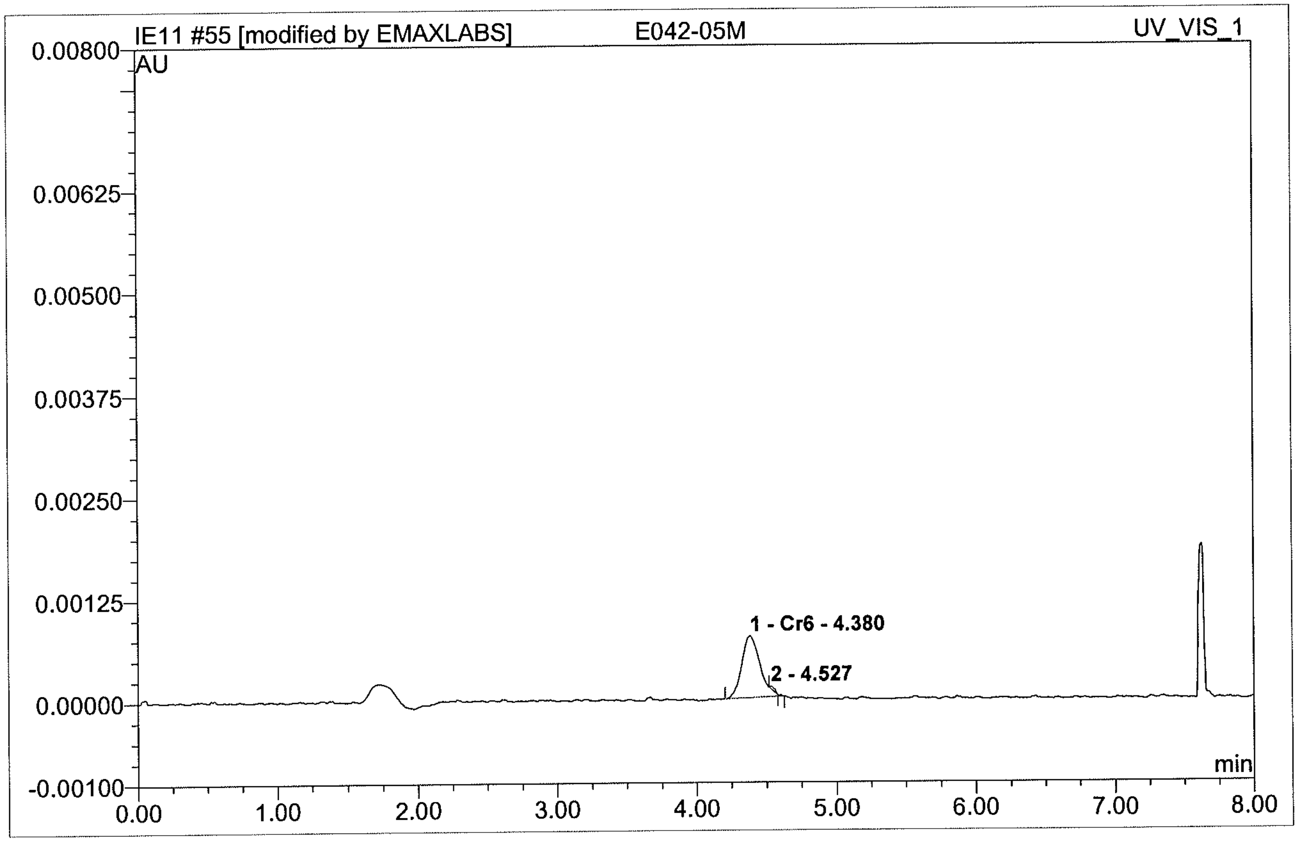
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.34	Cr6	0.0006210	0.0001028	97.34	4.955	BMB*
2	4.47	n.a.	0.0000700	0.0000028	2.66	n.a.	Rd*
Total:			0.001	0.000	100.00	4.955	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 055 E042-05M

Sample Name:	**E042-05M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 18:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

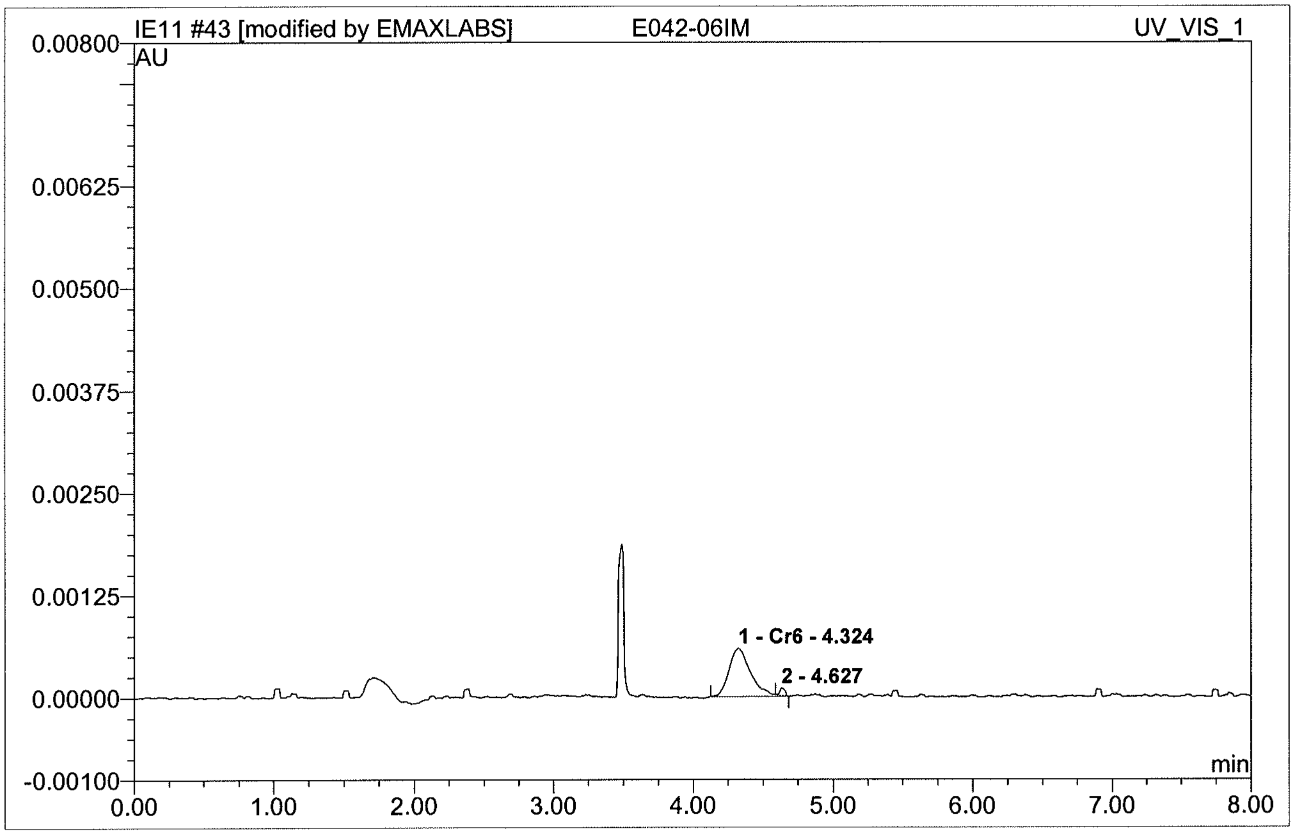


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.38	Cr6	0.0007520	0.0001134	98.64	1.088	BMB*
2	4.53	n.a.	0.0000280	0.0000016	1.36	n.a.	Rd*
Total:			0.001	0.000	100.00	1.088	

IE11 043 E042-06IM

D=5

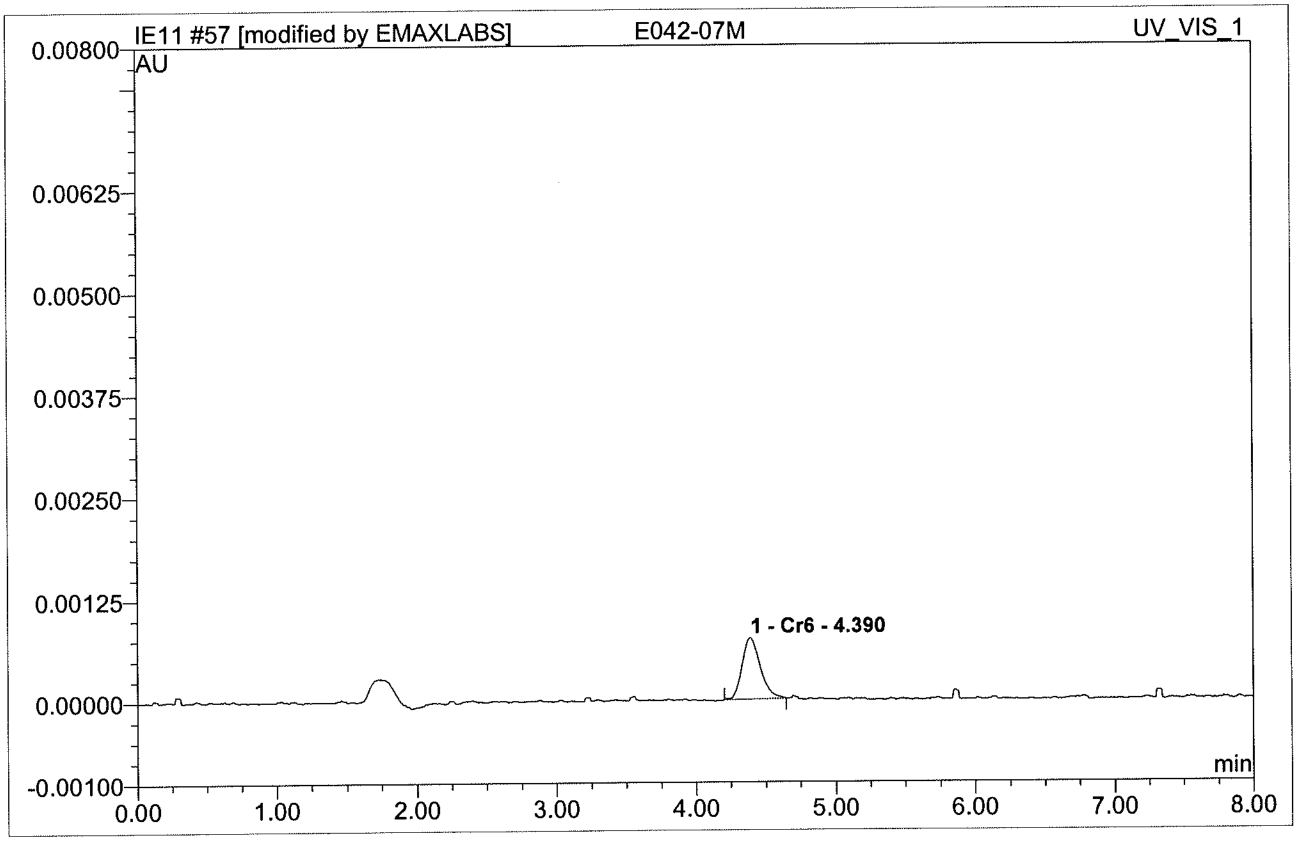
Sample Name:	**E042-06IM**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**5**
Recording Time:	**5/10/2018 16:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.32	Cr6	0.0005880	0.0001058	96.71	5.090	BMB*
2	4.63	n.a.	0.0000840	0.0000036	3.29	n.a.	Rd*
Total:			0.001	0.000	100.00	5.090	

IE11 057 E042-07M

Sample Name:	**E042-07M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 19:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



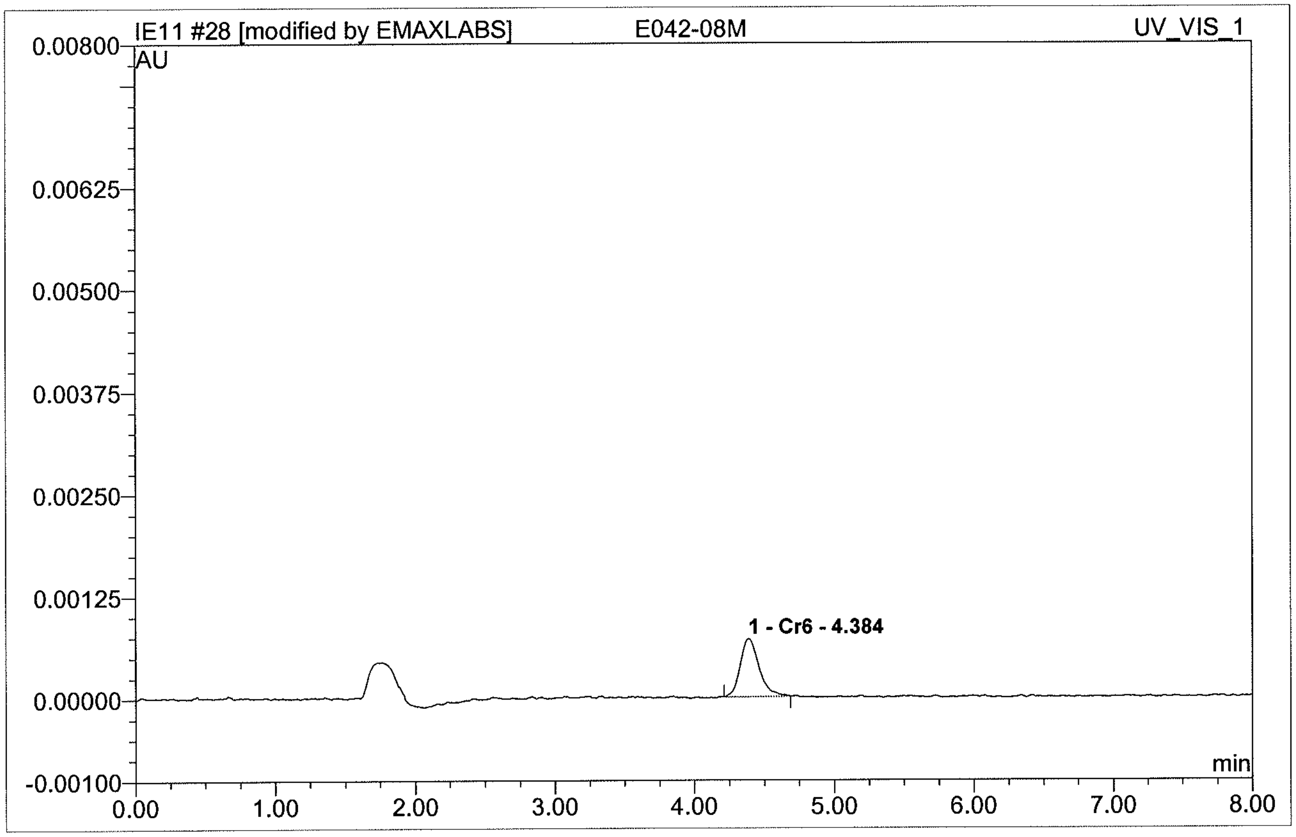
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.39	Cr6	0.0007490	0.0001126	100.00	1.080	BMB*
Total:			0.001	0.000	100.00	1.080	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 028 E042-08M

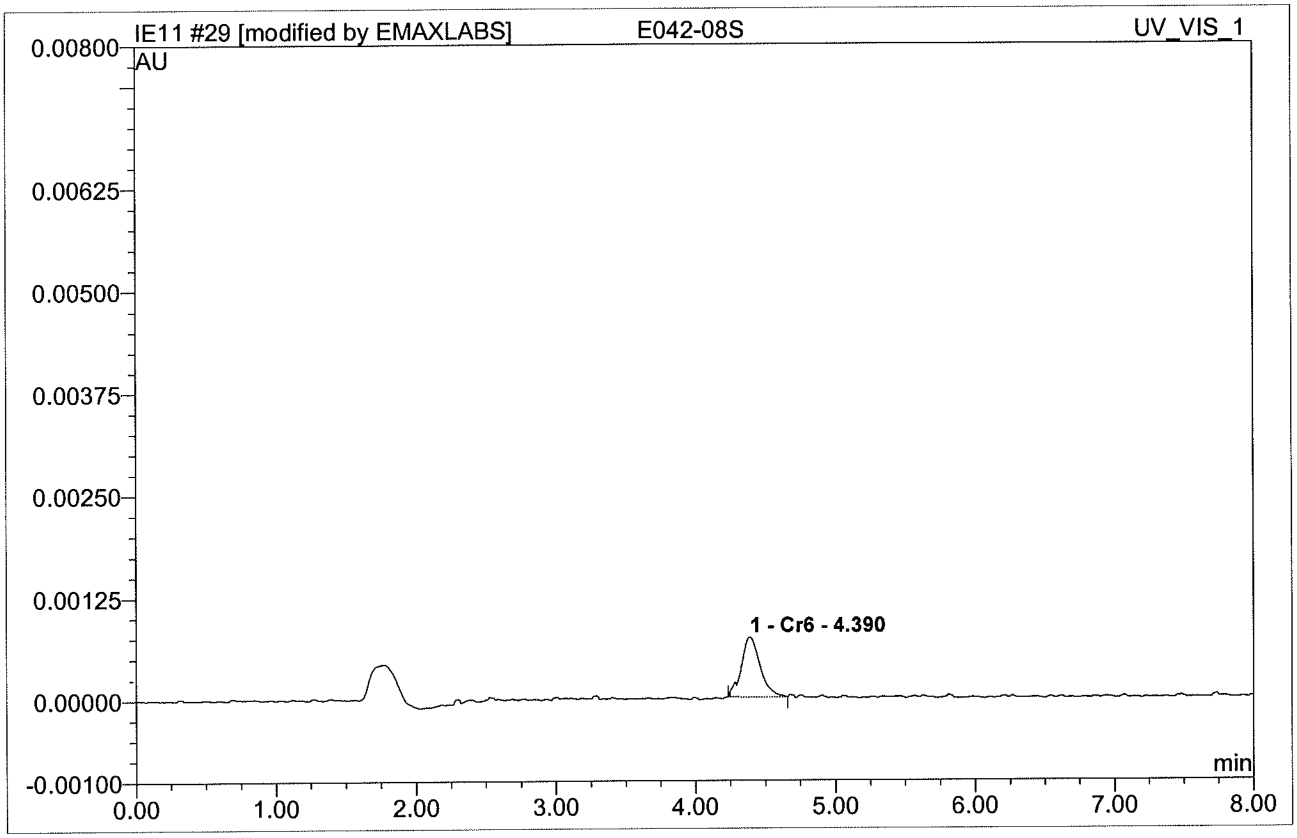
Sample Name:	**E042-08M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 14:00**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.38	Cr6	0.0007090	0.0001108	100.00	1.064	BMB*
Total:			0.001	0.000	100.00	1.064	

IE11 029 E042-08S

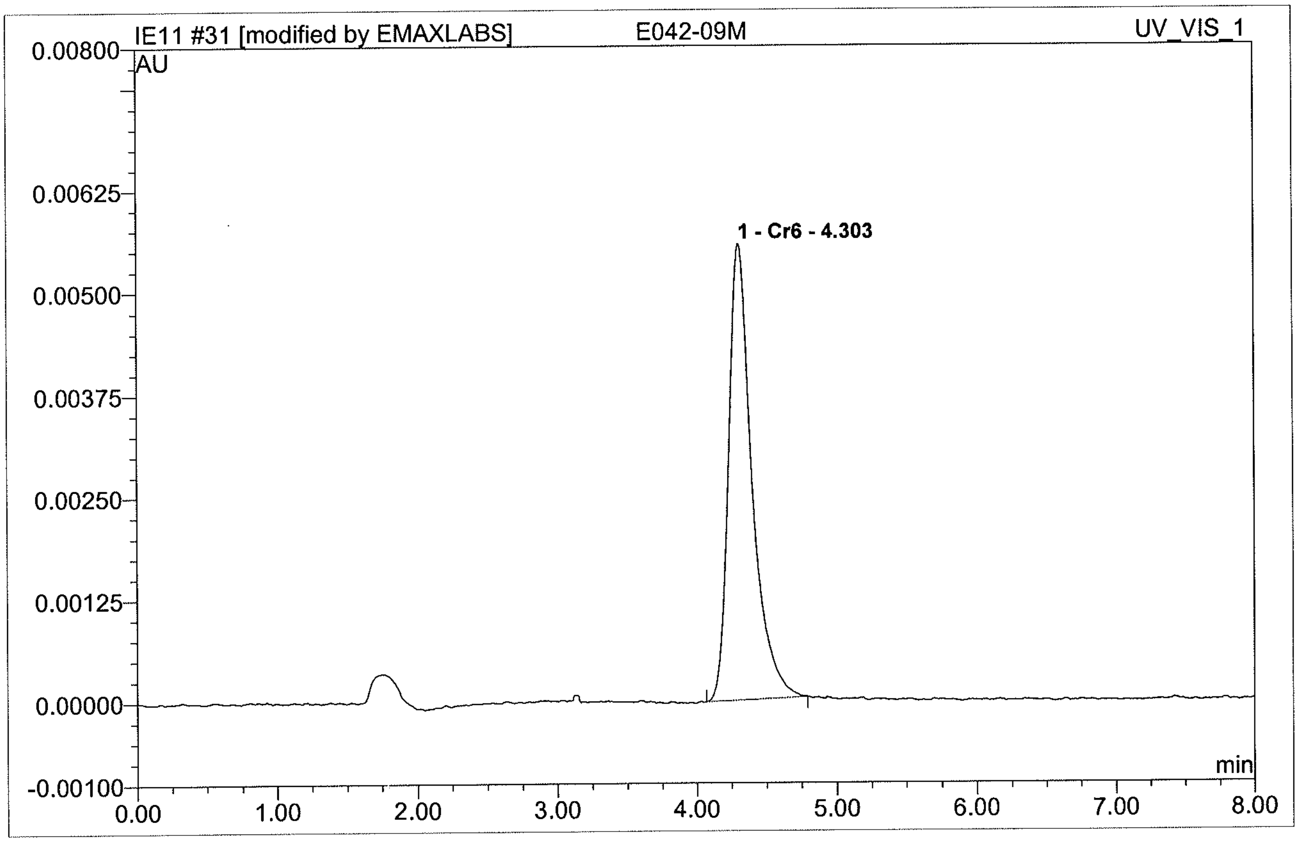
Sample Name:	**E042-08S**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 14:11**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.39	Cr6	0.0007300	0.0001128	100.00	1.082	BMB*
Total:			0.001	0.000	100.00	1.082	

IE11 031 E042-09M

Sample Name:	**E042-09M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 14:38**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.30	Cr6	0.0055730	0.0010828	100.00	9.987	BMB*
Total:			0.006	0.001	100.00	9.987	

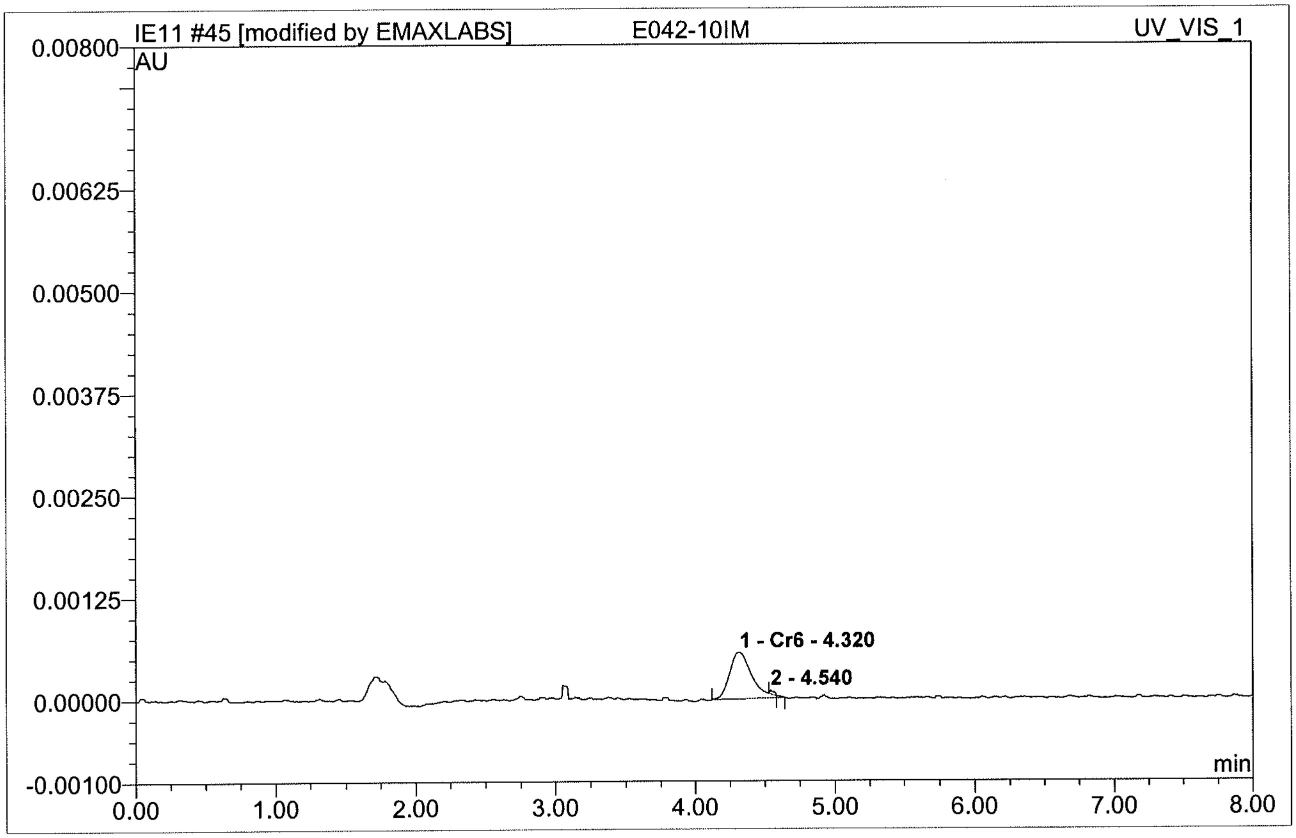
Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 045 E042-10IM

D=5

Sample Name:	**E042-10IM**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**5**
Recording Time:	**5/10/2018 17:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

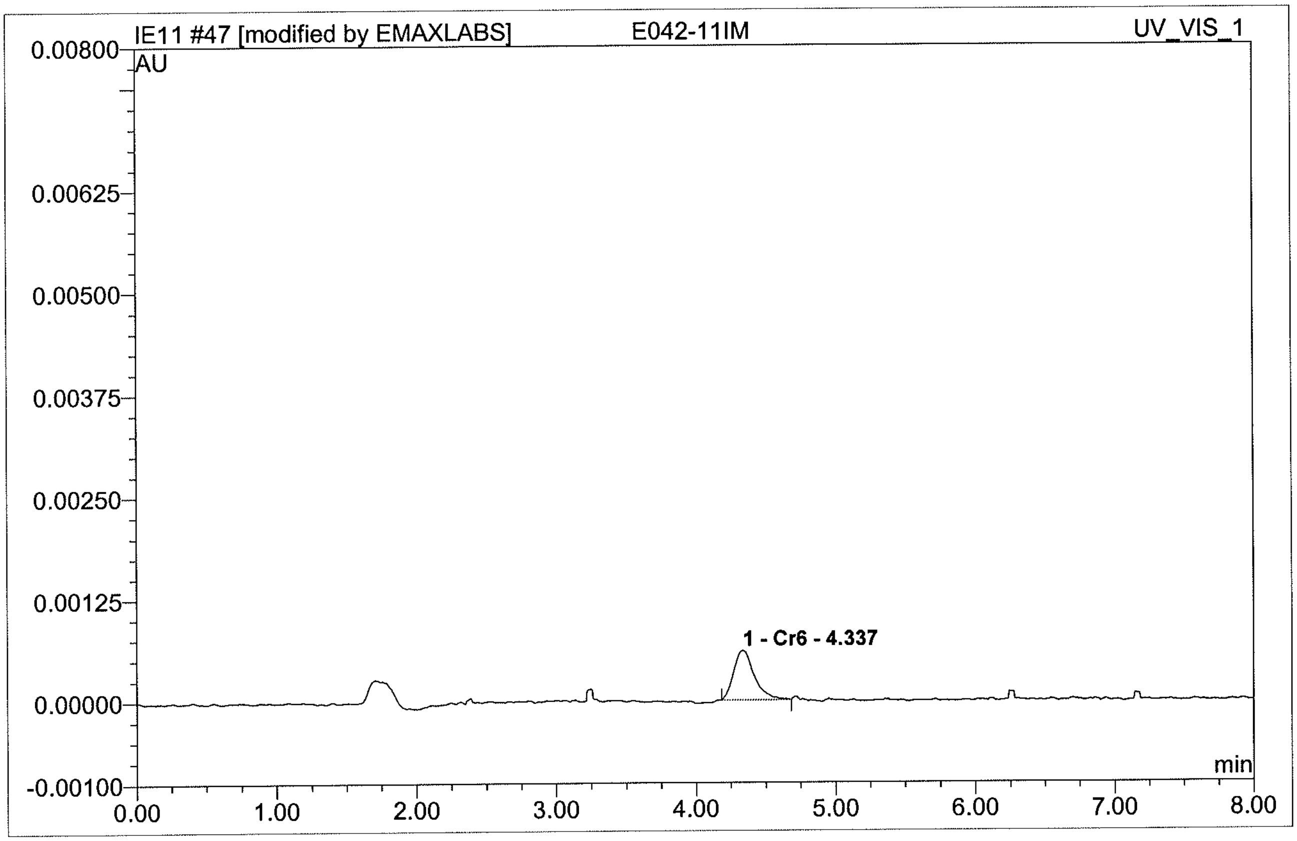


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.32	Cr6	0.0005650	0.0001044	98.37	5.025	BMB*
2	4.54	n.a.	0.0000470	0.0000017	1.63	n.a.	Rd*
Total:			0.001	0.000	100.00	5.025	

IE11 047 E042-11IM

D=5

Sample Name:	**E042-11IM**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**5**
Recording Time:	**5/10/2018 17:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



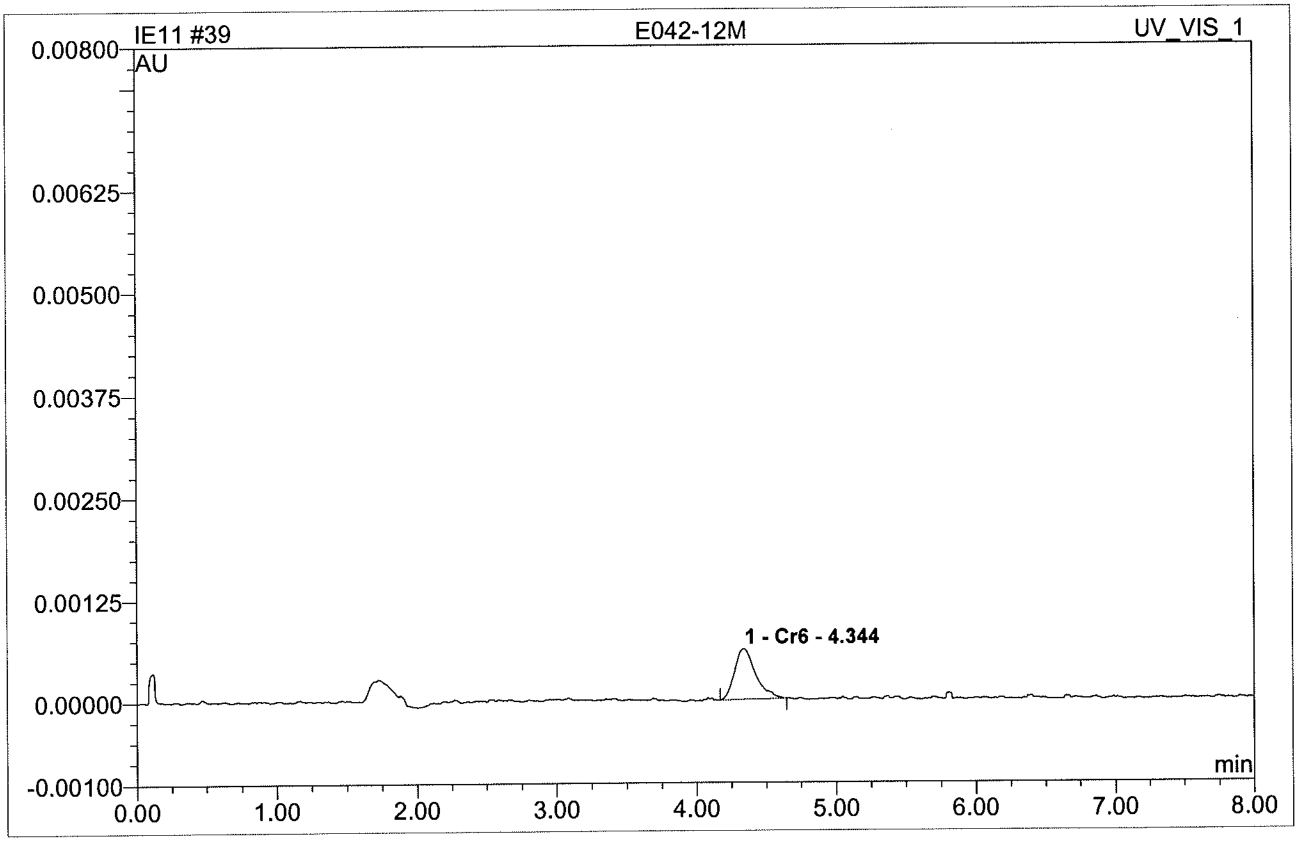
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.34	Cr6	0.0006040	0.0001035	100.00	4.987	BMB*
Total:			0.001	0.000	100.00	4.987	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 039 E042-12M

Sample Name:	**E042-12M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 16:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.34	Cr6	0.0006190	0.0001084	100.00	1.042	BMB
Total:			0.001	0.000	100.00	1.042	

INITIAL CALIBRATION(S)

IC RESULT FORM CalVersion : CR6.E10/IE10 (2018)

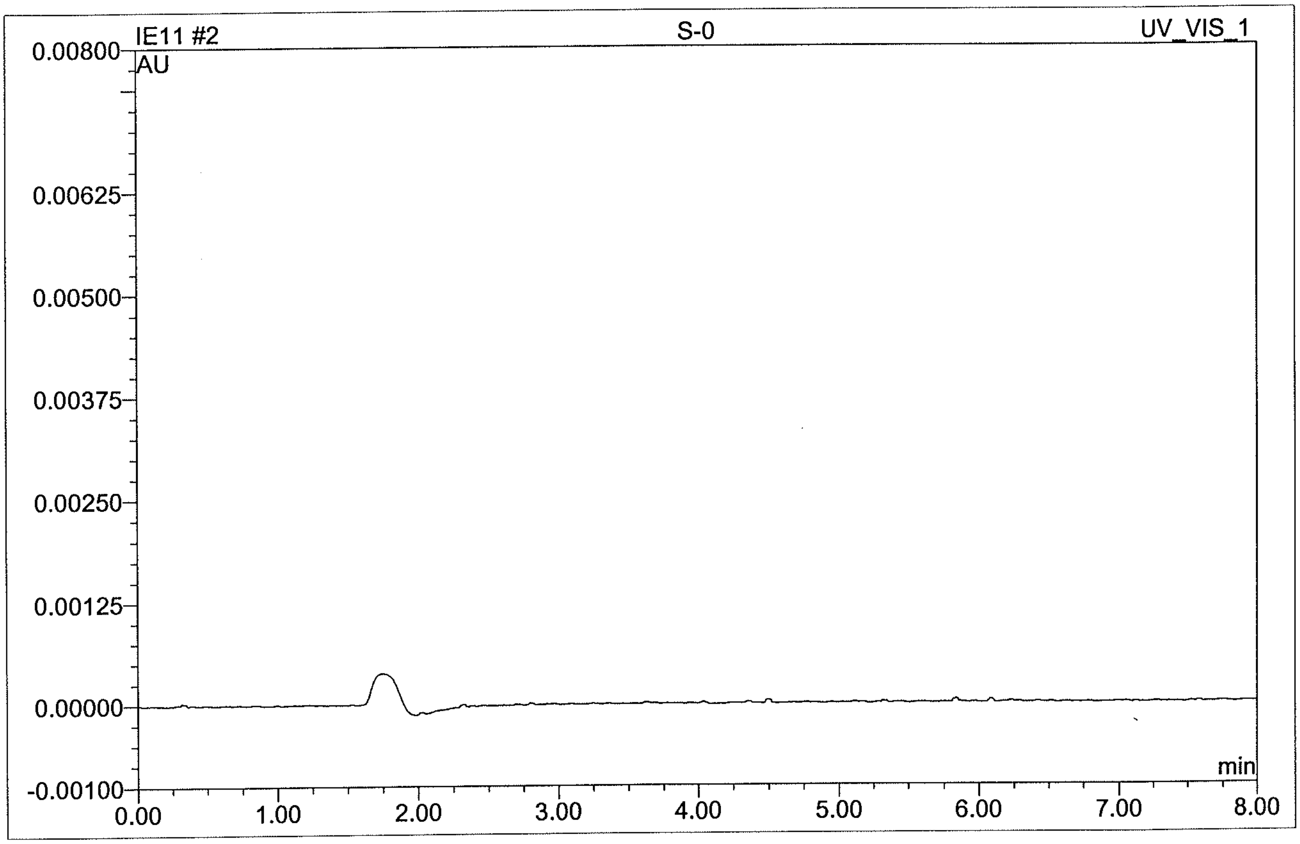
LFID	LSID	SelCmp	Cr6	DateTime	DF
IE11001	IB	C	ND	05/10/1809:15	1
IE11002	S-0	C	ND	05/10/1809:25	1
IE11003	S-1	C	0.209	05/10/1809:35	1
IE11004	S-2	C	0.502	05/10/1809:46	1
IE11005	S-3	C	1.014	05/10/1809:56	1
IE11006	S-4	C	1.983	05/10/1810:07	1
IE11007	S-5	C	4.927	05/10/1810:17	1
IE11008	S-6	C	7.420	05/10/1810:27	1
IE11009	S-7	C	10.098	05/10/1810:38	1
IE11010	ICV	C	99%	05/10/1810:48	1
IE11011	ICB	C	ND	05/10/1810:59	1
IE11012	LOW LEVEL	C	0.201	05/10/1811:11	1

Method: IC59E10
Solvent: buffer (SW4-04-16-01)

LE
5/24/18

IE11 002 S-0

Sample Name:	**S-0**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 9:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

LE 5/24/18

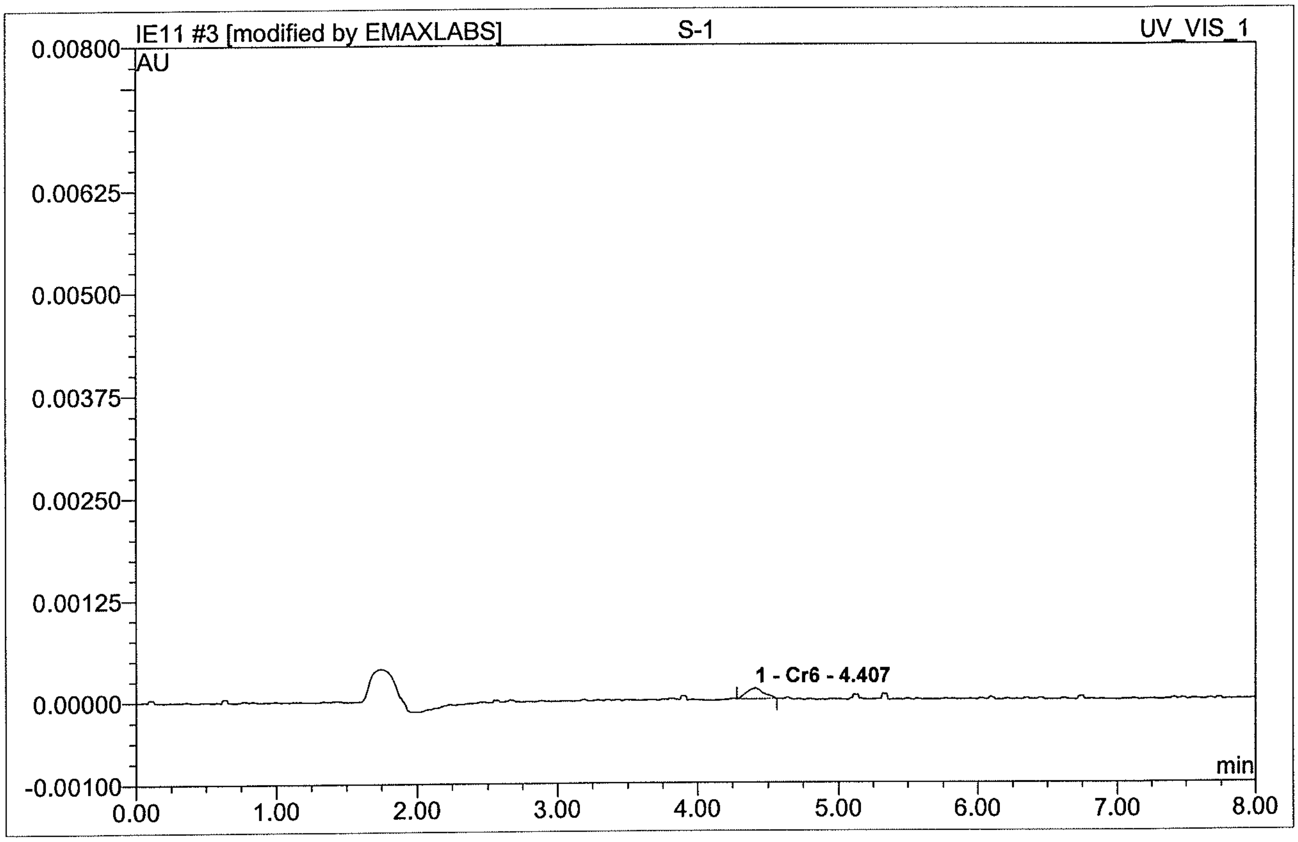
Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 003 S-1

0.2 PPB

Sample Name:	**S-1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 9:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.41	Cr6	0.0001300	0.0000177	100.00	0.209	BMB*
Total:			0.000	0.000	100.00	0.209	

LE 5/24/18

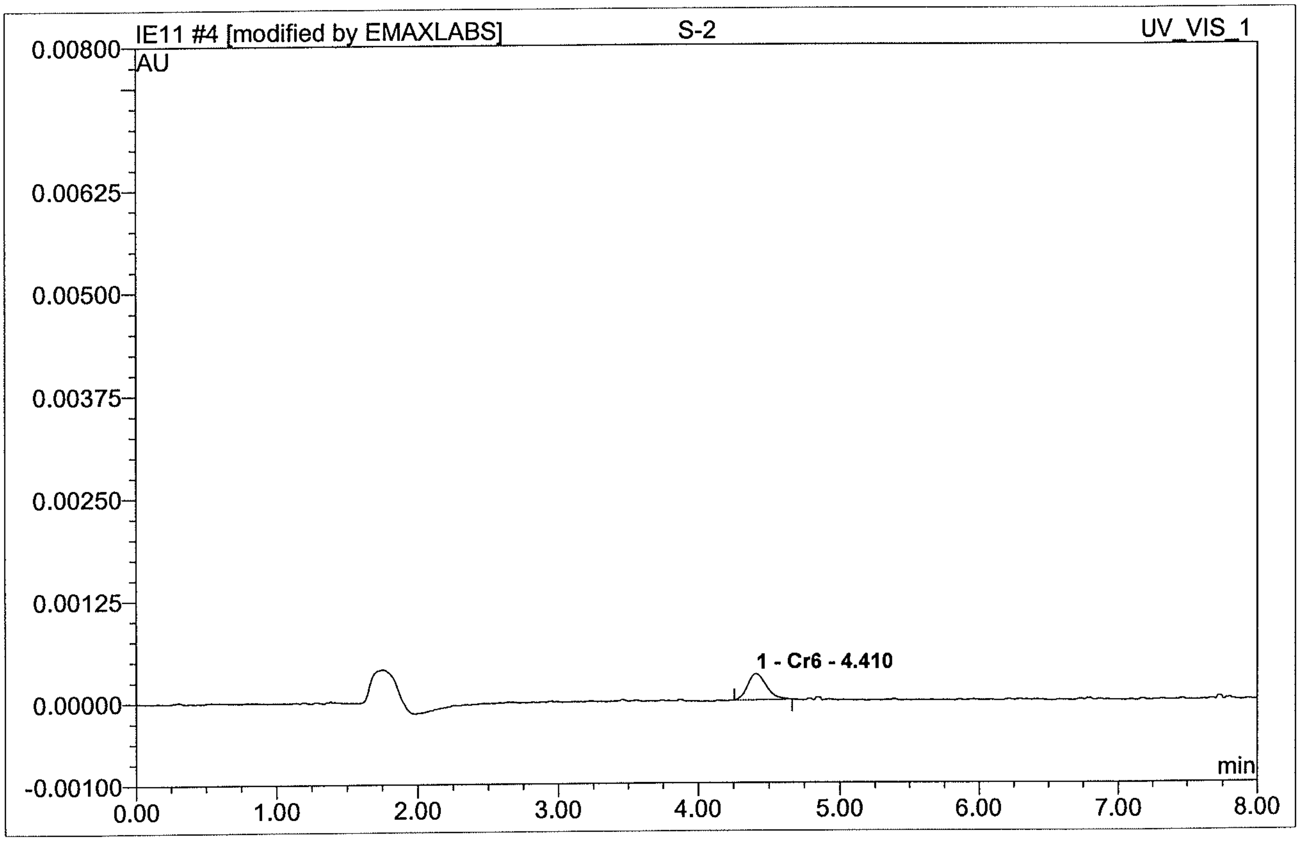
Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 004 S-2

0.5 PPB

Sample Name:	**S-2**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 9:46**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.41	Cr6	0.0003190	0.0000496	100.00	0.502	BMB*
Total:			0.000	0.000	100.00	0.502	

LE 5/24/18

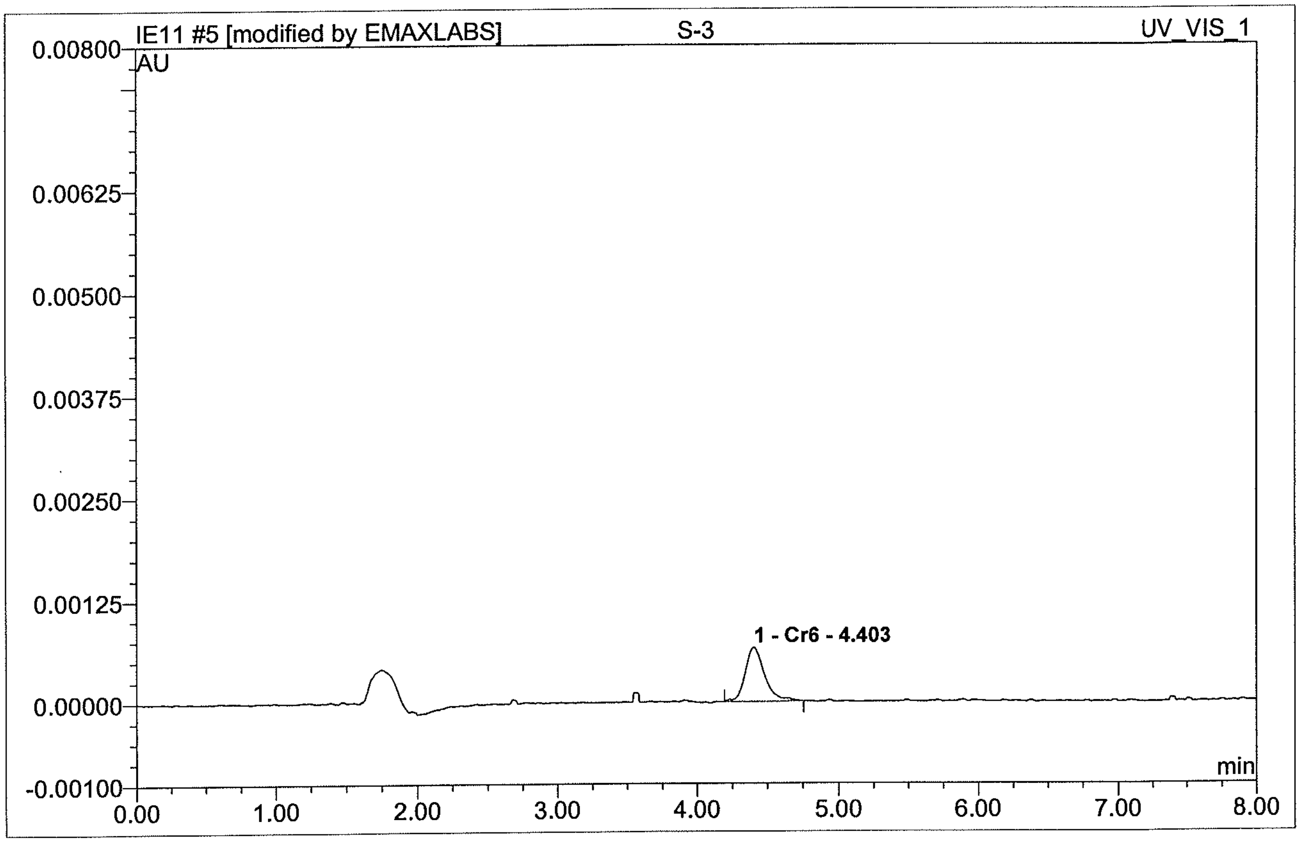
Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

Report/Integration

IE11 005 S-3

1.0 PPB

Sample Name:	**S-3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 9:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.40	Cr6	0.0006580	0.0001053	100.00	1.014	BMB* ✓
Total:			0.001	0.000	100.00	1.014	

LE 5/24/18

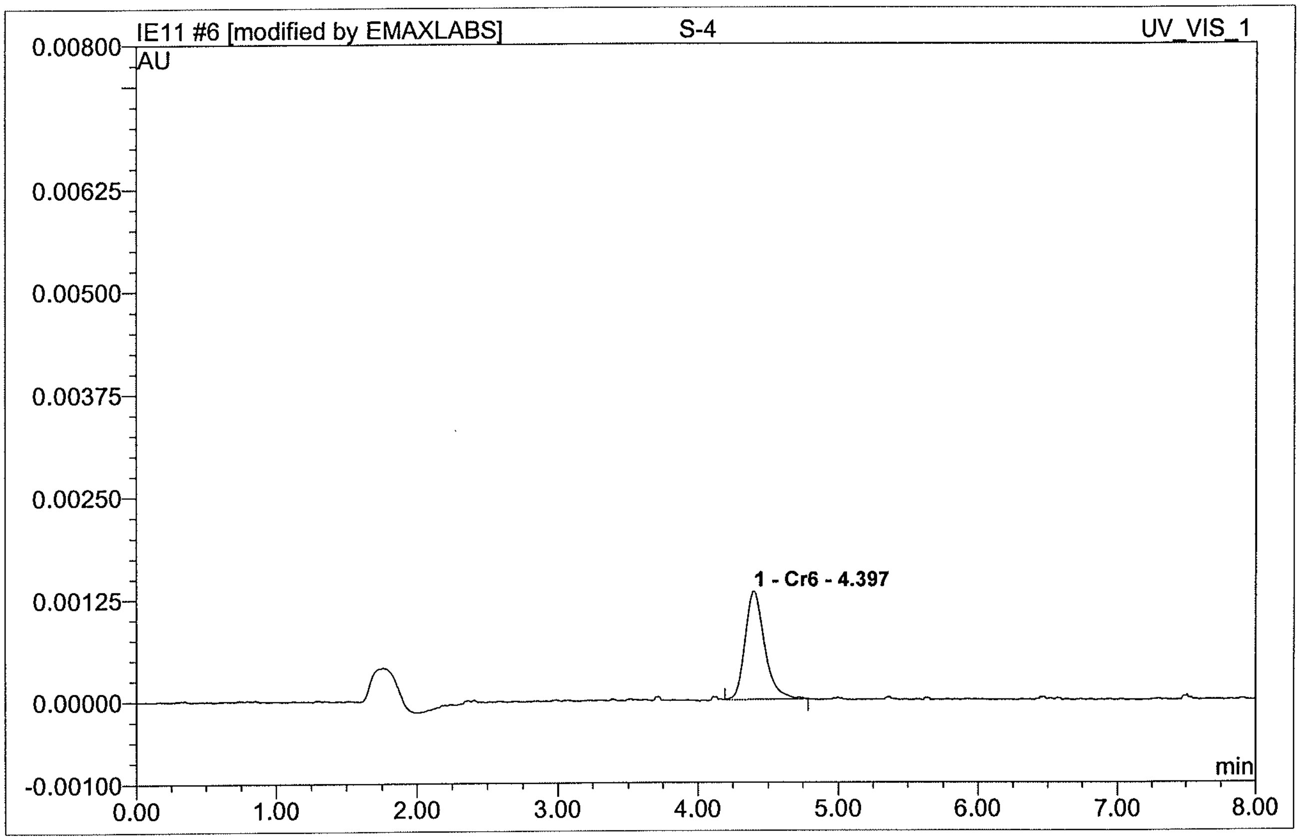
Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 006 S-4

2.0 PPB

Sample Name:	**S-4**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 10:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.40	Cr6	0.0013230	0.0002109	100.00	1.983	BMB*
Total:			0.001	0.000	100.00	1.983	

LB 5/24/18

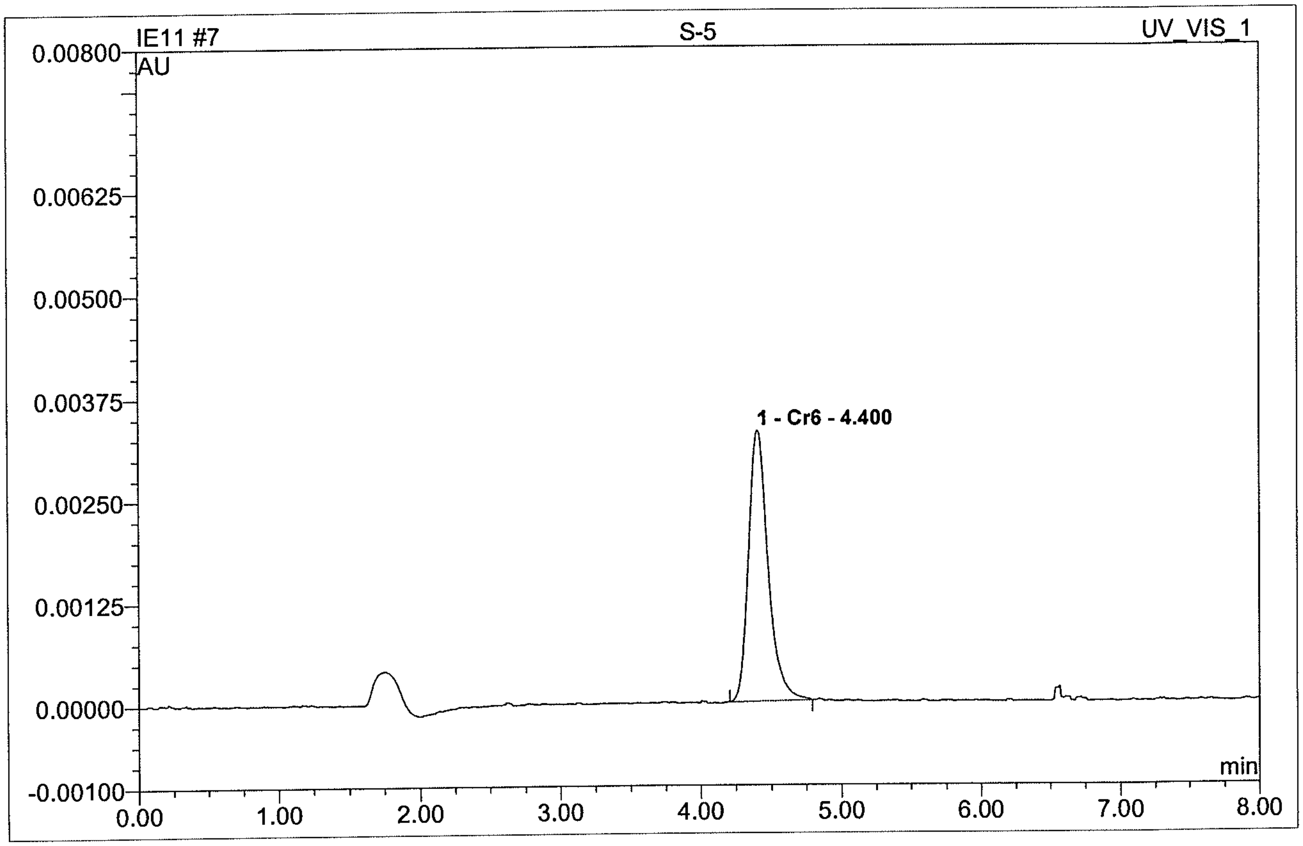
Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 007 S-5

5.0 PPB

Sample Name:	**S-5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 10:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.40	Cr6	0.0033070	0.0005315	100.00	4.927	BMB ✓
Total:			0.003	0.001	100.00	4.927	

LE 5/24/18

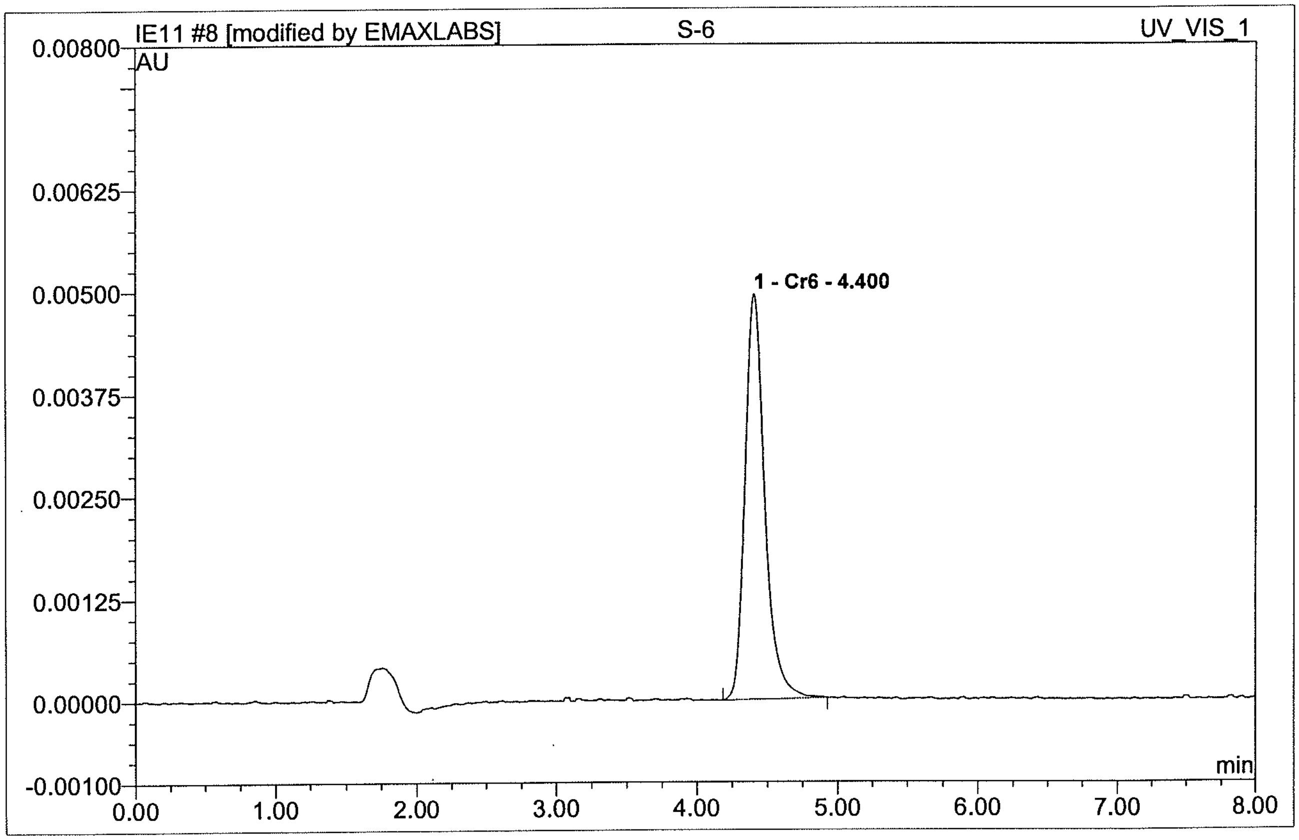
Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

Report/Integration

IE11 008 S-6

7.5 PPB

Sample Name:	**S-6**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 10:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.40	Cr6	0.0049470	0.0008031	100.00	7.420	BMB* ✓
Total:			0.005	0.001	100.00	7.420	

LE 5/24/18

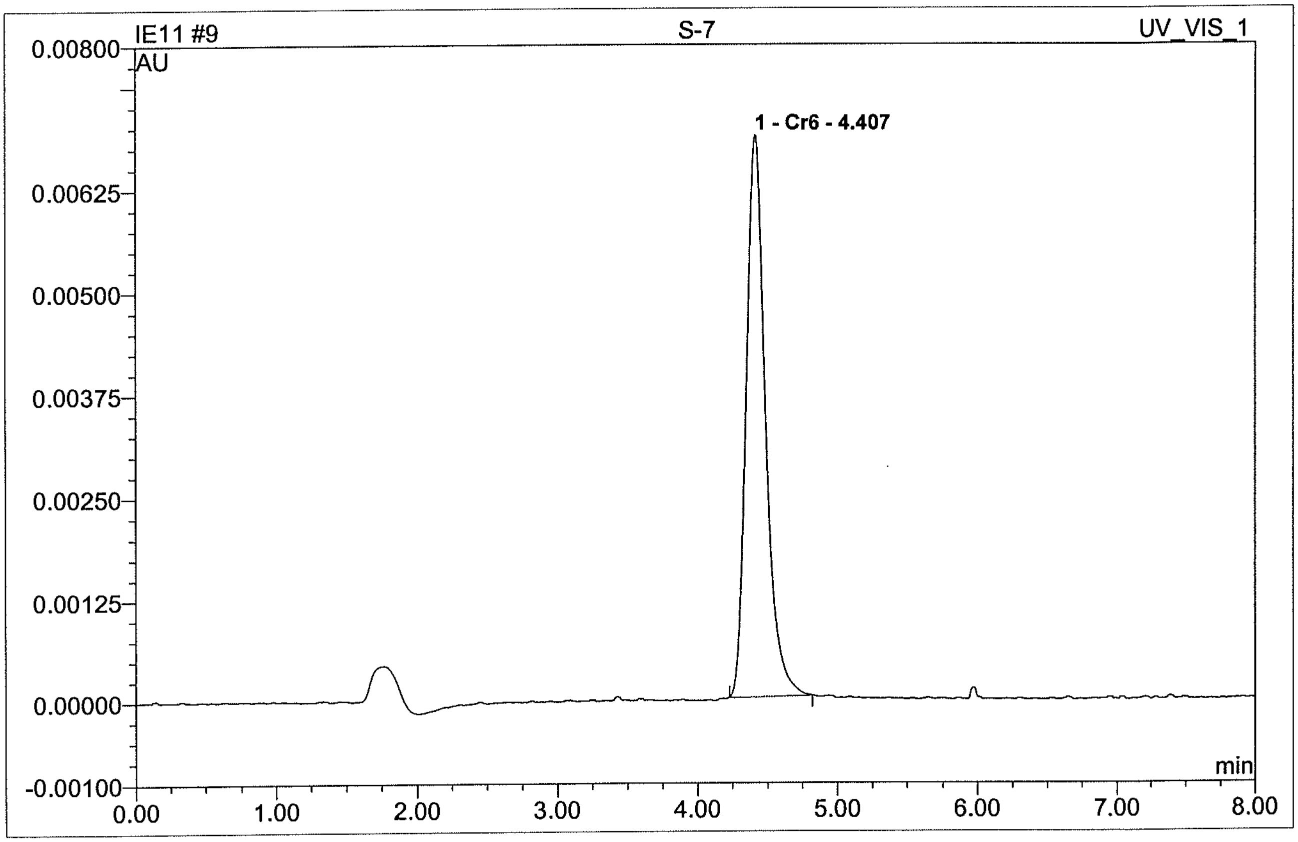
Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

Report/Integration

IE11 009 S-7

10 PPB

Sample Name:	**S-7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 10:38**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.41	Cr6	0.0068540	0.0010949	100.00	10.098	BMB
Total:			0.007	0.001	100.00	10.098	

LE 5/24/18

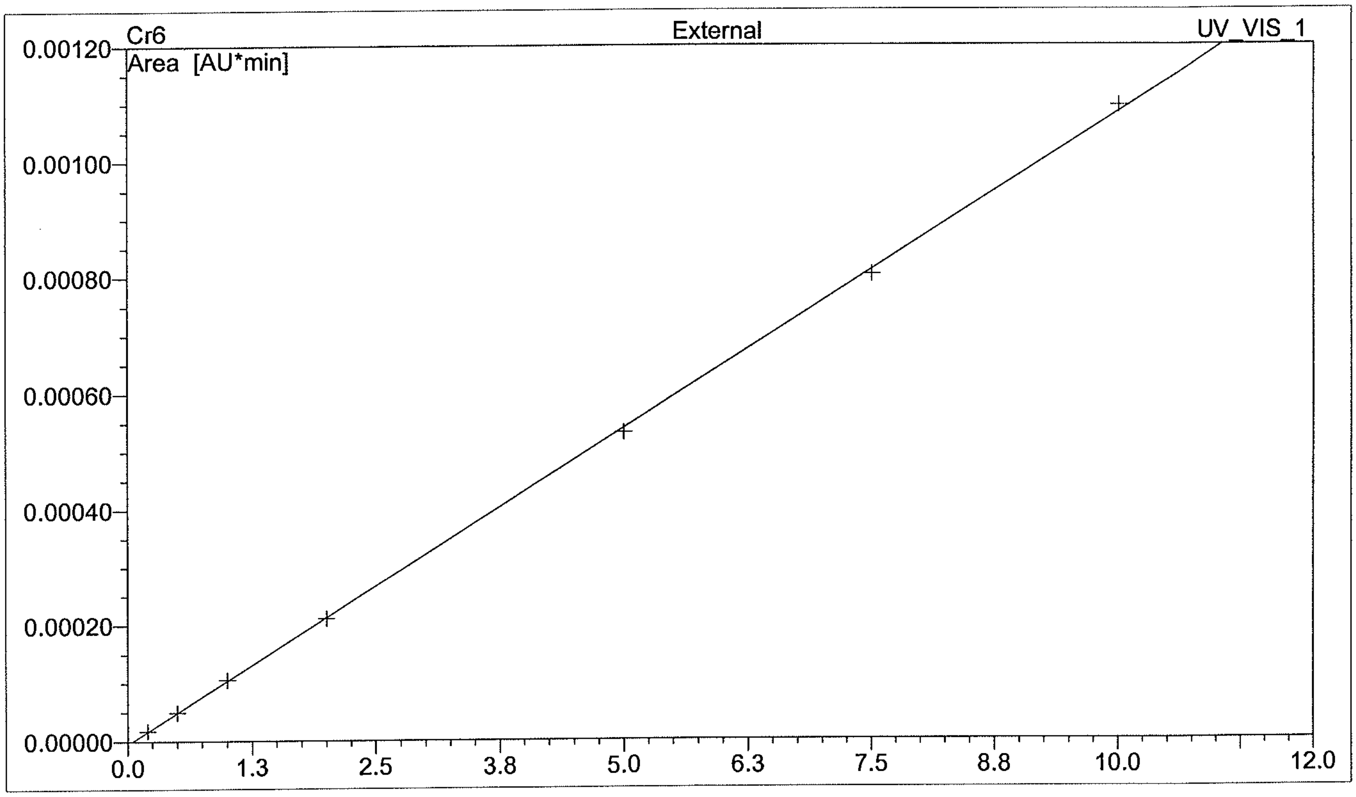
Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

9 S-7

10 PPB

Sample Name:	**S-7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/10/2018 10:38**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square	Offset	Slope	Curve
1	4.41	Cr6	0LOff	7	0.9998	-0.0000051	0.0001089	0.0000
Average:					0.9998	0.0000	0.0001	0.0000

LE 5/24/18

Report/Calibration(Batch)

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

SECOND SOURCE VERIFICATION

IC RESULT FORM CalVersion : CR6.E10/IE10 (2018)

LFID	LSID	SelCmp	Cr6	DateTime	DF
IE11001	IB	C	ND	05/10/1809:15	1
IE11002	S-0	C	ND	05/10/1809:25	1
IE11003	S-1	C	0.209	05/10/1809:35	1
IE11004	S-2	C	0.502	05/10/1809:46	1
IE11005	S-3	C	1.014	05/10/1809:56	1
IE11006	S-4	C	1.983	05/10/1810:07	1
IE11007	S-5	C	4.927	05/10/1810:17	1
IE11008	S-6	C	7.420	05/10/1810:27	1
IE11009	S-7	C	10.098	05/10/1810:38	1
IE11010	ICV	C	99%	05/10/1810:48	1
IE11011	ICB	C	ND	05/10/1810:59	1
IE11012	LOW LEVEL	C	0.201	05/10/1811:11	1

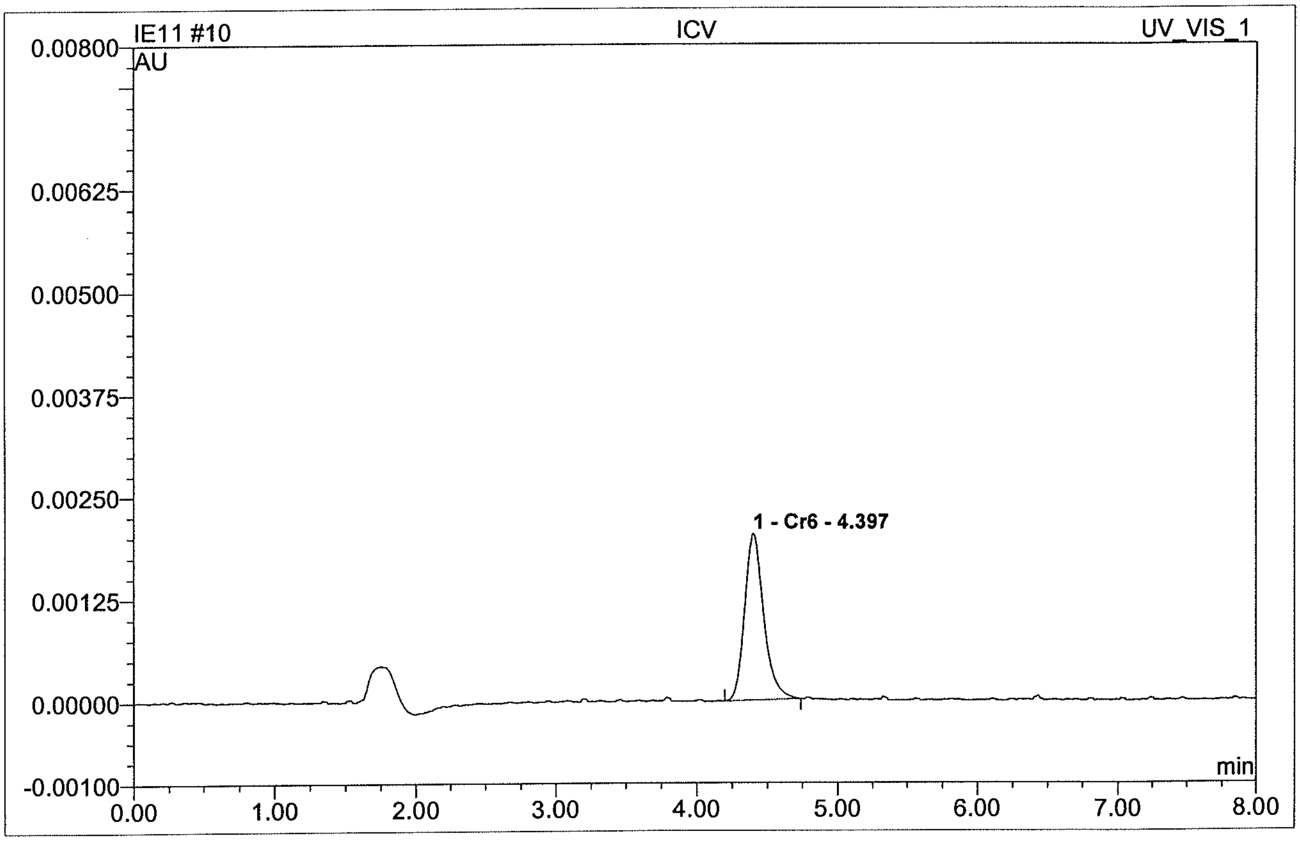
Method: IC59E10
Solvent: buffer (SW4-04-16-01)

LE
5/24/18

IE11 010 ICV

3.0 PPB

Sample Name:	**ICV**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 10:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.40	Cr6	0.0020210	0.0003193	100.00	2.978	BMB ✓
Total:			0.002	0.000	100.00	2.978	

$$\text{conc.} = \frac{\text{Area} - \text{offset}}{\text{slope}} = 2.978 \text{ ppb}$$

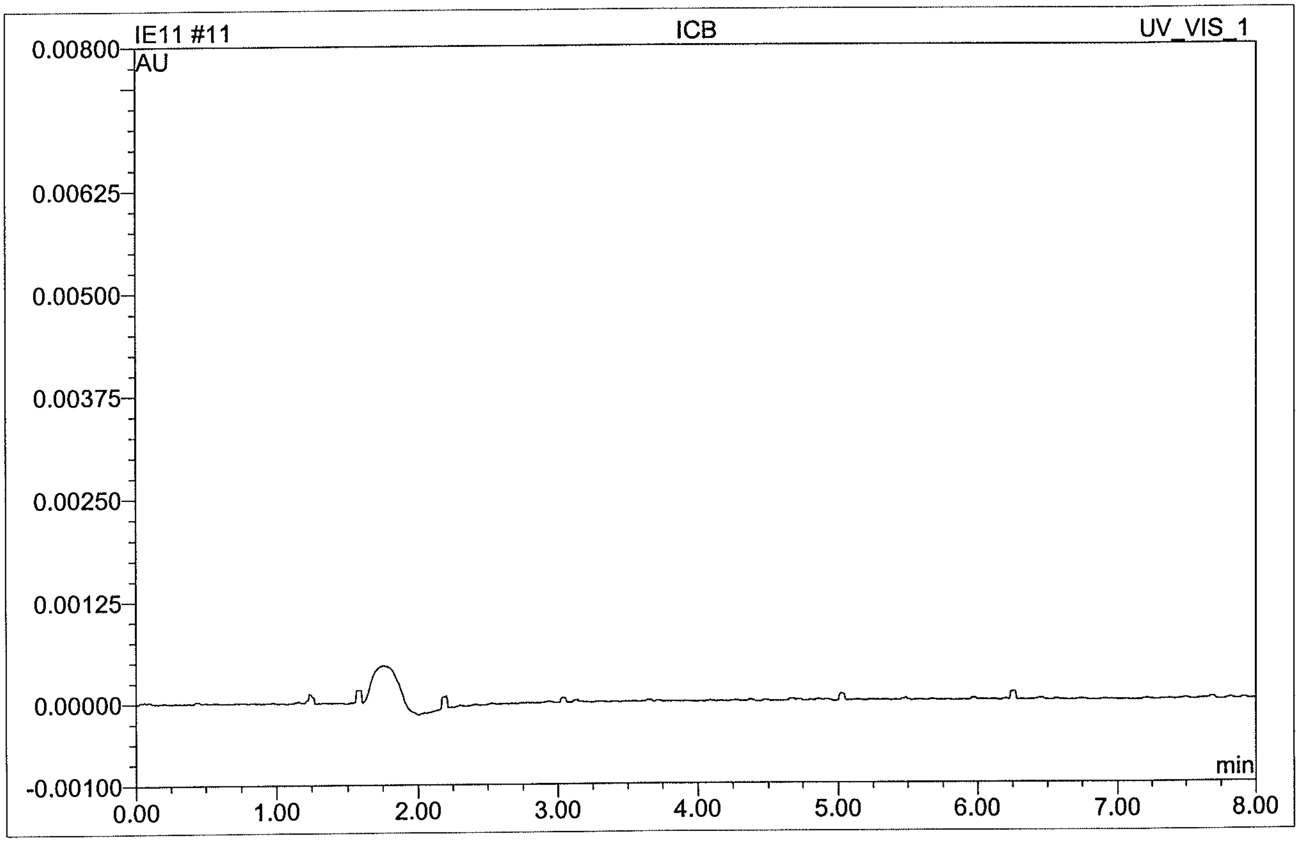
LB 5/24/18

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

Report/Integration

IE11 011 ICB

Sample Name:	**ICB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 10:59**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

LE 5/24/18

DAILY CALIBRATION(S)

Continuing Calibration Summary Form

Client : ARCADIS
Project : PG&E TOPOCK-GMP
SDG : 18E042
Method : E218.6
QuantMethod : IC59E10
InstrumentID: 59
Parameter : HEXAVALENT CHROMIUM

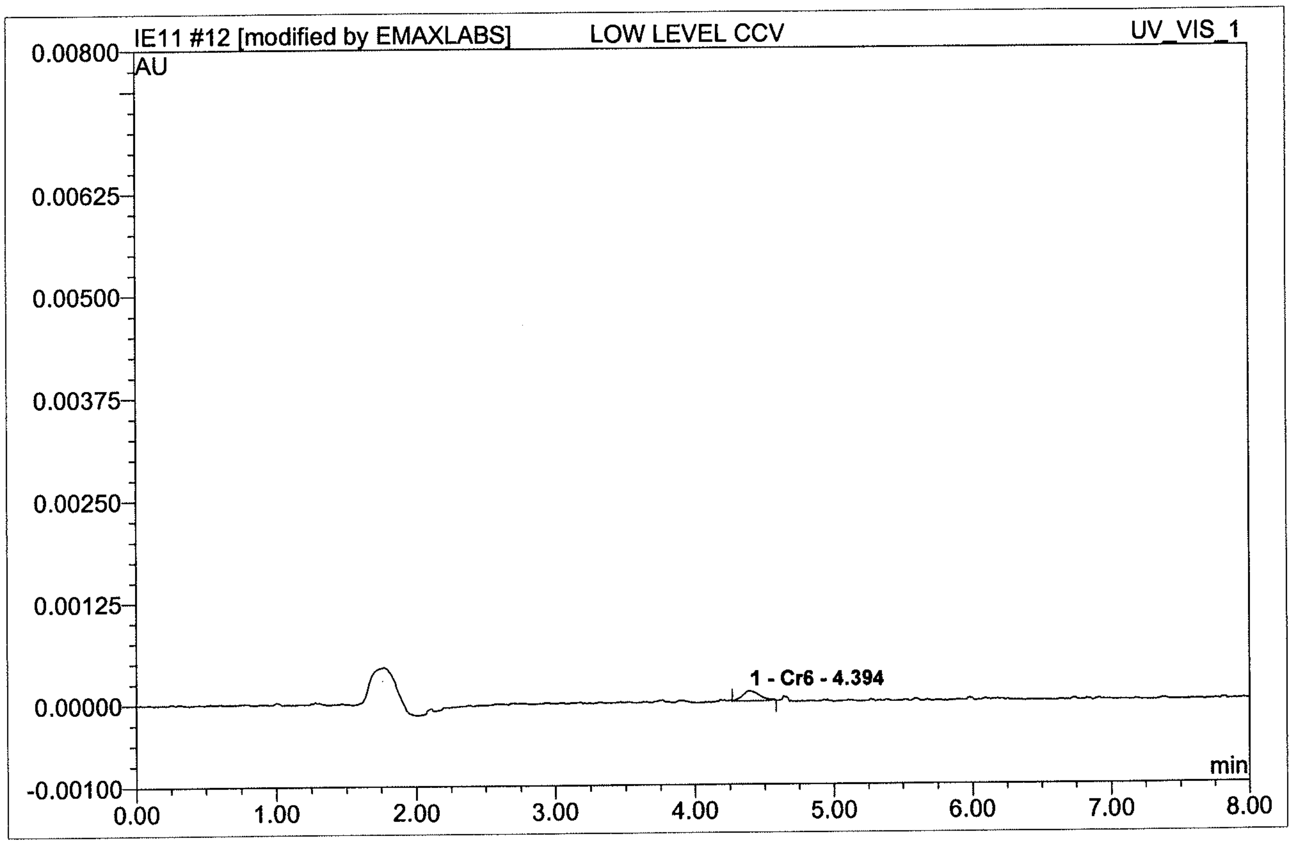
LFID	LSID	DF	Expected	Result	Unit	%Rec	AnalysisDateTime
IE11012	LOW CCV	1	0.2	0.201	ug/L	101	05/10/1811:11
IE11013	CCV1	1	2	1.984	ug/L	99	05/10/1811:21
IE11025	CCV3	1	2	1.991	ug/L	100	05/10/1813:26
IE11037	CCV5	1	2	1.968	ug/L	98	05/10/1815:40
IE11048	CCV7	1	2	1.997	ug/L	100	05/10/1817:35
IE11058	CCV9	1	2	1.974	ug/L	99	05/10/1819:19

CCV Acceptance Criteria: 95-105%

IE11 012 LOW LEVEL CCV

0.2 PPB

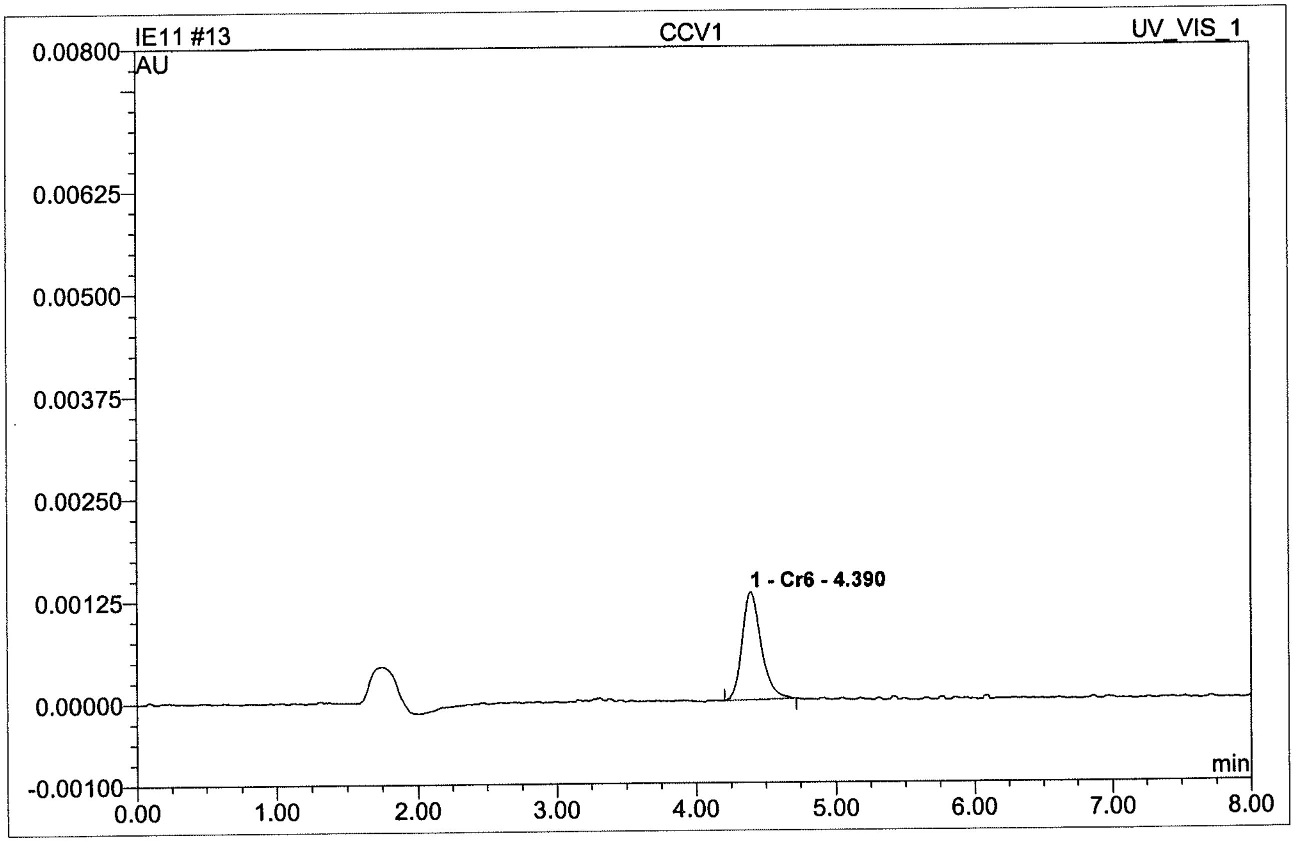
Sample Name:	**LOW LEVEL CCV**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 11:11**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.39	Cr6	0.0001210	0.0000168	100.00	0.201	BMB*
Total:			0.000	0.000	100.00	0.201	

IE11 013 CCV1

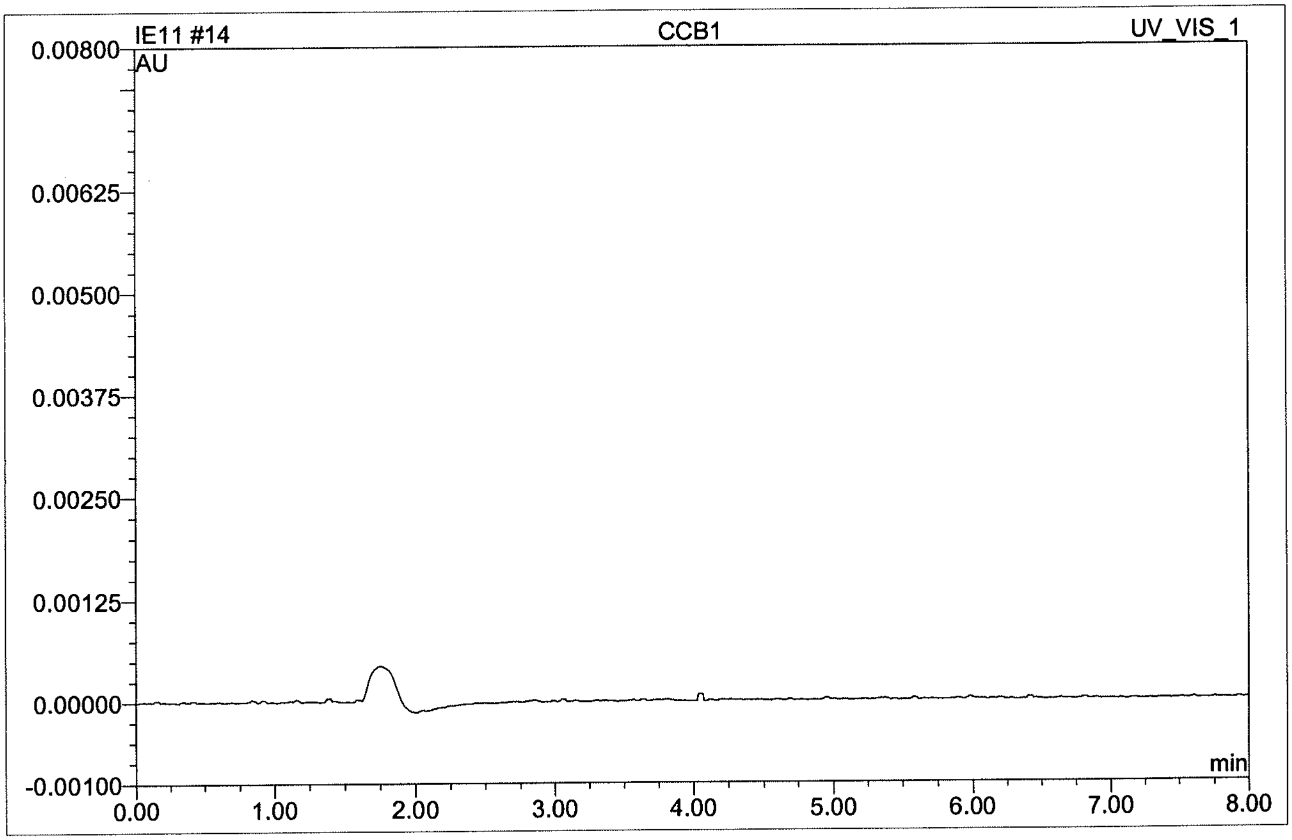
Sample Name:	**CCV1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 11:21**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.39	Cr6	0.0013160	0.0002110	100.00	1.984	BMB
Total:			0.001	0.000	100.00	1.984	

IE11 014 CCB1

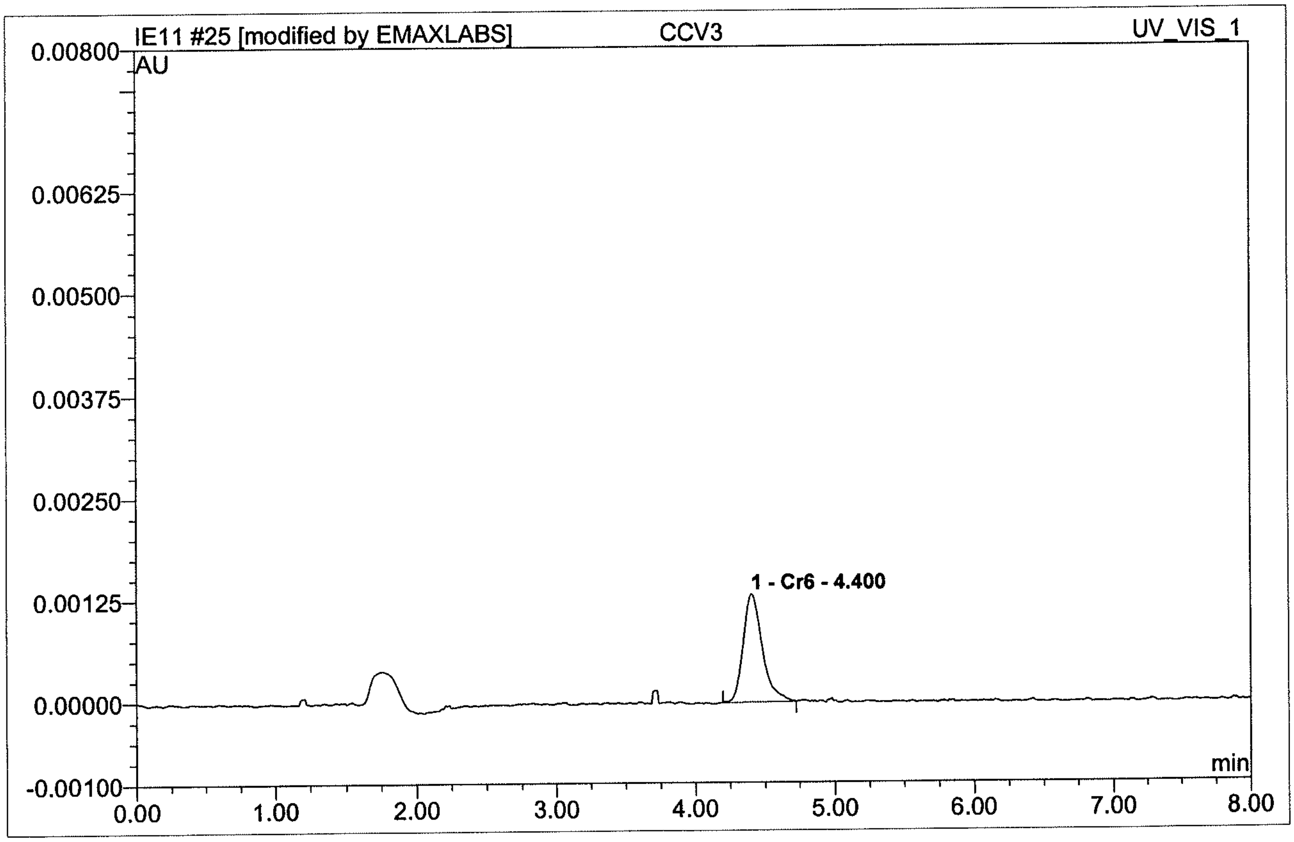
Sample Name:	**CCB1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 11:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 025 CCV3

Sample Name:	**CCV3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 13:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



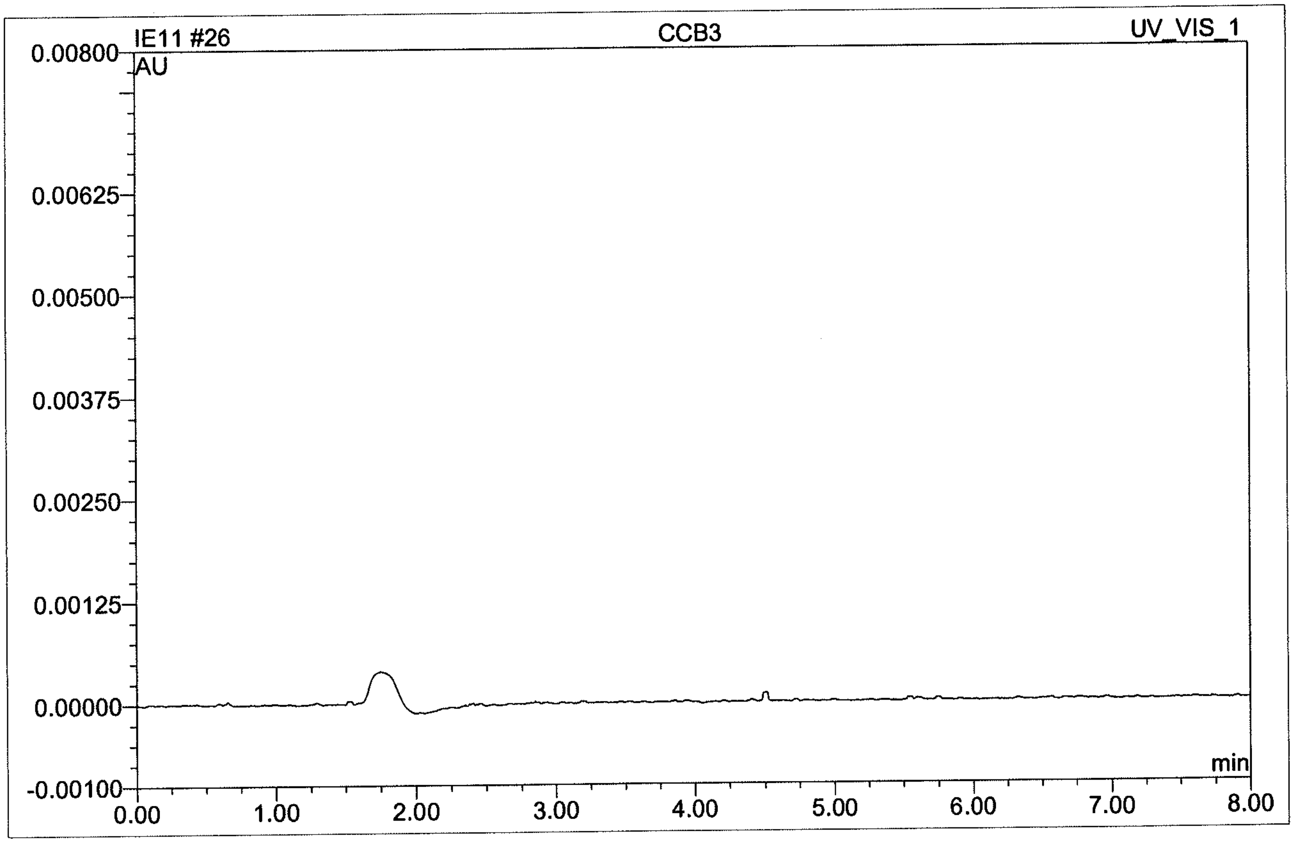
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.40	Cr6	0.0013200	0.0002118	100.00	1.991	BMB* ✓
Total:			0.001	0.000	100.00	1.991	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 026 CCB3

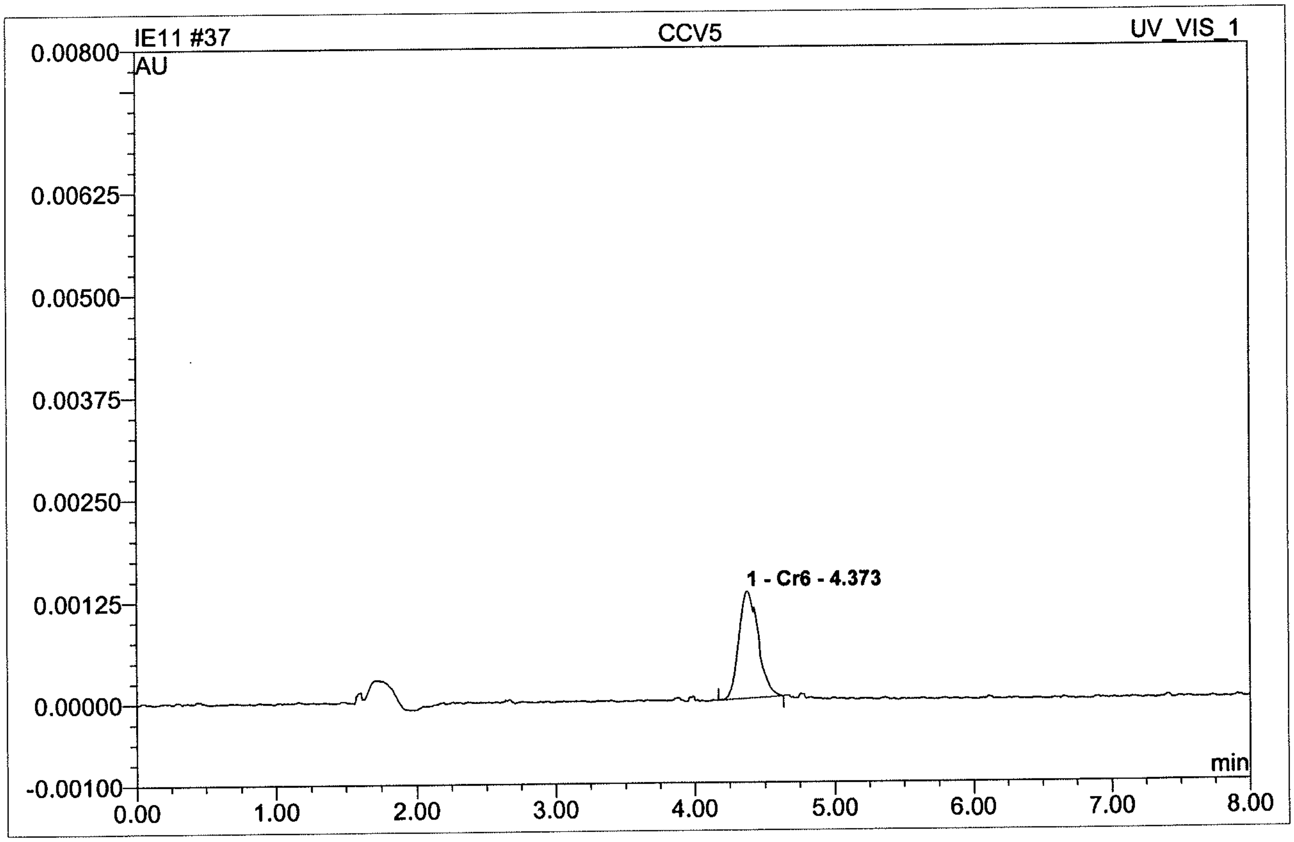
Sample Name:	**CCB3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 13:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 037 CCV5

Sample Name:	**CCV5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 15:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



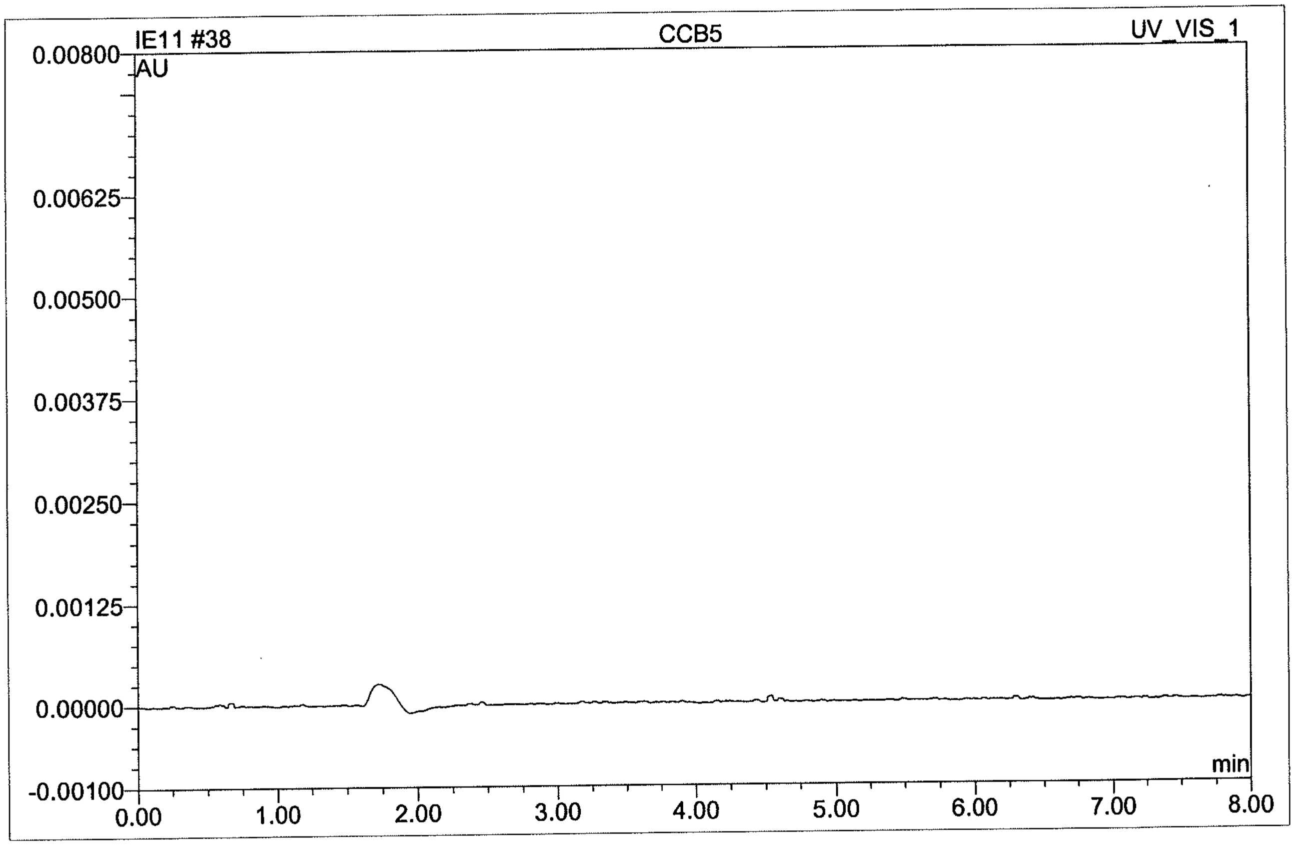
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.37	Cr6	0.0013110	0.0002093	100.00	1.968	BMB
Total:			0.001	0.000	100.00	1.968	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 038 CCB5

Sample Name:	**CCB5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 15:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



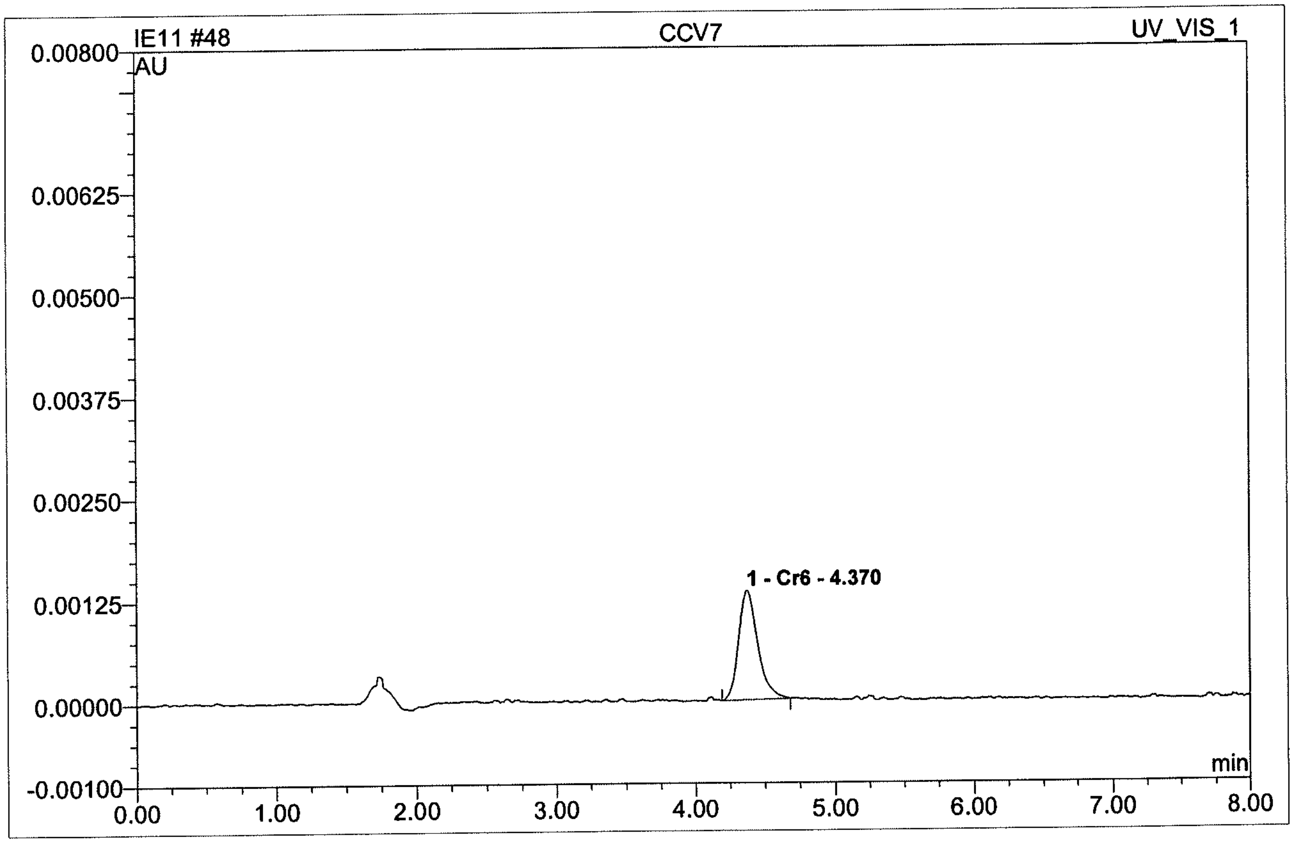
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

Report/Integration

IE11 048 CCV7

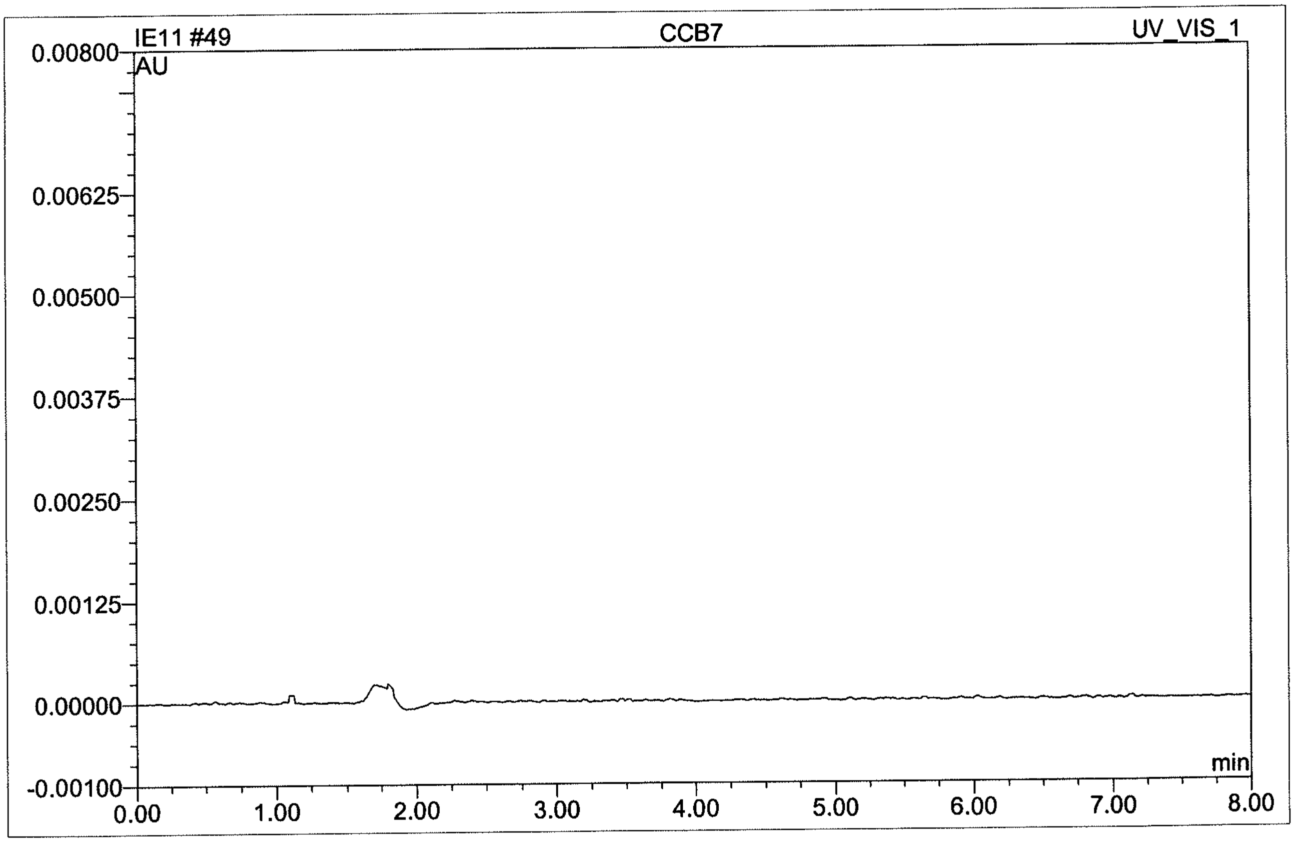
Sample Name:	**CCV7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 17:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.37	Cr6	0.0013330	0.0002124	100.00	1.997	BMB
Total:			0.001	0.000	100.00	1.997	

IE11 049 CCB7

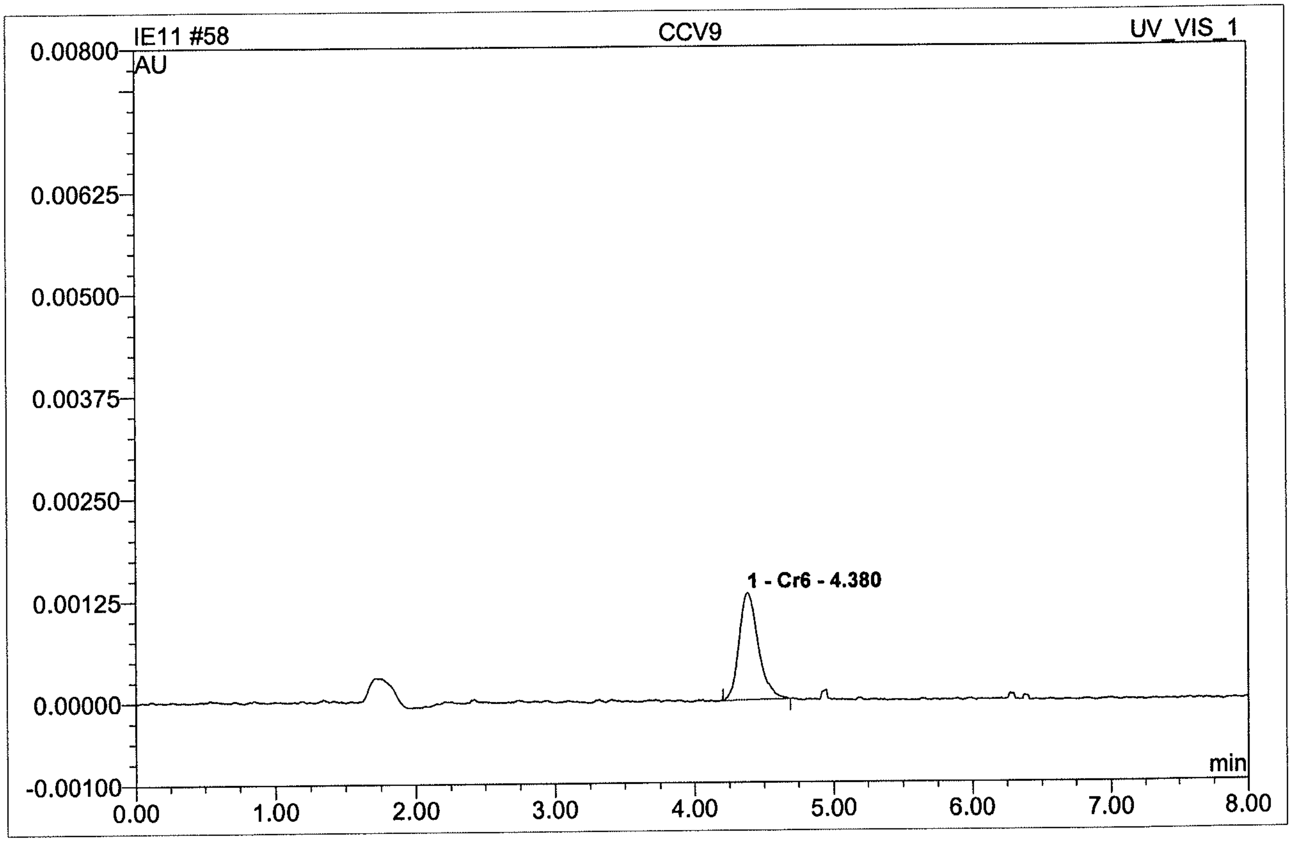
Sample Name:	**CCB7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 17:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 058 CCV9

Sample Name:	**CCV9**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 19:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



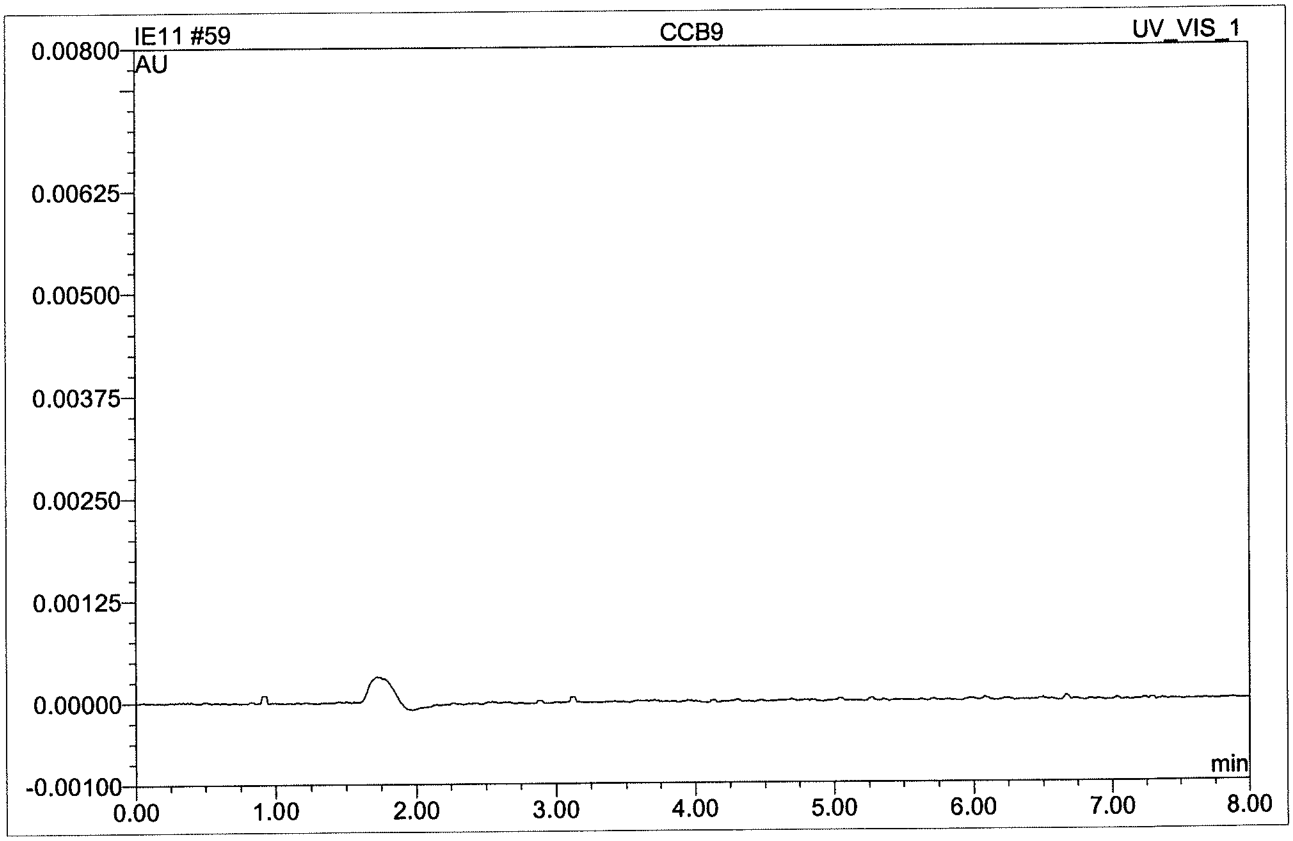
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.38	Cr6	0.0013110	0.0002099	100.00	1.974	BMB
Total:			0.001	0.000	100.00	1.974	

Report/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.70 SP2a Build 1871

IE11 059 CCB9

Sample Name:	**CCB9**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E10**	*Dilution Factor:*	**1**
Recording Time:	**5/10/2018 19:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
HEXAVALENT CHROMIUM IC

Note: For samples and relevant QCs/Standards analyzed, refer to attached analytical sequence.

Comments:

1,5 Diphenylcarbohydrazide : 0.5 g SW9A-04-049

MeOH : 100 ml SW1A-006-07-09

H_2SO_4 : 28 ml ↓ -08-20

$(NH_4)_2SO_4$: 66 g SW9A-04-054

NH_4OH : 13 ml ↓ -048

☐ **pH Adjusted Water ID #:**
(range 9.3-9.5)

☑ **Buffer** (10 mL → 100 mL) SW4-04-16-01

Reagent Water ID #: RW1-17-004

Linear Range (ppb): S0-0
S-1 - 0.2
S-2 - 0.5
S-3 - 1.0
S-4 - 2.0
S-5 - 5.0
S-6 - 7.5
S-7 - 10.0

HCE013W: E042

HCE015W: E091

Column: Dionex Ionpac AS7 (4x250 mm) serial 170821297
guard column: Dionex Ionpac NG1 (4x35 mm) serial 161024138
wavelength: 530 nm
flow rate: 1.0 mL/min
injection: 250 uL

Book #:	A59-043
Instrument No.:	59
Pipette ID:	SW9A-04-017 ✓
	SW9A-04-025 ✓
	SW9A-04-052 ✓
Balance ID:	10601202
Analytical Sequence:	IE11
Method File:	IC59E10
Analytical Batch:	HCE013W/015W

SOP #	Rev. #
☑ EMAX-218.6	6
☑ EMAX-7199	5
☐ EMAX-	

STANDARDS ID	
ICAL	SW6B-001-10-01
ICV	-10-02
CCV	-10-04
LCS	-10-05
MS	-06-25 (100 ppb)

Low Level CCV SW6B-001-10-03 (0.20 ppb)

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ CHROMELEON	
☐	

5 mL vial kit Lot #: 038008 Snap-Seal Container
0.45 µm filter lot #: 71610103 4 oz: 21117007
0.2 µm filter lot #: 1.5 oz: 21117007

Analyzed By: AS
Date: 5/10/18

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2018
Timebase: DX600
#Samples: 77

Created: 5/11/2018 7:12:58 AM by EMAXLABS
Last Update: 5/11/2018 7:12:58 AM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
1	IE11	001	IB	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:15:05 AM	1.0000	BUFFER
2	IE11	002	S-0	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:25:30 AM	1.0000	
3	IE11	003	S-1	Standard	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:35:54 AM	1.0000	0.2 PPB
4	IE11	004	S-2	Standard	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:46:19 AM	1.0000	0.5 PPB
5	IE11	005	S-3	Standard	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:56:43 AM	1.0000	1.0 PPB
6	IE11	006	S-4	Standard	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:07:07 AM	1.0000	2.0 PPB
7	IE11	007	S-5	Standard	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:17:32 AM	1.0000	5.0 PPB
8	IE11	008	S-6	Standard	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:27:55 AM	1.0000	7.5 PPB
9	IE11	009	S-7	Standard	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:38:20 AM	1.0000	10 PPB
10	IE11	010	ICV	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:48:57 AM	1.0000	3.0 PPB
11	IE11	011	ICB	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:59:21 AM	1.0000	
12	IE11	012	LOW LEVEL CCV	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 11:11:13 AM	1.0000	0.2 PPB
13	IE11	013	CCV1	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 11:21:37 AM	1.0000	
14	IE11	014	CCB1	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 11:32:02 AM	1.0000	
15	IE11	015	HCE013WB	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 11:42:26 AM	1.0000	
16	IE11	016	HCE013WL	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 11:52:50 AM	1.0000	
17	IE11	017	HCE013WC	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 12:03:14 PM	1.0000	
18	IE11	018	E042-02	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 12:13:38 PM	1.0000	
19	IE11	019	E042-02M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 12:24:02 PM	1.0000	
20	IE11	020	E042-02S	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 12:34:50 PM	1.0000	
21	IE11	021	E042-04	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 12:45:15 PM	1.0000	
22	IE11	022	E042-04M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 12:55:39 PM	1.0000	
23	IE11	023	E042-06	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 1:06:04 PM	1.0000	
24	IE11	024	E042-06M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 1:16:28 PM	1.0000	
25	IE11	025	CCV3	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 1:26:52 PM	1.0000	
26	IE11	026	CCB3	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 1:37:16 PM	1.0000	
27	IE11	027	E042-08	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 1:50:09 PM	1.0000	

FINAL AJ

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2018
Timebase: DX600
#Samples: 77

Created: 5/11/2018 7:12:58 AM by EMAXLABS
Last Update: 5/11/2018 7:12:58 AM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
28	IE11	028	E042-08M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 2:00:33 PM	1.0000	
29	IE11	029	E042-08S	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 2:11:40 PM	1.0000	
30	IE11	030	E042-09	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 2:22:04 PM	1.0000	
31	IE11	031	E042-09M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 2:38:29 PM	1.0000	
32	IE11	032	E042-10	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 2:48:53 PM	1.0000	
33	IE11	033	E042-10M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 2:59:17 PM	1.0000	
34	IE11	034	E042-11	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 3:09:41 PM	1.0000	
35	IE11	035	E042-11M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 3:20:06 PM	1.0000	
36	IE11	036	E042-12	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 3:30:30 PM	1.0000	
37	IE11	037	CCV5	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 3:40:54 PM	1.0000	
38	IE11	038	CCB5	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 3:51:18 PM	1.0000	
39	IE11	039	E042-12M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 4:01:42 PM	1.0000	
40	IE11	040	E042-04I	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 4:12:06 PM	5.0000	D=5
41	IE11	041	E042-04IM	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 4:22:31 PM	5.0000	D=5
42	IE11	042	E042-06I	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 4:32:55 PM	5.0000	D=5
43	IE11	043	E042-06IM	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 4:43:19 PM	5.0000	D=5
44	IE11	044	E042-10I	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 4:53:43 PM	5.0000	D=5
45	IE11	045	E042-10IM	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 5:04:07 PM	5.0000	D=5
46	IE11	046	E042-11I	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 5:14:31 PM	5.0000	D=5
47	IE11	047	E042-11IM	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 5:24:55 PM	5.0000	D=5
48	IE11	048	CCV7	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 5:35:19 PM	1.0000	
49	IE11	049	CCB7	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 5:45:43 PM	1.0000	
50	IE11	050	E042-01	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 5:56:07 PM	1.0000	
51	IE11	051	E042-01M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 6:06:32 PM	1.0000	
52	IE11	052	E042-03	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 6:16:56 PM	1.0000	
53	IE11	053	E042-03M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 6:27:20 PM	1.0000	
54	IE11	054	E042-05	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 6:37:45 PM	1.0000	

FINAL AS

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2018
Timebase: DX600
#Samples: 77

Created: 5/11/2018 7:12:58 AM by EMAXLABS
Last Update: 5/11/2018 7:12:58 AM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
55	IE11	055	E042-05M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 6:48:09 PM	1.0000	
56	IE11	056	E042-07	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 6:58:33 PM	1.0000	
57	IE11	057	E042-07M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 7:08:57 PM	1.0000	
58	IE11	058	CCV9	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 7:19:21 PM	1.0000	
59	IE11	059	CCB9	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 7:29:45 PM	1.0000	
60	IE11	060	HCE015WB	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 7:40:09 PM	1.0000	
61	IE11	061	HCE015WL	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 7:50:34 PM	1.0000	
62	IE11	062	HCE015WC	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 8:00:58 PM	1.0000	
63	IE11	063	E091-01	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 8:11:22 PM	1.0000	
64	IE11	064	E091-01M	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 8:21:46 PM	1.0000	
65	IE11	065	E091-01S	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 8:32:10 PM	1.0000	
66	IE11	066	E091-02	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 8:42:34 PM	1.0000	
67	IE11	067	E091-03	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 8:52:59 PM	1.0000	
68	IE11	068	E091-04	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:03:23 PM	1.0000	
69	IE11	069	E091-05	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:13:47 PM	1.0000	
70	IE11	070	CCV11	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:24:11 PM	1.0000	
71	IE11	071	CCB11	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:34:35 PM	1.0000	
72	IE11	072	E091-06	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:45:00 PM	1.0000	
73	IE11	073	E091-07	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 9:55:24 PM	1.0000	
74	IE11	074	E091-08	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:05:48 PM	1.0000	
75	IE11	075	E091-09	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:16:13 PM	1.0000	
76	IE11	076	CCV13	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:26:37 PM	1.0000	
77	IE11	077	CCB13	Unknown	250.0	Cr6 Program	IC59E10	Finished	5/10/2018 10:37:01 PM	1.0000	

FINAL

AS

SAMPLE PRESERVATION LOG(S)

EMAX LABORATORIES, INC.

pH ADJUSTMENTS/SAMPLE PRESERVATION LOG FOR HEXAVALENT CHROMIUM

Book #: PHC-017

SOP ☑ EMAX-218.6 Rev. 6 ☐ EMAX-7199 Rev. 5

Matrix: W Start Date: 5/7/18 Time: 12:45 End Date: 5/7/18 Time: ~~16:29~~ 17:15

Sample Prep ID	Lab Sample ID	Initial pH	Final pH	Notes
01	E042-01	9.36	9.36	no adjustment needed; Cr
02	-02	9.15	9.15	
03	-03	9.31	9.31	
04	-04	9.16	9.16	
05	-05	9.31	9.31	
06	-06	9.25	9.25	
07	-07	9.30	9.30	
08	-08	9.35	9.35	
09	-09	9.21	9.21	
10	-10	9.01	9.01	
11	-11	8.39	9.10	0.400 mL added →40 mL; Cr
12	-12	8.43	9.12	0.400 mL added →40 mL; Cr
13	E480-02	9.50	9.50	no adjustment needed; Cr
14	E482-01	9.50	9.50	
15				
16				
17				
18				
19				
20			AS	
21			5/7/18	
22				
23				
24				
25				

Standards	ID	pH
Buffer 7	SW1-01-945	7.00
Buffer 10	-965	10.0
Check pH Buffer (8)	-972	7.97
pH meter	F7	

Reagent	Standard ID #
NaOH	SW4-03-49-02
$(NH_4)_2SO_4/NH_4OH$	~~SW4-03-49-02~~ AS 5/7/18
Reagent Water	

Legend:

Color	Texture	Clarity	Artifacts
Bu = Blue Bl = Black	Cs = Coarse	Cr = Clear	Rk = Rocks
Bn = Brown Gn = Green	Md = Medium	Cy = Cloudy	Sl = Shale
Og = Orange Rd = Red	Fn = Fine	Td = Turbid	Vg = Vegetation
Yw = Yellow			

☑ Samples were received with preservation

Comments:

Prepared By: AS

Standard Added By: AS

Checked By: AS

RETENTION TIME WINDOW

RETENTION TIME WINDOW

METHOD 218.6/7199

Lab Name:	EMAX	**METHOD:**	EMAX-218.6/7199
Instrument ID:	DX500IC59	**IC COLUMN:**	AS7/AG7 / AS7/NG1
		COLUMN SIZE:	4x250mm

Compound	Ical Mean RT	from	to	Retention Time Window
CHROMIUM VI	**4.40**	4.19	4.62	**0.213**

IC59E10

LE 5/24/18

April 17, 2018

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

TEL: (916) 786-3302
FAX:

Workorder No.: N029506

RE: PG&E Topock-PMP

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 03, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Libucan for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock-PMP
Lab Order:	N029506

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N029506-001D-MS1 and N029506-001D-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N029506-002D-MS2 and N029506-002D-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock-PMP
Lab Order: N029506
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N029506-001A	PE-01-0418	Groundwater	4/3/2018 7:50:00 AM	4/3/2018	4/17/2018
N029506-001B	PE-01-0418	Groundwater	4/3/2018 7:50:00 AM	4/3/2018	4/17/2018
N029506-001C	PE-01-0418	Groundwater	4/3/2018 7:50:00 AM	4/3/2018	4/17/2018
N029506-001D	PE-01-0418	Groundwater	4/3/2018 7:50:00 AM	4/3/2018	4/17/2018
N029506-002A	TW-03D-0418	Groundwater	4/3/2018 7:45:00 AM	4/3/2018	4/17/2018
N029506-002B	TW-03D-0418	Groundwater	4/3/2018 7:45:00 AM	4/3/2018	4/17/2018
N029506-002C	TW-03D-0418	Groundwater	4/3/2018 7:45:00 AM	4/3/2018	4/17/2018
N029506-002D	TW-03D-0418	Groundwater	4/3/2018 7:45:00 AM	4/3/2018	4/17/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180404F**	QC Batch: **R123114**			PrepDate			Analyst: **LR**
Specific Conductance	2600	0.10	0.10		umhos/cm	1	4/4/2018 10:40 AM

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180404F**	QC Batch: **R123114**		PrepDate				Analyst: **LR**
Specific Conductance	8300	0.10	0.10		umhos/cm	1	4/4/2018 10:40 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N029506-002BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123114**
Client ID: **ZZZZZZ** Batch ID: **R123114** TestNo: **EPA 120.1** Analysis Date: **4/4/2018** SeqNo: **2978268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	8290.000	0.10						8260	0.363	2	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
SM4500-H+B							
RunID: **NV00922-WC_180404E** QC Batch: **R123113** PrepDate							Analyst: **LR**
pH	7.5	0.10	0.10	H	pH Units	1	4/4/2018 10:22 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	4/4/2018 10:22 AM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180404E** QC Batch: **R123113**				PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	4/4/2018 10:22 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	4/4/2018 10:22 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N029506-001BDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **123113**
Client ID: **ZZZZZZ** Batch ID: **R123113** TestNo: **SM4500-H+B** Analysis Date: **4/4/2018** SeqNo: **2978259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.560	0.10						7.540	0.265	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180404I**	QC Batch: **67464**			PrepDate		**4/4/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1700	20	20		mg/L	1	4/4/2018 12:56 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180404I**	QC Batch: **67464**			PrepDate		**4/4/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4800	50	50		mg/L	1	4/4/2018 12:56 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-67464** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **4/4/2018** RunNo: **123117**
Client ID: **LCSW** Batch ID: **67464** TestNo: **SM2540C** Analysis Date: **4/4/2018** SeqNo: **2978300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	999.000	10	1000	0	99.9	80	120				

Sample ID **MB-67464** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **4/4/2018** RunNo: **123117**
Client ID: **PBW** Batch ID: **67464** TestNo: **SM2540C** Analysis Date: **4/4/2018** SeqNo: **2978301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N029506-002BDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **4/4/2018** RunNo: **123117**
Client ID: **ZZZZZZ** Batch ID: **67464** TestNo: **SM2540C** Analysis Date: **4/4/2018** SeqNo: **2978304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4995.000	50						4835	3.26	5	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **NV00922-ICP2_180412F** QC Batch: **67564** PrepDate **4/11/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Calcium	130000	85	500		µg/L	1	4/12/2018 11:17 PM
Iron	36	18	20		µg/L	1	4/12/2018 11:17 PM
Magnesium	31000	48	100		µg/L	1	4/12/2018 11:17 PM
Sodium	390000	660	12000		µg/L	25	4/16/2018 04:32 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180412F**	QC Batch: **67564**			PrepDate **4/11/2018**			Analyst: **CEI**
Calcium	260000	85	500		µg/L	1	4/12/2018 11:56 PM
Iron	ND	18	20		µg/L	1	4/12/2018 11:56 PM
Magnesium	31000	48	100		µg/L	1	4/12/2018 11:56 PM
Sodium	1500000	3300	62000		µg/L	125	4/16/2018 04:39 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-67564** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/11/2018** RunNo: **123355**
Client ID: **PBW** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/12/2018** SeqNo: **2992093**

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

Sample ID **LCS1-67564** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/11/2018** RunNo: **123355**
Client ID: **LCSW** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/12/2018** SeqNo: **2992094**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9239.601	500	10000	0	92.4	85	115				
Iron	104.009	20	100.0	0	104	85	115				
Magnesium	9653.835	100	10000	0	96.5	85	115				

Sample ID **N029506-001D-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/11/2018** RunNo: **123355**
Client ID: **ZZZZZZ** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/12/2018** SeqNo: **2992100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	146435.652	500	10000	131400	151	75	125				S
Iron	141.499	20	100.0	35.53	106	75	125				
Magnesium	41879.578	100	10000	31100	108	75	125				

Sample ID **N029506-001D-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/11/2018** RunNo: **123355**
Client ID: **ZZZZZZ** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/12/2018** SeqNo: **2992101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	147208.369	500	10000	131400	159	75	125	146400	0.526	20	S
Iron	142.886	20	100.0	35.53	107	75	125	141.5	0.975	20	
Magnesium	41904.147	100	10000	31100	108	75	125	41880	0.0586	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-67564** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/11/2018** RunNo: **123400**
Client ID: **PBW** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995943**

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

Sample ID **LCS2-67564** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/11/2018** RunNo: **123400**
Client ID: **LCSW** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	21648.742	500	20000	0	108	85	115				

Sample ID **N029506-002D-MS2** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/11/2018** RunNo: **123400**
Client ID: **ZZZZZZ** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995950**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1783062.781	62000	20000	1486000	1480	75	125				S

Sample ID **N029506-002D-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/11/2018** RunNo: **123400**
Client ID: **ZZZZZZ** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1780517.446	62000	20000	1486000	1470	75	125	1783000	0.143	20	S

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180413B** QC Batch: **67642**				PrepDate **4/13/2018**			Analyst: **CEI**
Manganese	530	1.3	2.5		µg/L	5	4/13/2018 01:44 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180413B**	QC Batch: **67642**			PrepDate	**4/13/2018**		Analyst: **CEI**
Manganese	19	0.26	0.50		µg/L	1	4/13/2018 02:01 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-67642** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **4/13/2018** RunNo: **123377**
Client ID: **PBW** Batch ID: **67642** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993979**

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

Sample ID **LCS-67642** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **4/13/2018** RunNo: **123377**
Client ID: **LCSW** Batch ID: **67642** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	102.656	0.50	100.0	0	103	85	115				

Sample ID **N029640-001E-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **4/13/2018** RunNo: **123377**
Client ID: **ZZZZZZ** Batch ID: **67642** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	212.682	2.5	100.0	129.2	83.5	75	125				

Sample ID **N029640-001E-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **4/13/2018** RunNo: **123377**
Client ID: **ZZZZZZ** Batch ID: **67642** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	218.144	2.5	100.0	129.2	89.0	75	125	212.7	2.54	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180404B**	QC Batch: **R123130**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/4/2018 04:03 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180413A**	QC Batch: **67642**			PrepDate		**4/13/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	4/13/2018 01:38 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180404B**	QC Batch: **R123130**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	570	3.3	20		µg/L	100	4/4/2018 04:22 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180413A**	QC Batch: **67642**			PrepDate	**4/13/2018**		Analyst: **CEI**
Chromium	550	0.65	5.0		µg/L	5	4/13/2018 02:06 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **MB-67642** SampType: **MBLK** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **4/13/2018** RunNo: **123376**
Client ID: **PBW** Batch ID: **67642** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993726**

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

Sample ID **LCS-67642** SampType: **LCS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **4/13/2018** RunNo: **123376**
Client ID: **LCSW** Batch ID: **67642** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.364	1.0	10.00	0	104	85	115				

Sample ID **N029640-001E-MS** SampType: **MS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **4/13/2018** RunNo: **123376**
Client ID: **ZZZZZZ** Batch ID: **67642** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993745**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	24.701	1.0	10.00	16.35	83.5	75	125				

Sample ID **N029640-001E-MSD** SampType: **MSD** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **4/13/2018** RunNo: **123376**
Client ID: **ZZZZZZ** Batch ID: **67642** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993747**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	25.004	1.0	10.00	16.35	86.5	75	125	24.70	1.22	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	
Work Order:	N029506	
Project:	PG&E Topock-PMP	

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R123130** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **LCSW** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.214	0.20	5.000	0	104	90	110				

Sample ID **MB-R123130** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **PBW** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978623**

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

Sample ID **N029506-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **ZZZZZZ** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0	106	90	110				

Sample ID **N029506-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **ZZZZZZ** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1077.790	20	500.0	565.5	102	90	110				

Sample ID **N029506-002AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **ZZZZZZ** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1073.890	20	500.0	565.5	102	90	110	1078	0.363	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N029506
Project:	PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N029507-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**

Client ID: **ZZZZZZ** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.767	0.20						2.753	0.482	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180406F**	QC Batch: **R123274**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	210	1.2	5.0		mg/L	1	4/6/2018 01:20 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180406F** QC Batch: **R123274**				PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	170	1.2	5.0		mg/L	1	4/6/2018 01:20 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R123274** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123274**
Client ID: **LCSW** Batch ID: **R123274** TestNo: **SM 2320 B** Analysis Date: **4/6/2018** SeqNo: **2987733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	97.872	5.0	100.0	0	97.9	85	115				

Sample ID **MB-R123274** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123274**
Client ID: **PBW** Batch ID: **R123274** TestNo: **SM 2320 B** Analysis Date: **4/6/2018** SeqNo: **2987734**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N029506-001BDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123274**
Client ID: **ZZZZZZ** Batch ID: **R123274** TestNo: **SM 2320 B** Analysis Date: **4/6/2018** SeqNo: **2987736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	212.766	5.0						206.4	3.05	30	

Sample ID **N029506-001BMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123274**
Client ID: **ZZZZZZ** Batch ID: **R123274** TestNo: **SM 2320 B** Analysis Date: **4/6/2018** SeqNo: **2987737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	287.234	5.0	100.0	206.4	80.9	75	125				

Sample ID **N029506-001BMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123274**
Client ID: **ZZZZZZ** Batch ID: **R123274** TestNo: **SM 2320 B** Analysis Date: **4/6/2018** SeqNo: **2987738**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	289.362	5.0	100.0	206.4	83.0	75	125	287.2	0.738	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180404A**	QC Batch: **R123105**			PrepDate			Analyst: **RAB**
Chloride	640	1.8	100		mg/L	200	4/4/2018 07:32 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180404A**	QC Batch: **R123105**			PrepDate			Analyst: **RAB**
Sulfate	320	1.1	25		mg/L	50	4/4/2018 10:20 PM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180404A**	QC Batch: **R123105**			PrepDate			Analyst: **RAB**
Chloride	2600	4.6	250		mg/L	500	4/4/2018 07:47 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180404A**	QC Batch: **R123105**			PrepDate			Analyst: **RAB**
Sulfate	570	1.1	25		mg/L	50	4/4/2018 08:48 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R123105_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **PBW** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977644**

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

Sample ID **LCS-R123105_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **LCSW** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.031	0.50	2.000	0	102	90	110				

Sample ID **N029506-002BDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **ZZZZZZ** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2600.800	250						2611	0.376	20	

Sample ID **N029506-002BMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **ZZZZZZ** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3664.150	250	1000	2611	105	80	120				

Sample ID **N029506-002BMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **ZZZZZZ** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3682.900	250	1000	2611	107	80	120	3664	0.510	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R123105_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **PBW** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977669**

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

Sample ID **LCS-R123105_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **LCSW** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.994	0.50	4.000	0	99.8	90	110				

Sample ID **N029506-002BMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **ZZZZZZ** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977682**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	766.090	25	200.0	565.7	100	80	120				

Sample ID **N029506-002BMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **ZZZZZZ** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977683**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	767.055	25	200.0	565.7	101	80	120	766.1	0.126	20	

Sample ID **N029506-002BDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **ZZZZZZ** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977686**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	563.240	25						565.7	0.430	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180406B** QC Batch: **R123161**			PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	0.057	0.032	0.050		mg/L	1	4/6/2018

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180406B** QC Batch: **R123161** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	2.0	0.16	0.25		mg/L	5	4/6/2018

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R123161** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123161**
Client ID: **PBW** Batch ID: **R123161** TestNo: **SM4500-NO3** Analysis Date: **4/6/2018** SeqNo: **2980609**

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

Sample ID **LCS-R123161** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123161**
Client ID: **LCSW** Batch ID: **R123161** TestNo: **SM4500-NO3** Analysis Date: **4/6/2018** SeqNo: **2980610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.483	0.050	0.5000	0	96.6	85	115				

Sample ID **N029506-002CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123161**
Client ID: **ZZZZZZ** Batch ID: **R123161** TestNo: **SM4500-NO3** Analysis Date: **4/6/2018** SeqNo: **2980615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.078	0.25						2.050	1.36	20	

Sample ID **N029506-002CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123161**
Client ID: **ZZZZZZ** Batch ID: **R123161** TestNo: **SM4500-NO3** Analysis Date: **4/6/2018** SeqNo: **2980616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	4.333	0.25	2.500	2.050	91.3	75	125				

Sample ID **N029506-002CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123161**
Client ID: **ZZZZZZ** Batch ID: **R123161** TestNo: **SM4500-NO3** Analysis Date: **4/6/2018** SeqNo: **2980617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	4.368	0.25	2.500	2.050	92.7	75	125	4.333	0.805	20	

Qualifiers:

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

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr. #330
Address: Roseville, CA 95661
Phone: 916.786.3302 **Fax:**
Submitted By: Jason Maha
Title: Project Manager
Signature: **Date:** 4/3/18
I hereby authorize ASSET Labs to perform the tests indicated below:
Project Name: PG&E Topock - PMP
Project Number:

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com
daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr. #330
Roseville, CA 95661
Phone: 916.786.3302 **Fax:**
Sampled By: Jason Maha
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
Signature: Date 4/3/18

Bill to: Lisa Kellog
Address: 2999 Oak Road, Suite 300
Walnut Creek, CA 94597
Email to: lisa.kellog@arcadis.com **PO#**
Phone: 951.677.0577 **Fax:**

EDD Requirement
- [ ] Excel EDD
- [ ] Geotracker
- [ ] Labspec
- [ ] Others

Specify:
Global ID:

QA/QC
- [ ] RTNE
- [ ] RWQCB
- [ ] CalTrans
- [ ] Level III
- [x] LEVEL IV
- [ ] Regulatory

Specify State:

Sampe Receipt Condition (Y / N)
1. Chilled
2. Headspace
3. Container Intact
4. Seal Present
5. IR number 7
6. Method of Cooling I ✓

Sample Temp: 2-6°

Matrix
- [x] Ground
- [ ] Sediment
- [ ] Potable
- [ ] Soil
- [ ] NPDES
- [ ] Other Solid
- [ ] Surface

Analyses Requested

Courier:
Tracking No.

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Cr+6 by SM3500	Alkalinity	pH	Chloride	Specific Conductance	Sulfate	TDS	NO2/NO3 by SM 4500	Ca, Fe, Mg, Na by EPA 200.7	Cr, Mn by 200.8						Turn Around Time	No. of container	Container Type	PRESERVATION	Remarks
1	N029506-01	~~PE-01-0218~~ PE-01-0418	4/3/18	0750	X			X	X	X	X	X	X	X	X	X	X						E	4	P	N/S	
2	-02	~~TW-03D-0218~~ TW-03D-0418	4/3/18	0745	X			X	X	X	X	X	X	X	X	X	X						E	4	P	N/S	
3																											
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

Relinquished by (Signature and Printed Name)	Date / Time	Received by (Signature and Printed Name)	Date / Time
	4/3/18 1305		4/3/18 1305
	4/3/18 1940		4/3/18 1940

Turn Around Time (TAT)
- [ ] A < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

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

Special Instruction:

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

Preservatives:

H = HCl	N = HNO_3	S = H_2SO_4	C = 4°C
Z = $Zn(AC)_2$	O = NaOH	T = $Na_2S_2O_3$	
Others/Specify:			

Container Type:

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

White = Laboratory Copy Yellow = Customer's Copy

ASSET Laboratories

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

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

Cooler Received/Opened On: 4/3/2018 — Workorder: N029506

Rep sample Temp (Deg C): 2.6 — IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA — Packing Material Used: None

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

Sample Receipt Checklist

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

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR [signature] 4/13/2018

Reviewed By: [signature] 04/17/2018

ASSET Laboratories

WORK ORDER Summary

04-Apr-18

WorkOrder: N029506

Client ID: ARCUS02

Project: PG&E Topock-PMP **QC Level:** Level IV **Date Received:** 4/3/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029506-001A	PE-01-0418	4/3/2018 7:50:00 AM	4/17/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029506-001B			4/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			4/17/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			4/17/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			4/17/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			4/17/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			4/17/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			4/17/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N029506-001C			4/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029506-001D			4/17/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			4/17/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			4/17/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			4/17/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			4/17/2018		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029506-002A	TW-03D-0418	4/3/2018 7:45:00 AM	4/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029506-002B			4/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			4/17/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			4/17/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			4/17/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			4/17/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			4/17/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			4/17/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

04-Apr-18

WorkOrder: N029506

Client ID: ARCUS02

Project: PG&E Topock-PMP **QC Level:** Level IV **Date Received:** 4/3/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029506-002C	TW-03D-0418	4/3/2018 7:45:00 AM	4/17/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029506-002D			4/17/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			4/17/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			4/17/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			4/17/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			4/17/2018		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029506-003A	FOLDER	4/17/2018	4/17/2018		EDD	Client specific project	☐	☐	☐	LAB
			4/17/2018		Folder	Folder	☐	☐	☐	LAB
			4/17/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock-PMP

ASSET Laboratories Work Order:

N029506

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N029506

April 17, 2018

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

TEL: (916) 786-3302
FAX:

Workorder No.: N029506

RE: PG&E Topock-PMP

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 03, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Libucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock-PMP
Lab Order:	N029506

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N029506-001D-MS1 and N029506-001D-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N029506-002D-MS2 and N029506-002D-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock-PMP
Lab Order: N029506
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N029506-001A	PE-01-0418	Groundwater	4/3/2018 7:50:00 AM	4/3/2018	4/17/2018
N029506-001B	PE-01-0418	Groundwater	4/3/2018 7:50:00 AM	4/3/2018	4/17/2018
N029506-001C	PE-01-0418	Groundwater	4/3/2018 7:50:00 AM	4/3/2018	4/17/2018
N029506-001D	PE-01-0418	Groundwater	4/3/2018 7:50:00 AM	4/3/2018	4/17/2018
N029506-002A	TW-03D-0418	Groundwater	4/3/2018 7:45:00 AM	4/3/2018	4/17/2018
N029506-002B	TW-03D-0418	Groundwater	4/3/2018 7:45:00 AM	4/3/2018	4/17/2018
N029506-002C	TW-03D-0418	Groundwater	4/3/2018 7:45:00 AM	4/3/2018	4/17/2018
N029506-002D	TW-03D-0418	Groundwater	4/3/2018 7:45:00 AM	4/3/2018	4/17/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180404F** QC Batch: **R123114** PrepDate							Analyst: **LR**
Specific Conductance	2600	0.10	0.10		umhos/cm	1	4/4/2018 10:40 AM

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180404F**	QC Batch: **R123114**			PrepDate			Analyst: **LR**
Specific Conductance	8300	0.10	0.10		umhos/cm	1	4/4/2018 10:40 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N029506-002BDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**		Prep Date:			RunNo: **123114**			
Client ID: **ZZZZZZ**	Batch ID: **R123114**	TestNo: **EPA 120.1**			Analysis Date: **4/4/2018**			SeqNo: **2978268**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	8290.000	0.10						8260	0.363	2	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

PH

SM4500-H+B

RunID: **NV00922-WC_180404E** QC Batch: **R123113** PrepDate Analyst: **LR**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
pH	7.5	0.10	0.10	H	pH Units	1	4/4/2018 10:22 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	4/4/2018 10:22 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180404E**	QC Batch: **R123113**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	4/4/2018 10:22 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	4/4/2018 10:22 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N029506-001BDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **123113**
Client ID: **ZZZZZZ** Batch ID: **R123113** TestNo: **SM4500-H+B** Analysis Date: **4/4/2018** SeqNo: **2978259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.560	0.10						7.540	0.265	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180404I**	QC Batch: **67464**			PrepDate		**4/4/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1700	20	20		mg/L	1	4/4/2018 12:56 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE			**SM2540C**				
RunID: **NV00922-WC_180404I** QC Batch: **67464**				PrepDate **4/4/2018**			Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4800	50	50		mg/L	1	4/4/2018 12:56 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-67464** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **4/4/2018** RunNo: **123117**
Client ID: **LCSW** Batch ID: **67464** TestNo: **SM2540C** Analysis Date: **4/4/2018** SeqNo: **2978300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	999.000	10	1000	0	99.9	80	120				

Sample ID **MB-67464** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **4/4/2018** RunNo: **123117**
Client ID: **PBW** Batch ID: **67464** TestNo: **SM2540C** Analysis Date: **4/4/2018** SeqNo: **2978301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N029506-002BDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **4/4/2018** RunNo: **123117**
Client ID: **ZZZZZZ** Batch ID: **67464** TestNo: **SM2540C** Analysis Date: **4/4/2018** SeqNo: **2978304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4995.000	50						4835	3.26	5	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **NV00922-ICP2_180412F** QC Batch: **67564** PrepDate **4/11/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Calcium	130000	85	500		µg/L	1	4/12/2018 11:17 PM
Iron	36	18	20		µg/L	1	4/12/2018 11:17 PM
Magnesium	31000	48	100		µg/L	1	4/12/2018 11:17 PM
Sodium	390000	660	12000		µg/L	25	4/16/2018 04:32 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180412F**	QC Batch: **67564**			PrepDate **4/11/2018**			Analyst: **CEI**
Calcium	260000	85	500		µg/L	1	4/12/2018 11:56 PM
Iron	ND	18	20		µg/L	1	4/12/2018 11:56 PM
Magnesium	31000	48	100		µg/L	1	4/12/2018 11:56 PM
Sodium	1500000	3300	62000		µg/L	125	4/16/2018 04:39 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-67564** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/11/2018** RunNo: **123355**
Client ID: **PBW** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/12/2018** SeqNo: **2992093**

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

Sample ID **LCS1-67564** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/11/2018** RunNo: **123355**
Client ID: **LCSW** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/12/2018** SeqNo: **2992094**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9239.601	500	10000	0	92.4	85	115				
Iron	104.009	20	100.0	0	104	85	115				
Magnesium	9653.835	100	10000	0	96.5	85	115				

Sample ID **N029506-001D-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/11/2018** RunNo: **123355**
Client ID: **ZZZZZZ** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/12/2018** SeqNo: **2992100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	146435.652	500	10000	131400	151	75	125				S
Iron	141.499	20	100.0	35.53	106	75	125				
Magnesium	41879.578	100	10000	31100	108	75	125				

Sample ID **N029506-001D-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/11/2018** RunNo: **123355**
Client ID: **ZZZZZZ** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/12/2018** SeqNo: **2992101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	147208.369	500	10000	131400	159	75	125	146400	0.526	20	S
Iron	142.886	20	100.0	35.53	107	75	125	141.5	0.975	20	
Magnesium	41904.147	100	10000	31100	108	75	125	41880	0.0586	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-67564** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/11/2018** RunNo: **123400**
Client ID: **PBW** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995943**

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

Sample ID **LCS2-67564** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/11/2018** RunNo: **123400**
Client ID: **LCSW** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	21648.742	500	20000	0	108	85	115				

Sample ID **N029506-002D-MS2** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/11/2018** RunNo: **123400**
Client ID: **ZZZZZZ** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995950**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1783062.781	62000	20000	1486000	1480	75	125				S

Sample ID **N029506-002D-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **4/11/2018** RunNo: **123400**
Client ID: **ZZZZZZ** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1780517.446	62000	20000	1486000	1470	75	125	1783000	0.143	20	S

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180413B** QC Batch: **67642**				PrepDate		**4/13/2018**	Analyst: **CEI**
Manganese	530	1.3	2.5		µg/L	5	4/13/2018 01:44 PM

Qualifiers:

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

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_180413B** QC Batch: **67642** PrepDate **4/13/2018** Analyst: **CEI**							
Manganese	19	0.26	0.50		µg/L	1	4/13/2018 02:01 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-67642** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **4/13/2018** RunNo: **123377**
Client ID: **PBW** Batch ID: **67642** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993979**

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

Sample ID **LCS-67642** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **4/13/2018** RunNo: **123377**
Client ID: **LCSW** Batch ID: **67642** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	102.656	0.50	100.0	0	103	85	115				

Sample ID **N029640-001E-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **4/13/2018** RunNo: **123377**
Client ID: **ZZZZZZ** Batch ID: **67642** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	212.682	2.5	100.0	129.2	83.5	75	125				

Sample ID **N029640-001E-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **4/13/2018** RunNo: **123377**
Client ID: **ZZZZZZ** Batch ID: **67642** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	218.144	2.5	100.0	129.2	89.0	75	125	212.7	2.54	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180404B** QC Batch: **R123130**			PrepDate				Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/4/2018 04:03 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180413A** QC Batch: **67642**			PrepDate			4/13/2018	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	4/13/2018 01:38 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180404B** QC Batch: **R123130** PrepDate							Analyst: **RAB**
Hexavalent Chromium	570	3.3	20		µg/L	100	4/4/2018 04:22 PM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **NV00922-ICP7_180413A** QC Batch: **67642** PrepDate **4/13/2018**							Analyst: **CEI**
Chromium	550	0.65	5.0		µg/L	5	4/13/2018 02:06 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **MB-67642** SampType: **MBLK** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **4/13/2018** RunNo: **123376**
Client ID: **PBW** Batch ID: **67642** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993726**

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

Sample ID **LCS-67642** SampType: **LCS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **4/13/2018** RunNo: **123376**
Client ID: **LCSW** Batch ID: **67642** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.364	1.0	10.00	0	104	85	115				

Sample ID **N029640-001E-MS** SampType: **MS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **4/13/2018** RunNo: **123376**
Client ID: **ZZZZZZ** Batch ID: **67642** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993745**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	24.701	1.0	10.00	16.35	83.5	75	125				

Sample ID **N029640-001E-MSD** SampType: **MSD** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **4/13/2018** RunNo: **123376**
Client ID: **ZZZZZZ** Batch ID: **67642** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993747**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	25.004	1.0	10.00	16.35	86.5	75	125	24.70	1.22	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R123130** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **LCSW** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.214	0.20	5.000	0	104	90	110				

Sample ID **MB-R123130** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **PBW** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978623**

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

Sample ID **N029506-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **ZZZZZZ** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0	106	90	110				

Sample ID **N029506-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **ZZZZZZ** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1077.790	20	500.0	565.5	102	90	110				

Sample ID **N029506-002AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **ZZZZZZ** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1073.890	20	500.0	565.5	102	90	110	1078	0.363	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	
Work Order:	N029506	
Project:	PG&E Topock-PMP	

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N029507-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**

Client ID: **ZZZZZZ** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.767	0.20						2.753	0.482	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180406F** QC Batch: **R123274**				PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	210	1.2	5.0		mg/L	1	4/6/2018 01:20 PM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180406F**	QC Batch: **R123274**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	170	1.2	5.0		mg/L	1	4/6/2018 01:20 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R123274** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123274**
Client ID: **LCSW** Batch ID: **R123274** TestNo: **SM 2320 B** Analysis Date: **4/6/2018** SeqNo: **2987733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	97.872	5.0	100.0	0	97.9	85	115				

Sample ID **MB-R123274** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123274**
Client ID: **PBW** Batch ID: **R123274** TestNo: **SM 2320 B** Analysis Date: **4/6/2018** SeqNo: **2987734**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N029506-001BDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123274**
Client ID: **ZZZZZZ** Batch ID: **R123274** TestNo: **SM 2320 B** Analysis Date: **4/6/2018** SeqNo: **2987736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	212.766	5.0						206.4	3.05	30	

Sample ID **N029506-001BMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123274**
Client ID: **ZZZZZZ** Batch ID: **R123274** TestNo: **SM 2320 B** Analysis Date: **4/6/2018** SeqNo: **2987737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	287.234	5.0	100.0	206.4	80.9	75	125				

Sample ID **N029506-001BMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123274**
Client ID: **ZZZZZZ** Batch ID: **R123274** TestNo: **SM 2320 B** Analysis Date: **4/6/2018** SeqNo: **2987738**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	289.362	5.0	100.0	206.4	83.0	75	125	287.2	0.738	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180404A**	QC Batch: **R123105**			PrepDate			Analyst: **RAB**
Chloride	640	1.8	100		mg/L	200	4/4/2018 07:32 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180404A**	QC Batch: **R123105**			PrepDate			Analyst: **RAB**
Sulfate	320	1.1	25		mg/L	50	4/4/2018 10:20 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180404A**	QC Batch: **R123105**			PrepDate			Analyst: **RAB**
Chloride	2600	4.6	250		mg/L	500	4/4/2018 07:47 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180404A**	QC Batch: **R123105**			PrepDate			Analyst: **RAB**
Sulfate	570	1.1	25		mg/L	50	4/4/2018 08:48 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R123105_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **PBW** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977644**

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

Sample ID **LCS-R123105_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **LCSW** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.031	0.50	2.000	0	102	90	110				

Sample ID **N029506-002BDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **ZZZZZZ** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2600.800	250						2611	0.376	20	

Sample ID **N029506-002BMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **ZZZZZZ** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3664.150	250	1000	2611	105	80	120				

Sample ID **N029506-002BMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **ZZZZZZ** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3682.900	250	1000	2611	107	80	120	3664	0.510	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R123105_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **PBW** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977669**

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

Sample ID **LCS-R123105_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **LCSW** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.994	0.50	4.000	0	99.8	90	110				

Sample ID **N029506-002BMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **ZZZZZZ** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977682**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	766.090	25	200.0	565.7	100	80	120				

Sample ID **N029506-002BMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **ZZZZZZ** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977683**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	767.055	25	200.0	565.7	101	80	120	766.1	0.126	20	

Sample ID **N029506-002BDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **ZZZZZZ** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977686**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	563.240	25						565.7	0.430	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-Apr-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:50:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180406B** QC Batch: **R123161**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.057	0.032	0.050		mg/L	1	4/6/2018

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0418
Lab Order:	N029506	**Collection Date:**	4/3/2018 7:45:00 AM
Project:	PG&E Topock-PMP	**Matrix:**	GROUNDWATER
Lab ID:	N029506-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180406B**	QC Batch: **R123161**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	2.0	0.16	0.25		mg/L	5	4/6/2018

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R123161** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123161**
Client ID: **PBW** Batch ID: **R123161** TestNo: **SM4500-NO3** Analysis Date: **4/6/2018** SeqNo: **2980609**

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

Sample ID **LCS-R123161** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123161**
Client ID: **LCSW** Batch ID: **R123161** TestNo: **SM4500-NO3** Analysis Date: **4/6/2018** SeqNo: **2980610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.483	0.050	0.5000	0	96.6	85	115				

Sample ID **N029506-002CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123161**
Client ID: **ZZZZZZ** Batch ID: **R123161** TestNo: **SM4500-NO3** Analysis Date: **4/6/2018** SeqNo: **2980615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.078	0.25						2.050	1.36	20	

Sample ID **N029506-002CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123161**
Client ID: **ZZZZZZ** Batch ID: **R123161** TestNo: **SM4500-NO3** Analysis Date: **4/6/2018** SeqNo: **2980616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	4.333	0.25	2.500	2.050	91.3	75	125				

Sample ID **N029506-002CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123161**
Client ID: **ZZZZZZ** Batch ID: **R123161** TestNo: **SM4500-NO3** Analysis Date: **4/6/2018** SeqNo: **2980617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	4.368	0.25	2.500	2.050	92.7	75	125	4.333	0.805	20	

Qualifiers:

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

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Lisa Kellog
Address: 1410 Rocky Ridge Dr. #330	Company: Arcadis	Address: 2999 Oak Road, Suite 300
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Walnut Creek, CA 94597
Phone: 916.786.3302 Fax:	Address: 1410 Rocky Ridge Dr. #330	Email to: lisa.kellog@arcadis.com PO#:
Submitted By: Jason Maher	Roseville, CA 95661	Phone: 951.677.0577 Fax:
Title: Project Manager	Phone: 916.786.3302 Fax:	
Signature: [signature] Date: 4/3/18	Sampled By: Jason Maher	
I hereby authorize ASSET Labs to perform the tests indicated below:	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	
Project Name: PG&E Topock - PMP	Signature: [signature] Date: 4/3/18	
Project Number:		

EDD Requirement: Excel EDD ☐ Geotracker ☐ Labspec ☐ Others ☐ Specify: Global ID:

QA/QC: RTNE ☐ RWQCB ☐ CalTrans ☐ Level III ☐ LEVEL IV ☑ Regulatory ☐ Specify State:

Sampe Receipt Condition (Y / N): 1. Chilled ☐ ☐ 2. Headspace ☐ ☐ 3. Container Intact ☐ ☐ 4. Seal Present ☐ ☐ 5. IR number 7 6. Method of Cooling I/C Sample Temp: 2-6°

Courier:
Tracking No.

Matrix: Ground ☑ Sediment ☐ Potable ☐ Soil ☐ NPDES ☐ Other Solid ☐ Surface ☐

Analyses Requested

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Cr+6 by SM3500	Alkalinity	pH	Chloride	Specific Conductance	Sulfate	TDS	NO2/NO3 by SM 4500	Ca, Fe, Mg, Na by EPA 200.7	Cr, Mn by 200.8	Turn Around Time	No. of container	Container Type	PRESERVATION	Remarks
1	N029506- 01	~~PE-01-0218~~ PE-01-0418	4/3/18	0750	X			X	X	X	X	X	X	X	X	X	X	E	4	P	N/S	
2	-02	~~TW-03D-0218~~ TW-03D-0418	4/3/18	0745	X			X	X	X	X	X	X	X	X	X	X	E	4	P	N/S	
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Relinquished by (Signature and Printed Name)	Date / Time	Received by (Signature and Printed Name)	Date / Time
[signature]	4/3/18 1305	[signature]	4/3/18 1305
[signature]	4/3/18 1940	[signature]	4/3/18 1940

Turn Around Time (TAT)
☐ A < 24 Hrs or Same Day TAT
☐ B = Next Workday
☐ C = 2 Workdays
☐ D = 3 Workdays
☑ E = Routine 5-7 Workdays
TAT Starts at 8 AM the following day if samples received after 3:00 PM.

Special Instruction:

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

Preservatives:

H = HCl	N = HNO_3	S = H_2SO_4	C = 4ºC
Z = $Zn(AC)_2$	O = NaOH	T = $Na_2S_2O_3$	
Others/Specify:			

Container Type:

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

White = Laboratory Copy Yellow = Customer's Copy

ASSET Laboratories

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

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

Cooler Received/Opened On: 4/3/2018 — Workorder: N029506

Rep sample Temp (Deg C): 2.6 — IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA — Packing Material Used: None

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

Sample Receipt Checklist

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

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR [signature] 4/13/2018

Reviewed By: [signature] 04/17/2018

ASSET Laboratories

WORK ORDER Summary

04-Apr-18

WorkOrder: N029506

Client ID: ARCUS02

Project: PG&E Topock-PMP **QC Level:** Level IV **Date Received:** 4/3/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029506-001A	PE-01-0418	4/3/2018 7:50:00 AM	4/17/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029506-001B			4/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			4/17/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			4/17/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			4/17/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			4/17/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			4/17/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			4/17/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N029506-001C			4/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029506-001D			4/17/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			4/17/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			4/17/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			4/17/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			4/17/2018		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029506-002A	TW-03D-0418	4/3/2018 7:45:00 AM	4/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029506-002B			4/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			4/17/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			4/17/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			4/17/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			4/17/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			4/17/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			4/17/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

04-Apr-18

WorkOrder: N029506

Client ID: ARCUS02

Project: PG&E Topock-PMP

QC Level: Level IV

Date Received: 4/3/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029506-002C	TW-03D-0418	4/3/2018 7:45:00 AM	4/17/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029506-002D			4/17/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			4/17/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			4/17/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			4/17/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			4/17/2018		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029506-003A	FOLDER	4/17/2018	4/17/2018		EDD	Client specific project	☐	☐	☐	LAB
			4/17/2018		Folder	Folder	☐	☐	☐	LAB
			4/17/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N029506

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 200.7_Dissolved, EPA 200.8_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540C, SM 2320 B

EPA 120.1

WC ARCUS
REV 0
101215

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123114 **Analyst:** LSR

ASSET #: N029506 **Date Analyzed:** 4/4/2018

Method: EPA 120.1

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer Julia Ramit Date: 4/16/2018

2nd Level Reviewer RB 04/17/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 4/3/18 915
Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 us/cm	CINV-180108A	9.63 @20.2°C	% Rec: (90-110%)
1412	171121A	1412 @20.5°C	
9987	180108B	9940 @20.5°C	
99842	171121B	9980 @20.7°C	

	Sample ID	Matrix	Reading	Comments
1	N029488-001B	H2O	7290 @19.7°C	
2	2B		7160 @19.5°C	
3	3A		56900 @19.6°C	
4	3ADUP		57200 @19.5°C	
5				
6				
7				
8				
9	1413 us/cm	CINV-171121C	1443 @20.9°C	
10	10000	180108C	10250 @20.9°C	
Dup	99672	171215A	100200 @20.8°C	Accept: 10% water, 20% soil
Std Chk:				% Rec: (90-110%)

Date: 4/4/18 1040
Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 us/cm	CINV-180108A	9.32 @20.2°C	% Rec: (90-110%)
1412	171121A	1428 @20.3°C	
9987	180108B	10060 @20.3°C	
99842	171121B	100200 @20.3°C	

	Sample ID	Matrix	Reading	Comments
1	N029506-001B	H2O	2640 @18.9°C	
2	2B		8260 @18.3°C	
3	2B DUP		8290 @18.1°C	
4				
5				
6				Julia Ramit 4/16/2018
7				RB 04/17/2018
8	1413 us/cm	CINV-171121C	1448 @20.1°C	
9	10000	180108C	10290 @20.1°C	
10	99672	171215A	100600 @20.2°C	
Dup				Accept: 10% water, 20% soil
Std Chk:				% Rec: (90-110%)

Logbook # 6

SM 4500-H+B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123113 **Analyst:** LSR

ASSET #: N029506 **Date Analyzed:** 4/4/2018

Method: EPA 150.1

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

Comments:

Samples were received past holding time.

SECOND LEVEL REVIEW:

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

1st Level Reviewer Julia Ramit Date: 4/10/2018

2nd Level Reviewer RB 04/17/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 4/3/18 1130
Analyst: LJR

Standard	Std ID	pH	Comments
Buffer 7	GIW-1712-15D	7.01 @ 25.0°C	
Buffer 4	171208A	3.98 @ 25.0°C	
Buffer 10	180119A	10.00 @ 25.0°C	
Slope		97.6%	Acceptance Criteria: 95%-105%

	Sample ID	Matrix	pH	Comments
1	N029485-005B	Soil	6.52 @ 25.0°C	
2	5B DUP		6.54 @ 25.0°C	
3	10B		6.90 @ 25.0°C	
4	15B		6.82 @ 25.0°C	
5	20B		6.84 @ 25.0°C	
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	GIW-171023A	7.01 @ 25.0°C	Accept: +/- ~~0.1~~ 0.05 pH units from expected value

mh 1/5/18

Date: 4/4/18 1022
Analyst: LJR

Standard	Std ID	pH	Comments
Buffer 7	GIW-1712-15D	7.02 @ 25.0°C	
Buffer 4	171208A	4.02 @ 25.0°C	
Buffer 10	180119A	9.98 @ 25.0°C	
Slope		97.8%	Acceptance Criteria: 95%-105%

	Sample ID	Matrix	pH	Comments
1	N029506-001B	H_2O	7.54 @ 25.0°C	
2	1B DUP		7.56 @ 25.0°C	
3	2B		7.28 @ 25.0°C	
4	N029510-001B		7.60 @ 25.0°C	Julia Ramit
5	2B		7.52 @ 25.0°C	4/10/2018
6	2B DUP		7.54 @ 25.0°C	
7	3B		7.60 @ 25.0°C	RJB 04/17/2018
8	~~N02975-002B~~		~~5.79 @ 25.0°C~~	LJR 4/4/18
9	N029515-001B		7.52 @ 25.0°C	
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	GIW-171023A	7.01 @ 25.0°C	Accept: +/- ~~0.1~~ 0.05 pH units from expected value

mh 1/5/18

SM 2540C

WC ARCUS
REV 0
101215

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67464 **Analyst:** LSR

ASSET #: N029506 **Date Analyzed:** 4/4/2018

Method: EPA 160.1

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer Julia Ramit Date: 4/10/2018

2nd Level Reviewer Nancy 4/17/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

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

FORMULA:

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

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

Where:

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

For **N029506-001B,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(49.4369 - 49.3525)*1000000}{50}$$
$$=1688 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 1700 mg/L

Julia Ramit 4/10/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/4/2018 12:56:46 P**
Prep End Date: **4/5/2018 10:50:00 A**
Prep Batch **67464** Prep Code: **160.1_W_PRE**

Reviewed/ Date: Nancy 4/17/2018
Initials/ Date: Lilia Ramit 4/10/2018
Technician: **Lilia Ramit**

Prep Factor Units **mL / mL**
Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67464	Water		100	☐	0	0	100	1.000		
MB-67464	Water		100	☐	0	0	100	1.000		
N029506-001B	Groundwater		50	☐	0	0	100	2.000		
N029506-002B	Groundwater		20	☐	0	0	100	5.000		
N029506-002B-DU	Groundwater		20	☐	0	0	100	5.000		
N029507-012C	Groundwater		75	☐	0	0	100	1.333		
N029507-013C	Groundwater		75	☐	0	0	100	1.333		
N029507-014C	Groundwater		75	☐	0	0	100	1.333		
N029510-001B	Water		60	☐	0	0	100	1.667		
N029510-002B	Water		30	☐	0	0	100	3.333		
N029510-003B	Water		40	☐	0	0	100	2.500		
N029515-001B	Water		30	☐	0	0	100	3.333		

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

Number	Reagent Name
9814	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180326C	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/4/2018 12:56:46 P**
Prep End Date:

Reviewed/ Date: ____________
Initials/ Date: Lilia Ramit 4/10/2018

Prep Batch **67464** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67464	Water	LCSF180326 c	100	☐	0	0	100	1.000		
MB-67464	Water		100	☐	0	0	100	1.000		
N029506-001B	Groundwater	2640	100 /50	☐	0	0	100	1.000		
N029506-002B	Groundwater	8260	100 /20	☐	0	0	100	1.000		
N029506-002B-DU	Groundwater	↓	100 /20	☐	0	0	100	1.000		
N029507-012C	Groundwater	1583	100 /75	☐	0	0	100	1.000		
N029507-013C	Groundwater	1604	100 /75	☐	0	0	100	1.000		
N029507-014C	Groundwater	1623	100 /75	☐	0	0	100	1.000		
N029510-001B	Water	2060	100 /60	☐	0	0	100	1.000		
N029510-002B	Water	4350	100 /30	☐	0	0	100	1.000		
N029510-003B	Water	3250	100 /40	☐	0	0	100	1.000		
N029515-001B	Water	4350	100 /30	☐	0	0	100	1.000		

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

9814

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
4/4/18 1252 DD	MB C74164	100	71.6254 71.6252	71.6253 71.6253	
1X	LCS C74164	100	76.5605 76.5603	76.6605 76.6602	
E	NO29506-001B	50	49.3522 49.3525	49.4367 49.4369	
T	2B	20	46.0509 46.0588	46.1474 46.1475	
V	2B DUP	20	48.8827 48.8830	48.9831 48.9829	
L1	NO29507-012C	75	74.4882 74.4882	74.5719 74.5722	
L2	13C	75	76.5622 76.5626	76.6483 76.6483	
GG	14C	75	67.8458 67.8452	67.9309 67.9310	
XY	NO29510-001B	60	49.3379 49.3382	49.4536 49.4539	
S	2B	30	45.7140 45.7141	45.8202 45.8203	

Julia Ramit 4/10/2018 ASSET Laboratories Logbook#10

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
4/4/18 15	N029510-003B	40	48.8857 48.8856	49.0060 49.0059	
IF	N029515-001B	30	60.6257 60.6253	60.7410 60.7414	
	Silvia Ramit	4/10/2018			
	Closing wt:	~~49.~~ 50.0001	4/5/18 @ 1050		

ASSET Laboratories Logbook#10

MM 4/10/18

TOTAL DISSOLVED SOLIDS, TDS

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

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

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
4/5/2018									
MB-67464	100	71.6252	71.6253	1	1	1			MBLK
LCS-67464	100	76.5603	76.6602	999	1	999			LCS
N029506-001B	50	49.3525	49.4369	844	2	1688	2640	0.639	SAMP
N029506-002B	20	46.0508	46.1475	967	5	4835	8260	0.585	SAMP
N029506-002BDUP	20	48.883	48.9829	999	5	4995	8260	0.605	DUP
N029507-012C	75	74.4882	74.5722	840	1.33333333	1120	1583	0.708	SAMP
N029507-013C	75	76.5626	76.6483	857	1.33333333	1142.66667	1604	0.712	SAMP
N029507-014C	75	67.8452	67.931	858	1.33333333	1144	1623	0.705	SAMP
N029510-001B	60	49.3382	49.4539	1157	1.66666667	1928.33333	2060	0.936	SAMP
N029510-002B	30	45.7141	45.8203	1062	3.33333333	3540	4350	0.814	SAMP
N029510-003B	40	48.8856	49.0059	1203	2.5	3007.5	3250	0.925	SAMP
N029515-001B	30	60.6253	60.7414	1161	3.33333333	3870	4350	0.890	SAMP

Julia Ramit 4/10/2018

EPA 200.7
Dissolved

METALS ARCUS
REV 1.0
071116

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67564
ASSET #: N029506

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 4/12/2018

Method:
[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Ca in N029506-001D PS/MS/MSD failed. However LCS & DT passed criteria.

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

1st Level Reviewer CEI Date: 4/17/18

2nd Level Reviewer 4/17/2018 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67564
ASSET #: N029506
Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 4/16/2018

Method:
[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			~~X~~	X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Na run only.
%Rec of Na in N029506-002D PS/MS/MSD failed. However LCS passed criteria.

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

1st Level Reviewer CEI Date: 4/17/18
2nd Level Reviewer 4/17/2018 Date: ____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N029506-001D** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.03553 * 1 * (25/25) * 1000

Iron , ug/L = 35.53

Reporting results in two significant figures,

Iron , ug/L = 36

% RSD SUMMARY

RSD SUMMARY: 180412B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	7.0075	15	PASS
Standard1	ICAL	1	Ca	0.2	5.38	15	PASS
Standard2	ICAL	1	Ca	1	3.76	15	PASS
Standard3	ICAL	1	Ca	2	1.21	15	PASS
Standard4	ICAL	1	Ca	5	0.93	15	PASS
Standard5	ICAL	1	Ca	7.5	0.9	15	PASS
Standard6	ICAL	1	Ca	10	0.57	15	PASS
Standard7	ICAL	1	Ca	20	0.28	15	PASS
ICV	ICV	1	Ca	9.9	0.47	15	PASS
ICB	ICB	1	Ca	0.0096	144.016	15	<PQL
LLICV1	CCV1	1	Ca	0.17	9.9	20	PASS
ICSA1	ICSA	1	Ca	491.33	0.048	15	PASS
ICSAB1	ICSAB	1	Ca	551.74	0.13	15	PASS
MB-67564	MBLK	1	Ca	2482.2	10.09	15	PASS
CCV1	CCV	1	Ca	9.81	0.39	15	PASS
CCB1	CCB	1	Ca	0.031	41.67	15	<PQL
MB-67564	MBLK	1	Ca	0.023	43.84	15	<PQL
LCS1-67564	LCS	1	Ca	9.24	0.16	15	PASS
N029488-001E	SAMP	1	Ca	227.42	0.17	15	PASS
N029488-002E	SAMP	1	Ca	148.88	0.33	15	PASS
N029506-001D	SAMP	1	Ca	131.35	0.44	15	PASS
N029506-001D	SAMP	5	Ca	26.22	0.47	15	PASS
N029506-001D-PS	PS	1	Ca	138.73	0.18	15	PASS
N029506-001D-MS1	MS	1	Ca	146.44	0.64	15	PASS
N029506-001D-MSD1	MSD	1	Ca	147.21	0.94	15	PASS
N029506-002D	SAMP	1	Ca	262.82	0.7	15	PASS
CCV2	CCV	1	Ca	9.78	0.36	15	PASS
CCB2	CCB	1	Ca	0.025	43.14	15	<PQL
LLCCV1	CCV2	1	Ca	0.19	11.73	20	PASS
ICSA2	ICSA	1	Ca	487.13	0.012	15	PASS
ICSAB2	ICSAB	1	Ca	546.77	0.26	15	PASS
N029640-001E	SAMP	1	Ca	195.35	0.42	15	PASS
N029655-001C	SAMP	1	Ca	17.42	0.26	15	PASS
CCV3	CCV	1	Ca	9.72	0.17	15	PASS
CCB3	CCB	1	Ca	0.02	51.84	15	<PQL
CCV4	CCV	1	Ca	9.69	0.47	15	PASS
CCB4	CCB	1	Ca	0.021	269.7	15	<PQL
LLCCV2	CCV2	1	Ca	0.22	15.87	20	PASS
ICSA3	ICSA	1	Ca	485.14	0.043	15	PASS
ICSAB3	ICSAB	1	Ca	542.68	0.16	15	PASS
CCV5	CCV	1	Ca	9.7	0.54	15	PASS
CCB5	CCB	1	Ca	0.058	54.82	15	<PQL

RSD SUMMARY: 180412B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV6	CCV	1	Ca	9.72	0.16	15	PASS
CCB6	CCB	1	Ca	0.065	29.24	15	<PQL
CCV7	CCV	1	Ca	9.9	0.75	15	PASS
CCB7	CCB	1	Ca	-0.0099	245.78	15	<PQL
LLCCV3	CCV2	1	Ca	0.12	11.64	20	PASS
LLCCV4	CCV2	1	Ca	0.22	4.18	20	PASS
LLCCV5	CCV2	1	Ca	0.23	7.21	20	PASS
ICSA4	ICSA	1	Ca	481.94	0.066	15	PASS
ICSAB4	ICSAB	1	Ca	541.2	0.11	15	PASS
CalBlk	IBLK	1	Fe	0	19.03	15	<PQL
Standard1	ICAL	1	Fe	0.02	1.23	15	PASS
Standard2	ICAL	1	Fe	0.05	0.53	15	PASS
Standard3	ICAL	1	Fe	2	0.58	15	PASS
Standard4	ICAL	1	Fe	5	0.27	15	PASS
Standard5	ICAL	1	Fe	7.5	0.19	15	PASS
Standard6	ICAL	1	Fe	10	0.16	15	PASS
Standard7	ICAL	1	Fe	20	0.15	15	PASS
ICV	ICV	1	Fe	10.043	0.0096	15	PASS
ICB	ICB	1	Fe	-0.00027	215.45	15	<PQL
LLICV1	CCV1	1	Fe	0.02	0.88	20	PASS
ICSA1	ICSA	1	Fe	199.09	0.37	15	PASS
ICSAB1	ICSAB	1	Fe	187.06	0.41	15	PASS
MB-67564	MBLK	1	Fe	40.51	12.17	15	PASS
CCV1	CCV	1	Fe	9.92	0.086	15	PASS
CCB1	CCB	1	Fe	-0.00069	37.2	15	<PQL
MB-67564	MBLK	1	Fe	-0.0014	43.8	15	<PQL
LCS1-67564	LCS	1	Fe	0.1	0.65	15	PASS
N029488-001E	SAMP	1	Fe	0.0066	19.81	15	<PQL
N029488-002E	SAMP	1	Fe	0.017	2.86	15	PASS
N029506-001D	SAMP	1	Fe	0.036	1.32	15	PASS
N029506-001D	SAMP	5	Fe	0.0064	7.23	15	PASS
N029506-001D-PS	PS	1	Fe	0.14	0.67	15	PASS
N029506-001D-MS1	MS	1	Fe	0.14	0.27	15	PASS
N029506-001D-MSD1	MSD	1	Fe	0.14	0.6	15	PASS
N029506-002D	SAMP	1	Fe	-0.0018	15.52	15	<PQL
CCV2	CCV	1	Fe	10.006	0.23	15	PASS
CCB2	CCB	1	Fe	-0.00042	20.92	15	<PQL
LLCCV1	CCV2	1	Fe	0.019	2.74	20	PASS
ICSA2	ICSA	1	Fe	197.75	0.62	15	PASS
ICSAB2	ICSAB	1	Fe	185.43	0.23	15	PASS
N029640-001E	SAMP	1	Fe	0.82	0.53	15	PASS
N029655-001C	SAMP	1	Fe	1.49	0.61	15	PASS

RSD SUMMARY: 180412B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV3	CCV	1	Fe	9.82	0.048	15	PASS
CCB3	CCB	1	Fe	-0.00077	116.16	15	<PQL
CCV4	CCV	1	Fe	9.77	0.02	15	PASS
CCB4	CCB	1	Fe	-0.001	30.72	15	<PQL
LLCCV2	CCV2	1	Fe	0.019	2.84	20	PASS
ICSA3	ICSA	1	Fe	194.5	0.52	15	PASS
ICSAB3	ICSAB	1	Fe	182.01	0.14	15	PASS
CCV5	CCV	1	Fe	9.71	0.13	15	PASS
CCB5	CCB	1	Fe	-0.0014	16.54	15	<PQL
CCV6	CCV	1	Fe	9.68	0.15	15	PASS
CCB6	CCB	1	Fe	-0.00079	48.22	15	<PQL
CCV7	CCV	1	Fe	9.85	0.092	15	PASS
CCB7	CCB	1	Fe	-0.0014	40.39	15	<PQL
LLCCV3	CCV2	1	Fe	0.02	1.34	20	PASS
LLCCV4	CCV2	1	Fe	0.033	18.92	20	PASS
LLCCV5	CCV2	1	Fe	0.02	0.79	20	PASS
ICSA4	ICSA	1	Fe	195.93	0.58	15	PASS
ICSAB4	ICSAB	1	Fe	185.5	0.29	15	PASS
CalBlk	IBLK	1	Mg	0	0.99	15	PASS
Standard1	ICAL	1	Mg	0.1	0.42	15	PASS
Standard2	ICAL	1	Mg	1	0.45	15	PASS
Standard3	ICAL	1	Mg	2	0.54	15	PASS
Standard4	ICAL	1	Mg	5	0.27	15	PASS
Standard5	ICAL	1	Mg	7.5	0.24	15	PASS
Standard6	ICAL	1	Mg	10	0.11	15	PASS
Standard7	ICAL	1	Mg	20	0.18	15	PASS
ICV	ICV	1	Mg	9.99	0.065	15	PASS
ICB	ICB	1	Mg	-0.00037	76.66	15	<PQL
LLICV1	CCV1	1	Mg	0.091	0.41	20	PASS
ICSA1	ICSA	1	Mg	457.12	0.29	15	PASS
ICSAB1	ICSAB	1	Mg	509.51	0.34	15	PASS
MB-67564	MBLK	1	Mg	-50.67	22.73	15	<PQL
CCV1	CCV	1	Mg	9.73	0.16	15	PASS
CCB1	CCB	1	Mg	-0.00058	71.038	15	<PQL
MB-67564	MBLK	1	Mg	0.00076	44.37	15	<PQL
LCS1-67564	LCS	1	Mg	9.65	0.9	15	PASS
N029488-001E	SAMP	1	Mg	29.052	0.077	15	PASS
N029488-002E	SAMP	1	Mg	26.38	0.17	15	PASS
N029506-001D	SAMP	1	Mg	31.1	0.13	15	PASS
N029506-001D	SAMP	5	Mg	6.54	0.46	15	PASS
N029506-001D-PS	PS	1	Mg	39.75	0.11	15	PASS
N029506-001D-MS1	MS	1	Mg	41.88	0.11	15	PASS

RSD SUMMARY: 180412B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N029506-001D-MSD1	MSD	1	Mg	41.9	0.15	15	PASS
N029506-002D	SAMP	1	Mg	31.49	0.12	15	PASS
CCV2	CCV	1	Mg	9.92	0.35	15	PASS
CCB2	CCB	1	Mg	-0.00034	154.28	15	<PQL
LLCCV1	CCV2	1	Mg	0.09	0.79	20	PASS
ICSA2	ICSA	1	Mg	453.8	0.6	15	PASS
ICSAB2	ICSAB	1	Mg	505.45	0.25	15	PASS
N029640-001E	SAMP	1	Mg	29.6	0.19	15	PASS
N029655-001C	SAMP	1	Mg	3.89	0.53	15	PASS
CCV3	CCV	1	Mg	9.91	0.22	15	PASS
CCB3	CCB	1	Mg	0.0001	534.71	15	<PQL
CCV4	CCV	1	Mg	9.89	0.23	15	PASS
CCB4	CCB	1	Mg	0.00079	94.36	15	<PQL
LLCCV2	CCV2	1	Mg	0.09	2.075	20	PASS
ICSA3	ICSA	1	Mg	453.31	0.44	15	PASS
ICSAB3	ICSAB	1	Mg	504.17	0.26	15	PASS
CCV5	CCV	1	Mg	9.71	0.28	15	PASS
CCB5	CCB	1	Mg	0	21568.6	15	<PQL
CCV6	CCV	1	Mg	9.63	0.38	15	PASS
CCB6	CCB	1	Mg	0.00029	9.99	15	PASS
CCV7	CCV	1	Mg	9.7	0.35	15	PASS
CCB7	CCB	1	Mg	0.0037	12.16	15	PASS
LLCCV3	CCV2	1	Mg	0.11	0.89	20	PASS
LLCCV4	CCV2	1	Mg	0.098	5.71	20	PASS
LLCCV5	CCV2	1	Mg	0.088	0.75	20	PASS
ICSA4	ICSA	1	Mg	434.13	0.65	15	PASS
ICSAB4	ICSAB	1	Mg	490.88	0.26	15	PASS

RSD SUMMARY: 180416C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	3.71	15	PASS
Standard1	ICAL	1	Na	0.1	6.79	15	PASS
Standard2	ICAL	1	Na	1	0.75	15	PASS
Standard3	ICAL	1	Na	5	0.031	15	PASS
Standard4	ICAL	1	Na	10	0.55	15	PASS
Standard5	ICAL	1	Na	20	0.14	15	PASS
Standard6	ICAL	1	Na	40	0.12	15	PASS
ICV	ICV	1	Na	9.85	0.21	15	PASS
ICB	ICB	1	Na	-0.0025	210.54	15	<PQL
ICSA1	ICSA	1	Na	-0.0045	56.82	15	<PQL
ICSAB1	ICSAB	1	Na	9.87	0.39	15	PASS
CCV1	CCV	1	Na	9.9	0.07	15	PASS
CCB1	CCB	1	Na	0.0099	52.4	15	<PQL
CCV2	CCV	1	Na	10.13	0.17	15	PASS
CCB2	CCB	1	Na	0.062	3.2	15	PASS
CCV3	CCV	1	Na	10.094	0.045	15	PASS
CCB3	CCB	1	Na	0.021	18.55	15	<PQL
CCV4	CCV	1	Na	10.1	0.2	15	PASS
CCB4	CCB	1	Na	-0.004	96.45	15	<PQL
MB-67564	MBLK	1	Na	-0.0044	22.42	15	<PQL
LCS2-67564	LCS	1	Na	21.65	0.3	15	PASS
N029506-001D	SAMP	25	Na	15.52	0.23	15	PASS
N029506-002D	SAMP	25	Na	72.25	0.2	15	PASS
N029506-002D	SAMP	125	Na	11.89	0.1	15	PASS
N029506-002D	SAMP	625	Na	2.34	0.23	15	PASS
N029506-002D-PS	PS	125	Na	14.1	0.17	15	PASS
N029506-002D-MS2	MS	125	Na	14.27	0.11	15	PASS
CCV5	CCV	1	Na	10.13	0.29	15	PASS
CCB5	CCB	1	Na	-0.014	20.35	15	<PQL
N029506-002D-MSD2	MSD	125	Na	14.24	0.3	15	PASS
CCV6	CCV	1	Na	16.57	57.53	15	NR!
CCV7	CCV	1	Na	10.29	0.11	15	PASS
CCB6	CCB	1	Na	-0.015	2.49	15	PASS
ICSA2	ICSA	1	Na	-0.02	25.13	15	<PQL
ICSAB2	ICSAB	1	Na	10.31	0.053	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180412B

Instrument ID: ICP-02

STANDARD CODE		
Standard1	~~MWST-171018A~~,0.5<50mL	MWST-180228E
Standard2	~~MWST-171201O~~	MWST-180228D
Standard3	MWST-171201K,5<50mL	
Standard4	MWST-171201K,12.5<50mL	
Standard5	MWST-171201K,15<40mL	
Standard6	MWST-171201K,25<50mL	
Standard7	MWST-171201K	
ICV	MWST-171030E	
CCV	MWST-171201K,25<50mL	
ICSA/ICSAB	MWST-171201P/ MWST-171018E	
Int. Std. (Y)	MSST-171009C/B	
PS Spike	MWST-180108A/ -171030F/-171201A/B	

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	04/12/2018	07:26:36 PM
2	Standard1	ICAL	1	04/12/2018	07:32:58 PM
3	Standard2	ICAL	1	04/12/2018	07:39:16 PM
11	Standard3	ICAL	1	04/12/2018	07:45:35 PM
12	Standard4	ICAL	1	04/12/2018	07:51:56 PM
6	Standard5	ICAL	1	04/12/2018	08:01:21 PM
7	Standard6	ICAL	1	04/12/2018	08:10:44 PM
8	Standard7	ICAL	1	04/12/2018	08:19:39 PM
9	ICV	ICV	1	04/12/2018	08:23:34 PM
1	ICB	ICB	1	04/12/2018	08:32:31 PM
2	LLICV1	CCV1	1	04/12/2018	08:38:50 PM
4	ICSA1	ICSA	1	04/12/2018	08:45:09 PM
5	ICSAB1	ICSAB	1	04/12/2018	08:54:45 PM
38	MB-67435	MBLK	1	04/12/2018	09:03:50 PM
39	LCS-67435	LCS	1	04/12/2018	09:12:57 PM
40	N029480-001B	SAMP	1	04/12/2018	09:22:19 PM
41	N029480-001B	SAMP	5	04/12/2018	09:31:39 PM
42	N029480-001B-PS	PS	1	04/12/2018	09:37:58 PM
43	N029480-001B-MS	MS	1	04/12/2018	09:47:20 PM
44	N029480-001B-MSD	MSD	1	04/12/2018	09:56:41 PM
45	N029480-002B	SAMP	1	04/12/2018	10:06:03 PM
46	N029496-001B	SAMP	1	04/12/2018	10:15:23 PM
47	MB-67564	MBLK	1	04/12/2018	10:21:44 PM
7	CCV1	CCV	1	04/12/2018	10:27:40 PM
1	CCB1	CCB	1	04/12/2018	10:36:35 PM
47	MB-67564	MBLK	1	04/12/2018	10:42:53 PM
48	LCS1-67564	LCS	1	04/12/2018	10:49:15 PM
49	N029488-001E	SAMP	1	04/12/2018	10:58:38 PM

Nancy 4/17/2018

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
50	N029488-002E	SAMP	1	04/12/2018	11:08:02 PM
51	N029506-001D	SAMP	1	04/12/2018	11:17:22 PM
52	N029506-001D	SAMP	5	04/12/2018	11:22:07 PM
53	N029506-001D-PS	PS	1	04/12/2018	11:28:28 PM
54	N029506-001D-MS1	MS	1	04/12/2018	11:37:52 PM
55	N029506-001D-MSD1	MSD	1	04/12/2018	11:47:16 PM
56	N029506-002D	SAMP	1	04/12/2018	11:56:40 PM
7	CCV2	CCV	1	04/13/2018	12:06:02 AM
1	CCB2	CCB	1	04/13/2018	12:14:57 AM
2	LLCCV1	CCV2	1	04/13/2018	12:21:16 AM
4	ICSA2	ICSA	1	04/13/2018	12:27:35 AM
5	ICSAB2	ICSAB	1	04/13/2018	12:37:09 AM
57	N029640-001E	SAMP	1	04/13/2018	12:46:14 AM
58	N029655-001C	SAMP	1	04/13/2018	12:55:37 AM
59	MB-67517	MBLK	1	04/13/2018	01:01:59 AM
60	LCS-67517	LCS	1	04/13/2018	01:08:20 AM
61	N029510-001A	SAMP	1	04/13/2018	01:17:43 AM
62	N029510-001A	SAMP	5	04/13/2018	01:26:37 AM
63	N029510-001A-PS	PS	1	04/13/2018	01:32:59 AM
64	N029510-001A-MS	MS	1	04/13/2018	01:41:54 AM
65	N029510-001A-MSD	MSD	1	04/13/2018	01:50:49 AM
66	N029510-002A	SAMP	1	04/13/2018	01:59:44 AM
7	CCV3	CCV	1	04/13/2018	02:08:41 AM
1	CCB3	CCB	1	04/13/2018	02:17:36 AM
67	N029510-003A	SAMP	1	04/13/2018	02:23:54 AM
68	N029510-004A	SAMP	1	04/13/2018	02:32:48 AM
69	N029510-005A	SAMP	1	04/13/2018	02:42:11 AM
70	N029510-006A	SAMP	1	04/13/2018	02:51:04 AM
71	N029510-007A	SAMP	1	04/13/2018	03:00:29 AM
72	N029510-008A	SAMP	1	04/13/2018	03:09:23 AM
73	N029510-009A	SAMP	1	04/13/2018	03:18:17 AM
74	N029510-010A	SAMP	1	04/13/2018	03:27:43 AM
75	N029510-011A	SAMP	1	04/13/2018	03:37:08 AM
76	N029510-012A	SAMP	1	04/13/2018	03:46:02 AM
7	CCV4	CCV	1	04/13/2018	03:55:27 AM
1	CCB4	CCB	1	04/13/2018	04:04:22 AM
2	LLCCV2	CCV2	1	04/13/2018	04:10:41 AM
4	ICSA3	ICSA	1	04/13/2018	04:17:00 AM
5	ICSAB3	ICSAB	1	04/13/2018	04:26:33 AM
77	N029515-001A	SAMP	1	04/13/2018	04:35:37 AM
78	N029515-002A	SAMP	1	04/13/2018	04:44:33 AM
79	N029515-003A	SAMP	1	04/13/2018	04:50:54 AM
80	N029515-004A	SAMP	1	04/13/2018	05:00:19 AM
81	N029515-005A	SAMP	1	04/13/2018	05:09:12 AM
82	N029515-006A	SAMP	1	04/13/2018	05:18:36 AM
83	N029515-007A	SAMP	1	04/13/2018	05:27:29 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
84	N029515-008A	SAMP	1	04/13/2018	05:36:23 AM
85	MB-67516	MBLK	1	04/13/2018	05:45:18 AM
86	LCS-67516	LCS	1	04/13/2018	05:51:39 AM
7	CCV5	CCV	1	04/13/2018	06:01:03 AM
1	CCB5	CCB	1	04/13/2018	06:09:58 AM
87	N029515-009A	SAMP	1	04/13/2018	06:16:16 AM
88	N029515-009A	SAMP	5	04/13/2018	06:25:10 AM
89	N029515-009A-PS	PS	1	04/13/2018	06:31:33 AM
90	N029515-009A-MS	MS	1	04/13/2018	06:40:29 AM
91	N029515-009A-MSD	MSD	1	04/13/2018	06:49:26 AM
7	CCV6	CCV	1	04/13/2018	06:58:22 AM
1	CCB6	CCB	1	04/13/2018	07:07:17 AM
92	N029510-006A	SAMP	5	04/13/2018	07:42:38 AM
93	N029510-009A	SAMP	5	04/13/2018	07:52:00 AM
94	N029510-010A	SAMP	5	04/13/2018	08:01:22 AM
95	N029515-003A	SAMP	5	04/13/2018	08:10:43 AM
7	CCV7	CCV	1	04/13/2018	08:17:04 AM
1	CCB7	CCB	1	04/13/2018	08:25:59 AM
2	LLCCV3	CCV2	1	04/13/2018	08:31:47 AM
2	LLCCV4	CCV2	1	04/13/2018	08:40:11 AM
2	LLCCV5	CCV2	1	04/13/2018	09:02:39 AM
4	ICSA4	ICSA	1	04/13/2018	09:08:59 AM
5	ICSAB4	ICSAB	1	04/13/2018	09:18:33 AM

INJECTION LOG: 180416C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171201R,0.025<50mL
Standard2	MWST-171201R,0.25<50mL
Standard3	MWST-171201R,1.25<50mL
Standard4	MWST-171201R,2.5<50mL
Standard5	MWST-171201R,5<50mL
Standard6	MWST-171201R,10<50mL
ICV	MWST-171030L
CCV	MWST-171201R,2.5<50mL
ICSA/ICSAB	MWST-171201P/ MWST-171201S
Int. Std. (Sc):	MSST-171009C/B
PS Spike	MSST-130329D/E

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	04/16/2018	12:35:41 PM
26	Standard1	ICAL	1	04/16/2018	12:38:58 PM
27	Standard2	ICAL	1	04/16/2018	12:42:15 PM
28	Standard3	ICAL	1	04/16/2018	12:46:10 PM
29	Standard4	ICAL	1	04/16/2018	12:49:59 PM
30	Standard5	ICAL	1	04/16/2018	12:53:50 PM
31	Standard6	ICAL	1	04/16/2018	12:57:44 PM
32	ICV	ICV	1	04/16/2018	01:00:30 PM
1	ICB	ICB	1	04/16/2018	01:04:20 PM
33	ICSA1	ICSA	1	04/16/2018	01:07:36 PM
34	ICSAB1	ICSAB	1	04/16/2018	01:10:55 PM
38	MB-67614	MBLK	1	04/16/2018	01:14:51 PM
146	LCS2-67614	LCS	1	04/16/2018	01:18:08 PM
40	N029725-001A	SAMP	1	04/16/2018	01:22:08 PM
45	N029726-001A	SAMP	1	04/16/2018	01:25:27 PM
46	N029727-001A	SAMP	1	04/16/2018	01:28:47 PM
47	N029731-001A	SAMP	1	04/16/2018	01:32:36 PM
48	N029733-001A	SAMP	1	04/16/2018	01:35:56 PM
50	N029734-001A	SAMP	1	04/16/2018	01:39:46 PM
51	N029735-001A	SAMP	1	04/16/2018	01:43:06 PM
52	N029732-001A	SAMP	1	04/16/2018	01:46:25 PM
29	CCV1	CCV	1	04/16/2018	01:51:18 PM
1	CCB1	CCB	1	04/16/2018	01:55:11 PM
53	N029732-002A	SAMP	1	04/16/2018	01:58:28 PM
54	N029732-003A	SAMP	1	04/16/2018	02:03:19 PM
55	N029732-004A	SAMP	1	04/16/2018	02:08:13 PM
56	N029732-005A	SAMP	1	04/16/2018	02:13:11 PM
57	N029732-006A	SAMP	1	04/16/2018	02:18:50 PM
147	N029726-001A	SAMP	5	04/16/2018	02:24:28 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
148	N029726-001A-PS	PS	1	04/16/2018	02:27:50 PM
149	N029726-001A-MS2	MS	1	04/16/2018	02:32:00 PM
150	N029726-001A-MSD2	MSD	1	04/16/2018	02:36:09 PM
151	N029734-001A-MS2	MS	1	04/16/2018	02:40:18 PM
29	CCV2	CCV	1	04/16/2018	02:44:27 PM
1	CCB2	CCB	1	04/16/2018	02:48:21 PM
60	MB-67647	MBLK	1	04/16/2018	02:51:37 PM
152	LCS2-67647	LCS	1	04/16/2018	02:54:57 PM
62	N029743-001D	SAMP	1	04/16/2018	02:58:57 PM
64	N029762-001A	SAMP	1	04/16/2018	03:04:03 PM
69	N029763-001A	SAMP	1	04/16/2018	03:07:23 PM
70	N029764-001A	SAMP	1	04/16/2018	03:10:42 PM
153	N029763-001A	SAMP	5	04/16/2018	03:14:32 PM
154	N029763-001A-PS	PS	1	04/16/2018	03:17:53 PM
155	N029763-001A-MS2	MS	1	04/16/2018	03:22:02 PM
156	N029763-001A-MSD2	MSD	1	04/16/2018	03:26:02 PM
29	CCV3	CCV	1	04/16/2018	03:30:11 PM
1	CCB3	CCB	1	04/16/2018	03:34:03 PM
38	N029727-001A	SAMP	5	04/16/2018	03:37:21 PM
39	N029733-001A	SAMP	5	04/16/2018	03:40:39 PM
40	N029732-001A	SAMP	25	04/16/2018	03:43:57 PM
41	N029732-002A	SAMP	25	04/16/2018	03:47:16 PM
42	N029732-003A	SAMP	25	04/16/2018	03:50:35 PM
43	N029732-004A	SAMP	100	04/16/2018	03:53:53 PM
44	N029732-005A	SAMP	100	04/16/2018	03:57:13 PM
45	N029732-006A	SAMP	100	04/16/2018	04:00:32 PM
46	N029734-001A	SAMP	5	04/16/2018	04:03:51 PM
47	N029734-001A-MS2	MS	5	04/16/2018	04:07:11 PM
29	CCV4	CCV	1	04/16/2018	04:11:03 PM
1	CCB4	CCB	1	04/16/2018	04:14:54 PM
48	N029743-001D	SAMP	25	04/16/2018	04:18:11 PM
49	N029764-001A	SAMP	5	04/16/2018	04:22:01 PM
50	MB-67564	MBLK	1	04/16/2018	04:25:21 PM
51	LCS2-67564	LCS	1	04/16/2018	04:28:38 PM
52	N029506-001D	SAMP	25	04/16/2018	04:32:35 PM
53	N029506-002D	SAMP	25	04/16/2018	04:35:54 PM
54	N029506-002D	SAMP	125	04/16/2018	04:39:44 PM
55	N029506-002D	SAMP	625	04/16/2018	04:43:03 PM
56	N029506-002D-PS	PS	125	04/16/2018	04:46:21 PM
57	N029506-002D-MS2	MS	125	04/16/2018	04:49:40 PM
29	CCV5	CCV	1	04/16/2018	04:53:00 PM
1	CCB5	CCB	1	04/16/2018	04:56:51 PM
58	N029506-002D-MSD2	MSD	125	04/16/2018	04:59:41 PM
29	CCV6	CCV	1	04/16/2018	05:03:01 PM
29	CCV7	CCV	1	04/16/2018	05:06:25 PM
1	CCB6	CCB	1	04/16/2018	05:10:19 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
33	ICSA2	ICSA	1	04/16/2018	05:13:35 PM
34	ICSAB2	ICSAB	1	04/16/2018	05:16:54 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/11/2018 7:38:34**
Prep End Date: **4/11/2018 1:00:00**
Prep Batch **67564** Prep Code: **200.7_PR**

Reviewed/ Date: Nancy 4/17/2018
Initials/ Date: FOR
Technician **Mark Gesmundo**

Prep Factor Units **mL / mL** Temp. (°C): **95** Location: **DB-2-15**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-67564	Aqueous		25	☐	0	0	25	1.000		
LCS2-67564	Aqueous		25	☐	0	0	25	1.000		
MB-67564	Aqueous		25	☐	0	0	25	1.000		
N029488-001E	Water	<2	25	☐	0	0	25	1.000		
N029488-002E	Water	<2	25	☐	0	0	25	1.000		
N029506-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N029506-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N029506-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N029506-002D	Groundwater	<2	25	☐	0	0	25	1.000		
N029506-002D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N029506-002D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N029640-001E	Water	<2	25	☐	0	0	25	1.000		
N029655-001C	Water	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
9761	HYDROCHLORIC ACID
9772	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171030G	ICP Solution B	LCS,MS,MSD	0.5
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180412B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	04/12/2018	07:26:36 PM	Mg	279.079	197	0.00	mg/L	
Standard1	04/12/2018	07:32:58 PM	Mg	279.079	1540	0.1000	mg/L	
Standard2	04/12/2018	07:39:16 PM	Mg	279.079	16742	1.000	mg/L	
Standard3	04/12/2018	07:45:35 PM	Mg	279.079	35116	2.000	mg/L	
Standard4	04/12/2018	07:51:56 PM	Mg	279.079	89701	5.000	mg/L	
Standard5	04/12/2018	08:01:21 PM	Mg	279.079	134483	7.500	mg/L	
Standard6	04/12/2018	08:10:44 PM	Mg	279.079	175107	10.000	mg/L	
Standard7	04/12/2018	08:19:39 PM	Mg	279.079	345955	20.000	mg/L	0.9999
Calcium								
CalBlk	04/12/2018	07:26:36 PM	Ca	227.546	-132	0.00	mg/L	
Standard1	04/12/2018	07:32:58 PM	Ca	227.546	65	0.2000	mg/L	
Standard2	04/12/2018	07:39:16 PM	Ca	227.546	334	1.000	mg/L	
Standard3	04/12/2018	07:45:35 PM	Ca	227.546	707	2.000	mg/L	
Standard4	04/12/2018	07:51:56 PM	Ca	227.546	1778	5.000	mg/L	
Standard5	04/12/2018	08:01:21 PM	Ca	227.546	2683	7.500	mg/L	
Standard6	04/12/2018	08:10:44 PM	Ca	227.546	3552	10.000	mg/L	
Standard7	04/12/2018	08:19:39 PM	Ca	227.546	7199	20.000	mg/L	1.0000
Iron								
CalBlk	04/12/2018	07:26:36 PM	Fe	273.953	-121	0.00	mg/L	
Standard1	04/12/2018	07:32:58 PM	Fe	273.953	592	0.0200	mg/L	
Standard2	04/12/2018	07:39:16 PM	Fe	273.953	2066	0.050	mg/L	
Standard3	04/12/2018	07:45:35 PM	Fe	273.953	64717	2.000	mg/L	
Standard4	04/12/2018	07:51:56 PM	Fe	273.953	165176	5.000	mg/L	
Standard5	04/12/2018	08:01:21 PM	Fe	273.953	247577	7.500	mg/L	
Standard6	04/12/2018	08:10:44 PM	Fe	273.953	322176	10.000	mg/L	
Standard7	04/12/2018	08:19:39 PM	Fe	273.953	635728	20.000	mg/L	0.9999

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180416C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	04/16/2018	12:35:41 PM	Na	589.594	181	0.00	mg/L	
Standard1	04/16/2018	12:38:58 PM	Na	589.594	494	0.1000	mg/L	
Standard2	04/16/2018	12:42:15 PM	Na	589.594	4095	1.000	mg/L	
Standard3	04/16/2018	12:46:10 PM	Na	589.594	20809	5.000	mg/L	
Standard4	04/16/2018	12:49:59 PM	Na	589.594	41184	10.000	mg/L	
Standard5	04/16/2018	12:53:50 PM	Na	589.594	82489	20.000	mg/L	
Standard6	04/16/2018	12:57:44 PM	Na	589.594	167995	40.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123355**
Client ID: **ICV** Batch ID: **R123355** TestNo: **EPA 200.7** Analysis Date: **4/12/2018** SeqNo: **2992076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9901.796	500	10000	0	99.0	90	110				
Iron	10042.783	20	10000	0	100	90	110				
Magnesium	9993.002	100	10000	0	99.9	90	110				

Sample ID **LLICV1** SampType: **CCV1** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123355**
Client ID: **ZZZZZZ** Batch ID: **R123355** TestNo: **EPA 200.7** Analysis Date: **4/12/2018** SeqNo: **2992078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	169.726	500	200.0	0	84.9	80	120				
Iron	19.722	20	20.00	0	98.6	80	120				
Magnesium	90.614	100	100.0	0	90.6	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123355**
Client ID: **CCV** Batch ID: **R123355** TestNo: **EPA 200.7** Analysis Date: **4/12/2018** SeqNo: **2992091**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9810.238	500	10000	0	98.1	90	110				
Iron	9924.353	20	10000	0	99.2	90	110				
Magnesium	9725.481	100	10000	0	97.3	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123355**
Client ID: **CCV** Batch ID: **R123355** TestNo: **EPA 200.7** Analysis Date: **4/13/2018** SeqNo: **2992103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9780.484	500	10000	0	97.8	90	110				
Iron	10005.799	20	10000	0	100	90	110				
Magnesium	9917.039	100	10000	0	99.2	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.7_WDPG** Units: **µg/L**	Prep Date:	RunNo: **123355**
Client ID: **ZZZZZZ**	Batch ID: **R123355**	TestNo: **EPA 200.7**	Analysis Date: **4/13/2018**	SeqNo: **2992105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	192.847	500	200.0	0	96.4	70	130				
Iron	18.855	20	20.00	0	94.3	70	130				
Magnesium	89.501	100	100.0	0	89.5	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123400**
Client ID: **ICV** Batch ID: **R123400** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9849.135	500	10000	0	98.5	90	110				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123400**
Client ID: **CCV** Batch ID: **R123400** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995903**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9903.263	500	10000	0	99.0	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123400**
Client ID: **CCV** Batch ID: **R123400** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10133.434	500	10000	0	101	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123400**
Client ID: **CCV** Batch ID: **R123400** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10093.552	500	10000	0	101	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123400**
Client ID: **CCV** Batch ID: **R123400** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10102.080	500	10000	0	101	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV5** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123400**
Client ID: **CCV** Batch ID: **R123400** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10130.226	500	10000	0	101	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123400**
Client ID: **CCV** Batch ID: **R123400** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10290.327	500	10000	0	103	90	110				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123355**
Client ID: **ICB** Batch ID: **R123355** TestNo: **EPA 200.7** Analysis Date: **4/12/2018** SeqNo: **2992077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9.578	500									
Iron	-0.272202	20									
Magnesium	-0.367777	100									

Sample ID **CCB1** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123355**
Client ID: **CCB** Batch ID: **R123355** TestNo: **EPA 200.7** Analysis Date: **4/12/2018** SeqNo: **2992092**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	31.356	500									
Iron	-0.690282	20									
Magnesium	-0.581028	100									

Sample ID **CCB2** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123355**
Client ID: **CCB** Batch ID: **R123355** TestNo: **EPA 200.7** Analysis Date: **4/13/2018** SeqNo: **2992104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	24.865	500									
Iron	-0.42473	20									
Magnesium	-0.341261	100									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123400**
Client ID: **ICB** Batch ID: **R123400** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-2.539619	500									

Sample ID **CCB1** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123400**
Client ID: **CCB** Batch ID: **R123400** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9.866	500									

Sample ID **CCB2** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123400**
Client ID: **CCB** Batch ID: **R123400** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	62.342	500									

Sample ID **CCB3** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123400**
Client ID: **CCB** Batch ID: **R123400** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20.918	500									

Sample ID **CCB4** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123400**
Client ID: **CCB** Batch ID: **R123400** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-4.049803	500									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCB5** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123400**
Client ID: **CCB** Batch ID: **R123400** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-14.316827	500									

Sample ID **CCB6** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123400**
Client ID: **CCB** Batch ID: **R123400** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-14.573061	500									

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123355**
Client ID: **ICSA** Batch ID: **R123355** TestNo: **EPA 200.7** Analysis Date: **4/12/2018** SeqNo: **2992079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	498466.604	50	500000	0	99.7	80	120				
Calcium	491325.302	500	500000	0	98.3	80	120				
Iron	199092.889	20	200000	0	99.5	80	120				
Magnesium	457119.685	100	500000	0	91.4	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123355**
Client ID: **ICSAB** Batch ID: **R123355** TestNo: **EPA 200.7** Analysis Date: **4/12/2018** SeqNo: **2992080**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	564155.292	50	500000	0	113	80	120				
Calcium	551741.085	500	500000	0	110	80	120				
Iron	187064.899	20	200000	0	93.5	80	120				
Magnesium	509505.359	100	500000	0	102	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123355**
Client ID: **ICSA** Batch ID: **R123355** TestNo: **EPA 200.7** Analysis Date: **4/13/2018** SeqNo: **2992106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	508273.076	50	500000	0	102	80	120				
Calcium	487134.821	500	500000	0	97.4	80	120				
Iron	197751.613	20	200000	0	98.9	80	120				
Magnesium	453797.763	100	500000	0	90.8	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123355**
Client ID: **ICSAB** Batch ID: **R123355** TestNo: **EPA 200.7** Analysis Date: **4/13/2018** SeqNo: **2992107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	557795.121	50	500000	0	112	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123355**
Client ID: **ICSAB** Batch ID: **R123355** TestNo: **EPA 200.7** Analysis Date: **4/13/2018** SeqNo: **2992107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	546766.351	500	500000	0	109	80	120				
Iron	185432.333	20	200000	0	92.7	80	120				
Magnesium	505451.171	100	500000	0	101	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123400**
Client ID: **ICSA**	Batch ID: **R123400**	TestNo: **EPA 200.7**		Analysis Date: **4/16/2018**	SeqNo: **2995891**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-4.511304	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123400**
Client ID: **ICSAB**	Batch ID: **R123400**	TestNo: **EPA 200.7**		Analysis Date: **4/16/2018**	SeqNo: **2995892**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9873.928	500	10000	0	98.7	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123400**
Client ID: **ICSA**	Batch ID: **R123400**	TestNo: **EPA 200.7**		Analysis Date: **4/16/2018**	SeqNo: **2995957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-19.810462	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **123400**
Client ID: **ICSAB**	Batch ID: **R123400**	TestNo: **EPA 200.7**		Analysis Date: **4/16/2018**	SeqNo: **2995958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10312.248	500	10000	0	103	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180412B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.0049	100.49	65-125	PASS
Standard2	ICAL	1	1.02	102.04	65-125	PASS
Standard3	ICAL	1	1	99.72	65-125	PASS
Standard4	ICAL	1	0.98	97.84	65-125	PASS
Standard5	ICAL	1	0.98	97.56	65-125	PASS
Standard6	ICAL	1	0.97	96.89	65-125	PASS
Standard7	ICAL	1	0.96	96.43	65-125	PASS
ICV	ICV	1	0.98	97.52	65-125	PASS
ICB	ICB	1	0.99	99.31	65-125	PASS
LLICV1	CCV1	1	0.98	98.31	65-125	PASS
ICSA1	ICSA	1	0.94	93.97	65-125	PASS
ICSAB1	ICSAB	1	0.85	85.46	65-125	PASS
MB-67564	MBLK	1	-0.00008	-0.008	65-125	NR!
CCV1	CCV	1	0.98	98.22	65-125	PASS
CCB1	CCB	1	1	99.5	65-125	PASS
MB-67564	MBLK	1	0.99	98.97	65-125	PASS
LCS1-67564	LCS	1	0.91	90.57	65-125	PASS
N029488-001E	SAMP	1	0.84	84.5	65-125	PASS
N029488-002E	SAMP	1	0.84	84.32	65-125	PASS
N029506-001D	SAMP	1	0.91	90.99	65-125	PASS
N029506-001D	SAMP	5	0.94	94.5	65-125	PASS
N029506-001D-PS	PS	1	0.92	92.21	65-125	PASS
N029506-001D-MS1	MS	1	0.92	92.31	65-125	PASS
N029506-001D-MSD1	MSD	1	0.92	92.32	65-125	PASS
N029506-002D	SAMP	1	0.83	83.49	65-125	PASS
CCV2	CCV	1	0.97	96.9	65-125	PASS
CCB2	CCB	1	0.99	98.84	65-125	PASS
LLCCV1	CCV2	1	1.0029	100.29	65-125	PASS
ICSA2	ICSA	1	0.94	94.44	65-125	PASS
ICSAB2	ICSAB	1	0.85	85.24	65-125	PASS
N029640-001E	SAMP	1	0.85	85.2	65-125	PASS
N029655-001C	SAMP	1	0.97	96.64	65-125	PASS
CCV3	CCV	1	0.98	98.17	65-125	PASS
CCB3	CCB	1	1.0019	100.19	65-125	PASS
CCV4	CCV	1	0.99	99.004	65-125	PASS
CCB4	CCB	1	1.0088	100.88	65-125	PASS
LLCCV2	CCV2	1	1.013	101.32	65-125	PASS
ICSA3	ICSA	1	0.94	94.5	65-125	PASS
ICSAB3	ICSAB	1	0.86	85.67	65-125	PASS
CCV5	CCV	1	0.99	99.33	65-125	PASS

INTERNAL STANDARD: 180412B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCB5	CCB	1	1.022	102.15	65-125	PASS
CCV6	CCV	1	1.0028	100.28	65-125	PASS
CCB6	CCB	1	1.025	102.5	65-125	PASS
CCV7	CCV	1	1.019	101.93	65-125	PASS
CCB7	CCB	1	0.95	94.95	65-125	PASS
LLCCV3	CCV2	1	0.96	96.39	65-125	PASS
LLCCV4	CCV2	1	1.032	103.22	65-125	PASS
LLCCV5	CCV2	1	1.035	103.51	65-125	PASS
ICSA4	ICSA	1	0.97	96.97	65-125	PASS
ICSAB4	ICSAB	1	0.88	88.33	65-125	PASS

INTERNAL STANDARD: 180416C

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	~~Yttrium~~, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.97	96.53	65-125	PASS
Standard2	ICAL	1	0.98	98.2	65-125	PASS
Standard3	ICAL	1	0.97	97.099	65-125	PASS
Standard4	ICAL	1	0.96	95.97	65-125	PASS
Standard5	ICAL	1	0.96	96.23	65-125	PASS
Standard6	ICAL	1	0.95	94.9	65-125	PASS
ICV	ICV	1	0.96	96.46	65-125	PASS
ICB	ICB	1	0.99	99.15	65-125	PASS
ICSA1	ICSA	1	0.98	98.06	65-125	PASS
ICSAB1	ICSAB	1	0.96	95.99	65-125	PASS
CCV1	CCV	1	0.96	96.41	65-125	PASS
CCB1	CCB	1	1.0043	100.43	65-125	PASS
CCV2	CCV	1	0.99	99.21	65-125	PASS
CCB2	CCB	1	1.031	103.1	65-125	PASS
CCV3	CCV	1	0.98	97.87	65-125	PASS
CCB3	CCB	1	1.012	101.24	65-125	PASS
CCV4	CCV	1	0.98	97.65	65-125	PASS
CCB4	CCB	1	1	99.78	65-125	PASS
MB-67564	MBLK	1	0.99	99.48	65-125	PASS
LCS2-67564	LCS	1	1.031	103.09	65-125	PASS
N029506-001D	SAMP	25	1.0038	100.38	65-125	PASS
N029506-002D	SAMP	25	0.99	99.34	65-125	PASS
N029506-002D	SAMP	125	1.013	101.34	65-125	PASS
N029506-002D	SAMP	625	1.012	101.2	65-125	PASS
N029506-002D-PS	PS	125	0.99	99.35	65-125	PASS
N029506-002D-MS2	MS	125	1	99.93	65-125	PASS
CCV5	CCV	1	0.98	98.11	65-125	PASS
CCB5	CCB	1	1.0077	100.77	65-125	PASS
N029506-002D-MSD2	MSD	125	1	99.86	65-125	PASS
CCV6	CCV	1	0.31	31.043	65-125	NR!
CCV7	CCV	1	0.99	98.98	65-125	PASS
CCB6	CCB	1	1.011	101.06	65-125	PASS
ICSA2	ICSA	1	1.0012	100.12	65-125	PASS
ICSAB2	ICSAB	1	0.99	98.56	65-125	PASS

Nancy 4/17/2018

SERIAL DILUTION/ POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water **Dilution Test Summary**

Work Order No.: N029506
Test Method: EPA 200.7
Analysis Date: 4/12/2018

Matrix: Groundwater
Batch No.: 67564

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N029506-001D DT 5X	Calcium	ug/L	131114.4	PASS	131355	0.18%	10
N029506-001D DT 5X	Iron	ug/L	0	NA	35.53385	100.00%	10
N029506-001D DT 5X	Magnesium	ug/L	32714.06	PASS	31101.55	5.18%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water **Dilution Test Summary**

Work Order No.: N029506
Test Method: EPA 200.7
Analysis Date: 4/16/2018

Matrix: Water
Batch No.: 67564

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

~~Dilution test failed for Na~~.

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N029506-002D DT 1~~25X~~	Sodium	ug/L	~~1486302~~	~~FAIL~~	~~1806362~~	~~17.72%~~	10
5x			1462032		1486302	1.6%	

Note: NA - Not applicable

Nancy 4/17/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N029506-001D-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123355**
Client ID: **ZZZZZZ** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/12/2018** SeqNo: **2992099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	138729.273	500	10000	131400	73.7	80	120				S
Iron	137.819	20	100.0	35.53	102	80	120				
Magnesium	39750.245	100	10000	31100	86.5	80	120				

Sample ID **N029506-002D-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **123400**
Client ID: **ZZZZZZ** Batch ID: **67564** TestNo: **EPA 200.7** Analysis Date: **4/16/2018** SeqNo: **2995949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1763010.384	62000	20000	~~1806000~~ 1486000	~~-217~~ 1383%	80	120				S

Qualifiers:

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

Nancy for 4/17/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analyst: MI

Matrix: Water
Units: mg/L

Compound	MDL	LOD Spike	LOD Recovered	PQL Spike	PQL Recovered	PQL % Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

EPA 200.8
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)
ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67642
ASSET #: N029506
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 4/13/2018

Method:
[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X	X		~~X~~
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

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

1st Level Reviewer CEI Date: 4/17/18

2nd Level Reviewer [signature] 4/17/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

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

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N029506-002D** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 110.641 * 5 * (25/25)

Chromium , ug/L = 553.205

Reporting results in two significant figures,

Chromium , ug/L = 550

% RSD SUMMARY

PERCENT RSD SUMMARY: 180413A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	6.76	15	PASS	0.098	20.48	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.5	2.64	15	PASS	0.55	1.83	15	PASS
Std3-5/50 ppb	ICAL	1	5.099	1.8	15	PASS	5.13	1.47	15	PASS
Std4-10/100 ppb	ICAL	1	10.21	1.15	15	PASS	10.36	2.61	15	PASS
Std5-20/200 ppb	ICAL	1	20.48	2.55	15	PASS	20.35	2.47	15	PASS
Std6-40/400 ppb	ICAL	1	40.33	1.99	15	PASS	40.51	3.22	15	PASS
Std7-100/1000 ppb	ICAL	1	99.75	0.4	15	PASS	99.68	1.05	15	PASS
Std8-200/2000 ppb	ICAL	1	196.038	1.46	15	PASS	196.57	1.24	15	PASS
ICV	ICV	1	10.84	0.99	15	PASS	106.03	1.43	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.0064	125.42	15	<PQL
LLICV	CCV1	1	1.061	3.77	20	PASS	0.55	2.63	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	21.72	2.12	15	PASS	21.75	3.51	15	PASS
MB-67642	MBLK	1	0.013	51.45	15	<PQL	0.019	29.45	15	<PQL
LCS-67642	LCS	1	10.36	2.89	15	PASS	102.66	2.54	15	PASS
N029488-002E	SAMP	1	485.75	2.011	15	PASS	6.96	2.99	15	PASS
N029488-002E	SAMP	5	101.75	1.85	15	PASS	1.6	6.56	15	PASS
N029488-001E	SAMP	1	1.34	2.69	15	PASS	24.12	1.88	15	PASS
N029488-001E	SAMP	5	0.3	3.33	15	PASS	5.21	0.51	15	PASS
N029488-003C	SAMP	1	1.7	6.9	15	PASS	69.38	1.0093	15	PASS
N029488-003C	SAMP	5	<0.000	N/A	15	<PQL	24.012	2.43	15	PASS
N029506-001D	SAMP	1	0.11	11.92	15	PASS	516.46	2.2	15	PASS
N029506-001D	SAMP	5	0.028	44.0036	15	<PQL	106.34	2.54	15	PASS
CCV1	CCV	1	20.88	3.074	15	PASS	20.37	1.69	15	PASS
CCB1	CCB	1	0.0036	30.55	15	<PQL	0.0061	53.94	15	<PQL
N029506-002D	SAMP	1	535.91	2.23	15	PASS	19.27	1.71	15	PASS
N029506-002D	SAMP	5	110.64	2.66	15	PASS	4.21	0.84	15	PASS
N029640-001E	SAMP	1	16.35	1.74	15	PASS	115.51	0.9	15	PASS
N029640-001E	SAMP	5	3.61	0.72	15	PASS	25.84	2.43	15	PASS
N029640-001E	SAMP	25	0.72	2.85	15	PASS	5.36	3.41	15	PASS
N029640-001E-PS	PS	1	25.35	0.72	15	PASS	199.14	0.61	15	PASS
N029640-001E-PS	PS	5	5.6	1.51	15	PASS	44.11	1.32	15	PASS
N029640-001E-MS	MS	1	24.7	1.85	15	PASS	196.85	1.5	15	PASS
N029640-001E-MS	MS	5	5.3	2.3	15	PASS	42.54	1.38	15	PASS
N029640-001E-MSD	MSD	1	25.0038	2.083	15	PASS	197.67	1.7	15	PASS
CCV2	CCV	1	20.81	2.93	15	PASS	19.88	2.67	15	PASS
CCB2	CCB	1	0.0019	101.86	15	<PQL	0.011	65.42	15	<PQL
N029640-001E-MSD	MSD	5	5.46	1.74	15	PASS	43.63	0.81	15	PASS
N029655-001C	SAMP	1	4.19	1.79	15	PASS	22.44	1.57	15	PASS
N029655-001C	SAMP	5	0.91	6.53	15	PASS	6.17	1.41	15	PASS

PERCENT RSD SUMMARY: 180413A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N029488-003C	SAMP	25	<0.000	N/A	15	<PQL	5.073	2.63	15	PASS
CCV3	CCV	1	21.066	1.92	15	PASS	20.25	2.48	15	PASS
CCB3	CCB	1	0.0062	63.28	15	<PQL	0.012	18.12	15	<PQL
CCV4	CCV	1	20.76	1.087	15	PASS	19.79	1.47	15	PASS
CCB4	CCB	1	0.0042	59.15	15	<PQL	0.012	43.12	15	<PQL
LLCCV1	CCV2	1	1.056	3.83	20	PASS	0.54	7.17	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	21.3	1.58	15	PASS	21.0099	0.33	15	PASS
CCV5	CCV	1	21.38	1.76	15	PASS	20.21	2.71	15	PASS
CCB5	CCB	1	0.0011	284.59	15	<PQL	0.039	11.92	15	PASS
CCV6	CCV	1	21.41	1.14	15	PASS	20.33	0.58	15	PASS
CCB6	CCB	1	0.0047	72.63	15	<PQL	0.023	55.4	15	<PQL
LLCCV2	CCV2	1	0.95	3.6	20	PASS	0.46	9.79	20	PASS
ICSA3	ICSA	1	0.004	222.58	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	21.45	0.61	15	PASS	21.99	0.85	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180413A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0413001.D	RINSE	RINSE	1	04/13/18 11:29 AM
A0413002.D	Cal Blank	IBLK	1	04/13/18 11:35 AM
A0413003.D	Std1-0.1/1 ppb	ICAL	1	04/13/18 11:40 AM
A0413004.D	Std2-0.5/5 ppb	ICAL	1	04/13/18 11:46 AM
A0413005.D	Std3-5/50 ppb	ICAL	1	04/13/18 11:51 AM
A0413006.D	Std4-10/100 ppb	ICAL	1	04/13/18 11:57 AM
A0413007.D	Std5-20/200 ppb	ICAL	1	04/13/18 12:02 PM
A0413008.D	Std6-40/400 ppb	ICAL	1	04/13/18 12:08 PM
A0413009.D	Std7-100/1000 ppb	ICAL	1	04/13/18 12:14 PM
A0413010.D	Std8-200/2000 ppb	ICAL	1	04/13/18 12:19 PM
A0413011.D	ICV	ICV	1	04/13/18 12:26 PM
A0413012.D	ICB	ICB	1	04/13/18 12:31 PM
A0413013.D	LLICV	CCV1	1	04/13/18 12:37 PM
A0413014.D	ICSA1	ICSA	1	04/13/18 12:42 PM
A0413015.D	ICSAB1	ICSAB	1	04/13/18 12:48 PM
A0413016.D	MB-67642	MBLK	1	04/13/18 12:55 PM
A0413017.D	LCS-67642	LCS	1	04/13/18 12:59 PM
A0413018.D	N029488-002E	SAMP	1	04/13/18 1:05 PM
A0413019.D	N029488-002E	SAMP	5	04/13/18 1:10 PM
A0413020.D	N029488-001E	SAMP	1	04/13/18 1:16 PM
A0413021.D	N029488-001E	SAMP	5	04/13/18 1:21 PM
A0413022.D	N029488-003C	SAMP	1	04/13/18 1:26 PM
A0413023.D	N029488-003C	SAMP	5	04/13/18 1:32 PM
A0413024.D	N029506-001D	SAMP	1	04/13/18 1:38 PM
A0413025.D	N029506-001D	SAMP	5	04/13/18 1:44 PM
A0413026.D	CCV1	CCV	1	04/13/18 1:49 PM
A0413027.D	CCB1	CCB	1	04/13/18 1:55 PM
A0413028.D	N029506-002D	SAMP	1	04/13/18 2:01 PM
A0413029.D	N029506-002D	SAMP	5	04/13/18 2:06 PM
A0413030.D	N029640-001E	SAMP	1	04/13/18 2:11 PM
A0413031.D	N029640-001E	SAMP	5	04/13/18 2:16 PM
A0413032.D	N029640-001E	SAMP	25	04/13/18 2:23 PM
A0413033.D	N029640-001E-PS	PS	1	04/13/18 2:28 PM
A0413034.D	N029640-001E-PS	PS	5	04/13/18 2:34 PM
A0413035.D	N029640-001E-MS	MS	1	04/13/18 2:40 PM
A0413036.D	N029640-001E-MS	MS	5	04/13/18 2:45 PM
A0413037.D	N029640-001E-MSD	MSD	1	04/13/18 2:51 PM
A0413038.D	CCV2	CCV	1	04/13/18 2:57 PM
A0413039.D	CCB2	CCB	1	04/13/18 3:02 PM
A0413040.D	N029640-001E-MSD	MSD	5	04/13/18 3:08 PM
A0413041.D	N029655-001C	SAMP	1	04/13/18 3:13 PM
A0413042.D	N029655-001C	SAMP	5	04/13/18 3:19 PM

INJECTION LOG: 180413A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0413043.D	N029488-003C	SAMP	25	04/13/18 3:25 PM
A0413044.D	MB-67643	MBLK	1	04/13/18 3:30 PM
A0413045.D	LCS-67643	LCS	1	04/13/18 3:36 PM
A0413046.D	N029655-001D	SAMP	1	04/13/18 3:40 PM
A0413047.D	N029655-001D	SAMP	5	04/13/18 3:46 PM
A0413048.D	N029655-001D-PS	PS	1	04/13/18 3:51 PM
A0413049.D	N029655-001D-MS	MS	1	04/13/18 3:57 PM
A0413050.D	CCV3	CCV	1	04/13/18 4:03 PM
A0413051.D	CCB3	CCB	1	04/13/18 4:08 PM
A0413052.D	N029655-001D-MSD	MSD	1	04/13/18 4:14 PM
A0413053.D	MB-67608	MBLK	1	04/13/18 4:22 PM
A0413054.D	LCS-67608	LCS	1	04/13/18 4:27 PM
A0413055.D	N029716-001A	SAMP	1	04/13/18 4:40 PM
A0413056.D	N029717-006A	SAMP	1	04/13/18 4:46 PM
A0413057.D	N029717-006A	SAMP	5	04/13/18 4:51 PM
A0413058.D	N029717-006A-PS	PS	1	04/13/18 4:57 PM
A0413059.D	N029717-006A-MS	MS	1	04/13/18 5:03 PM
A0413060.D	N029717-006A-MSD	MSD	1	04/13/18 5:08 PM
A0413061.D	CCV4	CCV	1	04/13/18 5:14 PM
A0413062.D	CCB4	CCB	1	04/13/18 5:19 PM
A0413063.D	LLCCV1	CCV2	1	04/13/18 5:25 PM
A0413064.D	ICSA2	ICSA	1	04/13/18 5:31 PM
A0413065.D	ICSAB2	ICSAB	1	04/13/18 5:36 PM
A0413066.D	MB-67623	MBLK	1	04/13/18 6:39 PM
A0413067.D	LCS-67623	LCS	1	04/13/18 6:44 PM
A0413068.D	N029725-001A	SAMP	1	04/13/18 6:50 PM
A0413069.D	N029725-001A	SAMP	5	04/13/18 6:56 PM
A0413070.D	N029725-001A-PS	PS	1	04/13/18 7:01 PM
A0413071.D	N029725-001A-MS	MS	1	04/13/18 7:07 PM
A0413072.D	N029725-001A-MSD	MSD	1	04/13/18 7:12 PM
A0413073.D	N029726-001A	SAMP	1	04/13/18 7:18 PM
A0413074.D	N029727-001A	SAMP	1	04/13/18 7:23 PM
A0413075.D	N029731-001A	SAMP	1	04/13/18 7:29 PM
A0413076.D	CCV5	CCV	1	04/13/18 7:35 PM
A0413077.D	CCB5	CCB	1	04/13/18 7:40 PM
A0413078.D	N029733-001A	SAMP	1	04/13/18 7:46 PM
A0413079.D	N029734-001A	SAMP	1	04/13/18 7:51 PM
A0413080.D	N029735-001A	SAMP	1	04/13/18 7:57 PM
A0413081.D	N029743-001D	SAMP	1	04/13/18 8:03 PM
A0413082.D	N029754-001A	SAMP	1	04/13/18 8:08 PM
A0413083.D	N029762-001A	SAMP	1	04/13/18 8:14 PM
A0413084.D	N029762-001A-MS	MS	1	04/13/18 8:19 PM

INJECTION LOG: 180413A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0413085.D	N029763-001A	SAMP	1	04/13/18 8:25 PM
A0413086.D	N029764-001A	SAMP	1	04/13/18 8:31 PM
A0413087.D	N029488-003C	SAMP	5	04/13/18 8:37 PM
A0413088.D	CCV6	CCV	1	04/13/18 8:42 PM
A0413089.D	CCB6	CCB	1	04/13/18 8:47 PM
A0413090.D	LLCCV2	CCV2	1	04/13/18 8:53 PM
A0413091.D	ICSA3	ICSA	1	04/13/18 8:58 PM
A0413092.D	ICSAB3	ICSAB	1	04/13/18 9:03 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/13/2018 8:11:02**
Prep End Date: **4/13/2018 12:30:00**
Prep Batch **67642** Prep Code: **200.8_PR**

Reviewed/ Date: 4/17/2018
Initials/ Date: 4/17/2018
Technician **Claire Ignacio**

Prep Factor Units **mL / mL** Temp. (°C): **94.7** Location: **01-10**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67642	Aqueous		25	☐	0	0	25	1.000		
MB-67642	Aqueous		25	☐	0	0	25	1.000		
N029488-001E	Water	<2	25	☐	0	0	25	1.000		
N029488-002E	Water	<2	25	☐	0	0	25	1.000		
N029488-003C	Water	<2	25	☐	0	0	25	1.000		
N029506-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N029506-002D	Groundwater	<2	25	☐	0	0	25	1.000		
N029640-001E	Water	<2	25	☐	0	0	25	1.000		
N029640-001E-MS	Water	<2	25	☐	0	0	25	1.000		
N029640-001E-MS	Water	<2	25	☐	0	0	25	1.000		
N029655-001C	Water	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 13 Apr 2018 06:56:02 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	100918.00	0.00	
24	Mg	394524.00	0.00	
25	Mg	51356.60	0.00	
26	Mg	59468.10	0.00	
59	Co	438137.00	0.00	
115	In	782430.00	0.00	
206	Pb	244393.00	0.00	
207	Pb	212638.00	0.00	
208	Pb	527674.00	0.00	

RSD (%)

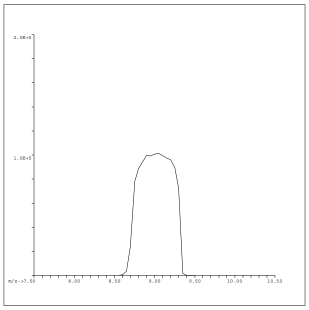
Element		Actual	Required	Flag
9	Be	1.30	5.00	
24	Mg	0.51	5.00	
25	Mg	0.84	5.00	
26	Mg	1.19	5.00	
59	Co	0.58	5.00	
115	In	0.63	5.00	
206	Pb	0.85	5.00	
207	Pb	1.00	5.00	
208	Pb	0.64	5.00	

Ion Ratio

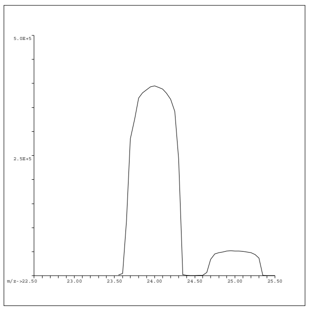
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

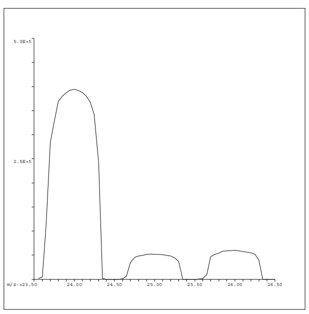
Element	Actual	Required	Flag



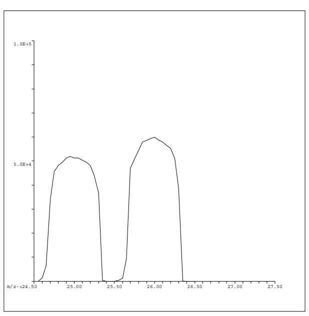
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



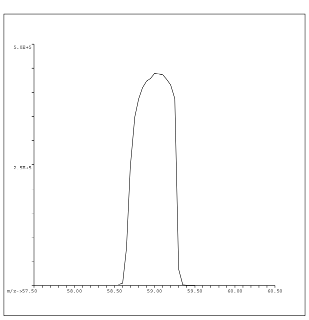
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



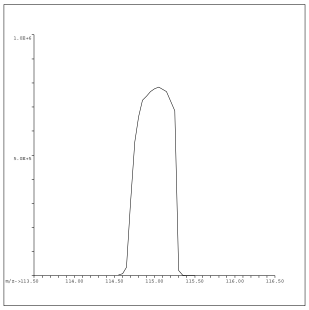
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



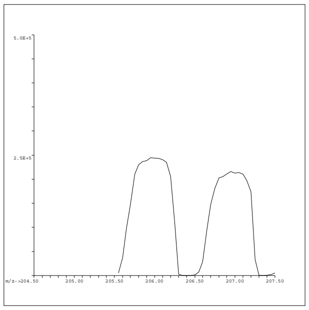
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



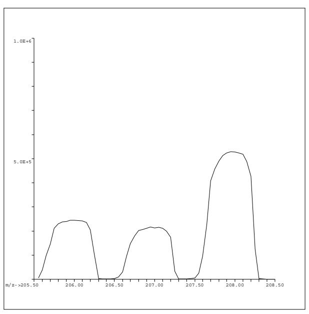
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



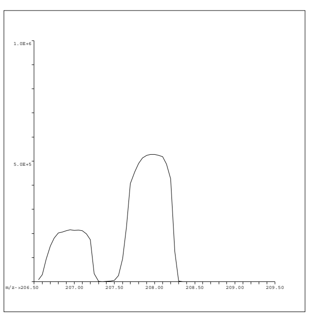
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180413A

Instrument ID: ICPMS-02

Analyte	Data File	A0413002.D	A0413004.D	A0413005.D	A0413006.D	A0413007.D	A0413008.D	A0413009.D	A0413010.D	
	Acq. Date-Time	04/13/2018 11:35 AM	04/13/2018 11:46 AM	04/13/2018 11:51 AM	04/13/2018 11:57 AM	04/13/2018 12:02 PM	04/13/2018 12:08 PM	04/13/2018 12:14 PM	04/13/2018 12:19 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	57466.8	57676.5	59758.1	59004.2	59737.8	59072.3	60641.2	61343.5	
55 Mn [2]	CPS	16.4	1358.9	12966.3	25855.7	51387	101120.4	255588	509760.4	1.0000
52 Cr [2]	CPS	68.9	2459.1	25488.9	50312	102083.6	198717.9	504638	1003023.4	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-171009C
IS Mix: 2MSST-170701A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV** SampType: **ICV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **ICV** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	106.030	0.50	100.0	0	106	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **ZZZZZZ** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.553	0.50	0.5000	0	111	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **CCV** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.369	0.50	20.00	0	102	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **CCV** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.879	0.50	20.00	0	99.4	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **CCV** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.247	0.50	20.00	0	101	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCV4** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **CCV** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994024**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.787	0.50	20.00	0	98.9	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **ZZZZZZ** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.542	0.50	0.5000	0	108	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **CCV** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.212	0.50	20.00	0	101	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **CCV** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.331	0.50	20.00	0	102	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **ZZZZZZ** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.459	0.50	0.5000	0	91.9	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **123376**
Client ID: **ICV**	Batch ID: **R123376**	TestNo: **EPA 200.8**		Analysis Date: **4/13/2018**	SeqNo: **2993721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.840	1.0	10.00	0	108	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **123376**
Client ID: **ZZZZZZ**	Batch ID: **R123376**	TestNo: **EPA 200.8**		Analysis Date: **4/13/2018**	SeqNo: **2993723**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.061	1.0	1.000	0	106	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **123376**
Client ID: **CCV**	Batch ID: **R123376**	TestNo: **EPA 200.8**		Analysis Date: **4/13/2018**	SeqNo: **2993736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.882	1.0	20.00	0	104	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **123376**
Client ID: **CCV**	Batch ID: **R123376**	TestNo: **EPA 200.8**		Analysis Date: **4/13/2018**	SeqNo: **2993748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.806	1.0	20.00	0	104	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **123376**
Client ID: **CCV**	Batch ID: **R123376**	TestNo: **EPA 200.8**		Analysis Date: **4/13/2018**	SeqNo: **2993760**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.066	1.0	20.00	0	105	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **CCV4** SampType: **CCV** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **123376**
Client ID: **CCV** Batch ID: **R123376** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.758	1.0	20.00	0	104	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **123376**
Client ID: **ZZZZZZ** Batch ID: **R123376** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.056	1.0	1.000	0	106	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB** SampType: **ICB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **ICB** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993975**

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

Sample ID **CCB1** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **CCB** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993990**

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

Sample ID **CCB2** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **CCB** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994002**

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

Sample ID **CCB3** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **CCB** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994014**

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

Sample ID **CCB4** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **CCB** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994025**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCB5** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **CCB** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994040**

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

Sample ID **CCB6** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **CCB** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994052**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **123376**
Client ID: **ICB** Batch ID: **R123376** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993722**

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

Sample ID **CCB1** SampType: **CCB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **123376**
Client ID: **CCB** Batch ID: **R123376** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993737**

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

Sample ID **CCB2** SampType: **CCB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **123376**
Client ID: **CCB** Batch ID: **R123376** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993749**

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

Sample ID **CCB3** SampType: **CCB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **123376**
Client ID: **CCB** Batch ID: **R123376** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993761**

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

Sample ID **CCB4** SampType: **CCB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **123376**
Client ID: **CCB** Batch ID: **R123376** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993772**

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

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

ASSET Laboratories

Date: *16-Apr-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **ICSA** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993977**

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

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **ICSAB** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.755	0.50	20.00	0	109	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **ICSA** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994027**

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

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **ICSAB** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.010	0.50	20.00	0	105	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **123377**
Client ID: **ICSA** Batch ID: **R123377** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2994054**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **200.8_WDISS** Units: **µg/L**	Prep Date:	RunNo: **123377**
Client ID: **ICSAB**	Batch ID: **R123377**	TestNo: **EPA 200.8**	Analysis Date: **4/13/2018**	SeqNo: **2994055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.986	0.50	20.00	0	110	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **123376**
Client ID: **ICSA** Batch ID: **R123376** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993724**

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

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **123376**
Client ID: **ICSAB** Batch ID: **R123376** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.721	1.0	20.00	0	109	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **123376**
Client ID: **ICSA** Batch ID: **R123376** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993774**

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

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **123376**
Client ID: **ICSAB** Batch ID: **R123376** TestNo: **EPA 200.8** Analysis Date: **4/13/2018** SeqNo: **2993775**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.297	1.0	20.00	0	106	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180413A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	57466.8	57466.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	58324.3	57466.8	101.49	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	57676.5	57466.8	100.36	PASS	70-125
Std3-5/50 ppb	ICAL	1	59758.1	57466.8	103.99	PASS	70-125
Std4-10/100 ppb	ICAL	1	59004.2	57466.8	102.68	PASS	70-125
Std5-20/200 ppb	ICAL	1	59737.8	57466.8	103.95	PASS	70-125
Std6-40/400 ppb	ICAL	1	59072.3	57466.8	102.79	PASS	70-125
Std7-100/1000 ppb	ICAL	1	60641.2	57466.8	105.52	PASS	70-125
Std8-200/2000 ppb	ICAL	1	61343.5	57466.8	106.75	PASS	70-125
ICV	ICV	1	55381	57466.8	96.37	PASS	70-125
ICB	ICB	1	58754.6	57466.8	102.24	PASS	70-125
LLICV	CCV1	1	67208.3	57466.8	116.95	PASS	70-125
ICSA1	ICSA	1	66072.6	57466.8	114.98	PASS	70-125
ICSAB1	ICSAB	1	68149.9	57466.8	118.59	PASS	70-125
MB-67642	MBLK	1	53667.5	57466.8	93.39	PASS	70-125
LCS-67642	LCS	1	66793.5	57466.8	116.23	PASS	70-125
N029488-002E	SAMP	1	62946.3	57466.8	109.54	PASS	70-125
N029488-002E	SAMP	5	67819.9	57466.8	118.02	PASS	70-125
N029488-001E	SAMP	1	64862.6	57466.8	112.87	PASS	70-125
N029488-001E	SAMP	5	69010.2	57466.8	120.09	PASS	70-125
N029488-003C	SAMP	1	44746.2	57466.8	77.86	PASS	70-125
N029488-003C	SAMP	5	59096.7	57466.8	102.84	PASS	70-125
N029506-001D	SAMP	1	62798.2	57466.8	109.28	PASS	70-125
N029506-001D	SAMP	5	65328.9	57466.8	113.68	PASS	70-125
CCV1	CCV	1	67653.6	57466.8	117.73	PASS	70-125
CCB1	CCB	1	65021.1	57466.8	113.15	PASS	70-125
N029506-002D	SAMP	1	60156.1	57466.8	104.68	PASS	70-125
N029506-002D	SAMP	5	64763.2	57466.8	112.7	PASS	70-125
N029640-001E	SAMP	1	64046.9	57466.8	111.45	PASS	70-125
N029640-001E	SAMP	5	67697.7	57466.8	117.8	PASS	70-125
N029640-001E	SAMP	25	66609.4	57466.8	115.91	PASS	70-125
N029640-001E-PS	PS	1	62815.8	57466.8	109.31	PASS	70-125
N029640-001E-PS	PS	5	66734.3	57466.8	116.13	PASS	70-125
N029640-001E-MS	MS	1	63334.6	57466.8	110.21	PASS	70-125
N029640-001E-MS	MS	5	67796.3	57466.8	117.97	PASS	70-125
N029640-001E-MSD	MSD	1	62551.5	57466.8	108.85	PASS	70-125
CCV2	CCV	1	67475.3	57466.8	117.42	PASS	70-125
CCB2	CCB	1	61961.6	57466.8	107.82	PASS	70-125
N029640-001E-MSD	MSD	5	64874.9	57466.8	112.89	PASS	70-125
N029655-001C	SAMP	1	67238.6	57466.8	117	PASS	70-125
N029655-001C	SAMP	5	64583.9	57466.8	112.38	PASS	70-125

INTERNAL STANDARD: 180413A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N029488-003C	SAMP	25	62229.2	57466.8	108.29	PASS	70-125
CCV3	CCV	1	63682.7	57466.8	110.82	PASS	70-125
CCB3	CCB	1	60009.1	57466.8	104.42	PASS	70-125
CCV4	CCV	1	62183.7	57466.8	108.21	PASS	70-125
CCB4	CCB	1	60628.9	57466.8	105.5	PASS	70-125
LLCCV1	CCV2	1	48955.1	57466.8	85.19	PASS	70-125
ICSA2	ICSA	1	68441	57466.8	119.1	PASS	70-125
ICSAB2	ICSAB	1	62796.8	57466.8	109.27	PASS	70-125
CCV5	CCV	1	60606.7	57466.8	105.46	PASS	70-125
CCB5	CCB	1	56679.4	57466.8	98.63	PASS	70-125
CCV6	CCV	1	63588.8	57466.8	110.65	PASS	70-125
CCB6	CCB	1	59034.5	57466.8	102.73	PASS	70-125
LLCCV2	CCV2	1	52559.3	57466.8	91.46	PASS	70-125
ICSA3	ICSA	1	64153	57466.8	111.63	PASS	70-125
ICSAB3	ICSAB	1	60583.1	57466.8	105.42	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water | **Dilution Test Summary**

Work Order No.: N029506
Test Method: EPA 200.8
Analysis Date: 4/13/2018

Matrix: Groundwater
Batch No.: 67642

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N029640-001E DT 5X	Chromium	ug/L	18.02963	NA	16.35031	10.27%	10
N029640-001E DT 25X	Manganese	ug/L	134.0309	PASS	129.1915	3.75%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N029640-001E-PS**	SampType: **PS**	TestCode: **200.8_WDISS** Units: **µg/L**	Prep Date:	RunNo: **123377**
Client ID: **ZZZZZZ**	Batch ID: **67642**	TestNo: **EPA 200.8**	Analysis Date: **4/13/2018**	SeqNo: **2993997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	220.526	2.5	100.0	129.2	91.3	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	N029640-001E-PS	SampType:	PS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	123376
Client ID:	ZZZZZZ	Batch ID:	67642	TestNo:	EPA 200.8			Analysis Date:	4/13/2018	SeqNo:	2993743

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	25.350	1.0	10.00	16.35	90.0	80	120				

Qualifiers:

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

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit
Analytical Method: EPA 6020 / 200.8 **Matrix:** Water
Digestion Method: EPA 3010A **Units:** ug/L
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R123130
ASSET #: N029506

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 4/4/2018

Method:

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

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer: rba Date: 4/8/2018

2nd Level Reviewer: Nancy 4/10/2018 Date:

SAMPLE CALCULATION

Sample Calculation

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

FORMULA:

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

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

where:

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

For Sample **N029506-002A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}\ ,\mu g/L = 5.6545 \quad * 100$$

$$Cr^{+6}\ ,\mu g/L = 565.4500$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}\ ,\mu g/L = 570}$$

rba 4/8/2018

ANALYSIS RUN LOG

INJECTION LOG: 180402B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	ICV	ICV	1	Hexavalent Chromium	04/02/18 1:50 PM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/02/18 2:01 PM	Reported
13	ICB	ICB	1	Hexavalent Chromium	04/02/18 2:18 PM	Reported
14	MB-R123054	MBLK	1	Hexavalent Chromium	04/02/18 2:30 PM	Reported
15	LCS-R123054	LCS	1	Hexavalent Chromium	04/02/18 2:39 PM	Reported
16	N029480-001A	SAMP	1	Hexavalent Chromium	04/02/18 2:49 PM	Not Reported
17	N029443-001G	SAMP	1	Hexavalent Chromium	04/02/18 2:58 PM	Reported
18	N029444-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:08 PM	Reported
19	N029445-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:17 PM	Reported
20	N029446-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:27 PM	Reported
21	N029480-001A	SAMP	5	Hexavalent Chromium	04/02/18 3:36 PM	Reported
22	N029480-002A	SAMP	5	Hexavalent Chromium	04/02/18 3:45 PM	Reported
23	N029480-001ADUP	DUP	5	Hexavalent Chromium	04/02/18 3:55 PM	Reported
24	CCV-1	CCV1	1	Hexavalent Chromium	04/02/18 4:04 PM	Reported
25	CCB-1	CCB	1	Hexavalent Chromium	04/02/18 4:14 PM	Reported
26	N029480-001AMS	MS	5	Hexavalent Chromium	04/02/18 4:23 PM	Reported
27	N029480-001AMSD	MSD	5	Hexavalent Chromium	04/02/18 4:33 PM	Reported
28	CCV-2	CCV	1	Hexavalent Chromium	04/02/18 4:42 PM	Reported
29	CCB-2	CCB	1	Hexavalent Chromium	04/02/18 4:52 PM	Reported

rba 4/3/2018

Injection Log Summary

Sequence Details

Name:	**IC-07_180402B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**02/Apr/18 17:22:28**
No. of Injections:	**32**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	ICV,ICV,1,	11	1000	Unknown		04/02/2018 13:50	Finished	ICV @5ppb, IWST-180129B
12	PQL@0.2ppb,CCV2,1	12	1000	Unknown		04/02/2018 14:01	Finished	PQL @ 0.2ppb
13	ICB,ICB,1,	13	1000	Unknown		04/02/2018 14:18	Finished	ICB R180329A
14	MB-H2O,MBLK,1,	14	1000	Unknown		04/02/2018 14:30	Finished	MB R180302A
15	LCS-H2O,LCS,1,	15	1000	Unknown		04/02/2018 14:39	Finished	LCS, IWST-180129B
16	N029480-001A,SAMP	16	1000	Unknown		04/02/2018 14:49	Finished	SAMP,10mL
17	N029443-001G,SAMP	17	1000	Unknown		04/02/2018 14:58	Finished	SAMP,10mL
18	N029444-001G,SAMP	18	1000	Unknown		04/02/2018 15:08	Finished	SAMP,10mL
19	N029445-001G,SAMP	19	1000	Unknown		04/02/2018 15:17	Finished	SAMP,10mL
20	N029446-001G,SAMP	20	1000	Unknown		04/02/2018 15:27	Finished	SAMP,10mL
21	N029480-001A,SAMP	21	1000	Unknown		04/02/2018 15:36	Finished	SAMP,2>10mL
22	N029480-002A,SAMP	22	1000	Unknown		04/02/2018 15:45	Finished	SAMP,2>10mL
23	N029480-001ADUP,D	23	1000	Unknown		04/02/2018 15:55	Finished	DUP,2>10mL
24	CCV-1,CCV1,1,	24	1000	Unknown		04/02/2018 16:04	Finished	CCV @10ppb, IWST-180129A
25	CCB-1,CCB,1,	25	1000	Unknown		04/02/2018 16:14	Finished	CCB R180302A
26	N029480-001AMS,MS	26	1000	Unknown		04/02/2018 16:23	Finished	SAMP,10mL
27	N029480-001AMSD,M	27	1000	Unknown		04/02/2018 16:33	Finished	MS (1ppb), IWST-180129B,1>1
28	CCV-2,CCV,1,	28	1000	Unknown		04/02/2018 16:42	Finished	CCV @5ppb, IWST-180129A
29	CCB-2,CCB,1,	29	1000	Unknown		04/02/2018 16:52	Finished	CCB R180302A
30	SHUTDOWN	30	1000	Unknown		04/02/2018 17:01	Finished	
31	Eluent: R180402B	31	1000	Unknown		n.a.	Finished	Eluent
32	PCR: R180402C	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 4/3/2018

INJECTION LOG: 180404A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	04/04/18 8:36 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	04/04/18 8:46 AM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	04/04/18 8:56 AM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/04/18 9:05 AM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	04/04/18 9:15 AM	Reported
16	MB-R123129	MBLK	1	Hexavalent Chromium	04/04/18 9:24 AM	Reported
17	LCS-R123129	LCS	1	Hexavalent Chromium	04/04/18 9:34 AM	Reported
18	N029509-001A	SAMP	1	Hexavalent Chromium	04/04/18 9:49 AM	Reported
19	N029509-001AMS	MS	1	Hexavalent Chromium	04/04/18 10:00 AM	Reported
20	N029509-002A	SAMP	1	Hexavalent Chromium	04/04/18 10:10 AM	Reported
21	N029509-002AMS	MS	1	Hexavalent Chromium	04/04/18 10:19 AM	Reported
22	N029509-003A	SAMP	1	Hexavalent Chromium	04/04/18 10:29 AM	Reported
23	N029509-003AMS	MS	1	Hexavalent Chromium	04/04/18 10:38 AM	Not Reported
24	N029509-004A	SAMP	1	Hexavalent Chromium	04/04/18 10:48 AM	Reported
25	N029509-004AMS	MS	1	Hexavalent Chromium	04/04/18 10:57 AM	Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	04/04/18 11:06 AM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	04/04/18 11:16 AM	Reported
28	N029509-005A	SAMP	1	Hexavalent Chromium	04/04/18 11:25 AM	Reported
29	N029509-005AMS	MS	1	Hexavalent Chromium	04/04/18 11:35 AM	Not Reported
30	N029509-006A	SAMP	1	Hexavalent Chromium	04/04/18 11:44 AM	Reported
31	N029509-006AMS	MS	1	Hexavalent Chromium	04/04/18 11:54 AM	Reported
32	N029509-007A	SAMP	1	Hexavalent Chromium	04/04/18 12:03 PM	Reported
33	N029509-007AMS	MS	1	Hexavalent Chromium	04/04/18 12:13 PM	Reported
34	N029509-008A	SAMP	1	Hexavalent Chromium	04/04/18 12:22 PM	Reported
35	N029509-008AMS	MS	1	Hexavalent Chromium	04/04/18 12:32 PM	Not Reported
36	N029509-003AMS	MS	1	Hexavalent Chromium	04/04/18 12:41 PM	Reported
37	N029509-005AMS	MS	1	Hexavalent Chromium	04/04/18 12:51 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	04/04/18 1:00 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	04/04/18 1:10 PM	Reported
40	N029509-005AMSD	MSD	1	Hexavalent Chromium	04/04/18 1:20 PM	Reported
41	N029509-008AMS	MS	1	Hexavalent Chromium	04/04/18 1:31 PM	Reported
42	N029508-001A	SAMP	1	Hexavalent Chromium	04/04/18 1:41 PM	Reported

INJECTION LOG: 180404A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N029508-001ADUP	DUP	1	Hexavalent Chromium	04/04/18 1:50 PM	Reported
44	N029508-002A	SAMP	1	Hexavalent Chromium	04/04/18 2:00 PM	Reported
45	N029508-003A	SAMP	1	Hexavalent Chromium	04/04/18 2:09 PM	Reported
46	N029508-004A	SAMP	1	Hexavalent Chromium	04/04/18 2:19 PM	Reported
47	N029508-005A	SAMP	1	Hexavalent Chromium	04/04/18 2:28 PM	Reported
48	N029508-006A	SAMP	1	Hexavalent Chromium	04/04/18 2:38 PM	Reported
49	N029508-007A	SAMP	1	Hexavalent Chromium	04/04/18 2:47 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	04/04/18 2:56 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	04/04/18 3:06 PM	Reported
52	N029508-008A	SAMP	1	Hexavalent Chromium	04/04/18 3:15 PM	Reported
53	N029508-009A	SAMP	1	Hexavalent Chromium	04/04/18 3:25 PM	Reported
54	N029508-010A	SAMP	1	Hexavalent Chromium	04/04/18 3:34 PM	Reported
55	LCS-R123130	LCS	1	Hexavalent Chromium	04/04/18 3:44 PM	Reported
56	MB-R123130	MBLK	1	Hexavalent Chromium	04/04/18 3:53 PM	Reported
57	N029506-001A	SAMP	1	Hexavalent Chromium	04/04/18 4:03 PM	Reported
58	N029506-001AMS	MS	1	Hexavalent Chromium	04/04/18 4:12 PM	Reported
59	N029506-002A	SAMP	100	Hexavalent Chromium	04/04/18 4:22 PM	Reported
60	N029506-002AMS	MS	100	Hexavalent Chromium	04/04/18 4:31 PM	Reported
61	N029506-002AMSD	MSD	100	Hexavalent Chromium	04/04/18 4:41 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	04/04/18 4:50 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	04/04/18 4:59 PM	Reported
64	N029507-001A	SAMP	1	Hexavalent Chromium	04/04/18 5:09 PM	Reported
65	N029507-001ADUP	DUP	1	Hexavalent Chromium	04/04/18 5:18 PM	Reported
66	N029507-002A	SAMP	1	Hexavalent Chromium	04/04/18 5:28 PM	Reported
67	N029507-003A	SAMP	1	Hexavalent Chromium	04/04/18 5:37 PM	Reported
68	N029507-004A	SAMP	1	Hexavalent Chromium	04/04/18 5:47 PM	Reported
69	N029507-005A	SAMP	1	Hexavalent Chromium	04/04/18 5:56 PM	Reported
70	N029507-006A	SAMP	1	Hexavalent Chromium	04/04/18 6:06 PM	Reported
71	N029507-007A	SAMP	1	Hexavalent Chromium	04/04/18 6:15 PM	Reported
72	N029507-008A	SAMP	1	Hexavalent Chromium	04/04/18 6:25 PM	Reported
73	N029507-009A	SAMP	1	Hexavalent Chromium	04/04/18 6:34 PM	Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	04/04/18 6:44 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	04/04/18 6:53 PM	Reported
76	N029507-010A	SAMP	5	Hexavalent Chromium	04/04/18 7:02 PM	Reported
77	N029507-011A	SAMP	1	Hexavalent Chromium	04/04/18 7:12 PM	Reported
78	N029507-012A	SAMP	1	Hexavalent Chromium	04/04/18 7:21 PM	Reported
79	N029507-013A	SAMP	2	Hexavalent Chromium	04/04/18 7:31 PM	Reported
80	N029507-014A	SAMP	2	Hexavalent Chromium	04/04/18 7:40 PM	Reported
81	N029507-015A	SAMP	5	Hexavalent Chromium	04/04/18 7:50 PM	Reported
82	N029507-016A	SAMP	1	Hexavalent Chromium	04/04/18 7:59 PM	Reported
83	N029551-001A	SAMP	1	Hexavalent Chromium	04/04/18 8:09 PM	Reported
84	N029551-002A	SAMP	1	Hexavalent Chromium	04/04/18 8:18 PM	Reported

INJECTION LOG: 180404A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	04/04/18 8:28 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	04/04/18 8:37 PM	Reported
87	MB-R123131	MBLK	1	Hexavalent Chromium	04/04/18 8:47 PM	Reported
88	LCS-R123131	LCS	1	Hexavalent Chromium	04/04/18 8:56 PM	Reported
89	N029552-005A	SAMP	100	Hexavalent Chromium	04/04/18 9:40 PM	Reported
90	N029552-005AMS	MS	100	Hexavalent Chromium	04/04/18 9:51 PM	Reported
91	N029552-005AMSD	MSD	100	Hexavalent Chromium	04/04/18 10:00 PM	Reported
92	N029552-007A	SAMP	100	Hexavalent Chromium	04/04/18 10:09 PM	Reported
93	N029552-007AMS	MS	100	Hexavalent Chromium	04/04/18 10:19 PM	Reported
94	N029551-003A	SAMP	1	Hexavalent Chromium	04/04/18 10:28 PM	Reported
95	N029551-003ADUP	DUP	1	Hexavalent Chromium	04/04/18 10:38 PM	Reported
96	N029551-004A	SAMP	1	Hexavalent Chromium	04/04/18 10:47 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	04/04/18 10:57 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	04/04/18 11:06 PM	Reported
99	N029551-005A	SAMP	1	Hexavalent Chromium	04/04/18 11:16 PM	Reported
100	N029551-006A	SAMP	1	Hexavalent Chromium	04/04/18 11:25 PM	Reported
101	N029551-007A	SAMP	1	Hexavalent Chromium	04/04/18 11:35 PM	Reported
102	N029551-008A	SAMP	1	Hexavalent Chromium	04/04/18 11:44 PM	Reported
103	N029551-009A	SAMP	1	Hexavalent Chromium	04/04/18 11:54 PM	Reported
104	N029551-010A	SAMP	1	Hexavalent Chromium	04/05/18 12:03 AM	Reported
105	N029551-011A	SAMP	1	Hexavalent Chromium	04/05/18 12:13 AM	Reported
106	N029552-001A	SAMP	1	Hexavalent Chromium	04/05/18 12:22 AM	Reported
107	N029552-002A	SAMP	2	Hexavalent Chromium	04/05/18 12:31 AM	Reported
108	N029552-003A	SAMP	50	Hexavalent Chromium	04/05/18 12:41 AM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	04/05/18 12:50 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	04/05/18 1:00 AM	Reported
111	N029552-004A	SAMP	20	Hexavalent Chromium	04/05/18 1:09 AM	Reported
112	N029552-006A	SAMP	10	Hexavalent Chromium	04/05/18 1:19 AM	Reported
113	N029552-008A	SAMP	10	Hexavalent Chromium	04/05/18 1:28 AM	Reported
114	N029552-009A	SAMP	1	Hexavalent Chromium	04/05/18 1:38 AM	Reported
115	N029552-010A	SAMP	500	Hexavalent Chromium	04/05/18 1:47 AM	Reported
116	N029552-011A	SAMP	500	Hexavalent Chromium	04/05/18 1:57 AM	Reported
117	CCV-10	CCV1	1	Hexavalent Chromium	04/05/18 2:06 AM	Reported
118	CCB-10	CCB	1	Hexavalent Chromium	04/05/18 2:16 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180404A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**05/Apr/18 02:46:21**
No. of Injections:	**121**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	BLANK	1	1000	Unknown		04/04/2018 08:36	Finished	BLANK
12	BLANK	2	1000	Unknown		04/04/2018 08:46	Finished	BLANK
13	CCV-1,CCV,1,	3	1000	Unknown		04/04/2018 08:56	Finished	CCV @5ppb, IWST-180129A
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		04/04/2018 09:05	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		04/04/2018 09:15	Finished	CCB R180329A
16	MB-H2O,MBLK,1,	6	1000	Unknown		04/04/2018 09:24	Finished	MB R180329A
17	LCS-H2O,LCS,1,	7	1000	Unknown		04/04/2018 09:34	Finished	LCS, IWST-180129B
18	N029509-001A,SAMF	1	1000	Unknown		04/04/2018 09:49	Finished	SAMP,10mL
19	N029509-001AMS,MS	2	1000	Unknown		04/04/2018 10:00	Finished	MS (1ppb), IWST-180129B,10
20	N029509-002A,SAMF	3	1000	Unknown		04/04/2018 10:10	Finished	SAMP,10mL
21	N029509-002AMS,MS	4	1000	Unknown		04/04/2018 10:19	Finished	MS (1ppb), IWST-180129B,10
22	N029509-003A,SAMF	5	1000	Unknown		04/04/2018 10:29	Finished	SAMP,10mL
23	N029509-003AMS,MS	6	1000	Unknown		04/04/2018 10:38	Finished	MS (1ppb), IWST-180129B,10
24	N029509-004A,SAMF	7	1000	Unknown		04/04/2018 10:48	Finished	SAMP,10mL
25	N029509-004AMS,MS	8	1000	Unknown		04/04/2018 10:57	Finished	MS (1ppb), IWST-180129B,10
26	CCV-2,CCV1,1,	9	1000	Unknown		04/04/2018 11:06	Finished	CCV @10ppb, IWST-180129A
27	CCB-2,CCB,1,	10	1000	Unknown		04/04/2018 11:16	Finished	CCB R180329A
28	N029509-005A,SAMF	11	1000	Unknown		04/04/2018 11:25	Finished	SAMP,10mL
29	N029509-005AMS,MS	12	1000	Unknown		04/04/2018 11:35	Finished	MS (1ppb), IWST-180129B,10
30	N029509-006A,SAMF	13	1000	Unknown		04/04/2018 11:44	Finished	SAMP,10mL
31	N029509-006AMS,MS	14	1000	Unknown		04/04/2018 11:54	Finished	MS (1ppb), IWST-180129B,10
32	N029509-007A,SAMF	15	1000	Unknown		04/04/2018 12:03	Finished	SAMP,10mL
33	N029509-007AMS,MS	16	1000	Unknown		04/04/2018 12:13	Finished	MS (1ppb), IWST-180129B,10
34	N029509-008A,SAMF	17	1000	Unknown		04/04/2018 12:22	Finished	SAMP,10mL
35	N029509-008AMS,MS	18	1000	Unknown		04/04/2018 12:32	Finished	MS (1ppb), IWST-180129B,10
36	N029509-003AMS,MS	19	1000	Unknown		04/04/2018 12:41	Finished	MS (1ppb), IWST-180129B,10
37	N029509-005AMS,MS	20	1000	Unknown		04/04/2018 12:51	Finished	MS (1ppb), IWST-180129B,10
38	CCV-3,CCV,1,	21	1000	Unknown		04/04/2018 13:00	Finished	CCV @5ppb, IWST-180129A
39	CCB-3,CCB,1,	22	1000	Unknown		04/04/2018 13:10	Finished	CCB R180329A
40	N029509-005AMSD,M	1	1000	Unknown		04/04/2018 13:20	Finished	MSD (1ppb), IWST-180129B,10
41	N029509-008AMS,MS	2	1000	Unknown		04/04/2018 13:31	Finished	MS (1ppb), IWST-180129B,10
42	N029508-001A,SAMF	3	1000	Unknown		04/04/2018 13:41	Finished	SAMP,10mL
43	N029508-001ADUP,D	4	1000	Unknown		04/04/2018 13:50	Finished	DUP,10mL
44	N029508-002A,SAMF	5	1000	Unknown		04/04/2018 14:00	Finished	SAMP,10mL
45	N029508-003A,SAMF	6	1000	Unknown		04/04/2018 14:09	Finished	SAMP,10mL
46	N029508-004A,SAMF	7	1000	Unknown		04/04/2018 14:19	Finished	SAMP,10mL
47	N029508-005A,SAMF	8	1000	Unknown		04/04/2018 14:28	Finished	SAMP,10mL
48	N029508-006A,SAMF	9	1000	Unknown		04/04/2018 14:38	Finished	SAMP,10mL
49	N029508-007A,SAMF	10	1000	Unknown		04/04/2018 14:47	Finished	SAMP,10mL
50	CCV-4,CCV1,1,	11	1000	Unknown		04/04/2018 14:56	Finished	CCV @10ppb, IWST-180129A
51	CCB-4,CCB,1,	12	1000	Unknown		04/04/2018 15:06	Finished	CCB R180329A
52	N029508-008A,SAMF	13	1000	Unknown		04/04/2018 15:15	Finished	SAMP,10mL
53	N029508-009A,SAMF	14	1000	Unknown		04/04/2018 15:25	Finished	SAMP,10mL
54	N029508-010A,SAMF	15	1000	Unknown		04/04/2018 15:34	Finished	SAMP,10mL
55	LCS-2,LCS,1,	16	1000	Unknown		04/04/2018 15:44	Finished	LCS, IWST-180129B
56	MB-2,MBLK,1,	17	1000	Unknown		04/04/2018 15:53	Finished	MB R180329A
57	N029506-001A,SAMF	18	1000	Unknown		04/04/2018 16:03	Finished	SAMP,10mL
58	N029506-001AMS,MS	19	1000	Unknown		04/04/2018 16:12	Finished	MS (1ppb), IWST-180129B,10
59	N029506-002A,SAMF	20	1000	Unknown		04/04/2018 16:22	Finished	SAMP,0.1>10mL
60	N029506-002AMS,MS	21	1000	Unknown		04/04/2018 16:31	Finished	MS (5ppb), IWST-180129B,0.1

IC-07 RBA 4/5/2018 5:22:01 PM

61	N029506-002AMSD,M	22	1000	Unknown		04/04/2018 16:41	Finished	MSD (5ppb), IWST-180129B,0.
62	CCV-5,CCV,1,	23	1000	Unknown		04/04/2018 16:50	Finished	CCV @5ppb, IWST-180129A
63	CCB-5,CCB,1,	24	1000	Unknown		04/04/2018 16:59	Finished	CCB R180329A
64	N029507-001A,SAMF	25	1000	Unknown		04/04/2018 17:09	Finished	SAMP,10mL
65	N029507-001ADUP,D	26	1000	Unknown		04/04/2018 17:18	Finished	DUP,10mL
66	N029507-002A,SAMF	27	1000	Unknown		04/04/2018 17:28	Finished	SAMP,10mL
67	N029507-003A,SAMF	28	1000	Unknown		04/04/2018 17:37	Finished	SAMP,10mL
68	N029507-004A,SAMF	29	1000	Unknown		04/04/2018 17:47	Finished	SAMP,10mL
69	N029507-005A,SAMF	30	1000	Unknown		04/04/2018 17:56	Finished	SAMP,10mL
70	N029507-006A,SAMF	31	1000	Unknown		04/04/2018 18:06	Finished	SAMP,10mL
71	N029507-007A,SAMF	32	1000	Unknown		04/04/2018 18:15	Finished	SAMP,10mL
72	N029507-008A,SAMF	33	1000	Unknown		04/04/2018 18:25	Finished	SAMP,10mL
73	N029507-009A,SAMF	34	1000	Unknown		04/04/2018 18:34	Finished	SAMP,10mL
74	CCV-6,CCV1,1,	35	1000	Unknown		04/04/2018 18:44	Finished	CCV @10ppb, IWST-180129A
75	CCB-6,CCB,1,	36	1000	Unknown		04/04/2018 18:53	Finished	CCB R180329A
76	N029507-010A,SAMF	37	1000	Unknown		04/04/2018 19:02	Finished	SAMP,2>10mL
77	N029507-011A,SAMF	38	1000	Unknown		04/04/2018 19:12	Finished	SAMP,10mL
78	N029507-012A,SAMF	39	1000	Unknown		04/04/2018 19:21	Finished	SAMP,10mL
79	N029507-013A,SAMF	40	1000	Unknown		04/04/2018 19:31	Finished	SAMP,5>10mL
80	N029507-014A,SAMF	41	1000	Unknown		04/04/2018 19:40	Finished	SAMP,5>10mL
81	N029507-015A,SAMF	42	1000	Unknown		04/04/2018 19:50	Finished	SAMP,2>10mL
82	N029507-016A,SAMF	43	1000	Unknown		04/04/2018 19:59	Finished	SAMP,10mL
83	N029551-001A,SAMF	44	1000	Unknown		04/04/2018 20:09	Finished	SAMP,10mL
84	N029551-002A,SAMF	45	1000	Unknown		04/04/2018 20:18	Finished	SAMP,10mL
85	CCV-7,CCV,1,	46	1000	Unknown		04/04/2018 20:28	Finished	CCV @5ppb, IWST-180129A
86	CCB-7,CCB,1,	47	1000	Unknown		04/04/2018 20:37	Finished	CCB R180329A
87	MB-3,MBLK,1,	48	1000	Unknown		04/04/2018 20:47	Finished	MB R180316A
88	LCS-3,LCS,1,	49	1000	Unknown		04/04/2018 20:56	Finished	LCS, IWST-180129B
89	N029552-005A,SAMF	1	1000	Unknown		04/04/2018 21:40	Finished	SAMP,0.1>10mL
90	N029552-005AMS,MS	2	1000	Unknown		04/04/2018 21:51	Finished	MS (5ppb), IWST-180129B,0.1
91	N029552-005AMSD,M	3	1000	Unknown		04/04/2018 22:00	Finished	MSD (5ppb), IWST-180129B,0.
92	N029552-007A,SAMF	4	1000	Unknown		04/04/2018 22:09	Finished	SAMP,0.1>10mL
93	N029552-007AMS,MS	5	1000	Unknown		04/04/2018 22:19	Finished	MS (5ppb), IWST-180129B,0.1
94	N029551-003A,SAMF	6	1000	Unknown		04/04/2018 22:28	Finished	SAMP,10mL
95	N029551-003ADUP,D	7	1000	Unknown		04/04/2018 22:38	Finished	DUP,10mL
96	N029551-004A,SAMF	8	1000	Unknown		04/04/2018 22:47	Finished	SAMP,10mL
97	CCV-8,CCV1,1,	9	1000	Unknown		04/04/2018 22:57	Finished	CCV @10ppb, IWST-180129A
98	CCB-8,CCB,1,	10	1000	Unknown		04/04/2018 23:06	Finished	CCB R180316A
99	N029551-005A,SAMF	11	1000	Unknown		04/04/2018 23:16	Finished	SAMP,10mL
100	N029551-006A,SAMF	12	1000	Unknown		04/04/2018 23:25	Finished	SAMP,10mL
101	N029551-007A,SAMF	13	1000	Unknown		04/04/2018 23:35	Finished	SAMP,10mL
102	N029551-008A,SAMF	14	1000	Unknown		04/04/2018 23:44	Finished	SAMP,10mL
103	N029551-009A,SAMF	15	1000	Unknown		04/04/2018 23:54	Finished	SAMP,10mL
104	N029551-010A,SAMF	16	1000	Unknown		04/05/2018 00:03	Finished	SAMP,10mL
105	N029551-011A,SAMF	17	1000	Unknown		04/05/2018 00:13	Finished	SAMP,10mL
106	N029552-001A,SAMF	18	1000	Unknown		04/05/2018 00:22	Finished	SAMP,10mL
107	N029552-002A,SAMF	19	1000	Unknown		04/05/2018 00:31	Finished	SAMP,10mL
108	N029552-003A,SAMF	20	1000	Unknown		04/05/2018 00:41	Finished	SAMP,0.2>10mL
109	CCV-9,CCV,1,	21	1000	Unknown		04/05/2018 00:50	Finished	CCV @5ppb, IWST-180129A
110	CCB-9,CCB,1,	22	1000	Unknown		04/05/2018 01:00	Finished	CCB R180316A
111	N029552-004A,SAMF	23	1000	Unknown		04/05/2018 01:09	Finished	SAMP,0.5>10mL
112	N029552-006A,SAMF	24	1000	Unknown		04/05/2018 01:19	Finished	SAMP,1>10mL
113	N029552-008A,SAMF	25	1000	Unknown		04/05/2018 01:28	Finished	SAMP,1>10mL
114	N029552-009A,SAMF	26	1000	Unknown		04/05/2018 01:38	Finished	SAMP,10mL
115	N029552-010A,SAMF	27	1000	Unknown		04/05/2018 01:47	Finished	SAMP,0.02>10mL
116	N029552-011A,SAMF	28	1000	Unknown		04/05/2018 01:57	Finished	SAMP,0.02>10mL
117	CCV-10,CCV1,1,	29	1000	Unknown		04/05/2018 02:06	Finished	CCV @10ppb, IWST-180129A
118	CCB-10,CCB,1,	30	1000	Unknown		04/05/2018 02:16	Finished	CCB R180316A
119	SHUTDOWN	31	1000	Unknown		04/05/2018 02:25	Finished	
120	Eluent: R180402B	32	1000	Unknown		n.a.	Finished	Eluent
121	PCR: R180402C	33	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 4/4/18
Time Prepared: 0911H
Prepared By: MSA/MG

slope: 97.87
pH 4: 4.02 @ 25.0°C
7: 7.02 @ 25.0°C
10: 9.96 @ 25.0°C
LCS: 7.01 @ 25.0°C

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CLNV-171116A
NH4OH + NH4SO4 eluent: M8S0402A / M8V406A
NH4OH + NH4SO4 buffer: M80329A

6N NaOH: M71229A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M029506-001A	9.43	-	~250 ml	~250 ml		M80329A
2)	2A	9.33	-				
3)	M029507-1A	8.73	9.36			+8 drops 6N NaOH	
4)	2A	8.83	9.37			+7 drops "	
5)	3A	8.85	9.38			+7 drops "	
6)	4A	8.97	9.36			+6 drops "	
7)	5A	8.94	9.40			+6 drops "	
8)	6A	9.02	9.41			+6 drops "	
9)	7A	8.58	9.33			+9 drops "	
10)	8A	8.70	9.43			+9 drops "	
11)	9A	9.13	9.40			+4 drops "	
12)	10A	8.29	9.36			+10 drops "	
13)	11A	9.09	9.35			+4 drops "	
14)	12A	9.08	9.38			+4 drops "	
15)	13A	9.15	9.40			+4 drops "	
	14A	9.24	9.36			+3 drops "	

Sample Preparation

Date Prepared: 4/4/18
Time Prepared: 0911H
Prepared By: MSA/MG

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CLNV-171116A
NH4OH + NH4SO4 eluent: M8S0402A / M8V406A
NH4OH + NH4SO4 buffer: M80329A

6N NaOH: M71229A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M029507-15A	8.99	9.36	~250 ml	~250 ml	+6 drops 6N NaOH	M80329A
2)	16A	9.54	-				
3)	M029508-1A	9.58	-				
4)	2A	9.44	-				
5)	3A	9.34	-				
6)	4A	9.37	-				
7)	5A	9.37	-				
8)	6A	9.39	-				
9)	7A	9.49	-				
10)	8A	9.55	-				
11)	9A	9.59	-				
12)	10A	9.36	-				
13)	M029509-1A	9.35	-				
14)	2A	9.38	-				
15)	3A	9.49	-				
	4A	9.42	-				

Logbook No. 14

pba 4/8/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/2/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0611	0.2744	1.2772	2.5376	3.7905	5.0743	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

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

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **ICV** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **2978616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.068	0.20	5.000	0	101	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **ZZZZZZ** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **2978617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.240	0.20	0.2000	0	120	80	120				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **ZZZZZZ** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978619**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.207	0.20	0.2000	0	104	80	120				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **ZZZZZZ** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.088	0.20	10.00	0	101	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **CCV** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.081	0.20	5.000	0	102	95	105				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **ZZZZZZ** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978641**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.183	0.20	10.00	0	102	95	105				

Sample ID **CCV-7** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **CCV** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978652**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.056	0.20	5.000	0	101	95	105				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

ASSET Laboratories

Date: *05-Apr-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **ICB** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **2978618**

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

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **CCB** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978621**

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

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **CCB** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978630**

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

Sample ID **CCB-6** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **CCB** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978642**

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

Sample ID **CCB-7** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123130**
Client ID: **CCB** Batch ID: **R123130** TestNo: **EPA 218.6** Analysis Date: **4/4/2018** SeqNo: **2978653**

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

Qualifiers:

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/4/2018

Sample Name	Retention Time	Evaluation
ICV	4.140	
CCV-1	4.240	
CCV-2	4.231	
CCV-3	4.240	
CCV-4	4.240	
CCV-5	4.240	
CCV-6	4.240	
CCV-7	4.240	
CCV-8	4.231	
CCV-9	4.231	
CCV-10	4.231	

Average	4.236	
Actual RT Window	4.156 -	4.316
Applied RT Window	4.036 -	4.436

MB-R123129	N.A.	N.A.
LCS-R123129	4.240	PASS
N029509-001A	4.223	PASS
N029509-001AMS	4.223	PASS
N029509-002A	4.231	PASS
N029509-002AMS	4.231	PASS
N029509-003A	4.223	PASS
N029509-003AMS	4.231	PASS
N029509-004A	4.231	PASS
N029509-004AMS	4.231	PASS
N029509-005A	4.215	PASS
N029509-005AMS	4.223	PASS
N029509-006A	N.A.	N.A.
N029509-006AMS	4.215	PASS
N029509-007A	4.248	PASS
N029509-007AMS	4.231	PASS
N029509-008A	4.223	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/4/2018

Sample Name	Retention Time		Evaluation
ICV	4.140		
CCV-1	4.240		
CCV-2	4.231		
CCV-3	4.240		
CCV-4	4.240		
CCV-5	4.240		
CCV-6	4.240		
CCV-7	4.240		
CCV-8	4.231		
CCV-9	4.231		
CCV-10	4.231		
Average	4.236		
Actual RT Window	4.156 -	4.316	
Applied RT Window	4.036 -	4.436	
N029509-008AMS	4.215		PASS
N029509-003AMS	4.231		PASS
N029509-005AMS	4.223		PASS
N029509-005AMSD	4.223		PASS
N029509-008AMS	4.215		PASS
N029508-001A	4.240		PASS
N029508-001ADUP	4.240		PASS
N029508-002A	4.240		PASS
N029508-003A	4.231		PASS
N029508-004A	4.231		PASS
N029508-005A	4.231		PASS
N029508-006A	4.231		PASS
N029508-007A	4.240		PASS
N029508-008A	N.A.		N.A.
N029508-009A	4.231		PASS
N029508-010A	N.A.		N.A.
LCS-R123130	4.240		PASS
MB-R123130	N.A.		N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/4/2018

Sample Name	Retention Time		Evaluation
ICV	4.140		
CCV-1	4.240		
CCV-2	4.231		
CCV-3	4.240		
CCV-4	4.240		
CCV-5	4.240		
CCV-6	4.240		
CCV-7	4.240		
CCV-8	4.231		
CCV-9	4.231		
CCV-10	4.231		
Average	4.236		
Actual RT Window	4.156 -	4.316	
Applied RT Window	4.036 -	4.436	
N029506-001A	N.A.		N.A.
N029506-001AMS	4.231		PASS
N029506-002A	4.240		PASS
N029506-002AMS	4.231		PASS
N029506-002AMSD	4.231		PASS
N029507-001A	4.181		PASS
N029507-001ADUP	4.181		PASS
N029507-002A	4.190		PASS
N029507-003A	4.190		PASS
N029507-004A	4.181		PASS
N029507-005A	4.181		PASS
N029507-006A	4.190		PASS
N029507-007A	4.156		PASS
N029507-008A	4.156		PASS
N029507-009A	4.215		PASS
N029507-010A	4.223		PASS
N029507-011A	4.223		PASS
N029507-012A	4.215		PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/4/2018

Sample Name	Retention Time		Evaluation
ICV	4.140		
CCV-1	4.240		
CCV-2	4.231		
CCV-3	4.240		
CCV-4	4.240		
CCV-5	4.240		
CCV-6	4.240		
CCV-7	4.240		
CCV-8	4.231		
CCV-9	4.231		
CCV-10	4.231		
Average	4.236		
Actual RT Window	4.156 -	4.316	
Applied RT Window	4.036 -	4.436	
N029507-013A	4.223		PASS
N029507-014A	4.223		PASS
N029507-015A	4.231		PASS
N029507-016A	N.A.		N.A.
N029551-001A	4.173		PASS
N029551-002A	N.A.		N.A.
MB-R123131	N.A.		N.A.
LCS-R123131	4.231		PASS
N029552-005A	4.231		PASS
N029552-005AMS	4.240		PASS
N029552-005AMSD	4.231		PASS
N029552-007A	4.240		PASS
N029552-007AMS	4.240		PASS
N029551-003A	4.173		PASS
N029551-003ADUP	4.181		PASS
N029551-004A	N.A.		N.A.
N029551-005A	N.A.		N.A.
N029551-006A	N.A.		N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/4/2018

Sample Name	Retention Time		Evaluation
ICV	4.140		
CCV-1	4.240		
CCV-2	4.231		
CCV-3	4.240		
CCV-4	4.240		
CCV-5	4.240		
CCV-6	4.240		
CCV-7	4.240		
CCV-8	4.231		
CCV-9	4.231		
CCV-10	4.231		
Average	4.236		
Actual RT Window	4.156 -	4.316	
Applied RT Window	4.036 -	4.436	
N029551-007A	N.A.		N.A.
N029551-008A	4.190		PASS
N029551-009A	N.A.		N.A.
N029551-010A	N.A.		N.A.
N029551-011A	N.A.		N.A.
N029552-001A	N.A.		N.A.
N029552-002A	4.123		PASS
N029552-003A	4.231		PASS
N029552-004A	4.231		PASS
N029552-006A	4.215		PASS
N029552-008A	4.223		PASS
N029552-009A	N.A.		N.A.
N029552-010A	4.231		PASS
N029552-011A	4.231		PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

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

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

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

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

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

LOD & PQL Verification 2018 (1st Quarter)

Method Name:	**Hexavalent Chromium by IC**	Matrix:	**WATER**
Method Number:	EPA Method 218.6/7199	Unit:	µg/L
Analysis Date(s):	3/21/2018		
Analyst:	Ria Abes		

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.116

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.201	**100**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180402B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	ICV	ICV	1	Hexavalent Chromium	04/02/18 1:50 PM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/02/18 2:01 PM	Reported
13	ICB	ICB	1	Hexavalent Chromium	04/02/18 2:18 PM	Reported
14	MB-R123054	MBLK	1	Hexavalent Chromium	04/02/18 2:30 PM	Reported
15	LCS-R123054	LCS	1	Hexavalent Chromium	04/02/18 2:39 PM	Reported
16	N029480-001A	SAMP	1	Hexavalent Chromium	04/02/18 2:49 PM	Not Reported
17	N029443-001G	SAMP	1	Hexavalent Chromium	04/02/18 2:58 PM	Reported
18	N029444-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:08 PM	Reported
19	N029445-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:17 PM	Reported
20	N029446-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:27 PM	Reported
21	N029480-001A	SAMP	5	Hexavalent Chromium	04/02/18 3:36 PM	Reported
22	N029480-002A	SAMP	5	Hexavalent Chromium	04/02/18 3:45 PM	Reported
23	N029480-001ADUP	DUP	5	Hexavalent Chromium	04/02/18 3:55 PM	Reported
24	CCV-1	CCV1	1	Hexavalent Chromium	04/02/18 4:04 PM	Reported
25	CCB-1	CCB	1	Hexavalent Chromium	04/02/18 4:14 PM	Reported
26	N029480-001AMS	MS	5	Hexavalent Chromium	04/02/18 4:23 PM	Reported
27	N029480-001AMSD	MSD	5	Hexavalent Chromium	04/02/18 4:33 PM	Reported
28	CCV-2	CCV	1	Hexavalent Chromium	04/02/18 4:42 PM	Reported
29	CCB-2	CCB	1	Hexavalent Chromium	04/02/18 4:52 PM	Reported

rba 4/3/2018

Injection Log Summary

Sequence Details

Name:	**IC-07_180402B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**02/Apr/18 17:22:28**
No. of Injections:	**32**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	ICV,ICV,1,	11	1000	Unknown		04/02/2018 13:50	Finished	ICV @5ppb, IWST-180129B
12	PQL@0.2ppb,CCV2,1	12	1000	Unknown		04/02/2018 14:01	Finished	PQL @ 0.2ppb
13	ICB,ICB,1,	13	1000	Unknown		04/02/2018 14:18	Finished	ICB R180329A
14	MB-H2O,MBLK,1,	14	1000	Unknown		04/02/2018 14:30	Finished	MB R180302A
15	LCS-H2O,LCS,1,	15	1000	Unknown		04/02/2018 14:39	Finished	LCS, IWST-180129B
16	N029480-001A,SAMF	16	1000	Unknown		04/02/2018 14:49	Finished	SAMP,10mL
17	N029443-001G,SAMF	17	1000	Unknown		04/02/2018 14:58	Finished	SAMP,10mL
18	N029444-001G,SAMF	18	1000	Unknown		04/02/2018 15:08	Finished	SAMP,10mL
19	N029445-001G,SAMF	19	1000	Unknown		04/02/2018 15:17	Finished	SAMP,10mL
20	N029446-001G,SAMF	20	1000	Unknown		04/02/2018 15:27	Finished	SAMP,10mL
21	N029480-001A,SAMF	21	1000	Unknown		04/02/2018 15:36	Finished	SAMP,2>10mL
22	N029480-002A,SAMF	22	1000	Unknown		04/02/2018 15:45	Finished	SAMP,2>10mL
23	N029480-001ADUP,D	23	1000	Unknown		04/02/2018 15:55	Finished	DUP,2>10mL
24	CCV-1,CCV1,1,	24	1000	Unknown		04/02/2018 16:04	Finished	CCV @10ppb, IWST-180129A
25	CCB-1,CCB,1,	25	1000	Unknown		04/02/2018 16:14	Finished	CCB R180302A
26	N029480-001AMS,MS	26	1000	Unknown		04/02/2018 16:23	Finished	SAMP,10mL
27	N029480-001AMSD,M	27	1000	Unknown		04/02/2018 16:33	Finished	MS (1ppb), IWST-180129B,1>1
28	CCV-2,CCV,1,	28	1000	Unknown		04/02/2018 16:42	Finished	CCV @5ppb, IWST-180129A
29	CCB-2,CCB,1,	29	1000	Unknown		04/02/2018 16:52	Finished	CCB R180302A
30	SHUTDOWN	30	1000	Unknown		04/02/2018 17:01	Finished	
31	Eluent: R180402B	31	1000	Unknown		n.a.	Finished	Eluent
32	PCR: R180402C	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

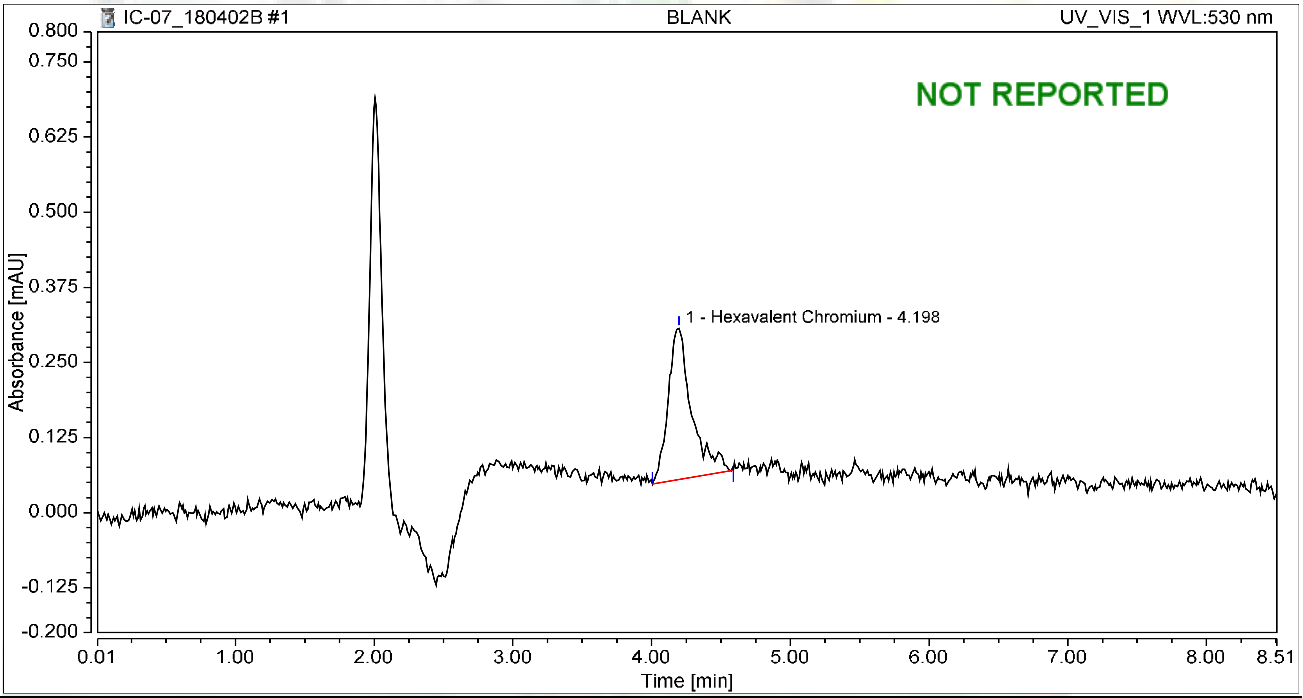
rba 4/3/2018

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 11:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

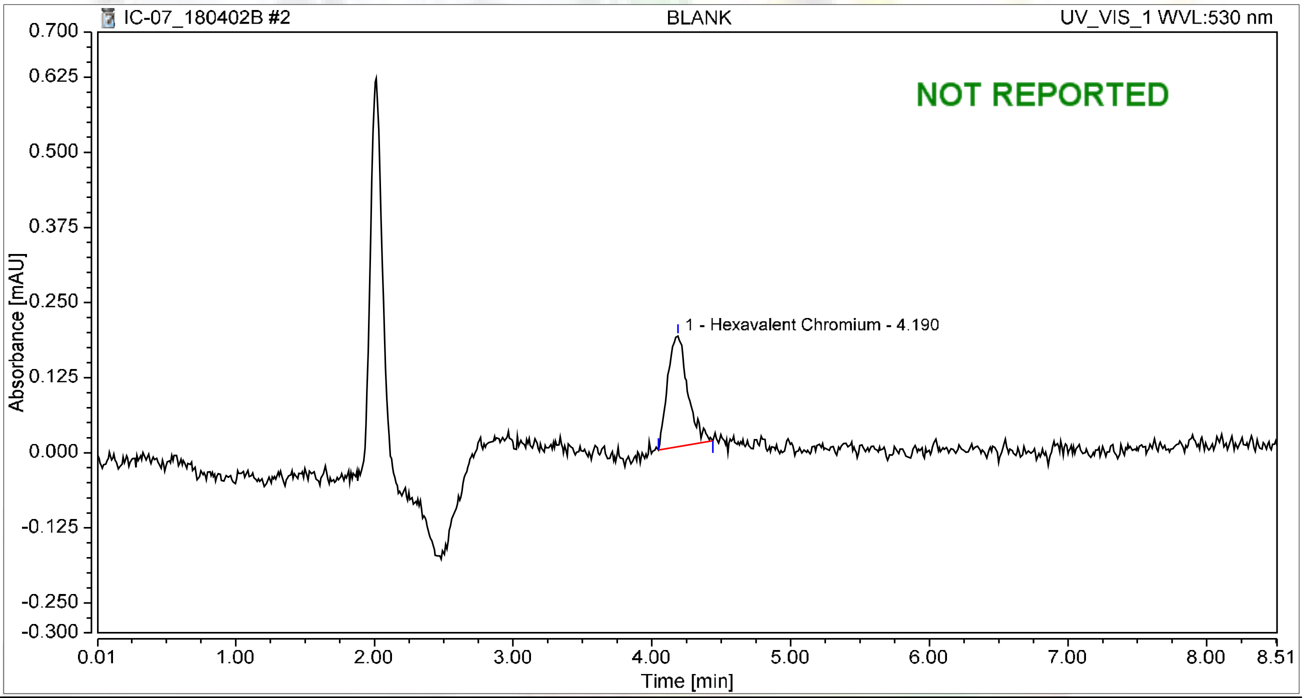
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.050	0.252	100.00	100.00	0.1965
Total:			**0.050**	**0.252**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 11:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

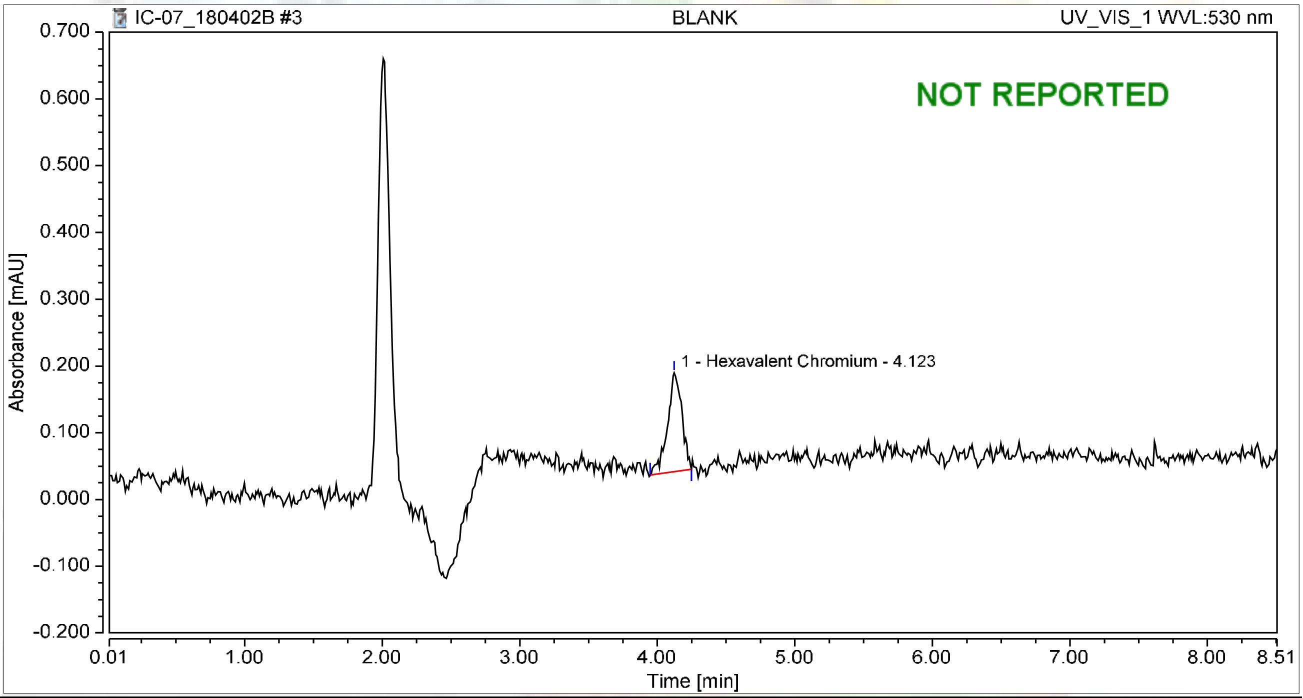
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.031	0.184	100.00	100.00	0.1224
Total:			**0.031**	**0.184**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 11:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

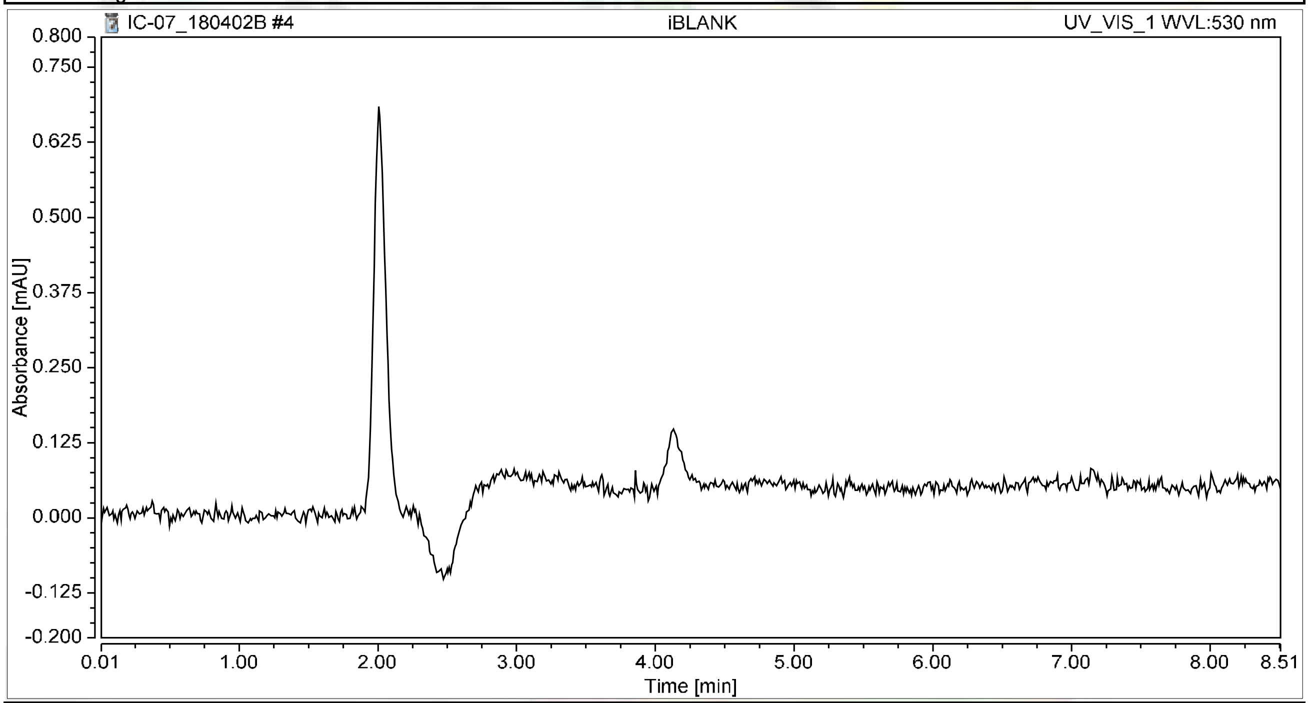
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.018	0.148	100.00	100.00	0.0704
Total:			**0.018**	**0.148**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

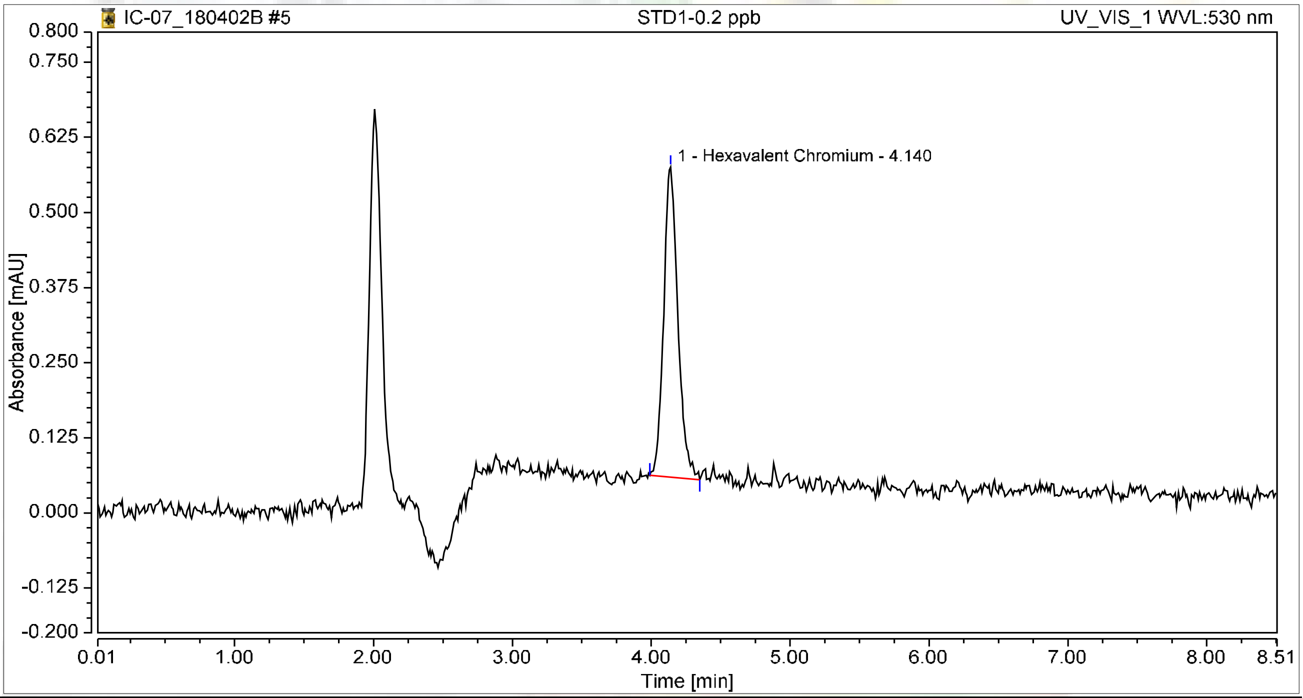
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

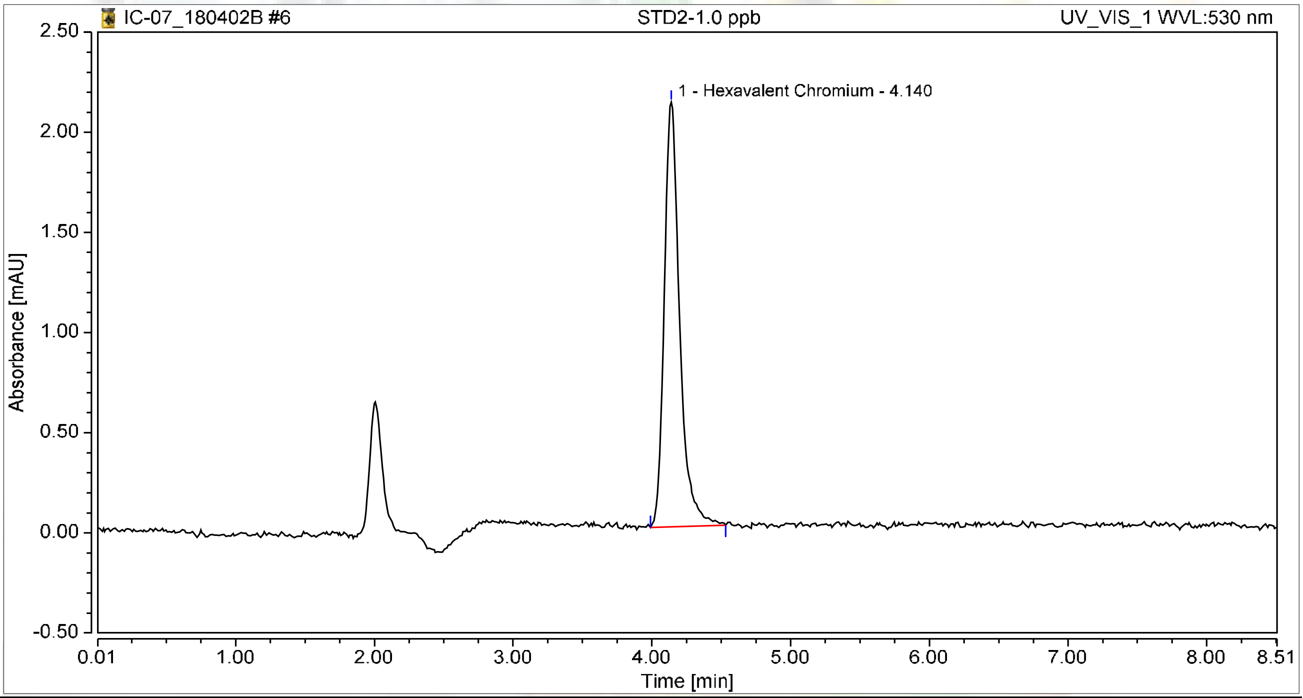
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.061	0.516	100.00	100.00	0.2409
Total:			**0.061**	**0.516**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 12:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

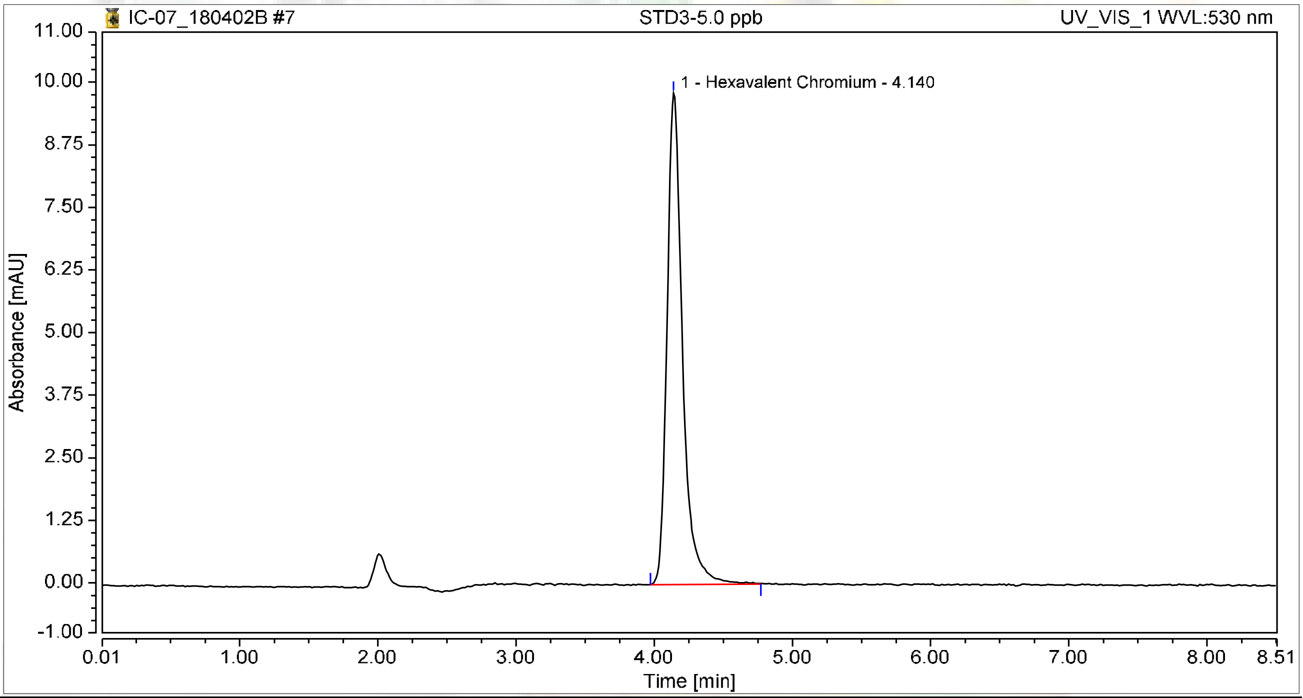
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.274	2.121	100.00	100.00	1.0825
Total:			**0.274**	**2.121**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

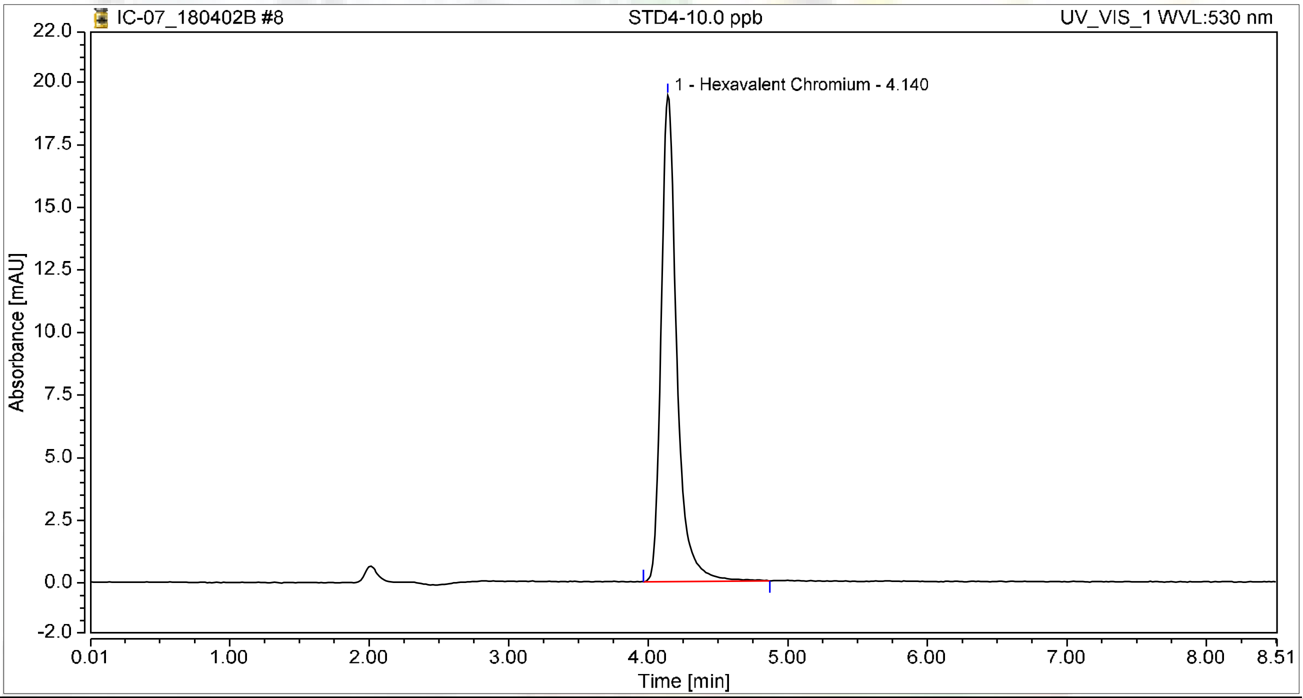
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.277	9.813	100.00	100.00	5.0383
Total:			**1.277**	**9.813**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

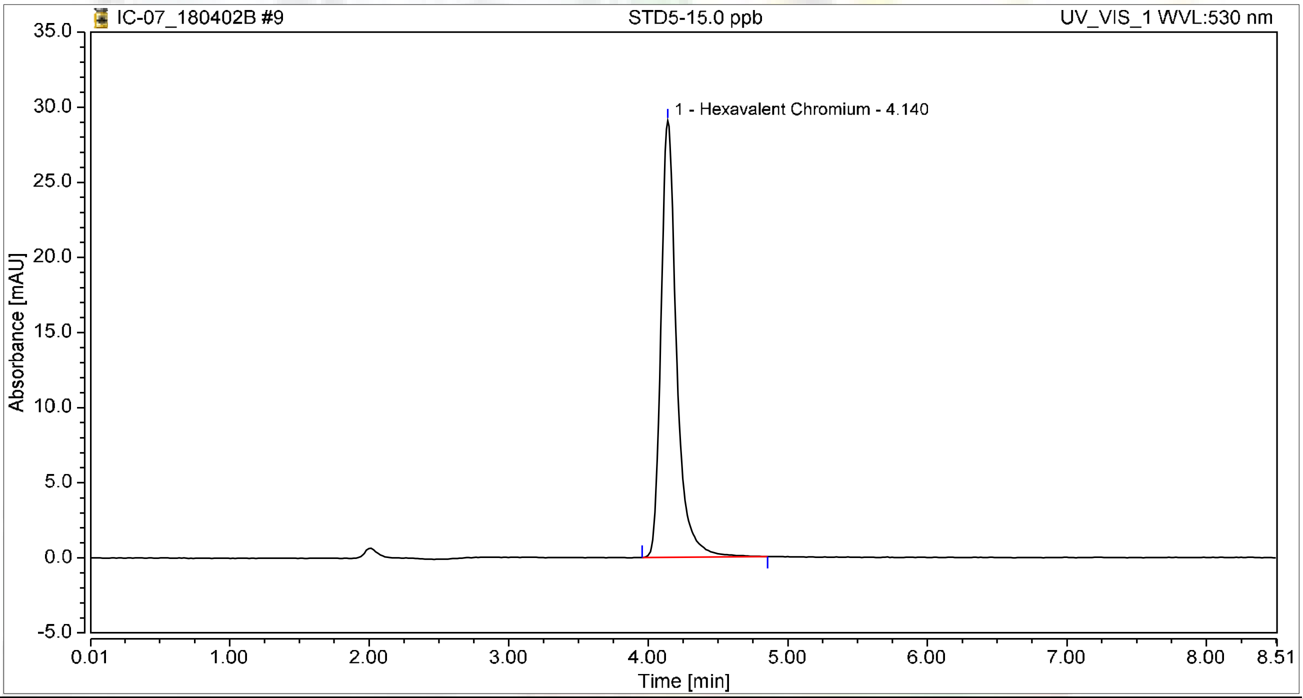
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.538	19.408	100.00	100.00	10.0099
Total:			**2.538**	**19.408**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

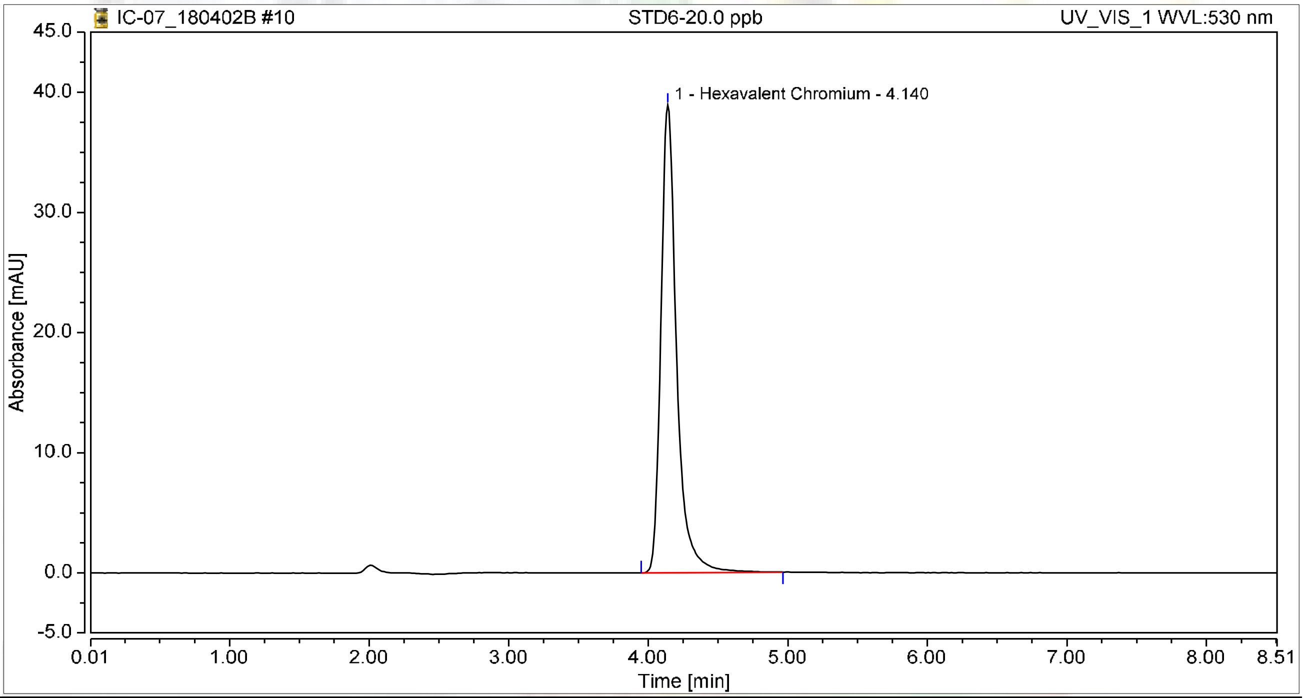
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.791	29.078	100.00	100.00	14.9525
Total:			**3.791**	**29.078**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:31**	*Sample Weight:*	**1.0000**

Chromatogram



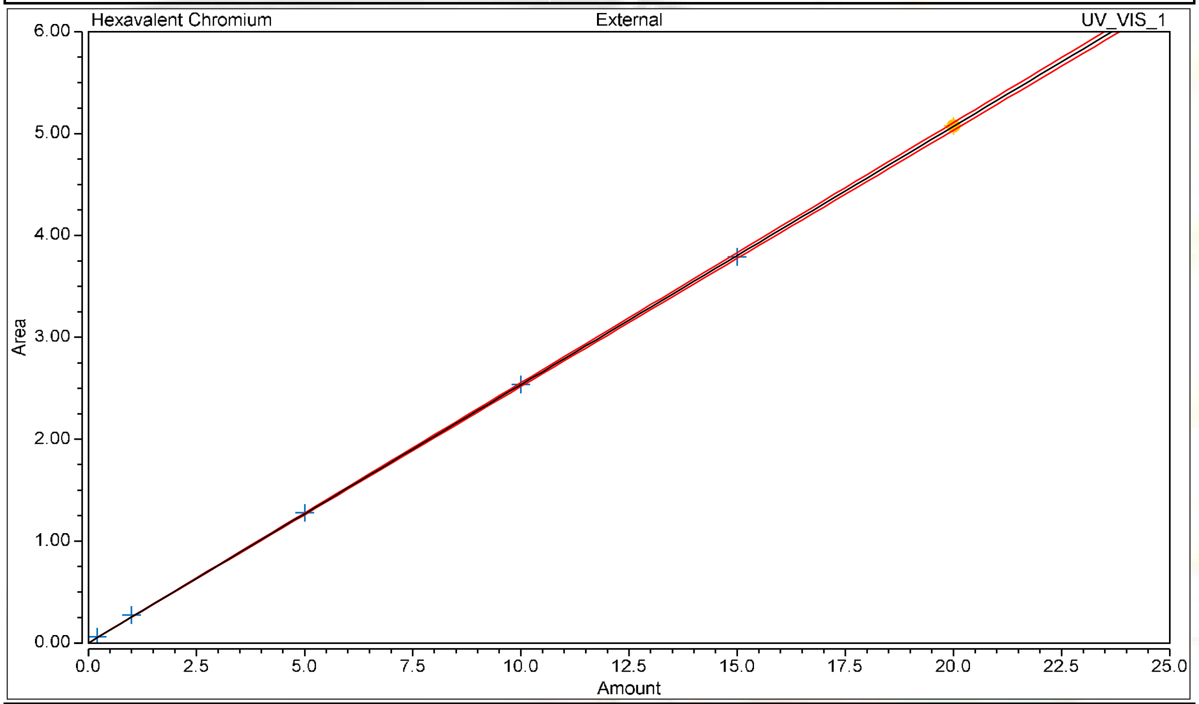
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	5.074	38.904	100.00	100.00	20.0166
Total:			**5.074**	**38.904**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2535
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

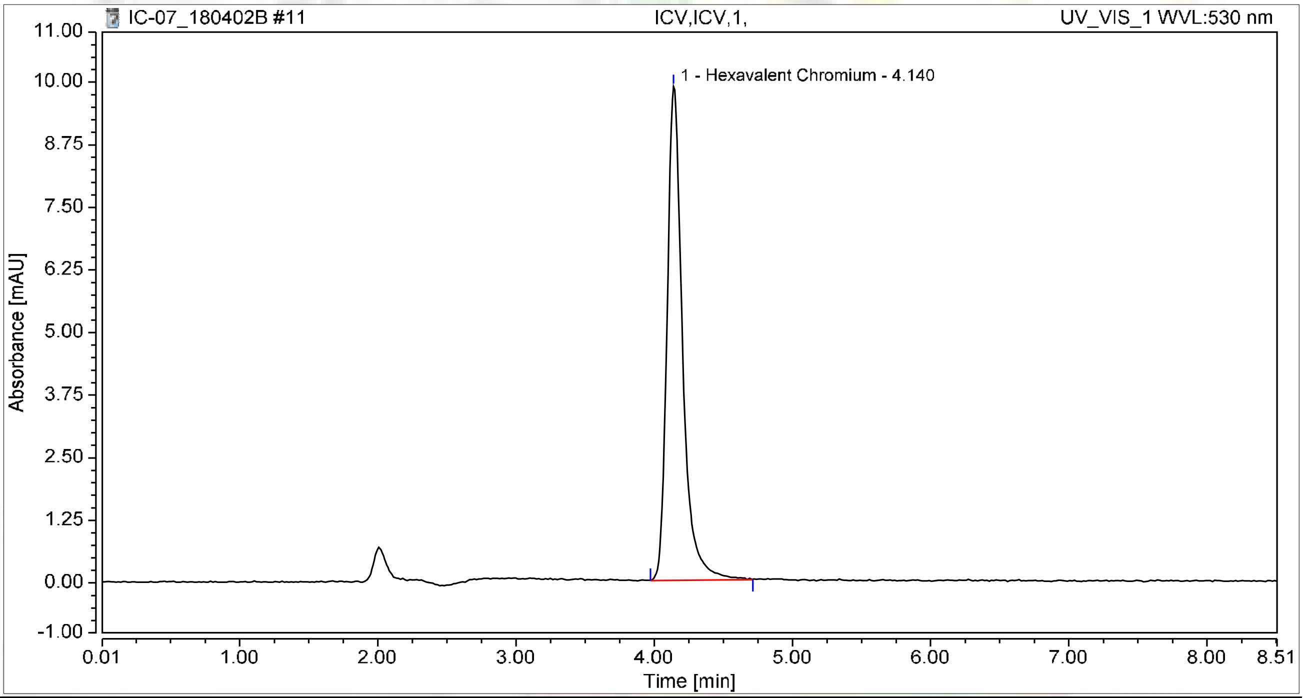
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
5	STD1-0.2 ppb	01	0.2000	0.0611	0.061	0.516
6	STD2-1.0 ppb	02	1.0000	0.2744	0.274	2.121
7	STD3-5.0 ppb	03	5.0000	1.2772	1.277	9.813
8	STD4-10.0 ppb	04	10.0000	2.5376	2.538	19.408
9	STD5-15.0 ppb	05	15.0000	3.7905	3.791	29.078
10	STD6-20.0 ppb	06	20.0000	5.0743	5.074	38.904

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

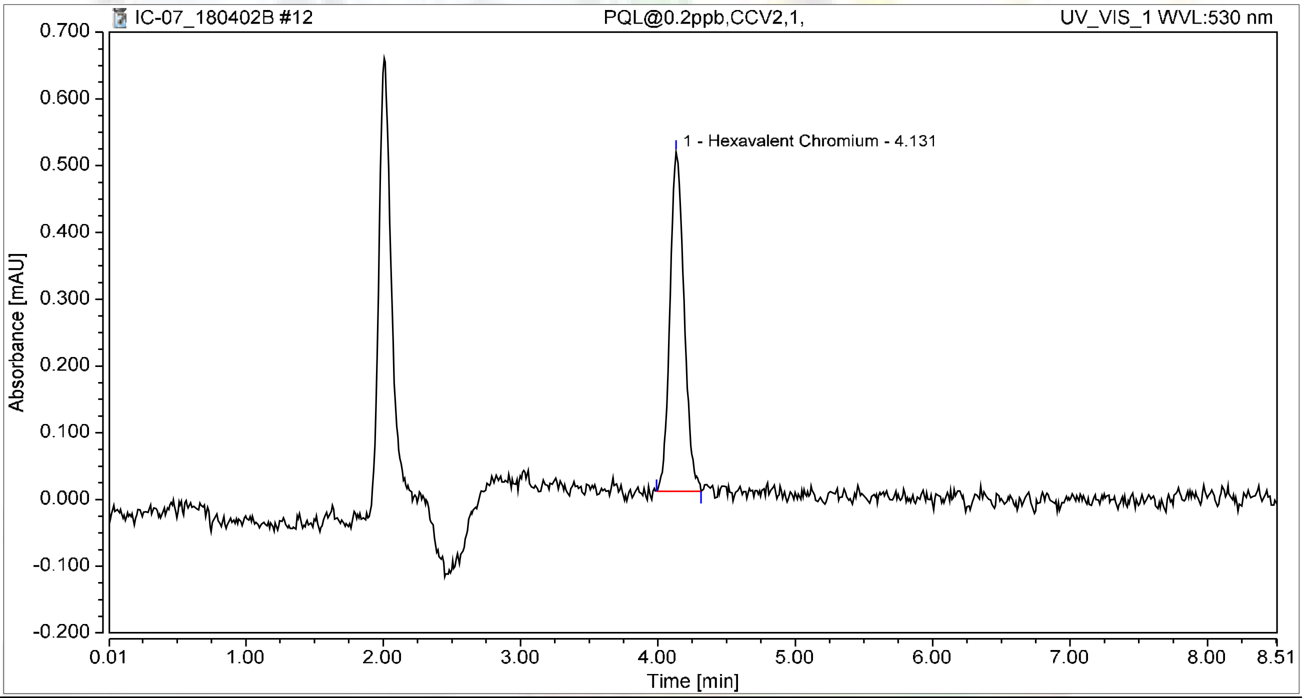
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.285	9.862	100.00	100.00	5.0684
Total:			**1.285**	**9.862**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

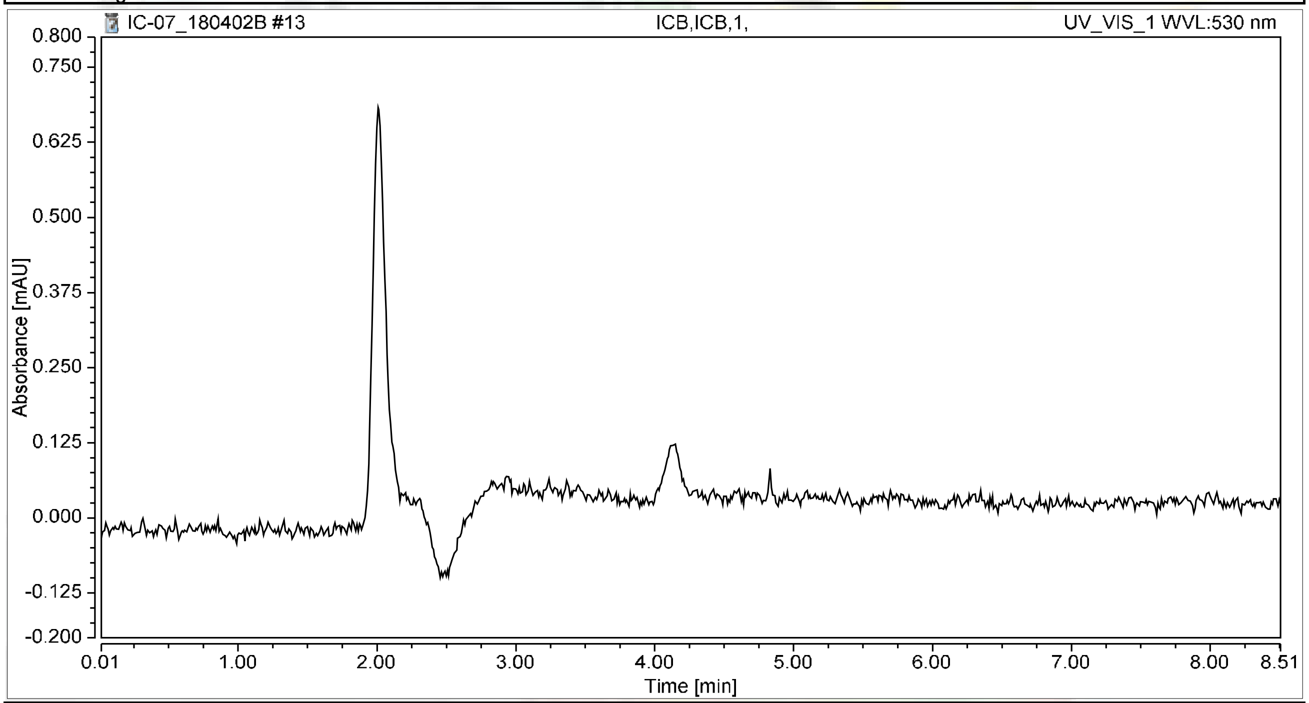
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.061	0.508	100.00	100.00	0.2395
Total:			**0.061**	**0.508**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 14:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

RAW DATA

INJECTION LOG: 180404A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	04/04/18 8:36 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	04/04/18 8:46 AM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	04/04/18 8:56 AM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/04/18 9:05 AM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	04/04/18 9:15 AM	Reported
16	MB-R123129	MBLK	1	Hexavalent Chromium	04/04/18 9:24 AM	Reported
17	LCS-R123129	LCS	1	Hexavalent Chromium	04/04/18 9:34 AM	Reported
18	N029509-001A	SAMP	1	Hexavalent Chromium	04/04/18 9:49 AM	Reported
19	N029509-001AMS	MS	1	Hexavalent Chromium	04/04/18 10:00 AM	Reported
20	N029509-002A	SAMP	1	Hexavalent Chromium	04/04/18 10:10 AM	Reported
21	N029509-002AMS	MS	1	Hexavalent Chromium	04/04/18 10:19 AM	Reported
22	N029509-003A	SAMP	1	Hexavalent Chromium	04/04/18 10:29 AM	Reported
23	N029509-003AMS	MS	1	Hexavalent Chromium	04/04/18 10:38 AM	Not Reported
24	N029509-004A	SAMP	1	Hexavalent Chromium	04/04/18 10:48 AM	Reported
25	N029509-004AMS	MS	1	Hexavalent Chromium	04/04/18 10:57 AM	Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	04/04/18 11:06 AM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	04/04/18 11:16 AM	Reported
28	N029509-005A	SAMP	1	Hexavalent Chromium	04/04/18 11:25 AM	Reported
29	N029509-005AMS	MS	1	Hexavalent Chromium	04/04/18 11:35 AM	Not Reported
30	N029509-006A	SAMP	1	Hexavalent Chromium	04/04/18 11:44 AM	Reported
31	N029509-006AMS	MS	1	Hexavalent Chromium	04/04/18 11:54 AM	Reported
32	N029509-007A	SAMP	1	Hexavalent Chromium	04/04/18 12:03 PM	Reported
33	N029509-007AMS	MS	1	Hexavalent Chromium	04/04/18 12:13 PM	Reported
34	N029509-008A	SAMP	1	Hexavalent Chromium	04/04/18 12:22 PM	Reported
35	N029509-008AMS	MS	1	Hexavalent Chromium	04/04/18 12:32 PM	Not Reported
36	N029509-003AMS	MS	1	Hexavalent Chromium	04/04/18 12:41 PM	Reported
37	N029509-005AMS	MS	1	Hexavalent Chromium	04/04/18 12:51 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	04/04/18 1:00 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	04/04/18 1:10 PM	Reported
40	N029509-005AMSD	MSD	1	Hexavalent Chromium	04/04/18 1:20 PM	Reported
41	N029509-008AMS	MS	1	Hexavalent Chromium	04/04/18 1:31 PM	Reported
42	N029508-001A	SAMP	1	Hexavalent Chromium	04/04/18 1:41 PM	Reported

Nancy 4/10/2018

rba 4/8/2018

INJECTION LOG: 180404A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N029508-001ADUP	DUP	1	Hexavalent Chromium	04/04/18 1:50 PM	Reported
44	N029508-002A	SAMP	1	Hexavalent Chromium	04/04/18 2:00 PM	Reported
45	N029508-003A	SAMP	1	Hexavalent Chromium	04/04/18 2:09 PM	Reported
46	N029508-004A	SAMP	1	Hexavalent Chromium	04/04/18 2:19 PM	Reported
47	N029508-005A	SAMP	1	Hexavalent Chromium	04/04/18 2:28 PM	Reported
48	N029508-006A	SAMP	1	Hexavalent Chromium	04/04/18 2:38 PM	Reported
49	N029508-007A	SAMP	1	Hexavalent Chromium	04/04/18 2:47 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	04/04/18 2:56 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	04/04/18 3:06 PM	Reported
52	N029508-008A	SAMP	1	Hexavalent Chromium	04/04/18 3:15 PM	Reported
53	N029508-009A	SAMP	1	Hexavalent Chromium	04/04/18 3:25 PM	Reported
54	N029508-010A	SAMP	1	Hexavalent Chromium	04/04/18 3:34 PM	Reported
55	LCS-R123130	LCS	1	Hexavalent Chromium	04/04/18 3:44 PM	Reported
56	MB-R123130	MBLK	1	Hexavalent Chromium	04/04/18 3:53 PM	Reported
57	N029506-001A	SAMP	1	Hexavalent Chromium	04/04/18 4:03 PM	Reported
58	N029506-001AMS	MS	1	Hexavalent Chromium	04/04/18 4:12 PM	Reported
59	N029506-002A	SAMP	100	Hexavalent Chromium	04/04/18 4:22 PM	Reported
60	N029506-002AMS	MS	100	Hexavalent Chromium	04/04/18 4:31 PM	Reported
61	N029506-002AMSD	MSD	100	Hexavalent Chromium	04/04/18 4:41 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	04/04/18 4:50 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	04/04/18 4:59 PM	Reported
64	N029507-001A	SAMP	1	Hexavalent Chromium	04/04/18 5:09 PM	Reported
65	N029507-001ADUP	DUP	1	Hexavalent Chromium	04/04/18 5:18 PM	Reported
66	N029507-002A	SAMP	1	Hexavalent Chromium	04/04/18 5:28 PM	Reported
67	N029507-003A	SAMP	1	Hexavalent Chromium	04/04/18 5:37 PM	Reported
68	N029507-004A	SAMP	1	Hexavalent Chromium	04/04/18 5:47 PM	Reported
69	N029507-005A	SAMP	1	Hexavalent Chromium	04/04/18 5:56 PM	Reported
70	N029507-006A	SAMP	1	Hexavalent Chromium	04/04/18 6:06 PM	Reported
71	N029507-007A	SAMP	1	Hexavalent Chromium	04/04/18 6:15 PM	Reported
72	N029507-008A	SAMP	1	Hexavalent Chromium	04/04/18 6:25 PM	Reported
73	N029507-009A	SAMP	1	Hexavalent Chromium	04/04/18 6:34 PM	Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	04/04/18 6:44 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	04/04/18 6:53 PM	Reported
76	N029507-010A	SAMP	5	Hexavalent Chromium	04/04/18 7:02 PM	Reported
77	N029507-011A	SAMP	1	Hexavalent Chromium	04/04/18 7:12 PM	Reported
78	N029507-012A	SAMP	1	Hexavalent Chromium	04/04/18 7:21 PM	Reported
79	N029507-013A	SAMP	2	Hexavalent Chromium	04/04/18 7:31 PM	Reported
80	N029507-014A	SAMP	2	Hexavalent Chromium	04/04/18 7:40 PM	Reported
81	N029507-015A	SAMP	5	Hexavalent Chromium	04/04/18 7:50 PM	Reported
82	N029507-016A	SAMP	1	Hexavalent Chromium	04/04/18 7:59 PM	Reported
83	N029551-001A	SAMP	1	Hexavalent Chromium	04/04/18 8:09 PM	Reported
84	N029551-002A	SAMP	1	Hexavalent Chromium	04/04/18 8:18 PM	Reported

INJECTION LOG: 180404A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	04/04/18 8:28 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	04/04/18 8:37 PM	Reported
87	MB-R123131	MBLK	1	Hexavalent Chromium	04/04/18 8:47 PM	Reported
88	LCS-R123131	LCS	1	Hexavalent Chromium	04/04/18 8:56 PM	Reported
89	N029552-005A	SAMP	100	Hexavalent Chromium	04/04/18 9:40 PM	Reported
90	N029552-005AMS	MS	100	Hexavalent Chromium	04/04/18 9:51 PM	Reported
91	N029552-005AMSD	MSD	100	Hexavalent Chromium	04/04/18 10:00 PM	Reported
92	N029552-007A	SAMP	100	Hexavalent Chromium	04/04/18 10:09 PM	Reported
93	N029552-007AMS	MS	100	Hexavalent Chromium	04/04/18 10:19 PM	Reported
94	N029551-003A	SAMP	1	Hexavalent Chromium	04/04/18 10:28 PM	Reported
95	N029551-003ADUP	DUP	1	Hexavalent Chromium	04/04/18 10:38 PM	Reported
96	N029551-004A	SAMP	1	Hexavalent Chromium	04/04/18 10:47 PM	Reported
97	CCV-8	CCV1	1	Hexavalent Chromium	04/04/18 10:57 PM	Reported
98	CCB-8	CCB	1	Hexavalent Chromium	04/04/18 11:06 PM	Reported
99	N029551-005A	SAMP	1	Hexavalent Chromium	04/04/18 11:16 PM	Reported
100	N029551-006A	SAMP	1	Hexavalent Chromium	04/04/18 11:25 PM	Reported
101	N029551-007A	SAMP	1	Hexavalent Chromium	04/04/18 11:35 PM	Reported
102	N029551-008A	SAMP	1	Hexavalent Chromium	04/04/18 11:44 PM	Reported
103	N029551-009A	SAMP	1	Hexavalent Chromium	04/04/18 11:54 PM	Reported
104	N029551-010A	SAMP	1	Hexavalent Chromium	04/05/18 12:03 AM	Reported
105	N029551-011A	SAMP	1	Hexavalent Chromium	04/05/18 12:13 AM	Reported
106	N029552-001A	SAMP	1	Hexavalent Chromium	04/05/18 12:22 AM	Reported
107	N029552-002A	SAMP	2	Hexavalent Chromium	04/05/18 12:31 AM	Reported
108	N029552-003A	SAMP	50	Hexavalent Chromium	04/05/18 12:41 AM	Reported
109	CCV-9	CCV	1	Hexavalent Chromium	04/05/18 12:50 AM	Reported
110	CCB-9	CCB	1	Hexavalent Chromium	04/05/18 1:00 AM	Reported
111	N029552-004A	SAMP	20	Hexavalent Chromium	04/05/18 1:09 AM	Reported
112	N029552-006A	SAMP	10	Hexavalent Chromium	04/05/18 1:19 AM	Reported
113	N029552-008A	SAMP	10	Hexavalent Chromium	04/05/18 1:28 AM	Reported
114	N029552-009A	SAMP	1	Hexavalent Chromium	04/05/18 1:38 AM	Reported
115	N029552-010A	SAMP	500	Hexavalent Chromium	04/05/18 1:47 AM	Reported
116	N029552-011A	SAMP	500	Hexavalent Chromium	04/05/18 1:57 AM	Reported
117	CCV-10	CCV1	1	Hexavalent Chromium	04/05/18 2:06 AM	Reported
118	CCB-10	CCB	1	Hexavalent Chromium	04/05/18 2:16 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180404A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**05/Apr/18 02:46:21**
No. of Injections:	**121**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	BLANK	1	1000	Unknown		04/04/2018 08:36	Finished	BLANK
12	BLANK	2	1000	Unknown		04/04/2018 08:46	Finished	BLANK
13	CCV-1,CCV,1,	3	1000	Unknown		04/04/2018 08:56	Finished	CCV @5ppb, IWST-180129A
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		04/04/2018 09:05	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		04/04/2018 09:15	Finished	CCB R180329A
16	MB-H2O,MBLK,1,	6	1000	Unknown		04/04/2018 09:24	Finished	MB R180329A
17	LCS-H2O,LCS,1,	7	1000	Unknown		04/04/2018 09:34	Finished	LCS, IWST-180129B
18	N029509-001A,SAMF	1	1000	Unknown		04/04/2018 09:49	Finished	SAMP,10mL
19	N029509-001AMS,MS	2	1000	Unknown		04/04/2018 10:00	Finished	MS (1ppb), IWST-180129B,10
20	N029509-002A,SAMF	3	1000	Unknown		04/04/2018 10:10	Finished	SAMP,10mL
21	N029509-002AMS,MS	4	1000	Unknown		04/04/2018 10:19	Finished	MS (1ppb), IWST-180129B,10
22	N029509-003A,SAMF	5	1000	Unknown		04/04/2018 10:29	Finished	SAMP,10mL
23	N029509-003AMS,MS	6	1000	Unknown		04/04/2018 10:38	Finished	MS (1ppb), IWST-180129B,10
24	N029509-004A,SAMF	7	1000	Unknown		04/04/2018 10:48	Finished	SAMP,10mL
25	N029509-004AMS,MS	8	1000	Unknown		04/04/2018 10:57	Finished	MS (1ppb), IWST-180129B,10
26	CCV-2,CCV1,1,	9	1000	Unknown		04/04/2018 11:06	Finished	CCV @10ppb, IWST-180129A
27	CCB-2,CCB,1,	10	1000	Unknown		04/04/2018 11:16	Finished	CCB R180329A
28	N029509-005A,SAMF	11	1000	Unknown		04/04/2018 11:25	Finished	SAMP,10mL
29	N029509-005AMS,MS	12	1000	Unknown		04/04/2018 11:35	Finished	MS (1ppb), IWST-180129B,10
30	N029509-006A,SAMF	13	1000	Unknown		04/04/2018 11:44	Finished	SAMP,10mL
31	N029509-006AMS,MS	14	1000	Unknown		04/04/2018 11:54	Finished	MS (1ppb), IWST-180129B,10
32	N029509-007A,SAMF	15	1000	Unknown		04/04/2018 12:03	Finished	SAMP,10mL
33	N029509-007AMS,MS	16	1000	Unknown		04/04/2018 12:13	Finished	MS (1ppb), IWST-180129B,10
34	N029509-008A,SAMF	17	1000	Unknown		04/04/2018 12:22	Finished	SAMP,10mL
35	N029509-008AMS,MS	18	1000	Unknown		04/04/2018 12:32	Finished	MS (1ppb), IWST-180129B,10
36	N029509-003AMS,MS	19	1000	Unknown		04/04/2018 12:41	Finished	MS (1ppb), IWST-180129B,10
37	N029509-005AMS,MS	20	1000	Unknown		04/04/2018 12:51	Finished	MS (1ppb), IWST-180129B,10
38	CCV-3,CCV,1,	21	1000	Unknown		04/04/2018 13:00	Finished	CCV @5ppb, IWST-180129A
39	CCB-3,CCB,1,	22	1000	Unknown		04/04/2018 13:10	Finished	CCB R180329A
40	N029509-005AMSD,M	1	1000	Unknown		04/04/2018 13:20	Finished	MSD (1ppb), IWST-180129B,1(
41	N029509-008AMS,MS	2	1000	Unknown		04/04/2018 13:31	Finished	MS (1ppb), IWST-180129B,10
42	N029508-001A,SAMF	3	1000	Unknown		04/04/2018 13:41	Finished	SAMP,10mL
43	N029508-001ADUP,D	4	1000	Unknown		04/04/2018 13:50	Finished	DUP,10mL
44	N029508-002A,SAMF	5	1000	Unknown		04/04/2018 14:00	Finished	SAMP,10mL
45	N029508-003A,SAMF	6	1000	Unknown		04/04/2018 14:09	Finished	SAMP,10mL
46	N029508-004A,SAMF	7	1000	Unknown		04/04/2018 14:19	Finished	SAMP,10mL
47	N029508-005A,SAMF	8	1000	Unknown		04/04/2018 14:28	Finished	SAMP,10mL
48	N029508-006A,SAMF	9	1000	Unknown		04/04/2018 14:38	Finished	SAMP,10mL
49	N029508-007A,SAMF	10	1000	Unknown		04/04/2018 14:47	Finished	SAMP,10mL
50	CCV-4,CCV1,1,	11	1000	Unknown		04/04/2018 14:56	Finished	CCV @10ppb, IWST-180129A
51	CCB-4,CCB,1,	12	1000	Unknown		04/04/2018 15:06	Finished	CCB R180329A
52	N029508-008A,SAMF	13	1000	Unknown		04/04/2018 15:15	Finished	SAMP,10mL
53	N029508-009A,SAMF	14	1000	Unknown		04/04/2018 15:25	Finished	SAMP,10mL
54	N029508-010A,SAMF	15	1000	Unknown		04/04/2018 15:34	Finished	SAMP,10mL
55	LCS-2,LCS,1,	16	1000	Unknown		04/04/2018 15:44	Finished	LCS, IWST-180129B
56	MB-2,MBLK,1,	17	1000	Unknown		04/04/2018 15:53	Finished	MB R180329A
57	N029506-001A,SAMF	18	1000	Unknown		04/04/2018 16:03	Finished	SAMP,10mL
58	N029506-001AMS,MS	19	1000	Unknown		04/04/2018 16:12	Finished	MS (1ppb), IWST-180129B,10
59	N029506-002A,SAMF	20	1000	Unknown		04/04/2018 16:22	Finished	SAMP,0.1>10mL
60	N029506-002AMS,MS	21	1000	Unknown		04/04/2018 16:31	Finished	MS (5ppb), IWST-180129B,0.1

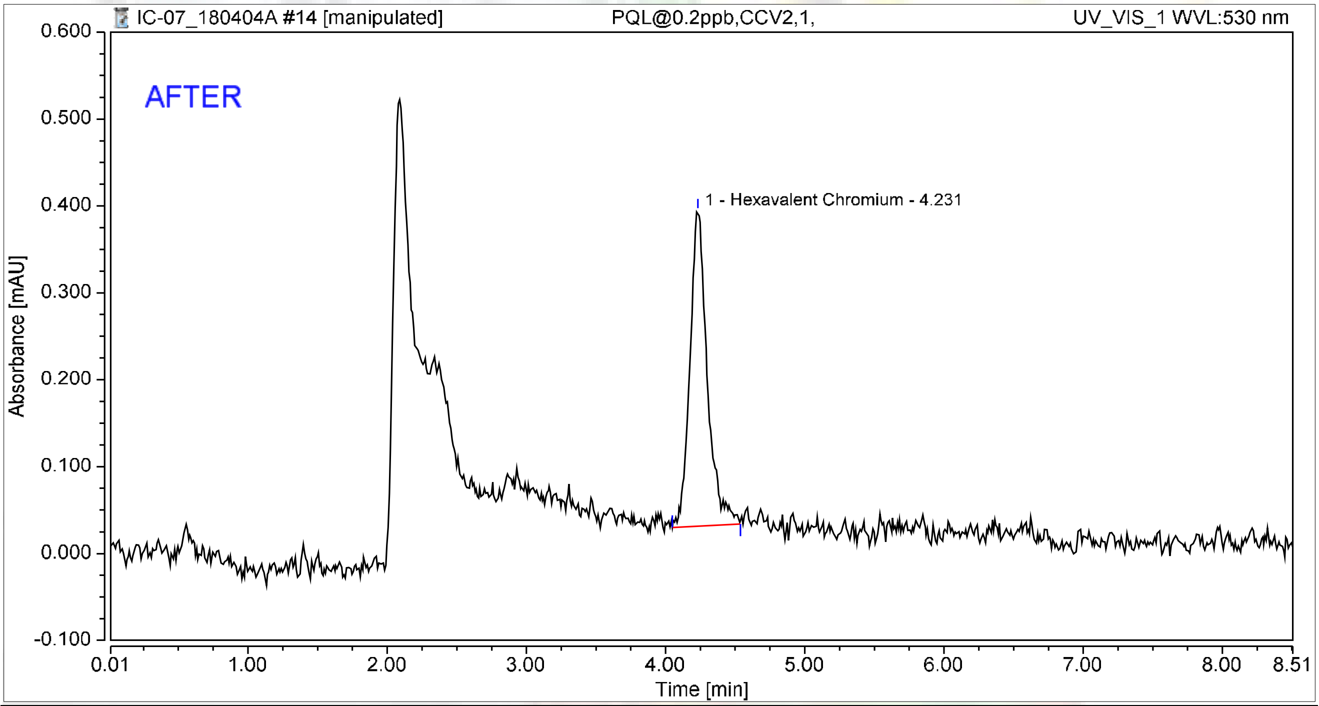
61	N029506-002AMSD,M	22	1000	Unknown		04/04/2018 16:41	Finished	MSD (5ppb), IWST-180129B,0.
62	CCV-5,CCV,1,	23	1000	Unknown		04/04/2018 16:50	Finished	CCV @5ppb, IWST-180129A
63	CCB-5,CCB,1,	24	1000	Unknown		04/04/2018 16:59	Finished	CCB R180329A
64	N029507-001A,SAMP	25	1000	Unknown		04/04/2018 17:09	Finished	SAMP,10mL
65	N029507-001ADUP,D	26	1000	Unknown		04/04/2018 17:18	Finished	DUP,10mL
66	N029507-002A,SAMP	27	1000	Unknown		04/04/2018 17:28	Finished	SAMP,10mL
67	N029507-003A,SAMP	28	1000	Unknown		04/04/2018 17:37	Finished	SAMP,10mL
68	N029507-004A,SAMP	29	1000	Unknown		04/04/2018 17:47	Finished	SAMP,10mL
69	N029507-005A,SAMP	30	1000	Unknown		04/04/2018 17:56	Finished	SAMP,10mL
70	N029507-006A,SAMP	31	1000	Unknown		04/04/2018 18:06	Finished	SAMP,10mL
71	N029507-007A,SAMP	32	1000	Unknown		04/04/2018 18:15	Finished	SAMP,10mL
72	N029507-008A,SAMP	33	1000	Unknown		04/04/2018 18:25	Finished	SAMP,10mL
73	N029507-009A,SAMP	34	1000	Unknown		04/04/2018 18:34	Finished	SAMP,10mL
74	CCV-6,CCV1,1,	35	1000	Unknown		04/04/2018 18:44	Finished	CCV @10ppb, IWST-180129A
75	CCB-6,CCB,1,	36	1000	Unknown		04/04/2018 18:53	Finished	CCB R180329A
76	N029507-010A,SAMP	37	1000	Unknown		04/04/2018 19:02	Finished	SAMP,2>10mL
77	N029507-011A,SAMP	38	1000	Unknown		04/04/2018 19:12	Finished	SAMP,10mL
78	N029507-012A,SAMP	39	1000	Unknown		04/04/2018 19:21	Finished	SAMP,10mL
79	N029507-013A,SAMP	40	1000	Unknown		04/04/2018 19:31	Finished	SAMP,5>10mL
80	N029507-014A,SAMP	41	1000	Unknown		04/04/2018 19:40	Finished	SAMP,5>10mL
81	N029507-015A,SAMP	42	1000	Unknown		04/04/2018 19:50	Finished	SAMP,2>10mL
82	N029507-016A,SAMP	43	1000	Unknown		04/04/2018 19:59	Finished	SAMP,10mL
83	N029551-001A,SAMP	44	1000	Unknown		04/04/2018 20:09	Finished	SAMP,10mL
84	N029551-002A,SAMP	45	1000	Unknown		04/04/2018 20:18	Finished	SAMP,10mL
85	CCV-7,CCV,1,	46	1000	Unknown		04/04/2018 20:28	Finished	CCV @5ppb, IWST-180129A
86	CCB-7,CCB,1,	47	1000	Unknown		04/04/2018 20:37	Finished	CCB R180329A
87	MB-3,MBLK,1,	48	1000	Unknown		04/04/2018 20:47	Finished	MB R180316A
88	LCS-3,LCS,1,	49	1000	Unknown		04/04/2018 20:56	Finished	LCS, IWST-180129B
89	N029552-005A,SAMP	1	1000	Unknown		04/04/2018 21:40	Finished	SAMP,0.1>10mL
90	N029552-005AMS,MS	2	1000	Unknown		04/04/2018 21:51	Finished	MS (5ppb), IWST-180129B,0.1
91	N029552-005AMSD,M	3	1000	Unknown		04/04/2018 22:00	Finished	MSD (5ppb), IWST-180129B,0.
92	N029552-007A,SAMP	4	1000	Unknown		04/04/2018 22:09	Finished	SAMP,0.1>10mL
93	N029552-007AMS,MS	5	1000	Unknown		04/04/2018 22:19	Finished	MS (5ppb), IWST-180129B,0.1
94	N029551-003A,SAMP	6	1000	Unknown		04/04/2018 22:28	Finished	SAMP,10mL
95	N029551-003ADUP,D	7	1000	Unknown		04/04/2018 22:38	Finished	DUP,10mL
96	N029551-004A,SAMP	8	1000	Unknown		04/04/2018 22:47	Finished	SAMP,10mL
97	CCV-8,CCV1,1,	9	1000	Unknown		04/04/2018 22:57	Finished	CCV @10ppb, IWST-180129A
98	CCB-8,CCB,1,	10	1000	Unknown		04/04/2018 23:06	Finished	CCB R180316A
99	N029551-005A,SAMP	11	1000	Unknown		04/04/2018 23:16	Finished	SAMP,10mL
100	N029551-006A,SAMP	12	1000	Unknown		04/04/2018 23:25	Finished	SAMP,10mL
101	N029551-007A,SAMP	13	1000	Unknown		04/04/2018 23:35	Finished	SAMP,10mL
102	N029551-008A,SAMP	14	1000	Unknown		04/04/2018 23:44	Finished	SAMP,10mL
103	N029551-009A,SAMP	15	1000	Unknown		04/04/2018 23:54	Finished	SAMP,10mL
104	N029551-010A,SAMP	16	1000	Unknown		04/05/2018 00:03	Finished	SAMP,10mL
105	N029551-011A,SAMP	17	1000	Unknown		04/05/2018 00:13	Finished	SAMP,10mL
106	N029552-001A,SAMP	18	1000	Unknown		04/05/2018 00:22	Finished	SAMP,10mL
107	N029552-002A,SAMP	19	1000	Unknown		04/05/2018 00:31	Finished	SAMP,10mL
108	N029552-003A,SAMP	20	1000	Unknown		04/05/2018 00:41	Finished	SAMP,0.2>10mL
109	CCV-9,CCV,1,	21	1000	Unknown		04/05/2018 00:50	Finished	CCV @5ppb, IWST-180129A
110	CCB-9,CCB,1,	22	1000	Unknown		04/05/2018 01:00	Finished	CCB R180316A
111	N029552-004A,SAMP	23	1000	Unknown		04/05/2018 01:09	Finished	SAMP,0.5>10mL
112	N029552-006A,SAMP	24	1000	Unknown		04/05/2018 01:19	Finished	SAMP,1>10mL
113	N029552-008A,SAMP	25	1000	Unknown		04/05/2018 01:28	Finished	SAMP,1>10mL
114	N029552-009A,SAMP	26	1000	Unknown		04/05/2018 01:38	Finished	SAMP,10mL
115	N029552-010A,SAMP	27	1000	Unknown		04/05/2018 01:47	Finished	SAMP,0.02>10mL
116	N029552-011A,SAMP	28	1000	Unknown		04/05/2018 01:57	Finished	SAMP,0.02>10mL
117	CCV-10,CCV1,1,	29	1000	Unknown		04/05/2018 02:06	Finished	CCV @10ppb, IWST-180129A
118	CCB-10,CCB,1,	30	1000	Unknown		04/05/2018 02:16	Finished	CCB R180316A
119	SHUTDOWN	31	1000	Unknown		04/05/2018 02:25	Finished	
120	Eluent: R180402B	32	1000	Unknown		n.a.	Finished	Eluent
121	PCR: R180402C	33	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 09:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.053	0.363	100.00	100.00	0.2073
Total:			**0.053**	**0.363**	**100.00**	**100.00**	

rba 4/8/2018

Reviewed by:
Nancy 4/10/2018

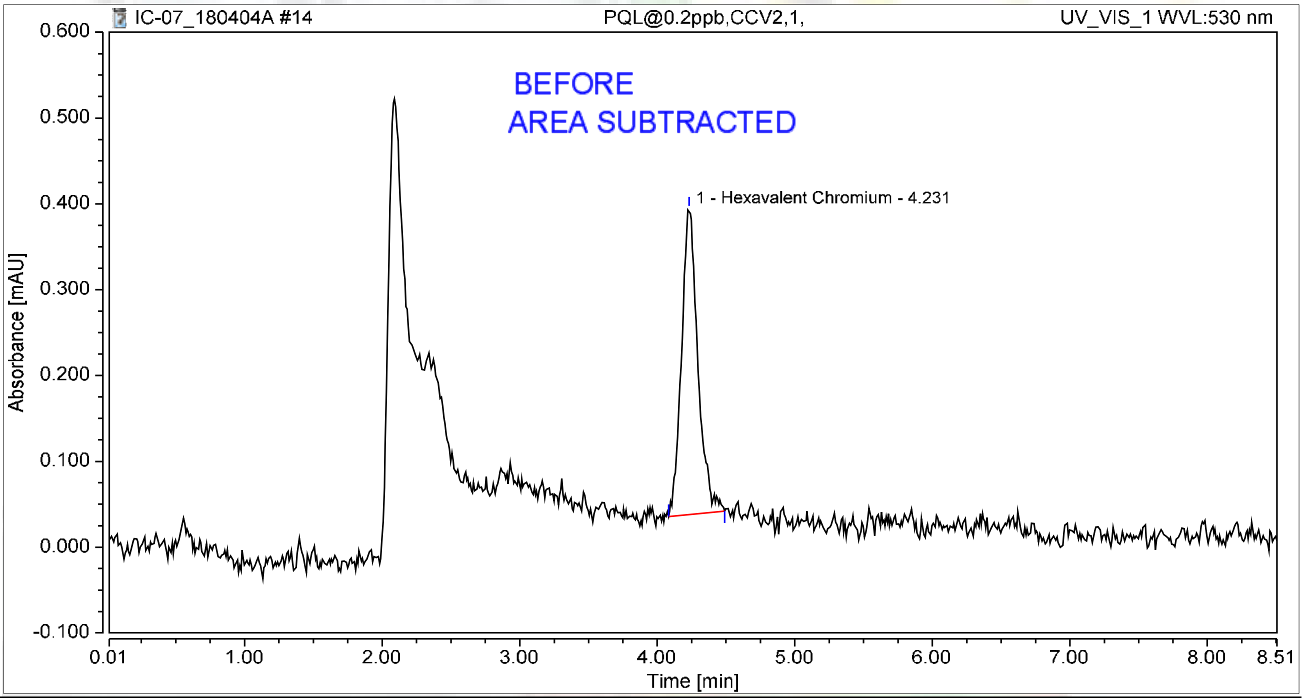
My first report/Integration

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 09:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.049	0.356	100.00	100.00	0.1933
Total:			**0.049**	**0.356**	**100.00**	**100.00**	

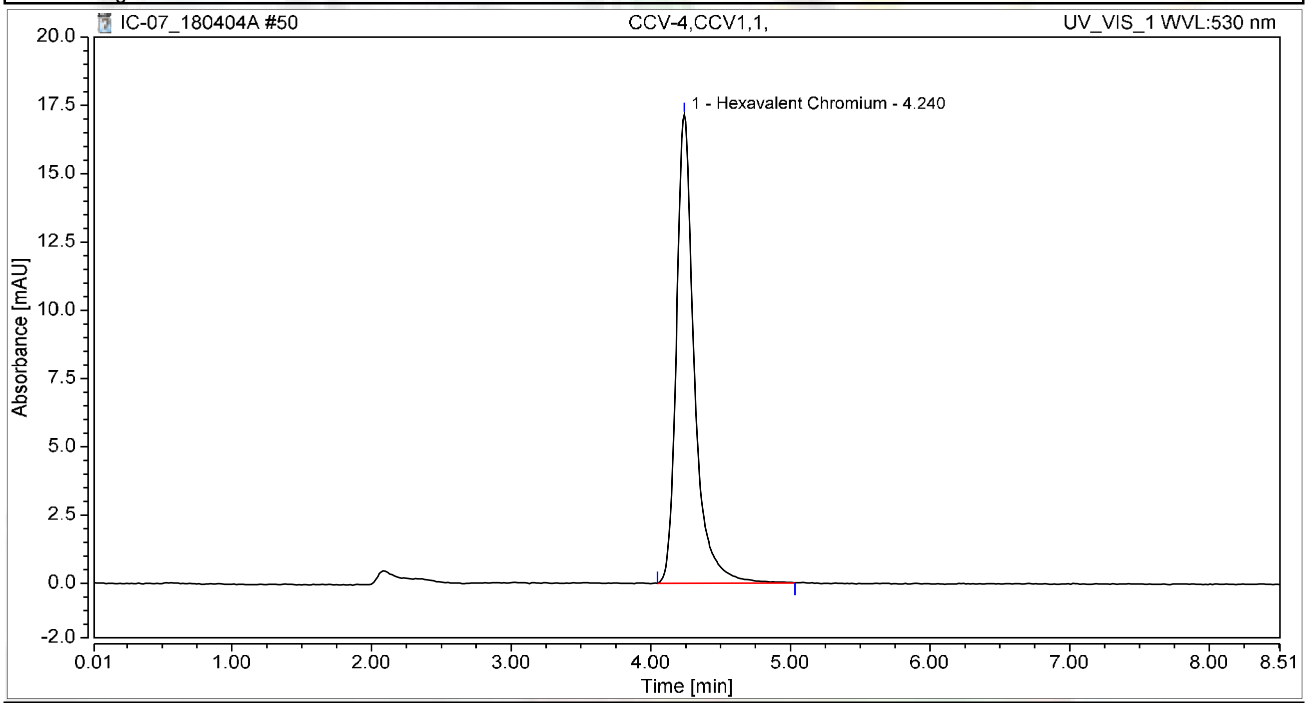
rba 4/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 14:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

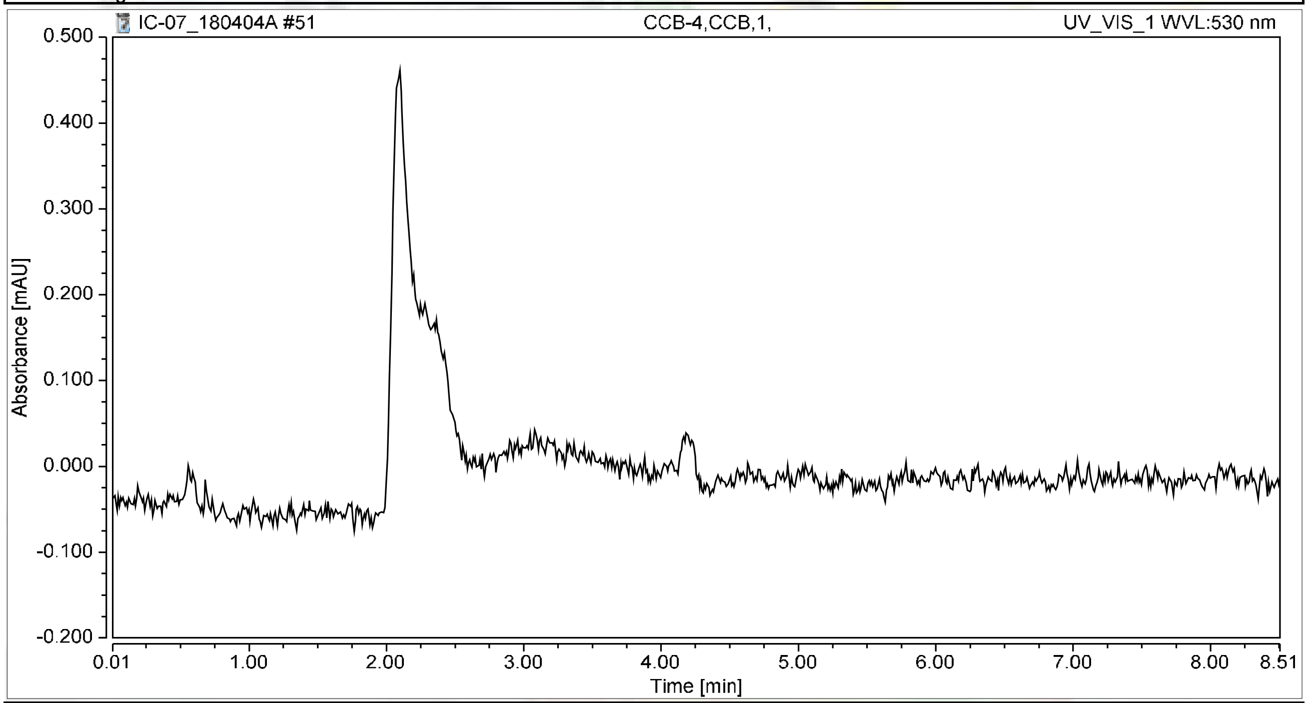
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	2.557	17.164	100.00	100.00	10.0882
Total:			**2.557**	**17.164**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 15:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

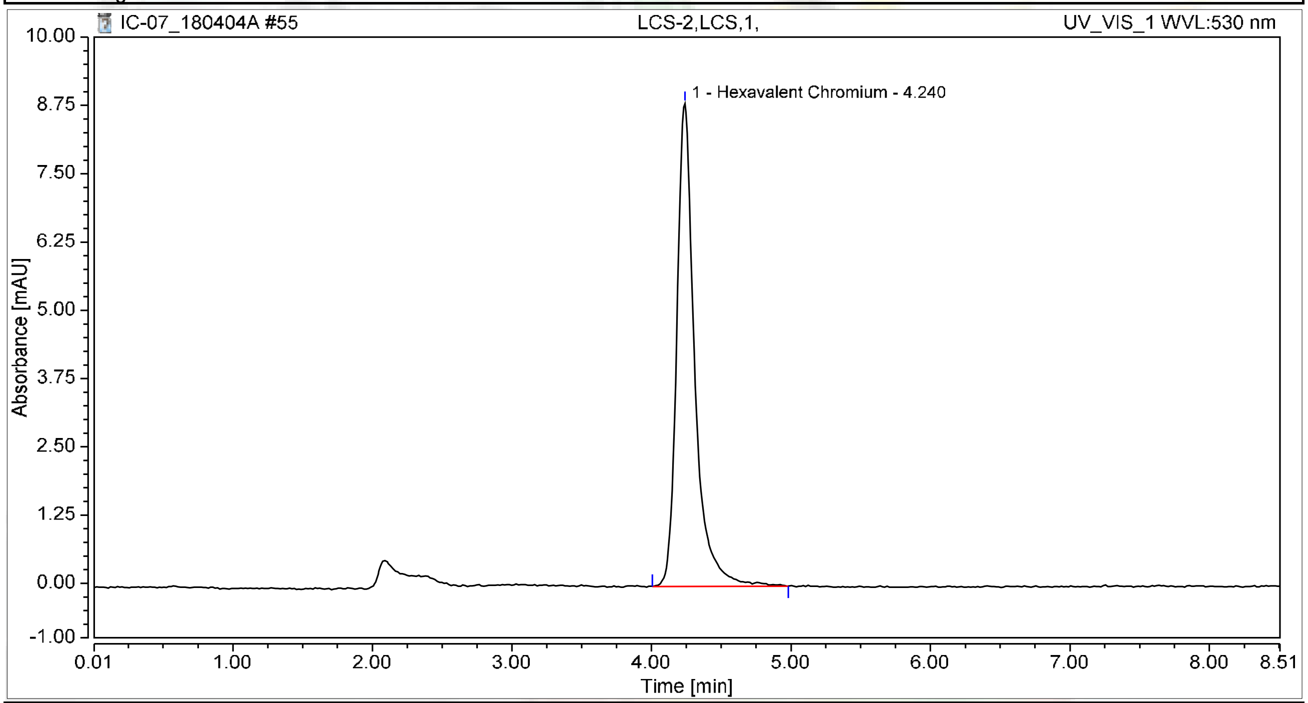
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-2,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 15:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

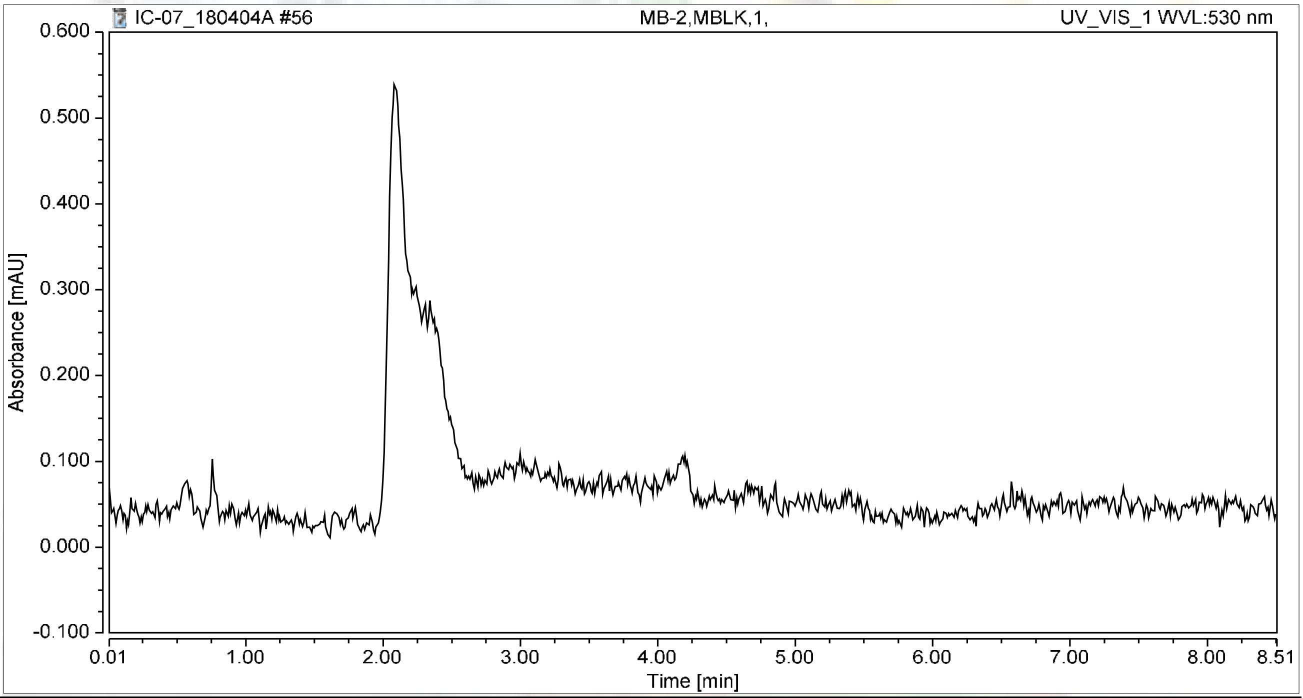
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	1.322	8.838	100.00	100.00	5.2135
Total:			**1.322**	**8.838**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-2,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 15:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

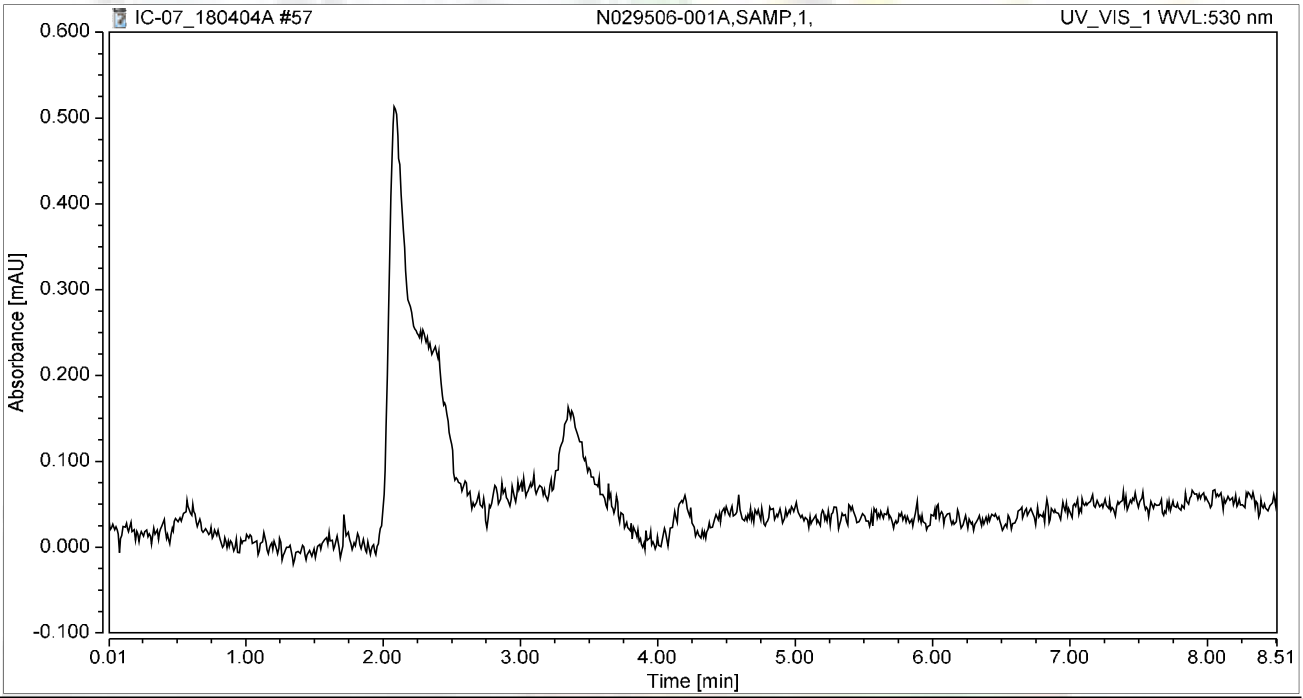
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029506-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 16:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

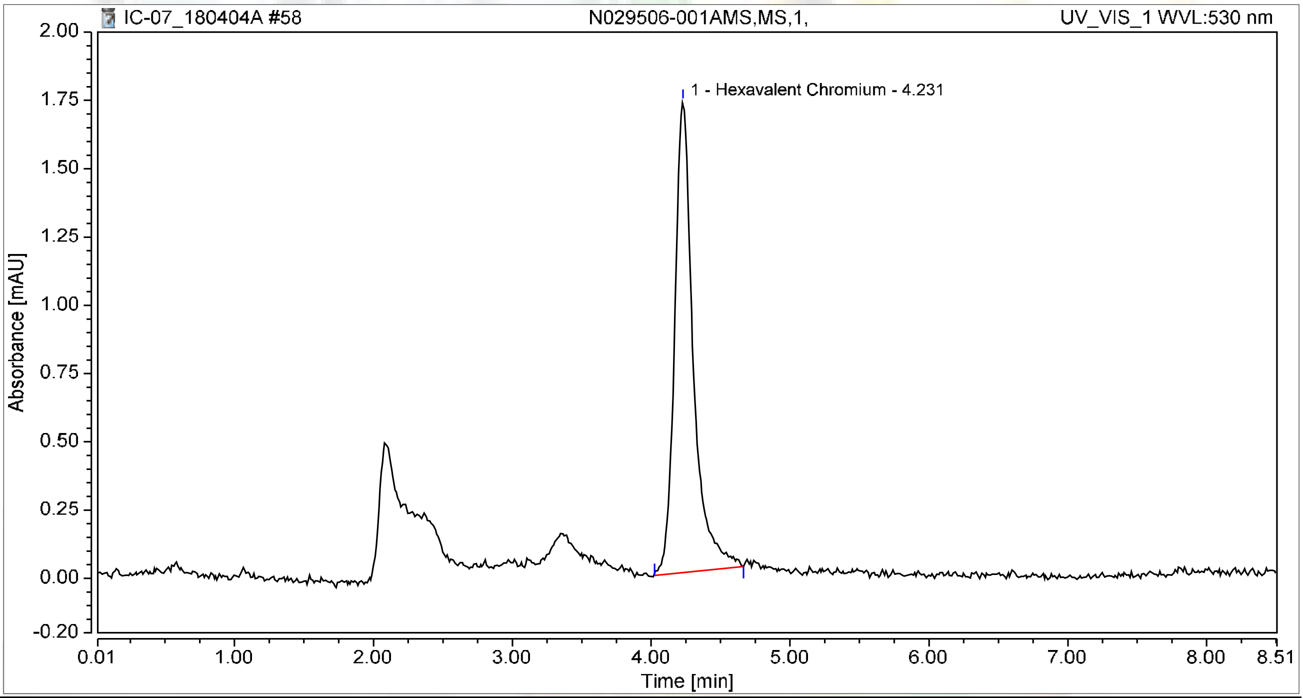
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029506-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 16:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

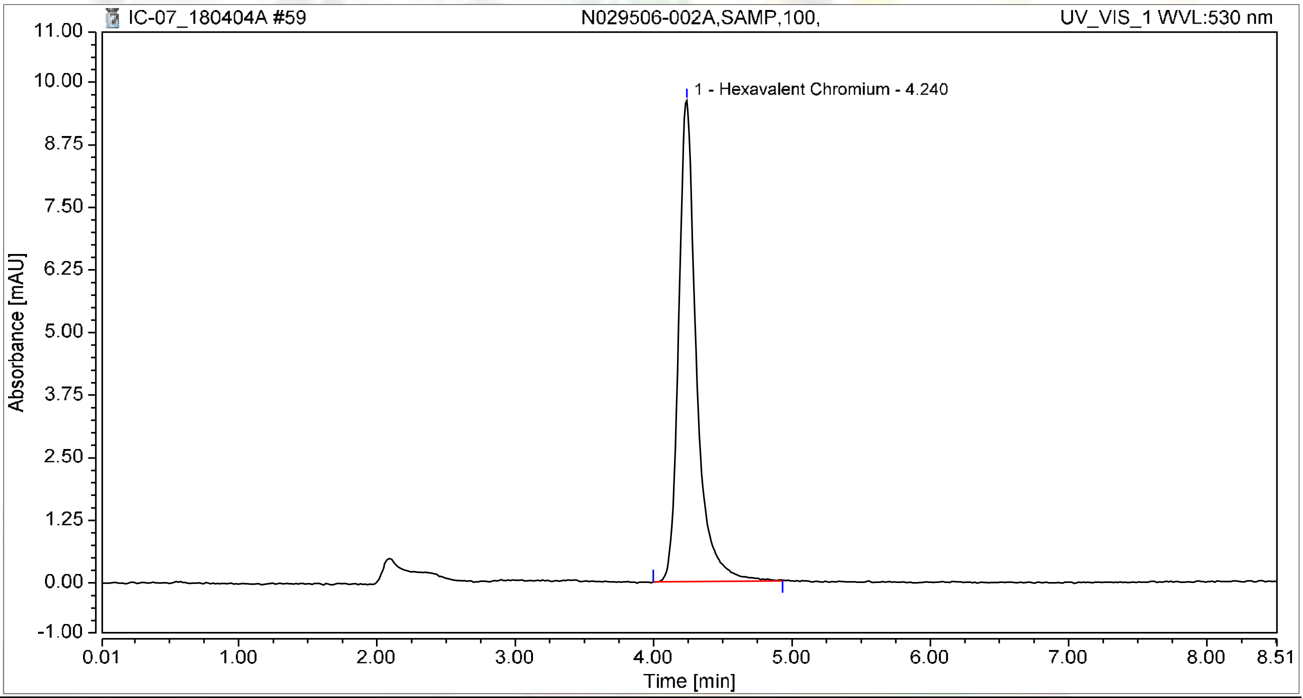
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.269	1.726	100.00	100.00	1.0602
Total:			**0.269**	**1.726**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029506-002A,SAMP,100,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 16:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

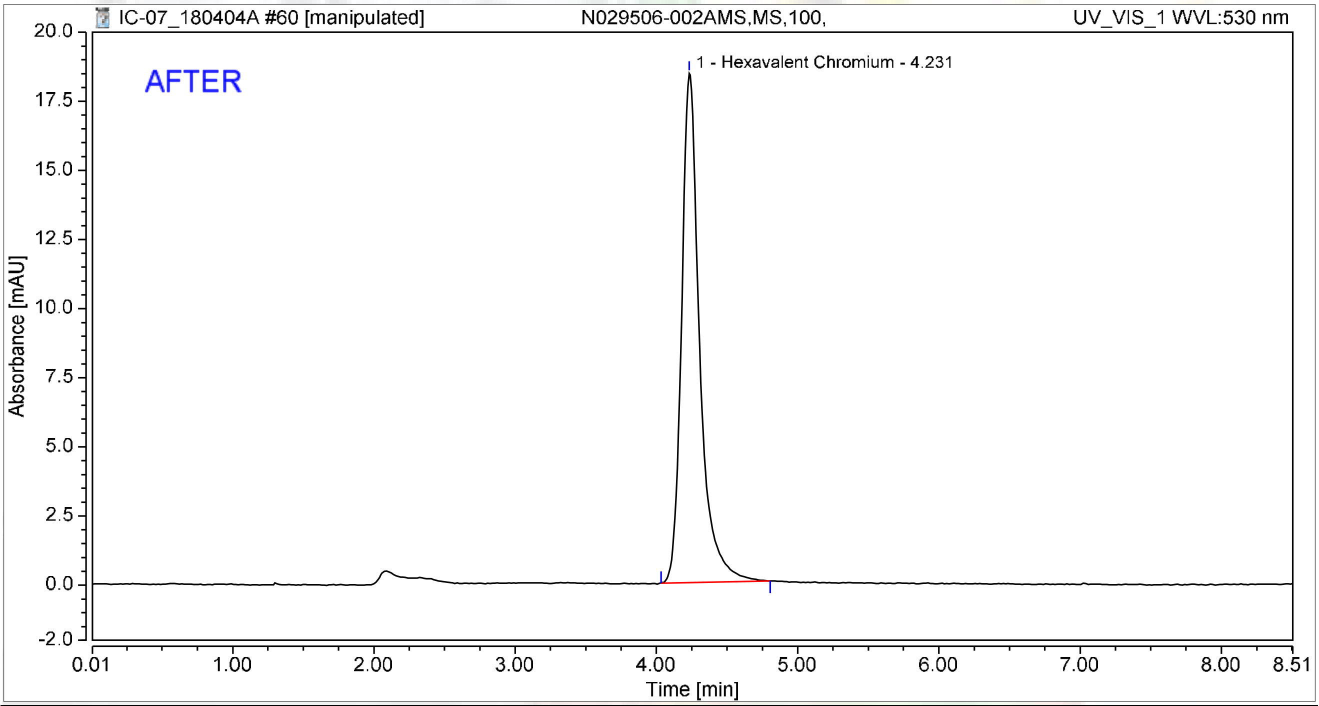
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	1.433	9.603	100.00	100.00	5.6545
Total:			**1.433**	**9.603**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029506-002AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 16:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.732	18.421	100.00	100.00	10.7779
Total:			**2.732**	**18.421**	**100.00**	**100.00**	

rba 4/8/2018

Reviewed by:
Nancy 4/10/2018

My first report/Integration

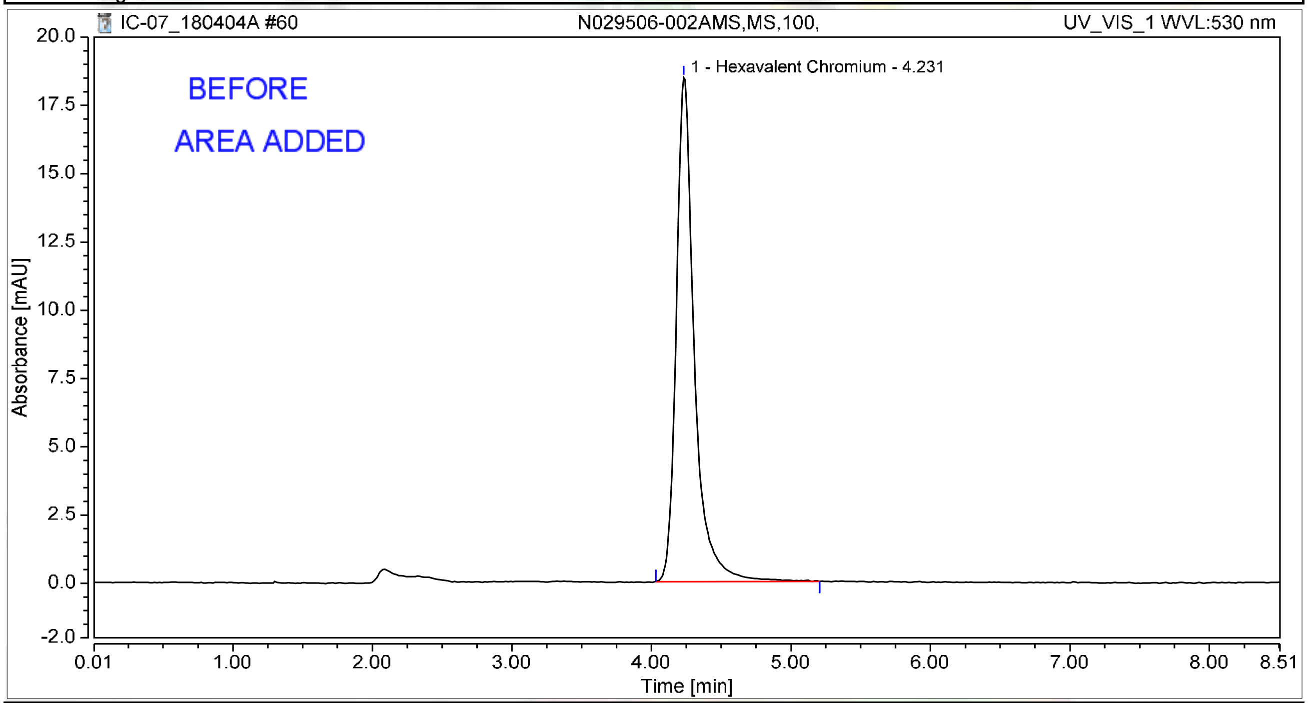
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N029506-002AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 16:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.778	18.441	100.00	100.00	10.9594
Total:			**2.778**	**18.441**	**100.00**	**100.00**	

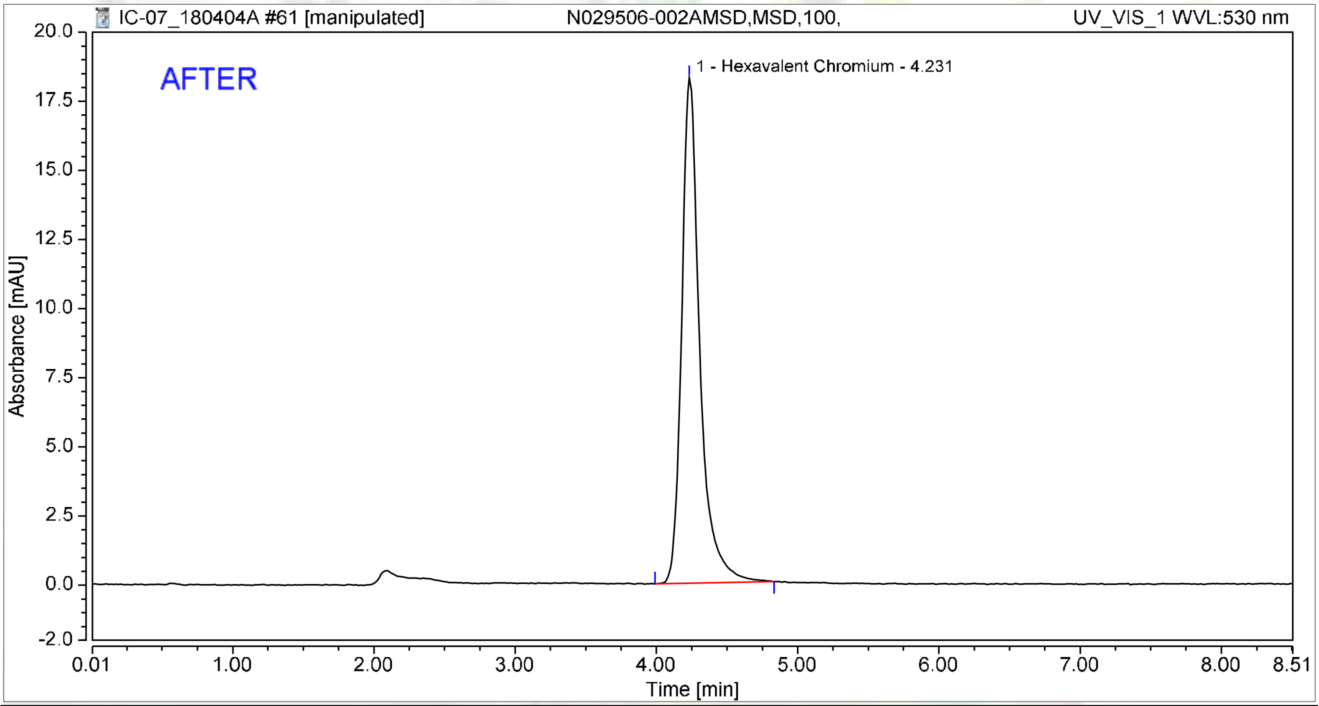
rba 4/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029506-002AMSD,MSD,100,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 16:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.722	18.289	100.00	100.00	10.7389
Total:			**2.722**	**18.289**	**100.00**	**100.00**	

rba 4/8/2018

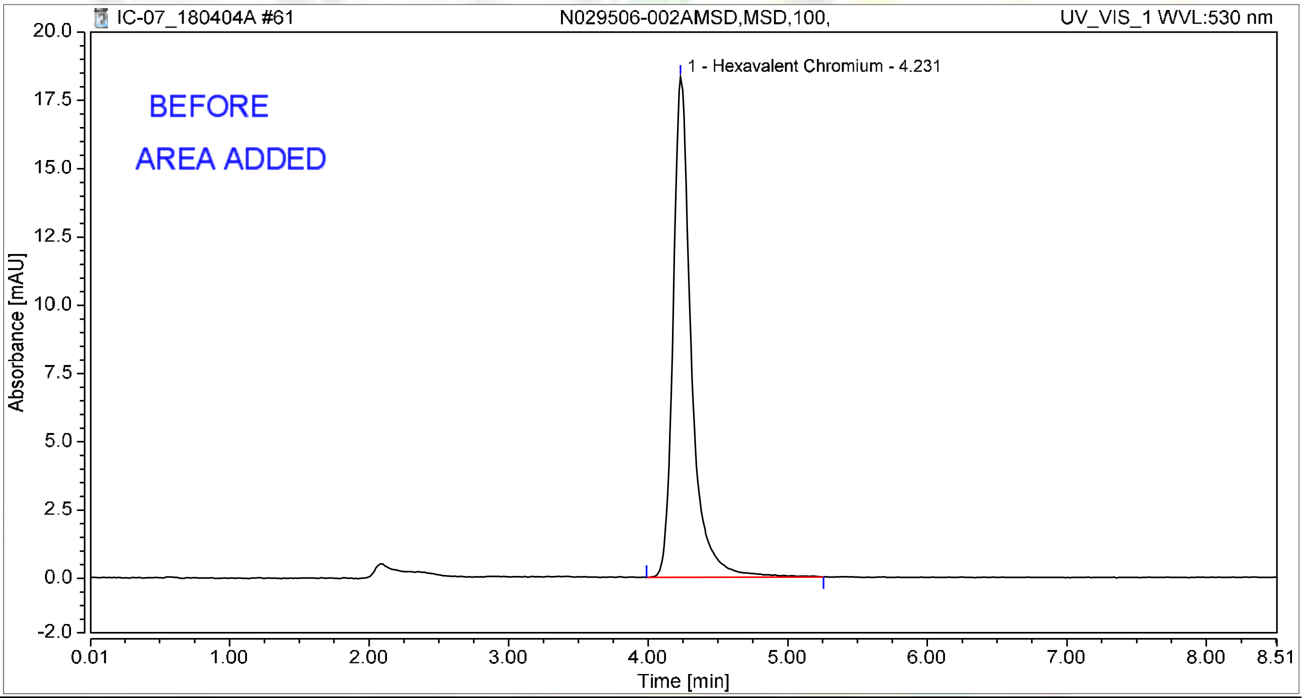
Reviewed by:
Nancy 4/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029506-002AMSD,MSD,100,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 16:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.773	18.311	100.00	100.00	10.9384
Total:			**2.773**	**18.311**	**100.00**	**100.00**	

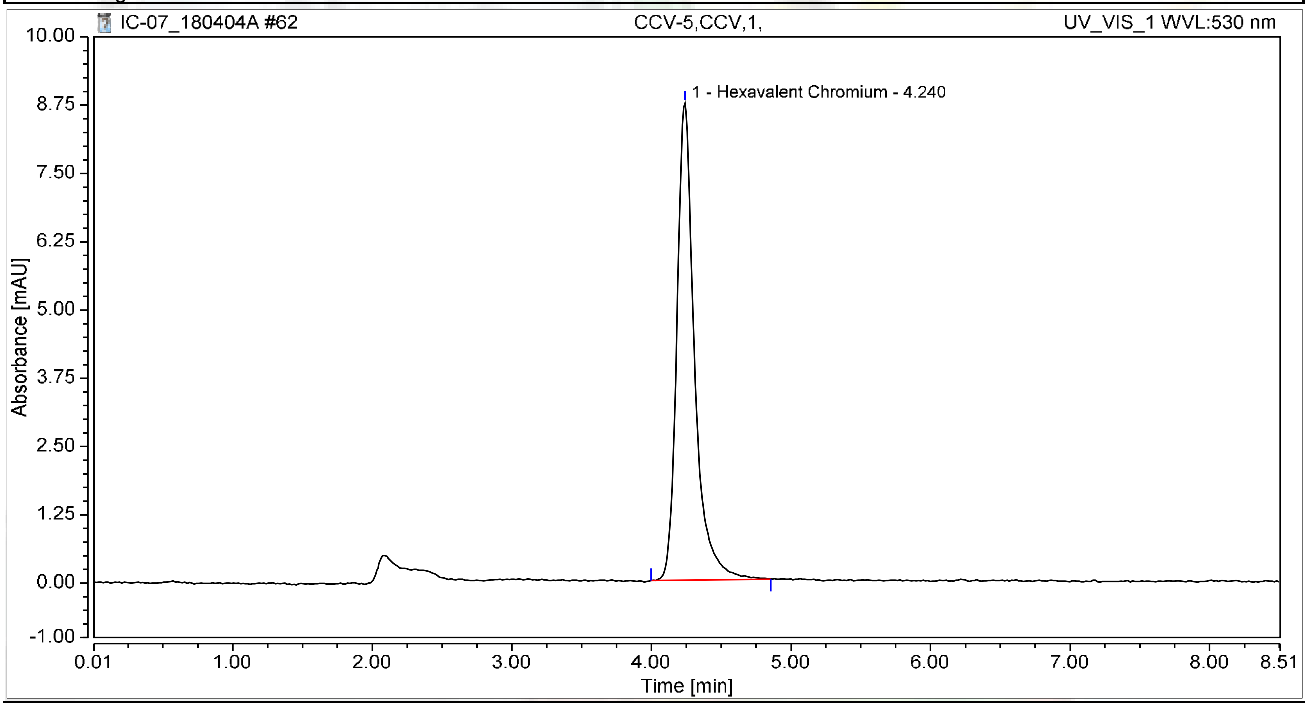
rba 4/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 16:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

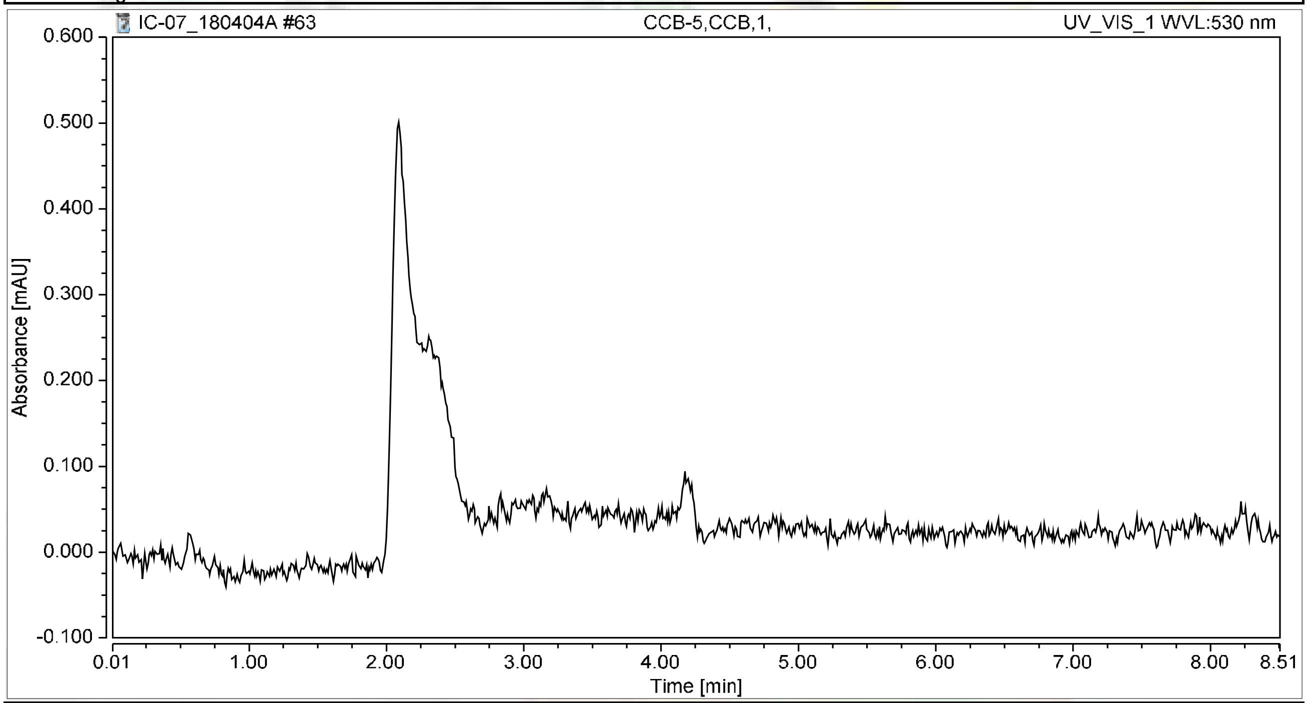
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	1.288	8.732	100.00	100.00	5.0809
Total:			**1.288**	**8.732**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 16:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

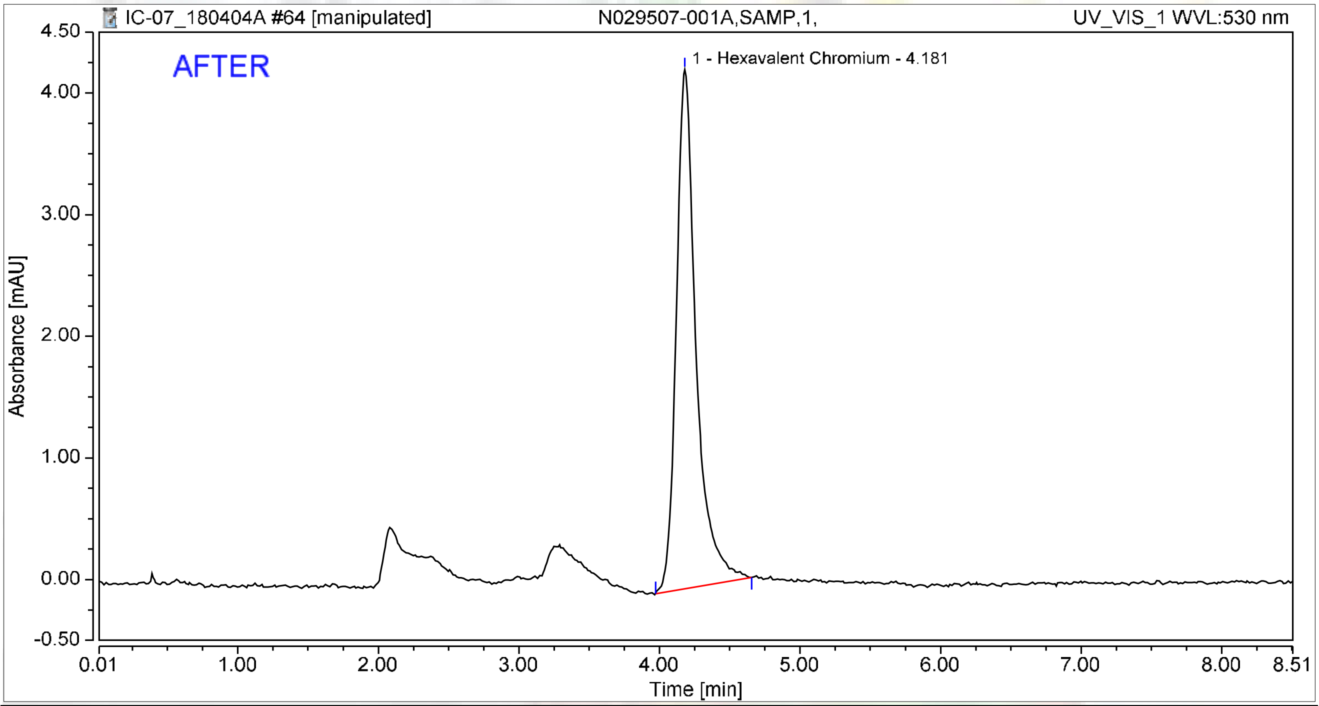
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029507-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 17:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.698	4.267	100.00	100.00	2.7534
Total:			**0.698**	**4.267**	**100.00**	**100.00**	

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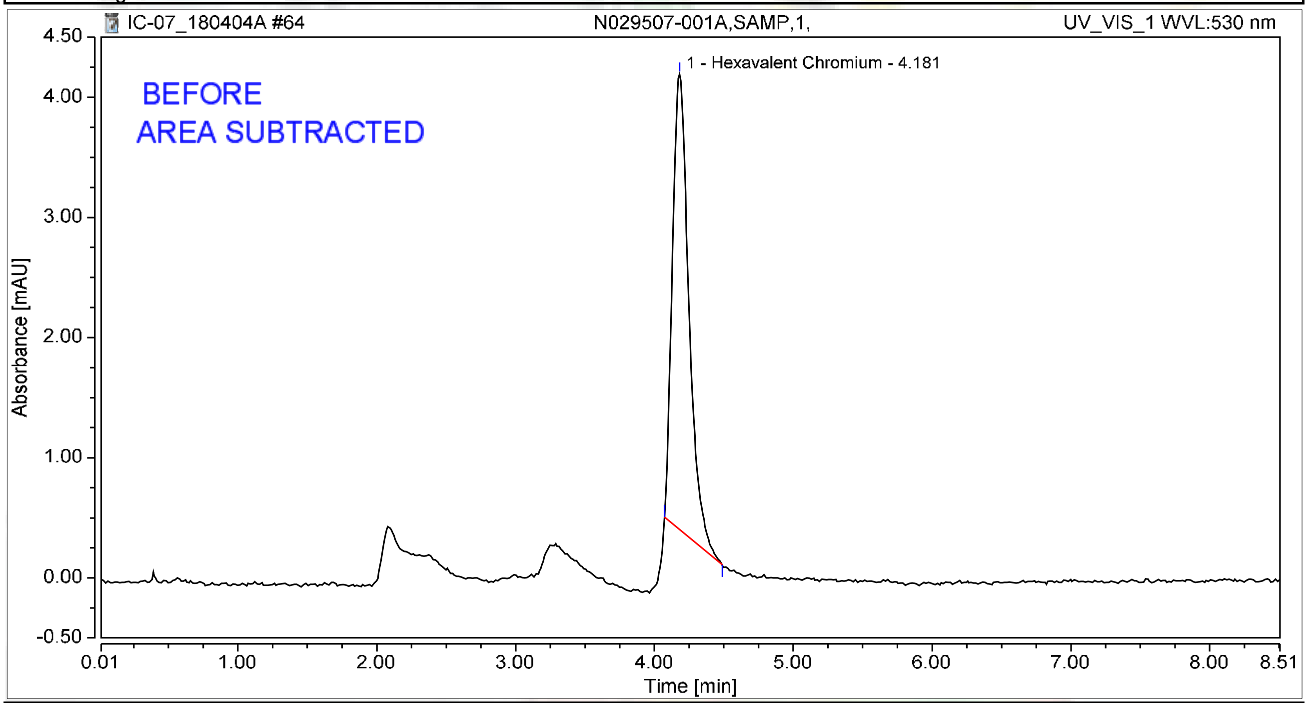
Chromatogram and Results

Injection Details

Injection Name:	**N029507-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 17:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.521	3.788	100.00	100.00	2.0568
Total:			**0.521**	**3.788**	**100.00**	**100.00**	

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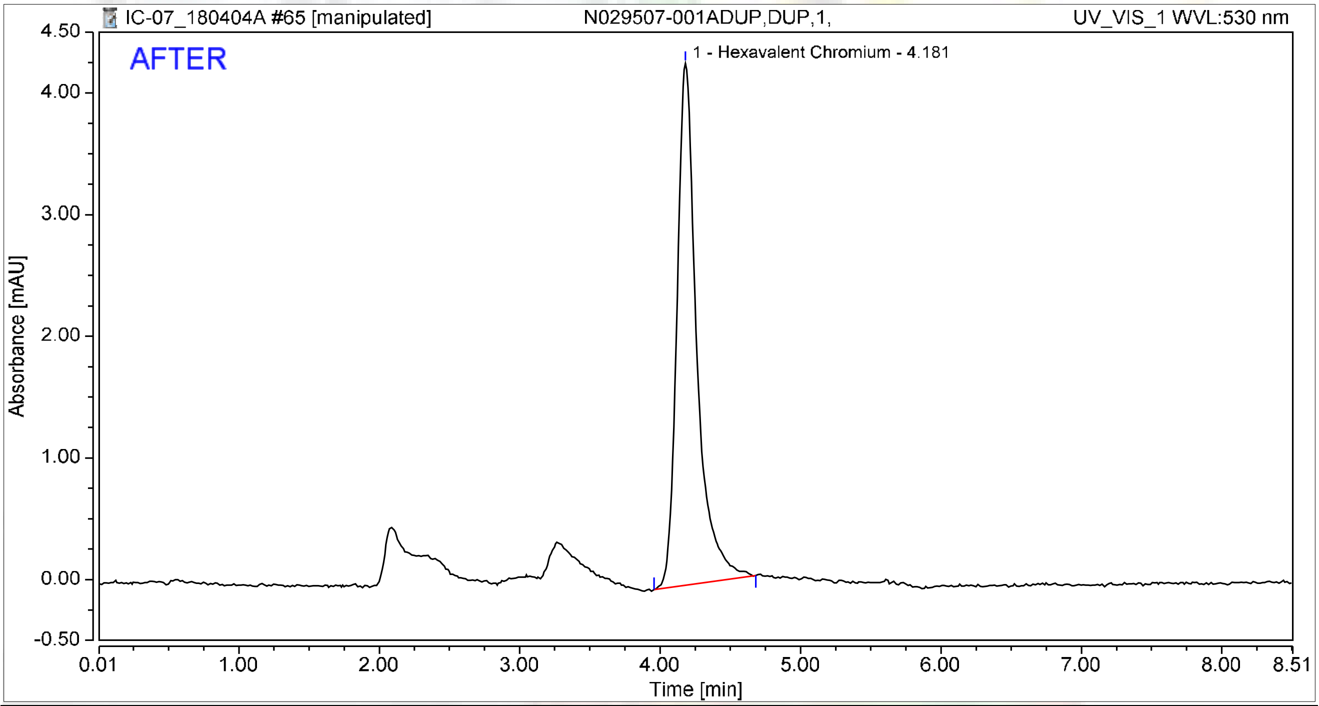
Chromatogram and Results

Injection Details

Injection Name:	**N029507-001ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 17:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.701	4.290	100.00	100.00	2.7667
Total:			**0.701**	**4.290**	**100.00**	**100.00**	

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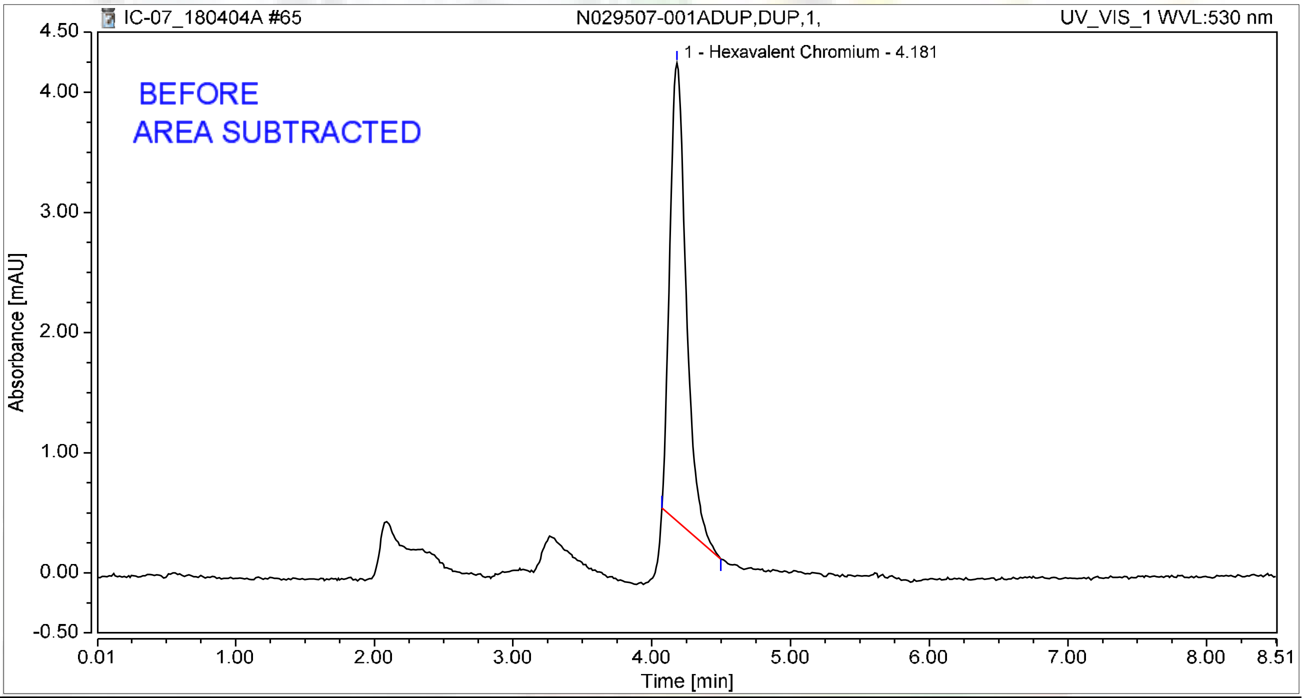
Chromatogram and Results

Injection Details

Injection Name:	**N029507-001ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 17:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.525	3.809	100.00	100.00	2.0691
Total:			**0.525**	**3.809**	**100.00**	**100.00**	

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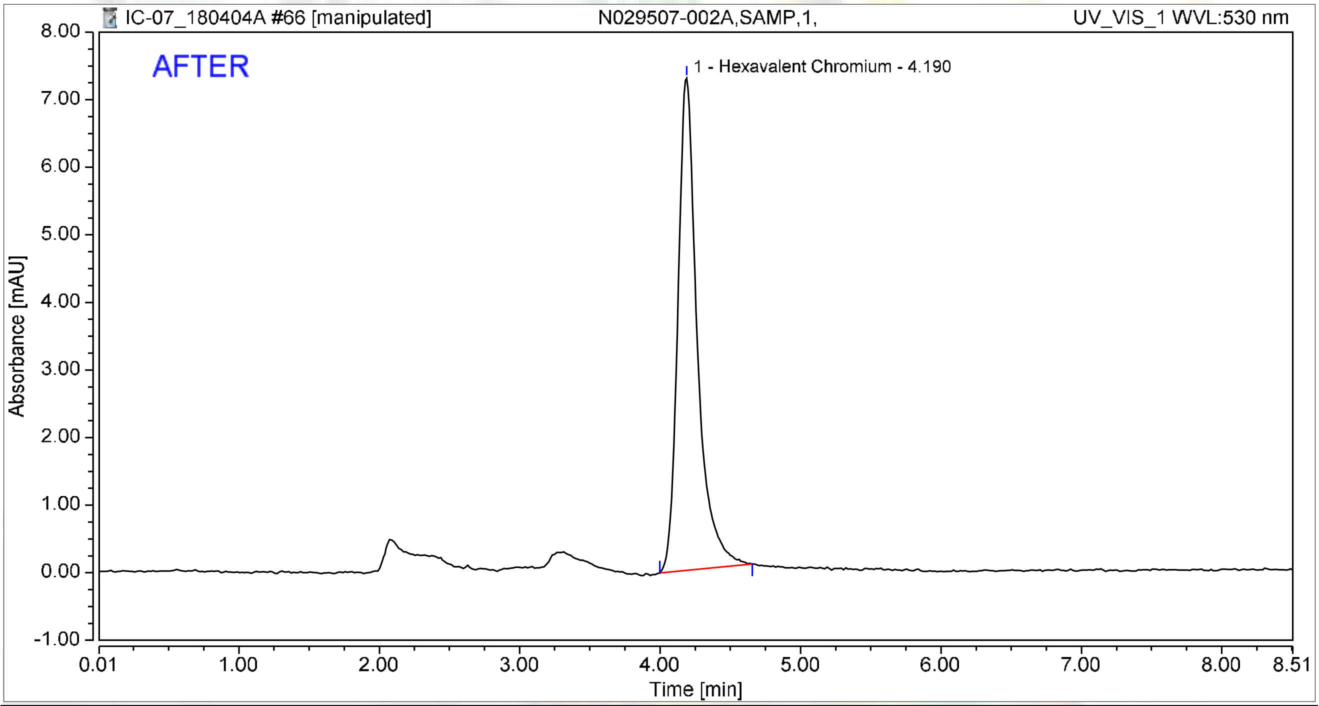
Chromatogram and Results

Injection Details

Injection Name:	**N029507-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 17:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.168	7.282	100.00	100.00	4.6062
Total:			**1.168**	**7.282**	**100.00**	**100.00**	

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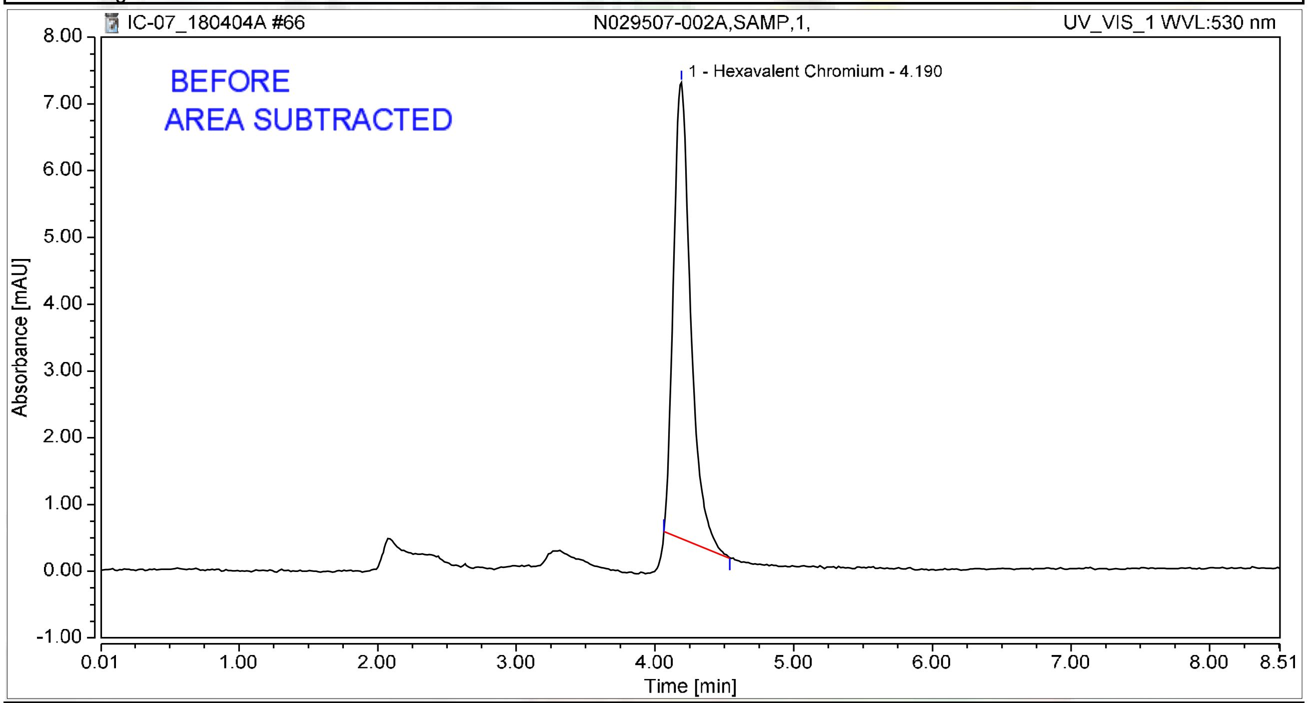
Chromatogram and Results

Injection Details

Injection Name:	**N029507-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 17:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.991	6.829	100.00	100.00	3.9108
Total:			**0.991**	**6.829**	**100.00**	**100.00**	

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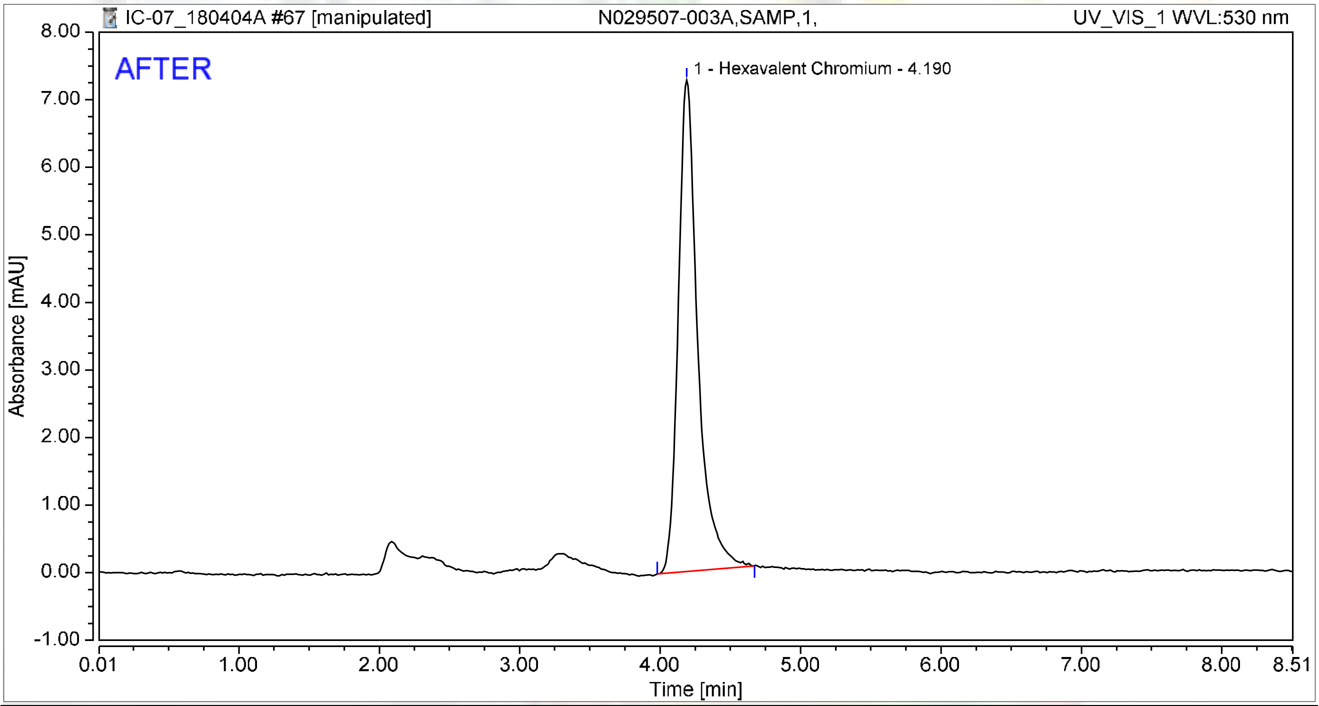
Chromatogram and Results

Injection Details

Injection Name:	**N029507-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 17:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.169	7.274	100.00	100.00	4.6121
Total:			**1.169**	**7.274**	**100.00**	**100.00**	

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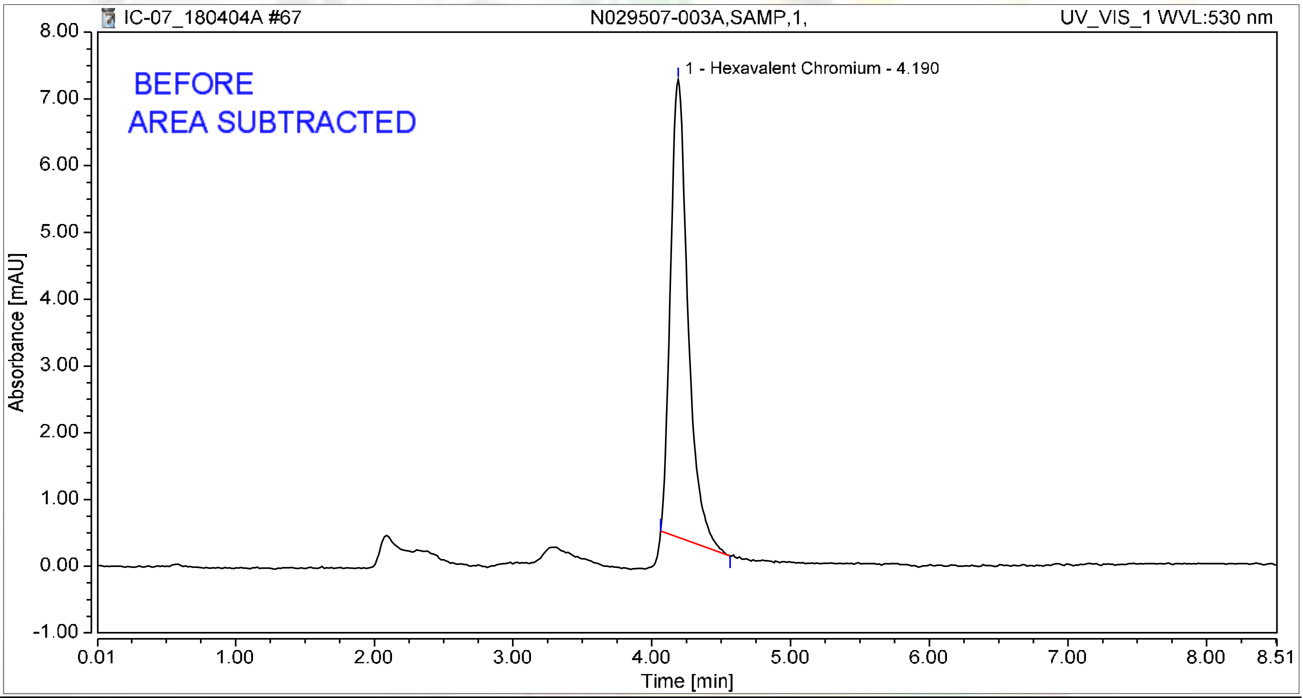
Chromatogram and Results

Injection Details

Injection Name:	**N029507-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 17:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.005	6.856	100.00	100.00	3.9639
Total:			**1.005**	**6.856**	**100.00**	**100.00**	

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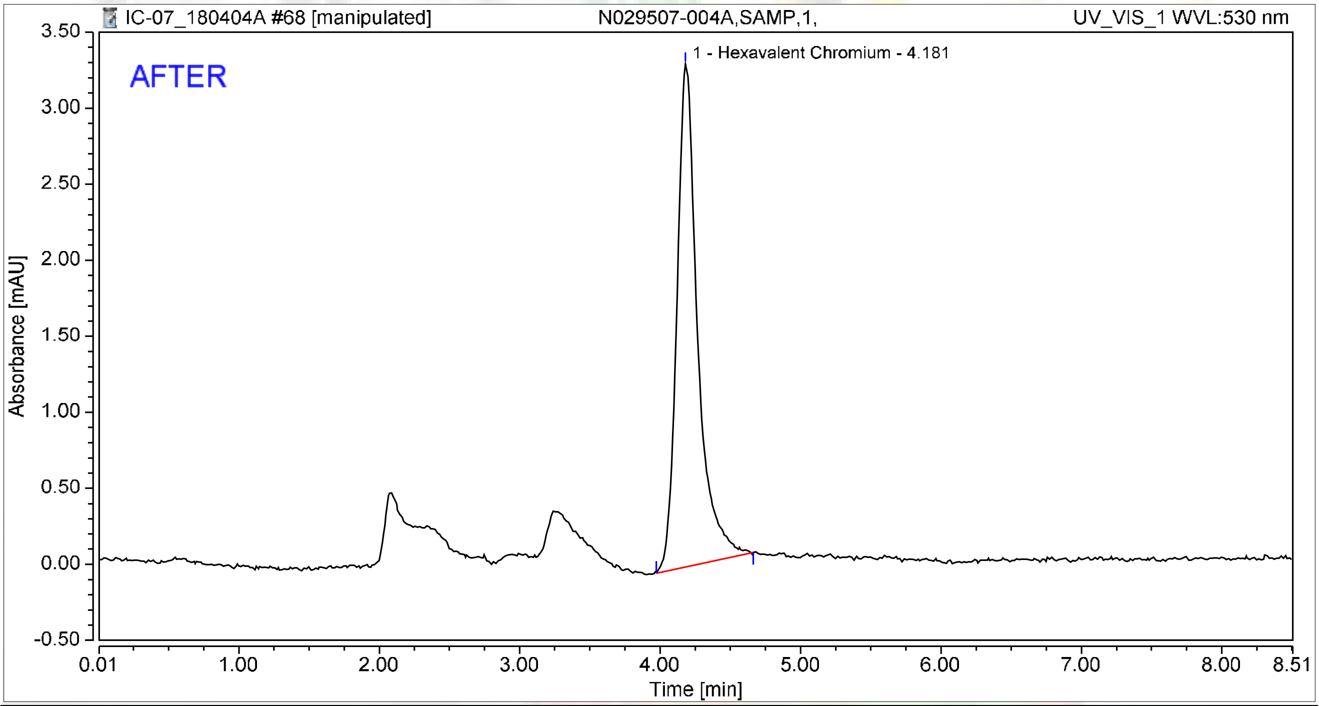
Chromatogram and Results

Injection Details

Injection Name:	**N029507-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 17:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.565	3.306	100.00	100.00	2.2296
Total:			**0.565**	**3.306**	**100.00**	**100.00**	

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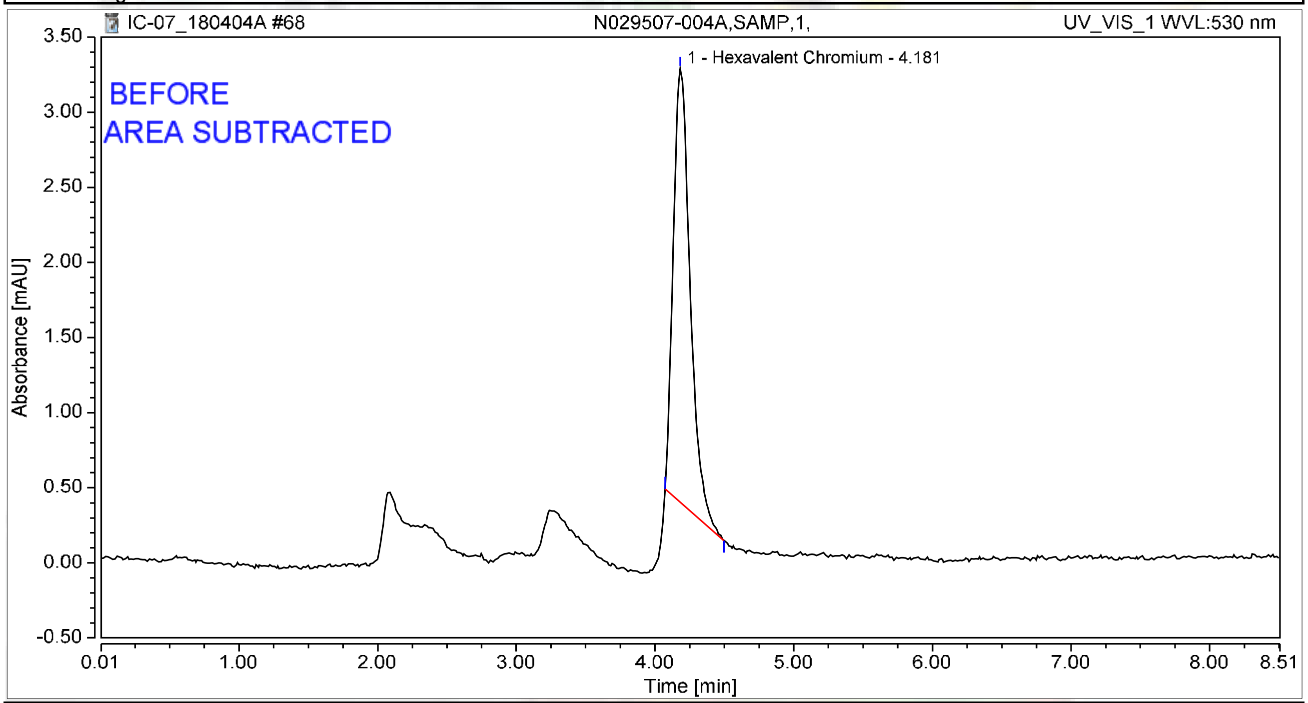
Chromatogram and Results

Injection Details

Injection Name:	**N029507-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 17:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.409	2.884	100.00	100.00	1.6127
Total:			**0.409**	**2.884**	**100.00**	**100.00**	

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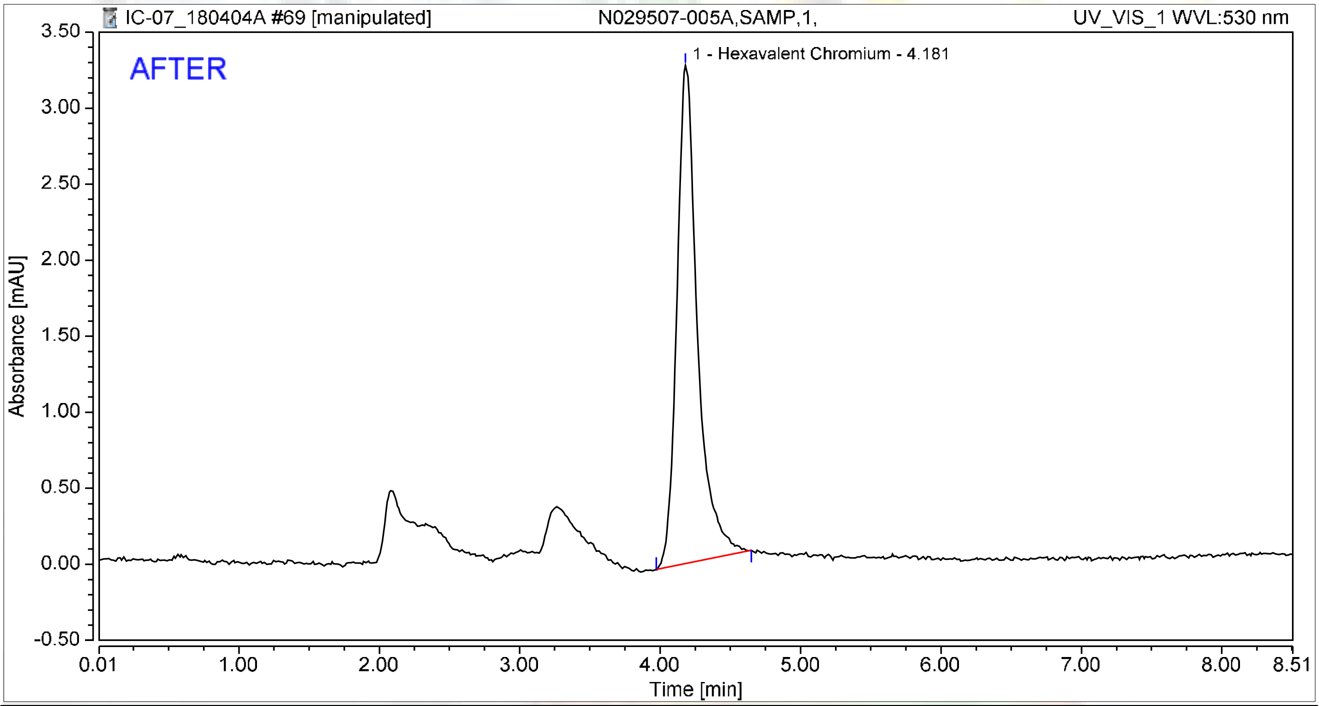
Chromatogram and Results

Injection Details

Injection Name:	**N029507-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 17:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.557	3.275	100.00	100.00	2.1959
Total:			**0.557**	**3.275**	**100.00**	**100.00**	

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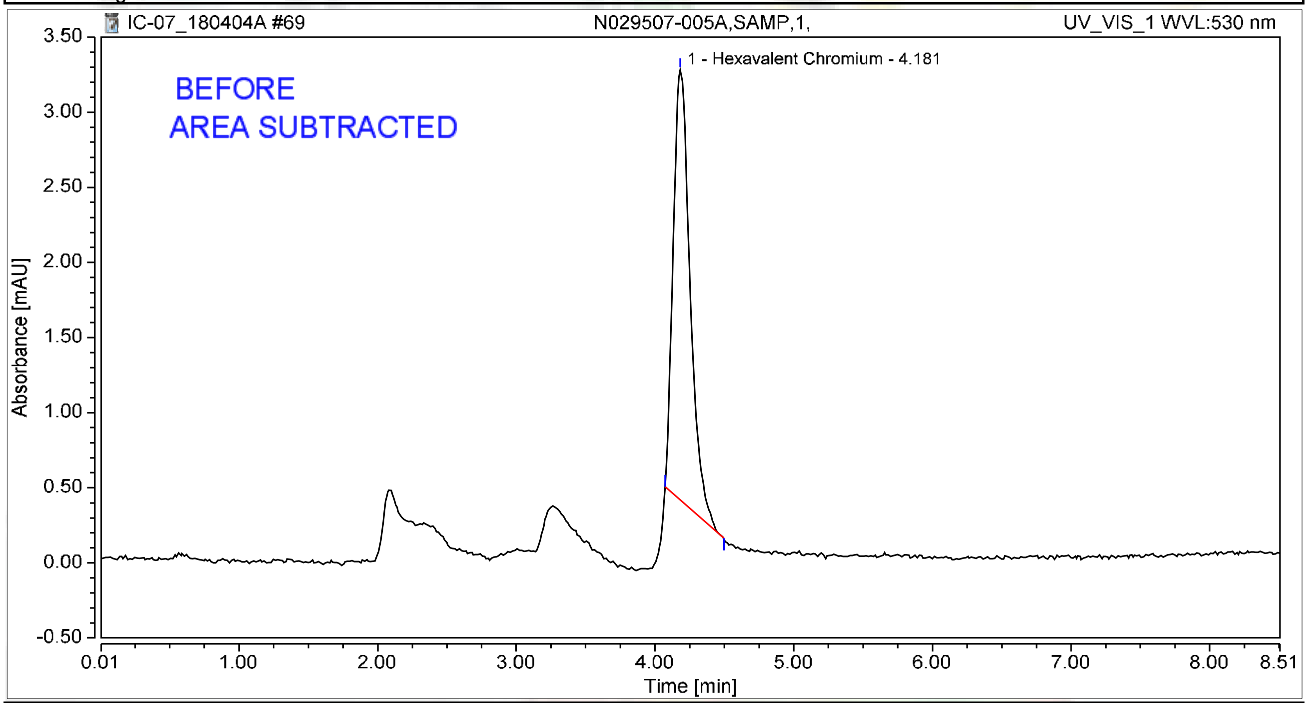
Chromatogram and Results

Injection Details

Injection Name:	**N029507-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 17:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.406	2.862	100.00	100.00	1.5999
Total:			**0.406**	**2.862**	**100.00**	**100.00**	

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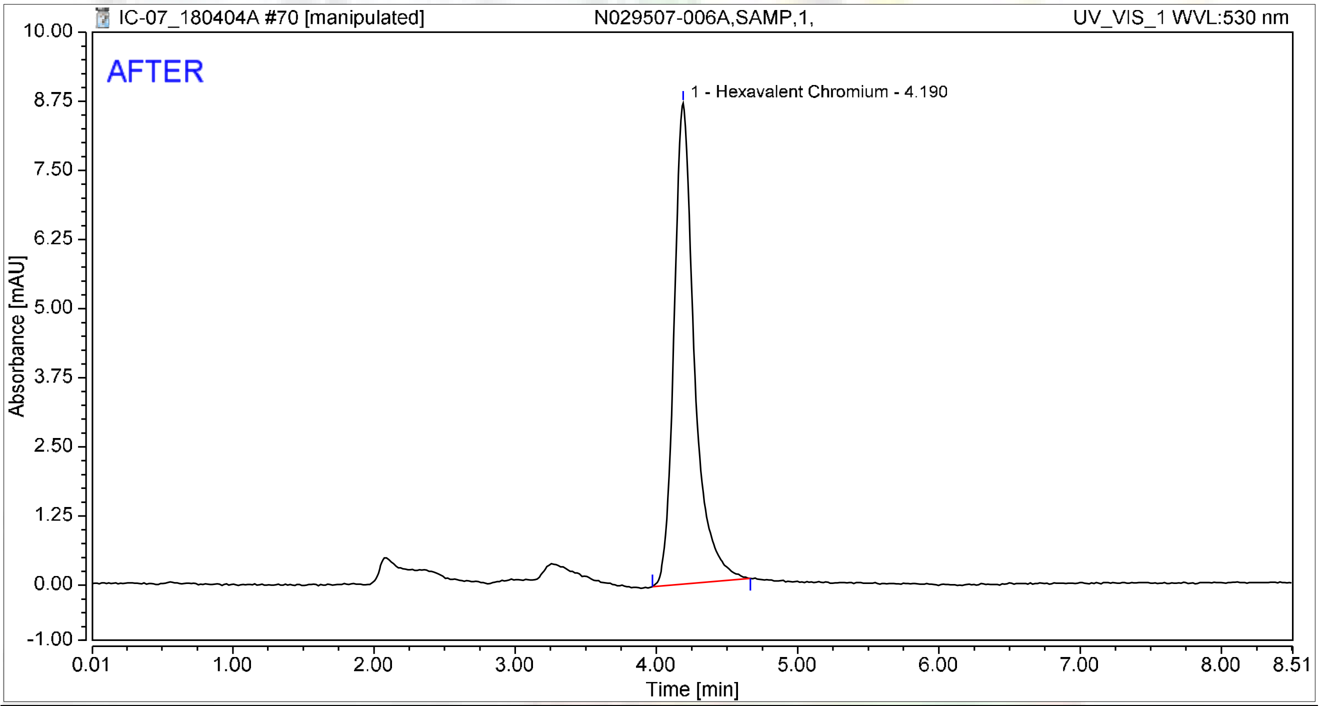
Chromatogram and Results

Injection Details

Injection Name:	**N029507-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.460	8.697	100.00	100.00	5.7579
Total:			**1.460**	**8.697**	**100.00**	**100.00**	

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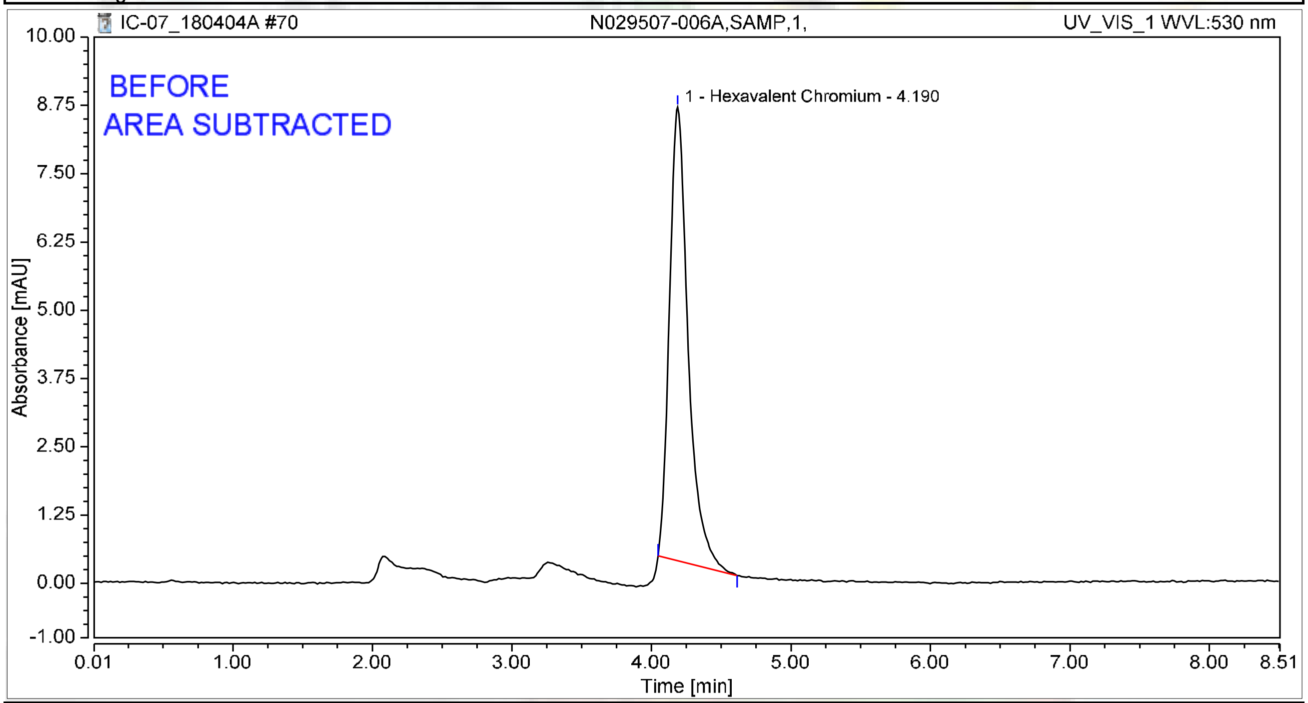
Chromatogram and Results

Injection Details

Injection Name:	**N029507-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.294	8.305	100.00	100.00	5.1036
Total:			**1.294**	**8.305**	**100.00**	**100.00**	

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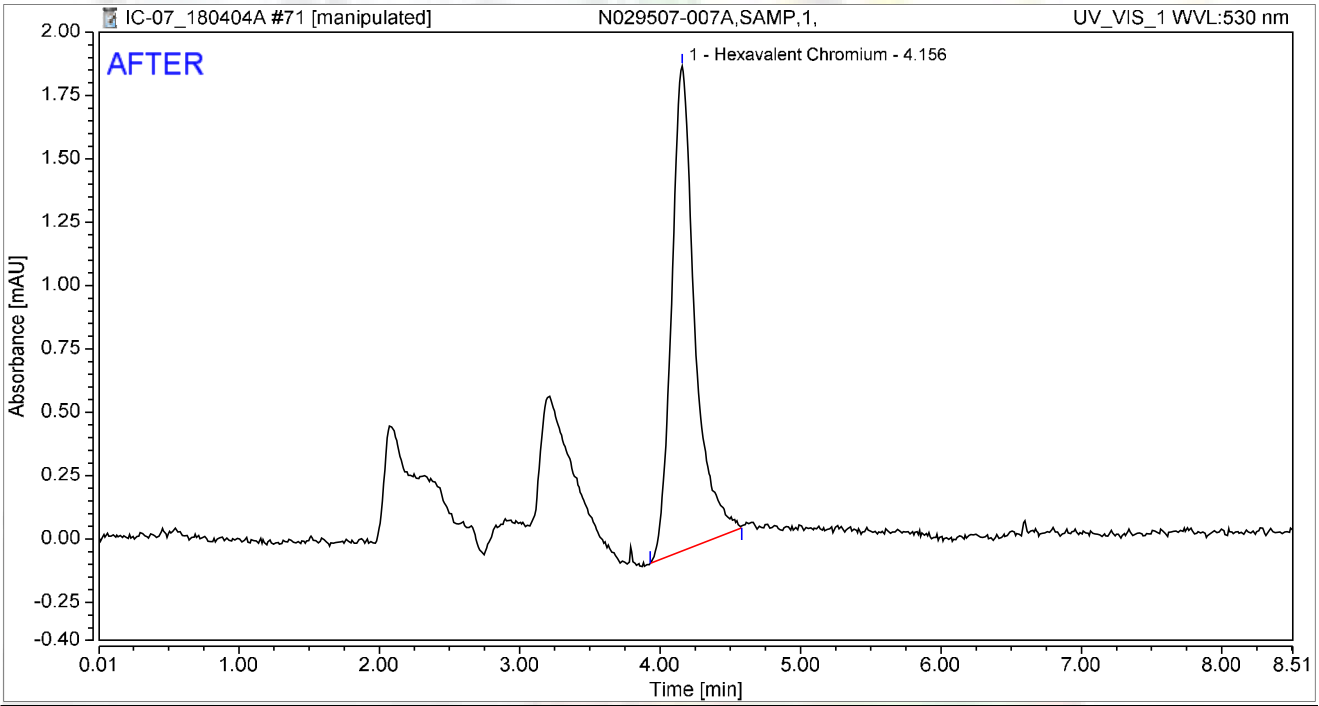
Chromatogram and Results

Injection Details

Injection Name:	**N029507-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 18:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.367	1.914	100.00	100.00	1.4482
Total:			**0.367**	**1.914**	**100.00**	**100.00**	

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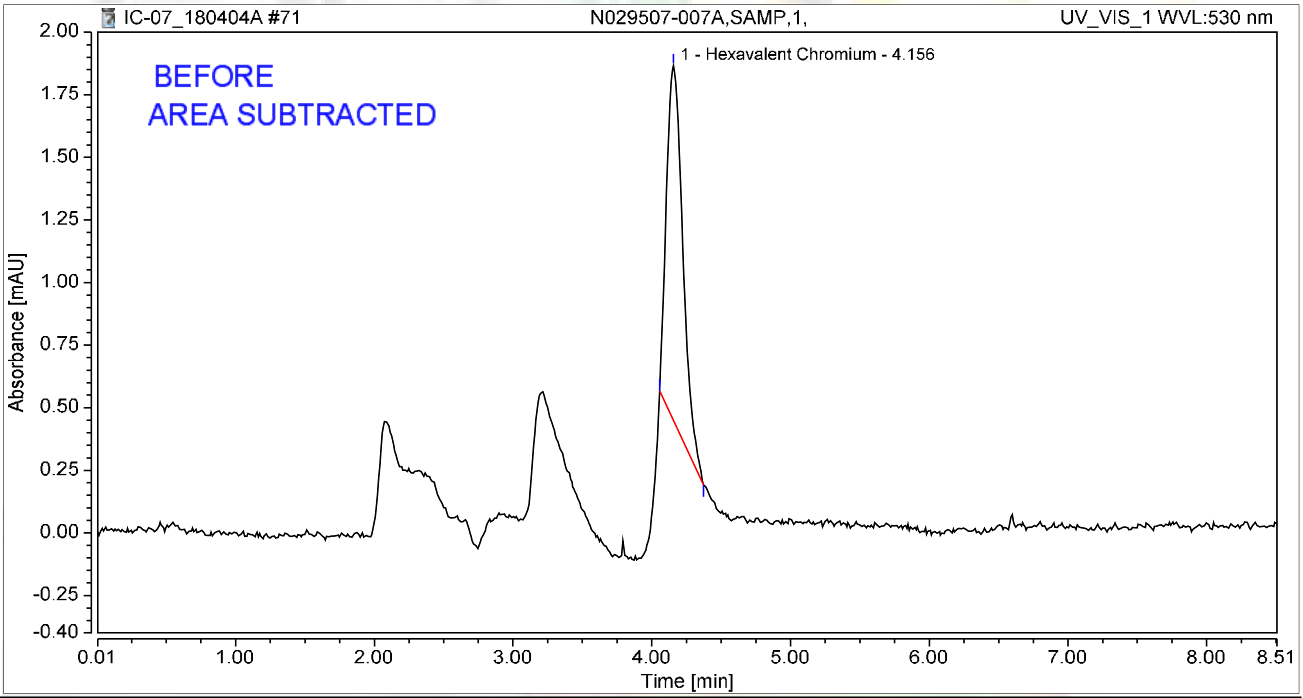
Chromatogram and Results

Injection Details

Injection Name:	**N029507-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 18:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.194	1.417	100.00	100.00	0.7655
Total:			**0.194**	**1.417**	**100.00**	**100.00**	

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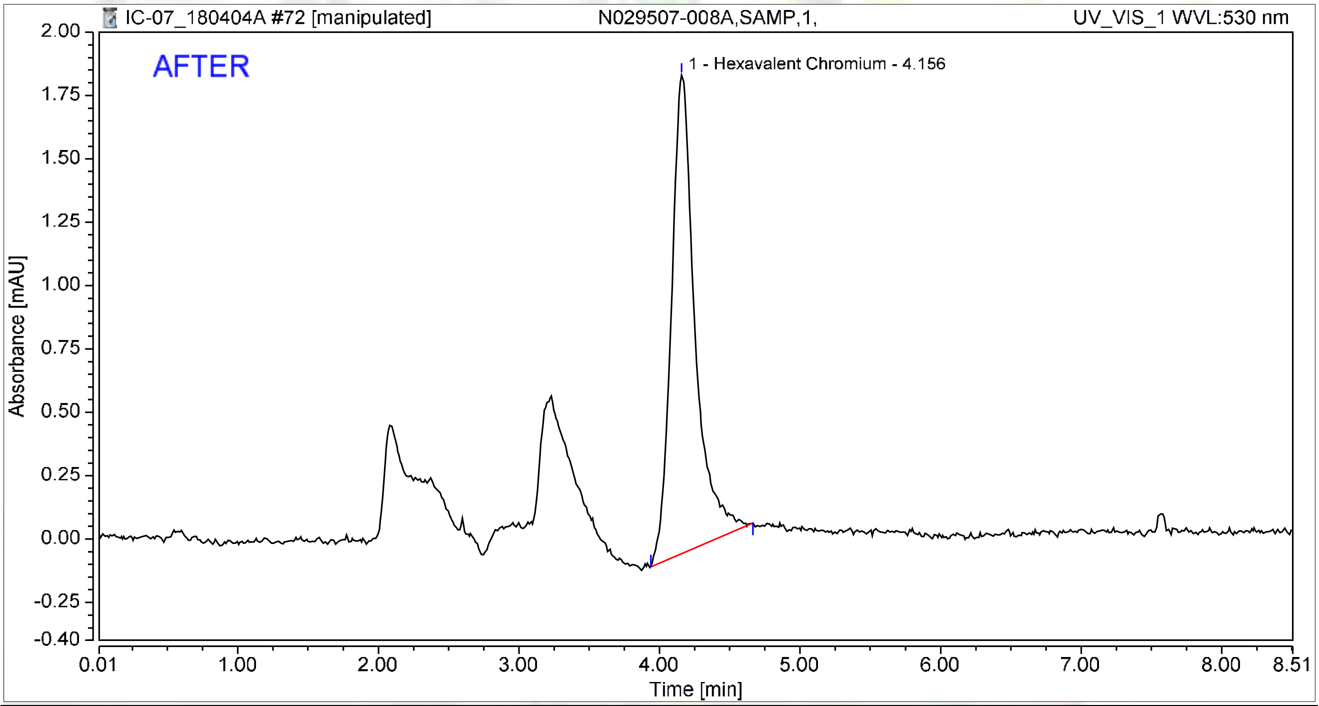
Chromatogram and Results

Injection Details

Injection Name:	**N029507-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.370	1.888	100.00	100.00	1.4600
Total:			**0.370**	**1.888**	**100.00**	**100.00**	

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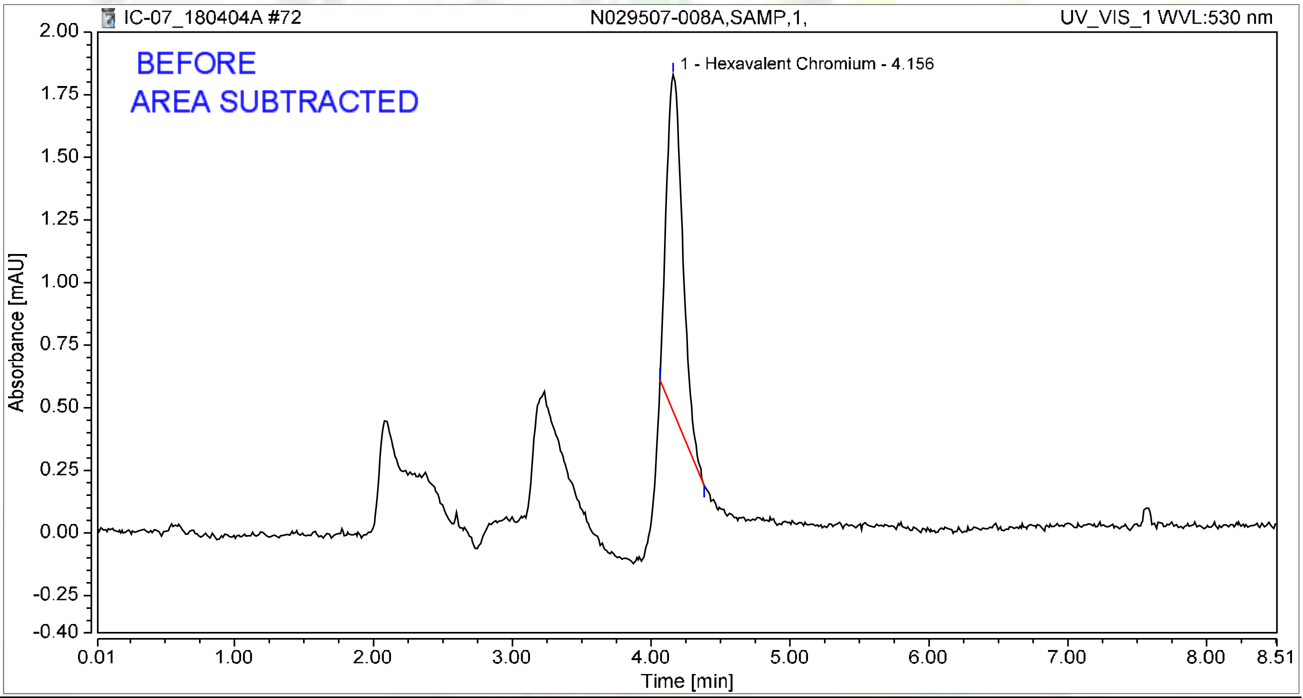
Chromatogram and Results

Injection Details

Injection Name:	**N029507-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.183	1.341	100.00	100.00	0.7202
Total:			**0.183**	**1.341**	**100.00**	**100.00**	

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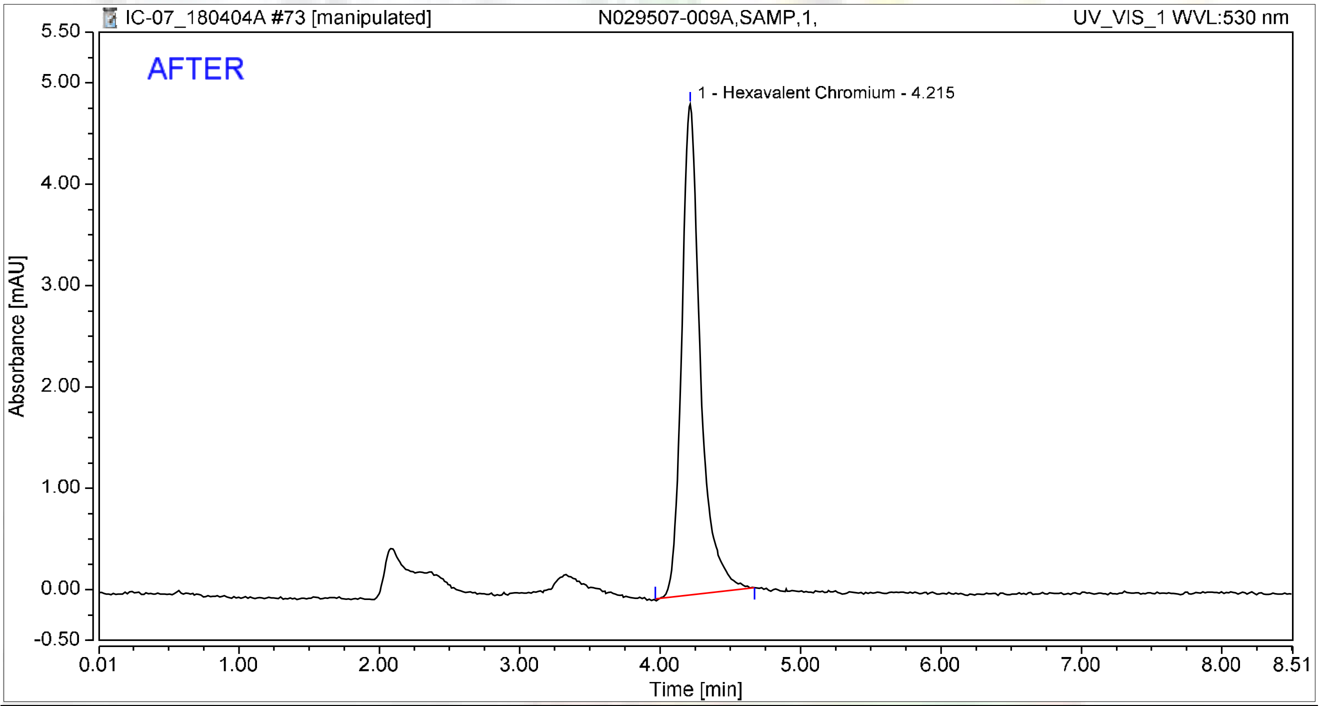
Chromatogram and Results

Injection Details

Injection Name:	**N029507-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 18:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.751	4.840	100.00	100.00	2.9620
Total:			**0.751**	**4.840**	**100.00**	**100.00**	

rba 4/8/2018

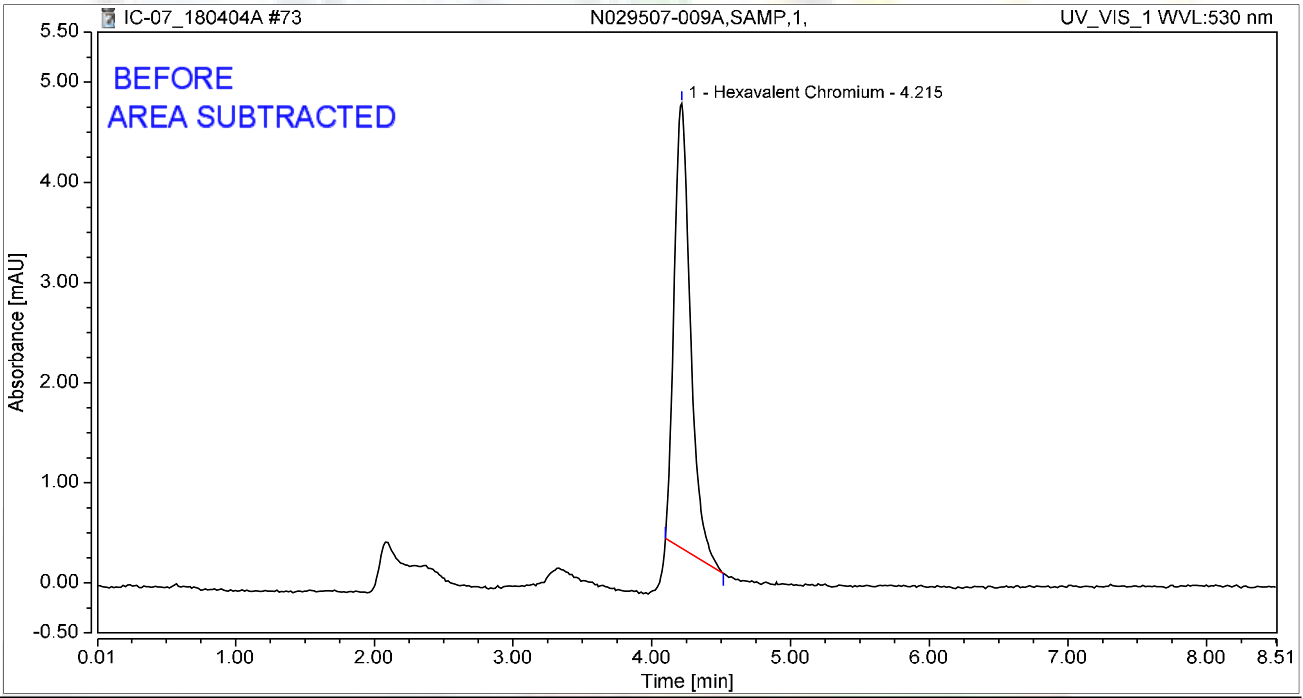
Reviewed by:
Nancy 4/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029507-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 18:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.606	4.444	100.00	100.00	2.3919
Total:			**0.606**	**4.444**	**100.00**	**100.00**	

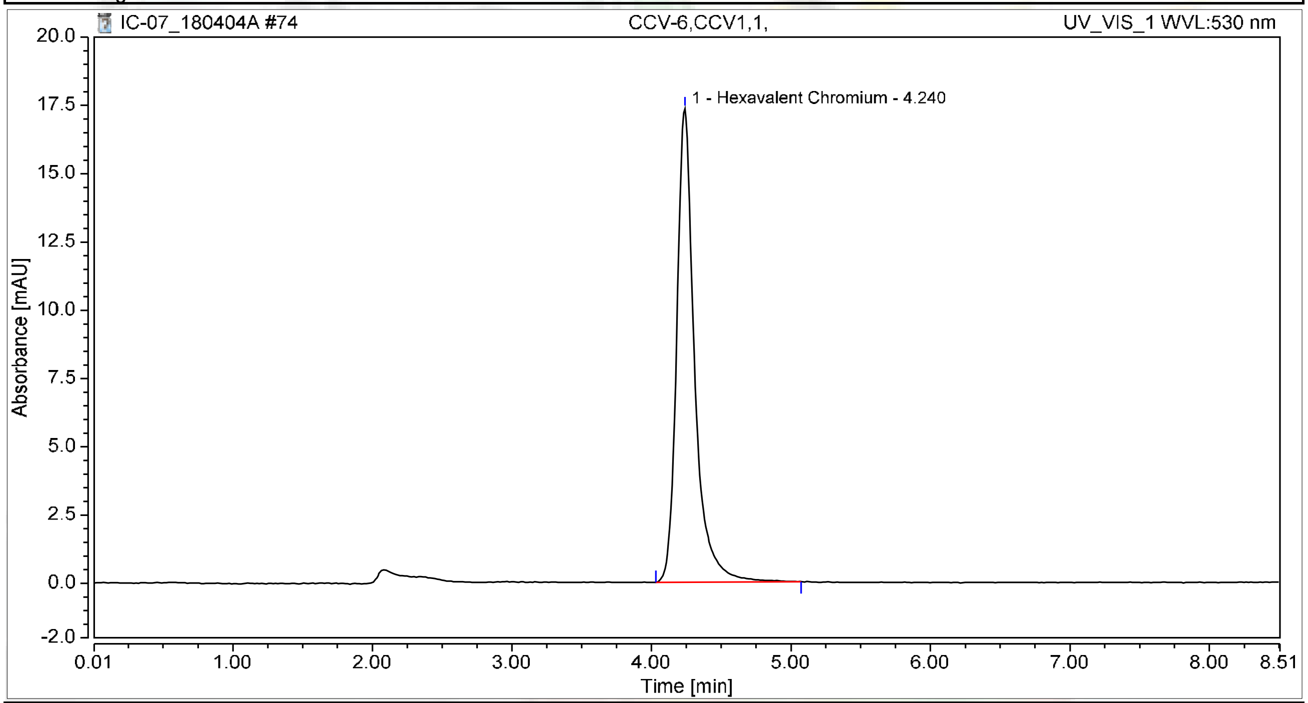
rba 4/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

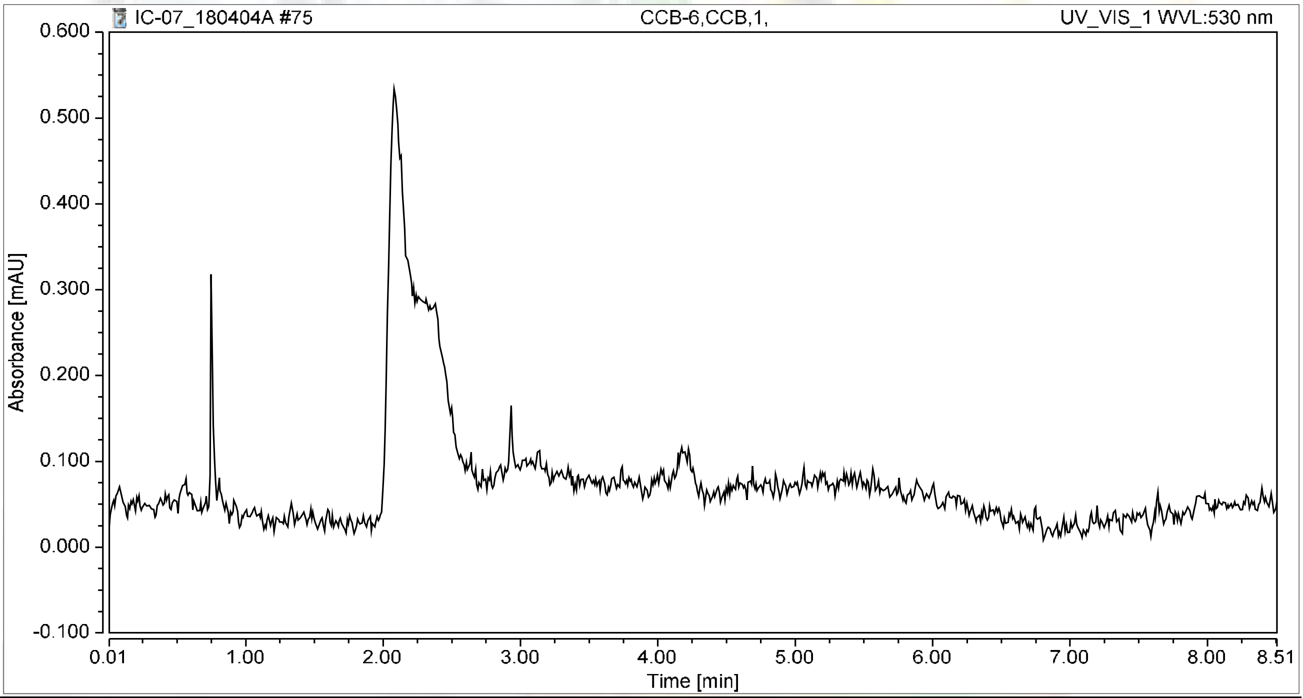
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	2.581	17.335	100.00	100.00	10.1826
Total:			**2.581**	**17.335**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 18:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

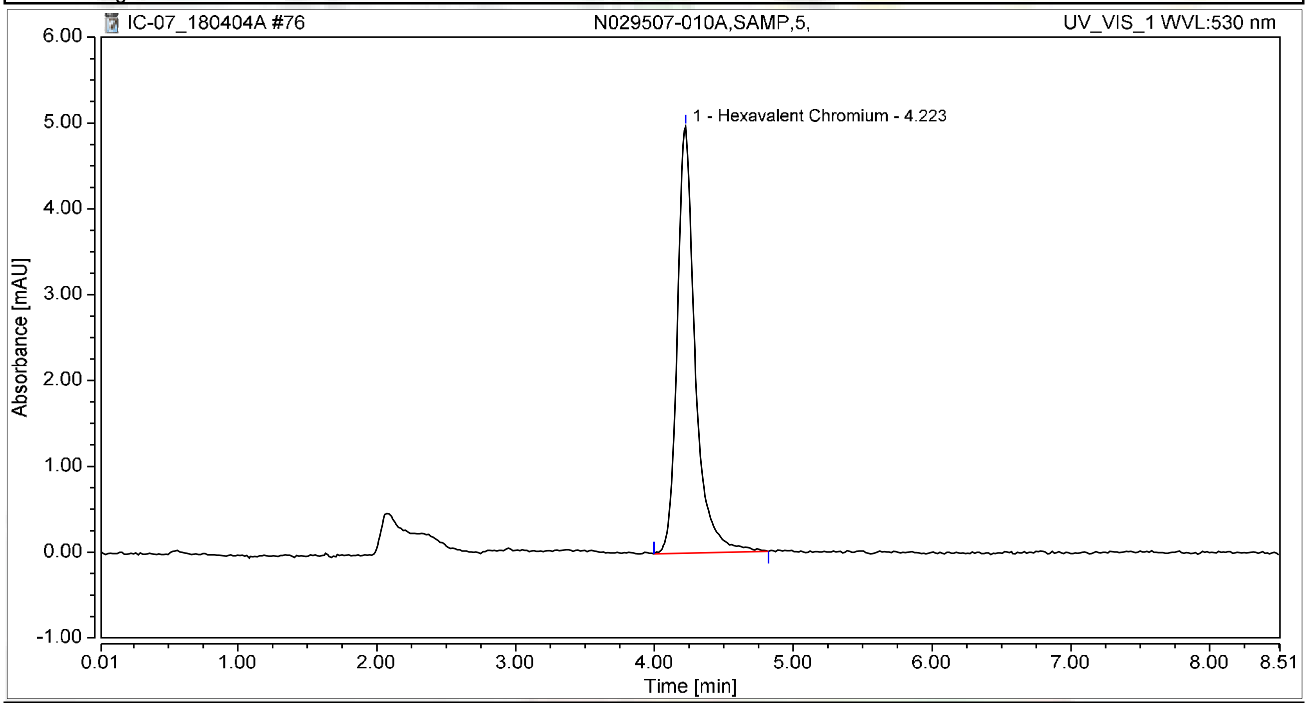
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029507-010A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 19:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

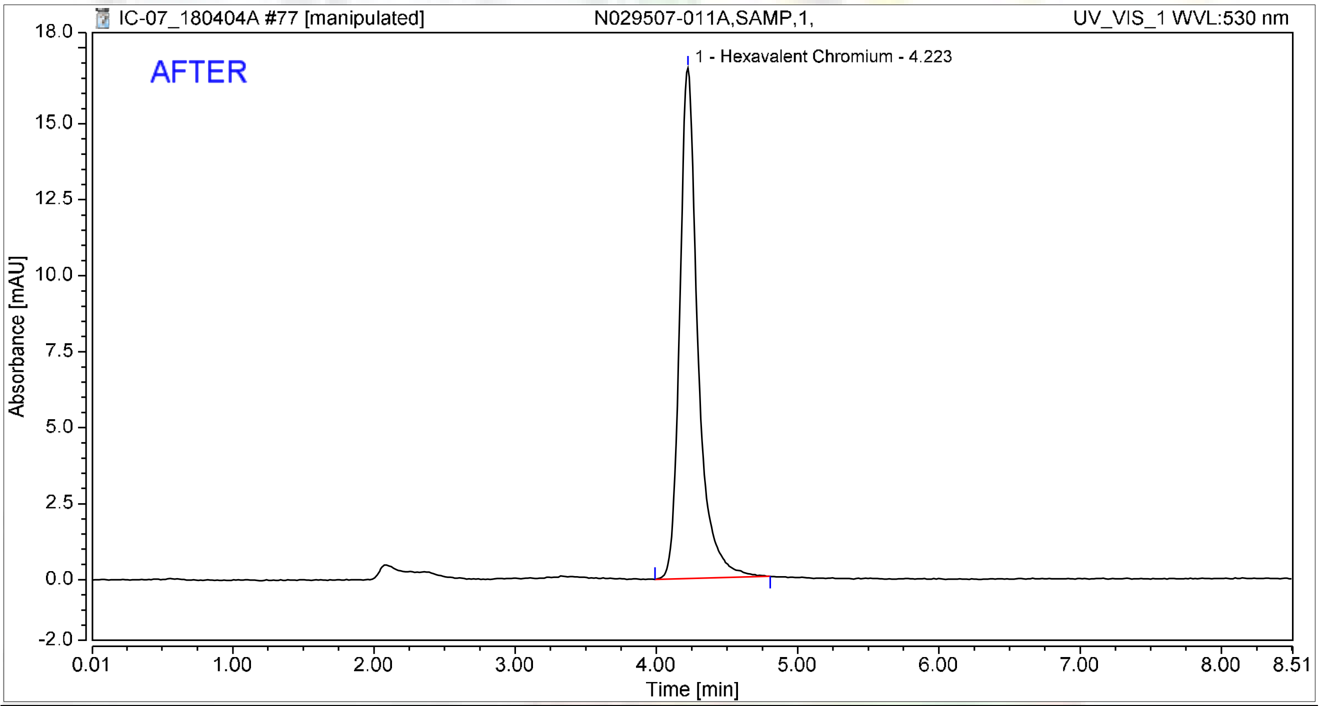
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.745	4.968	100.00	100.00	2.9400
Total:			**0.745**	**4.968**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029507-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 19:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	2.504	16.796	100.00	100.00	9.8779
Total:			**2.504**	**16.796**	**100.00**	**100.00**	

rba 4/8/2018

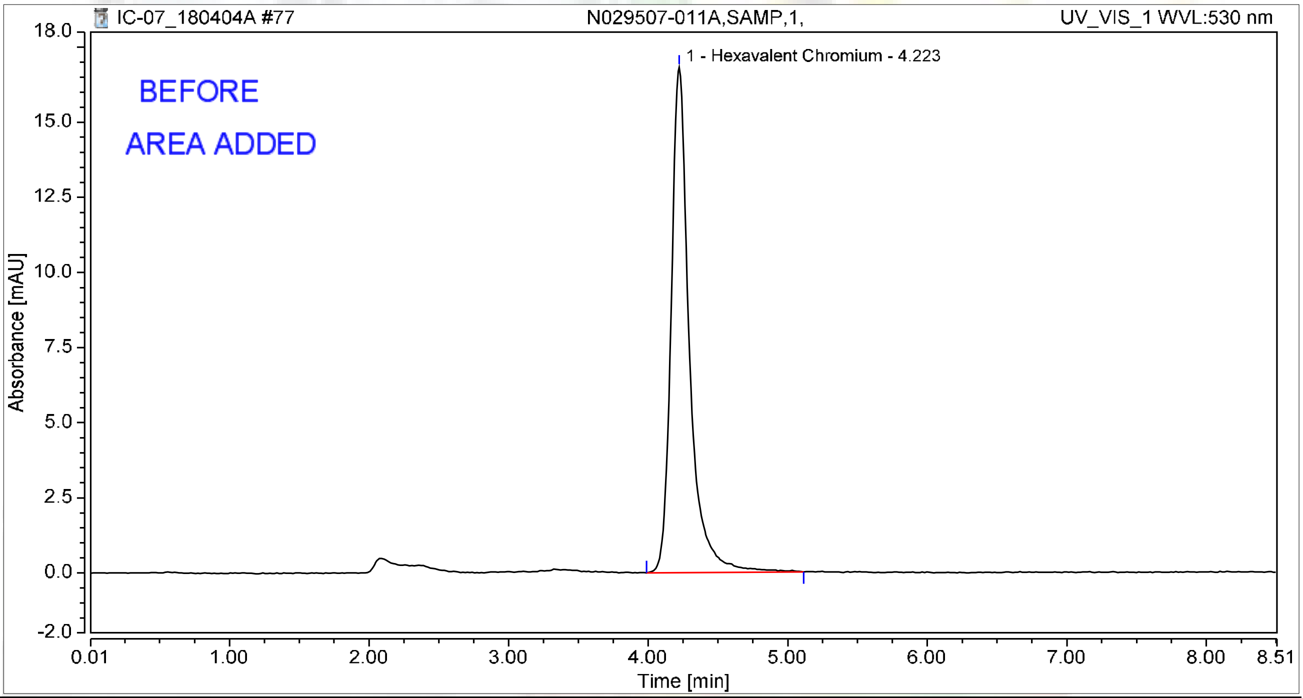
Reviewed by:
Nancy 4/10/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029507-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 19:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	2.551	16.820	100.00	100.00	10.0642
Total:			**2.551**	**16.820**	**100.00**	**100.00**	

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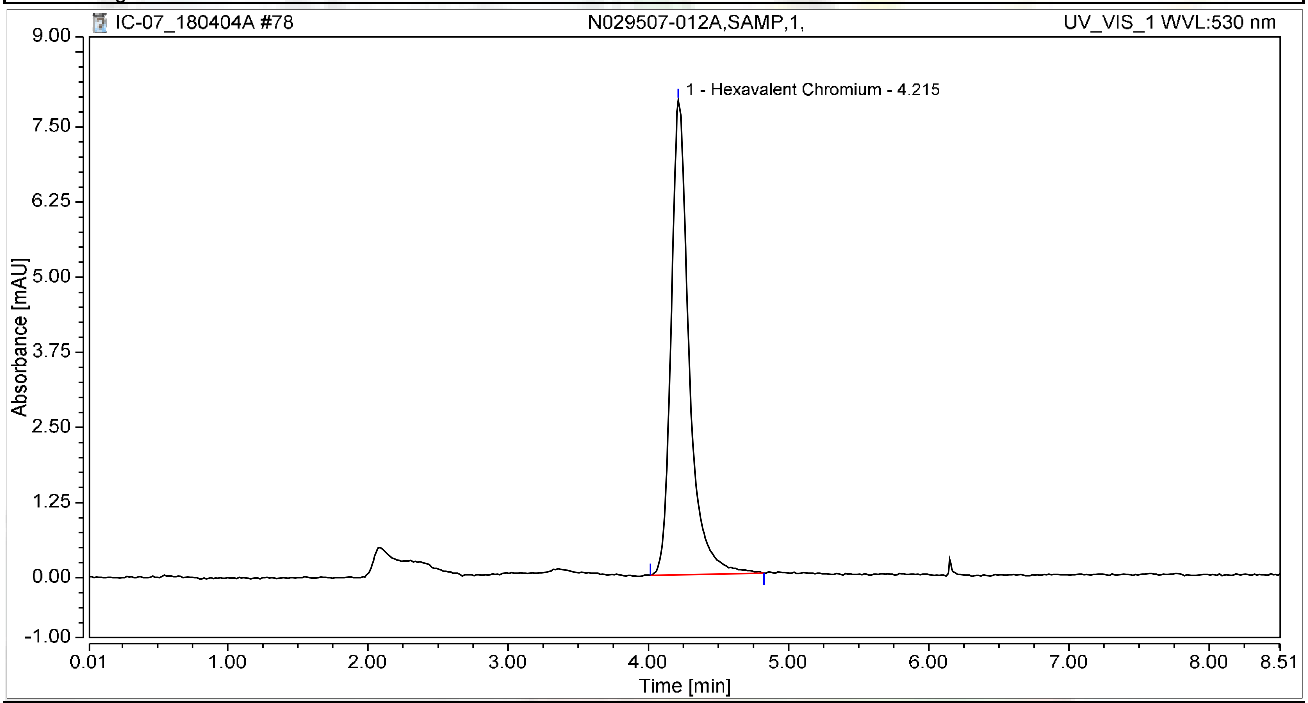
Chromatogram and Results

Injection Details

Injection Name:	**N029507-012A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 19:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

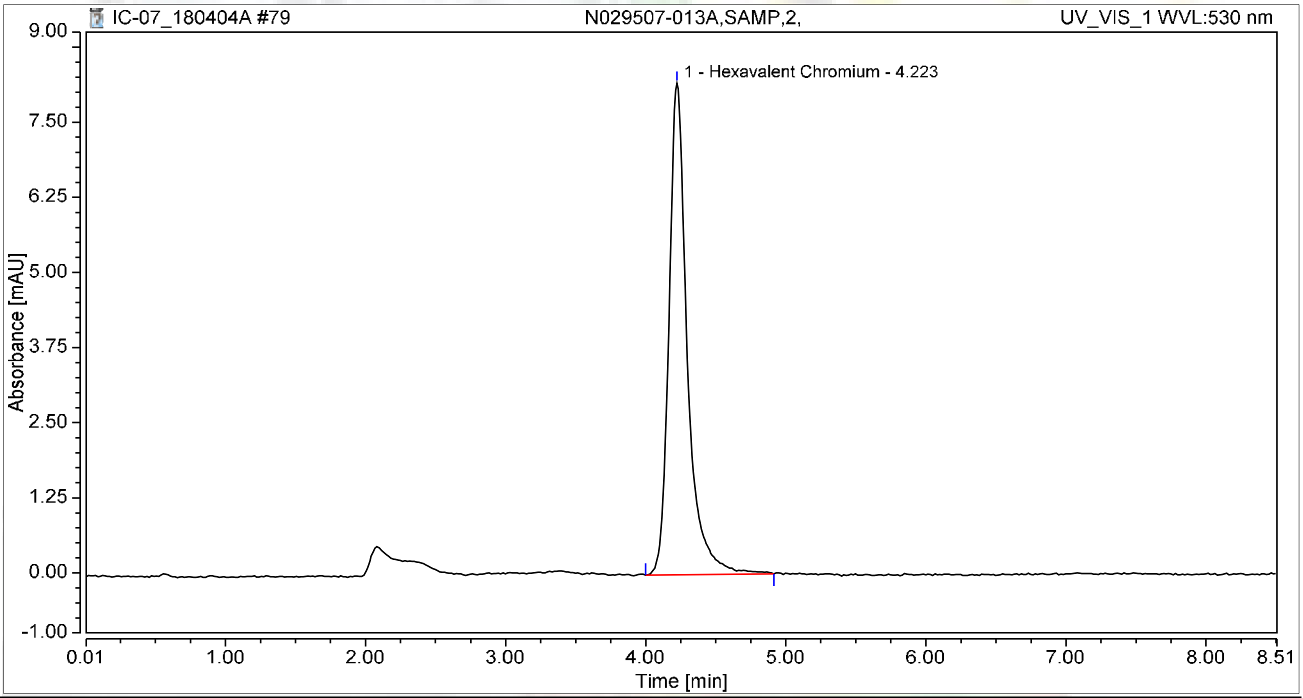
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.179	7.891	100.00	100.00	4.6498
Total:			**1.179**	**7.891**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029507-013A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 19:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

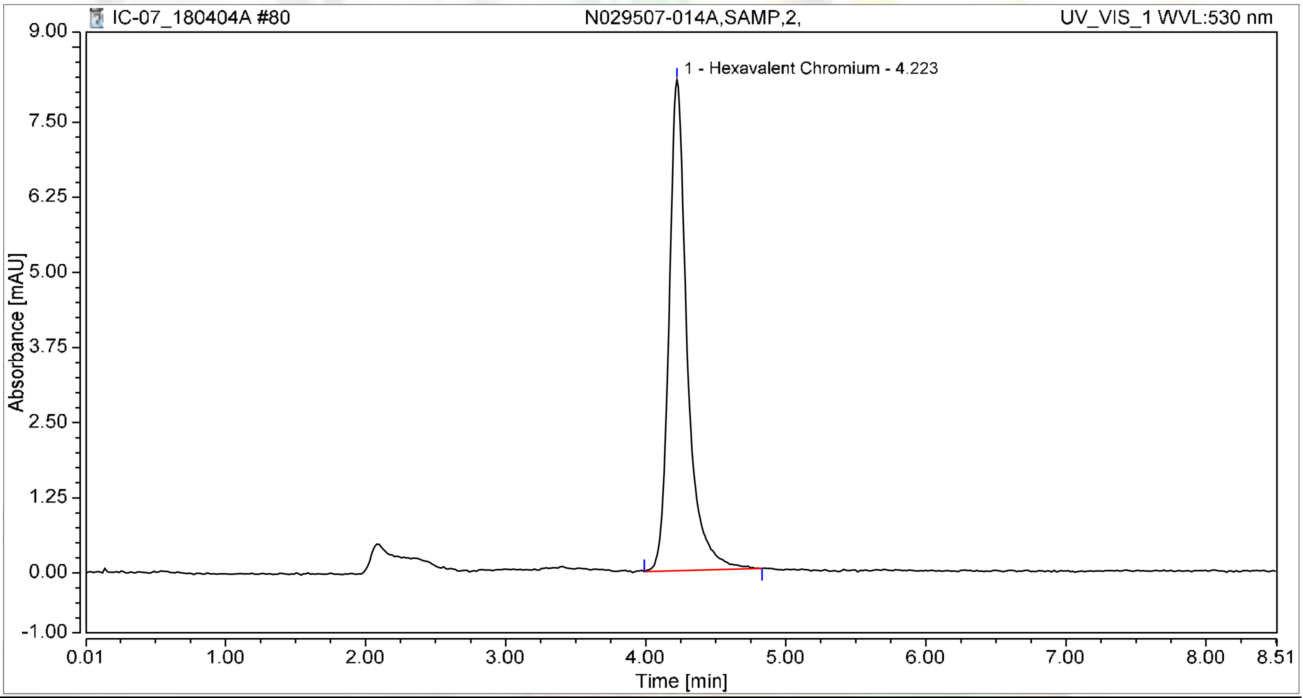
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	1.247	8.182	100.00	100.00	4.9202
Total:			**1.247**	**8.182**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029507-014A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 19:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

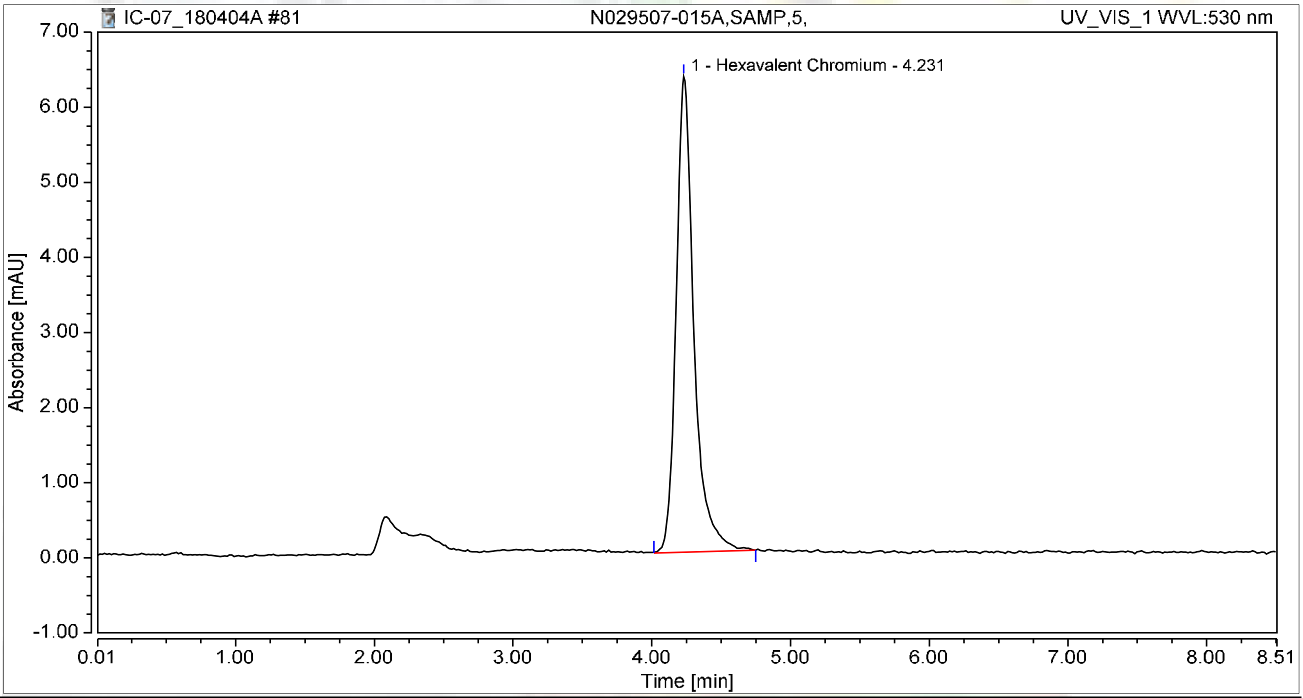
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	1.236	8.172	100.00	100.00	4.8757
Total:			**1.236**	**8.172**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029507-015A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 19:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

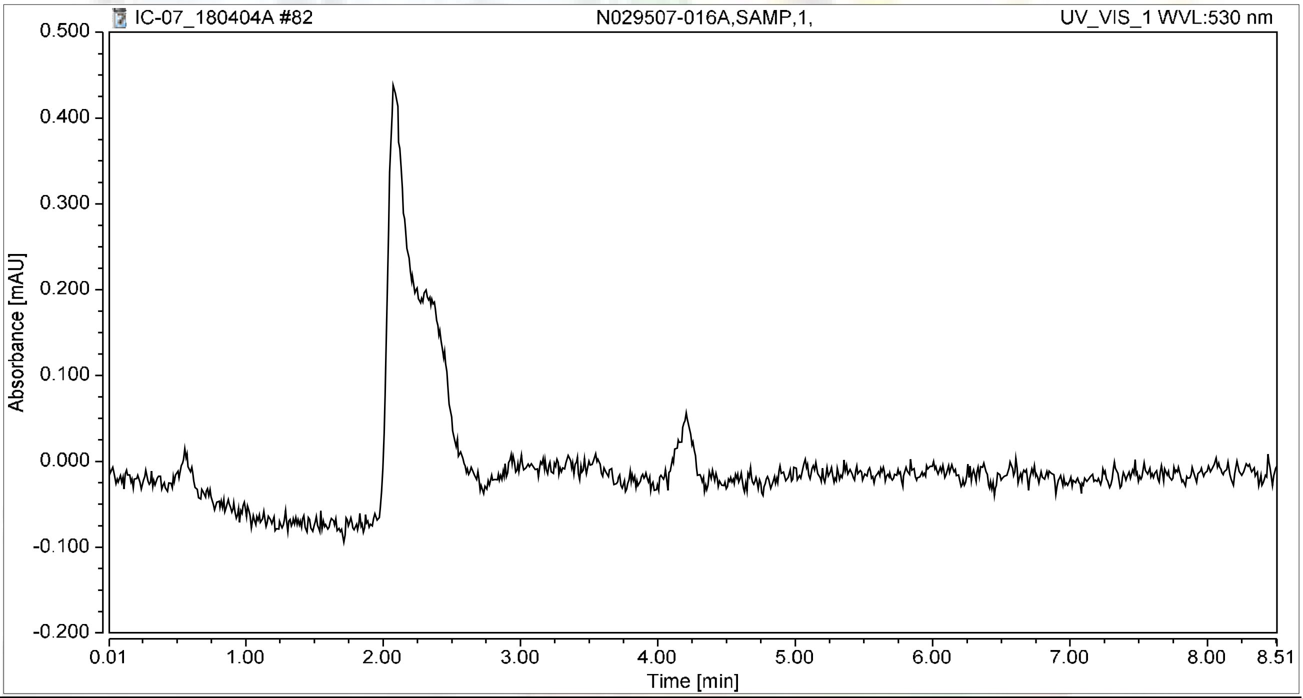
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.938	6.334	100.00	100.00	3.7015
Total:			**0.938**	**6.334**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029507-016A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 19:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

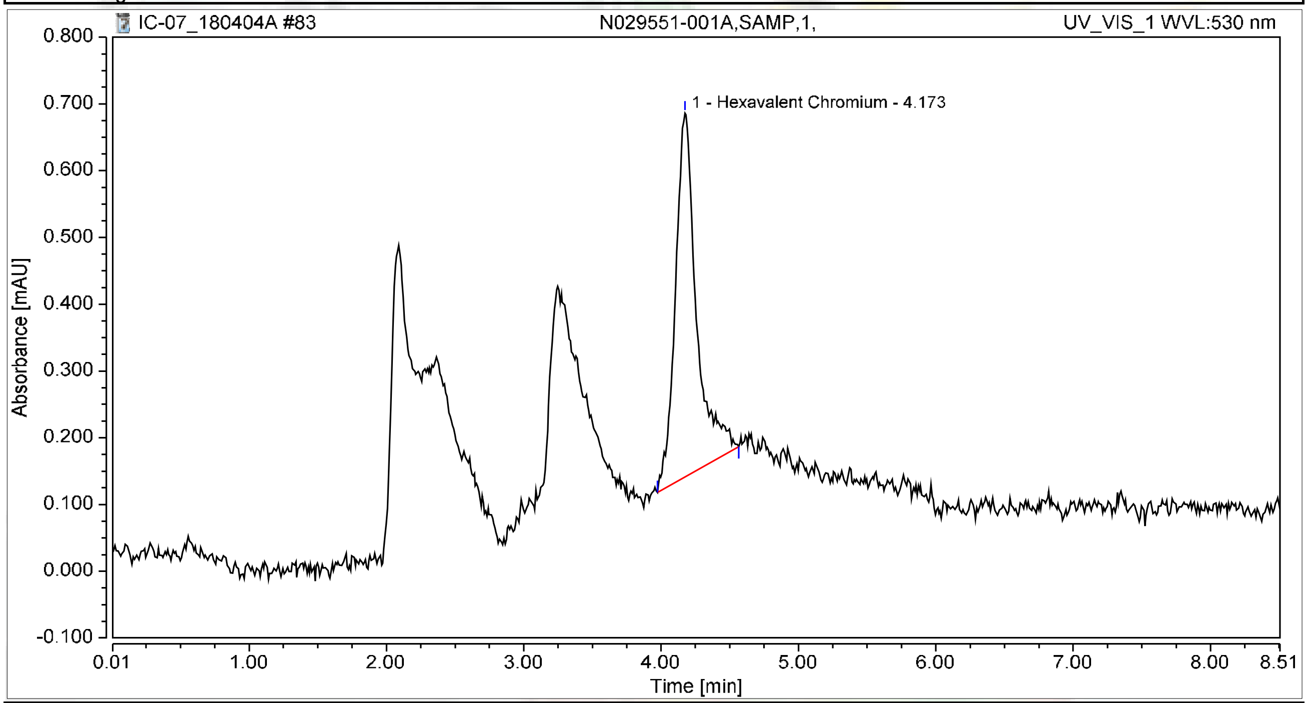
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029551-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 20:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

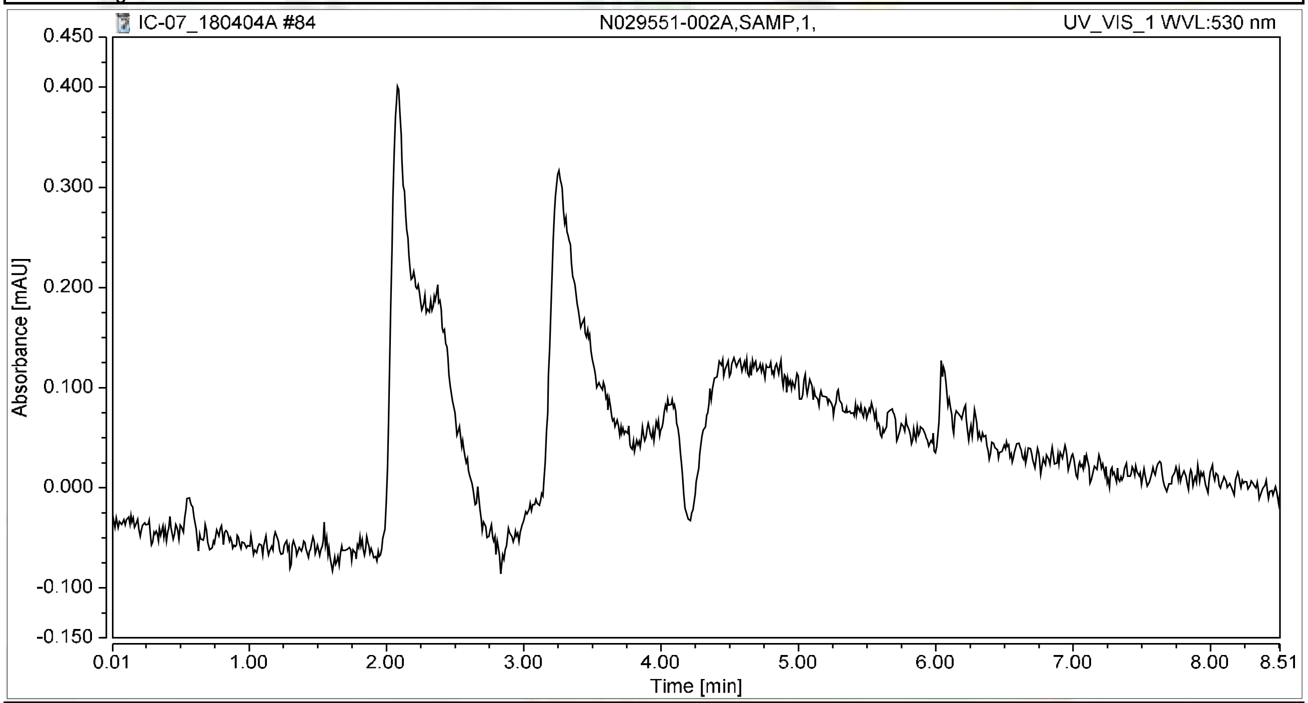
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.097	0.545	100.00	100.00	0.3830
Total:			**0.097**	**0.545**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029551-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 20:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

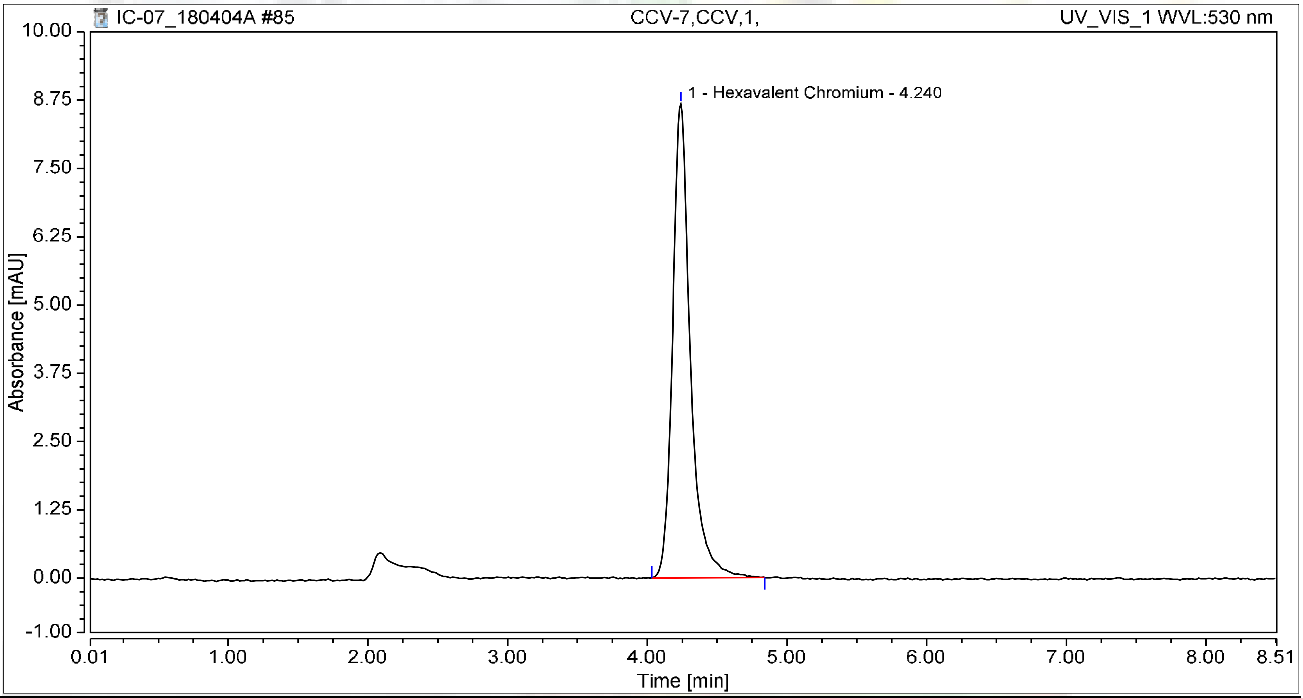
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 20:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

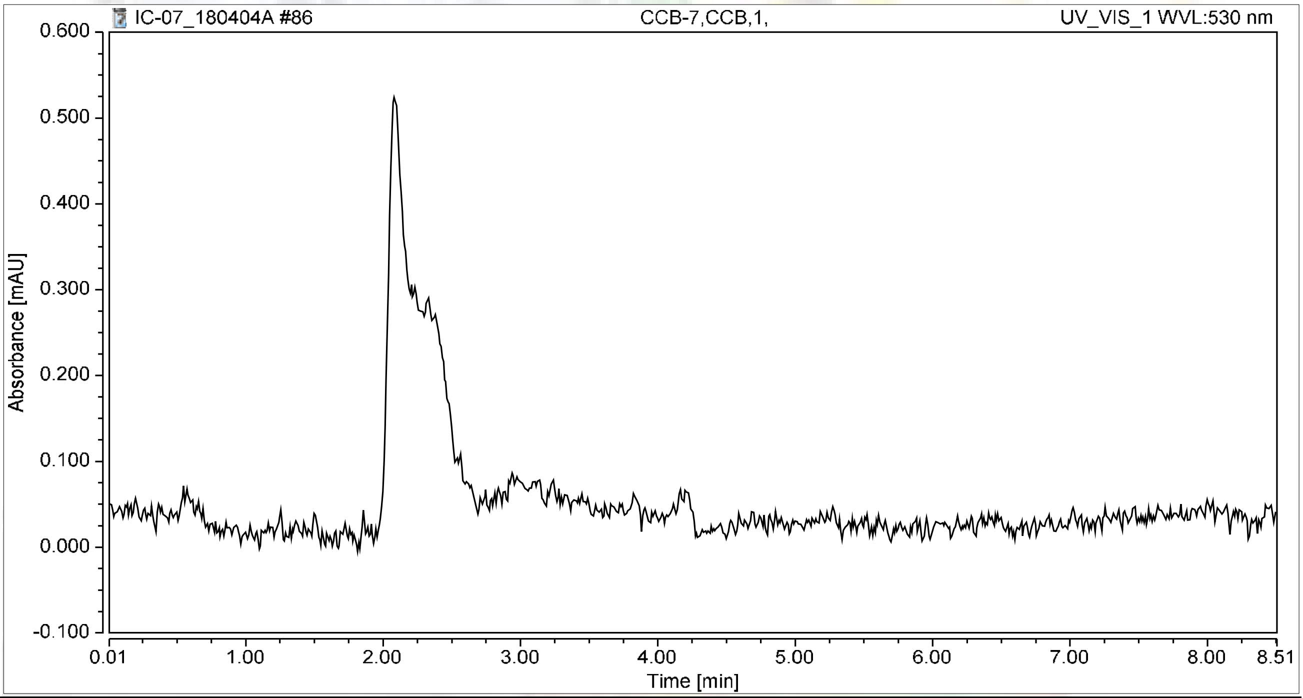
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	1.282	8.681	100.00	100.00	5.0557
Total:			**1.282**	**8.681**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/Apr/18 20:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123274 **Analyst:** LSR

ASSET #: N029506 **Date Analyzed:** 4/6/2018

Method: EPA 2320

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer Julia Ramit Date: 4/16/2018

2nd Level Reviewer RB 04/17/2018 Date:

SAMPLE CALCULATION

Sample ID: **N029506-001B @ pH 7.80**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.75 mL)

= **0.02128 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (9.70) (0.02128 N) (1) * 1000

= 206.4160 mg/**L**

Reporting results in two significant figures,

= **210 mg/L** as CaCO3

Julia Ramit 4/16/2018

RB 04/17/2018

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02128 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (9.70 mL) (0.02128) (1) * 1000

= 206.4160 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 206.4160 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **210 mg/L**

Julia Ramit 4/16/2018
RB 04/17/2018

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.29	50	0.00	0.050	MBLK
LCS-1	8.27	50	0.00	4.60	LCS
N029506-001B	7.80	50	0.00	9.70	SAMP
N029506-002B	7.53	50	0.00	8.20	SAMP
N029556-001B	6.09	50	0.00	26.60	SAMP
N029506-001BDUP	7.88	50	0.00	10.00	DUP
N029506-001BMS	7.76	50	0.00	13.50	MS
N029506-001BMSD	7.78	50	0.00	13.60	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.750**	ml
N H2SO4	**0.02128**	Normal

Date Analyzed:	**4/6/18**
Time:	**1:20 PM**
Analyzed By:	**LSR**

Sodium Carbonate:	**CINV-161205A**
Sodium Bicarbonate:	**CINV-150601A**
Sulfuric Acid:	**R180406A**

Julia Ramit 4/12/2018

RB 04/17/2018

Date Analyzed:	4/6/18		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	1:20 PM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**LSR**			Hydrochloric Acid:		0			Titrant used:	11.75	**mL**		**P = 1/2 T**
				Sulfuric Acid:		R180406A							**P > 1/2 T**
									N H2SO4	0.02128	**N**		**P = T**

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.29				0.02128	0.00	0.05	0.05	1	0.00	1.06	
LCS-1	50	8.27				0.02128	0.00	4.60	4.60	1	0.00	97.87	
N029506-001B	50	7.8				0.02128	0.00	9.70	9.70	1	0.00	206.38	
N029506-002B	50	7.53				0.02128	0.00	8.20	8.20	1	0.00	174.47	
N029556-001B	50	6.09				0.02128	0.00	26.60	26.60	1	0.00	565.96	
N029506-001BDU	50	7.88				0.02128	0.00	10.00	10.00	1	0.00	212.77	
N029506-001BMS	50	7.76				0.02128	0.00	13.50	13.50	1	0.00	287.23	
N029506-001BMS	50	7.78				0.02128	0.00	13.60	13.60	1	0.00	289.36	

Julia Ramit 4/12/2018

RB 04/17/2018

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	4/6/18
Time:	1:20 PM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.06	1.06	1.06		P = 0
LCS-1	0.00	0.00	97.87	97.87	97.87		P = 0
N029506-001B	0.00	0.00	206.38	206.38	206.38		P = 0
N029506-002B	0.00	0.00	174.47	174.47	174.47		P = 0
N029556-001B	0.00	0.00	565.96	565.96	565.96		P = 0
N029506-001BDUP	0.00	0.00	212.77	212.77	212.77		P = 0
N029506-001BMS	0.00	0.00	287.23	287.23	287.23		P = 0
N029506-001BMSD	0.00	0.00	289.36	289.36	289.36		P = 0

Lilia Ramit 4/12/2018

RB 04/17/2018

Matrix: H_2O

Date Extracted: 4/6/18
Time Extracted:
Extracted By: LSR

Date Analyzed: 4/6/18
Time Analyzed: 1320
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV-1612054
Hydrochloric Acid: -
Sulfuric Acid: R1804060
Sodium Bicarbonate: CINV 1506014

pH meter Calibration:
Slope: 98.7%
pH 7 - 7.01 - CINV 1712150
4 - 4.01 - 1712058A
10 - 9.99 - 180119A

	Sample ID	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50mL	10.65	INST180406A	5mL	0.05N	-	-	11.80	50/50	$N\ H_2SO_4 = \frac{(2.65g/L)(5mL)}{(53)(V\ titrant)}$	= 0.02118644
	#2	↓	10.61	↓	↓	↓	-	-	11.70	↓		= 0.02136752
												Ave: 0.02127698
1)	MBLK	50mL	5.29	-	-	-	0.02128	0	0.05	50/50		
2)	LCS		8.27	INST180406B	1mL	0.05N		0	4.60			
3)	N029506-1B		7.80					0	9.70			
4)	↓ 2B		7.53					0	8.20			
5)	N029556-1B		6.09					0	26.60			
6)	N029506-1B DUP		7.88					0	10.00			
7)	1BMS		7.76	INST180406B	1mL	0.05N		0	13.50			
8)	↓ 1BMSD	↓	7.78	↓	↓	↓	↓	0	13.60	↓		
9)												
10)												
11)												
12)												
13)												
14)												
15)												
16)												
17)												
18)												
19)												
20)												
	MS											
	MSD											
	LCS											

$$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50{,}000)}{Vsx}$$

$$T = \frac{(V\ pH\ 4.5)(N\ H_2SO_4)(50{,}000)}{Vsx}$$

Julia Ramit 4/12/2018

RB 04/17/2018

EPA 300.0

IC ARCUS
REV 2.0
011416

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R123105
ASSET #: N029507 / N029506

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 4/4/2018

Method:

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

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer: rba   Date: 4/8/2018

2nd Level Reviewer: [signature] 4/17/2018   Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A	=	mg/L, IC calculated concentration
DF	=	dilution factor

For **N029506-001B** concentration in mg/L is calculated as follows:

Chloride, mg/L = 3.2042 * 200

= 640.84

Reporting result in two significant values,

Chloride, mg/L = 640

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS
#Samples: 10
Created: 4/2/2018 8:05:50 AM by IC-05
Last Update: 4/3/2018 1:01:43 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
3	Std - 0	Standard	1000.0	Anions Default	EPA 300_0_180402	Finished
4	Std - 1	Standard	1000.0	Anions Default	EPA 300_0_180402	Finished
5	Std - 2	Standard	1000.0	Anions Default	EPA 300_0_180402	Finished
6	Std - 3	Standard	1000.0	Anions Default	EPA 300_0_180402	Finished
7	Std - 4	Standard	1000.0	Anions Default	EPA 300_0_180402	Finished
8	Std - 5	Standard	1000.0	Anions Default	EPA 300_0_180402	Finished
9	ICV	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
10	ICB	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished

rba 4/8/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 4/2/2018 8:05:50 AM by IC-05
#Samples: 10 Last Update: 4/3/2018 1:01:43 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	4/2/2018 8:06:15 AM	BLANK
2	BLANK,BLANK,1	4/2/2018 8:21:33 AM	BLANK
3	Std - 0	4/2/2018 8:36:51 AM	IBLANK
4	Std - 1	4/2/2018 9:36:38 AM	STD-LOW
5	Std - 2	4/2/2018 9:51:56 AM	STD
6	Std - 3	4/2/2018 10:07:14 AM	STD
7	Std - 4	4/2/2018 10:22:32 AM	STD
8	Std - 5	4/2/2018 10:37:50 AM	STD-HIGH
9	ICV	4/2/2018 11:12:37 AM	ICV
10	ICB	4/2/2018 11:27:55 AM	ICB

rba 4/8/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS
#Samples: 64
Created: 4/4/2018 8:21:15 AM by IC-05
Last Update: 4/4/2018 3:49:34 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
3	Std - 0	Standard	1000.0	Anions Default	EPA 300_0_180402	Finished
4	Std - 1	Standard	1000.0	Anions Default	EPA 300_0_180402	Finished
5	Std - 2	Standard	1000.0	Anions Default	EPA 300_0_180402	Finished
6	Std - 3	Standard	1000.0	Anions Default	EPA 300_0_180402	Finished
7	Std - 4	Standard	1000.0	Anions Default	EPA 300_0_180402	Finished
8	Std - 5	Standard	1000.0	Anions Default	EPA 300_0_180402	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
12	CCB-1,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
13	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
14	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
15	N029507-001E,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
16	N029507-002E,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
17	N029507-003E,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
18	N029507-004E,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
19	N029507-005E,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
20	N029507-006D,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
21	N029507-007E,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
22	N029507-008E,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
23	CCV-2,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
24	CCB-2,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
25	N029507-010E,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
26	N029507-011E,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
27	N029507-012E,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
28	N029507-013D,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
29	N029507-014D,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
30	N029507-001EMS,MS,50	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
31	N029507-001EMSD,MSD,50	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
32	N029507-012EMS,MS,20	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
33	N029507-010EDUP,DUP,10	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
34	N029510-001B,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
35	CCV-3,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
36	CCB-3,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
37	N029510-002B,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
38	N029515-001B,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
39	N029510-003B,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
40	N029515-002B,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
41	N029510-001BDUP,DUP,5	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished

rba 4/8/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 4/4/2018 8:21:15 AM by IC-05
#Samples: 64 Last Update: 4/4/2018 3:49:34 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	4/2/2018 8:06:15 AM	BLANK
2	BLANK,BLANK,1	4/2/2018 8:21:33 AM	BLANK
3	Std - 0	4/2/2018 8:36:51 AM	IBLANK
4	Std - 1	4/2/2018 9:36:38 AM	STD-LOW
5	Std - 2	4/2/2018 9:51:56 AM	STD
6	Std - 3	4/2/2018 10:07:14 AM	STD
7	Std - 4	4/2/2018 10:22:32 AM	STD
8	Std - 5	4/2/2018 10:37:50 AM	STD-HIGH
9	BLANK,BLANK,1	4/4/2018 8:21:39 AM	BLANK
10	CCV-1,CCV,1	4/4/2018 8:36:57 AM	CCV
11	CCB-1,CCB,1	4/4/2018 8:52:14 AM	CCB
12	CCB-1,CCB,1	4/4/2018 9:07:32 AM	METHOD BLANK
13	MB-H2O,MBLK,1	4/4/2018 9:22:50 AM	METHOD BLANK
14	LCS-H2O,LCS,1	4/4/2018 9:38:08 AM	LCS
15	N029507-001E,SAMP,50	4/4/2018 9:53:25 AM	SAMP,0.2>10mL
16	N029507-002E,SAMP,20	4/4/2018 10:18:22 AM	SAMP,0.5>10mL
17	N029507-003E,SAMP,20	4/4/2018 10:33:41 AM	SAMP,0.5>10mL
18	N029507-004E,SAMP,20	4/4/2018 10:48:58 AM	SAMP,0.5>10mL
19	N029507-005E,SAMP,20	4/4/2018 11:04:16 AM	SAMP,0.5>10mL
20	N029507-006D,SAMP,20	4/4/2018 11:19:34 AM	SAMP,0.5>10mL
21	N029507-007E,SAMP,20	4/4/2018 11:34:52 AM	SAMP,0.5>10mL
22	N029507-008E,SAMP,20	4/4/2018 11:50:10 AM	SAMP,0.5>10mL
23	CCV-2,CCV,1	4/4/2018 12:05:28 PM	CCV
24	CCB-2,CCB,1	4/4/2018 12:20:46 PM	CCB
25	N029507-010E,SAMP,10	4/4/2018 12:36:04 PM	SAMP,1>10mL
26	N029507-011E,SAMP,10	4/4/2018 12:51:22 PM	SAMP,1>10mL
27	N029507-012E,SAMP,20	4/4/2018 1:06:40 PM	SAMP,0.5>10mL
28	N029507-013D,SAMP,10	4/4/2018 1:21:58 PM	SAMP,1>10mL
29	N029507-014D,SAMP,10	4/4/2018 1:37:15 PM	SAMP,1>10mL
30	N029507-001EMS,MS,50	4/4/2018 1:52:33 PM	MS,0.2>10mL
31	N029507-001EMSD,MSD,50	4/4/2018 2:26:05 PM	MSD,0.2>10mL
32	N029507-012EMS,MS,20	4/4/2018 2:41:22 PM	MS,0.5>10mL
33	N029507-010EDUP,DUP,10	4/4/2018 2:56:40 PM	DUP,1>10mL
34	N029510-001B,SAMP,5	4/4/2018 3:11:58 PM	SAMP,2>10mL
35	CCV-3,CCV,1	4/4/2018 3:27:16 PM	CCV
36	CCB-3,CCB,1	4/4/2018 3:42:34 PM	CCB
37	N029510-002B,SAMP,5	4/4/2018 3:57:53 PM	SAMP,2>10mL
38	N029515-001B,SAMP,5	4/4/2018 4:13:11 PM	SAMP,2>10mL
39	N029510-003B,SAMP,5	4/4/2018 4:28:29 PM	SAMP,2>10mL
40	N029515-002B,SAMP,1	4/4/2018 4:43:47 PM	SAMP,10mL
41	N029510-001BDUP,DUP,5	4/4/2018 4:59:04 PM	DUP,2>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 4/4/2018 8:21:15 AM by IC-05
#Samples: 64 Last Update: 4/4/2018 3:49:34 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N029510-001BMS,MS,5	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
43	N029510-001BMSD,MSD,5	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
44	N029510-001B,SAMP,100	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
45	N029510-002B,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
46	N029510-003B,SAMP,100	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
47	CCV-4,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
48	CCB-4,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
N029515-001B 49	~~N029515-002B~~,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
50	N029510-001B,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
51	N029506-001B,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
52	N029506-002B,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
53	N029506-002BDUP,DUP,500	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
54	N029506-002BMS,MS,500	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
55	N029506-002BMSD,MSD,500	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
56	N029506-002B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
57	N029506-002BMS,MS,50	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
58	N029506-002BMSD,MSD,50	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
59	CCV-5,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
60	CCB-5,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
61	N029506-002BDUP,DUP,50	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
62	N029506-001B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
63	CCV-6,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished
64	CCB-6,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180402	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 4/4/2018 8:21:15 AM by IC-05
#Samples: 64 Last Update: 4/4/2018 3:49:34 PM by IC-05

	No.	Name	Inj. Date/Time	Comment
	42	N029510-001BMS,MS,5	4/4/2018 5:14:22 PM	MS,2>10mL
	43	N029510-001BMSD,MSD,5	4/4/2018 5:29:41 PM	MSD,2>10mL
	44	N029510-001B,SAMP,100	4/4/2018 5:44:59 PM	SAMP,0.1>10mL
	45	N029510-002B,SAMP,200	4/4/2018 6:00:18 PM	SAMP,0.05>10mL
	46	N029510-003B,SAMP,100	4/4/2018 6:15:36 PM	SAMP,0.1>10mL
	47	CCV-4,CCV,1	4/4/2018 6:30:53 PM	CCV
	48	CCB-4,CCB,1	4/4/2018 6:46:11 PM	CCB
N029515-001B	49	~~N029515-002B~~,SAMP,200	4/4/2018 7:01:29 PM	SAMP,0.05>10mL
	50	N029510-001B,SAMP,20	4/4/2018 7:16:47 PM	SAMP,0.5>10mL
	51	N029506-001B,SAMP,200	4/4/2018 7:32:05 PM	SAMP,0.05>10mL
	52	N029506-002B,SAMP,500	4/4/2018 7:47:22 PM	SAMP,0.02>10mL
	53	N029506-002BDUP,DUP,500	4/4/2018 8:02:40 PM	DUP,0.02>10mL
	54	N029506-002BMS,MS,500	4/4/2018 8:17:58 PM	MS,0.02>10mL
	55	N029506-002BMSD,MSD,500	4/4/2018 8:33:16 PM	MSD,0.02>10mL
	56	N029506-002B,SAMP,50	4/4/2018 8:48:34 PM	SAMP,0.2>10mL
	57	N029506-002BMS,MS,50	4/4/2018 9:03:52 PM	MS,0.2>10mL
	58	N029506-002BMSD,MSD,50	4/4/2018 9:19:10 PM	MSD,0.2>10mL
	59	CCV-5,CCV,1	4/4/2018 9:34:28 PM	CCV
	60	CCB-5,CCB,1	4/4/2018 9:49:46 PM	CCB
	61	N029506-002BDUP,DUP,50	4/4/2018 10:05:04 PM	DUP,0.2>10mL
	62	N029506-001B,SAMP,50	4/4/2018 10:20:22 PM	SAMP,0.2>10mL
	63	CCV-6,CCV,1	4/4/2018 10:35:40 PM	CCV
	64	CCB-6,CCB,1	4/4/2018 10:50:58 PM	CCB

INITIAL CALIBRATION DATA SUMMARY

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

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

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 4/2/2018

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0700	0.1461	0.3025	0.7476	1.5775	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814B

Calibration Acceptance Criteria: > 0.995 Correlation

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

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 4/2/2018

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0450	0.2145	0.4454	1.1621	2.4429	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814G

Calibration Acceptance Criteria: > 0.995 Correlation

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

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N029506
Project:	PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **ICV** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/2/2018** SeqNo: **2977640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.139	0.50	2.000	0	107	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCV** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977642**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.977	0.50	2.000	0	98.9	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCV** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.986	0.50	2.000	0	99.3	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCV** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.980	0.50	2.000	0	99.0	90	110				

Sample ID **CCV-4** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCV** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977652**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.997	0.50	2.000	0	99.9	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCV** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.991	0.50	2.000	0	99.6	90	110				

Sample ID **CCV-6** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCV** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.987	0.50	2.000	0	99.4	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **ICV** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/2/2018** SeqNo: **2977665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.018	0.50	4.000	0	100	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCV** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.056	0.50	4.000	0	101	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCV** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.986	0.50	4.000	0	99.7	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCV** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.047	0.50	4.000	0	101	90	110				

Sample ID **CCV-4** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCV** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977678**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.034	0.50	4.000	0	101	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **123105**
Client ID: **CCV**	Batch ID: **R123105**	TestNo: **EPA 300.0**	Analysis Date: **4/4/2018**	SeqNo: **2977684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.047	0.50	4.000	0	101	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **123105**
Client ID: **CCV**	Batch ID: **R123105**	TestNo: **EPA 300.0**	Analysis Date: **4/4/2018**	SeqNo: **2977688**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.983	0.50	4.000	0	99.6	90	110				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

ASSET Laboratories

Date: *13-Apr-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB** SampType: **ICB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **ICB** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/2/2018** SeqNo: **2977641**

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

Sample ID **CCB-1** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCB** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977643**

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

Sample ID **CCB-2** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCB** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977647**

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

Sample ID **CCB-3** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCB** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977649**

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

Sample ID **CCB-4** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCB** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977653**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCB** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977662**

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

Sample ID **CCB-6** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCB** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977664**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB** SampType: **ICB** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **ICB** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/2/2018** SeqNo: **2977666**

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

Sample ID **CCB-1** SampType: **CCB** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCB** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977668**

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

Sample ID **CCB-2** SampType: **CCB** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCB** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977672**

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

Sample ID **CCB-3** SampType: **CCB** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCB** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977674**

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

Sample ID **CCB-4** SampType: **CCB** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123105**
Client ID: **CCB** Batch ID: **R123105** TestNo: **EPA 300.0** Analysis Date: **4/4/2018** SeqNo: **2977679**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **123105**
Client ID: **CCB**	Batch ID: **R123105**	TestNo: **EPA 300.0**	Analysis Date: **4/4/2018**	SeqNo: **2977685**

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

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **123105**
Client ID: **CCB**	Batch ID: **R123105**	TestNo: **EPA 300.0**	Analysis Date: **4/4/2018**	SeqNo: **2977689**

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

Qualifiers:

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 4/4/2018

Sample Name	Retention Time		Evaluation
ICV	Chloride	4.100	
CCV-1	Chloride	4.107	
CCV-2	Chloride	4.110	
CCV-3	Chloride	4.110	
CCV-4	Chloride	4.117	
CCV-5	Chloride	4.117	
CCV-6	Chloride	4.127	

Average 4.115

Applied RT Window 3.915 - 4.315

MB-R123105_CL	Chloride	N.A.	N.A.
LCS-R123105_CL	Chloride	4.110	PASS
N029506-001B	Chloride	4.113	PASS
N029506-002B	Chloride	4.113	PASS
N029506-002BDUP	Chloride	4.113	PASS
N029506-002BMS	Chloride	4.117	PASS
N029506-002BMSD	Chloride	4.117	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 4/4/2018

Sample Name		Retention Time	Evaluation
ICV	Sulfate	9.034	
CCV-1	Sulfate	9.067	
CCV-2	Sulfate	9.080	
CCV-3	Sulfate	9.080	
CCV-4	Sulfate	9.094	
CCV-5	Sulfate	9.094	
CCV-6	Sulfate	9.127	

Average	9.090	
Applied RT Window	8.890 -	9.290

MB-R123105_SO4	Sulfate	N.A.	N.A.
LCS-R123105_SO4	Sulfate	9.070	PASS
N029506-002B	Sulfate	9.093	PASS
N029506-002BMS	Sulfate	9.097	PASS
N029506-002BMSD	Sulfate	9.093	PASS
N029506-002BDUP	Sulfate	9.127	PASS
N029506-001B	Sulfate	9.120	PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2018 (1st Quarter)

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)**
Method Number: EPA Method 300.0
Analysis Date(s): 3/29-30/2018
Analyst: Ria B. Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.0252	0.10	0.087	**87**
Chloride	**0.0091**	0.020	0.1193	0.50	0.5757	**115**
Nitrite	**0.0030**	0.010	0.0237	0.05	0.0638	**128**
Bromide	**0.0196**	0.040	0.0405	0.20	0.1993	**100**
Nitrate	**0.0050**	0.010	0.0191	0.05	0.0561	**112**
Phosphate	**0.0135**	0.030	0.0415	0.10	0.1216	**122**
Sulfate	**0.0229**	0.050	0.3682	0.50	0.6549	**131**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123161 **Analyst:** QBM

ASSET #: N029506 **Date Analyzed:** 4/6/2018

Method: **4500_NO3**

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

Comments:

CCV2 failed, low bias. However samples are closed by CCV1.

SECOND LEVEL REVIEW:

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

1st Level Reviewer QBM Date: 4/17/2018

2nd Level Reviewer RB 04/17/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N029506-001C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.0568	*	1
	=	0.0568	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.057 mg/L

RB 04/17/2018

INITIAL CALIBRATION
DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

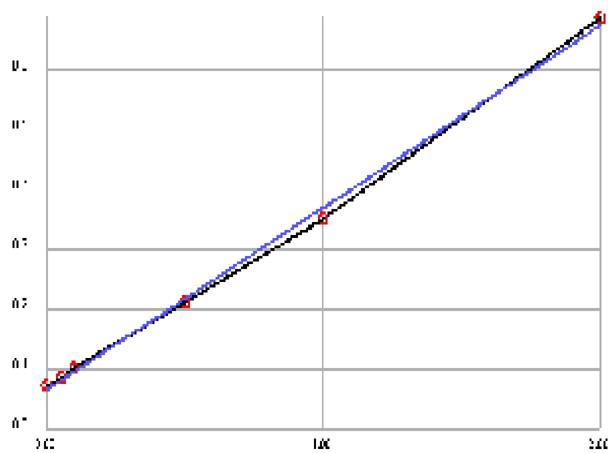
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.3036x + 0.0664
Correlation	.998778

Calibrant	Energy	Set	Conc
1	0.0738	0.0000	0.0242
2	0.0846	0.0500	0.0598
3	0.1020	0.1000	0.1171
4	0.2117	0.5000	0.4784
5	0.3496	1.0000	0.9325
6	0.6853	2.0000	2.0381



Notes:

04/17/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W** Units: **mg/L**			Prep Date:			RunNo: **123161**			
Client ID: **ICV**	Batch ID: **R123161**	TestNo: **SM4500-NO3**			Analysis Date: **4/6/2018**			SeqNo: **2980607**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.478	0.050	0.5000	0	95.6	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W** Units: **mg/L**			Prep Date:			RunNo: **123161**			
Client ID: **CCV**	Batch ID: **R123161**	TestNo: **SM4500-NO3**			Analysis Date: **4/6/2018**			SeqNo: **2980618**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.494	0.050	0.5000	0	98.8	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W** Units: **mg/L**			Prep Date:			RunNo: **123161**			
Client ID: **CCV**	Batch ID: **R123161**	TestNo: **SM4500-NO3**			Analysis Date: **4/6/2018**			SeqNo: **2980629**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.448	0.050	0.5000	0	89.7	90	110				S

Qualifiers:

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

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029506
Project: PG&E Topock-PMP

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **123161**						
Client ID: **ICB**	Batch ID: **R123161**	TestNo: **SM4500-NO3**		Analysis Date: **4/6/2018**		SeqNo: **2980608**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrate/Nitrite as N	0.035	0.050										

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **123161**						
Client ID: **CCB**	Batch ID: **R123161**	TestNo: **SM4500-NO3**		Analysis Date: **4/6/2018**		SeqNo: **2980619**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrate/Nitrite as N	ND	0.050										

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **123161**						
Client ID: **CCB**	Batch ID: **R123161**	TestNo: **SM4500-NO3**		Analysis Date: **4/6/2018**		SeqNo: **2980630**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrate/Nitrite as N	ND	0.050										

Qualifiers:

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

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 04-06-2018 15:20
Time end: 04-06-2018 17:40

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	17:08:58	0.0166		0.0715
2	<BLANK>	17:09:53	0.0173		0.0717
3	<CAL1>	17:10:53	0.0242	[0]	0.0738
4	<CAL2>	17:11:49	0.0598	[0.05]	0.0846
5	<CAL3>	17:12:50	0.1171	[0.1]	0.1020
6	<CAL4>	17:13:44	0.4784	[0.5]	0.2117
7	<CAL5>	17:14:39	0.9325	[1]	0.3496
8	<CAL6>	17:15:41	2.0381	[2]	0.6853
9	,BLANK,BLANK,1, NOT REPORTED	17:16:37	0.0697		0.0876
10	,ICV,ICV,1,	17:17:37	0.4780		0.2116
11	,ICB,ICB,1,	17:18:32	0.0348		0.0770
12	,MB-H2O,MBLK,1,	17:19:27	0.0209		0.0728
13	,LCS-H2O,LCS,1,	17:20:29	0.4830		0.2131
14	,MDL-1,SAMP,1,	17:21:23	0.0766		0.0897
15	,MDL-2,SAMP,1,	17:22:18	0.0680		0.0871
16	,N029506-001C,SAMP,1,	17:23:14	0.0568		0.0837
17	,N029506-002C,SAMP,5,	17:24:14	0.4099		0.1909
18	,N029506-002CDUP,DUP,5,	17:24:57	0.4155		0.1926
19	,N029506-002CMS,MS,5,	17:25:47	0.8666		0.3296
20	,N029506-002CMSD,MSD,5,	17:26:35	0.8736		0.3317
21	,BLANK, NOT REPORTED	17:27:19	0.0404		0.0787
22	,CCV-1,CCV,1,	17:28:00	0.4938		0.2164
23	,CCB-1,CCB,1,	17:28:50	0.0242		0.0738
24	,MDL-3,SAMP,1,	17:29:32	0.0644		0.0860
25	,N029352-001H,SAMP,100,	17:30:15	0.0361		0.0774
26	,N029353-001H,SAMP,100,	17:31:05	0.0450		0.0801

RB 04/17/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	**,N029354-001H,SAMP,100,**	17:31:47	0.0252		0.0741
28	**,N029355-001H,SAMP,100,**	17:32:30	0.0252		0.0741
29	**,N029356-001H,SAMP,100,**	17:33:18	0.0278		0.0749
30	**,N029357-001H,SAMP,100,**	17:34:01	0.0068		0.0685
31	**,N029358-001H,SAMP,50,**	17:34:43	0.1112		0.1002
32	**,BLANK,** NOT REPORTED	17:35:33	0.0242		0.0738
33	**,BLANK,** NOT REPORTED	17:36:15	0.0097		0.0694
34	**,~~CCV-3~~,CCV,1,** CCV-2 NOT REPORTED	17:36:58	0.4257		0.1957
35	**,~~CCV-3~~,CCV,1,** CCV-2	17:37:47	0.4484		0.2026
36	**,~~CCB-3~~,CCB,1,** CCB-2	17:38:29	0.0239		0.0737

RB 04/17/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 4/6/2018
Time Analyzed: 3:20 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180328D
Color reagent: R180328E
2% Copper Sulfate: R180328C
Ammonium Hydroxide: CINV-180112B

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N029352-001H		6.18							
N029353-001H		5.22							
N029354-001H		9.00							
N029355-001H		7.77							
N029356-001H		8.04							
N029357-001H		8.44							
N029358-001H		5.51							
N029506-001C		7.61							
N029506-002C		6.88							

Advanced Technology Laboratories, Inc.
Book # 1

04/17/2018

MDL STUDY

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

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

METHOD DETECTION LIMIT 2017

Method Name:	**Nitrate/Nitrite by Cadmium Reduction**	Matrix:	**Water**
Method Number:	SM4500NO3F	Unit:	mg/L
Analysis Date(s):	10/25,2017, 10/26/2017, 10/27/2017	Spike Conc:	0.05 mg/L
Analyst/Technician:	Quennie B. Manimtim		

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

May 10, 2018

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

TEL: (916) 786-3302
FAX:

Workorder No.: N029942

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

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 23, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Libucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California	
Project:	PG&E Topock - GMP, RC000753.0801	**CASE NARRATIVE**
Lab Order:	N029942	

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N029942-001, -002, -003, -004, -005 and -007 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N029942-001, -002, -004 and -007 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *10-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N029942
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N029942-001A	MW-52D-Q218	Groundwater	4/23/2018 3:04:00 PM	4/23/2018	5/10/2018
N029942-001B	MW-52D-Q218	Groundwater	4/23/2018 3:04:00 PM	4/23/2018	5/10/2018
N029942-001C	MW-52D-Q218	Groundwater	4/23/2018 3:04:00 PM	4/23/2018	5/10/2018
N029942-002A	MW-52M-Q218	Groundwater	4/23/2018 3:37:00 PM	4/23/2018	5/10/2018
N029942-002B	MW-52M-Q218	Groundwater	4/23/2018 3:37:00 PM	4/23/2018	5/10/2018
N029942-002C	MW-52M-Q218	Groundwater	4/23/2018 3:37:00 PM	4/23/2018	5/10/2018
N029942-003A	MW-53D-Q218	Groundwater	4/23/2018 2:14:00 PM	4/23/2018	5/10/2018
N029942-003B	MW-53D-Q218	Groundwater	4/23/2018 2:14:00 PM	4/23/2018	5/10/2018
N029942-003C	MW-53D-Q218	Groundwater	4/23/2018 2:14:00 PM	4/23/2018	5/10/2018
N029942-004A	MW-53M-Q218	Groundwater	4/23/2018 1:35:00 PM	4/23/2018	5/10/2018
N029942-004B	MW-53M-Q218	Groundwater	4/23/2018 1:35:00 PM	4/23/2018	5/10/2018
N029942-004C	MW-53M-Q218	Groundwater	4/23/2018 1:35:00 PM	4/23/2018	5/10/2018
N029942-005A	MW-32-035-Q218	Groundwater	4/23/2018 3:23:00 PM	4/23/2018	5/10/2018
N029942-005B	MW-32-035-Q218	Groundwater	4/23/2018 3:23:00 PM	4/23/2018	5/10/2018
N029942-005C	MW-32-035-Q218	Groundwater	4/23/2018 3:23:00 PM	4/23/2018	5/10/2018
N029942-006A	MW-32-035-EB-Q218	Groundwater	4/23/2018 2:55:00 PM	4/23/2018	5/10/2018
N029942-007A	MW-22-Q218	Groundwater	4/23/2018 2:18:00 PM	4/23/2018	5/10/2018
N029942-007B	MW-22-Q218	Groundwater	4/23/2018 2:18:00 PM	4/23/2018	5/10/2018
N029942-007C	MW-22-Q218	Groundwater	4/23/2018 2:18:00 PM	4/23/2018	5/10/2018
N029942-008A	MW-701-Q218	Groundwater	4/23/2018 3:30:00 PM	4/23/2018	5/10/2018

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52D-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:04:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180424A**	QC Batch: **R123595**			PrepDate			Analyst: **LR**
Specific Conductance	20000	0.10	0.10		umhos/cm	1	4/24/2018 10:15 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52M-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:37:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180424A**	QC Batch: **R123595**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	4/24/2018 10:15 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53D-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 2:14:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180424A**	QC Batch: **R123595**			PrepDate			Analyst: **LR**
Specific Conductance	24000	0.10	0.10		umhos/cm	1	4/24/2018 10:15 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53M-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 1:35:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180424A**	QC Batch: **R123595**			PrepDate			Analyst: **LR**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	4/24/2018 10:15 AM

Qualifiers:

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

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

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ANALYTICAL RESULTS

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-32-035-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:23:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180424A**	QC Batch: **R123595**			PrepDate			Analyst: **LR**
Specific Conductance	8100	0.10	0.10		umhos/cm	1	4/24/2018 10:15 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-22-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 2:18:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180424A** QC Batch: **R123595** PrepDate							Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	4/24/2018 10:15 AM

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

CLIENT: ARCADIS U.S., Inc. - California

Work Order: N029942

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N029942-003BDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:		RunNo: **123595**	
Client ID: **ZZZZZZ**	Batch ID: **R123595**	TestNo: **EPA 120.1**		Analysis Date: **4/24/2018**		SeqNo: **3005492**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	23500.000	0.10						23600	0.425	2	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52D-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:04:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180424A** QC Batch: **R123632**			PrepDate				Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/24/2018 10:28 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A / EPA 6020							
RunID: **NV00922-ICP7_180504A** QC Batch: **67847**			PrepDate **4/26/2018**				Analyst: **CEI**
Chromium	ND	0.65	5.0		µg/L	5	5/4/2018 03:13 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52M-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:37:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180424A** QC Batch: **R123632** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/24/2018 10:48 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180509A** QC Batch: **67847** PrepDate **4/26/2018** Analyst: **CEI**							
Chromium	ND	0.65	5.0		µg/L	5	5/9/2018 11:45 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53D-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 2:14:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180424A** QC Batch: **R123632** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/24/2018 11:07 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180509A** QC Batch: **67847** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/9/2018 11:51 AM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53M-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 1:35:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180424A**	QC Batch: **R123632**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/24/2018 01:30 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		EPA 6020				
RunID: **NV00922-ICP7_180509A**	QC Batch: **67847**			PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/9/2018 12:07 PM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-32-035-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:23:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180424A** QC Batch: **R123632** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/24/2018 12:04 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180509A** QC Batch: **67847** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/9/2018 12:25 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-32-035-EB-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 2:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180424A** QC Batch: **R123632** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/24/2018 12:23 PM

Qualifiers:

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

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-22-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 2:18:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180424A**	QC Batch: **R123632**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/24/2018 12:42 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180509A**	QC Batch: **67847**			PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	ND	0.65	5.0		µg/L	5	5/9/2018 12:53 PM

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ANALYTICAL RESULTS

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-701-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180424A**	QC Batch: **R123632**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/24/2018 01:01 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123632** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **PBW** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007898**

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

Sample ID **LCS-R123632** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **LCSW** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.223	0.20	5.000	0	104	90	110				

Sample ID **N029942-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007901**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.555	1.0	5.000	0	91.1	90	110				

Sample ID **N029942-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007903**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.694	1.0	5.000	0	93.9	90	110				

Sample ID **N029942-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007905**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.561	1.0	5.000	0	91.2	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N029942-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.039	1.0	5.000	0	101	90	110				

Sample ID **N029942-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N029942-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.079	1.0	5.000	0	102	90	110				

Sample ID **N029942-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID **N029942-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.617	1.0	5.000	0	92.3	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N029942-005ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007920**

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

Sample ID **N029942-007AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.042	1.0	5.000	0	101	90	110	5.079	0.741	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N029942
Project:	PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-67847** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **PBW** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3017977**

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

Sample ID **LCS-67847** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **LCSW** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3017978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.763	1.0	10.00	0	108	85	115				

Sample ID **N029906-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3017982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	177.212	1.0	10.00	169.0	81.9	75	125				

Sample ID **N029906-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3017983**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	178.048	1.0	10.00	169.0	90.3	75	125	177.2	0.471	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52D-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:04:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180504A**	QC Batch: **67847**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	4.1	0.41	0.50		µg/L	5	5/4/2018 03:13 PM
Manganese	260	1.3	2.5		µg/L	5	5/4/2018 03:13 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52M-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:37:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180509A**	QC Batch: **67847**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	0.98	0.41	0.50		µg/L	5	5/9/2018 11:45 AM
Manganese	160	1.3	2.5		µg/L	5	5/9/2018 11:45 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53D-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 2:14:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180509A**	QC Batch: **67847**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	2.9	0.081	0.10		µg/L	1	5/9/2018 11:51 AM
Manganese	1400	2.6	5.0		µg/L	10	5/9/2018 12:02 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53M-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 1:35:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180509A**	QC Batch: **67847**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	4.8	0.41	0.50		µg/L	5	5/9/2018 12:13 PM
Manganese	400	1.3	2.5		µg/L	5	5/9/2018 12:13 PM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-32-035-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:23:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180509A**	QC Batch: **67847**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	5.9	0.081	0.10		µg/L	1	5/9/2018 12:25 PM
Manganese	1200	2.6	5.0		µg/L	10	5/9/2018 12:36 PM

Qualifiers:

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

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-22-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 2:18:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180509A**	QC Batch: **67847**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	14	0.41	0.50		µg/L	5	5/9/2018 12:53 PM
Manganese	1700	6.4	12		µg/L	25	5/9/2018 01:04 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N029942
Project:	PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-67847** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **PBW** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3018038**

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

Sample ID **LCS-67847** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **LCSW** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3018039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.993	0.10	10.00	0	110	85	115				
Manganese	101.532	0.50	100.0	0	102	85	115				

Sample ID **N029906-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3018043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.125	0.10	10.00	1.171	110	75	125				

Sample ID **N029906-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3018044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.027	0.10	10.00	1.171	109	75	125	12.12	0.810	20	

Sample ID **N029906-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3018047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	419.827	2.5	100.0	305.3	114	75	125				

Qualifiers:

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N029906-001B-MSD**	SampType: **MSD**		TestCode: **6020_DIS**	Units: **µg/L**		Prep Date: **4/26/2018**			RunNo: **123880**		
Client ID: **ZZZZZZ**	Batch ID: **67847**		TestNo: **EPA 6020**	**EPA 3010A**		Analysis Date: **5/4/2018**			SeqNo: **3018050**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	415.460	2.5	100.0	305.3	110	75	125	419.8	1.05	20	

Qualifiers:

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

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

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

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: Date: 4/23/2018	Sampled By: ~~Gantt Jeffers~~ Jason Maher	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	
Project Name: PG&E Topock - GMP	Signature: Date: 4/23/2018	
Project Number: RC000753.0801		

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE				
Geotracker		RWQCB	✓	1. Chilled	✓	
Labspec		CalTrans		2. Headspace		
Others	✓	LEVEL III		3. Container Intact		
Specify: RWQCB		LEVEL IV		4. Seal Present		
		Regulatory		5. IR number	2	
Global ID:		Specify State:		6. Method of Cooling: Ice		
				Sample Temp: 2.9		
				Courier:		
				Tracking No.:		

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N029942 - 01	MW-52D-Q218	4/23/2018	15:04			X		X							X	E	4	P		
2	- 02	MW-52M-Q218	4/23/2018	15:37			X		X							X	E	4	P		
3	- 03	MW-53D-Q218	4/23/2018	14:14			X		X							X	E	4	P		
4	- 04	MW-53M-Q218	4/23/2018	13:35			X		X							X	E	4	P		
5	- 05	MW-32-035-Q218	4/23/2018	15:23			X		X							X	E	4	P		
6	- 06	MW-32-035-EB-Q218	4/23/2018	14:55		X											E	1	P		
7	- 07	MW-22-Q218	4/23/2018	14:18		X			X							X	E	3	P		
8	- 08	MW-701-Q218	4/23/2018	15:30		X											E	1	P		
9																					
10																					

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	4/23/18 1606		4/23/18 1606
	4/23/18 1810		4/23/18 1810

Turn Around Time (TAT)

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

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

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

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

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

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

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

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

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

Cooler Received/Opened On: 4/23/2018 Workorder: N029942

Rep sample Temp (Deg C): 2.9 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

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

Sample Receipt Checklist

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

Comments:

For:

Checklist Completed By: YR [signature] 4/26/2018

Reviewed By: [signature] 04/30/2018

ASSET Laboratories

WORK ORDER Summary

24-Apr-18

WorkOrder: N029942

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/23/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029942-001A	MW-52D-Q218	4/23/2018 3:04:00 PM	5/7/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029942-001B			5/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029942-001C			5/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029942-002A	MW-52M-Q218	4/23/2018 3:37:00 PM	5/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029942-002B			5/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029942-002C			5/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029942-003A	MW-53D-Q218	4/23/2018 2:14:00 PM	5/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029942-003B			5/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029942-003C			5/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029942-004A	MW-53M-Q218	4/23/2018 1:35:00 PM	5/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029942-004B			5/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029942-004C			5/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029942-005A	MW-32-035-Q218	4/23/2018 3:23:00 PM	5/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029942-005B			5/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

24-Apr-18

WorkOrder: N029942

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/23/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029942-005C	MW-32-035-Q218	4/23/2018 3:23:00 PM	5/7/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029942-006A	MW-32-035-EB-Q218	4/23/2018 2:55:00 PM	5/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029942-007A	MW-22-Q218	4/23/2018 2:18:00 PM	5/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029942-007B			5/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029942-007C			5/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029942-008A	MW-701-Q218	4/23/2018 3:30:00 PM	5/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029942-009A	FOLDER	5/7/2018	5/7/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/7/2018		Folder	Folder	☐	☐	☐	LAB
			5/7/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.0801

ASSET Laboratories Work Order:

N029942

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N029942

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

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

May 10, 2018

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

TEL: (916) 786-3302
FAX:

Workorder No.: N029942

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

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 23, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Sitancao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.0801
Lab Order:	N029942

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N029942-001, -002, -003, -004, -005 and -007 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N029942-001, -002, -004 and -007 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

ASSET Laboratories

Date: *10-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N029942
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N029942-001A	MW-52D-Q218	Groundwater	4/23/2018 3:04:00 PM	4/23/2018	5/10/2018
N029942-001B	MW-52D-Q218	Groundwater	4/23/2018 3:04:00 PM	4/23/2018	5/10/2018
N029942-001C	MW-52D-Q218	Groundwater	4/23/2018 3:04:00 PM	4/23/2018	5/10/2018
N029942-002A	MW-52M-Q218	Groundwater	4/23/2018 3:37:00 PM	4/23/2018	5/10/2018
N029942-002B	MW-52M-Q218	Groundwater	4/23/2018 3:37:00 PM	4/23/2018	5/10/2018
N029942-002C	MW-52M-Q218	Groundwater	4/23/2018 3:37:00 PM	4/23/2018	5/10/2018
N029942-003A	MW-53D-Q218	Groundwater	4/23/2018 2:14:00 PM	4/23/2018	5/10/2018
N029942-003B	MW-53D-Q218	Groundwater	4/23/2018 2:14:00 PM	4/23/2018	5/10/2018
N029942-003C	MW-53D-Q218	Groundwater	4/23/2018 2:14:00 PM	4/23/2018	5/10/2018
N029942-004A	MW-53M-Q218	Groundwater	4/23/2018 1:35:00 PM	4/23/2018	5/10/2018
N029942-004B	MW-53M-Q218	Groundwater	4/23/2018 1:35:00 PM	4/23/2018	5/10/2018
N029942-004C	MW-53M-Q218	Groundwater	4/23/2018 1:35:00 PM	4/23/2018	5/10/2018
N029942-005A	MW-32-035-Q218	Groundwater	4/23/2018 3:23:00 PM	4/23/2018	5/10/2018
N029942-005B	MW-32-035-Q218	Groundwater	4/23/2018 3:23:00 PM	4/23/2018	5/10/2018
N029942-005C	MW-32-035-Q218	Groundwater	4/23/2018 3:23:00 PM	4/23/2018	5/10/2018
N029942-006A	MW-32-035-EB-Q218	Groundwater	4/23/2018 2:55:00 PM	4/23/2018	5/10/2018
N029942-007A	MW-22-Q218	Groundwater	4/23/2018 2:18:00 PM	4/23/2018	5/10/2018
N029942-007B	MW-22-Q218	Groundwater	4/23/2018 2:18:00 PM	4/23/2018	5/10/2018
N029942-007C	MW-22-Q218	Groundwater	4/23/2018 2:18:00 PM	4/23/2018	5/10/2018
N029942-008A	MW-701-Q218	Groundwater	4/23/2018 3:30:00 PM	4/23/2018	5/10/2018

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52D-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:04:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180424A**	QC Batch: **R123595**			PrepDate			Analyst: **LR**
Specific Conductance	20000	0.10	0.10		umhos/cm	1	4/24/2018 10:15 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52M-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:37:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180424A**	QC Batch: **R123595**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	4/24/2018 10:15 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53D-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 2:14:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180424A** QC Batch: **R123595** PrepDate							Analyst: **LR**
Specific Conductance	24000	0.10	0.10		umhos/cm	1	4/24/2018 10:15 AM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53M-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 1:35:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180424A**	QC Batch: **R123595**			PrepDate			Analyst: **LR**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	4/24/2018 10:15 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-32-035-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:23:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180424A**	QC Batch: **R123595**			PrepDate			Analyst: **LR**
Specific Conductance	8100	0.10	0.10		umhos/cm	1	4/24/2018 10:15 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-22-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 2:18:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180424A** QC Batch: **R123595** PrepDate							Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	4/24/2018 10:15 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N029942-003BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123595**
Client ID: **ZZZZZZ** Batch ID: **R123595** TestNo: **EPA 120.1** Analysis Date: **4/24/2018** SeqNo: **3005492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	23500.000	0.10						23600	0.425	2	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52D-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:04:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180424A** QC Batch: **R123632** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/24/2018 10:28 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180504A** QC Batch: **67847** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	ND	0.65	5.0		µg/L	5	5/4/2018 03:13 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52M-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:37:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180424A**	QC Batch: **R123632**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/24/2018 10:48 AM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180509A**	QC Batch: **67847**			PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	ND	0.65	5.0		µg/L	5	5/9/2018 11:45 AM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53D-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 2:14:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180424A** QC Batch: **R123632** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/24/2018 11:07 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180509A** QC Batch: **67847** PrepDate **4/26/2018** Analyst: **CEI**							
Chromium	ND	0.13	1.0		µg/L	1	5/9/2018 11:51 AM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53M-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 1:35:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180424A**	QC Batch: **R123632**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/24/2018 01:30 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180509A**	QC Batch: **67847**			PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/9/2018 12:07 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-32-035-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:23:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180424A** QC Batch: **R123632** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/24/2018 12:04 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180509A** QC Batch: **67847** PrepDate **4/26/2018** Analyst: **CEI**							
Chromium	ND	0.13	1.0		µg/L	1	5/9/2018 12:25 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-32-035-EB-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 2:55:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180424A** QC Batch: **R123632** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/24/2018 12:23 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-22-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 2:18:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180424A**	QC Batch: **R123632**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/24/2018 12:42 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180509A**	QC Batch: **67847**			PrepDate		**4/26/2018**	Analyst: **CEI**
Chromium	ND	0.65	5.0		µg/L	5	5/9/2018 12:53 PM

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

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-701-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180424A** QC Batch: **R123632** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/24/2018 01:01 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123632** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **PBW** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007898**

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

Sample ID **LCS-R123632** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **LCSW** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.223	0.20	5.000	0	104	90	110				

Sample ID **N029942-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007901**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.555	1.0	5.000	0	91.1	90	110				

Sample ID **N029942-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007903**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.694	1.0	5.000	0	93.9	90	110				

Sample ID **N029942-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007905**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.561	1.0	5.000	0	91.2	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N029942-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.039	1.0	5.000	0	101	90	110				

Sample ID **N029942-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.068	0.20	1.000	0	107	90	110				

Sample ID **N029942-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.079	1.0	5.000	0	102	90	110				

Sample ID **N029942-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID **N029942-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.617	1.0	5.000	0	92.3	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N029942-005ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007920**

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

Sample ID **N029942-007AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.042	1.0	5.000	0	101	90	110	5.079	0.741	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-67847** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **PBW** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3017977**

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

Sample ID **LCS-67847** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **LCSW** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3017978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.763	1.0	10.00	0	108	85	115				

Sample ID **N029906-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3017982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	177.212	1.0	10.00	169.0	81.9	75	125				

Sample ID **N029906-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3017983**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	178.048	1.0	10.00	169.0	90.3	75	125	177.2	0.471	20	

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52D-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:04:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-001		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180504A** QC Batch: **67847** PrepDate **4/26/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	4.1	0.41	0.50		µg/L	5	5/4/2018 03:13 PM
Manganese	260	1.3	2.5		µg/L	5	5/4/2018 03:13 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52M-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:37:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180509A**	QC Batch: **67847**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	0.98	0.41	0.50		µg/L	5	5/9/2018 11:45 AM
Manganese	160	1.3	2.5		µg/L	5	5/9/2018 11:45 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53D-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 2:14:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180509A**	QC Batch: **67847**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	2.9	0.081	0.10		µg/L	1	5/9/2018 11:51 AM
Manganese	1400	2.6	5.0		µg/L	10	5/9/2018 12:02 PM

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53M-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 1:35:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180509A**	QC Batch: **67847**			PrepDate		**4/26/2018**	Analyst: **CEI**
Arsenic	4.8	0.41	0.50		µg/L	5	5/9/2018 12:13 PM
Manganese	400	1.3	2.5		µg/L	5	5/9/2018 12:13 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-32-035-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 3:23:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180509A**	QC Batch: **67847**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	5.9	0.081	0.10		µg/L	1	5/9/2018 12:25 PM
Manganese	1200	2.6	5.0		µg/L	10	5/9/2018 12:36 PM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *10-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-22-Q218
Lab Order:	N029942	**Collection Date:**	4/23/2018 2:18:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029942-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180509A**	QC Batch: **67847**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	14	0.41	0.50		µg/L	5	5/9/2018 12:53 PM
Manganese	1700	6.4	12		µg/L	25	5/9/2018 01:04 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-67847** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **PBW** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3018038**

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

Sample ID **LCS-67847** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **LCSW** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3018039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.993	0.10	10.00	0	110	85	115				
Manganese	101.532	0.50	100.0	0	102	85	115				

Sample ID **N029906-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3018043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.125	0.10	10.00	1.171	110	75	125				

Sample ID **N029906-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3018044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.027	0.10	10.00	1.171	109	75	125	12.12	0.810	20	

Sample ID **N029906-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3018047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	419.827	2.5	100.0	305.3	114	75	125				

Qualifiers:

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N029906-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3018050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	415.460	2.5	100.0	305.3	110	75	125	419.8	1.05	20	

Qualifiers:

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

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

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

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com, daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: Date: 4/23/2018	Sampled By: ~~Gantt Jeffers~~ Jason Maher	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	
Project Name: PG&E Topock - GMP	Signature: Date: 4/23/2018	
Project Number: RC000753.0801		

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

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling: 1c		
Sample Temp: 2-9 2		
Courier:		
Tracking No.:		

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	250 mL poly: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	2x250 mL poly: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	1 liter poly: Bromide, Sulfate, Chloride (EPA 300.0)	1 liter poly: Specific Conductance (EPA 120.1)	1 liter poly: Total Dissolved Solids (SM92540)	1 liter poly: Alkalinity, Total as CaCO3 (SM2320B)	125 mL poly: Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4	500 mL poly: Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3	500 mL poly: Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3	500 mL poly: Dissolved metals (SW6010B FF) (Cr); HNO3	500 mL poly: Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N029942 - 01	MW-52D-Q218	4/23/2018	15:04			X		X							X	E	4	P		
2	- 02	MW-52M-Q218	4/23/2018	15:37			X		X							X	E	4	P		
3	- 03	MW-53D-Q218	4/23/2018	14:14			X		X							X	E	4	P		
4	- 04	MW-53M-Q218	4/23/2018	13:35			X		X							X	E	4	P		
5	- 05	MW-32-035-Q218	4/23/2018	15:23			X		X							X	E	4	P		
6	- 06	MW-32-035-EB-Q218	4/23/2018	14:55		X											E	1	P		
7	- 07	MW-22-Q218	4/23/2018	14:18		X			X							X	E	3	P		
8	- 08	MW-701-Q218	4/23/2018	15:30		X											E	1	P		
9																					
10																					

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	4/23/18 1606		4/23/18 1806
	4/23/18 1810		4/23/18 1810

Turn Around Time (TAT)

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

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

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

Preservatives:

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

Container Type:

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

ASSET Laboratories

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

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

Cooler Received/Opened On: 4/23/2018 Workorder: N029942

Rep sample Temp (Deg C): 2.9 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

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

Sample Receipt Checklist

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

Comments:

Checklist Completed By: YR For: YLT 4/26/2018

Reviewed By: [signature] 04/30/2018

ASSET Laboratories

WORK ORDER Summary

24-Apr-18

WorkOrder: N029942

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/23/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029942-001A	MW-52D-Q218	4/23/2018 3:04:00 PM	5/7/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029942-001B			5/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029942-001C			5/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029942-002A	MW-52M-Q218	4/23/2018 3:37:00 PM	5/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029942-002B			5/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029942-002C			5/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029942-003A	MW-53D-Q218	4/23/2018 2:14:00 PM	5/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029942-003B			5/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029942-003C			5/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029942-004A	MW-53M-Q218	4/23/2018 1:35:00 PM	5/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029942-004B			5/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029942-004C			5/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029942-005A	MW-32-035-Q218	4/23/2018 3:23:00 PM	5/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029942-005B			5/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

24-Apr-18

WorkOrder: N029942

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/23/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029942-005C	MW-32-035-Q218	4/23/2018 3:23:00 PM	5/7/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029942-006A	MW-32-035-EB-Q218	4/23/2018 2:55:00 PM	5/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029942-007A	MW-22-Q218	4/23/2018 2:18:00 PM	5/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029942-007B			5/7/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029942-007C			5/7/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/7/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029942-008A	MW-701-Q218	4/23/2018 3:30:00 PM	5/7/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029942-009A	FOLDER	5/7/2018	5/7/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/7/2018		Folder	Folder	☐	☐	☐	LAB
			5/7/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N029942

NAME	TEST METHOD
Claire Ignacio	EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123595 **Analyst:** LSR

ASSET #: N029942 **Date Analyzed:** 4/24/2018

Method: EPA 120.1

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer Julia Ramit Date: 5/1/2018

2nd Level Reviewer Nancy 5/7/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: 4/24/18 1015
Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV-180108A	9.95 @25.6°C	% Rec: (90-110%)
1412	180131A	1437 @25.5°C	
9987	180108B	10060 @25.4°C	
99601	180201A	100800 @25.4°C	

	Sample ID	Matrix	Reading	Comments
1	N029711-001A	H_2O	382 @24.0°C	
2	1ADUP		384 @23.9°C	
3	N029942-001B		19790 @22.8°C	19790
4	2B		14450 @22.8°C	
5	3B		23600 @22.5°C	
6	4B		18140 @22.4°C	
7	5B		8140 @22.7°C	
8	3B DUP		23500 @22.2°C	
9	7B		10150 @22.8°C	
10	1413 uS/cm	CINV-171121C	1440 @25.8°C	2%
Dup	10,000	180108C	9990 @25.8°C	Accept: ~~10% water, 20% soil~~ 4/24/18 LSR
	Std Chk: 99672	171215A	98000 @25.8°C	% Rec: (90-110%)

Julia Ramit 5/1/2018

Date: 4/25/18 1000
Analyst: LSR

Standard	Std ID	Reading	Comments
9.65	CINV-180108A	9.78 @25.2°C	% Rec: (90-110%)
1412	180131A	1423 @25.4°C	
9987	180108B	9930 @25.4°C	
99601	180201A	99400 @25.4°C	

	Sample ID	Matrix	Reading	Comments
1	N029973-001B	H_2O	11900 @21.1°C	
2	1B DUP		11920 @20.9°C	
3	2B		931 @21.3°C	
4	4B		1960 @21.0°C	1413 - CINV171121C
5	6B		4270 @21.3°C	= 1439 @25.3°C
6	7B		5710 @21.5°C	10,000 - CINV180108C
7	8B		18820 @21.7°C	= 10060 @25.4°C
8	9B		9410 @21.5°C	99672 - CINV171215A
9	11B		7380 @21.4°C	= 98900 @25.4°C
10	12B		9060 @21.7°C	
Dup	14B		8850 @21.6°C	Accept: ~~10% water, 20% soil~~ 2% 4/25/18 LSR
	Std Chk:			% Rec: (90-110%)

Logbook # 6

EPA 218.6

IC ARCUS
REV 2.0
011416

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R123632
ASSET #: N029942

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 4/24/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ___________

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

Comments: Dilutions were necessary for N029942-001A to -005A and -007A due to matrix interference.
MS of all mentioned samples and RT of N029942-007AMS failed at 1X.

SECOND LEVEL REVIEW:

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

1st Level Reviewer rba Date: 4/26/2018

2nd Level Reviewer Nancy 5/7/2018 Date:

SAMPLE CALCULATION

Sample Calculation

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

FORMULA:

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

Cr^{+6} ,µg/L = A * DF

where:

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

For Sample **N029942-001A** , the concentration in µg/L is calculated as follows:

Cr^{+6} ,µg/L = 0.0000 * 5

Cr^{+6} ,µg/L = 0.0000

Since PQL is 1 µg/L,

Cr^{+6} ,µg/L = ND

ANALYSIS RUN LOG

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

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

INJECTION LOG: 180402B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	ICV	ICV	1	Hexavalent Chromium	04/02/18 1:50 PM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/02/18 2:01 PM	Reported
13	ICB	ICB	1	Hexavalent Chromium	04/02/18 2:18 PM	Reported
14	MB-R123054	MBLK	1	Hexavalent Chromium	04/02/18 2:30 PM	Reported
15	LCS-R123054	LCS	1	Hexavalent Chromium	04/02/18 2:39 PM	Reported
16	N029480-001A	SAMP	1	Hexavalent Chromium	04/02/18 2:49 PM	Not Reported
17	N029443-001G	SAMP	1	Hexavalent Chromium	04/02/18 2:58 PM	Reported
18	N029444-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:08 PM	Reported
19	N029445-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:17 PM	Reported
20	N029446-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:27 PM	Reported
21	N029480-001A	SAMP	5	Hexavalent Chromium	04/02/18 3:36 PM	Reported
22	N029480-002A	SAMP	5	Hexavalent Chromium	04/02/18 3:45 PM	Reported
23	N029480-001ADUP	DUP	5	Hexavalent Chromium	04/02/18 3:55 PM	Reported
24	CCV-1	CCV1	1	Hexavalent Chromium	04/02/18 4:04 PM	Reported
25	CCB-1	CCB	1	Hexavalent Chromium	04/02/18 4:14 PM	Reported
26	N029480-001AMS	MS	5	Hexavalent Chromium	04/02/18 4:23 PM	Reported
27	N029480-001AMSD	MSD	5	Hexavalent Chromium	04/02/18 4:33 PM	Reported
28	CCV-2	CCV	1	Hexavalent Chromium	04/02/18 4:42 PM	Reported
29	CCB-2	CCB	1	Hexavalent Chromium	04/02/18 4:52 PM	Reported

rba 4/3/2018

Injection Log Summary

Sequence Details

Name:	**IC-07_180402B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**02/Apr/18 17:22:28**
No. of Injections:	**32**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	ICV,ICV,1,	11	1000	Unknown		04/02/2018 13:50	Finished	ICV @5ppb, IWST-180129B
12	PQL@0.2ppb,CCV2,1	12	1000	Unknown		04/02/2018 14:01	Finished	PQL @ 0.2ppb
13	ICB,ICB,1,	13	1000	Unknown		04/02/2018 14:18	Finished	ICB R180329A
14	MB-H2O,MBLK,1,	14	1000	Unknown		04/02/2018 14:30	Finished	MB R180302A
15	LCS-H2O,LCS,1,	15	1000	Unknown		04/02/2018 14:39	Finished	LCS, IWST-180129B
16	N029480-001A,SAMF	16	1000	Unknown		04/02/2018 14:49	Finished	SAMP,10mL
17	N029443-001G,SAMF	17	1000	Unknown		04/02/2018 14:58	Finished	SAMP,10mL
18	N029444-001G,SAMF	18	1000	Unknown		04/02/2018 15:08	Finished	SAMP,10mL
19	N029445-001G,SAMF	19	1000	Unknown		04/02/2018 15:17	Finished	SAMP,10mL
20	N029446-001G,SAMF	20	1000	Unknown		04/02/2018 15:27	Finished	SAMP,10mL
21	N029480-001A,SAMF	21	1000	Unknown		04/02/2018 15:36	Finished	SAMP,2>10mL
22	N029480-002A,SAMF	22	1000	Unknown		04/02/2018 15:45	Finished	SAMP,2>10mL
23	N029480-001ADUP,D	23	1000	Unknown		04/02/2018 15:55	Finished	DUP,2>10mL
24	CCV-1,CCV1,1,	24	1000	Unknown		04/02/2018 16:04	Finished	CCV @10ppb, IWST-180129A
25	CCB-1,CCB,1,	25	1000	Unknown		04/02/2018 16:14	Finished	CCB R180302A
26	N029480-001AMS,MS	26	1000	Unknown		04/02/2018 16:23	Finished	SAMP,10mL
27	N029480-001AMSD,M	27	1000	Unknown		04/02/2018 16:33	Finished	MS (1ppb), IWST-180129B,1>1
28	CCV-2,CCV,1,	28	1000	Unknown		04/02/2018 16:42	Finished	CCV @5ppb, IWST-180129A
29	CCB-2,CCB,1,	29	1000	Unknown		04/02/2018 16:52	Finished	CCB R180302A
30	SHUTDOWN	30	1000	Unknown		04/02/2018 17:01	Finished	
31	Eluent: R180402B	31	1000	Unknown		n.a.	Finished	Eluent
32	PCR: R180402C	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 4/3/2018

INJECTION LOG: 180424A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	04/24/18 8:54 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	04/24/18 9:04 AM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	04/24/18 9:14 AM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/24/18 9:23 AM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	04/24/18 9:33 AM	Not Reported
16	CCB-1	CCB	1	Hexavalent Chromium	04/24/18 9:56 AM	Reported
17	MB-R123632	MBLK	1	Hexavalent Chromium	04/24/18 10:07 AM	Reported
18	LCS-R123632	LCS	1	Hexavalent Chromium	04/24/18 10:17 AM	Reported
19	N029942-001A	SAMP	5	Hexavalent Chromium	04/24/18 10:28 AM	Reported
20	N029942-001AMS	MS	5	Hexavalent Chromium	04/24/18 10:39 AM	Reported
21	N029942-002A	SAMP	5	Hexavalent Chromium	04/24/18 10:48 AM	Reported
22	N029942-002AMS	MS	5	Hexavalent Chromium	04/24/18 10:58 AM	Reported
23	N029942-003A	SAMP	5	Hexavalent Chromium	04/24/18 11:07 AM	Reported
24	N029942-003AMS	MS	5	Hexavalent Chromium	04/24/18 11:17 AM	Reported
25	N029942-004A	SAMP	1	Hexavalent Chromium	04/24/18 11:26 AM	Not Reported
26	N029942-004AMS	MS	1	Hexavalent Chromium	04/24/18 11:36 AM	Not Reported
27	CCV-2	CCV1	1	Hexavalent Chromium	04/24/18 11:45 AM	Reported
28	CCB-2	CCB	1	Hexavalent Chromium	04/24/18 11:55 AM	Reported
29	N029942-005A	SAMP	5	Hexavalent Chromium	04/24/18 12:04 PM	Reported
30	N029942-005AMS	MS	5	Hexavalent Chromium	04/24/18 12:14 PM	Reported
31	N029942-006A	SAMP	1	Hexavalent Chromium	04/24/18 12:23 PM	Reported
32	N029942-006AMS	MS	1	Hexavalent Chromium	04/24/18 12:33 PM	Reported
33	N029942-007A	SAMP	5	Hexavalent Chromium	04/24/18 12:42 PM	Reported
34	N029942-007AMS	MS	5	Hexavalent Chromium	04/24/18 12:51 PM	Reported
35	N029942-008A	SAMP	1	Hexavalent Chromium	04/24/18 1:01 PM	Reported
36	N029942-008AMS	MS	1	Hexavalent Chromium	04/24/18 1:10 PM	Reported
37	N029942-004A	SAMP	5	Hexavalent Chromium	04/24/18 1:30 PM	Reported
38	N029942-004AMS	MS	5	Hexavalent Chromium	04/24/18 1:41 PM	Reported
39	CCV-3	CCV	1	Hexavalent Chromium	04/24/18 1:51 PM	Reported
40	CCB-3	CCB	1	Hexavalent Chromium	04/24/18 2:00 PM	Reported
41	N029942-005ADUP	DUP	5	Hexavalent Chromium	04/24/18 2:10 PM	Reported
42	N029942-007AMSD	MSD	5	Hexavalent Chromium	04/24/18 2:19 PM	Reported

INJECTION LOG: 180424A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N029942-001A	SAMP	1	Hexavalent Chromium	04/24/18 2:29 PM	Not Reported
44	N029942-001AMS	MS	1	Hexavalent Chromium	04/24/18 2:38 PM	Not Reported
45	N029942-002A	SAMP	1	Hexavalent Chromium	04/24/18 2:48 PM	Not Reported
46	N029942-002AMS	MS	1	Hexavalent Chromium	04/24/18 2:57 PM	Not Reported
47	N029942-003A	SAMP	1	Hexavalent Chromium	04/24/18 3:06 PM	Not Reported
48	N029942-003AMS	MS	1	Hexavalent Chromium	04/24/18 3:16 PM	Not Reported
49	N029942-005A	SAMP	1	Hexavalent Chromium	04/24/18 3:25 PM	Not Reported
50	N029942-005AMS	MS	1	Hexavalent Chromium	04/24/18 3:35 PM	Not Reported
51	CCV-4	CCV1	1	Hexavalent Chromium	04/24/18 3:44 PM	Reported
52	CCB-4	CCB	1	Hexavalent Chromium	04/24/18 3:54 PM	Reported
53	N029942-007A	SAMP	1	Hexavalent Chromium	04/24/18 4:03 PM	Not Reported
54	N029942-007AMS	MS	1	Hexavalent Chromium	04/24/18 4:13 PM	Not Reported
55	N029719-005A	SAMP	1	Hexavalent Chromium	04/24/18 4:22 PM	Not Reported
56	N029719-005AMS	MS	1	Hexavalent Chromium	04/24/18 4:32 PM	Not Reported
57	N029720-008A	SAMP	1	Hexavalent Chromium	04/24/18 4:41 PM	Not Reported
58	N029720-008AMS	MS	1	Hexavalent Chromium	04/24/18 4:51 PM	Not Reported
59	N029720-009A	SAMP	1	Hexavalent Chromium	04/24/18 5:00 PM	Not Reported
60	N029720-009AMS	MS	1	Hexavalent Chromium	04/24/18 5:09 PM	Not Reported
61	N029721-001A	SAMP	1	Hexavalent Chromium	04/24/18 5:19 PM	Not Reported
62	N029721-001AMS	MS	1	Hexavalent Chromium	04/24/18 5:28 PM	Not Reported
63	CCV-5	CCV	1	Hexavalent Chromium	04/24/18 5:38 PM	Reported
64	CCB-5	CCB	1	Hexavalent Chromium	04/24/18 5:47 PM	Reported
65	N029721-004A	SAMP	1	Hexavalent Chromium	04/24/18 5:57 PM	Not Reported
66	N029721-004AMS	MS	1	Hexavalent Chromium	04/24/18 6:06 PM	Not Reported
67	N029721-010A	SAMP	1	Hexavalent Chromium	04/24/18 6:16 PM	Not Reported
68	N029721-010AMS	MS	1	Hexavalent Chromium	04/24/18 6:25 PM	Not Reported
69	N029721-013A	SAMP	1	Hexavalent Chromium	04/24/18 6:35 PM	Not Reported
70	N029721-013AMS	MS	1	Hexavalent Chromium	04/24/18 6:44 PM	Not Reported
71	CCV-6	CCV	1	Hexavalent Chromium	04/24/18 6:54 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	04/24/18 7:03 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180424A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**24/Apr/18 19:33:50**
No. of Injections:	**75**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	BLANK	1	1000	Unknown		04/24/2018 08:54	Finished	BLANK
12	BLANK	2	1000	Unknown		04/24/2018 09:04	Finished	BLANK
13	CCV-1,CCV,1,	3	1000	Unknown		04/24/2018 09:14	Finished	CCV @5ppb, IWST-180129A
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		04/24/2018 09:23	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		04/24/2018 09:33	Finished	CCB R180409B
16	CCB-1,CCB,1,	5	1000	Unknown		04/24/2018 09:56	Finished	CCB R180418A
17	MB-H2O,MBLK,1,	6	1000	Unknown		04/24/2018 10:07	Finished	MB R180418A
18	LCS-H2O,LCS,1,	7	1000	Unknown		04/24/2018 10:17	Finished	LCS, IWST-180129B
19	N029942-001A,SAMP	9	1000	Unknown		04/24/2018 10:28	Finished	SAMP,2>10mL
20	N029942-001AMS,MS	10	1000	Unknown		04/24/2018 10:39	Finished	MS (1ppb), IWST-180129B,2>1
21	N029942-002A,SAMP	11	1000	Unknown		04/24/2018 10:48	Finished	SAMP,2>10mL
22	N029942-002AMS,MS	12	1000	Unknown		04/24/2018 10:58	Finished	MS (1ppb), IWST-180129B,2>1
23	N029942-003A,SAMP	13	1000	Unknown		04/24/2018 11:07	Finished	SAMP,2>10mL
24	N029942-003AMS,MS	14	1000	Unknown		04/24/2018 11:17	Finished	MS (1ppb), IWST-180129B,2>1
25	N029942-004A,SAMP	15	1000	Unknown		04/24/2018 11:26	Finished	SAMP,10mL
26	N029942-004AMS,MS	16	1000	Unknown		04/24/2018 11:36	Finished	MS (1ppb), IWST-180129B,10
27	CCV-2,CCV1,1,	17	1000	Unknown		04/24/2018 11:45	Finished	CCV @10ppb, IWST-180129A
28	CCB-2,CCB,1,	18	1000	Unknown		04/24/2018 11:55	Finished	CCB R180418A
29	N029942-005A,SAMP	19	1000	Unknown		04/24/2018 12:04	Finished	SAMP,2>10mL
30	N029942-005AMS,MS	20	1000	Unknown		04/24/2018 12:14	Finished	MS (1ppb), IWST-180129B,2>1
31	N029942-006A,SAMP	21	1000	Unknown		04/24/2018 12:23	Finished	SAMP,10mL
32	N029942-006AMS,MS	22	1000	Unknown		04/24/2018 12:33	Finished	MS (1ppb), IWST-180129B,10
33	N029942-007A,SAMP	23	1000	Unknown		04/24/2018 12:42	Finished	SAMP,2>10mL
34	N029942-007AMS,MS	24	1000	Unknown		04/24/2018 12:51	Finished	MS (1ppb), IWST-180129B,2>1
35	N029942-008A,SAMP	25	1000	Unknown		04/24/2018 13:01	Finished	SAMP,10mL
36	N029942-008AMS,MS	26	1000	Unknown		04/24/2018 13:10	Finished	MS (1ppb), IWST-180129B,10
37	N029942-004A,SAMP	1	1000	Unknown		04/24/2018 13:30	Finished	SAMP,2>10mL
38	N029942-004AMS,MS	2	1000	Unknown		04/24/2018 13:41	Finished	MS (1ppb), IWST-180129B,2>1
39	CCV-3,CCV,1,	3	1000	Unknown		04/24/2018 13:51	Finished	CCV @5ppb, IWST-180129A
40	CCB-3,CCB,1,	4	1000	Unknown		04/24/2018 14:00	Finished	CCB R180418A
41	N029942-005ADUP,D	5	1000	Unknown		04/24/2018 14:10	Finished	DUP,2>10mL
42	N029942-007AMSD,M	6	1000	Unknown		04/24/2018 14:19	Finished	MSD (1ppb), IWST-180129B,2>
43	N029942-001A,SAMP	7	1000	Unknown		04/24/2018 14:29	Finished	SAMP,10mL
44	N029942-001AMS,MS	8	1000	Unknown		04/24/2018 14:38	Finished	MS (1ppb), IWST-180129B,10
45	N029942-002A,SAMP	9	1000	Unknown		04/24/2018 14:48	Finished	SAMP,10mL
46	N029942-002AMS,MS	10	1000	Unknown		04/24/2018 14:57	Finished	MS (1ppb), IWST-180129B,10
47	N029942-003A,SAMP	11	1000	Unknown		04/24/2018 15:06	Finished	SAMP,10mL
48	N029942-003AMS,MS	12	1000	Unknown		04/24/2018 15:16	Finished	MS (1ppb), IWST-180129B,10
49	N029942-005A,SAMP	13	1000	Unknown		04/24/2018 15:25	Finished	SAMP,10mL
50	N029942-005AMS,MS	14	1000	Unknown		04/24/2018 15:35	Finished	MS (1ppb), IWST-180129B,10
51	CCV-4,CCV1,1,	15	1000	Unknown		04/24/2018 15:44	Finished	CCV @10ppb, IWST-180129A
52	CCB-4,CCB,1,	16	1000	Unknown		04/24/2018 15:54	Finished	CCB R180418A
53	N029942-007A,SAMP	17	1000	Unknown		04/24/2018 16:03	Finished	SAMP,10mL
54	N029942-007AMS,MS	18	1000	Unknown		04/24/2018 16:13	Finished	MS (1ppb), IWST-180129B,10
55	N029719-005A,SAMP	19	1000	Unknown		04/24/2018 16:22	Finished	SAMP,10mL
56	N029719-005AMS,MS	20	1000	Unknown		04/24/2018 16:32	Finished	MS (5ppb), IWST-180129B,10
57	N029720-008A,SAMP	21	1000	Unknown		04/24/2018 16:41	Finished	SAMP,10mL
58	N029720-008AMS,MS	22	1000	Unknown		04/24/2018 16:51	Finished	MS (5ppb), IWST-180129B,10
59	N029720-009A,SAMP	23	1000	Unknown		04/24/2018 17:00	Finished	SAMP,10mL
60	N029720-009AMS,MS	24	1000	Unknown		04/24/2018 17:09	Finished	MS (5ppb), IWST-180129B,10

61	N029721-001A,SAMF	25	1000	Unknown		04/24/2018 17:19	Finished	SAMP,10mL
62	N029721-001AMS,M\$	26	1000	Unknown		04/24/2018 17:28	Finished	MS (5ppb), IWST-180129B,10
63	CCV-5,CCV,1,	27	1000	Unknown		04/24/2018 17:38	Finished	CCV @5ppb, IWST-180129A
64	CCB-5,CCB,1,	28	1000	Unknown		04/24/2018 17:47	Finished	CCB R180409B
65	N029721-004A,SAMF	29	1000	Unknown		04/24/2018 17:57	Finished	SAMP,10mL
66	N029721-004AMS,M\$	30	1000	Unknown		04/24/2018 18:06	Finished	MS (5ppb), IWST-180129B,10
67	N029721-010A,SAMF	31	1000	Unknown		04/24/2018 18:16	Finished	SAMP,10mL
68	N029721-010AMS,M\$	32	1000	Unknown		04/24/2018 18:25	Finished	MS (5ppb), IWST-180129B,10
69	N029721-013A,SAMF	33	1000	Unknown		04/24/2018 18:35	Finished	SAMP,10mL
70	N029721-013AMS,M\$	34	1000	Unknown		04/24/2018 18:44	Finished	MS (5ppb), IWST-180129B,10
71	CCV-6,CCV,1,	35	1000	Unknown		04/24/2018 18:54	Finished	CCV @10ppb, IWST-180129A
72	CCB-6,CCB,1,	36	1000	Unknown		04/24/2018 19:03	Finished	CCB R180316A
73	SHUTDOWN	37	1000	Unknown		04/24/2018 19:12	Finished	
74	Eluent: R180424A	38	1000	Unknown		n.a.	Finished	Eluent
75	PCR: R180423B	39	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 4/23/18
Time Prepared: 0 1450 H
Prepared By: MDA

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: N1804 23A
NH4OH + NH4SO4 buffer: N180316A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N029939-001A	7.22	9.45	~250 ml	~250 ml	+5ml N180316A	
2)	2A	7.39	9.39				
3)	3A	7.45	9.50				
4)	4A	7.71	9.44				
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 4/24/18
Time Prepared: 0901H
Prepared By: MDA

Slope: 98.92
pH4: 4.00 @25.0°C
7: 7.00 @25.0°C
10: 6.99 @25.0°C
W: 7.02 @25.0°C

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: N1804 24A
NH4OH + NH4SO4 buffer: N180418A

6N NaOH: N171229A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N029942-001A	9.45	-	~250ml	~250ml		1/2
2)	1A	9.43	-				2/2
3)	2A	9.45	-				1/2
4)	2A	9.39	-				2/2
5)	3A	9.48	-				1/2
6)	3A	9.52	-				2/2
7)	4A	9.54	-				1/2
8)	4A	9.53					2/2
9)	5A	8.72	9.34			+9drops NaOH	1/2
10)	5A	8.53	9.43			+10 " "	2/2
11)	6A	9.61	-				
12)	7A	8.33	9.31			+10 " "	
13)	8A	9.58	-				
14)							
15)							

Logbook No. 14

rba 4/26/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/2/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0611	0.2744	1.2772	2.5376	3.7905	5.0743	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

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

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ICV** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **3007892**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.068	0.20	5.000	0	101	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **3007893**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.240	0.20	0.2000	0	120	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **CCV** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.057	0.20	5.000	0	101	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.206	0.20	0.2000	0	103	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.983	0.20	10.00	0	99.8	95	105				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **CCV** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.067	0.20	5.000	0	101	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.164	0.20	10.00	0	102	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **CCV** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.013	0.20	5.000	0	100	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ZZZZZZ** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.041	0.20	10.00	0	100	95	105				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **ICB** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **3007894**

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

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **CCB** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007897**

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

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **CCB** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007907**

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

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **CCB** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007919**

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

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **CCB** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007923**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **CCB** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007925**

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

Sample ID **CCB-6** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123632**
Client ID: **CCB** Batch ID: **R123632** TestNo: **EPA 218.6** Analysis Date: **4/24/2018** SeqNo: **3007927**

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

Qualifiers:

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/24/2018

Sample Name	Retention Time	Evaluation
ICV	4.140	
CCV-1	4.248	
CCV-2	4.256	
CCV-3	4.256	
CCV-4	4.256	
CCV-5	4.256	
CCV-6	4.248	

Average	4.253	
Actual RT Window	4.173 -	4.333
Applied RT Window	4.053 -	4.453

MB-R123632	N.A.	N.A.
LCS-R123632	4.256	PASS
N029942-001A	N.A.	N.A.
N029942-001AMS	4.173	PASS
N029942-002A	N.A.	N.A.
N029942-002AMS	4.198	PASS
N029942-003A	N.A.	N.A.
N029942-003AMS	4.148	PASS
N029942-004A	N.A.	N.A.
N029942-004AMS	N.A.	N.A.
N029942-005A	N.A.	N.A.
N029942-005AMS	4.231	PASS
N029942-006A	N.A.	N.A.
N029942-006AMS	4.256	PASS
N029942-007A	N.A.	N.A.
N029942-007AMS	4.223	PASS
N029942-008A	N.A.	N.A.
N029942-008AMS	4.256	PASS
N029942-004A	N.A.	N.A.
N029942-004AMS	4.173	PASS
N029942-005ADUP	N.A.	N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/24/2018

Sample Name	Retention Time		Evaluation
ICV	4.140		
CCV-1	4.248		
CCV-2	4.256		
CCV-3	4.256		
CCV-4	4.256		
CCV-5	4.256		
CCV-6	4.248		
Average	4.253		
Actual RT Window	4.173 -	4.333	
Applied RT Window	4.053 -	4.453	
N029942-007AMSD	4.223		PASS
N029942-001A	N.A.		N.A.
N029942-001AMS	N.A.		N.A.
N029942-002A	N.A.		N.A.
N029942-002AMS	N.A.		N.A.
N029942-003A	N.A.		N.A.
N029942-003AMS	N.A.		N.A.
N029942-005A	N.A.		N.A.
N029942-005AMS	4.098		PASS
N029942-007A	N.A.		N.A.
N029942-007AMS	4.040		FAIL
N029719-005A	4.248		PASS
N029719-005AMS	4.248		PASS
N029720-008A	4.248		PASS
N029720-008AMS	4.248		PASS
N029720-009A	4.223		PASS
N029720-009AMS	4.223		PASS
N029721-001A	4.248		PASS
N029721-001AMS	4.248		PASS
N029721-004A	4.223		PASS
N029721-004AMS	4.223		PASS
N029721-010A	4.248		PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/24/2018

Sample Name	Retention Time		Evaluation
ICV	4.140		
CCV-1	4.248		
CCV-2	4.256		
CCV-3	4.256		
CCV-4	4.256		
CCV-5	4.256		
CCV-6	4.248		
Average	4.253		
Actual RT Window	4.173 -	4.333	
Applied RT Window	4.053 -	4.453	
N029721-010AMS	4.248		PASS
N029721-013A	4.248		PASS
N029721-013AMS	4.248		PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

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

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

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

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

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

LOD & PQL Verification 2018 (1st Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 3/21/2018
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.116

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.201	**100**

INITIAL CALIBRATION

INJECTION LOG: 180402B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	ICV	ICV	1	Hexavalent Chromium	04/02/18 1:50 PM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/02/18 2:01 PM	Reported
13	ICB	ICB	1	Hexavalent Chromium	04/02/18 2:18 PM	Reported
14	MB-R123054	MBLK	1	Hexavalent Chromium	04/02/18 2:30 PM	Reported
15	LCS-R123054	LCS	1	Hexavalent Chromium	04/02/18 2:39 PM	Reported
16	N029480-001A	SAMP	1	Hexavalent Chromium	04/02/18 2:49 PM	Not Reported
17	N029443-001G	SAMP	1	Hexavalent Chromium	04/02/18 2:58 PM	Reported
18	N029444-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:08 PM	Reported
19	N029445-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:17 PM	Reported
20	N029446-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:27 PM	Reported
21	N029480-001A	SAMP	5	Hexavalent Chromium	04/02/18 3:36 PM	Reported
22	N029480-002A	SAMP	5	Hexavalent Chromium	04/02/18 3:45 PM	Reported
23	N029480-001ADUP	DUP	5	Hexavalent Chromium	04/02/18 3:55 PM	Reported
24	CCV-1	CCV1	1	Hexavalent Chromium	04/02/18 4:04 PM	Reported
25	CCB-1	CCB	1	Hexavalent Chromium	04/02/18 4:14 PM	Reported
26	N029480-001AMS	MS	5	Hexavalent Chromium	04/02/18 4:23 PM	Reported
27	N029480-001AMSD	MSD	5	Hexavalent Chromium	04/02/18 4:33 PM	Reported
28	CCV-2	CCV	1	Hexavalent Chromium	04/02/18 4:42 PM	Reported
29	CCB-2	CCB	1	Hexavalent Chromium	04/02/18 4:52 PM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_180402B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**02/Apr/18 17:22:28**
No. of Injections:	**32**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	ICV,ICV,1,	11	1000	Unknown		04/02/2018 13:50	Finished	ICV @5ppb, IWST-180129B
12	PQL@0.2ppb,CCV2,	12	1000	Unknown		04/02/2018 14:01	Finished	PQL @ 0.2ppb
13	ICB,ICB,1,	13	1000	Unknown		04/02/2018 14:18	Finished	ICB R180329A
14	MB-H2O,MBLK,1,	14	1000	Unknown		04/02/2018 14:30	Finished	MB R180302A
15	LCS-H2O,LCS,1,	15	1000	Unknown		04/02/2018 14:39	Finished	LCS, IWST-180129B
16	N029480-001A,SAMP	16	1000	Unknown		04/02/2018 14:49	Finished	SAMP,10mL
17	N029443-001G,SAMP	17	1000	Unknown		04/02/2018 14:58	Finished	SAMP,10mL
18	N029444-001G,SAMP	18	1000	Unknown		04/02/2018 15:08	Finished	SAMP,10mL
19	N029445-001G,SAMP	19	1000	Unknown		04/02/2018 15:17	Finished	SAMP,10mL
20	N029446-001G,SAMP	20	1000	Unknown		04/02/2018 15:27	Finished	SAMP,10mL
21	N029480-001A,SAMP	21	1000	Unknown		04/02/2018 15:36	Finished	SAMP,2>10mL
22	N029480-002A,SAMP	22	1000	Unknown		04/02/2018 15:45	Finished	SAMP,2>10mL
23	N029480-001ADUP,D	23	1000	Unknown		04/02/2018 15:55	Finished	DUP,2>10mL
24	CCV-1,CCV1,1,	24	1000	Unknown		04/02/2018 16:04	Finished	CCV @10ppb, IWST-180129A
25	CCB-1,CCB,1,	25	1000	Unknown		04/02/2018 16:14	Finished	CCB R180302A
26	N029480-001AMS,MS	26	1000	Unknown		04/02/2018 16:23	Finished	SAMP,10mL
27	N029480-001AMSD,M	27	1000	Unknown		04/02/2018 16:33	Finished	MS (1ppb), IWST-180129B,1>1
28	CCV-2,CCV,1,	28	1000	Unknown		04/02/2018 16:42	Finished	CCV @5ppb, IWST-180129A
29	CCB-2,CCB,1,	29	1000	Unknown		04/02/2018 16:52	Finished	CCB R180302A
30	SHUTDOWN	30	1000	Unknown		04/02/2018 17:01	Finished	
31	Eluent: R180402B	31	1000	Unknown		n.a.	Finished	Eluent
32	PCR: R180402C	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

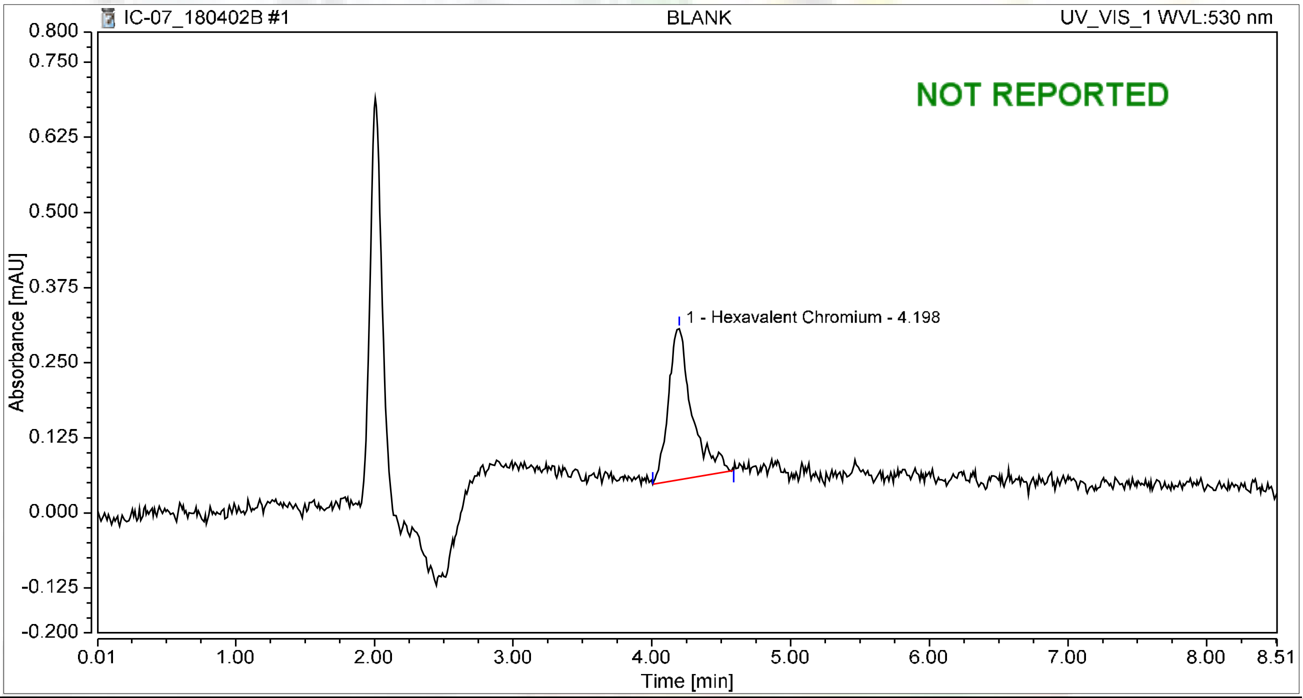
rba 4/3/2018

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 11:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

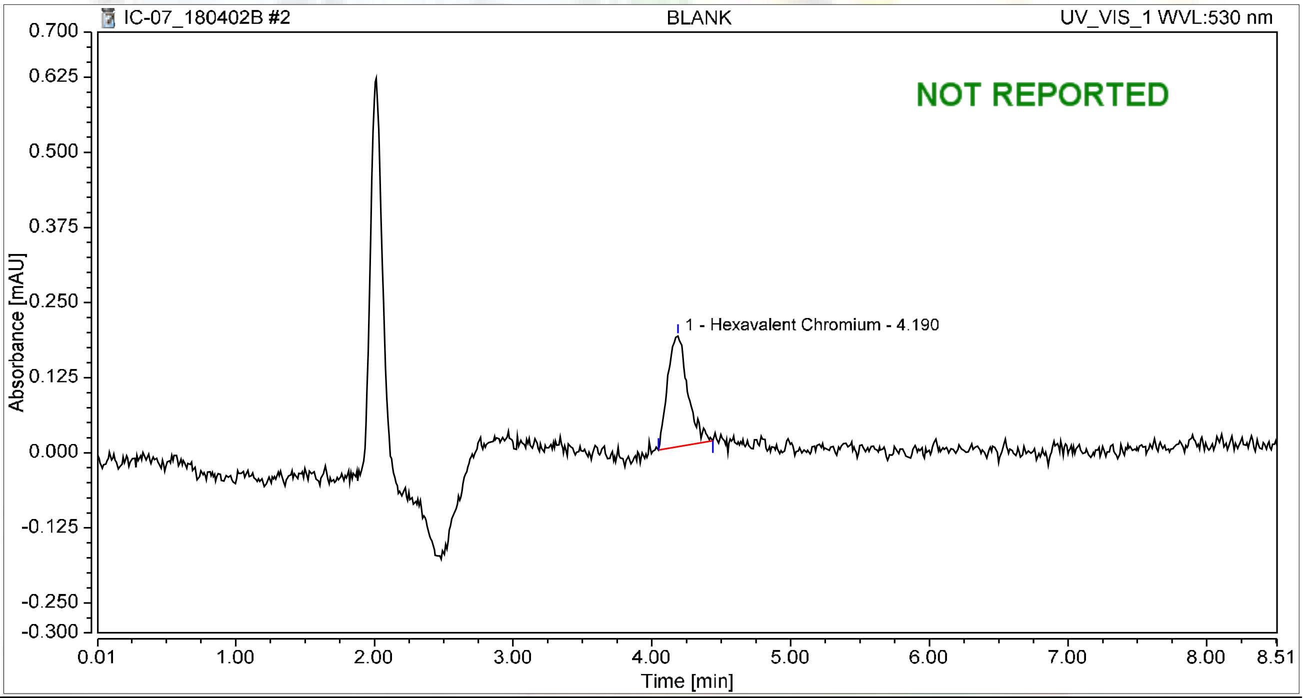
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.050	0.252	100.00	100.00	0.1965
Total:			**0.050**	**0.252**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 11:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

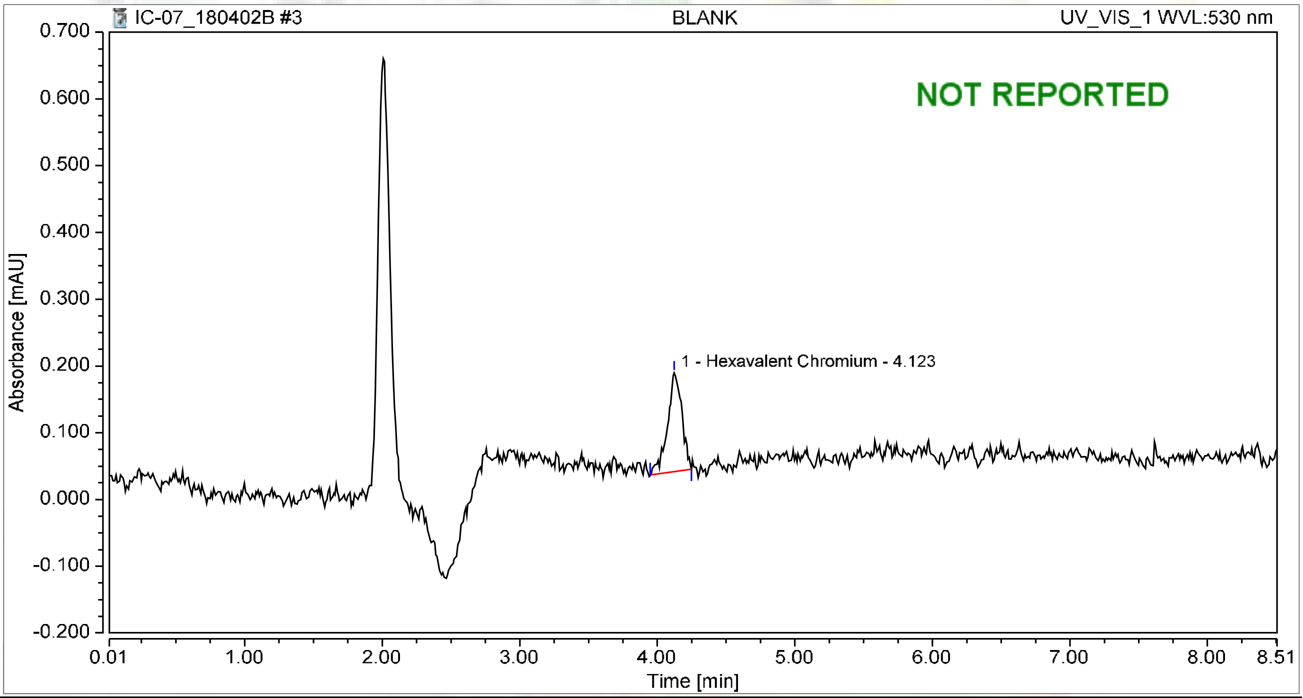
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.031	0.184	100.00	100.00	0.1224
Total:			**0.031**	**0.184**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 11:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

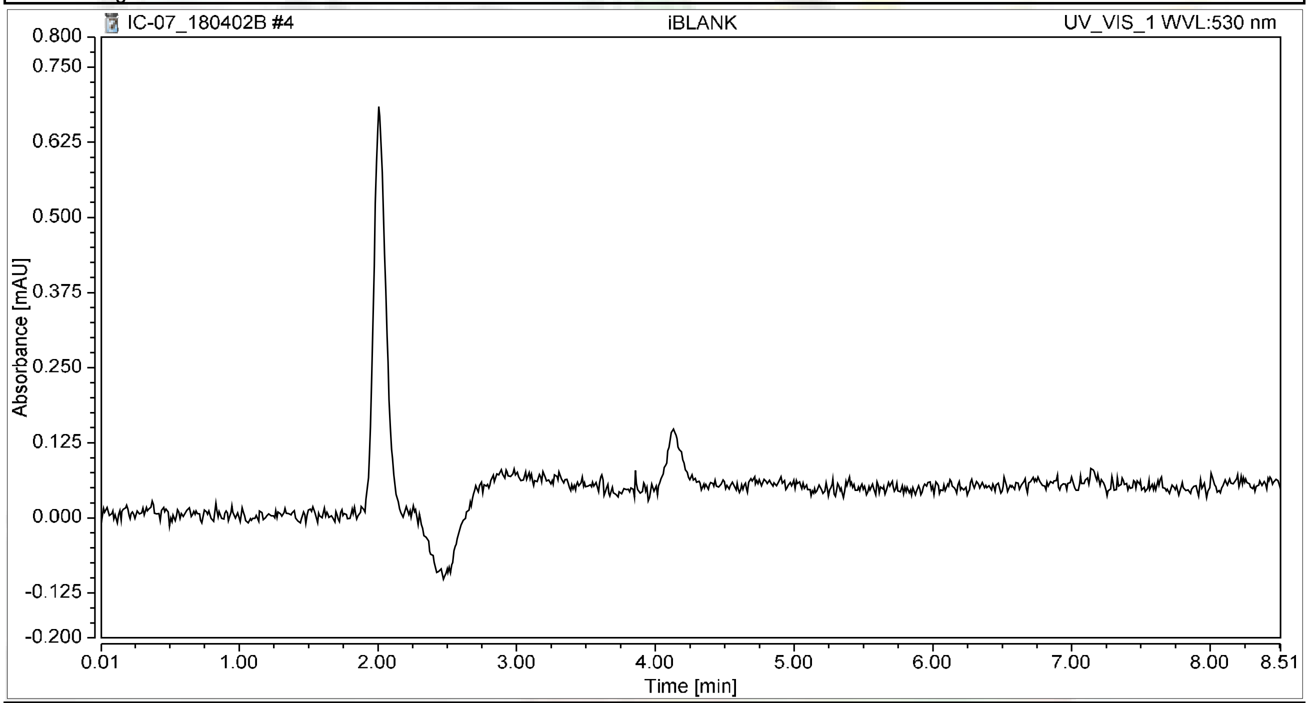
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.018	0.148	100.00	100.00	0.0704
Total:			**0.018**	**0.148**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

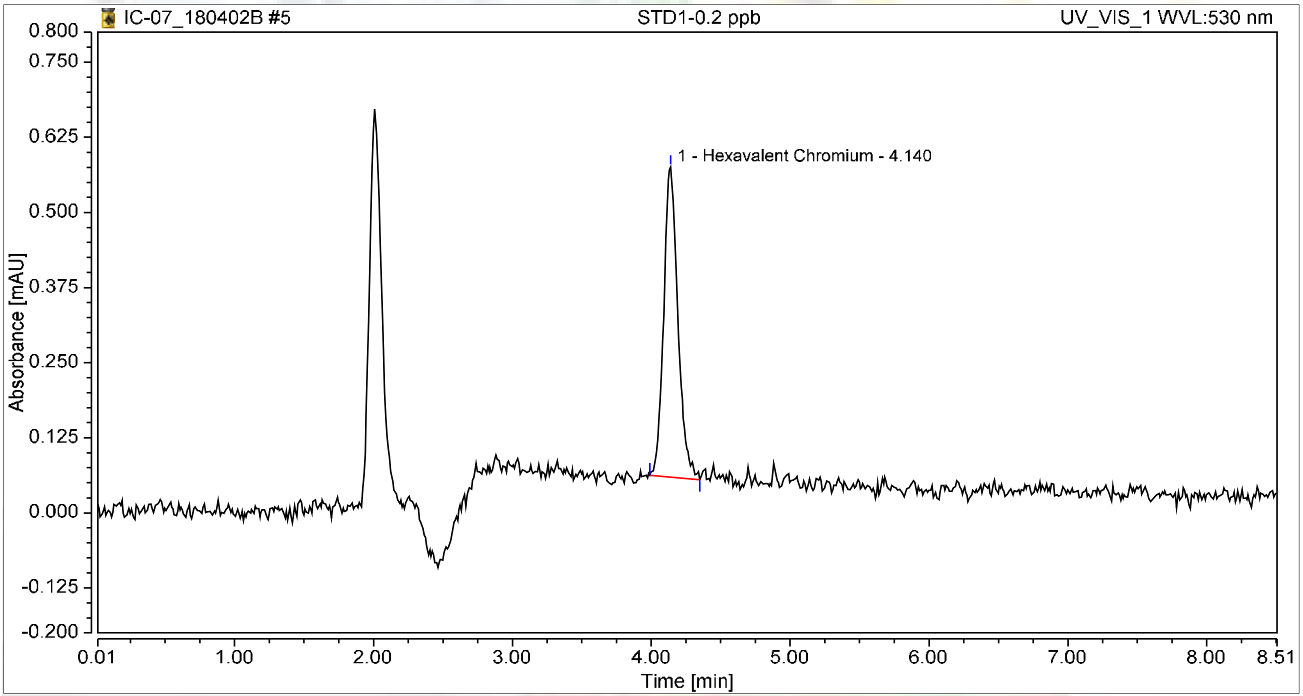
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

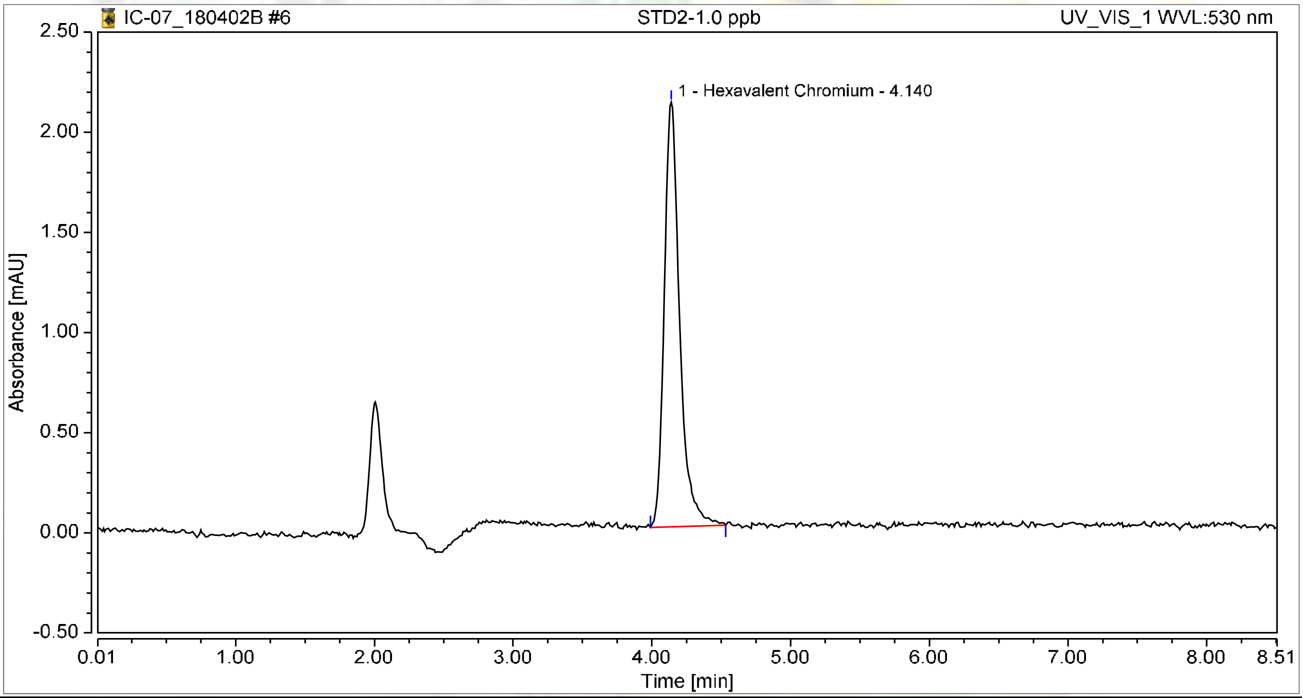
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.061	0.516	100.00	100.00	0.2409
Total:			**0.061**	**0.516**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 12:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

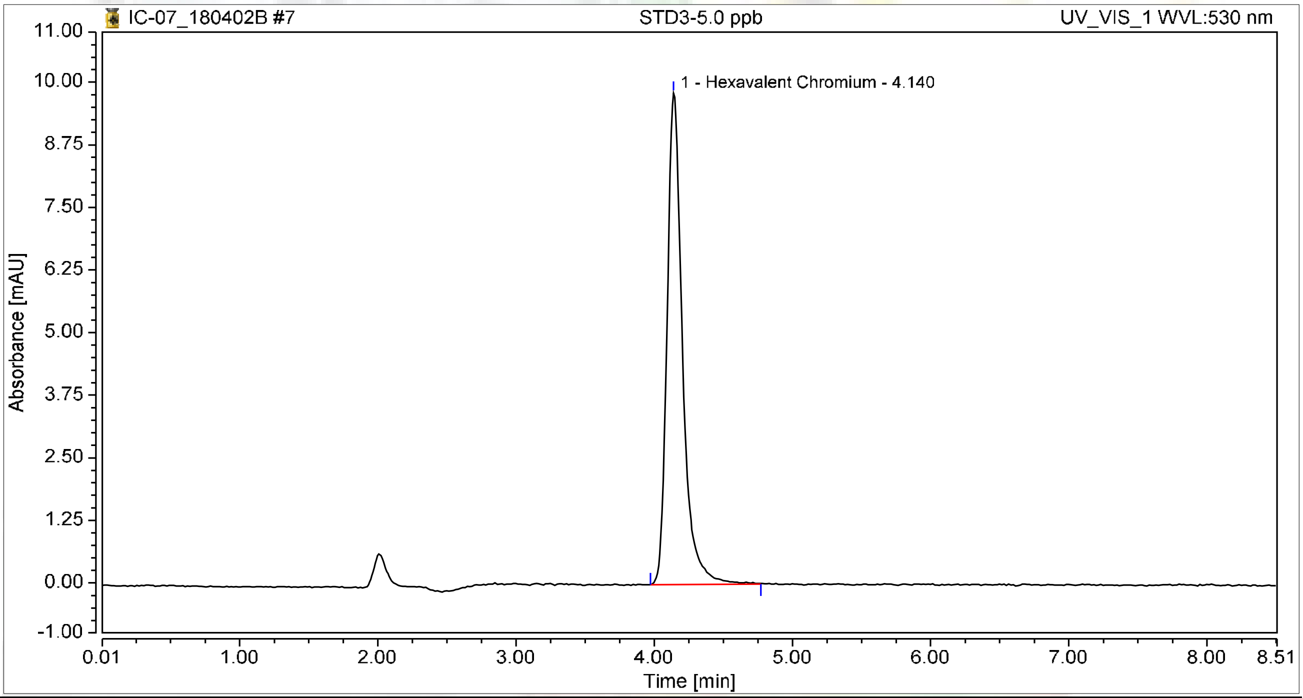
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.274	2.121	100.00	100.00	1.0825
Total:			**0.274**	**2.121**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

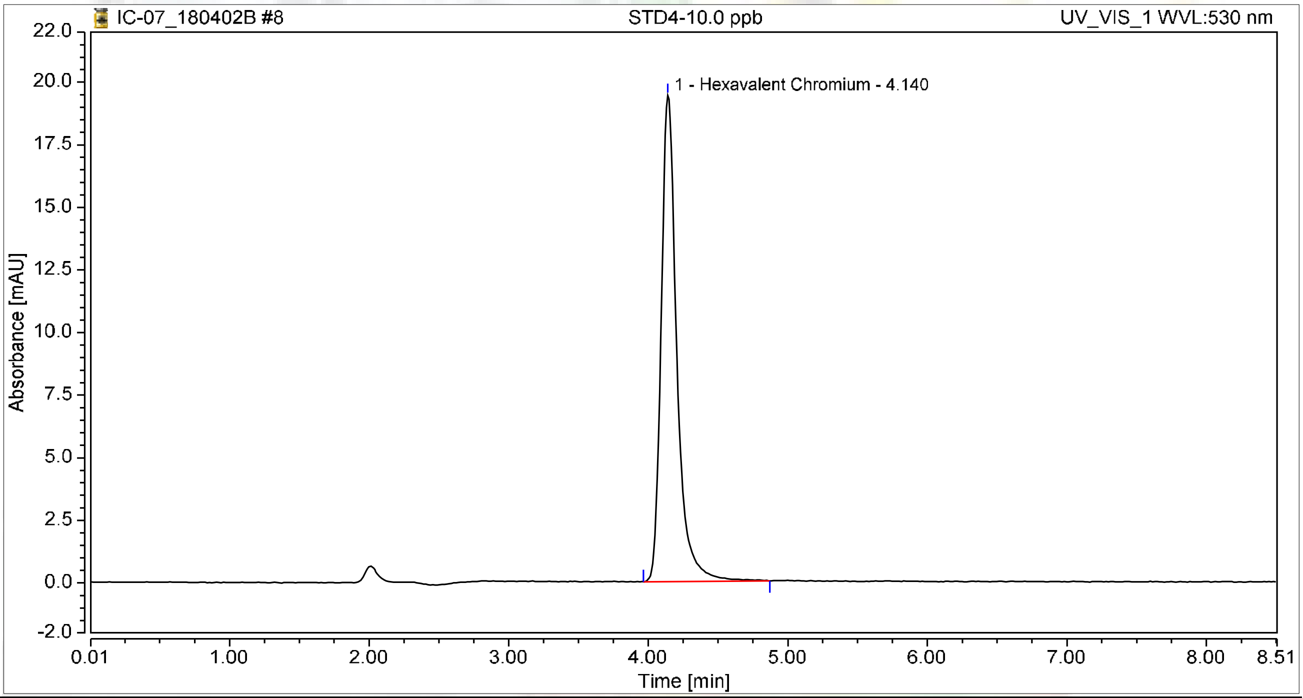
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.277	9.813	100.00	100.00	5.0383
Total:			**1.277**	**9.813**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

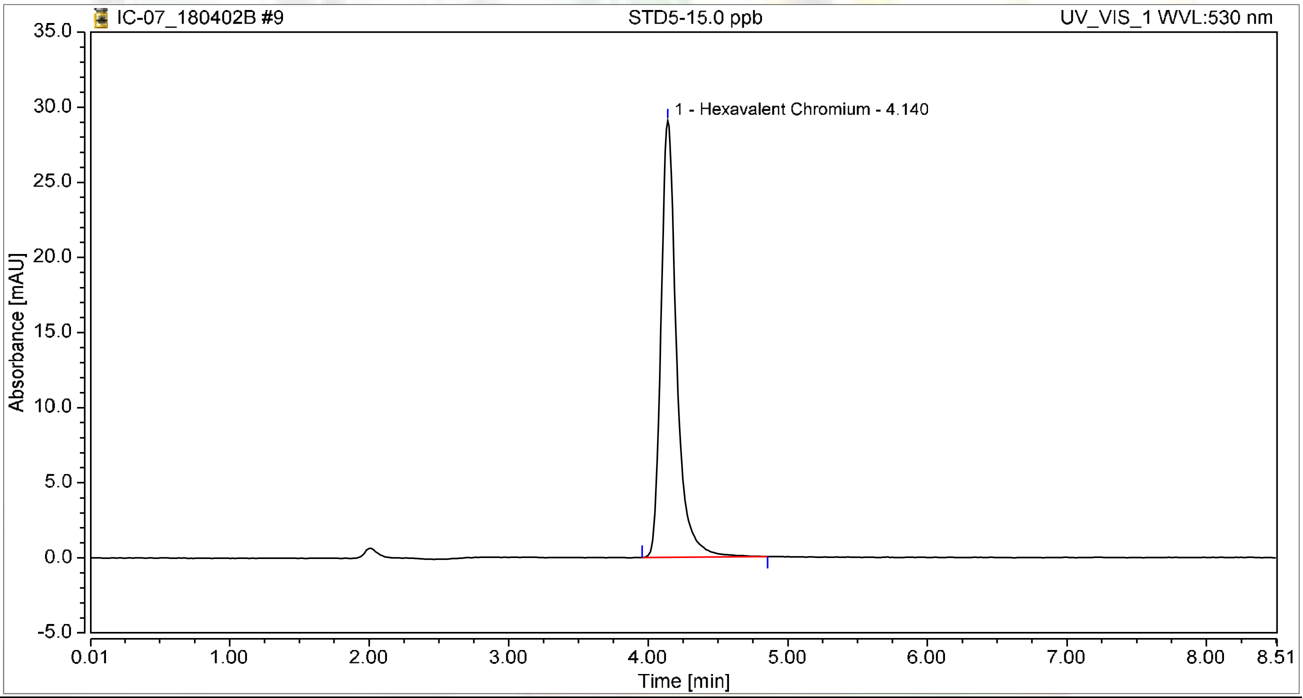
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.538	19.408	100.00	100.00	10.0099
Total:			**2.538**	**19.408**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

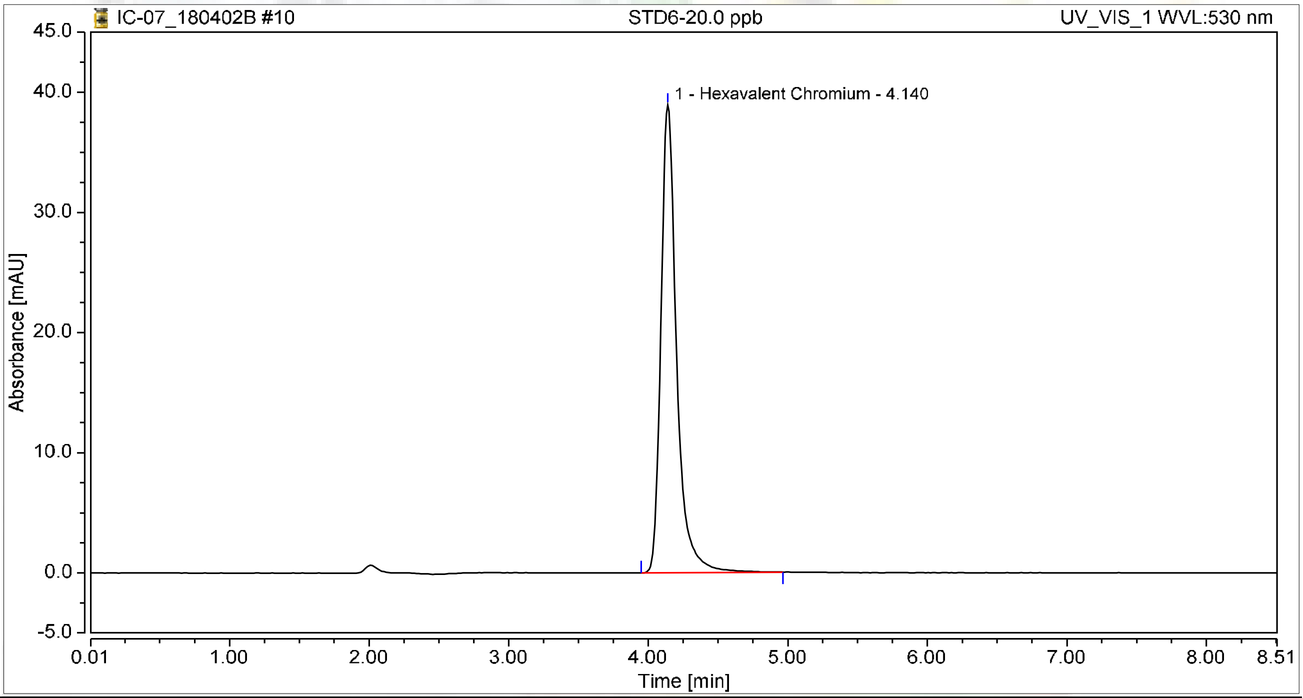
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.791	29.078	100.00	100.00	14.9525
Total:			**3.791**	**29.078**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:31**	*Sample Weight:*	**1.0000**

Chromatogram



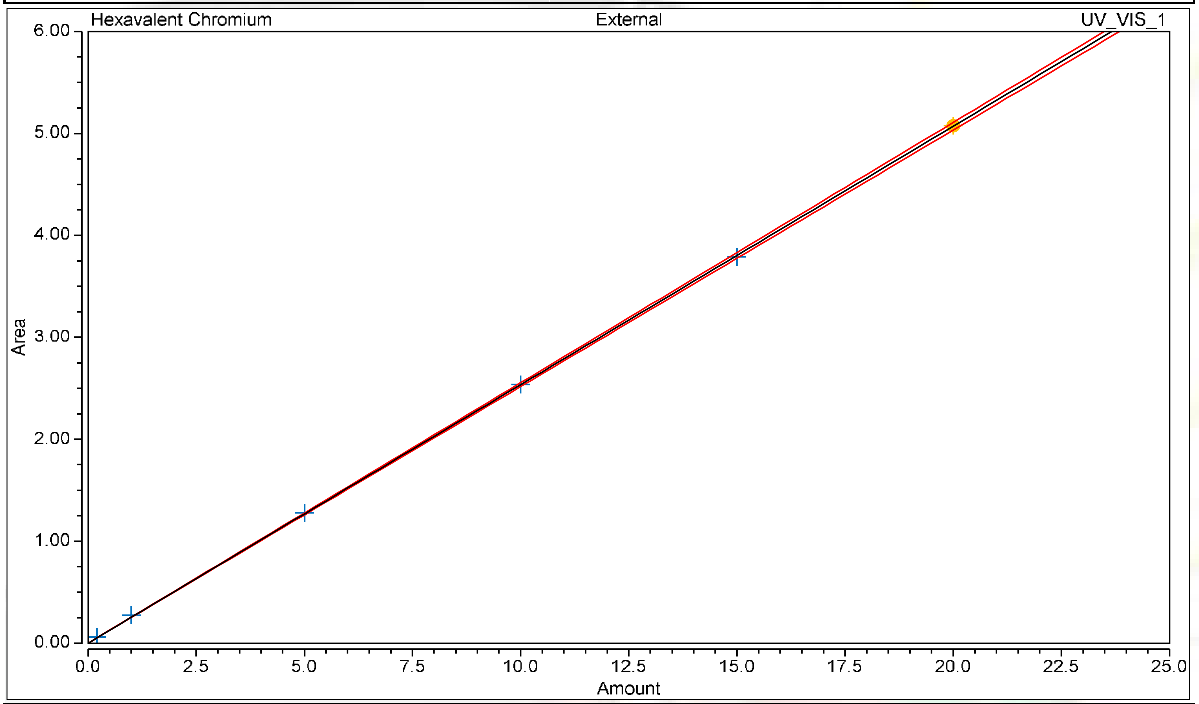
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	5.074	38.904	100.00	100.00	20.0166
Total:			**5.074**	**38.904**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2535
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

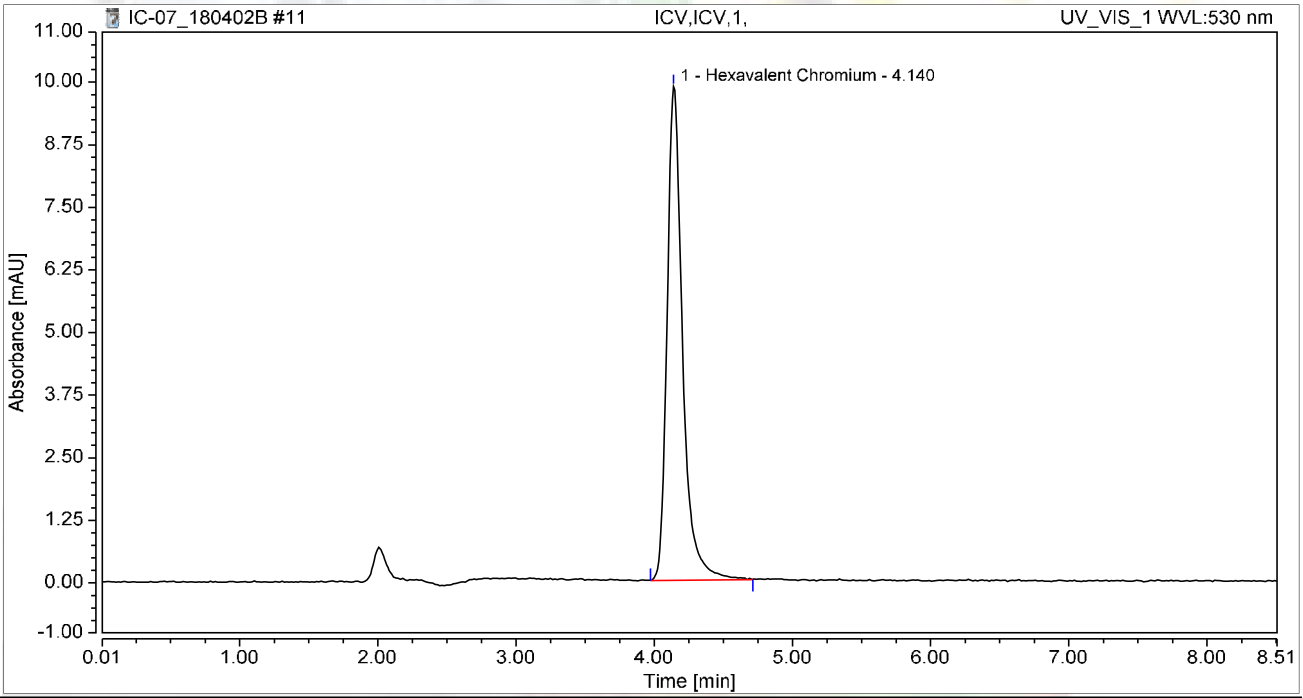
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
5	STD1-0.2 ppb	01	0.2000	0.0611	0.061	0.516
6	STD2-1.0 ppb	02	1.0000	0.2744	0.274	2.121
7	STD3-5.0 ppb	03	5.0000	1.2772	1.277	9.813
8	STD4-10.0 ppb	04	10.0000	2.5376	2.538	19.408
9	STD5-15.0 ppb	05	15.0000	3.7905	3.791	29.078
10	STD6-20.0 ppb	06	20.0000	5.0743	5.074	38.904

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

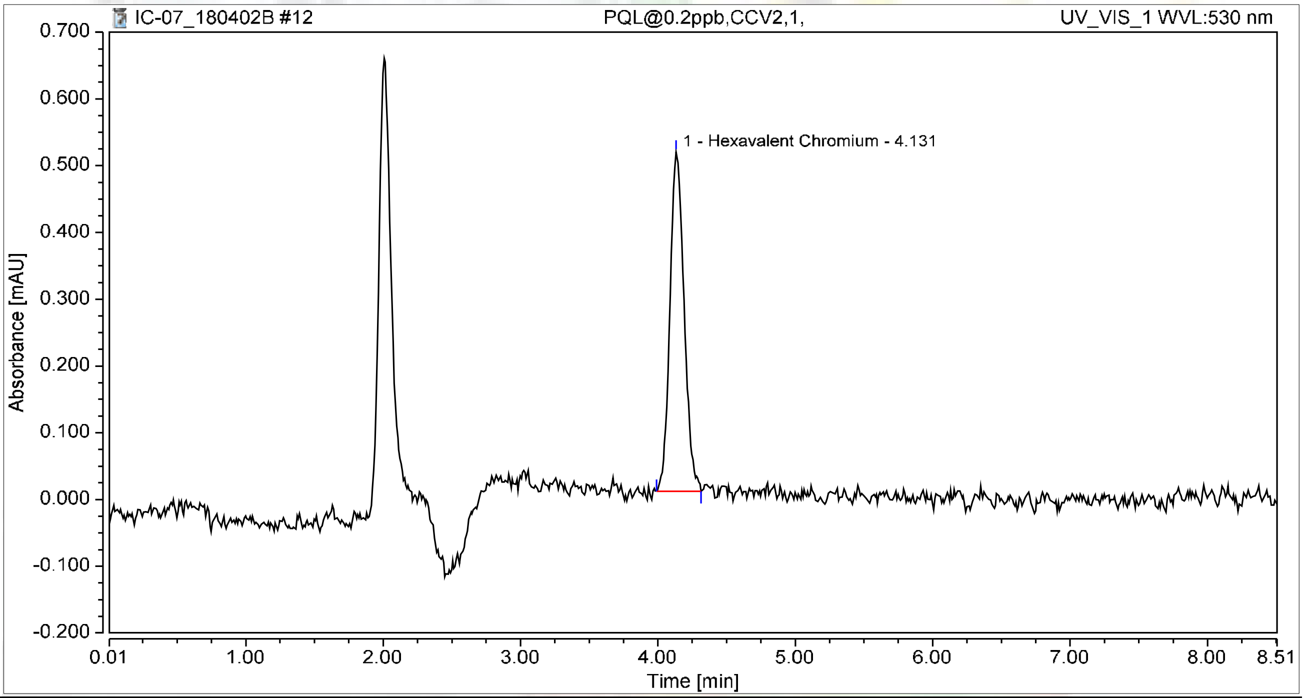
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.285	9.862	100.00	100.00	5.0684
Total:			**1.285**	**9.862**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

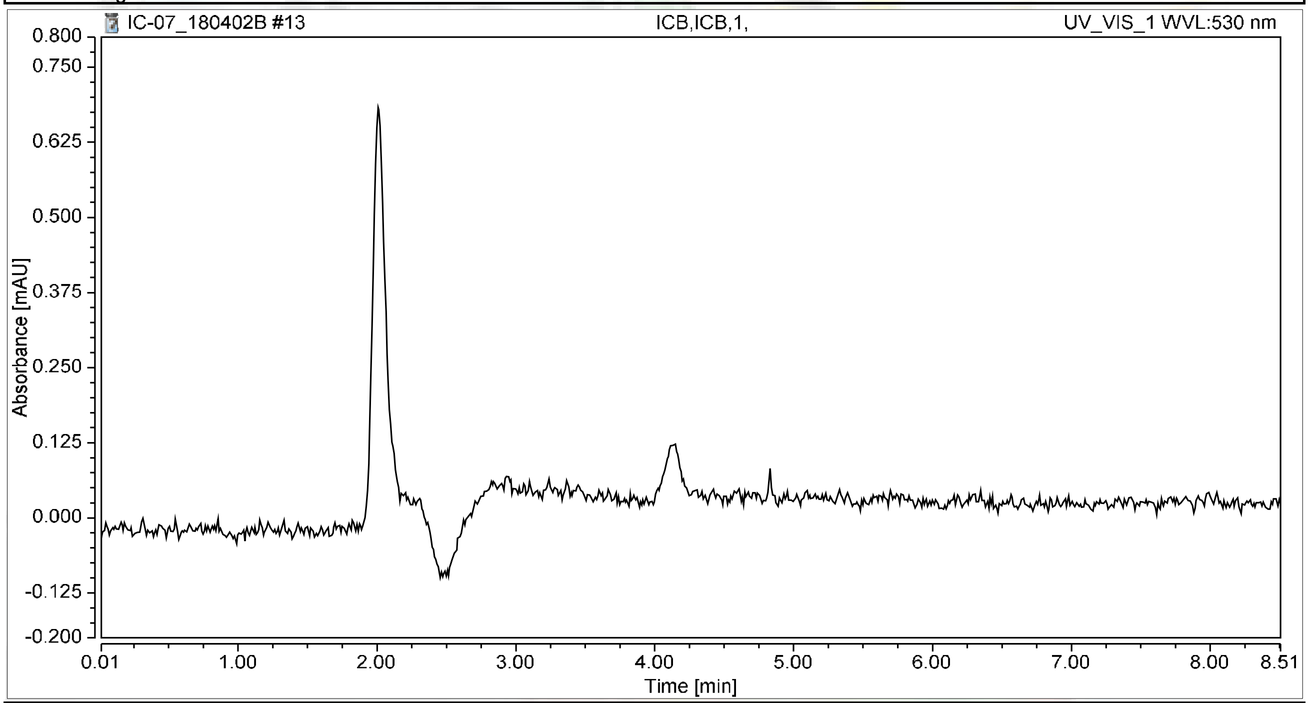
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.061	0.508	100.00	100.00	0.2395
Total:			**0.061**	**0.508**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 14:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

RAW DATA

INJECTION LOG: 180424A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	04/24/18 8:54 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	04/24/18 9:04 AM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	04/24/18 9:14 AM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/24/18 9:23 AM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	04/24/18 9:33 AM	Not Reported
16	CCB-1	CCB	1	Hexavalent Chromium	04/24/18 9:56 AM	Reported
17	MB-R123632	MBLK	1	Hexavalent Chromium	04/24/18 10:07 AM	Reported
18	LCS-R123632	LCS	1	Hexavalent Chromium	04/24/18 10:17 AM	Reported
19	N029942-001A	SAMP	5	Hexavalent Chromium	04/24/18 10:28 AM	Reported
20	N029942-001AMS	MS	5	Hexavalent Chromium	04/24/18 10:39 AM	Reported
21	N029942-002A	SAMP	5	Hexavalent Chromium	04/24/18 10:48 AM	Reported
22	N029942-002AMS	MS	5	Hexavalent Chromium	04/24/18 10:58 AM	Reported
23	N029942-003A	SAMP	5	Hexavalent Chromium	04/24/18 11:07 AM	Reported
24	N029942-003AMS	MS	5	Hexavalent Chromium	04/24/18 11:17 AM	Reported
25	N029942-004A	SAMP	1	Hexavalent Chromium	04/24/18 11:26 AM	Not Reported
26	N029942-004AMS	MS	1	Hexavalent Chromium	04/24/18 11:36 AM	Not Reported
27	CCV-2	CCV1	1	Hexavalent Chromium	04/24/18 11:45 AM	Reported
28	CCB-2	CCB	1	Hexavalent Chromium	04/24/18 11:55 AM	Reported
29	N029942-005A	SAMP	5	Hexavalent Chromium	04/24/18 12:04 PM	Reported
30	N029942-005AMS	MS	5	Hexavalent Chromium	04/24/18 12:14 PM	Reported
31	N029942-006A	SAMP	1	Hexavalent Chromium	04/24/18 12:23 PM	Reported
32	N029942-006AMS	MS	1	Hexavalent Chromium	04/24/18 12:33 PM	Reported
33	N029942-007A	SAMP	5	Hexavalent Chromium	04/24/18 12:42 PM	Reported
34	N029942-007AMS	MS	5	Hexavalent Chromium	04/24/18 12:51 PM	Reported
35	N029942-008A	SAMP	1	Hexavalent Chromium	04/24/18 1:01 PM	Reported
36	N029942-008AMS	MS	1	Hexavalent Chromium	04/24/18 1:10 PM	Reported
37	N029942-004A	SAMP	5	Hexavalent Chromium	04/24/18 1:30 PM	Reported
38	N029942-004AMS	MS	5	Hexavalent Chromium	04/24/18 1:41 PM	Reported
39	CCV-3	CCV	1	Hexavalent Chromium	04/24/18 1:51 PM	Reported
40	CCB-3	CCB	1	Hexavalent Chromium	04/24/18 2:00 PM	Reported
41	N029942-005ADUP	DUP	5	Hexavalent Chromium	04/24/18 2:10 PM	Reported
42	N029942-007AMSD	MSD	5	Hexavalent Chromium	04/24/18 2:19 PM	Reported

INJECTION LOG: 180424A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N029942-001A	SAMP	1	Hexavalent Chromium	04/24/18 2:29 PM	Not Reported
44	N029942-001AMS	MS	1	Hexavalent Chromium	04/24/18 2:38 PM	Not Reported
45	N029942-002A	SAMP	1	Hexavalent Chromium	04/24/18 2:48 PM	Not Reported
46	N029942-002AMS	MS	1	Hexavalent Chromium	04/24/18 2:57 PM	Not Reported
47	N029942-003A	SAMP	1	Hexavalent Chromium	04/24/18 3:06 PM	Not Reported
48	N029942-003AMS	MS	1	Hexavalent Chromium	04/24/18 3:16 PM	Not Reported
49	N029942-005A	SAMP	1	Hexavalent Chromium	04/24/18 3:25 PM	Not Reported
50	N029942-005AMS	MS	1	Hexavalent Chromium	04/24/18 3:35 PM	Not Reported
51	CCV-4	CCV1	1	Hexavalent Chromium	04/24/18 3:44 PM	Reported
52	CCB-4	CCB	1	Hexavalent Chromium	04/24/18 3:54 PM	Reported
53	N029942-007A	SAMP	1	Hexavalent Chromium	04/24/18 4:03 PM	Not Reported
54	N029942-007AMS	MS	1	Hexavalent Chromium	04/24/18 4:13 PM	Not Reported
55	N029719-005A	SAMP	1	Hexavalent Chromium	04/24/18 4:22 PM	Not Reported
56	N029719-005AMS	MS	1	Hexavalent Chromium	04/24/18 4:32 PM	Not Reported
57	N029720-008A	SAMP	1	Hexavalent Chromium	04/24/18 4:41 PM	Not Reported
58	N029720-008AMS	MS	1	Hexavalent Chromium	04/24/18 4:51 PM	Not Reported
59	N029720-009A	SAMP	1	Hexavalent Chromium	04/24/18 5:00 PM	Not Reported
60	N029720-009AMS	MS	1	Hexavalent Chromium	04/24/18 5:09 PM	Not Reported
61	N029721-001A	SAMP	1	Hexavalent Chromium	04/24/18 5:19 PM	Not Reported
62	N029721-001AMS	MS	1	Hexavalent Chromium	04/24/18 5:28 PM	Not Reported
63	CCV-5	CCV	1	Hexavalent Chromium	04/24/18 5:38 PM	Reported
64	CCB-5	CCB	1	Hexavalent Chromium	04/24/18 5:47 PM	Reported
65	N029721-004A	SAMP	1	Hexavalent Chromium	04/24/18 5:57 PM	Not Reported
66	N029721-004AMS	MS	1	Hexavalent Chromium	04/24/18 6:06 PM	Not Reported
67	N029721-010A	SAMP	1	Hexavalent Chromium	04/24/18 6:16 PM	Not Reported
68	N029721-010AMS	MS	1	Hexavalent Chromium	04/24/18 6:25 PM	Not Reported
69	N029721-013A	SAMP	1	Hexavalent Chromium	04/24/18 6:35 PM	Not Reported
70	N029721-013AMS	MS	1	Hexavalent Chromium	04/24/18 6:44 PM	Not Reported
71	CCV-6	CCV	1	Hexavalent Chromium	04/24/18 6:54 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	04/24/18 7:03 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180424A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**24/Apr/18 19:33:50**
No. of Injections:	**75**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	BLANK	1	1000	Unknown		04/24/2018 08:54	Finished	BLANK
12	BLANK	2	1000	Unknown		04/24/2018 09:04	Finished	BLANK
13	CCV-1,CCV,1,	3	1000	Unknown		04/24/2018 09:14	Finished	CCV @5ppb, IWST-180129A
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		04/24/2018 09:23	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		04/24/2018 09:33	Finished	CCB R180409B
16	CCB-1,CCB,1,	5	1000	Unknown		04/24/2018 09:56	Finished	CCB R180418A
17	MB-H2O,MBLK,1,	6	1000	Unknown		04/24/2018 10:07	Finished	MB R180418A
18	LCS-H2O,LCS,1,	7	1000	Unknown		04/24/2018 10:17	Finished	LCS, IWST-180129B
19	N029942-001A,SAMF	9	1000	Unknown		04/24/2018 10:28	Finished	SAMP,2>10mL
20	N029942-001AMS,MS	10	1000	Unknown		04/24/2018 10:39	Finished	MS (1ppb), IWST-180129B,2>1
21	N029942-002A,SAMF	11	1000	Unknown		04/24/2018 10:48	Finished	SAMP,2>10mL
22	N029942-002AMS,MS	12	1000	Unknown		04/24/2018 10:58	Finished	MS (1ppb), IWST-180129B,2>1
23	N029942-003A,SAMF	13	1000	Unknown		04/24/2018 11:07	Finished	SAMP,2>10mL
24	N029942-003AMS,MS	14	1000	Unknown		04/24/2018 11:17	Finished	MS (1ppb), IWST-180129B,2>1
25	N029942-004A,SAMF	15	1000	Unknown		04/24/2018 11:26	Finished	SAMP,10mL
26	N029942-004AMS,MS	16	1000	Unknown		04/24/2018 11:36	Finished	MS (1ppb), IWST-180129B,10
27	CCV-2,CCV1,1,	17	1000	Unknown		04/24/2018 11:45	Finished	CCV @10ppb, IWST-180129A
28	CCB-2,CCB,1,	18	1000	Unknown		04/24/2018 11:55	Finished	CCB R180418A
29	N029942-005A,SAMF	19	1000	Unknown		04/24/2018 12:04	Finished	SAMP,2>10mL
30	N029942-005AMS,MS	20	1000	Unknown		04/24/2018 12:14	Finished	MS (1ppb), IWST-180129B,2>1
31	N029942-006A,SAMF	21	1000	Unknown		04/24/2018 12:23	Finished	SAMP,10mL
32	N029942-006AMS,MS	22	1000	Unknown		04/24/2018 12:33	Finished	MS (1ppb), IWST-180129B,10
33	N029942-007A,SAMF	23	1000	Unknown		04/24/2018 12:42	Finished	SAMP,2>10mL
34	N029942-007AMS,MS	24	1000	Unknown		04/24/2018 12:51	Finished	MS (1ppb), IWST-180129B,2>1
35	N029942-008A,SAMF	25	1000	Unknown		04/24/2018 13:01	Finished	SAMP,10mL
36	N029942-008AMS,MS	26	1000	Unknown		04/24/2018 13:10	Finished	MS (1ppb), IWST-180129B,10
37	N029942-004A,SAMF	1	1000	Unknown		04/24/2018 13:30	Finished	SAMP,2>10mL
38	N029942-004AMS,MS	2	1000	Unknown		04/24/2018 13:41	Finished	MS (1ppb), IWST-180129B,2>1
39	CCV-3,CCV,1,	3	1000	Unknown		04/24/2018 13:51	Finished	CCV @5ppb, IWST-180129A
40	CCB-3,CCB,1,	4	1000	Unknown		04/24/2018 14:00	Finished	CCB R180418A
41	N029942-005ADUP,D	5	1000	Unknown		04/24/2018 14:10	Finished	DUP,2>10mL
42	N029942-007AMSD,M	6	1000	Unknown		04/24/2018 14:19	Finished	MSD (1ppb), IWST-180129B,2>
43	N029942-001A,SAMF	7	1000	Unknown		04/24/2018 14:29	Finished	SAMP,10mL
44	N029942-001AMS,MS	8	1000	Unknown		04/24/2018 14:38	Finished	MS (1ppb), IWST-180129B,10
45	N029942-002A,SAMF	9	1000	Unknown		04/24/2018 14:48	Finished	SAMP,10mL
46	N029942-002AMS,MS	10	1000	Unknown		04/24/2018 14:57	Finished	MS (1ppb), IWST-180129B,10
47	N029942-003A,SAMF	11	1000	Unknown		04/24/2018 15:06	Finished	SAMP,10mL
48	N029942-003AMS,MS	12	1000	Unknown		04/24/2018 15:16	Finished	MS (1ppb), IWST-180129B,10
49	N029942-005A,SAMF	13	1000	Unknown		04/24/2018 15:25	Finished	SAMP,10mL
50	N029942-005AMS,MS	14	1000	Unknown		04/24/2018 15:35	Finished	MS (1ppb), IWST-180129B,10
51	CCV-4,CCV1,1,	15	1000	Unknown		04/24/2018 15:44	Finished	CCV @10ppb, IWST-180129A
52	CCB-4,CCB,1,	16	1000	Unknown		04/24/2018 15:54	Finished	CCB R180418A
53	N029942-007A,SAMF	17	1000	Unknown		04/24/2018 16:03	Finished	SAMP,10mL
54	N029942-007AMS,MS	18	1000	Unknown		04/24/2018 16:13	Finished	MS (1ppb), IWST-180129B,10
55	N029719-005A,SAMF	19	1000	Unknown		04/24/2018 16:22	Finished	SAMP,10mL
56	N029719-005AMS,MS	20	1000	Unknown		04/24/2018 16:32	Finished	MS (5ppb), IWST-180129B,10
57	N029720-008A,SAMF	21	1000	Unknown		04/24/2018 16:41	Finished	SAMP,10mL
58	N029720-008AMS,MS	22	1000	Unknown		04/24/2018 16:51	Finished	MS (5ppb), IWST-180129B,10
59	N029720-009A,SAMF	23	1000	Unknown		04/24/2018 17:00	Finished	SAMP,10mL
60	N029720-009AMS,MS	24	1000	Unknown		04/24/2018 17:09	Finished	MS (5ppb), IWST-180129B,10

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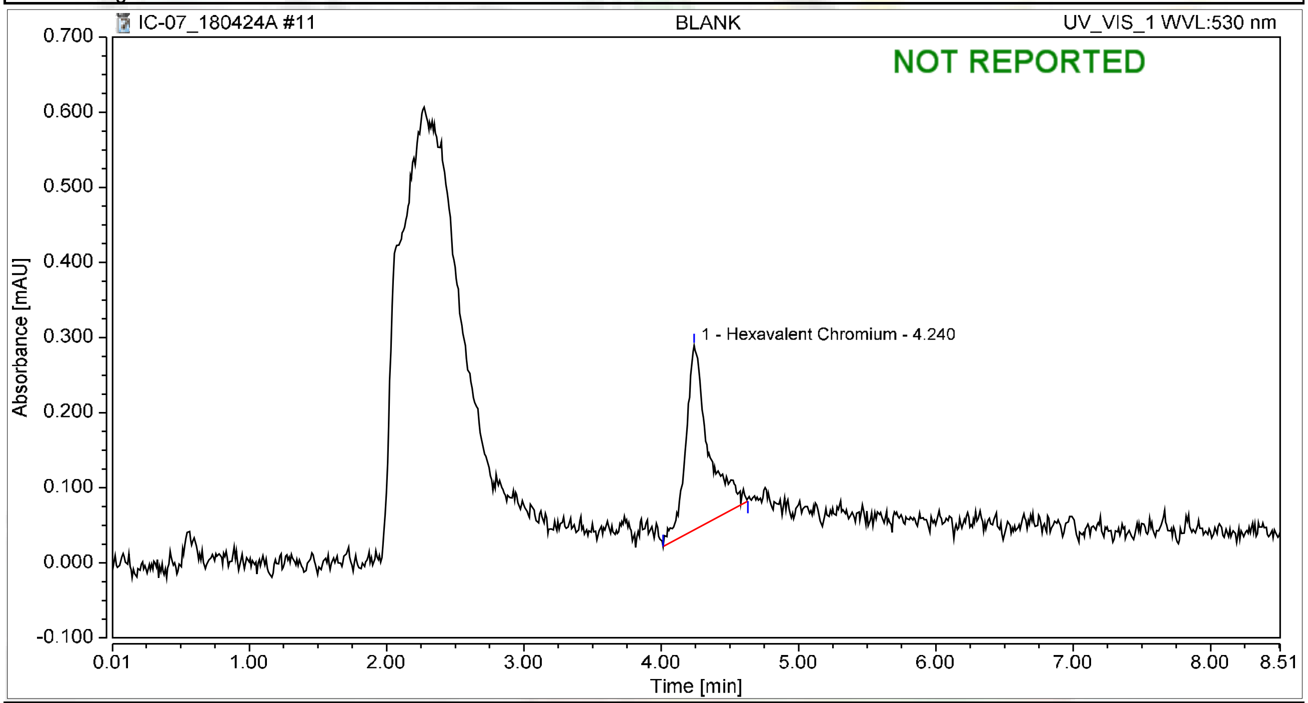
61	N029721-001A,SAMF	25	1000	Unknown		04/24/2018 17:19	Finished	SAMP,10mL
62	N029721-001AMS,MS	26	1000	Unknown		04/24/2018 17:28	Finished	MS (5ppb), IWST-180129B,10
63	CCV-5,CCV,1,	27	1000	Unknown		04/24/2018 17:38	Finished	CCV @5ppb, IWST-180129A
64	CCB-5,CCB,1,	28	1000	Unknown		04/24/2018 17:47	Finished	CCB R180409B
65	N029721-004A,SAMF	29	1000	Unknown		04/24/2018 17:57	Finished	SAMP,10mL
66	N029721-004AMS,MS	30	1000	Unknown		04/24/2018 18:06	Finished	MS (5ppb), IWST-180129B,10
67	N029721-010A,SAMF	31	1000	Unknown		04/24/2018 18:16	Finished	SAMP,10mL
68	N029721-010AMS,MS	32	1000	Unknown		04/24/2018 18:25	Finished	MS (5ppb), IWST-180129B,10
69	N029721-013A,SAMF	33	1000	Unknown		04/24/2018 18:35	Finished	SAMP,10mL
70	N029721-013AMS,MS	34	1000	Unknown		04/24/2018 18:44	Finished	MS (5ppb), IWST-180129B,10
71	CCV-6,CCV,1,	35	1000	Unknown		04/24/2018 18:54	Finished	CCV @10ppb, IWST-180129A
72	CCB-6,CCB,1,	36	1000	Unknown		04/24/2018 19:03	Finished	CCB R180316A
73	SHUTDOWN	37	1000	Unknown		04/24/2018 19:12	Finished	
74	Eluent: R180424A	38	1000	Unknown		n.a.	Finished	Eluent
75	PCR: R180423B	39	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 08:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

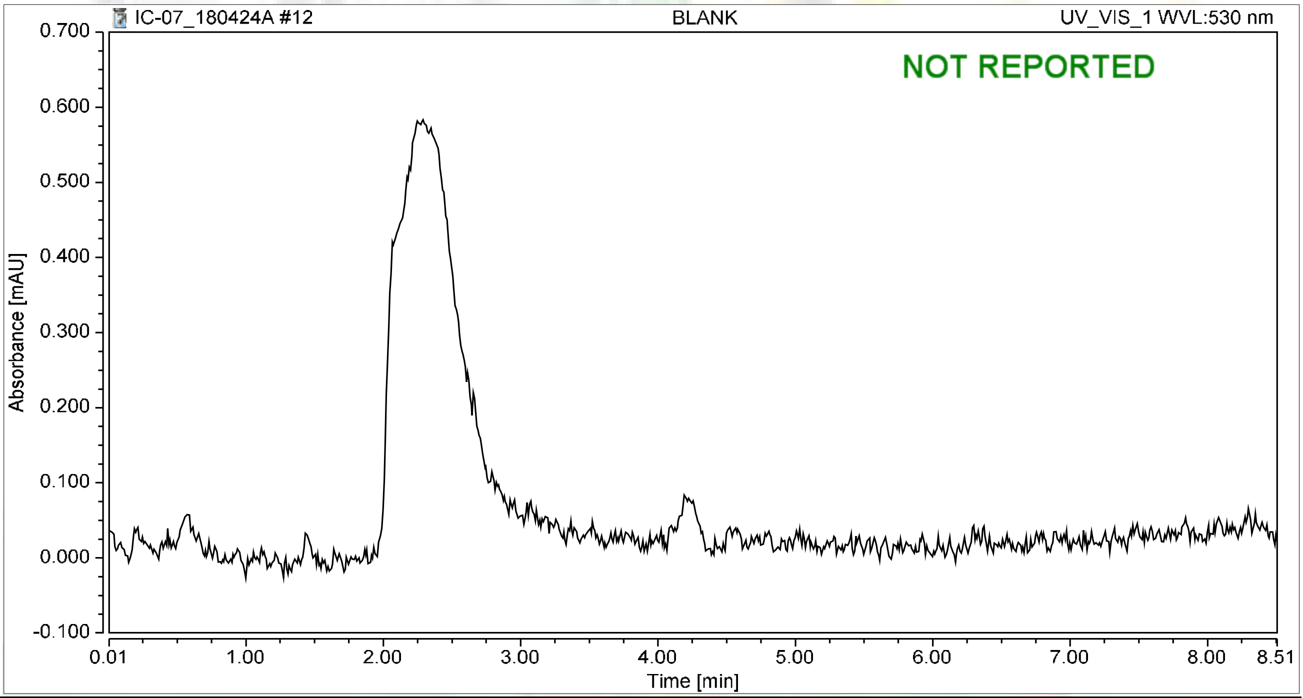
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.047	0.245	100.00	100.00	0.1866
Total:			**0.047**	**0.245**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 09:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

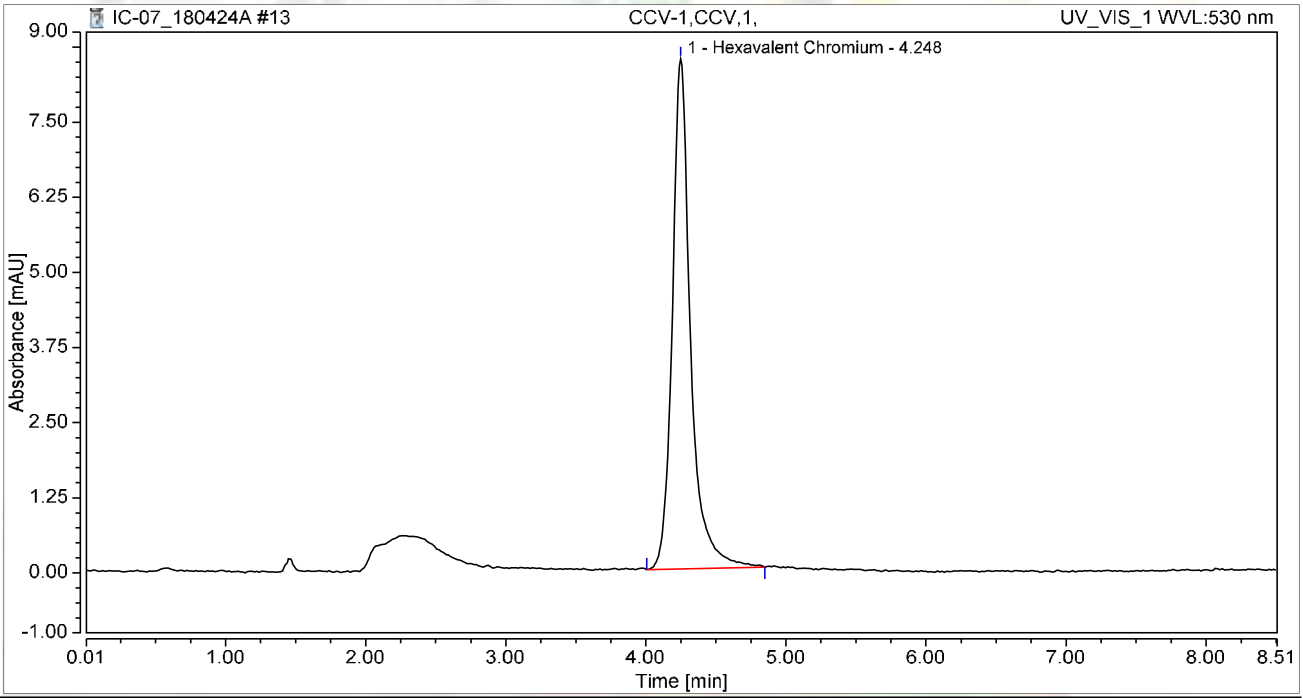
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 09:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

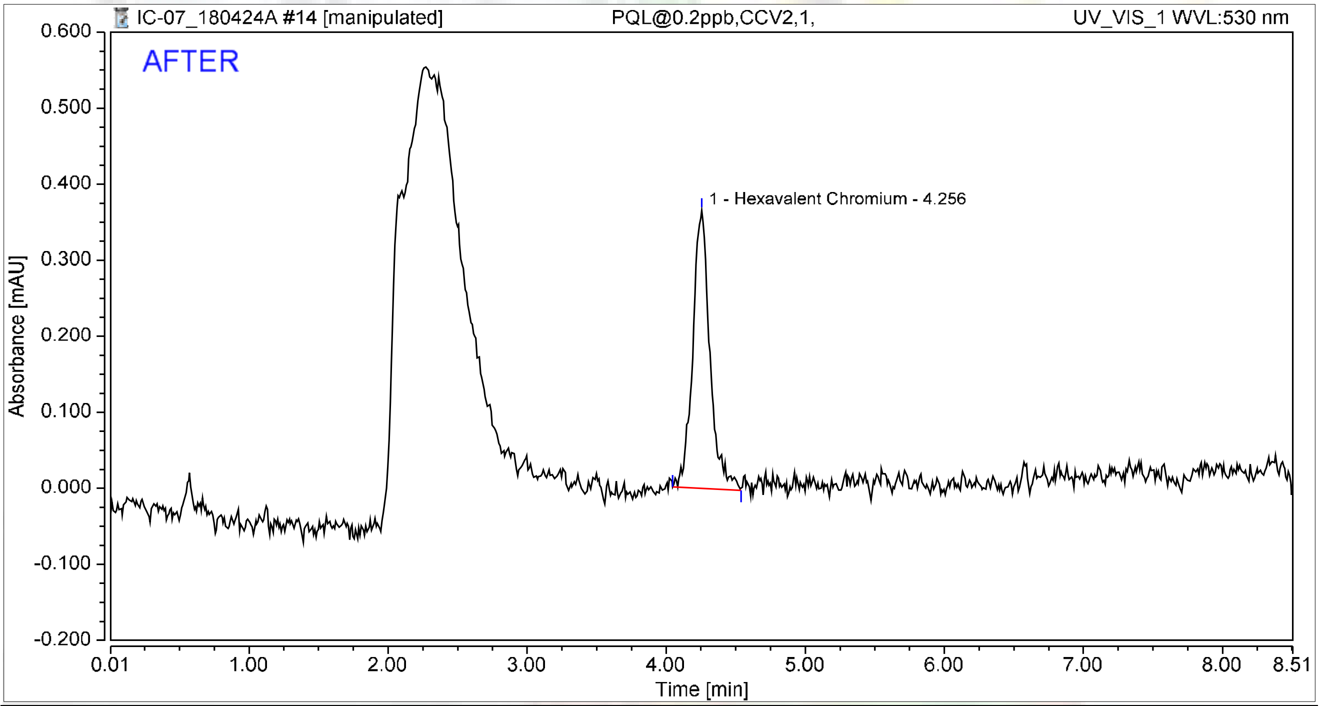
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.282	8.491	100.00	100.00	5.0569
Total:			**1.282**	**8.491**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 09:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.052	0.366	100.00	100.00	0.2058
Total:			**0.052**	**0.366**	**100.00**	**100.00**	

rba 4/26/2018

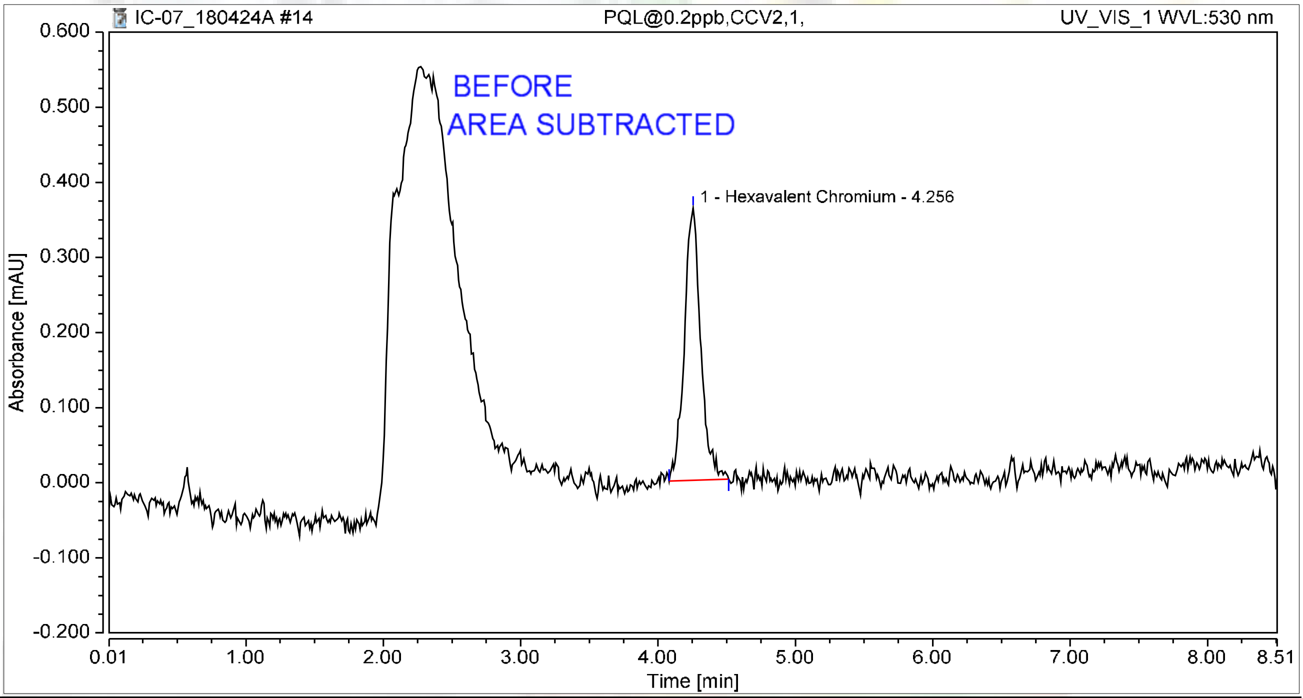
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 09:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.050	0.362	100.00	100.00	0.1980
Total:			**0.050**	**0.362**	**100.00**	**100.00**	

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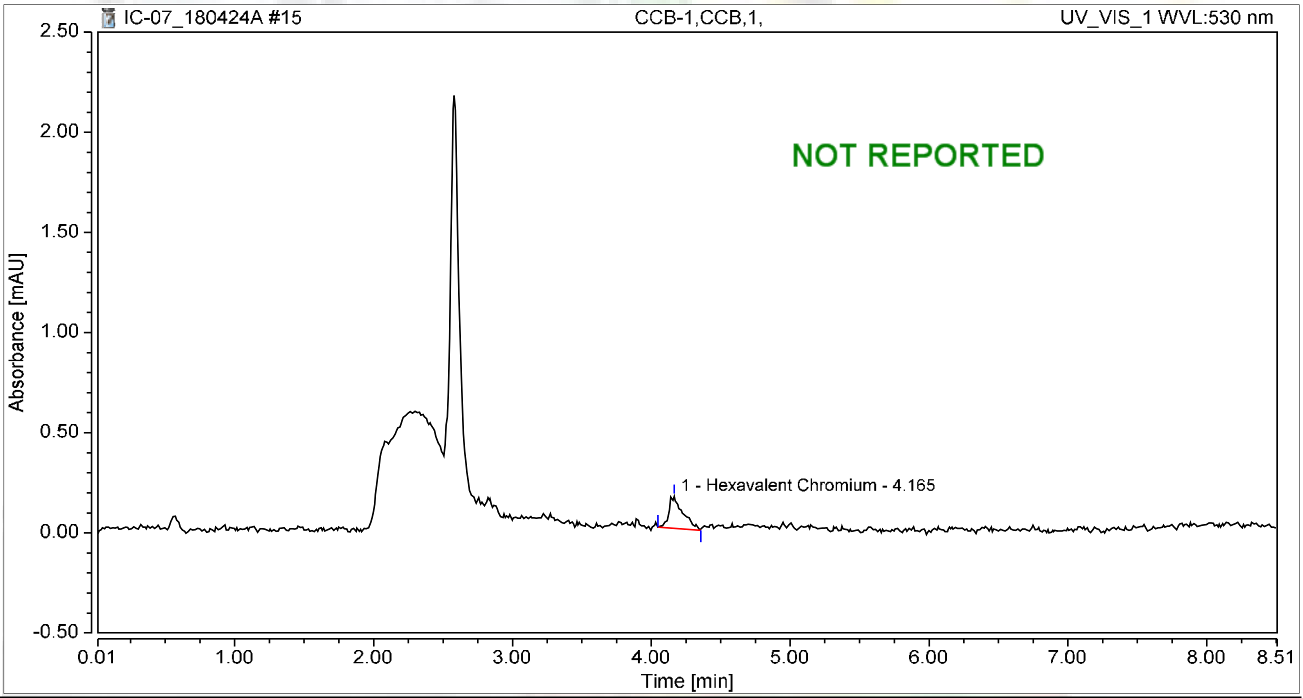
Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

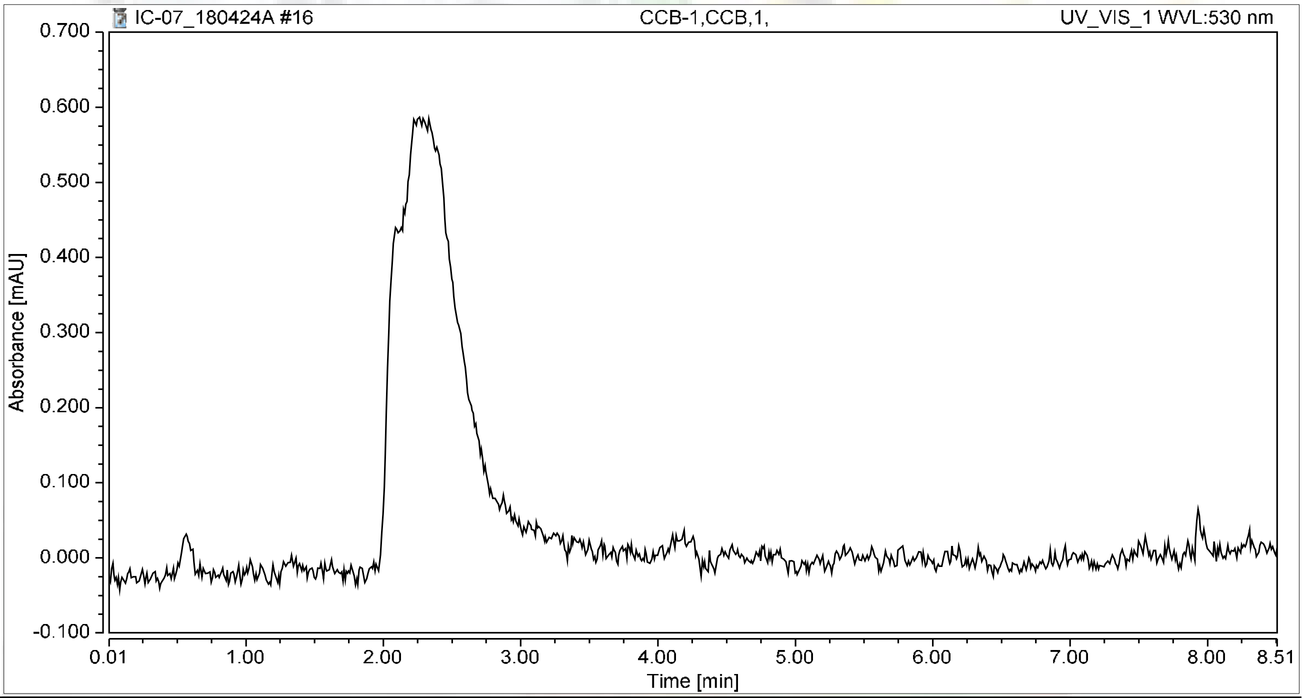
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.018	0.158	100.00	100.00	0.0729
Total:			**0.018**	**0.158**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

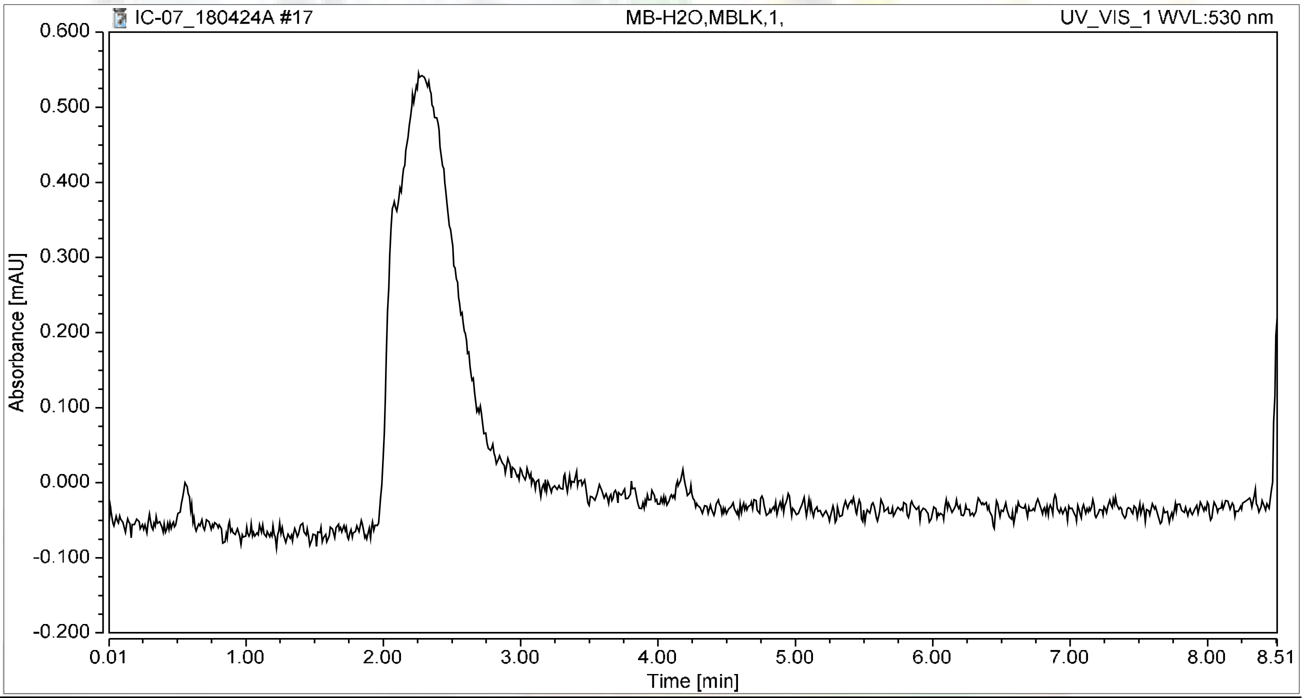
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 10:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

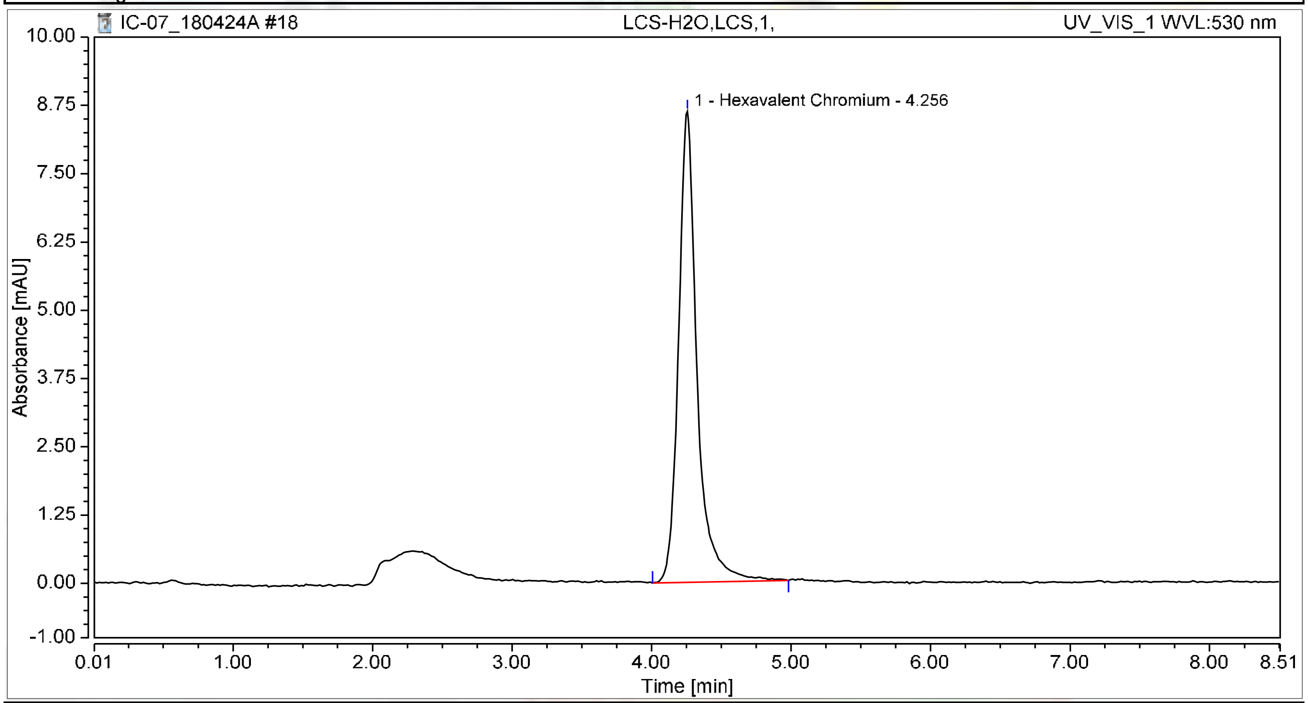
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 10:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

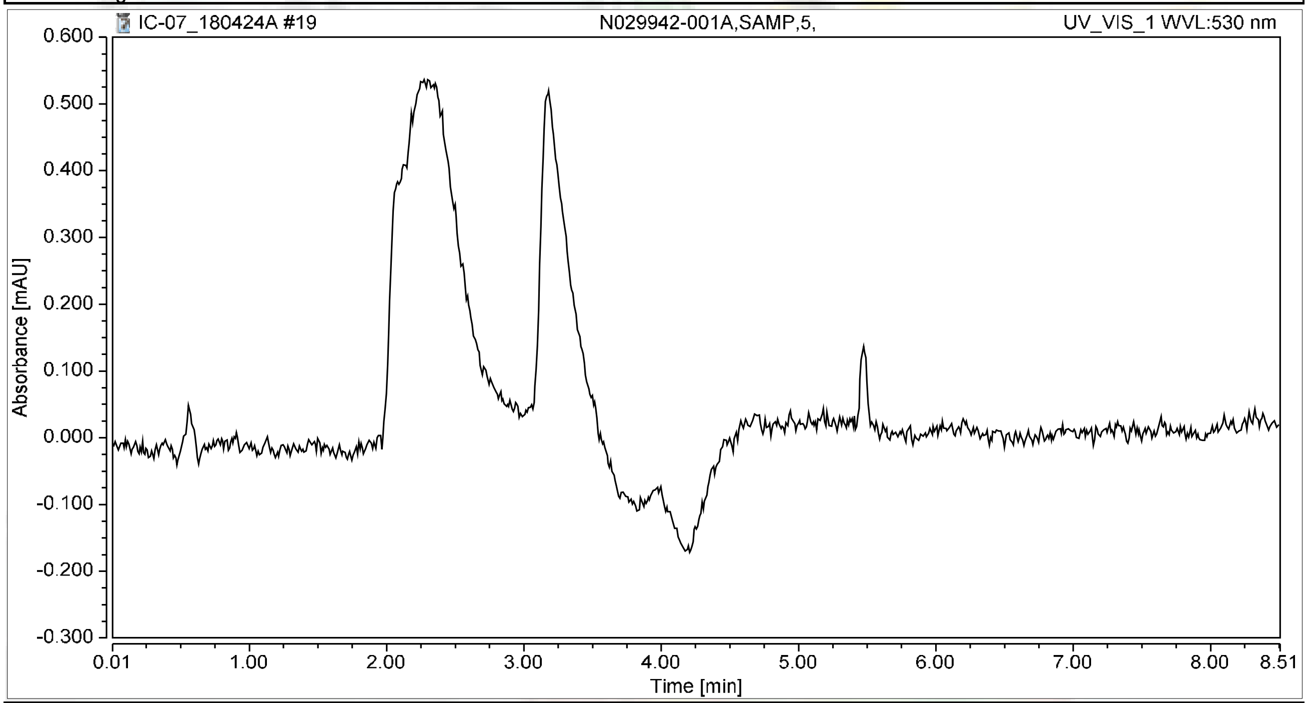
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.324	8.620	100.00	100.00	5.2231
Total:			**1.324**	**8.620**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 10:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

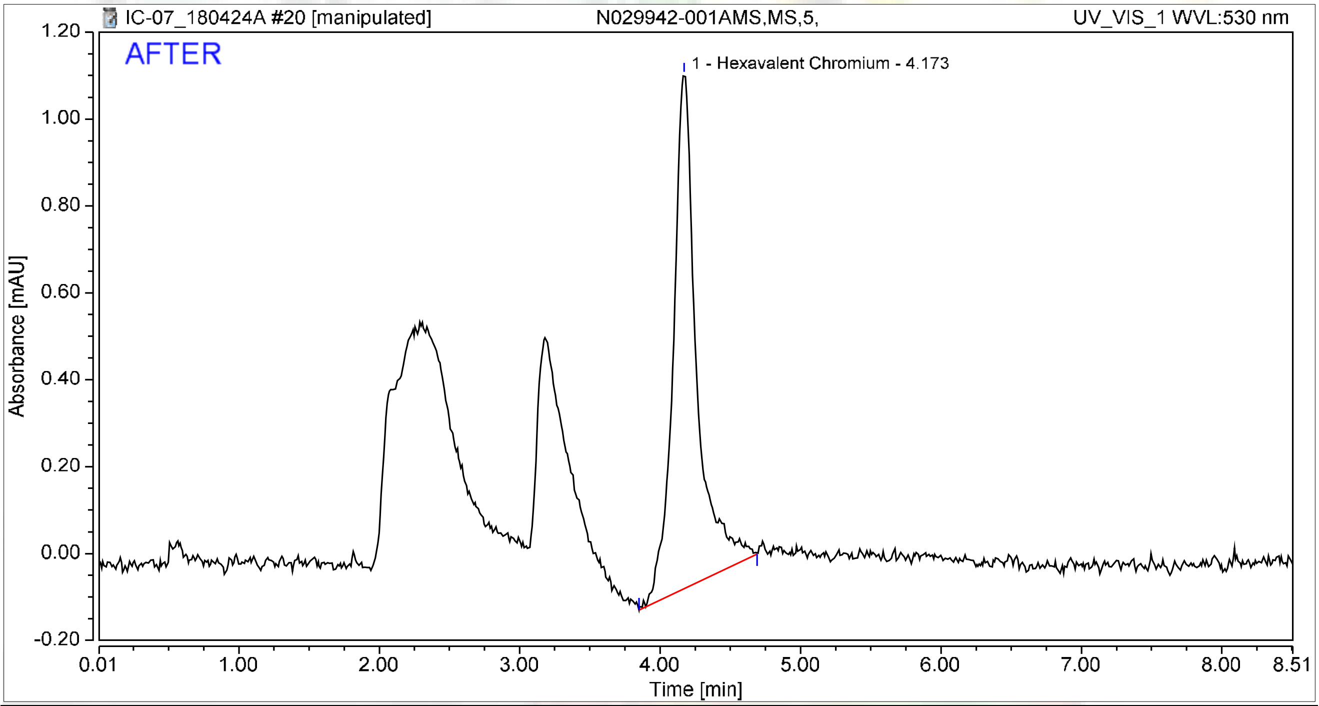
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.231	1.182	100.00	100.00	0.9110
Total:			**0.231**	**1.182**	**100.00**	**100.00**	

rba 4/26/2018

Reviewed by:
Nancy 5/7/2018

My first report/integration

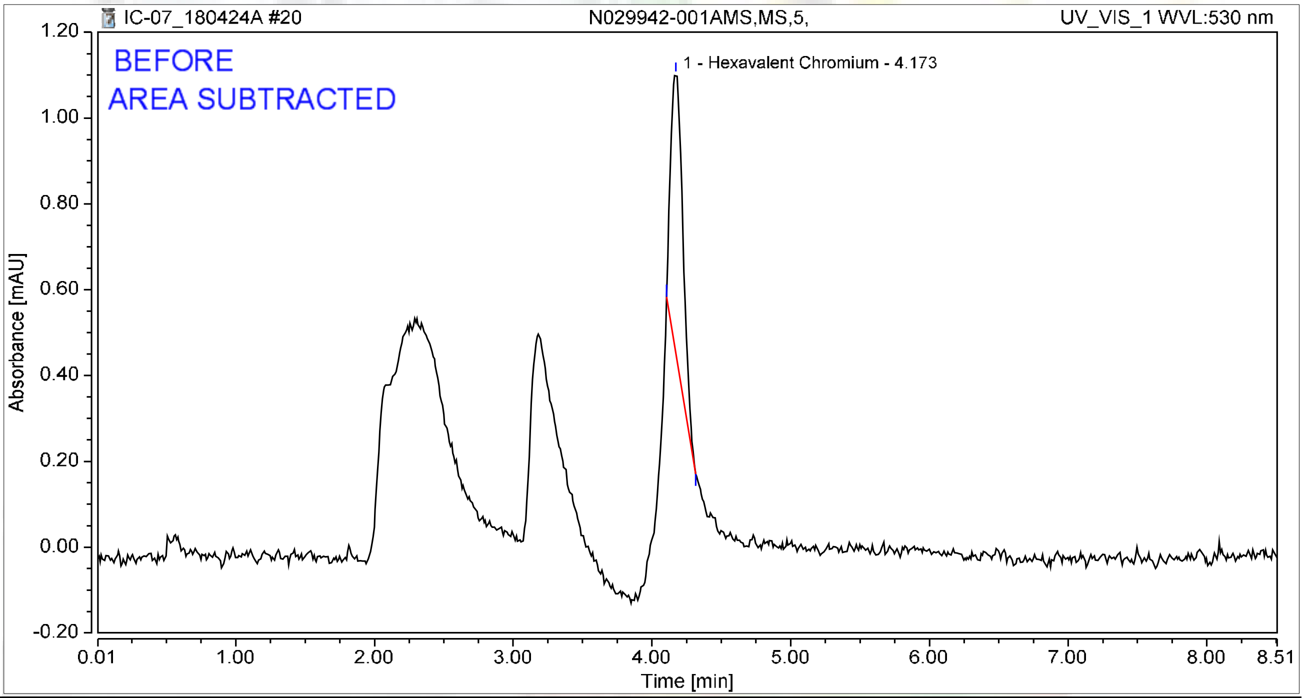
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N029942-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.066	0.650	100.00	100.00	0.2617
Total:			**0.066**	**0.650**	**100.00**	**100.00**	

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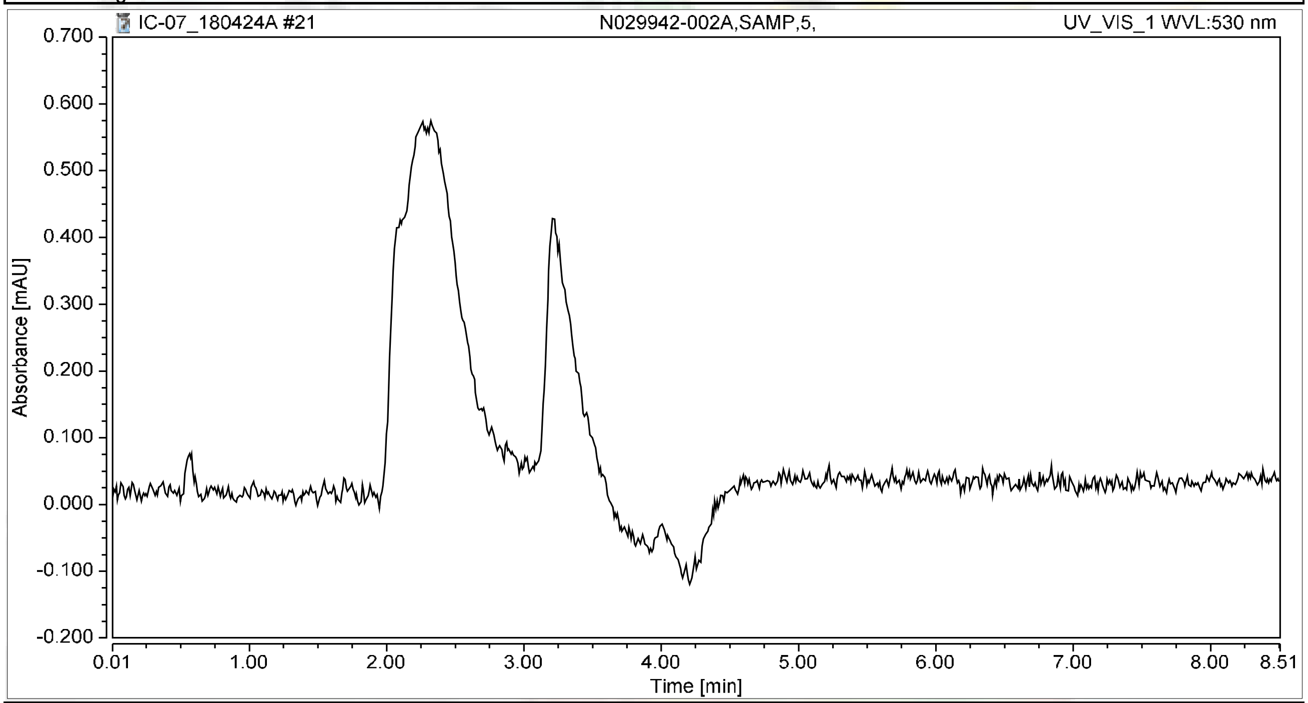
Chromatogram and Results

Injection Details

Injection Name:	**N029942-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

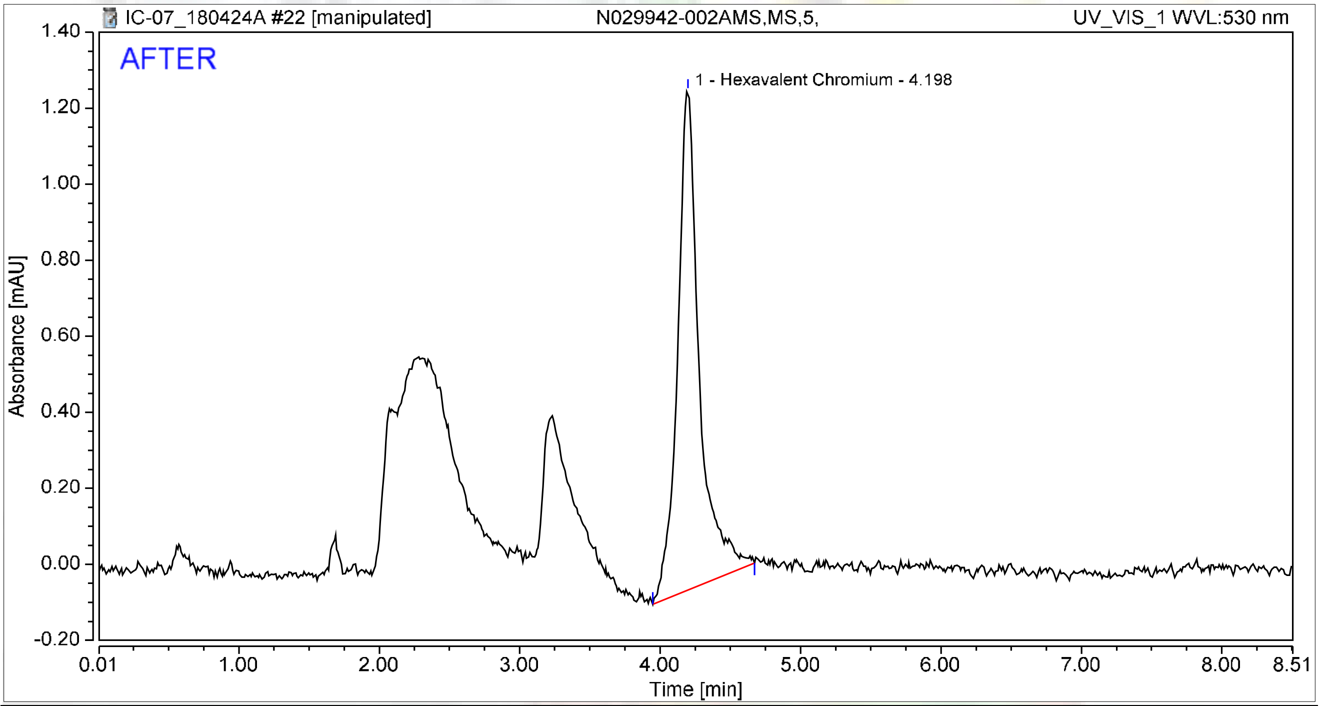
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.238	1.313	100.00	100.00	0.9387
Total:			**0.238**	**1.313**	**100.00**	**100.00**	

rba 4/26/2018

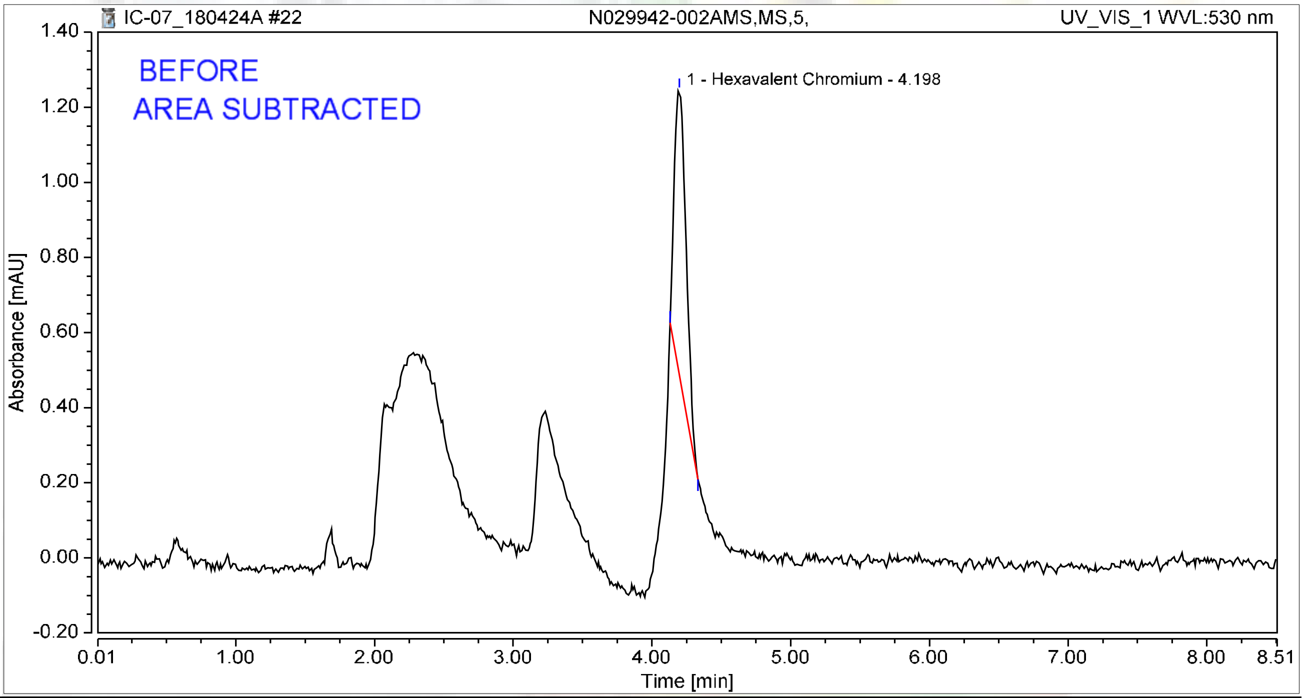
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029942-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.075	0.758	100.00	100.00	0.2950
Total:			**0.075**	**0.758**	**100.00**	**100.00**	

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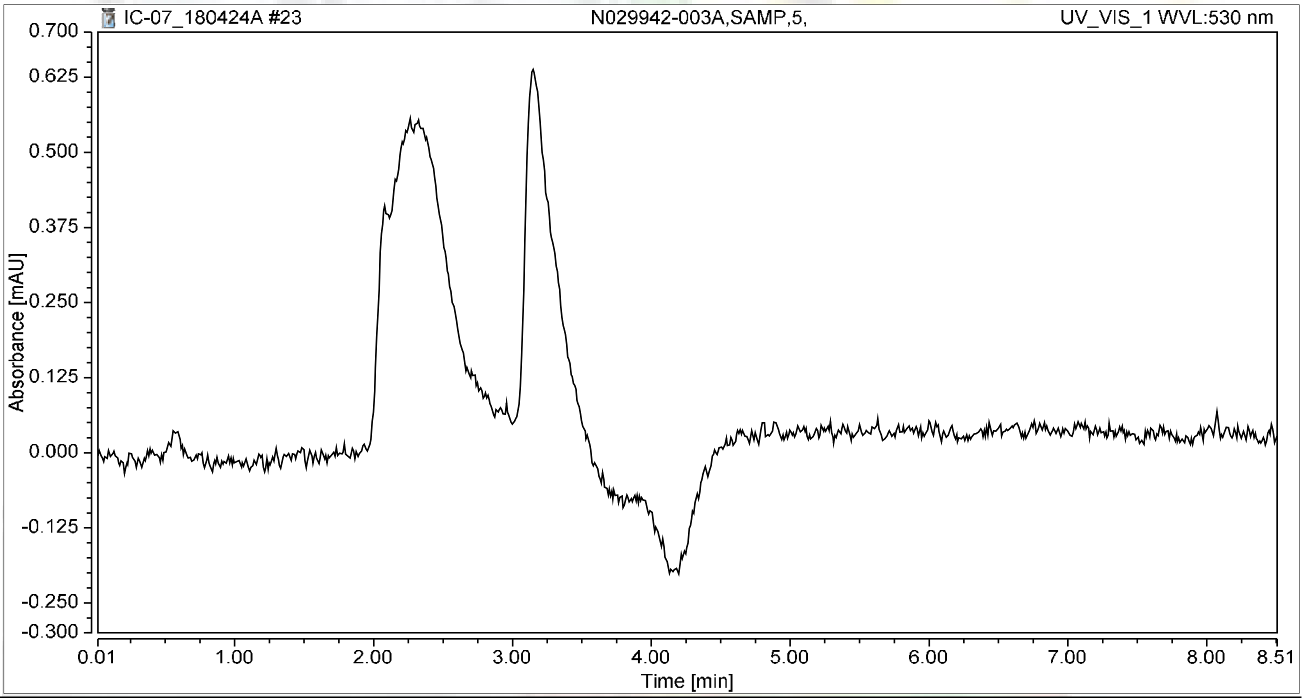
Chromatogram and Results

Injection Details

Injection Name:	**N029942-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

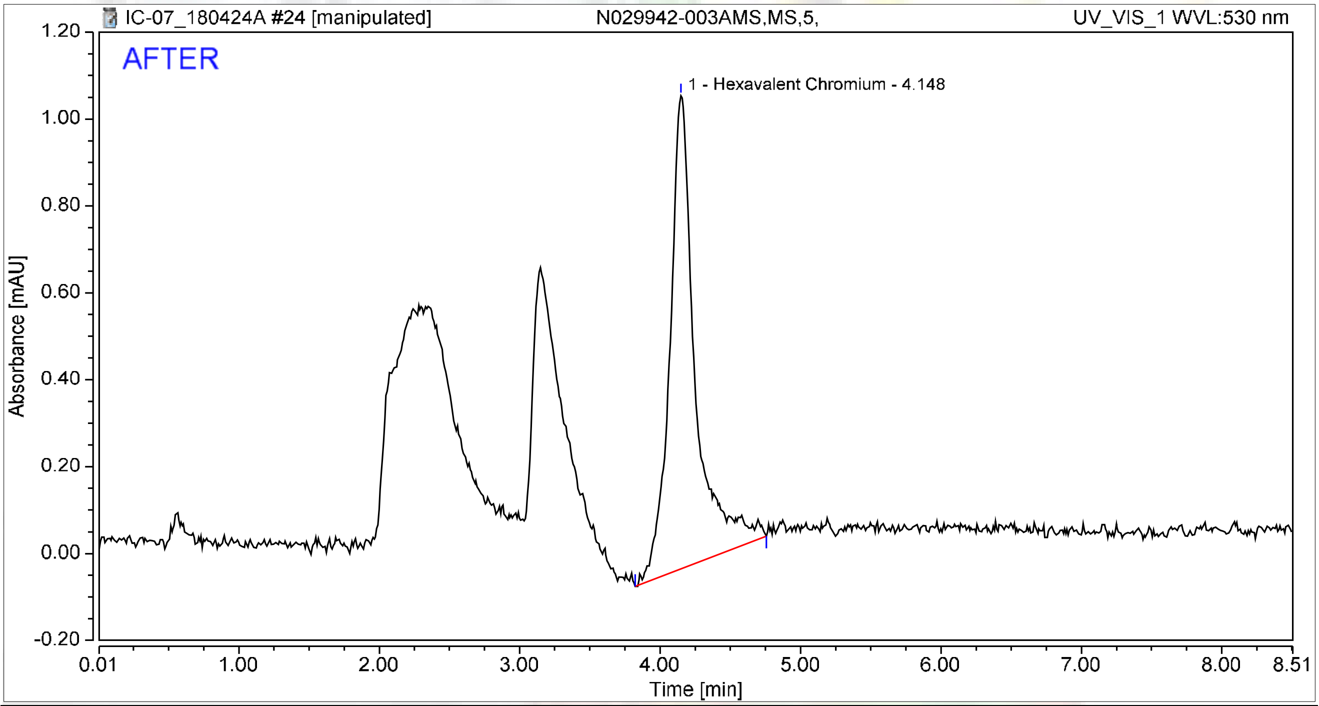
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.231	1.089	100.00	100.00	0.9122
Total:			**0.231**	**1.089**	**100.00**	**100.00**	

rba 4/26/2018

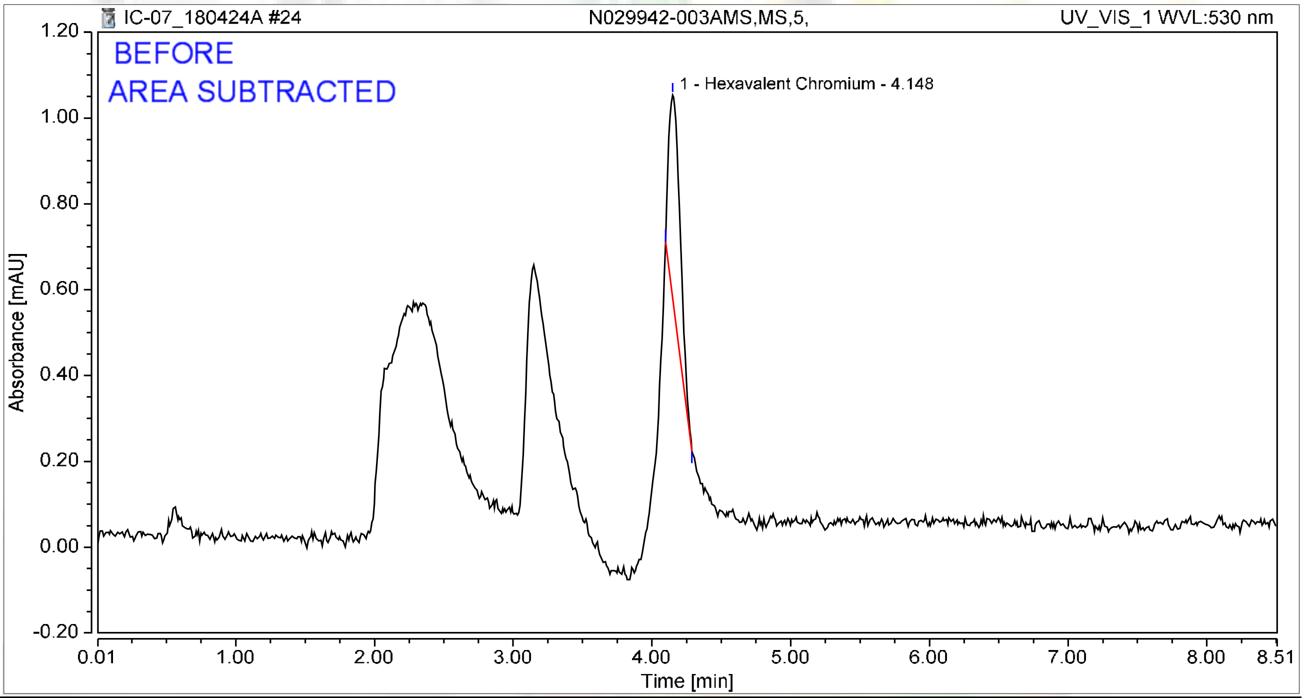
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029942-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.046	0.469	100.00	100.00	0.1815
Total:			**0.046**	**0.469**	**100.00**	**100.00**	

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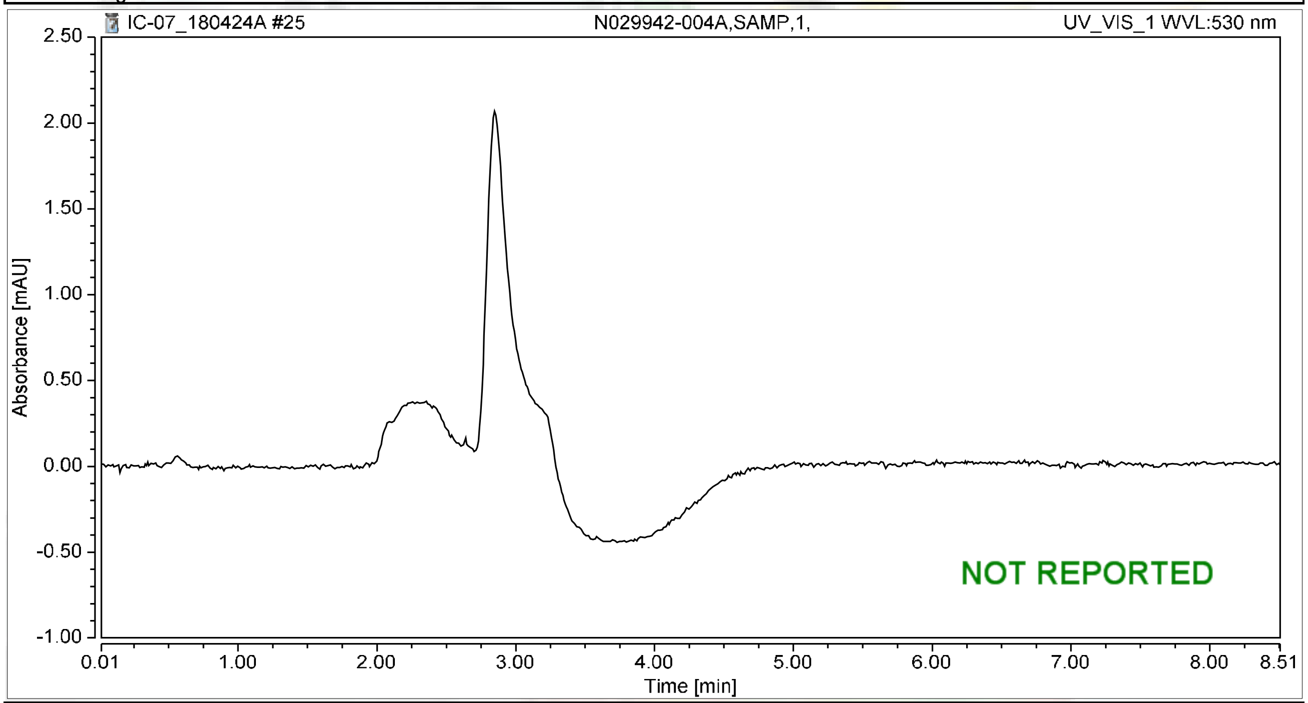
Chromatogram and Results

Injection Details			
Injection Name:	**N029942-004A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

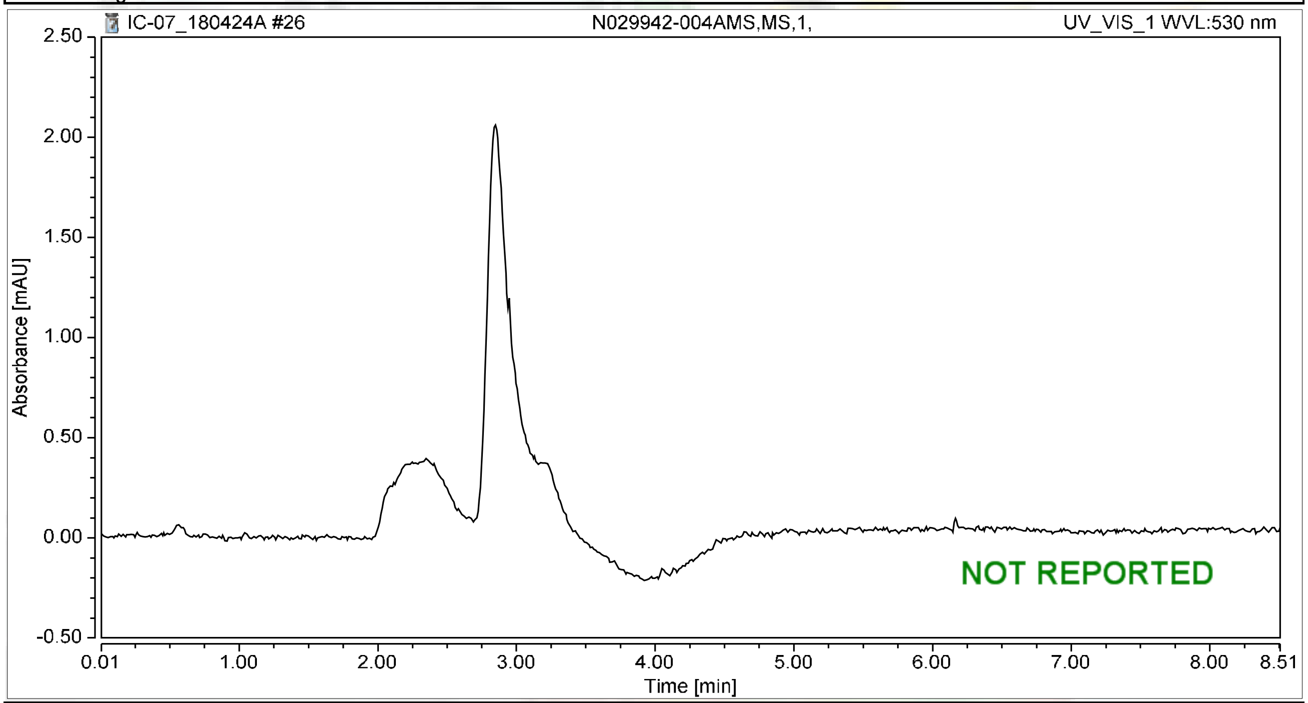
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

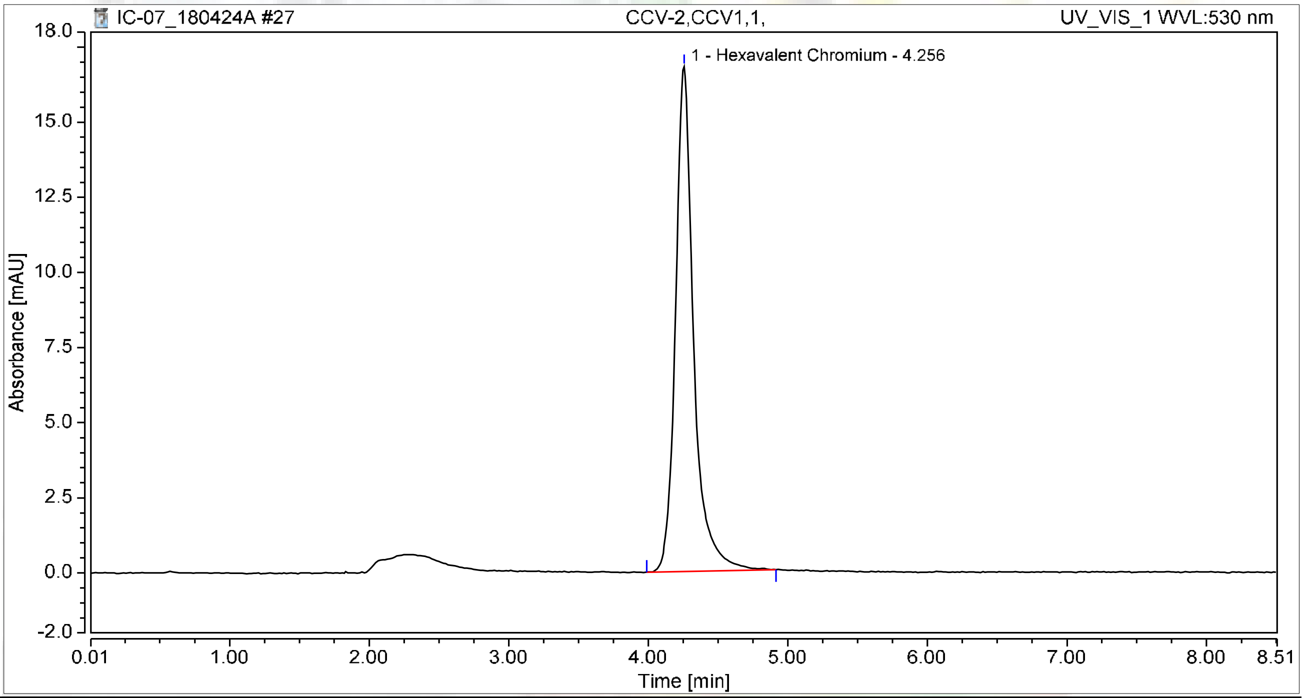
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

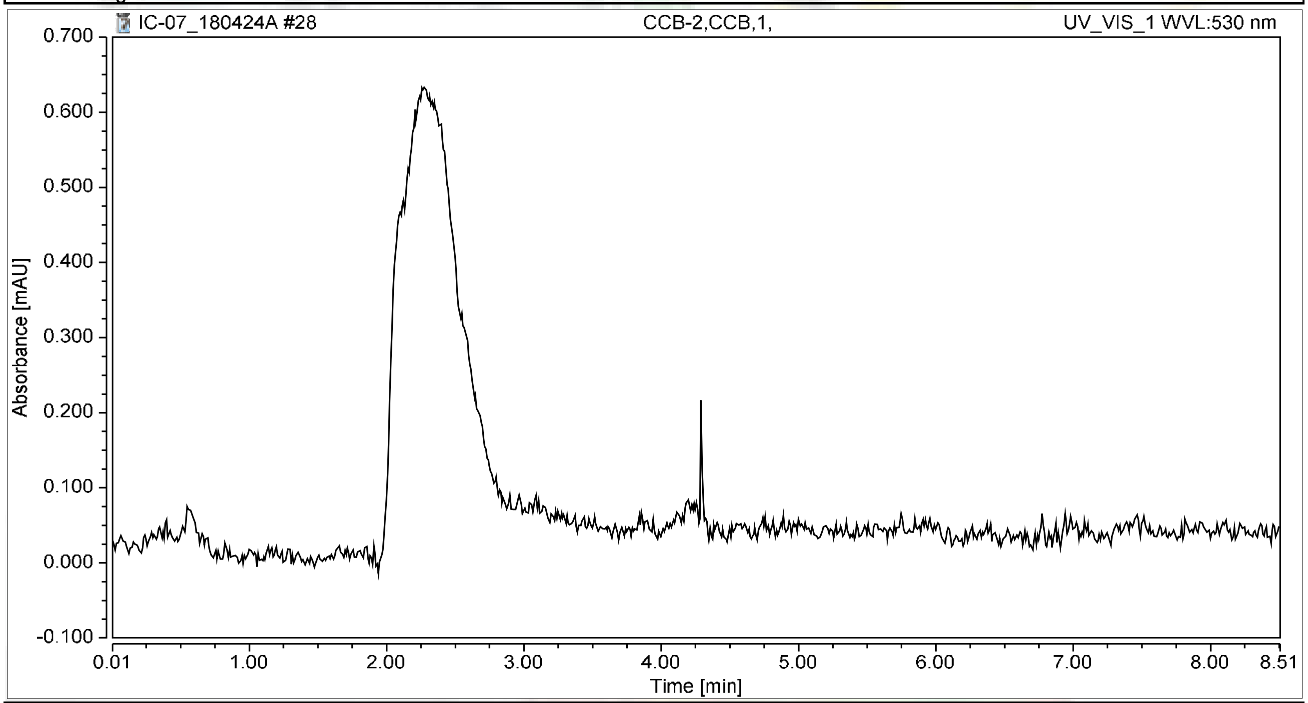
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.531	16.808	100.00	100.00	9.9827
Total:			**2.531**	**16.808**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 11:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

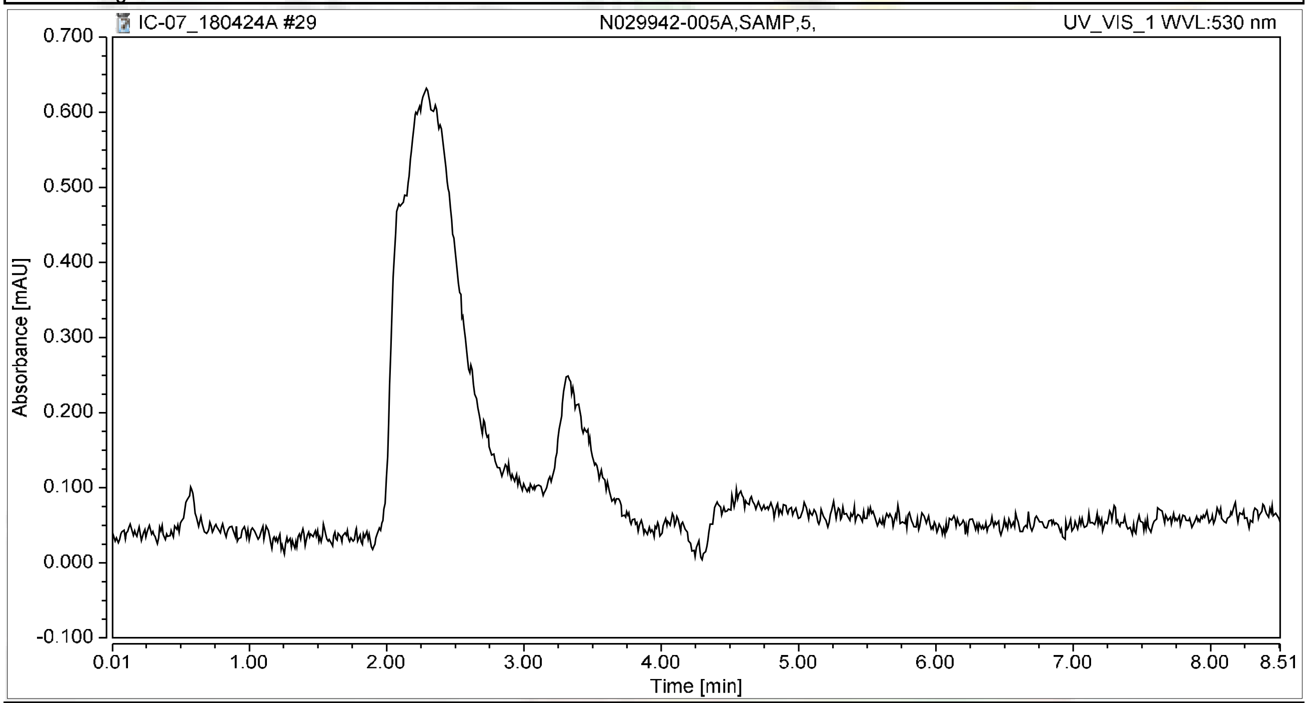
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 12:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

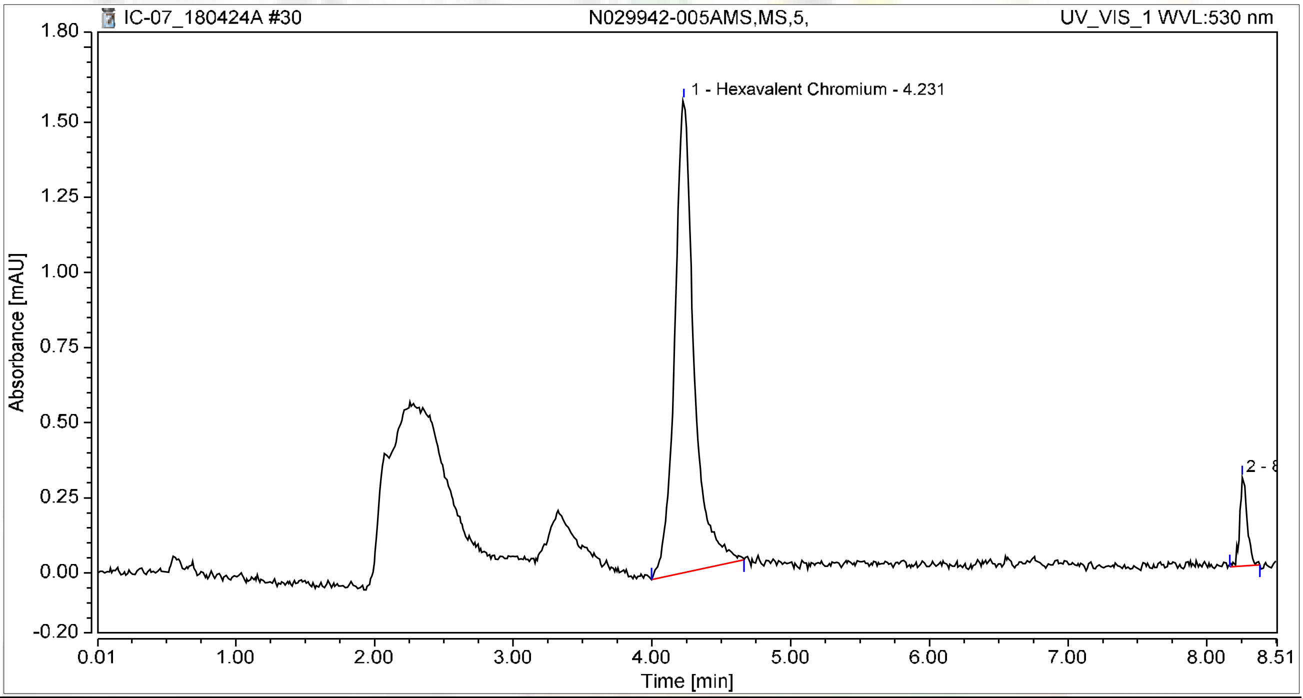
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 12:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

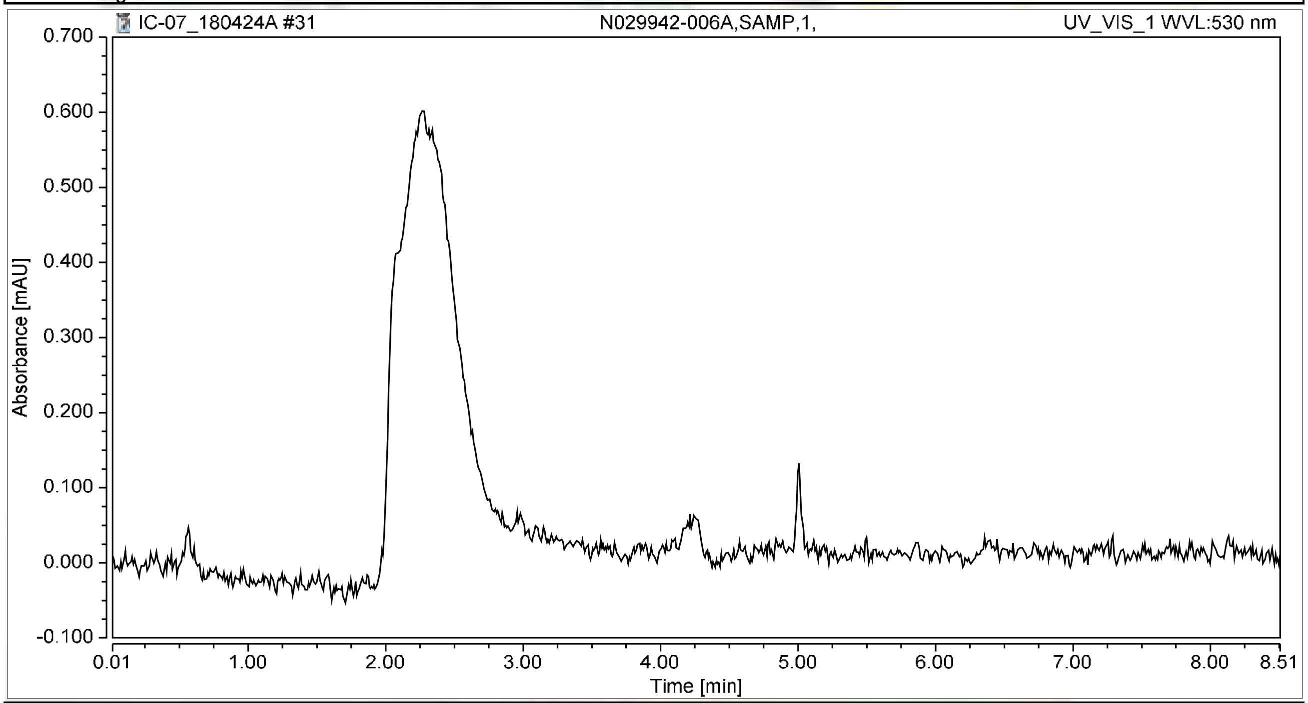
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.255	1.572	93.25	84.24	1.0078
2		8.256	0.018	0.294	6.75	15.76	n.a.
Total:			**0.274**	**1.866**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

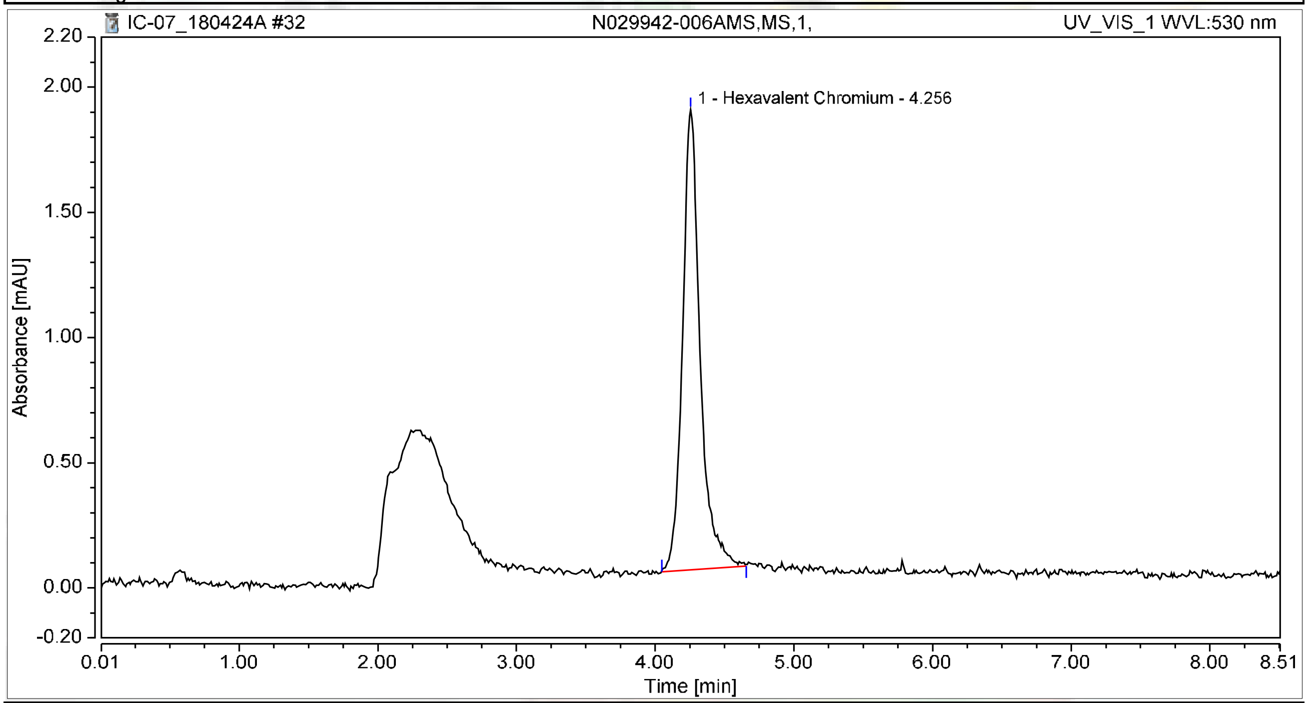
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 12:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

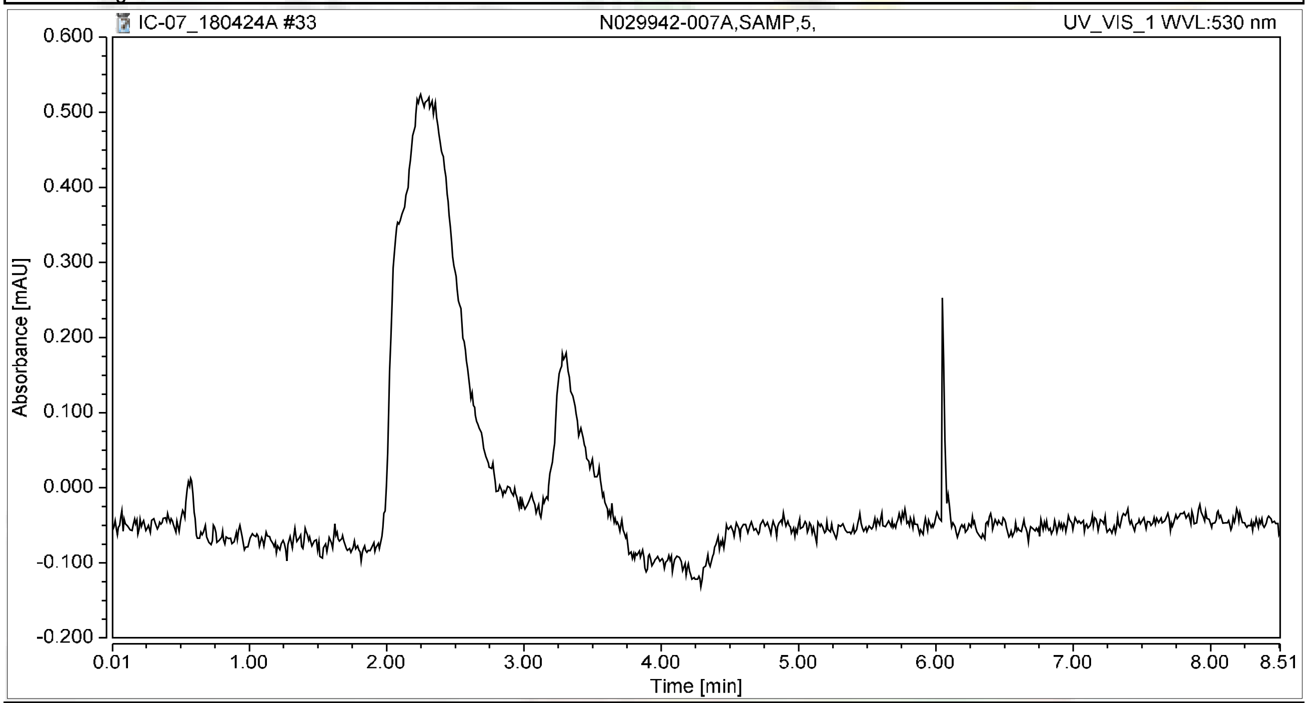
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.271	1.839	100.00	100.00	1.0677
Total:			**0.271**	**1.839**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-007A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

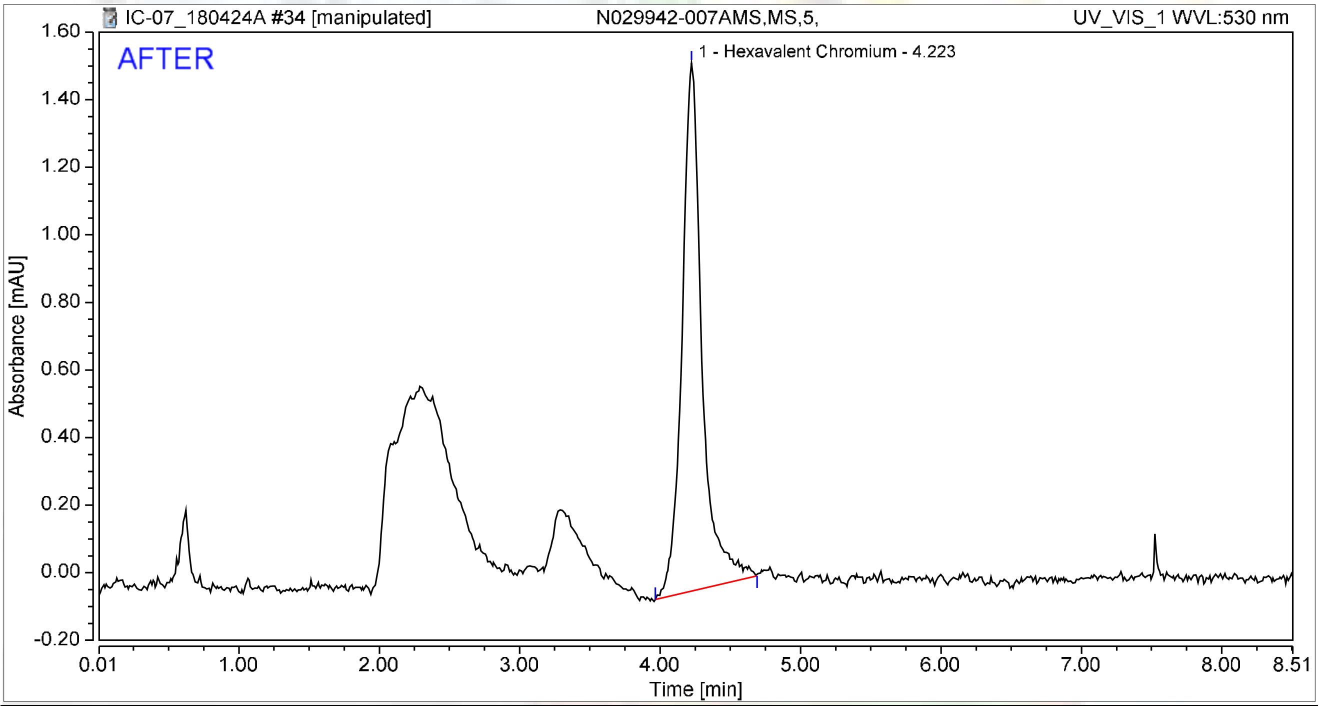
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-007AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 12:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.258	1.563	100.00	100.00	1.0158
Total:			**0.258**	**1.563**	**100.00**	**100.00**	

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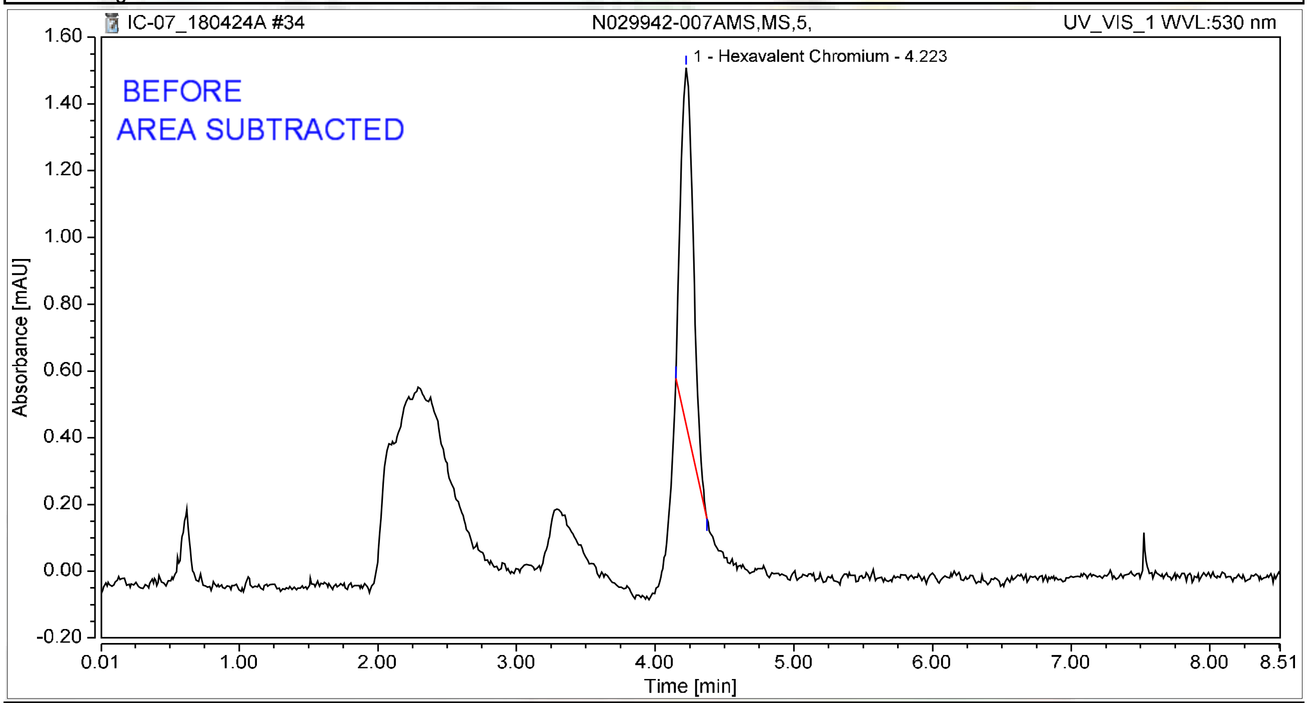
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029942-007AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 12:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.113	1.071	100.00	100.00	0.4452
Total:			**0.113**	**1.071**	**100.00**	**100.00**	

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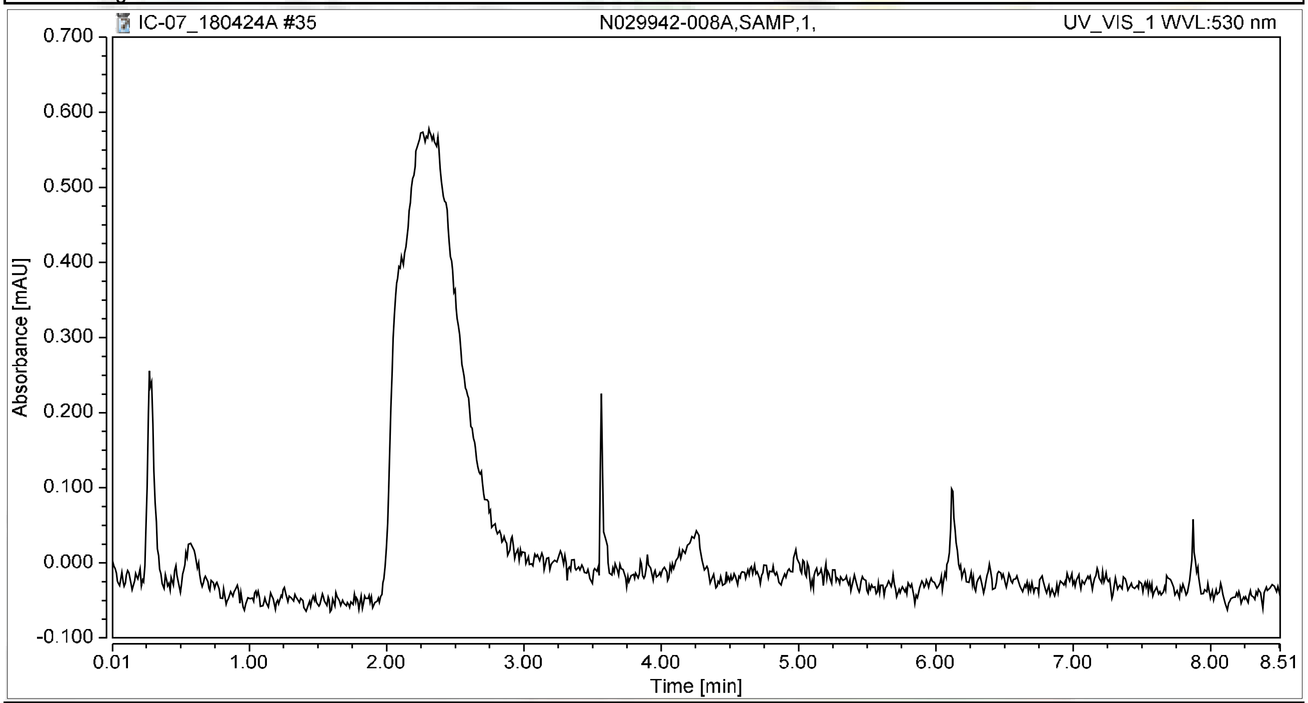
Chromatogram and Results

Injection Details

Injection Name:	**N029942-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 13:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

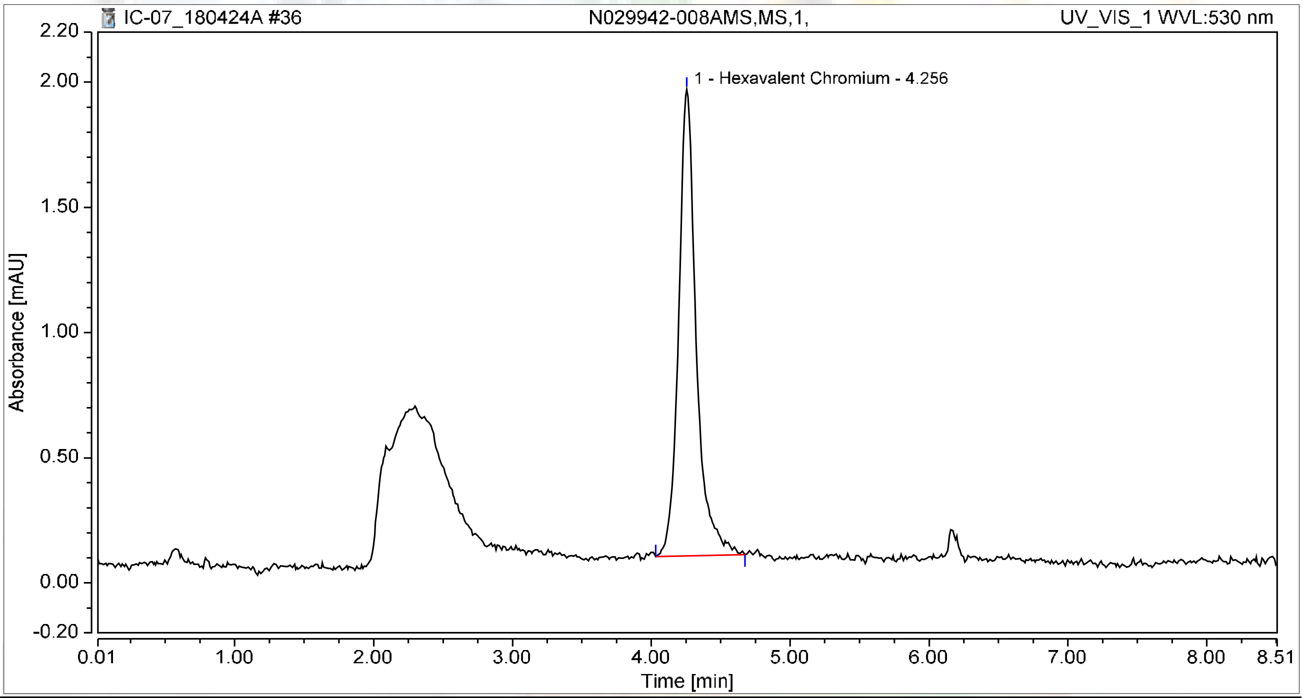
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-008AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 13:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

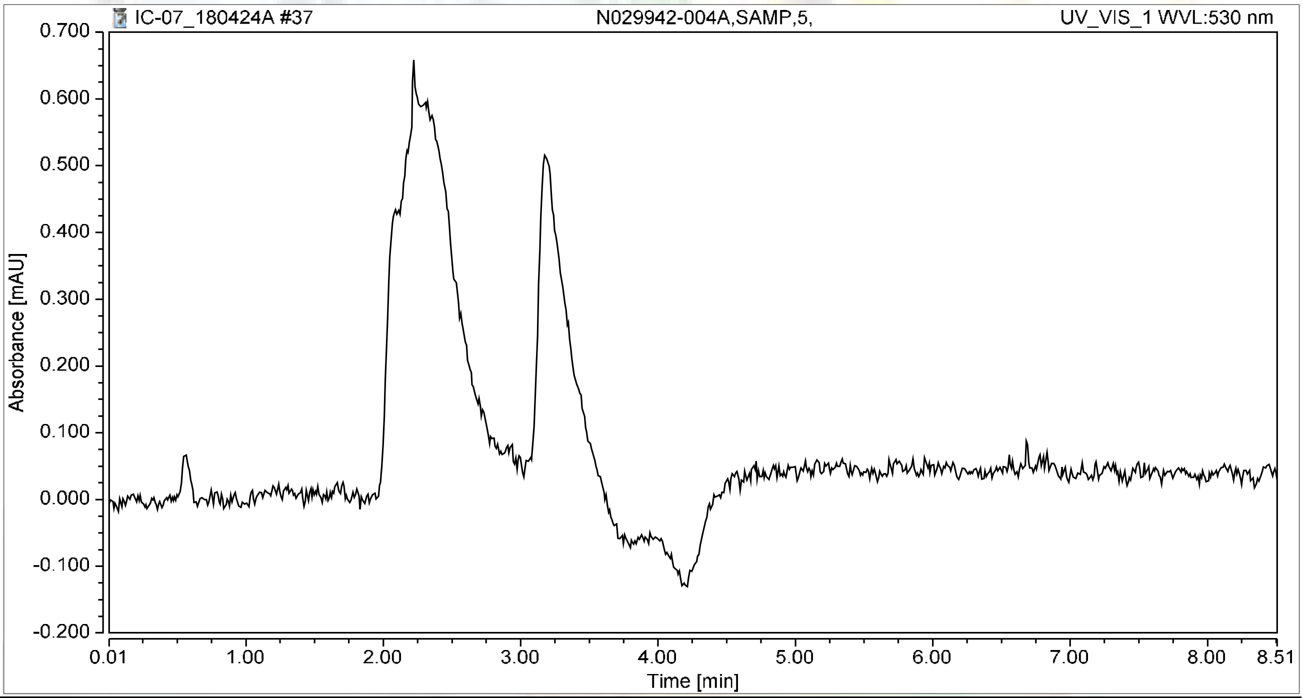
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.274	1.863	100.00	100.00	1.0816
Total:			**0.274**	**1.863**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 13:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

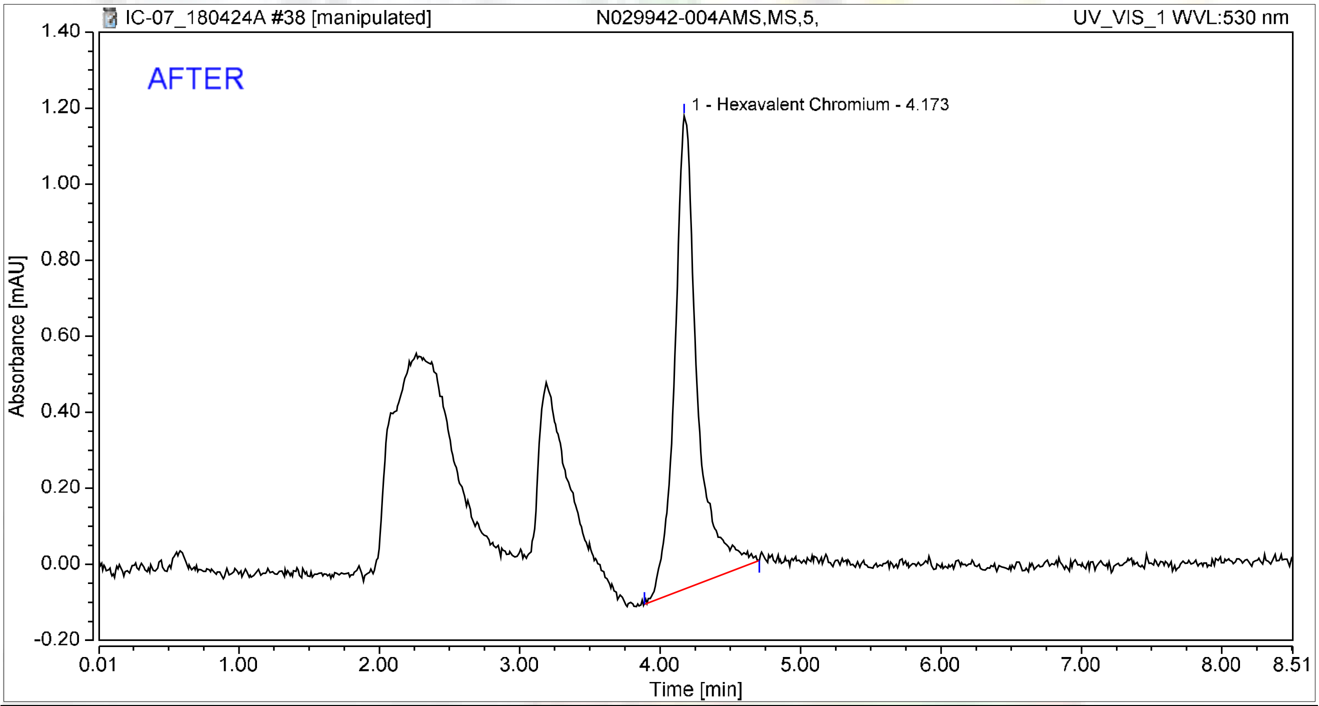
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 13:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.234	1.244	100.00	100.00	0.9233
Total:			**0.234**	**1.244**	**100.00**	**100.00**	

rba 4/26/2018

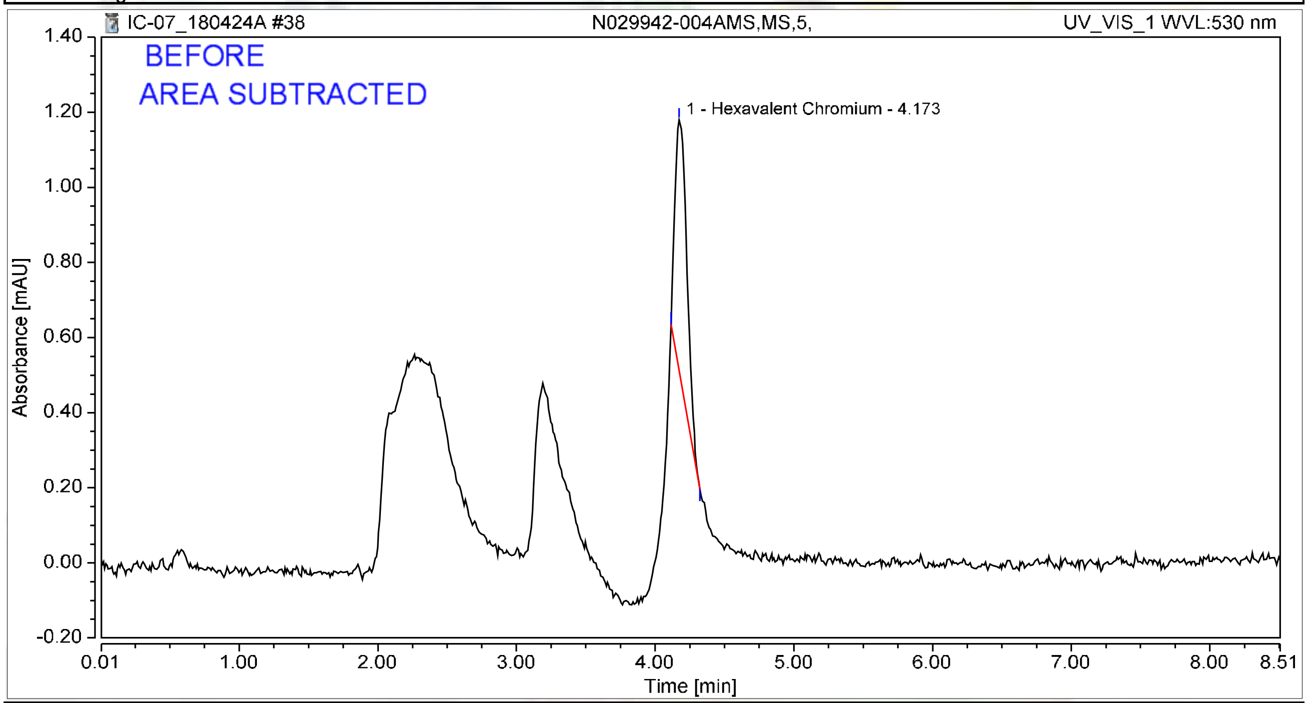
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029942-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 13:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.067	0.667	100.00	100.00	0.2661
Total:			**0.067**	**0.667**	**100.00**	**100.00**	

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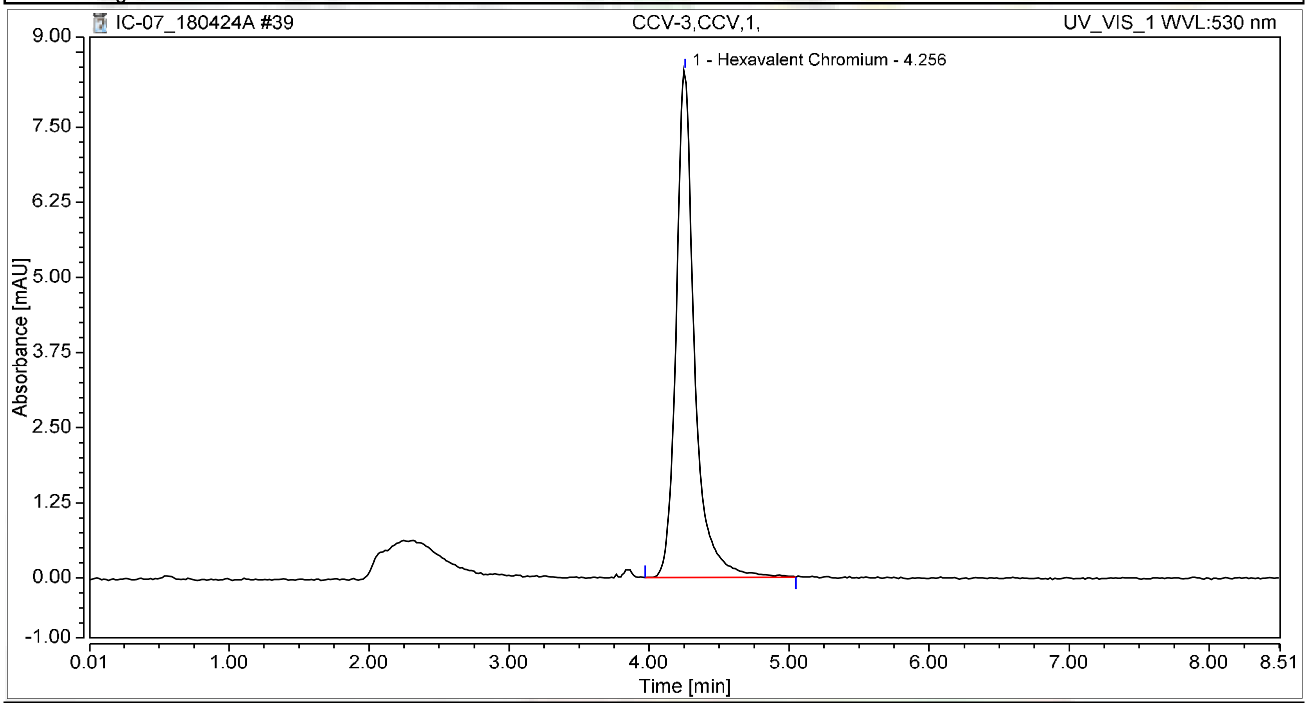
Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 13:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

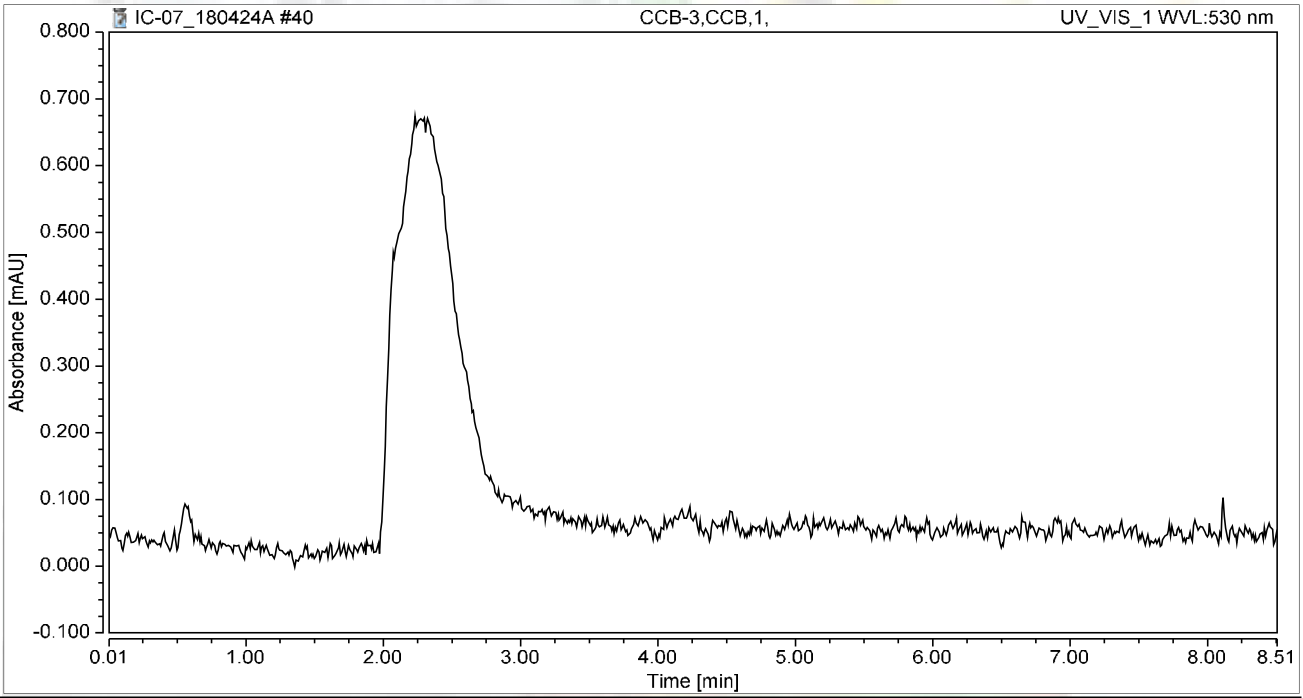
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.285	8.431	100.00	100.00	5.0673
Total:			**1.285**	**8.431**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 14:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

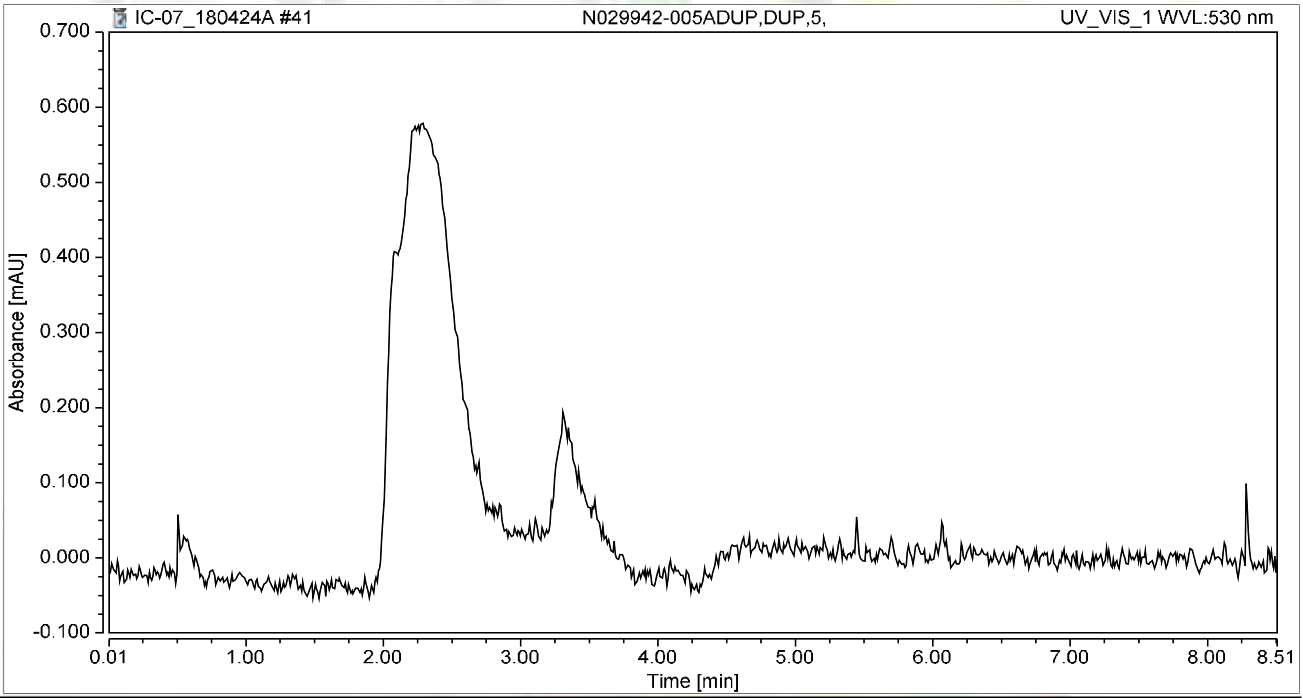
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-005ADUP,DUP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 14:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

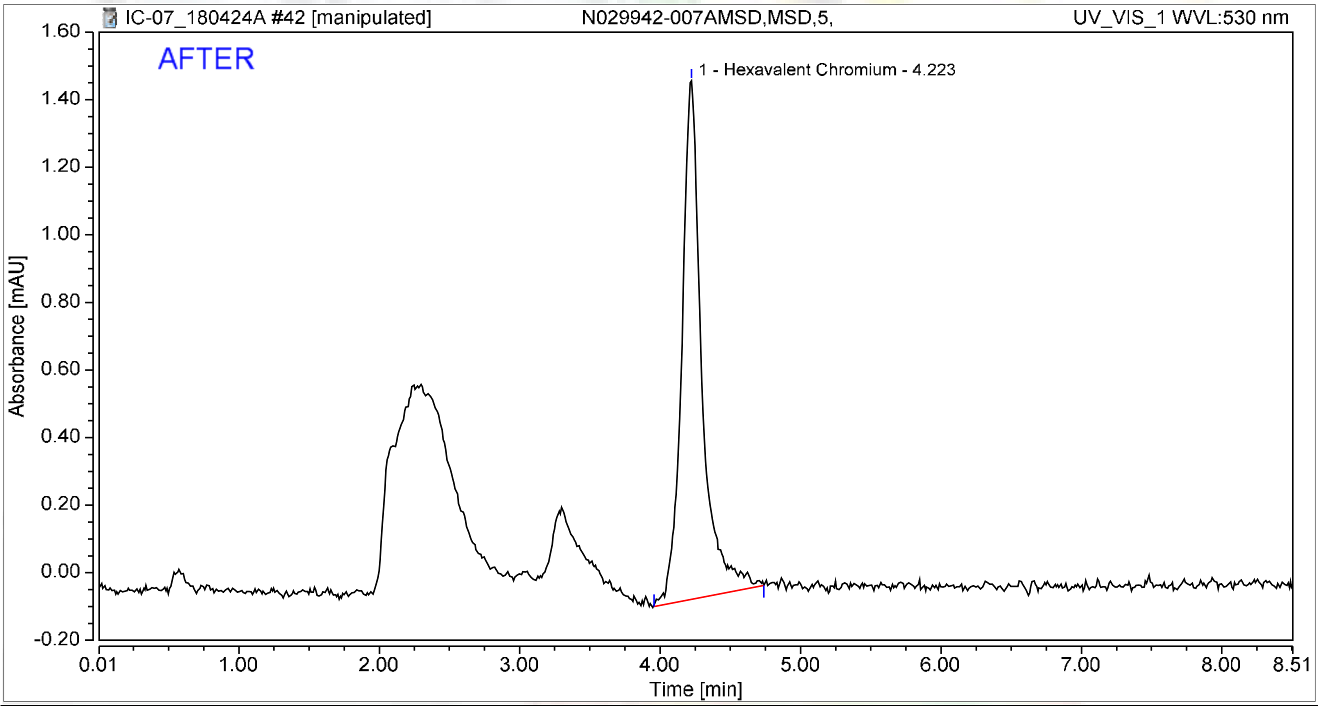
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-007AMSD,MSD,5,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 14:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.256	1.534	100.00	100.00	1.0083
Total:			**0.256**	**1.534**	**100.00**	**100.00**	

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Reviewed by:
Nancy 5/7/2018

My first report/integration

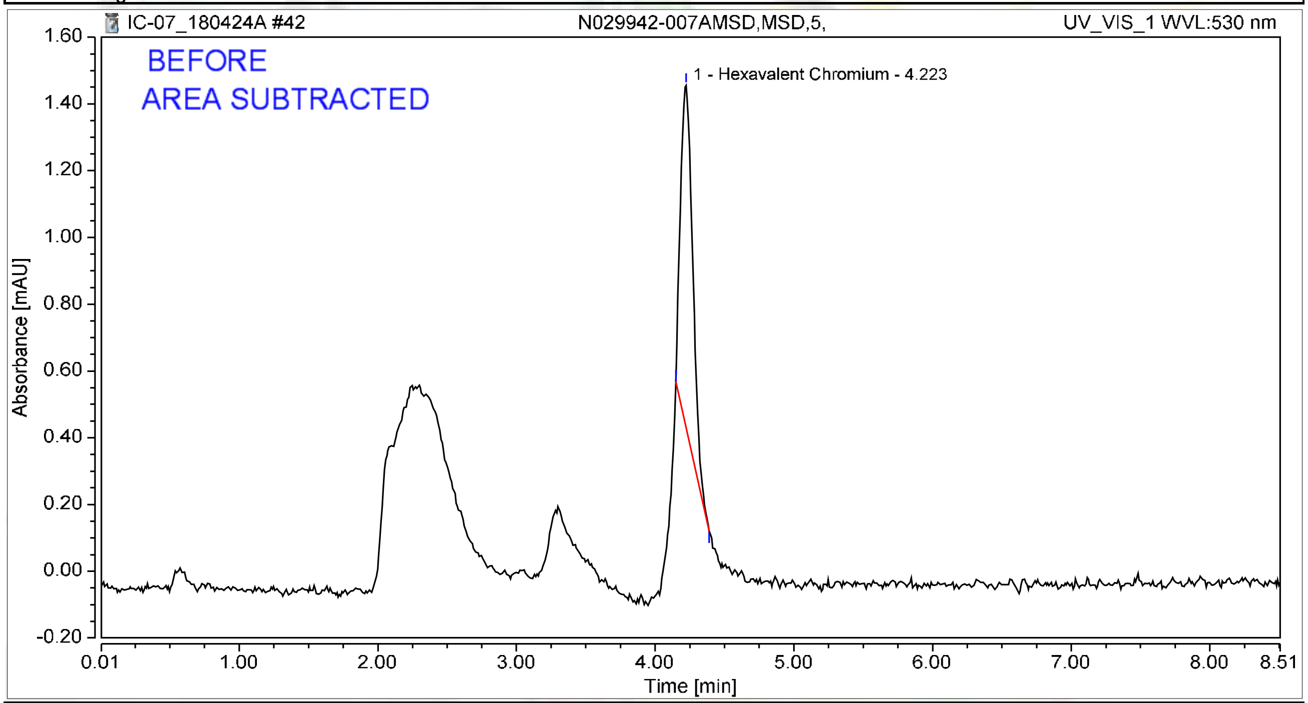
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N029942-007AMSD,MSD,5,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 14:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.104	1.026	100.00	100.00	0.4092
Total:			**0.104**	**1.026**	**100.00**	**100.00**	

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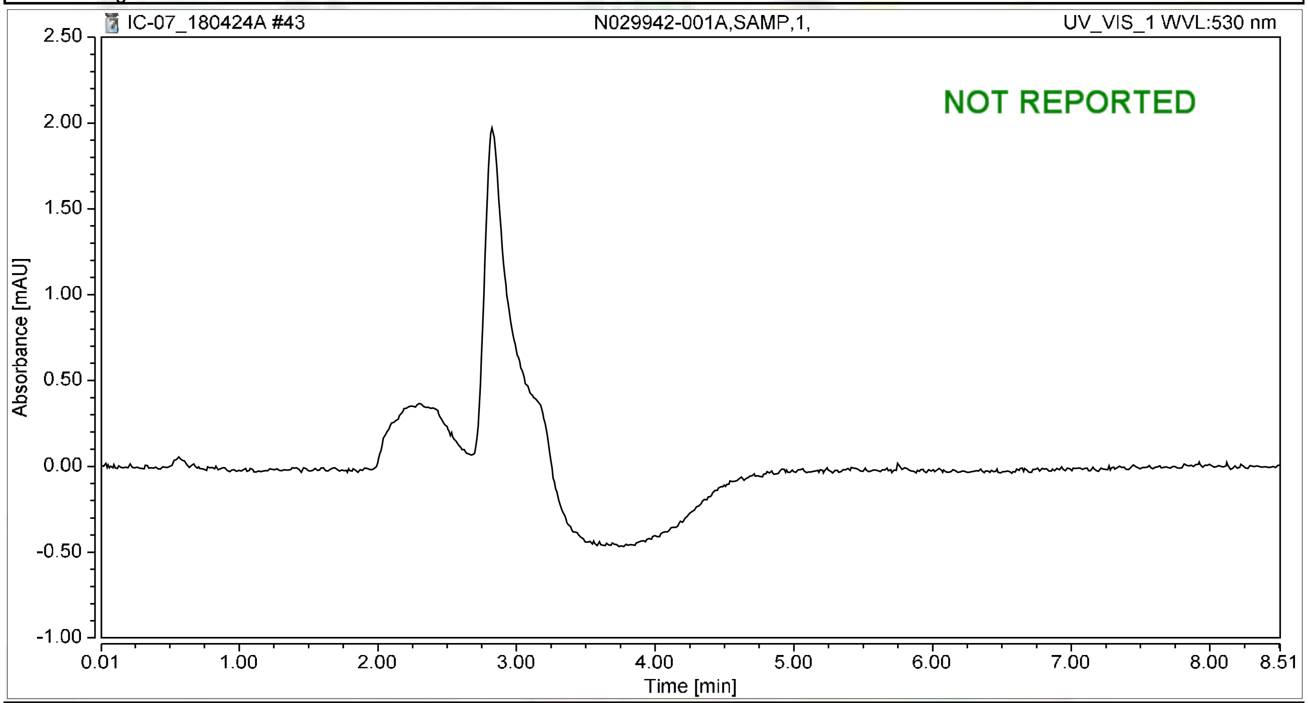
Chromatogram and Results

Injection Details

Injection Name:	**N029942-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 14:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

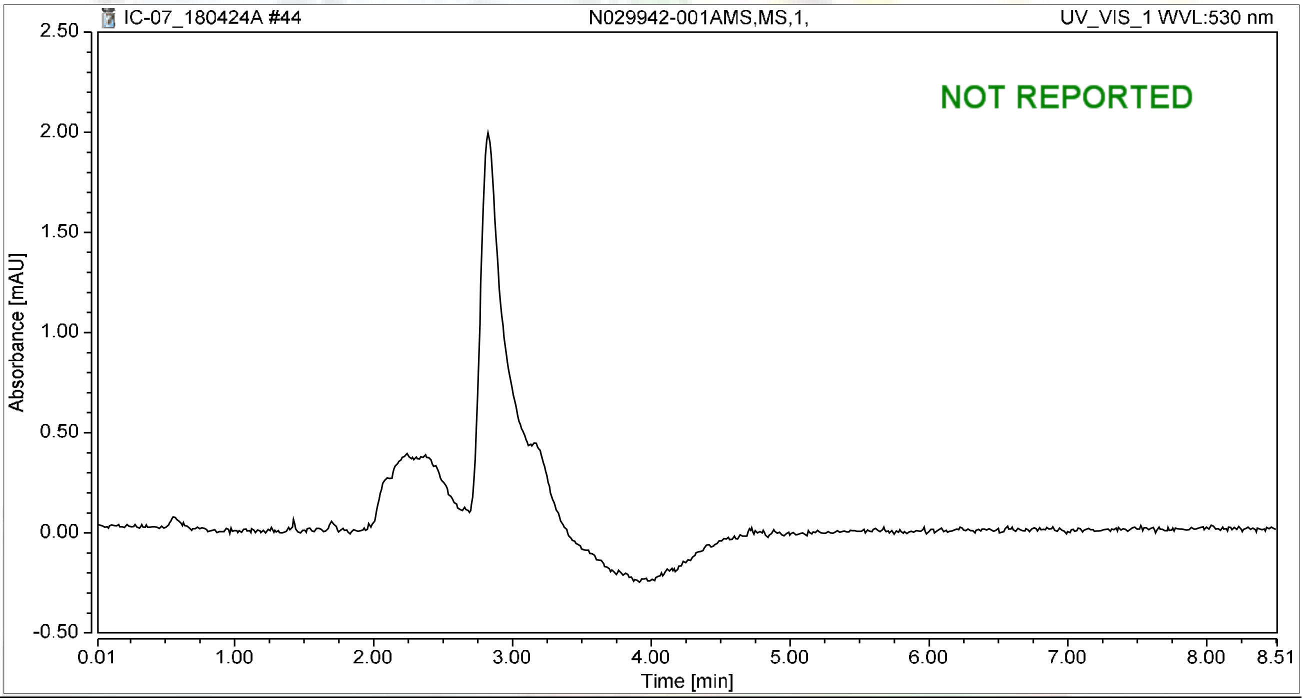
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 14:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

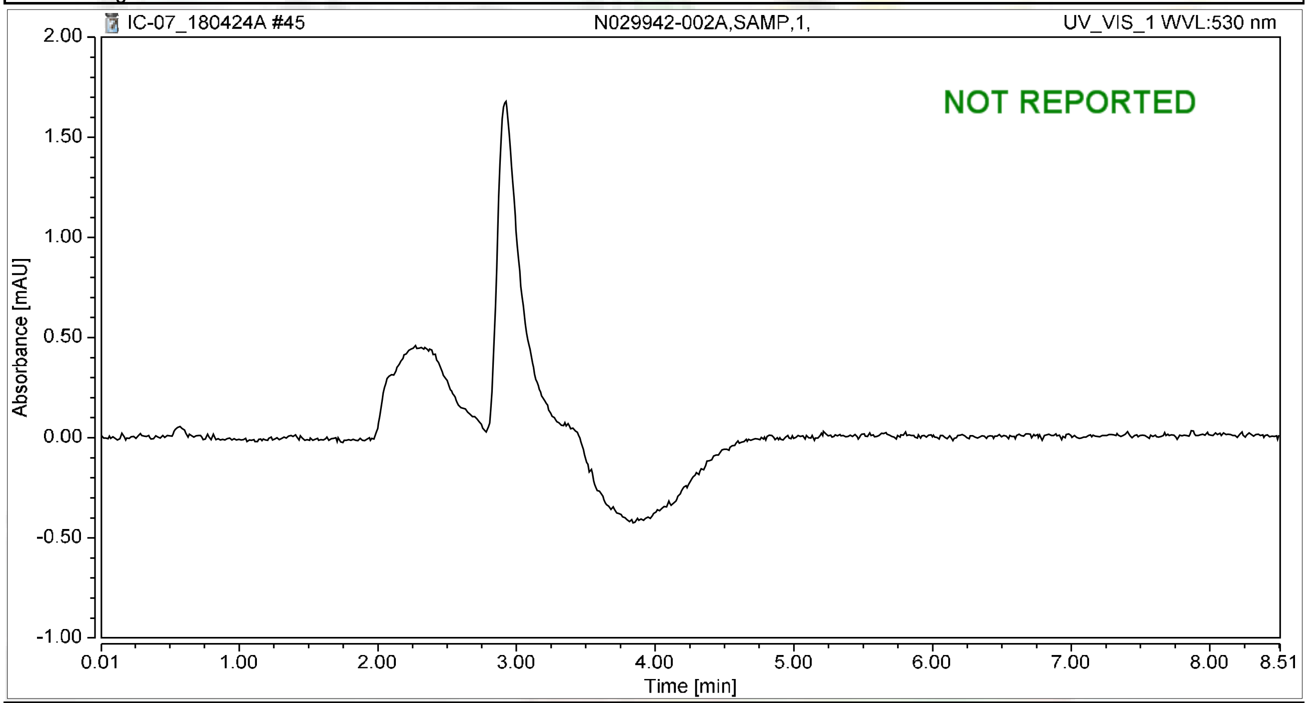
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 14:48**	*Sample Weight:*	**1.0000**

Chromatogram



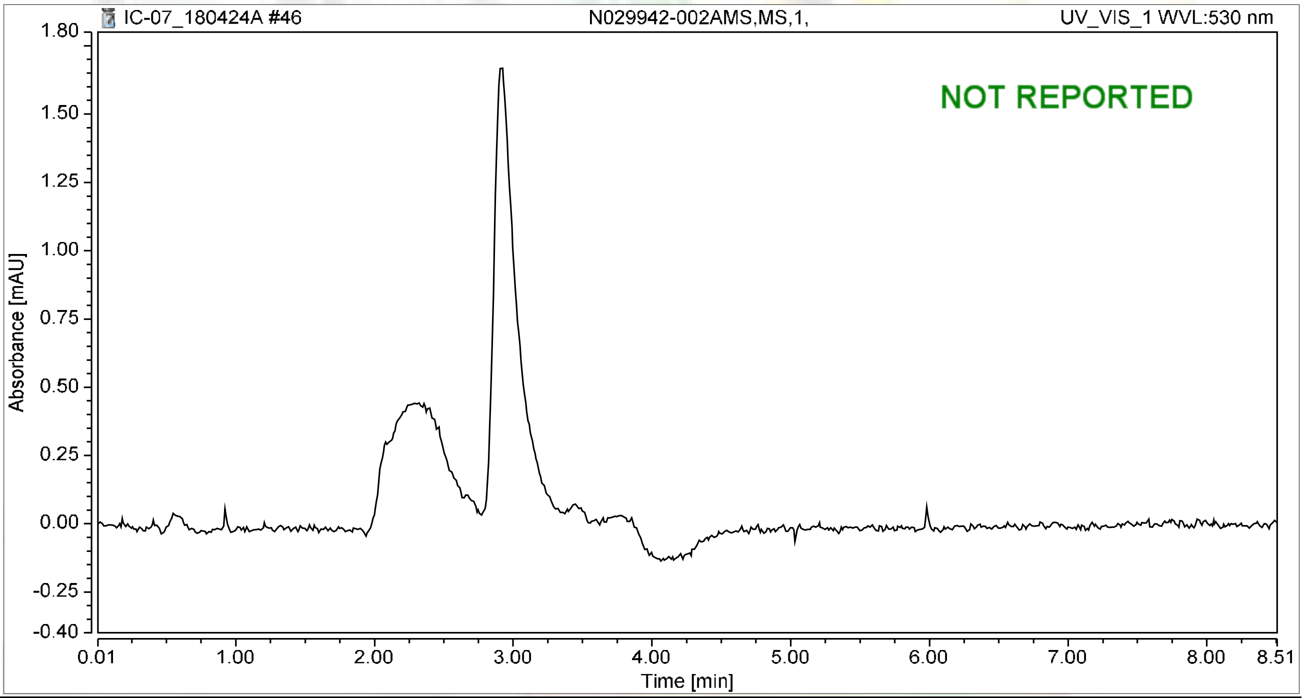
Integration Results

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

Chromatogram and Results

Injection Details			
Injection Name:	**N029942-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 14:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

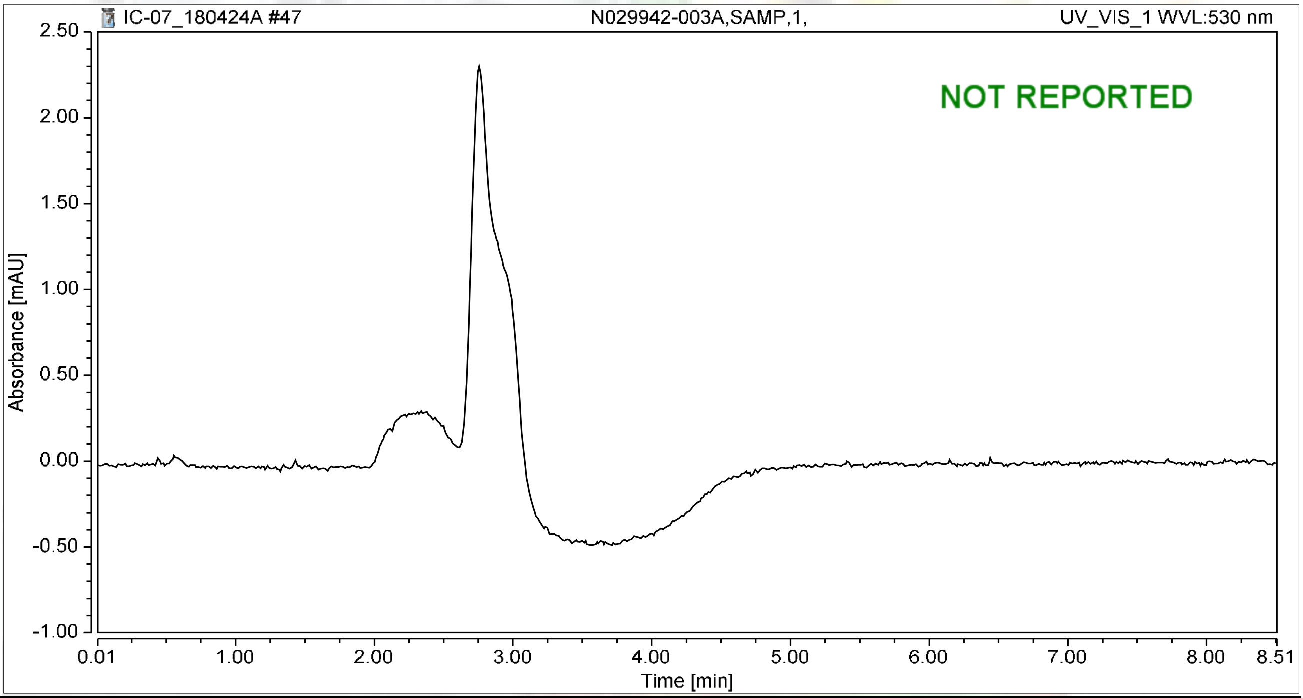
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 15:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

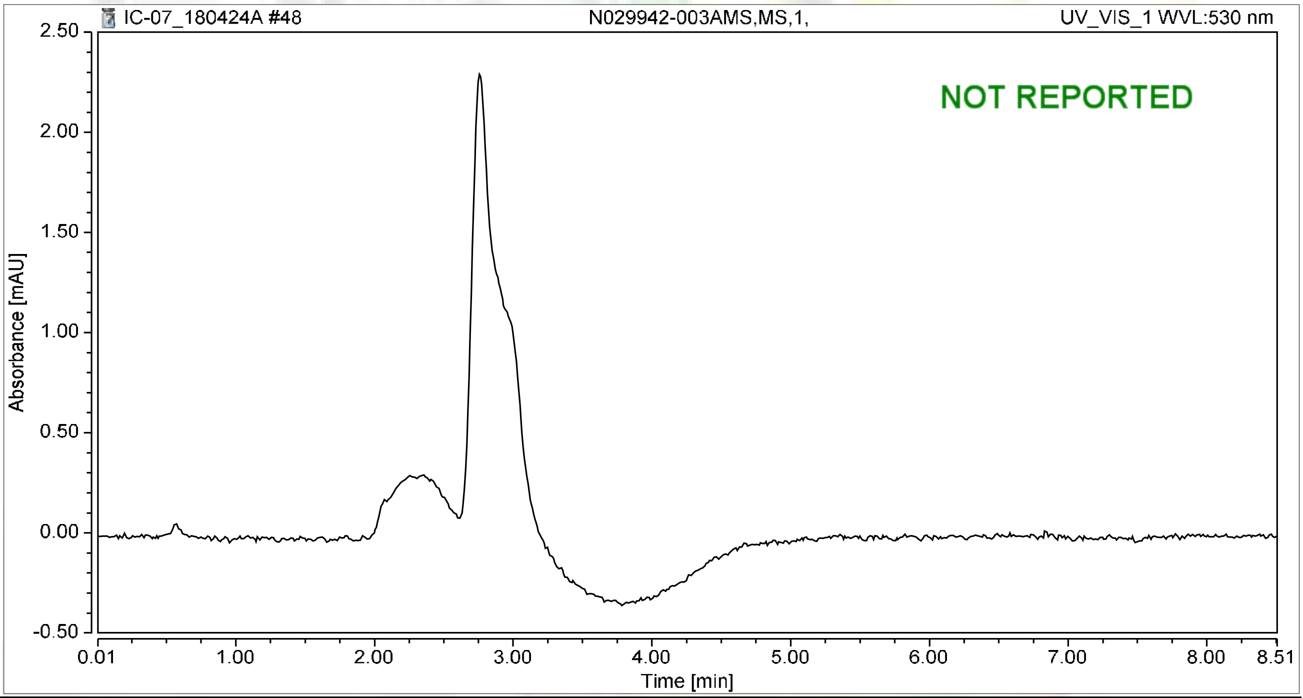
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 15:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

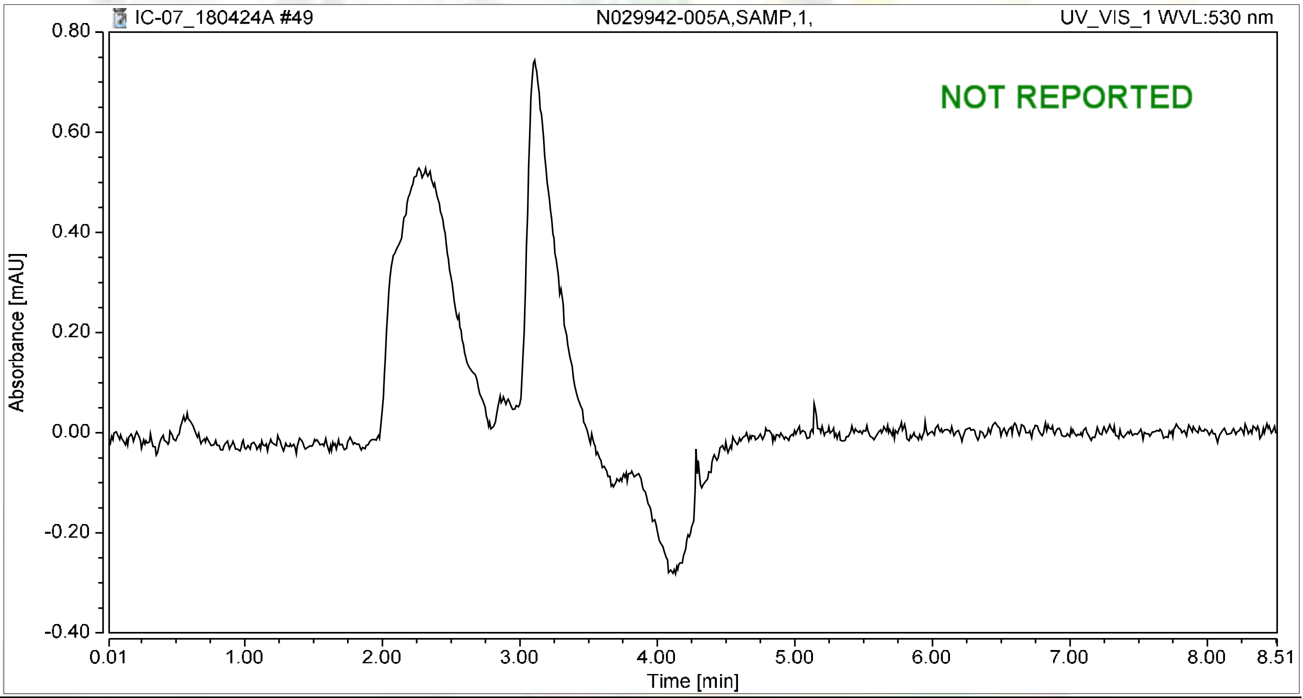
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 15:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

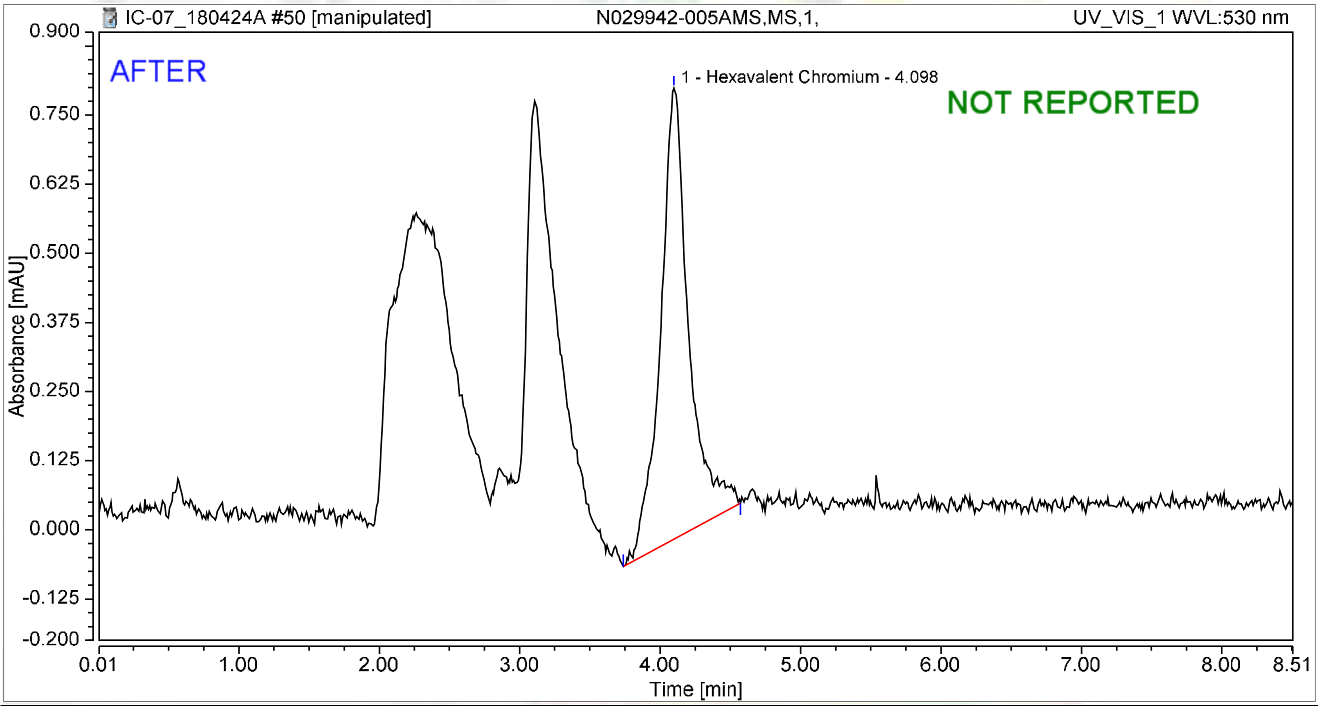
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 15:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.191	0.816	100.00	100.00	0.7534
Total:			**0.191**	**0.816**	**100.00**	**100.00**	

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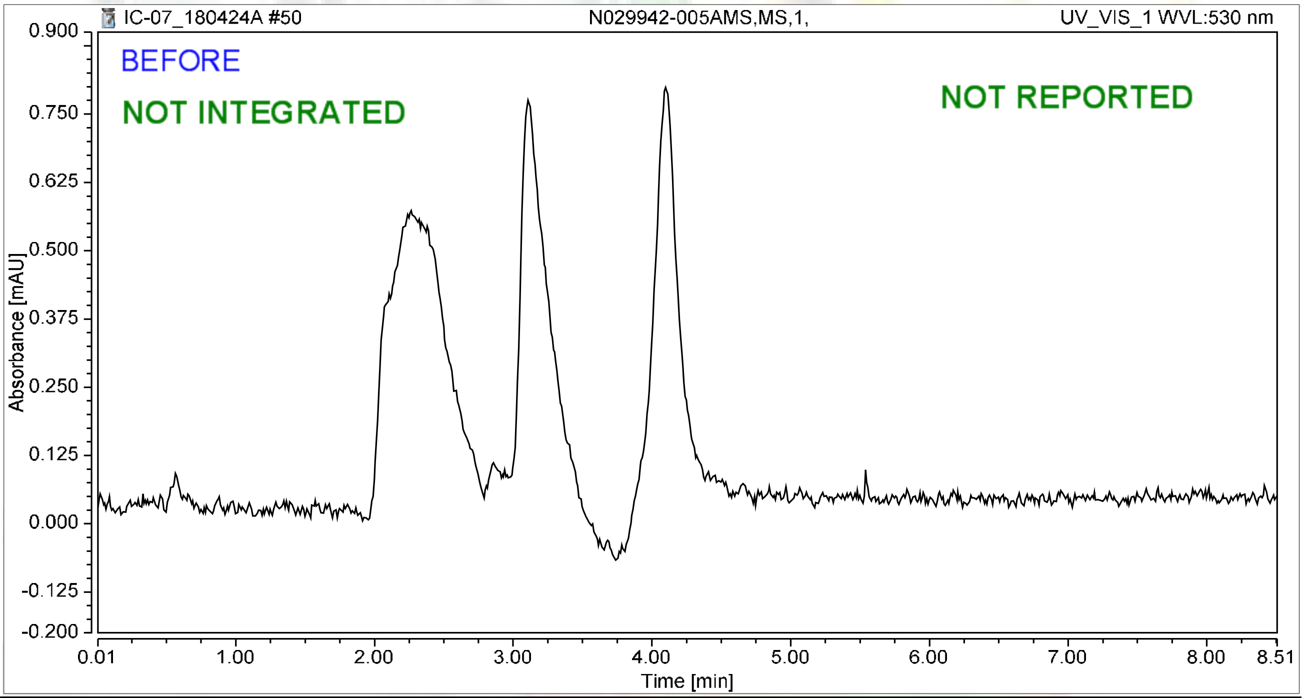
Chromatogram and Results

Injection Details

Injection Name:	**N029942-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 15:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

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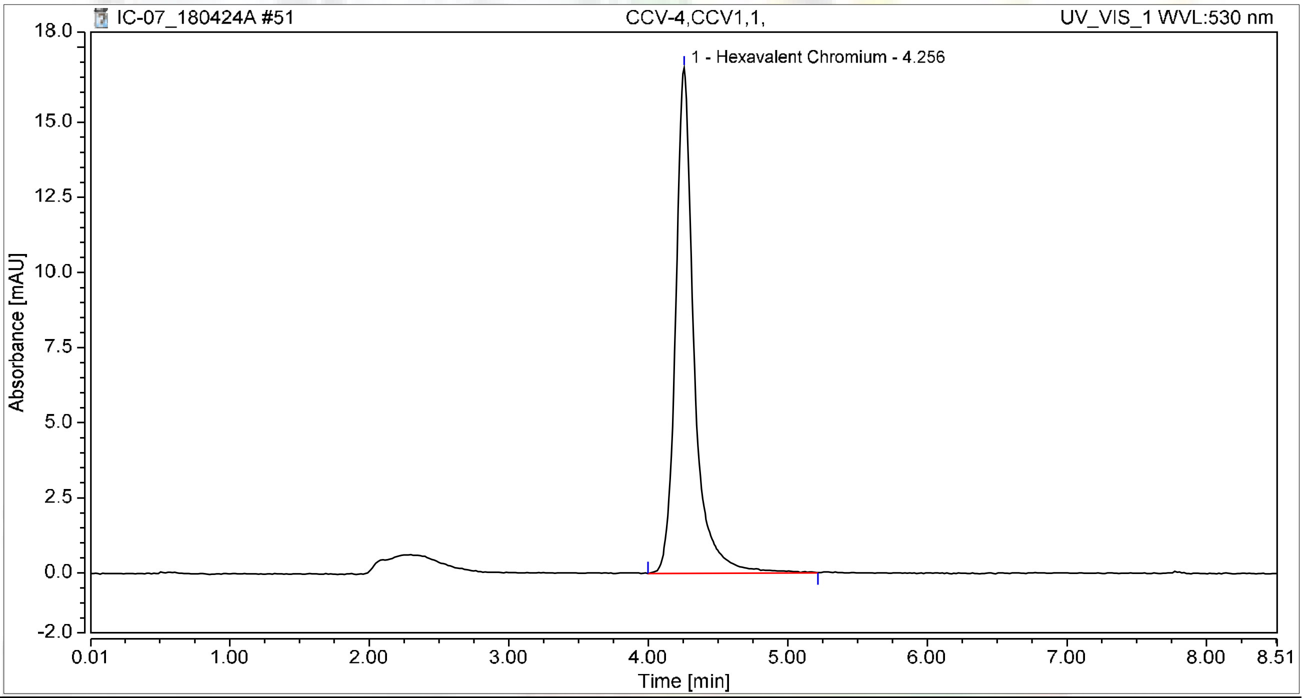
Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 15:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

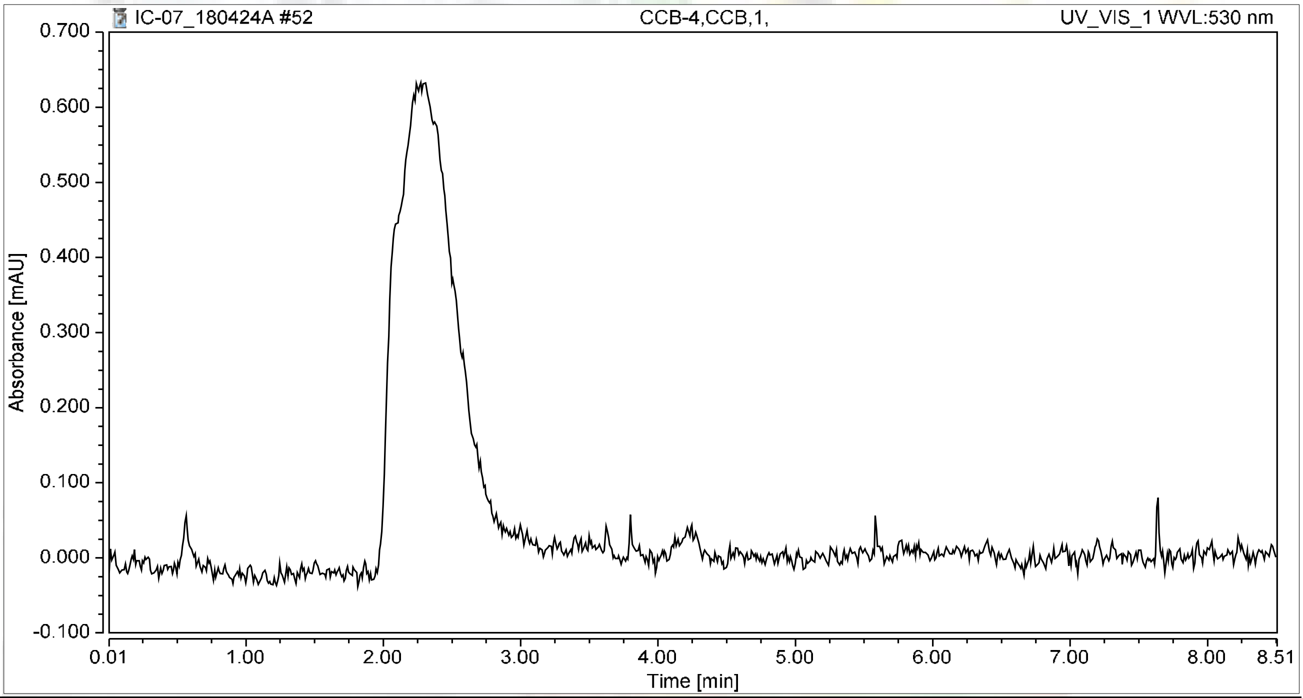
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.577	16.815	100.00	100.00	10.1640
Total:			**2.577**	**16.815**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 15:54**	*Sample Weight:*	**1.0000**

Chromatogram



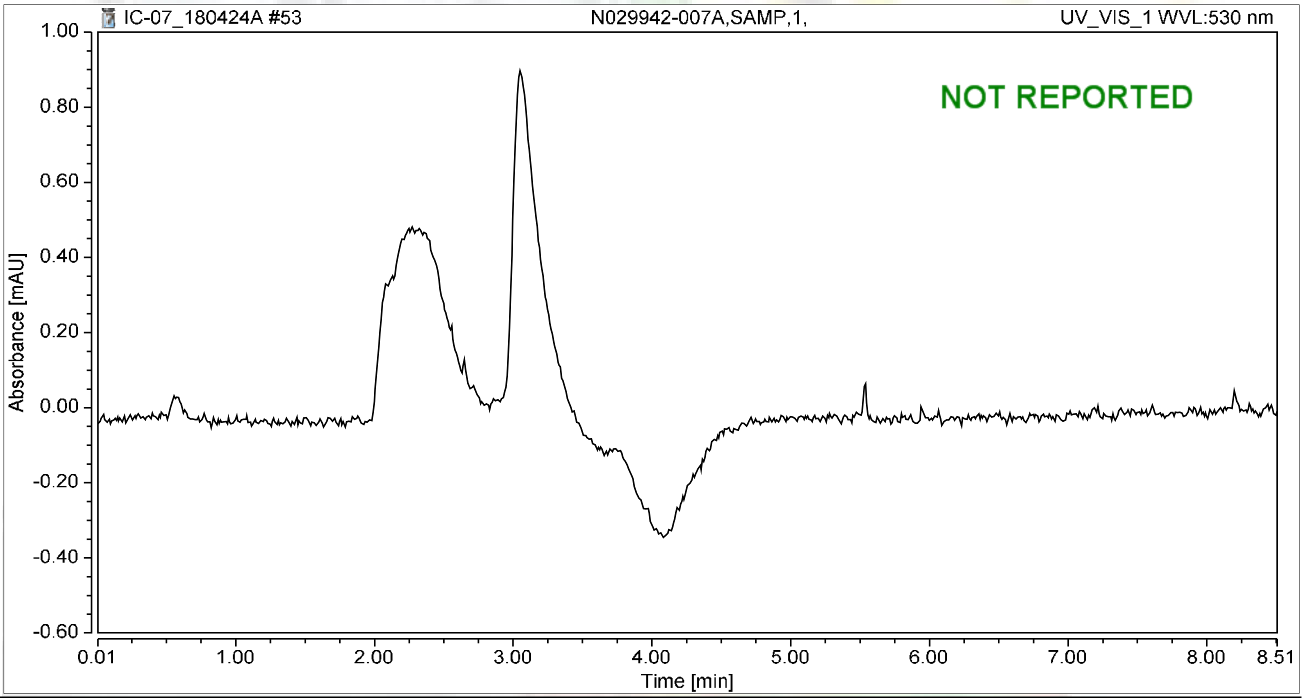
Integration Results

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

Chromatogram and Results

Injection Details			
Injection Name:	**N029942-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 16:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

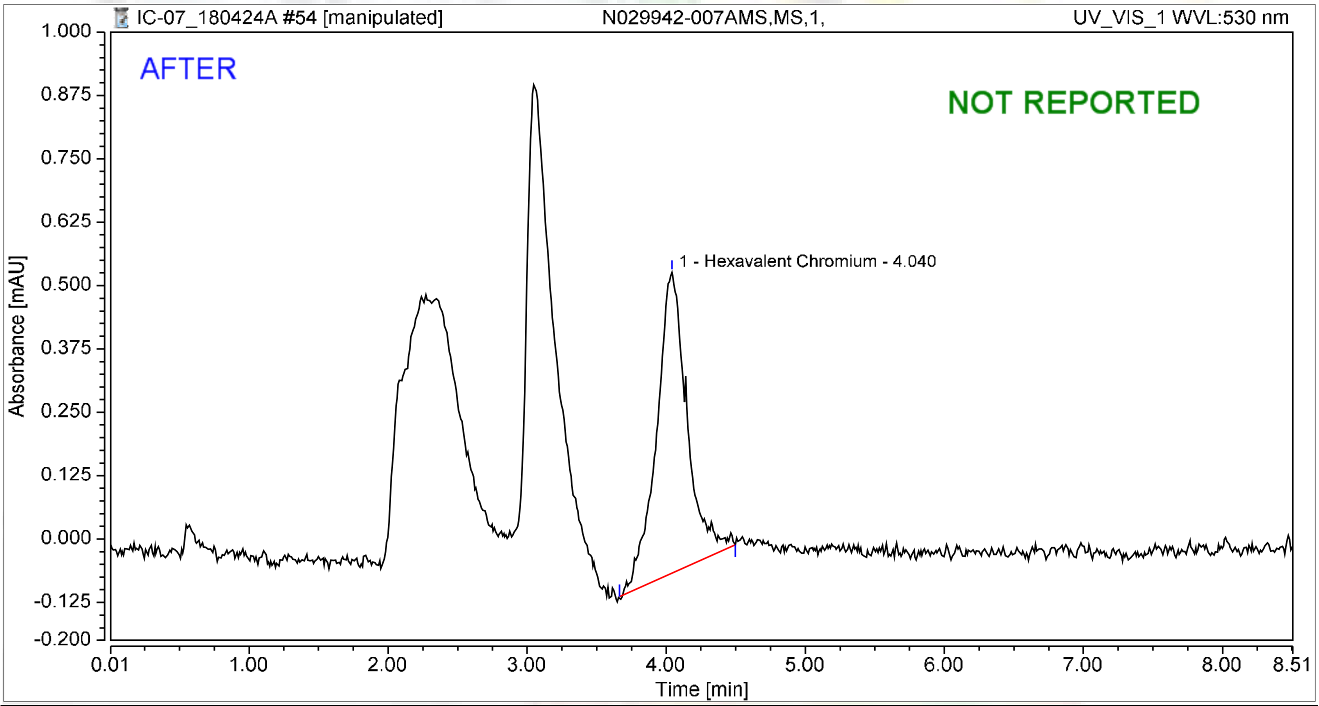
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029942-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 16:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.151	0.594	100.00	100.00	0.5972
Total:			**0.151**	**0.594**	**100.00**	**100.00**	

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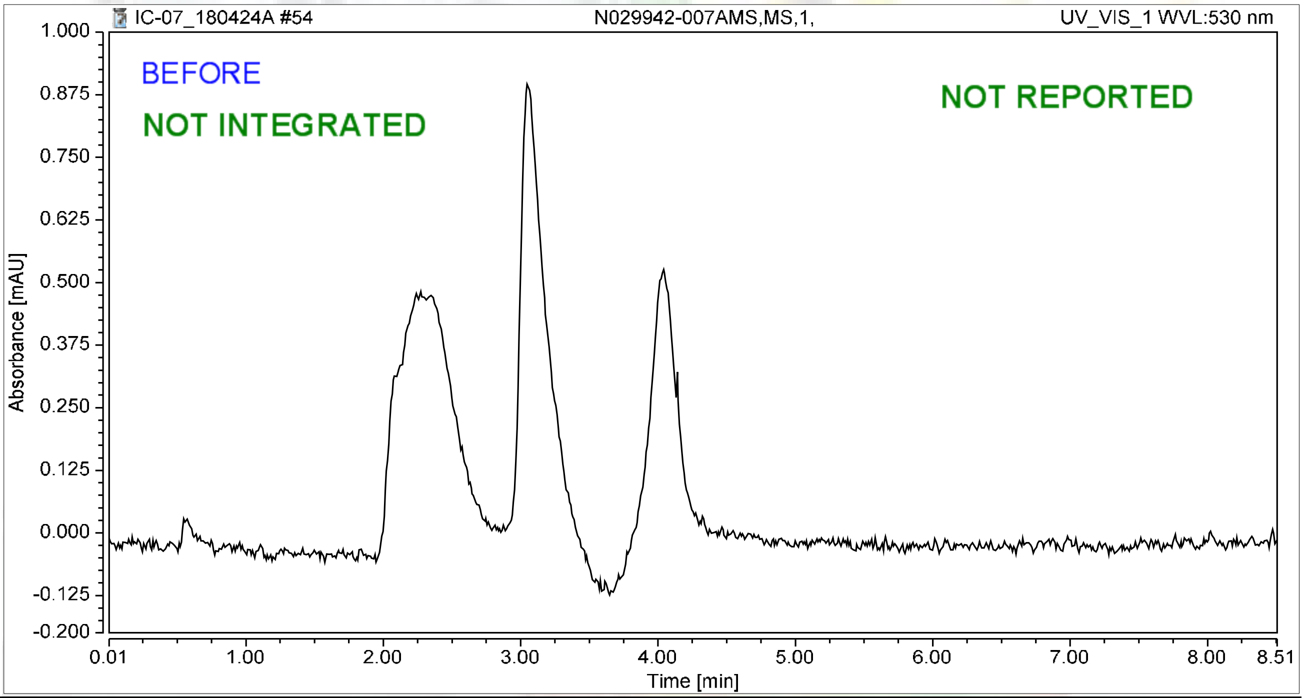
Chromatogram and Results

Injection Details

Injection Name:	**N029942-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 16:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

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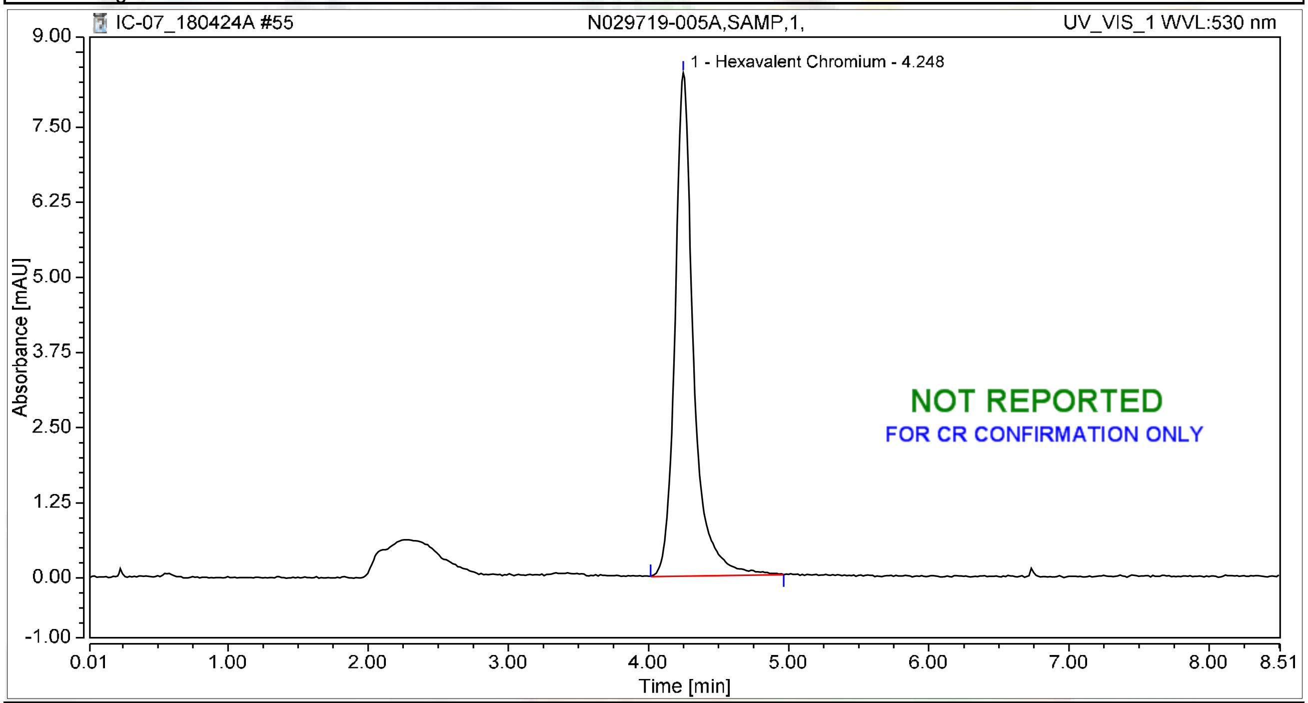
Chromatogram and Results

Injection Details

Injection Name:	**N029719-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 16:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

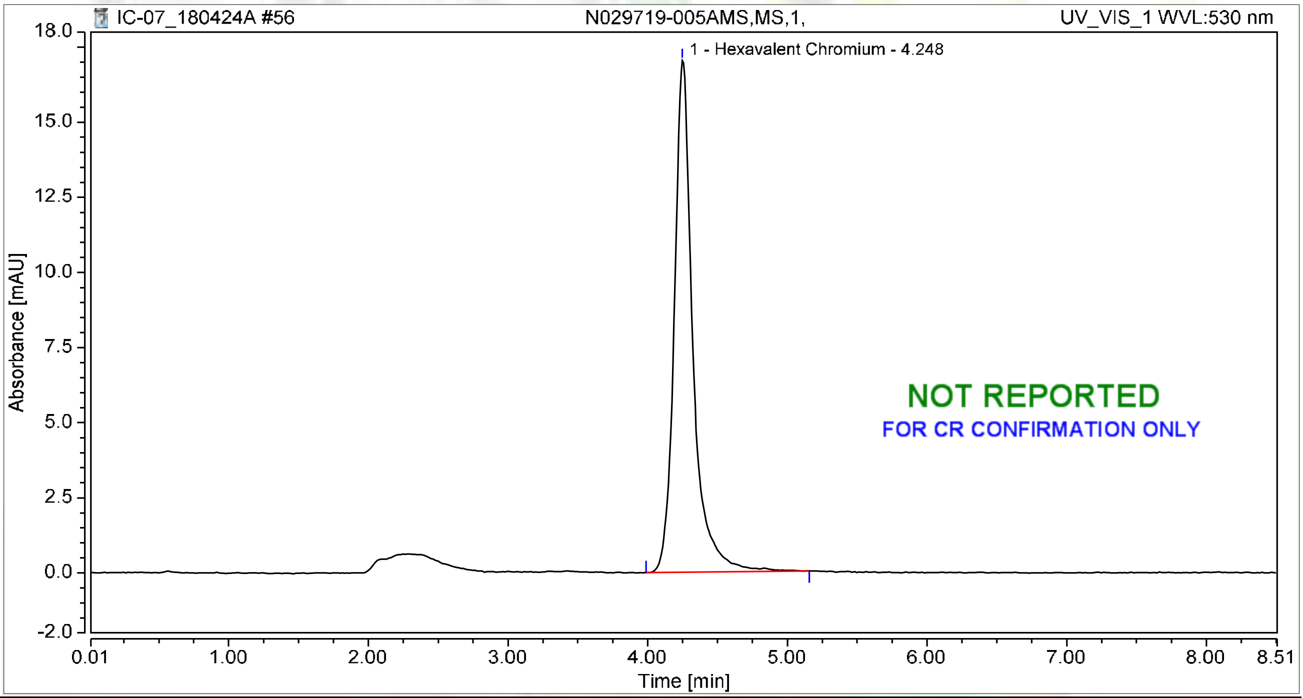
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.289	8.372	100.00	100.00	5.0865
Total:			**1.289**	**8.372**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029719-005AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 16:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

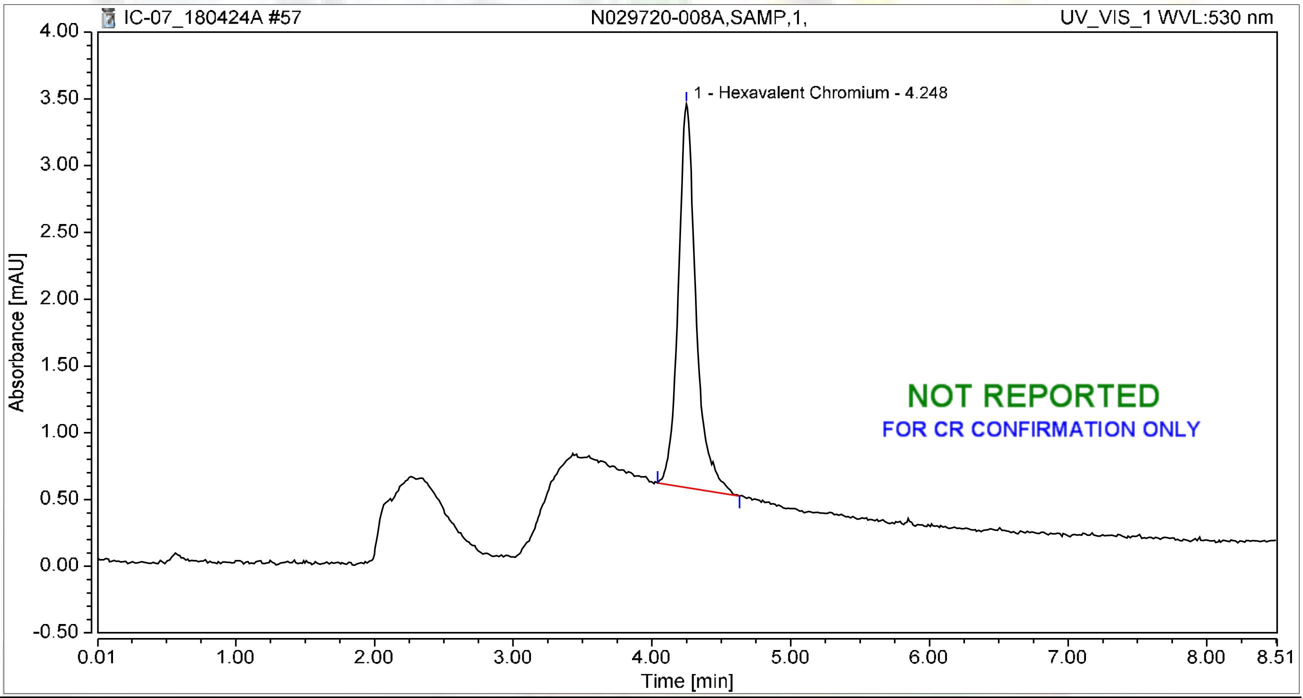
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.631	17.033	100.00	100.00	10.3774
Total:			**2.631**	**17.033**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029720-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 16:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

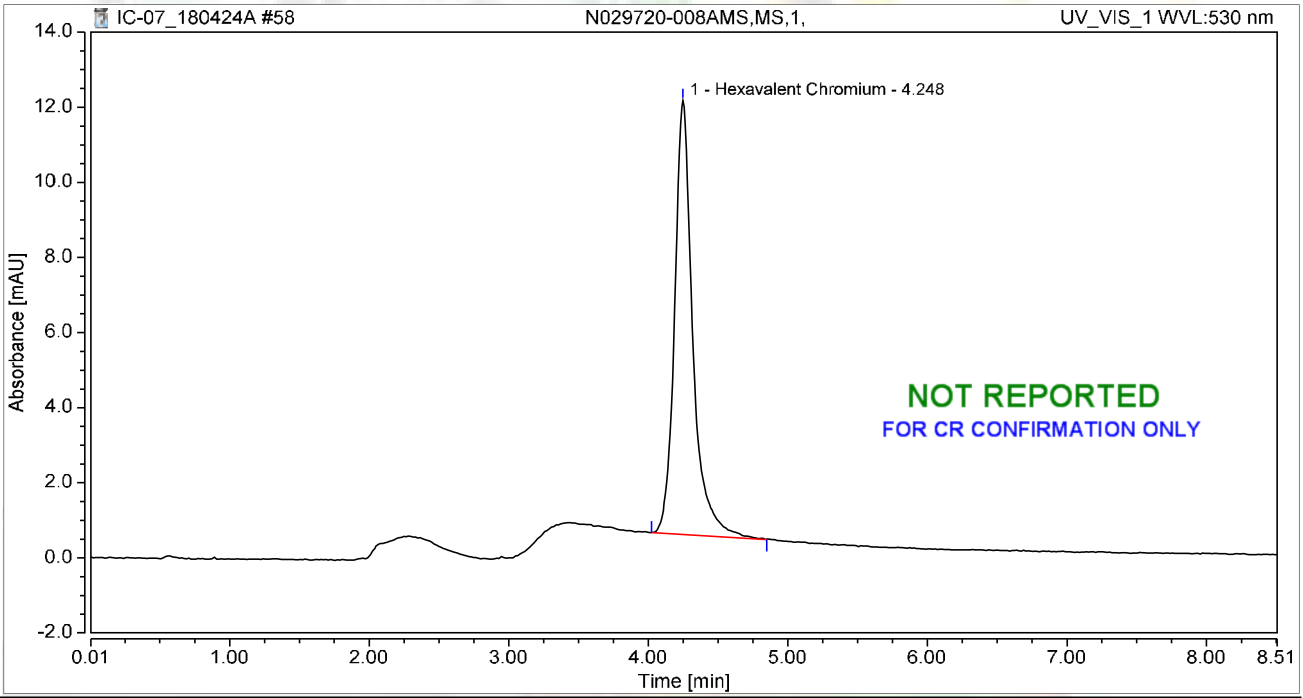
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.427	2.873	100.00	100.00	1.6837
Total:			**0.427**	**2.873**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029720-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 16:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

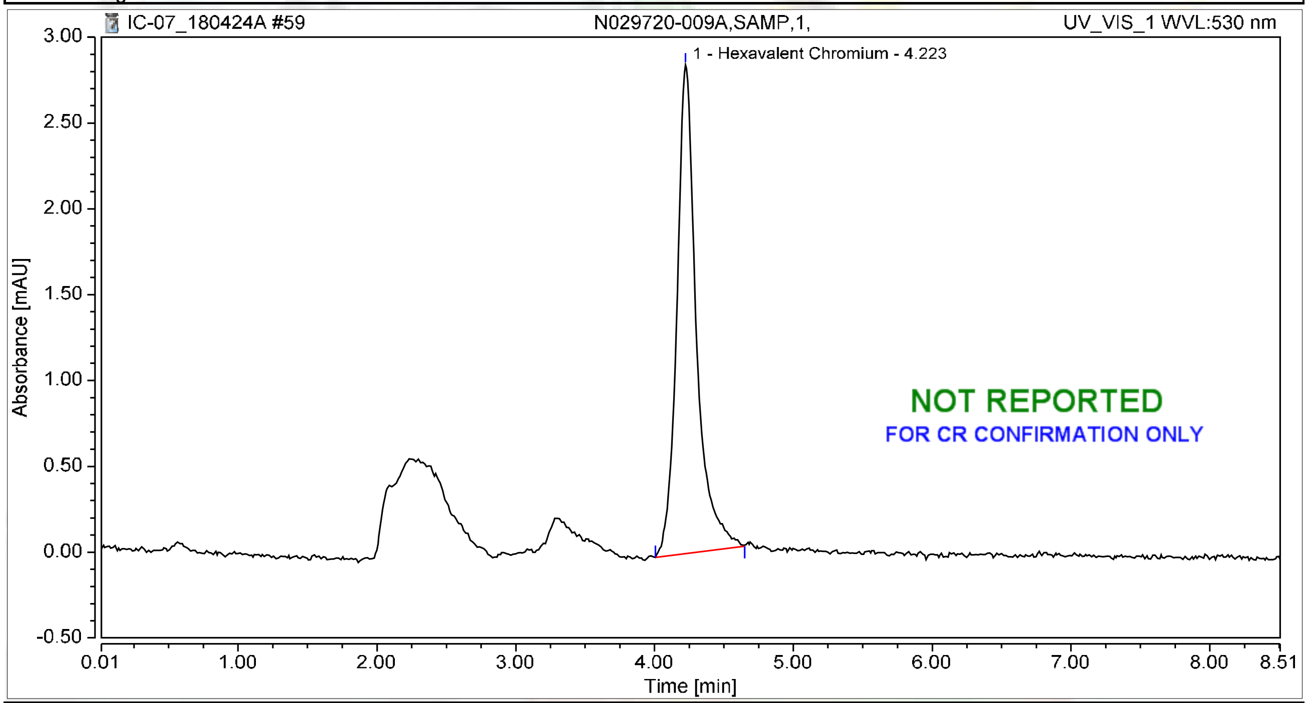
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.747	11.554	100.00	100.00	6.8901
Total:			**1.747**	**11.554**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029720-009A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 17:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

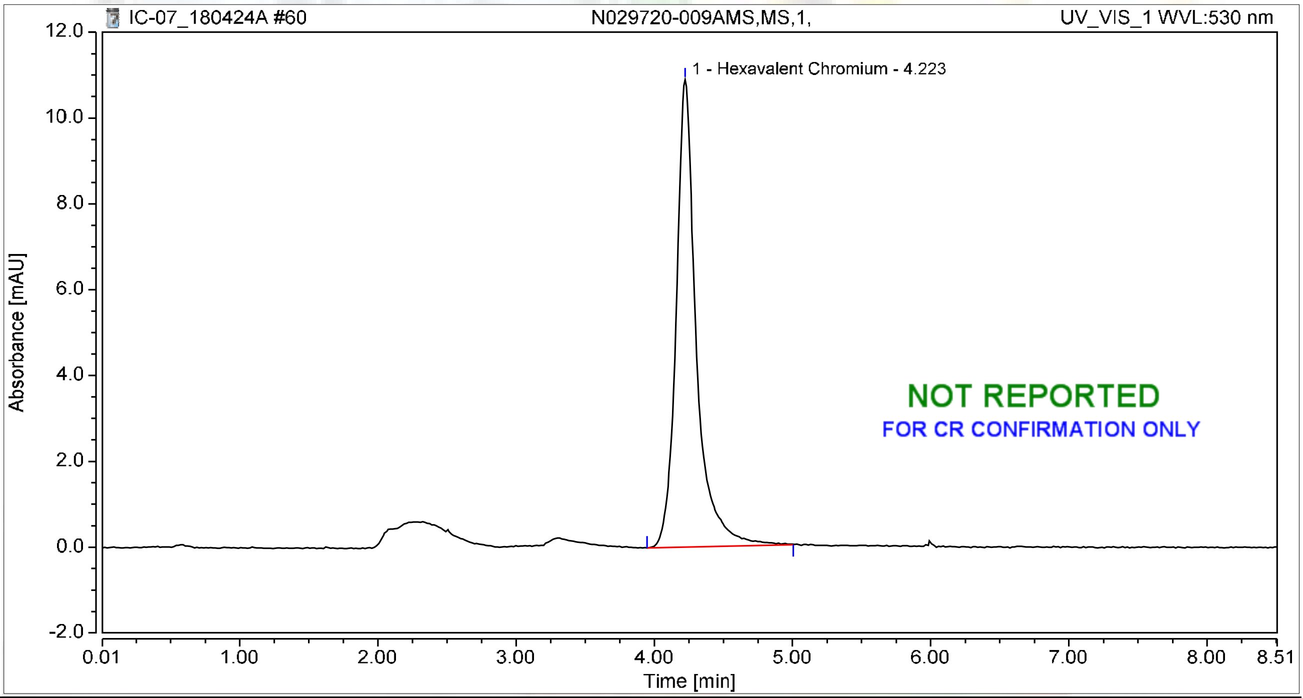
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.467	2.847	100.00	100.00	1.8431
Total:			**0.467**	**2.847**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029720-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 17:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

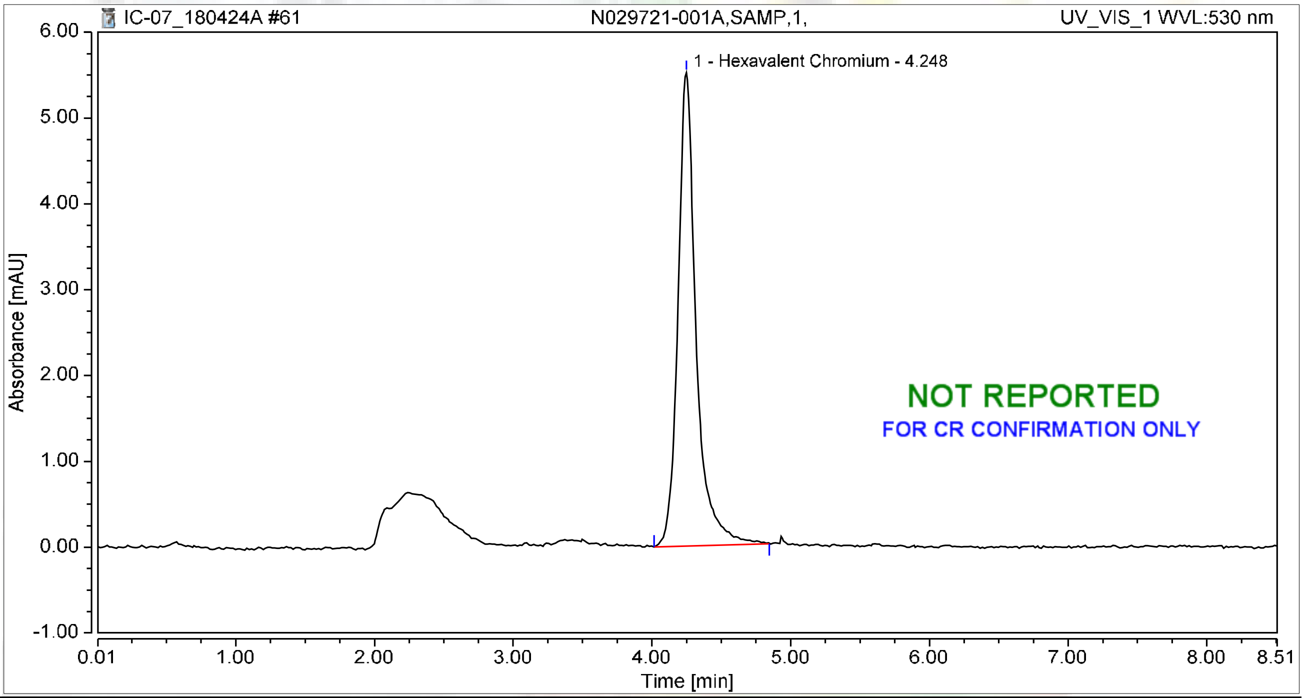
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	1.844	10.888	100.00	100.00	7.2752
Total:			**1.844**	**10.888**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029721-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 17:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

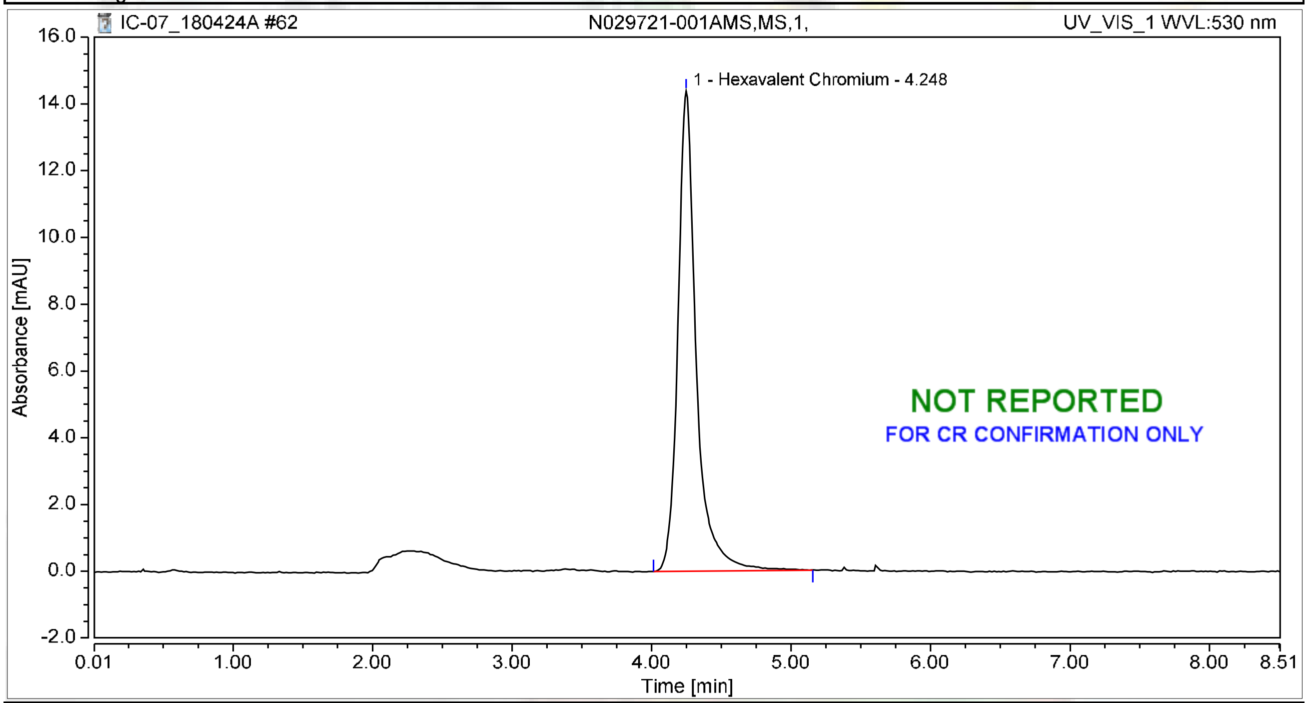
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.836	5.517	100.00	100.00	3.2994
Total:			**0.836**	**5.517**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029721-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 17:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

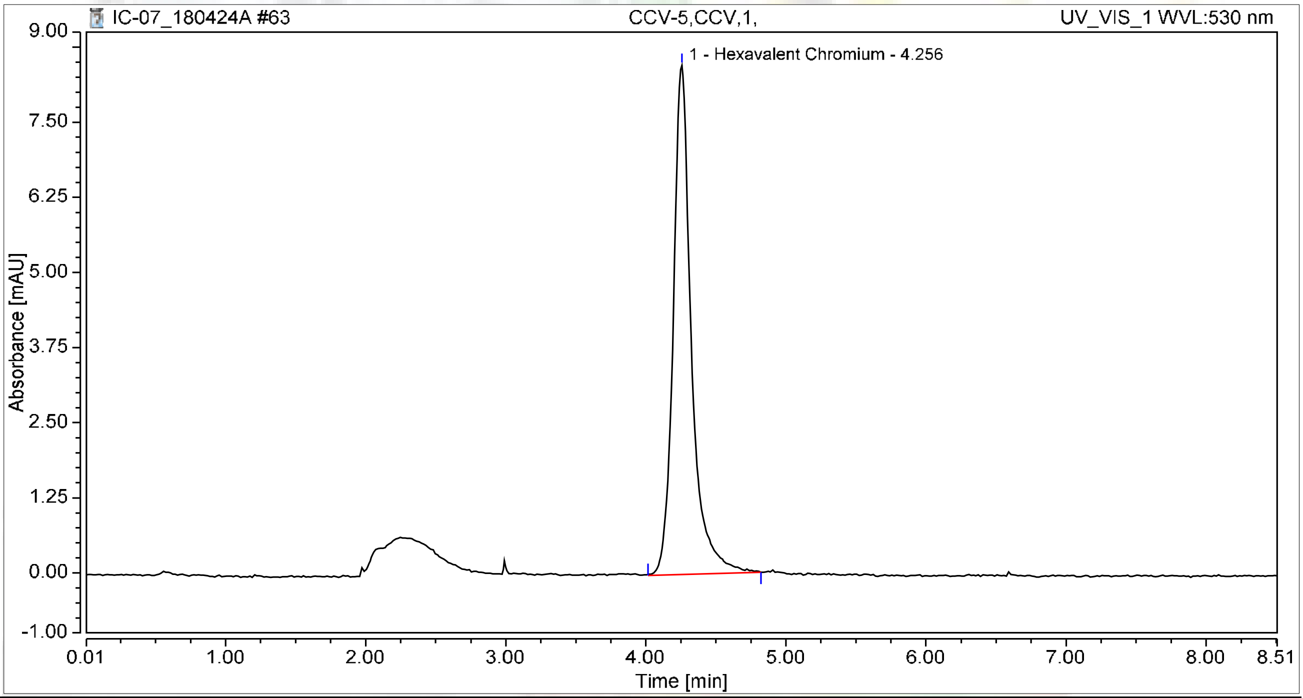
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.195	14.387	100.00	100.00	8.6600
Total:			**2.195**	**14.387**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 17:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

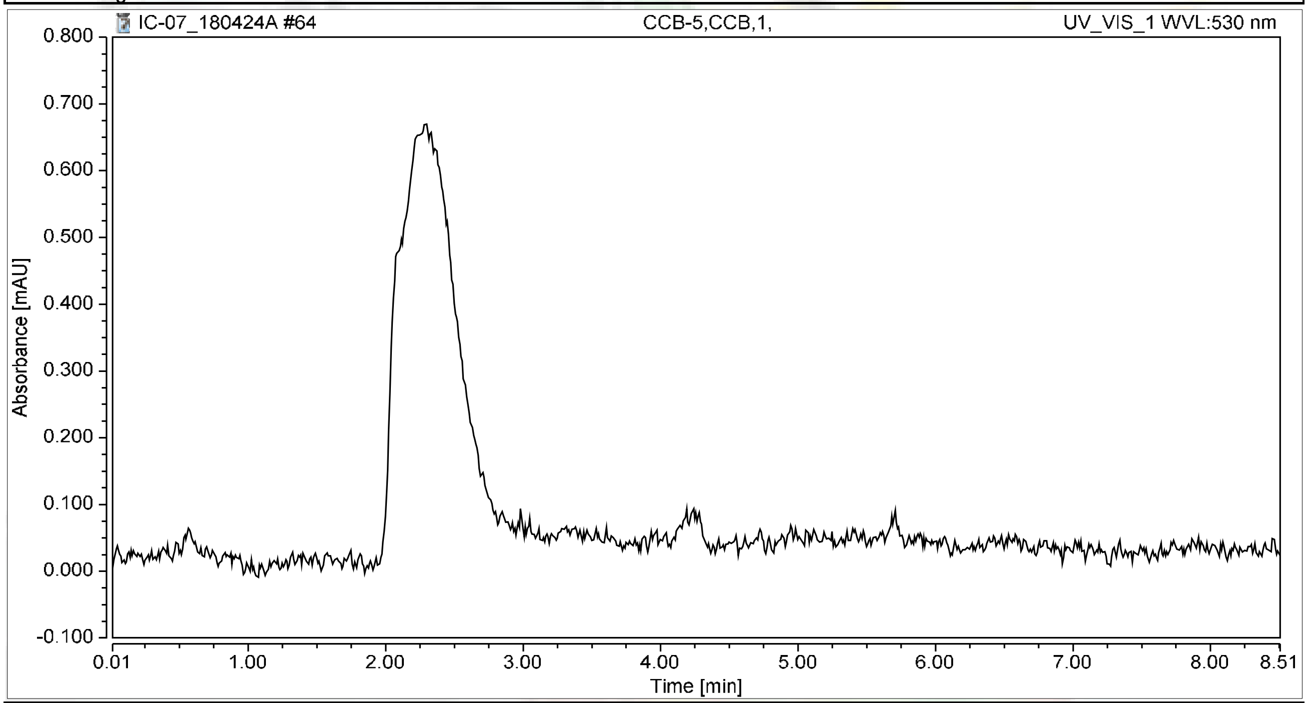
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.271	8.471	100.00	100.00	5.0127
Total:			**1.271**	**8.471**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 17:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

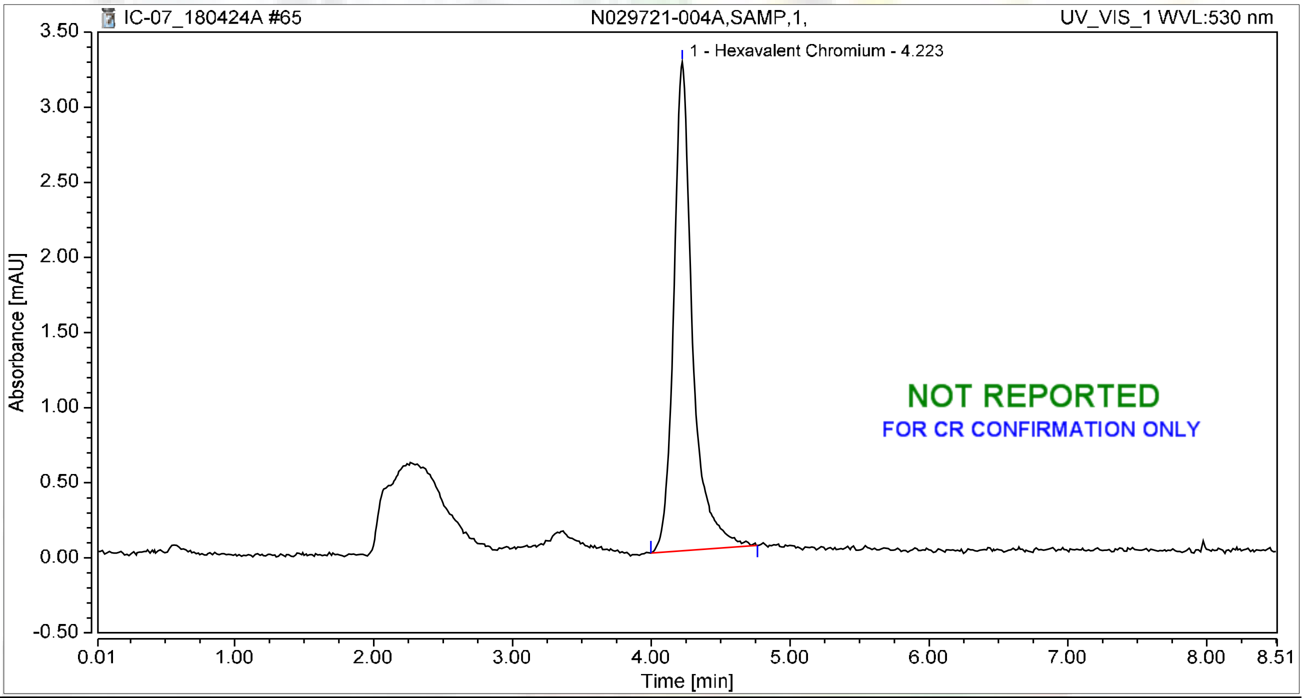
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029721-004A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 17:57**	*Sample Weight:*	**1.0000**

Chromatogram



NOT REPORTED
FOR CR CONFIRMATION ONLY

Integration Results

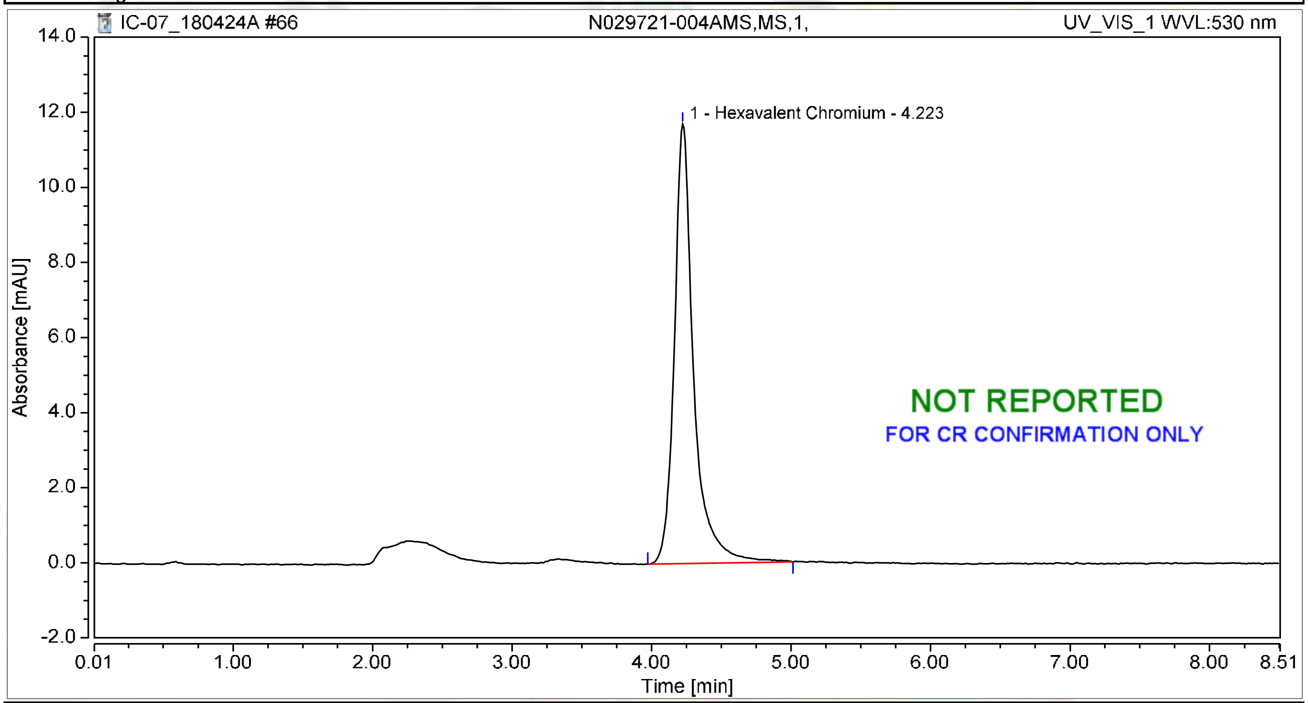
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.512	3.254	100.00	100.00	2.0215
Total:			**0.512**	**3.254**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029721-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

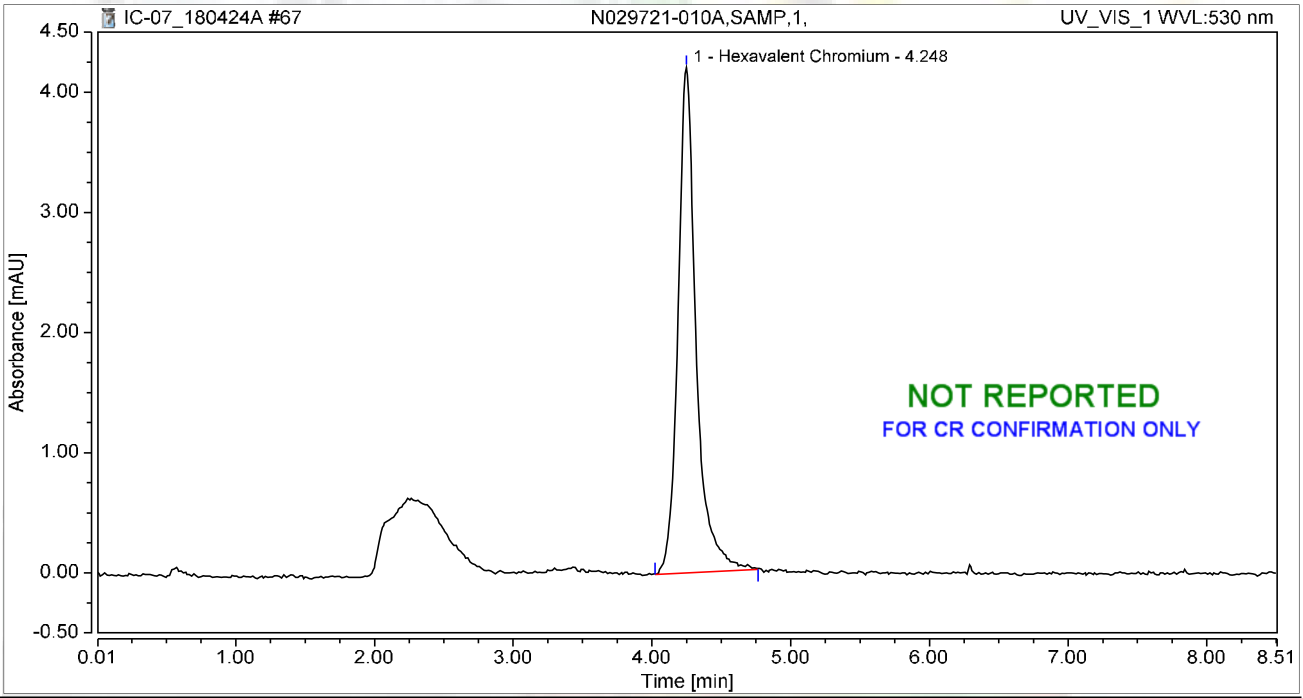
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	1.875	11.705	100.00	100.00	7.3943
Total:			**1.875**	**11.705**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029721-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 18:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

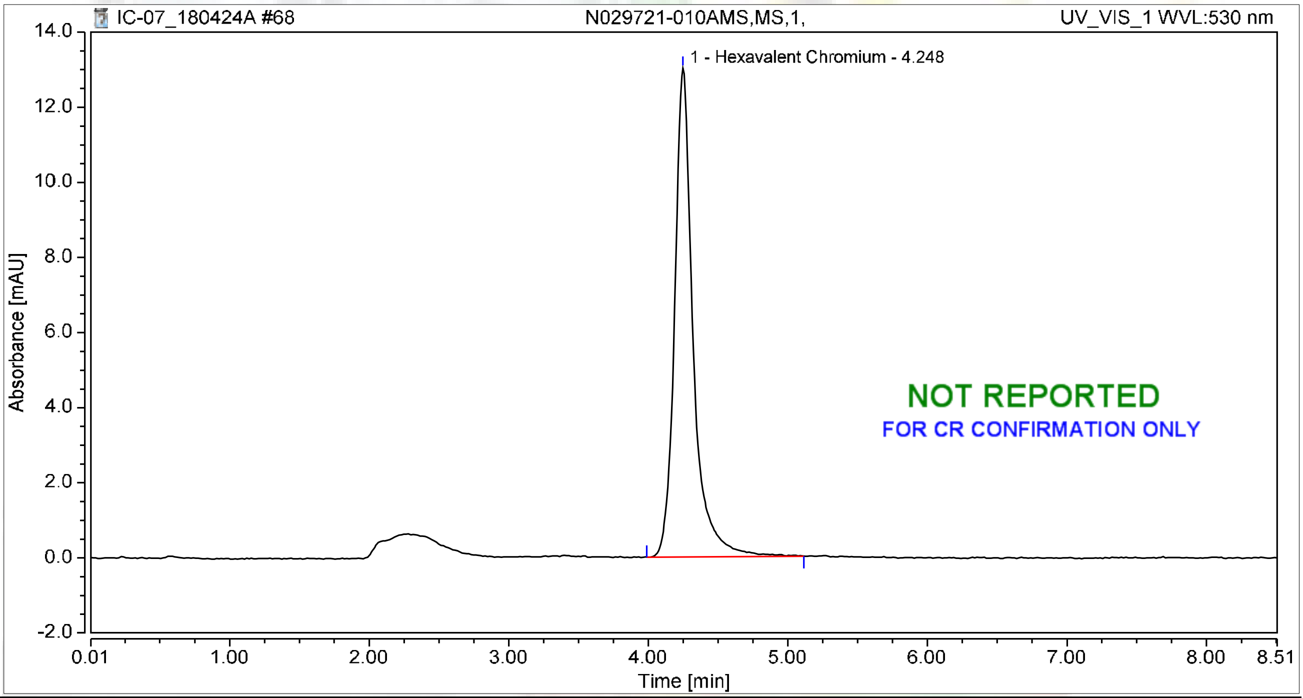
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.638	4.208	100.00	100.00	2.5163
Total:			**0.638**	**4.208**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029721-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

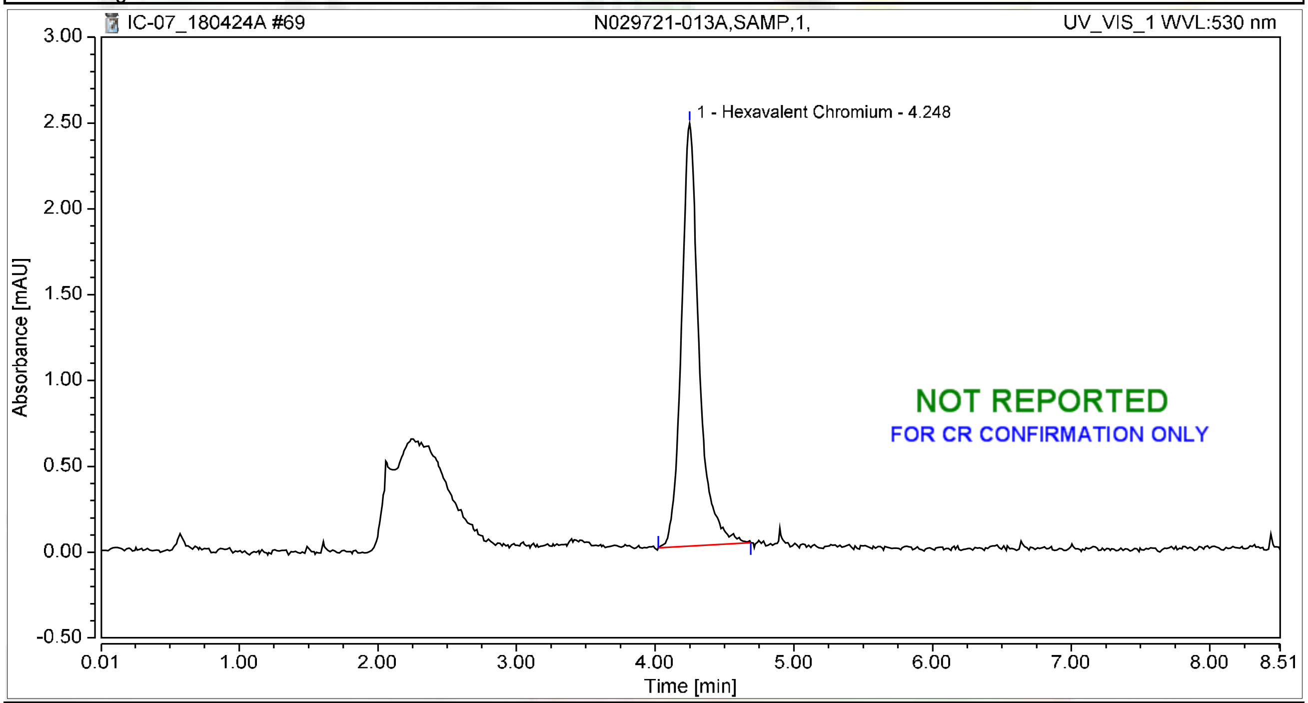
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.005	13.016	100.00	100.00	7.9089
Total:			**2.005**	**13.016**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029721-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 18:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

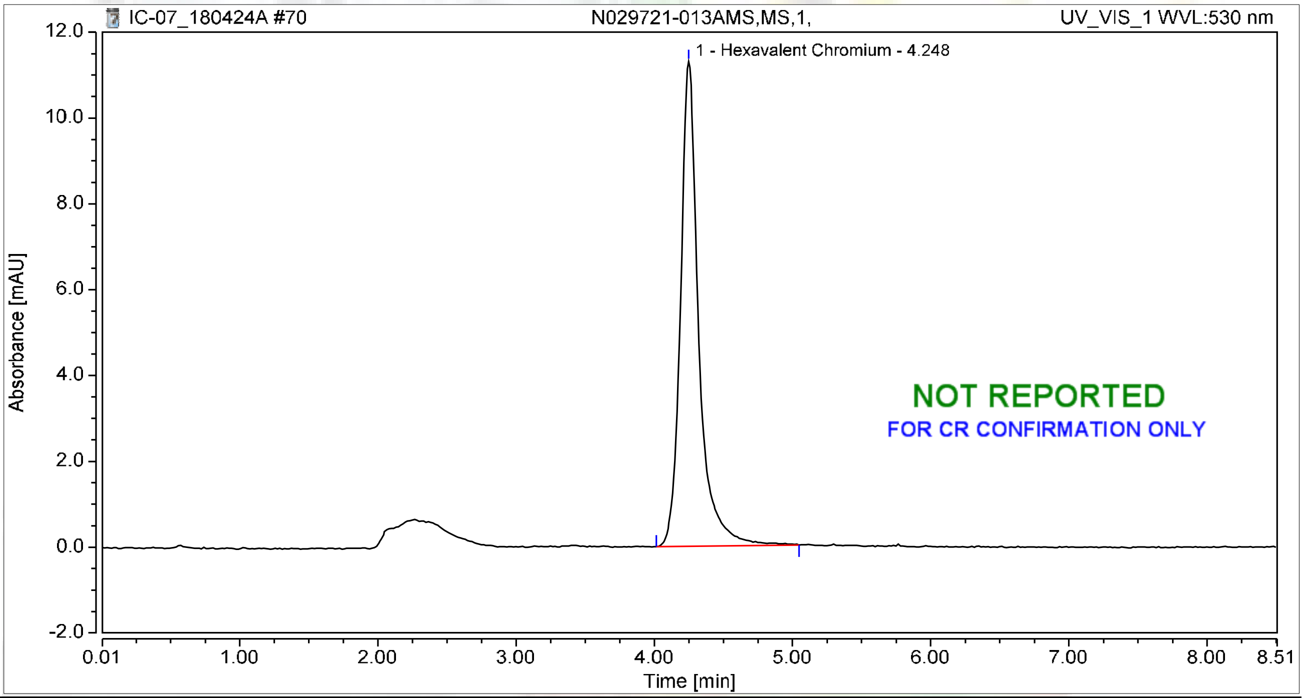
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.363	2.462	100.00	100.00	1.4318
Total:			**0.363**	**2.462**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029721-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

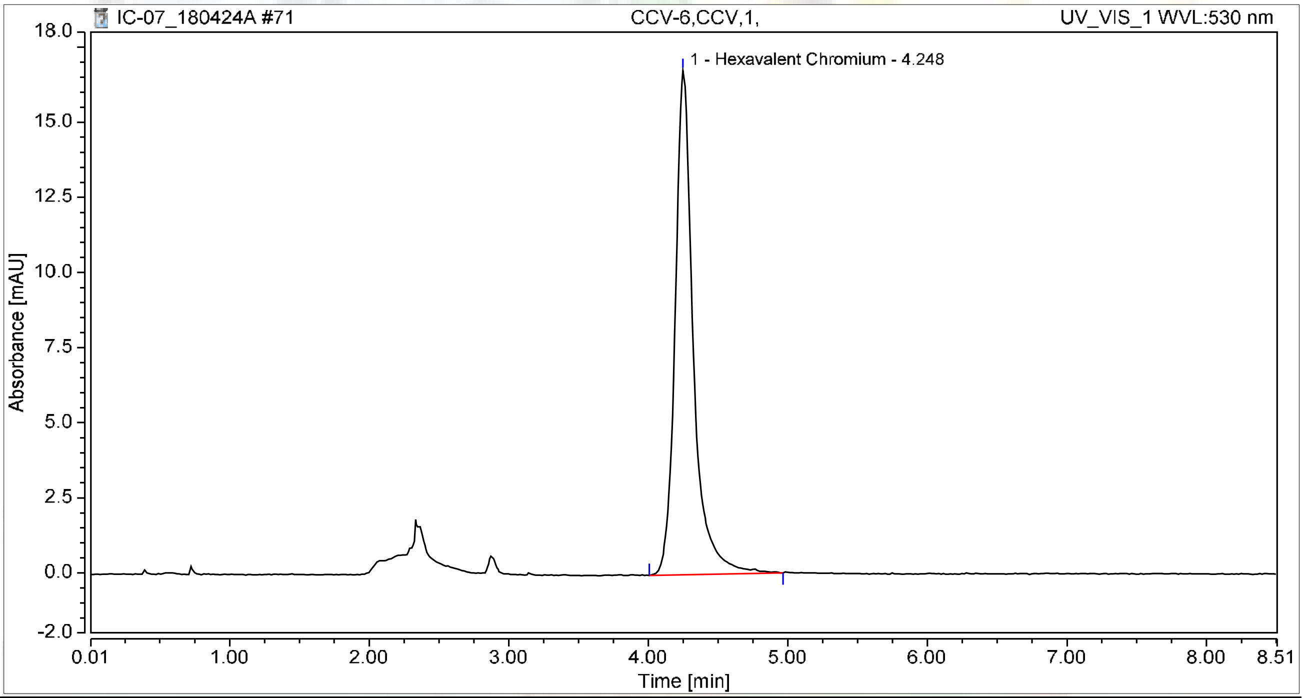
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.728	11.297	100.00	100.00	6.8175
Total:			**1.728**	**11.297**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 18:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

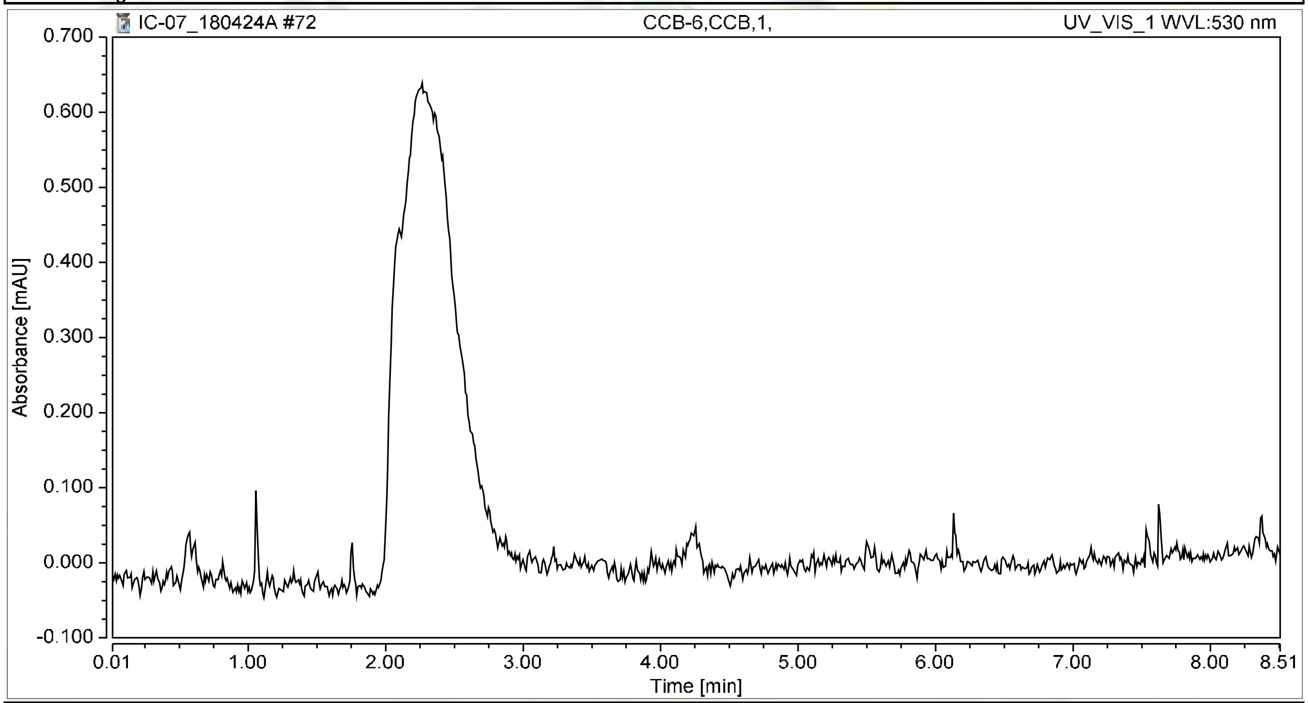
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.545	16.786	100.00	100.00	10.0406
Total:			**2.545**	**16.786**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**24/Apr/18 19:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67847
ASSET #: N029942

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/4/2018

Method:

- [ ] EPA 6010B / 200.7
- [X] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			~~X~~	X	
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			~~X~~	X	
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).		X			X	
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Sc[2] and Ge[2] in N029942-002C failed. For rerun.

DT/ PS failed for Cr however,MS/MSD/LCS passed criteria

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

1st Level Reviewer CEI Date: 5/10/18

2nd Level Reviewer Nancy 5/10/2018 Date: ________

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67847 **Instrument ID:** ICPMS-02
ASSET #: N029942 **Analyst:** CEI
Method: **Date Analyzed:** 5/9/2018

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			~~X~~		X
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			~~X~~		X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			~~X~~		X
24. LCS compounds within control limits.	X			~~X~~		X
25. MS/MSD, RPD's are within control limits	X			~~X~~		X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

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

1st Level Reviewer CEI Date: 5/10/18

2nd Level Reviewer [signature] 5/10/2018 Date: ——

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

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

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N029942-001C** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 0.04753 * 5 * (25/25)

Chromium , ug/L = 0.23765

Reporting results in two significant figures,

Chromium , ug/L = 0.2

Since PQL of Chromium , in ug/L = 1.0

Chromium , ug/L = ND

% RSD SUMMARY

PERCENT RSD SUMMARY: 180504A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	30.9	15	<PQL	0.18	19.93	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.53	4.21	15	PASS	0.5	9.076	15	PASS
Std3-5/50 ppb	ICAL	1	5.26	2.79	15	PASS	5.11	4.092	15	PASS
Std4-10/100 ppb	ICAL	1	10.37	1.39	15	PASS	10.4	1.27	15	PASS
Std5-20/200 ppb	ICAL	1	20.85	1.48	15	PASS	20.6	2.15	15	PASS
Std6-40/400 ppb	ICAL	1	41.36	0.78	15	PASS	41.52	0.6	15	PASS
Std7-100/1000 ppb	ICAL	1	101.76	0.62	15	PASS	101.64	0.38	15	PASS
Std8-200/2000 ppb	ICAL	1	198.74	1.25	15	PASS	198.79	0.98	15	PASS
ICV	ICV	1	10.96	2.18	15	PASS	103.52	2.19	15	PASS
ICB	ICB	1	0.051	22.048	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.042	2.62	20	PASS	0.61	7.46	20	PASS
ICSA1	ICSA	1	0.078	13.17	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.72	0.21	15	PASS	16.63	0.84	15	PASS
LLICV	CCV1	1	0.98	6.64	20	PASS	0.48	7.73	20	PASS
MB-67847	MBLK	1	0.045	125.46	15	<PQL	0.019	193.094	15	<PQL
LCS-67847	LCS	1	10.76	1.76	15	PASS	101.53	0.75	15	PASS
N029906-001B	SAMP	1	169.017	0.57	15	PASS	281.063	1.37	15	PASS
N029906-001B	SAMP	5	37.7	2.71	15	PASS	61.067	2.08	15	PASS
N029906-001B-PS	PS	1	176.48	0.32	15	PASS	378.88	0.52	15	PASS
N029906-001B-MS	MS	1	177.21	1.34	15	PASS	379.14	1.47	15	PASS
N029906-001B-MSD	MSD	1	178.048	1.43	15	PASS	380.51	1.33	15	PASS
N029906-001B	SAMP	25	9.33	2.84	15	PASS	12.76	2.28	15	PASS
N029906-001B-PS	PS	5	40.08	2.053	15	PASS	82.71	2.71	15	PASS
N029906-001B-MS	MS	5	40.37	1.93	15	PASS	83.97	1.96	15	PASS
CCV1	CCV	1	21.31	0.33	15	PASS	20.84	0.38	15	PASS
CCB1	CCB	1	0.13	31.18	15	<PQL	0.075	65.82	15	<PQL
N029906-001B-MSD	MSD	5	39.68	2.4	15	PASS	83.092	2.98	15	PASS
N029906-002B	SAMP	1	36.53	1.59	15	PASS	237.72	0.8	15	PASS
N029906-002B	SAMP	5	8.83	0.43	15	PASS	55.032	0.42	15	PASS
N029906-003B	SAMP	1	828.49	0.7	15	PASS	32.67	2.15	15	PASS
N029906-003B	SAMP	10	91.56	0.59	15	PASS	3.98	2.077	15	PASS
N029906-004B	SAMP	1	143.41	0.45	15	PASS	0.32	23.86	15	<PQL
N029906-005B	SAMP	1	167.58	0.47	15	PASS	0.73	7.72	15	PASS
N029906-006B	SAMP	1	568.42	1.57	15	PASS	2.21	3.44	15	PASS
N029906-006B	SAMP	5	121.66	0.68	15	PASS	0.75	0.46	15	PASS
N029906-007B	SAMP	1	0.95	5.35	15	PASS	0.085	368.57	15	<PQL
CCV2	CCV	1	20.42	2.22	15	PASS	18.47	2.21	15	PASS
CCB2	CCB	1	0.19	17.76	15	<PQL	<0.000	N/A	15	<PQL
N029906-009B	SAMP	1	0.05	12.98	15	PASS	142.13	0.53	15	PASS
N029906-010B	SAMP	1	<0.000	N/A	15	<PQL	68.5	0.78	15	PASS

PERCENT RSD SUMMARY: 180504A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N029906-012B	SAMP	1	<0.000	N/A	15	<PQL	4198.4	0.86	15	PASS
N029906-012B	SAMP	50	0.59	4.22	15	PASS	91.9	1.11	15	PASS
N029906-013B	SAMP	1	0.016	118.41	15	<PQL	124.69	1.86	15	PASS
N029906-014B	SAMP	1	7.23	2.49	15	PASS	873.26	0.69	15	PASS
N029906-014B	SAMP	10	1.34	3.11	15	PASS	92.4	2.24	15	PASS
N029942-001C	SAMP	1	0.62	74.51	15	<PQL	232.97	1.47	15	PASS
N029942-001C	SAMP	5	0.048	147.05	15	<PQL	51.73	3.15	15	PASS
N029942-002C	SAMP	1	<0.000	N/A	15	<PQL	154.86	1.14	15	PASS
CCV3	CCV	1	20.5	1.23	15	PASS	19.58	1.62	15	PASS
CCB3	CCB	1	0.17	15.84	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.013	4.18	20	PASS	0.37	10.36	20	PASS
ICSA2	ICSA	1	0.099	20.067	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	22.85	0.75	15	PASS	16.62	0.67	15	PASS
N029942-002C	SAMP	5	1.047	1.97	15	PASS	32.99	0.3	15	PASS
N029942-003C	SAMP	1	0.28	62.97	15	<PQL	1269.12	0.94	15	PASS
N029942-003C	SAMP	5	0.19	41.34	15	<PQL	268.62	1.26	15	PASS
N029942-003C	SAMP	10	0.21	16.75	15	<PQL	147.96	2.44	15	PASS
N029942-004C	SAMP	1	<0.000	N/A	15	<PQL	381.13	0.097	15	PASS
N029942-004C	SAMP	5	<0.000	N/A	15	<PQL	82.2	1.33	15	PASS
N029942-004C	SAMP	10	<0.000	N/A	15	<PQL	45.74	1.77	15	PASS
N029942-005C	SAMP	1	0.1	47.89	15	<PQL	1092.62	2.86	15	PASS
N029942-005C	SAMP	5	<0.000	N/A	15	<PQL	233.93	1.26	15	PASS
N029942-005C	SAMP	10	<0.000	N/A	15	<PQL	125.58	0.55	15	PASS
CCV4	CCV	1	20.34	2.64	15	PASS	20.25	1.35	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.026	85.93	15	<PQL
N029942-007C	SAMP	5	<0.000	N/A	15	<PQL	335.98	2.092	15	PASS
N029942-007C	SAMP	1	<0.000	N/A	15	<PQL	1651.069	0.8	15	PASS
N029942-007C	SAMP	25	<0.000	N/A	15	<PQL	73.98	0.96	15	PASS

not reported

Nancy 5/10/2018

PERCENT RSD SUMMARY: 180504A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	9.44	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.48	8.48	15	PASS
Std3-5/50 ppb	ICAL	1	4.94	0.44	15	PASS
Std4-10/100 ppb	ICAL	1	10.036	0.58	15	PASS
Std5-20/200 ppb	ICAL	1	20.33	0.43	15	PASS
Std6-40/400 ppb	ICAL	1	40.25	0.95	15	PASS
Std7-100/1000 ppb	ICAL	1	99.7	0.67	15	PASS
Std8-200/2000 ppb	ICAL	1	200.065	1.23	15	PASS
ICV	ICV	1	10.63	0.68	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.057	41.39	20	<PQL
ICSA1	ICSA	1	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	22.77	2.66	15	PASS
LLICV	CCV1	1	0.098	19.34	20	PASS
MB-67847	MBLK	1	<0.000	N/A	15	<PQL
LCS-67847	LCS	1	10.99	2.11	15	PASS
N029906-001B	SAMP	1	1.17	5.62	15	PASS
N029906-001B	SAMP	5	0.26	12.69	15	PASS
N029906-001B-PS	PS	1	12.15	0.55	15	PASS
N029906-001B-MS	MS	1	12.12	2.32	15	PASS
N029906-001B-MSD	MSD	1	12.027	2.63	15	PASS
N029906-001B	SAMP	25	0.019	141.32	15	<PQL
N029906-001B-PS	PS	5	2.6	4.24	15	PASS
N029906-001B-MS	MS	5	2.63	2.0093	15	PASS
CCV1	CCV	1	20.67	1.22	15	PASS
CCB1	CCB	1	0.044	10.81	15	PASS
N029906-001B-MSD	MSD	5	2.57	2.59	15	PASS
N029906-002B	SAMP	1	1.2	2.93	15	PASS
N029906-002B	SAMP	5	0.24	14.63	15	PASS
N029906-003B	SAMP	1	0.75	7.64	15	PASS
N029906-003B	SAMP	10	0.097	30.41	15	<PQL
N029906-004B	SAMP	1	0.5	10.072	15	PASS
N029906-005B	SAMP	1	0.42	6.3	15	PASS
N029906-006B	SAMP	1	1.7	5.2	15	PASS
N029906-006B	SAMP	5	0.36	9.54	15	PASS
N029906-007B	SAMP	1	2.28	1.2	15	PASS
CCV2	CCV	1	19.29	0.25	15	PASS
CCB2	CCB	1	0.029	13.75	15	PASS
N029906-009B	SAMP	1	12.93	3.14	15	PASS
N029906-010B	SAMP	1	13.12	2.029	15	PASS

PERCENT RSD SUMMARY: 180504A

Instrument ID: ICPMS-02

not reported

Sample Name	Type	DF	75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N029906-012B	SAMP	1	31.76	2.22	15	PASS
N029906-012B	SAMP	50	0.6	14.036	15	PASS
N029906-013B	SAMP	1	4.14	3.053	15	PASS
N029906-014B	SAMP	1	1.71	7.54	15	PASS
N029906-014B	SAMP	10	0.12	16.24	15	NR!
N029942-001C	SAMP	1	3.88	2.68	15	PASS
N029942-001C	SAMP	5	0.82	5.52	15	PASS
N029942-002C	SAMP	1	1.29	7.3	15	PASS
CCV3	CCV	1	20.61	1.35	15	PASS
CCB3	CCB	1	0.011	202.85	15	<PQL
LLCCV1	CCV2	1	0.074	19.39	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	22.6	2.56	15	PASS
N029942-002C	SAMP	5	0.21	23.43	15	NR!
N029942-003C	SAMP	1	3.12	1.24	15	PASS
N029942-003C	SAMP	5	0.79	6.26	15	PASS
N029942-003C	SAMP	10	0.28	23.92	15	NR!
N029942-004C	SAMP	1	0.9	16.72	15	NR!
N029942-004C	SAMP	5	0.43	24.63	15	NR!
N029942-004C	SAMP	10	0.048	52.73	15	<PQL
N029942-005C	SAMP	1	7.7	6.2	15	PASS
N029942-005C	SAMP	5	1.76	15.78	15	NR!
N029942-005C	SAMP	10	0.85	18.63	15	NR!
CCV4	CCV	1	24.36	3.88	15	PASS
CCB4	CCB	1	0.11	19.071	15	NR!
N029942-007C	SAMP	5	3.096	3.066	15	PASS
N029942-007C	SAMP	1	19.0016	4.16	15	PASS
N029942-007C	SAMP	25	1.54	7.74	15	PASS

5/10/2018

PERCENT RSD SUMMARY: 180509A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.067	22.22	15	<PQL	0.1	6.95	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.44	5.4	15	PASS	0.47	1.57	15	PASS
Std3-5/50 ppb	ICAL	1	4.89	0.96	15	PASS	4.91	2.88	15	PASS
Std4-10/100 ppb	ICAL	1	9.99	1.93	15	PASS	10.13	0.76	15	PASS
Std5-20/200 ppb	ICAL	1	20	0.55	15	PASS	19.97	0.8	15	PASS
Std6-40/400 ppb	ICAL	1	40.0071	0.98	15	PASS	39.98	0.6	15	PASS
Std7-100/1000 ppb	ICAL	1	100.55	0.51	15	PASS	100.67	0.25	15	PASS
Std8-200/2000 ppb	ICAL	1	199.73	1.082	15	PASS	199.67	0.72	15	PASS
ICV	ICV	1	9.75	1.58	15	PASS	106.76	1.18	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.82	5.37	20	PASS	0.57	11.71	20	PASS
ICSA1	ICSA	1	0.021	29.97	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.32	1.17	15	PASS	17.22	2.22	15	PASS
LLICV	CCV1	1	1.0027	2.52	20	PASS	0.49	4.98	20	PASS
N029942-002C	SAMP	5	<0.000	N/A	15	<PQL	32.17	0.22	15	PASS
N029942-003C	SAMP	1	<0.000	N/A	15	<PQL	1193.61	0.37	15	PASS
N029942-003C	SAMP	5	<0.000	N/A	15	<PQL	262.2	1.011	15	PASS
N029942-003C	SAMP	10	<0.000	N/A	15	<PQL	144.63	0.4	15	PASS
N029942-004C	SAMP	1	<0.000	N/A	15	<PQL	370.53	0.36	15	PASS
N029942-004C	SAMP	5	<0.000	N/A	15	<PQL	80.58	0.23	15	PASS
N029942-004C	SAMP	10	<0.000	N/A	15	<PQL	42.93	1.66	15	PASS
N029942-005C	SAMP	1	0.046	41.21	15	<PQL	1072.22	0.57	15	PASS
N029942-005C	SAMP	5	<0.000	N/A	15	<PQL	230.94	1.031	15	PASS
N029942-005C	SAMP	10	<0.000	N/A	15	<PQL	121.72	1.48	15	PASS
CCV1	CCV	1	18.84	1.61	15	PASS	20.26	1.21	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N029942-007C	SAMP	5	<0.000	N/A	15	<PQL	331.15	0.42	15	PASS
N029942-007C	SAMP	1	0.48	106.73	15	<PQL	1641.32	3.00075	15	PASS
N029942-007C	SAMP	25	<0.000	N/A	15	<PQL	69.18	0.9	15	PASS
CCV2	CCV	1	19.72	1.6	15	PASS	20.18	1.64	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.93	3.094	20	PASS	0.51	9.2	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.35	1.28	15	PASS	16.36	1.17	15	PASS

PERCENT RSD SUMMARY: 180509A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	38.35	15	NR!
Std2-0.5/5 ppb	ICAL	1	0.46	6.19	15	PASS
Std3-5/50 ppb	ICAL	1	5.0087	3.17	15	PASS
Std4-10/100 ppb	ICAL	1	10.0044	0.88	15	PASS
Std5-20/200 ppb	ICAL	1	19.72	1.17	15	PASS
Std6-40/400 ppb	ICAL	1	39.23	0.5	15	PASS
Std7-100/1000 ppb	ICAL	1	100.87	2.49	15	PASS
Std8-200/2000 ppb	ICAL	1	199.75	1.019	15	PASS
ICV	ICV	1	9.84	2.078	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.07	43.64	20	<PQL
ICSA1	ICSA	1	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	21.025	1.94	15	PASS
LLICV	CCV1	1	0.11	26.45	20	NR!
N029942-002C	SAMP	5	0.2	7.031	15	PASS
N029942-003C	SAMP	1	2.89	1.73	15	PASS
N029942-003C	SAMP	5	0.55	8.85	15	PASS
N029942-003C	SAMP	10	0.29	11.47	15	PASS
N029942-004C	SAMP	1	0.64	10.12	15	PASS
N029942-004C	SAMP	5	0.97	5.088	15	PASS
N029942-004C	SAMP	10	0.81	9.28	15	PASS
N029942-005C	SAMP	1	5.91	3.092	15	PASS
N029942-005C	SAMP	5	1.57	6.19	15	PASS
N029942-005C	SAMP	10	1.0046	2.4	15	PASS
CCV1	CCV	1	20.36	2.071	15	PASS
CCB1	CCB	1	0.04	36.23	15	<PQL
N029942-007C	SAMP	5	2.71	4.18	15	PASS
N029942-007C	SAMP	1	13.84	7.035	15	PASS
N029942-007C	SAMP	25	0.56	4.014	15	PASS
CCV2	CCV	1	19.9	0.12	15	PASS
CCB2	CCB	1	0.036	88.079	15	<PQL
LLCCV1	CCV2	1	0.092	31.026	20	<PQL
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.6	1.69	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180504A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0504001.D	RINSE	RINSE	1	05/04/18 10:44 AM
A0504002.D	Cal Blank	IBLK	1	05/04/18 10:50 AM
A0504003.D	Std1-0.1/1 ppb	ICAL	1	05/04/18 10:55 AM
A0504004.D	Std2-0.5/5 ppb	ICAL	1	05/04/18 11:01 AM
A0504005.D	Std3-5/50 ppb	ICAL	1	05/04/18 11:07 AM
A0504006.D	Std4-10/100 ppb	ICAL	1	05/04/18 11:12 AM
A0504007.D	Std5-20/200 ppb	ICAL	1	05/04/18 11:18 AM
A0504008.D	Std6-40/400 ppb	ICAL	1	05/04/18 11:23 AM
A0504009.D	Std7-100/1000 ppb	ICAL	1	05/04/18 11:29 AM
A0504010.D	Std8-200/2000 ppb	ICAL	1	05/04/18 11:34 AM
A0504011.D	ICV	ICV	1	05/04/18 11:40 AM
A0504012.D	ICB	ICB	1	05/04/18 11:45 AM
A0504013.D	LLICV	CCV1	1	05/04/18 11:51 AM
A0504014.D	ICSA1	ICSA	1	05/04/18 11:57 AM
A0504015.D	ICSAB1	ICSAB	1	05/04/18 12:02 PM
A0504016.D	LLICV	CCV1	1	05/04/18 12:08 PM
A0504017.D	MB-67847	MBLK	1	05/04/18 12:14 PM
A0504018.D	LCS-67847	LCS	1	05/04/18 12:19 PM
A0504019.D	N029906-001B	SAMP	1	05/04/18 12:25 PM
A0504020.D	N029906-001B	SAMP	5	05/04/18 12:30 PM
A0504021.D	N029906-001B-PS	PS	1	05/04/18 12:36 PM
A0504022.D	N029906-001B-MS	MS	1	05/04/18 12:42 PM
A0504023.D	N029906-001B-MSD	MSD	1	05/04/18 12:47 PM
A0504024.D	N029906-001B	SAMP	25	05/04/18 12:53 PM
A0504025.D	N029906-001B-PS	PS	5	05/04/18 12:58 PM
A0504026.D	N029906-001B-MS	MS	5	05/04/18 1:04 PM
A0504027.D	CCV1	CCV	1	05/04/18 1:10 PM
A0504028.D	CCB1	CCB	1	05/04/18 1:16 PM
A0504029.D	N029906-001B-MSD	MSD	5	05/04/18 1:21 PM
A0504030.D	N029906-002B	SAMP	1	05/04/18 1:27 PM
A0504031.D	N029906-002B	SAMP	5	05/04/18 1:32 PM
A0504032.D	N029906-003B	SAMP	1	05/04/18 1:37 PM
A0504033.D	N029906-003B	SAMP	10	05/04/18 1:43 PM
A0504034.D	N029906-004B	SAMP	1	05/04/18 1:49 PM
A0504035.D	N029906-005B	SAMP	1	05/04/18 1:55 PM
A0504036.D	N029906-006B	SAMP	1	05/04/18 2:00 PM
A0504037.D	N029906-006B	SAMP	5	05/04/18 2:05 PM
A0504038.D	N029906-007B	SAMP	1	05/04/18 2:11 PM
A0504039.D	CCV2	CCV	1	05/04/18 2:16 PM
A0504040.D	CCB2	CCB	1	05/04/18 2:22 PM
A0504041.D	N029906-009B	SAMP	1	05/04/18 2:28 PM
A0504042.D	N029906-010B	SAMP	1	05/04/18 2:33 PM

INJECTION LOG: 180504A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0504043.D	N029906-012B	SAMP	1	05/04/18 2:39 PM
A0504044.D	N029906-012B	SAMP	50	05/04/18 2:45 PM
A0504045.D	N029906-013B	SAMP	1	05/04/18 2:50 PM
A0504046.D	N029906-014B	SAMP	1	05/04/18 2:56 PM
A0504047.D	N029906-014B	SAMP	10	05/04/18 3:01 PM
A0504048.D	N029942-001C	SAMP	1	05/04/18 3:07 PM
A0504049.D	N029942-001C	SAMP	5	05/04/18 3:13 PM
A0504050.D	N029942-002C	SAMP	1	05/04/18 3:18 PM
A0504051.D	CCV3	CCV	1	05/04/18 3:23 PM
A0504052.D	CCB3	CCB	1	05/04/18 3:29 PM
A0504053.D	LLCCV1	CCV2	1	05/04/18 3:34 PM
A0504054.D	ICSA2	ICSA	1	05/04/18 3:40 PM
A0504055.D	ICSAB2	ICSAB	1	05/04/18 3:48 PM
A0504056.D	N029942-002C	SAMP	5	05/04/18 3:53 PM
A0504057.D	N029942-003C	SAMP	1	05/04/18 3:59 PM
A0504058.D	N029942-003C	SAMP	5	05/04/18 4:04 PM
A0504059.D	N029942-003C	SAMP	10	05/04/18 4:10 PM
A0504060.D	N029942-004C	SAMP	1	05/04/18 4:16 PM
A0504061.D	N029942-004C	SAMP	5	05/04/18 4:21 PM
A0504062.D	N029942-004C	SAMP	10	05/04/18 4:27 PM
A0504063.D	N029942-005C	SAMP	1	05/04/18 4:33 PM
A0504064.D	N029942-005C	SAMP	5	05/04/18 4:39 PM
A0504065.D	N029942-005C	SAMP	10	05/04/18 4:44 PM
A0504066.D	CCV4	CCV	1	05/04/18 4:50 PM
A0504067.D	CCB4	CCB	1	05/04/18 4:56 PM
A0504068.D	N029942-007C	SAMP	5	05/04/18 5:01 PM
A0504069.D	N029942-007C	SAMP	1	05/04/18 5:07 PM
A0504070.D	N029942-007C	SAMP	25	05/04/18 5:12 PM
A0504071.D	MB-67913	MBLK	1	05/04/18 5:18 PM

not reported

INJECTION LOG: 180509A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0509001.D	RINSE	RINSE	1	05/09/18 10:15 AM
A0509002.D	Cal Blank	IBLK	1	05/09/18 10:21 AM
A0509003.D	Std1-0.1/1 ppb	ICAL	1	05/09/18 10:26 AM
A0509004.D	Std2-0.5/5 ppb	ICAL	1	05/09/18 10:32 AM
A0509005.D	Std3-5/50 ppb	ICAL	1	05/09/18 10:38 AM
A0509006.D	Std4-10/100 ppb	ICAL	1	05/09/18 10:43 AM
A0509007.D	Std5-20/200 ppb	ICAL	1	05/09/18 10:49 AM
A0509008.D	Std6-40/400 ppb	ICAL	1	05/09/18 10:54 AM
A0509009.D	Std7-100/1000 ppb	ICAL	1	05/09/18 11:00 AM
A0509010.D	Std8-200/2000 ppb	ICAL	1	05/09/18 11:05 AM
A0509011.D	ICV	ICV	1	05/09/18 11:11 AM
A0509012.D	ICB	ICB	1	05/09/18 11:16 AM
A0509013.D	LLICV	CCV1	1	05/09/18 11:22 AM
A0509014.D	ICSA1	ICSA	1	05/09/18 11:27 AM
A0509015.D	ICSAB1	ICSAB	1	05/09/18 11:33 AM
A0509016.D	LLICV	CCV1	1	05/09/18 11:39 AM
A0509017.D	N029942-002C	SAMP	5	05/09/18 11:45 AM
A0509018.D	N029942-003C	SAMP	1	05/09/18 11:51 AM
A0509019.D	N029942-003C	SAMP	5	05/09/18 11:57 AM
A0509020.D	N029942-003C	SAMP	10	05/09/18 12:02 PM
A0509021.D	N029942-004C	SAMP	1	05/09/18 12:07 PM
A0509022.D	N029942-004C	SAMP	5	05/09/18 12:13 PM
A0509023.D	N029942-004C	SAMP	10	05/09/18 12:19 PM
A0509024.D	N029942-005C	SAMP	1	05/09/18 12:25 PM
A0509025.D	N029942-005C	SAMP	5	05/09/18 12:30 PM
A0509026.D	N029942-005C	SAMP	10	05/09/18 12:36 PM
A0509027.D	CCV1	CCV	1	05/09/18 12:41 PM
A0509028.D	CCB1	CCB	1	05/09/18 12:47 PM
A0509029.D	N029942-007C	SAMP	5	05/09/18 12:53 PM
A0509030.D	N029942-007C	SAMP	1	05/09/18 12:58 PM
A0509031.D	N029942-007C	SAMP	25	05/09/18 1:04 PM
A0509032.D	CCV2	CCV	1	05/09/18 1:09 PM
A0509033.D	CCB2	CCB	1	05/09/18 1:15 PM
A0509034.D	LLCCV1	CCV2	1	05/09/18 1:22 PM
A0509035.D	ICSA2	ICSA	1	05/09/18 1:26 PM
A0509036.D	ICSAB2	ICSAB	1	05/09/18 1:32 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/26/2018 5:00:00**
Prep End Date: **4/26/2018 9:30:00**
Prep Batch **67847** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/10/2018
Initials/ Date: 5/10/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**01-52**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67847	Aqueous		25	☐	0	0	25	1.000		
MB-67847	Aqueous		25	☐	0	0	25	1.000		
N029906-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N029906-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N029906-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N029906-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N029906-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N029906-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N029906-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N029906-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N029906-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N029906-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N029906-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N029906-012B	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/26/2018 5:00:00**
Prep End Date: **4/26/2018 9:30:00**
Prep Batch **67847** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/10/2018
Initials/ Date: 5/10/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**01-52**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N029906-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N029906-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N029942-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N029942-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N029942-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N029942-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N029942-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N029942-007C	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 4 May 2018 08:51:08 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	131480.00	0.00	
24	Mg	628351000.00	0.00	
25	Mg	84260700.00	0.00	
26	Mg	97118600.00	0.00	
59	Co	519514.00	0.00	
115	In	788987.00	0.00	
206	Pb	215622.00	0.00	
207	Pb	186774.00	0.00	
208	Pb	462390.00	0.00	

RSD (%)

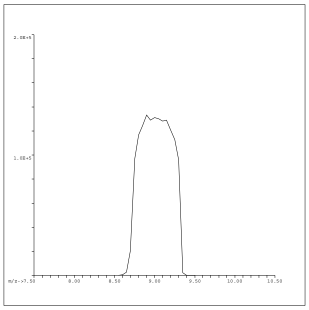
Element		Actual	Required	Flag
9	Be	4.20	5.00	
24	Mg	0.88	5.00	
25	Mg	1.28	5.00	
26	Mg	1.20	5.00	
59	Co	0.42	5.00	
115	In	0.24	5.00	
206	Pb	0.50	5.00	
207	Pb	0.68	5.00	
208	Pb	0.67	5.00	

Ion Ratio

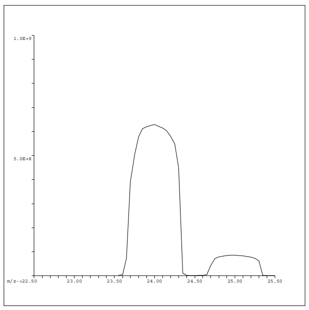
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

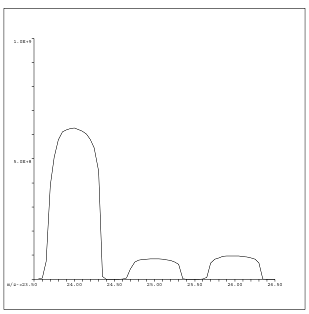
Element	Actual	Required	Flag



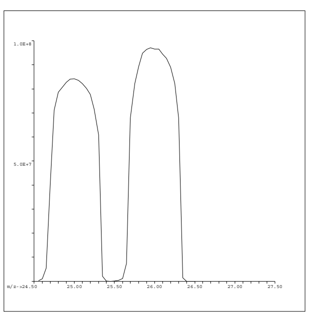
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



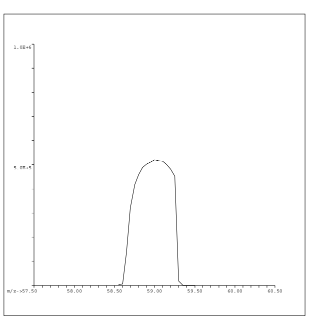
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



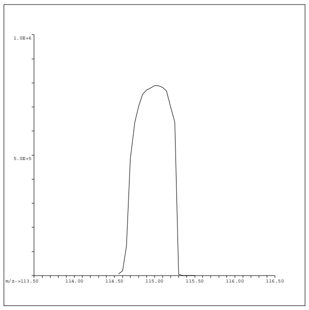
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



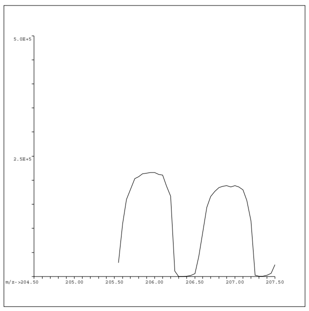
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



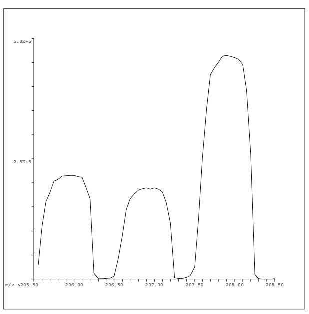
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



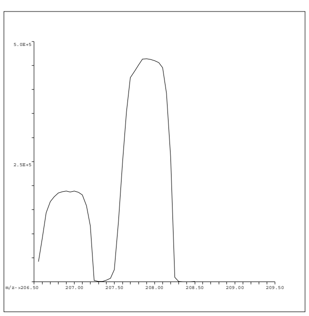
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 205.95
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 9 May 2018 09:59:44 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	69851.00	0.00	
24	Mg	320316000.00	0.00	
25	Mg	43026000.00	0.00	
26	Mg	49951200.00	0.00	
59	Co	417074.00	0.00	
115	In	699640.00	0.00	
206	Pb	207873.00	0.00	
207	Pb	181205.00	0.00	
208	Pb	444707.00	0.00	

RSD (%)

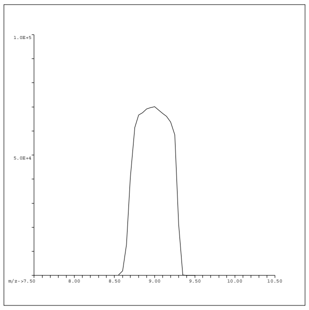
Element		Actual	Required	Flag
9	Be	1.51	5.00	
24	Mg	0.82	5.00	
25	Mg	0.93	5.00	
26	Mg	0.80	5.00	
59	Co	0.42	5.00	
115	In	0.36	5.00	
206	Pb	1.13	5.00	
207	Pb	0.69	5.00	
208	Pb	0.65	5.00	

Ion Ratio

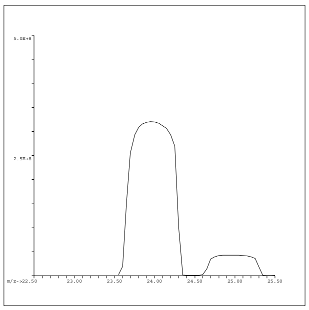
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

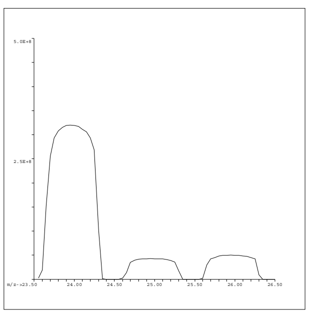
Element	Actual	Required	Flag



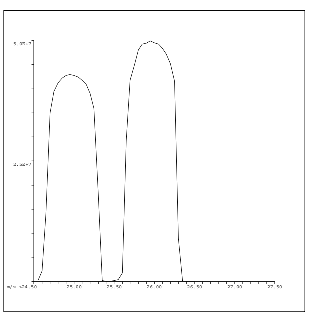
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



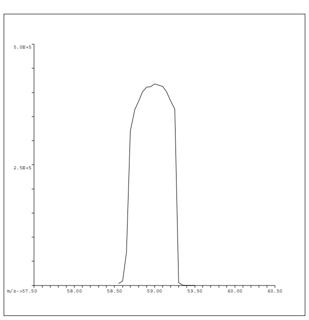
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



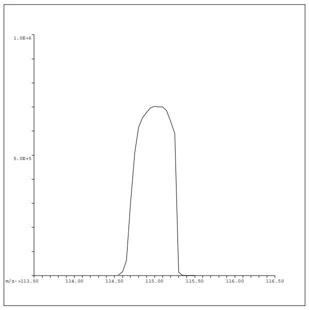
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



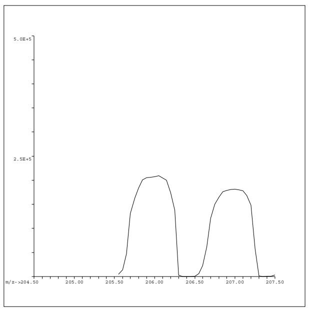
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



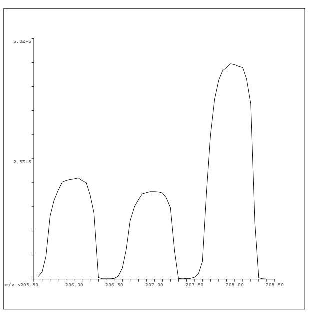
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



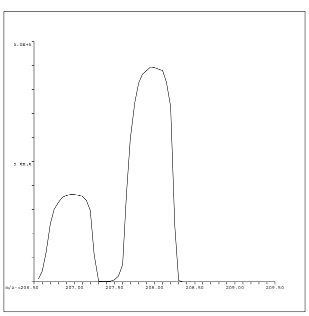
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180504A

Instrument ID: ICPMS-02

Analyte	Data File	A0504002.D	A0504003.D	A0504004.D	A0504005.D	A0504006.D	A0504007.D	A0504008.D	A0504009.D	A0504010.D	
	Acq. Date-Time	05/04/2018 10:50 AM	05/04/2018 10:55 AM	05/04/2018 11:01 AM	05/04/2018 11:07 AM	05/04/2018 11:12 AM	05/04/2018 11:18 AM	05/04/2018 11:23 AM	05/04/2018 11:29 AM	05/04/2018 11:34 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	51653		52669.5	52295.1	52301.8	52483.5	52121.3	52727.4	52939.3	
55 Mn [2]	CPS	1025.9		2090.6	11696.1	22745.6	44174.1	87396.6	214934	420993.5	0.9999
52 Cr [2]	CPS	1359.6		3633.3	23506.6	45056.5	89451.3	174910.3	433380.8	848350.9	0.9999
72 Ge (ISTD) [2]	CPS	38497.4	39043.4	38958.4	39207.1	39272.5	38617.6	38469.4	38723.5	38056.4	
75 As [2]	CPS	37.3	88	235.1	2064.6	4162.8	8254.6	16240.1	40439.6	79718.2	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MWST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180509A

Instrument ID: ICPMS-02

Analyte	Data File	A0509002.D	A0509003.D	A0509004.D	A0509005.D	A0509006.D	A0509007.D	A0509008.D	A0509009.D	A0509010.D	
	Acq. Date-Time	05/09/2018 10:21 AM	05/09/2018 10:26 AM	05/09/2018 10:32 AM	05/09/2018 10:38 AM	05/09/2018 10:43 AM	05/09/2018 10:49 AM	05/09/2018 10:54 AM	05/09/2018 11:00 AM	05/09/2018 11:05 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	56643.8		58509.9	58551.3	57885.7	58261.5	58468.8	57932.3	58480.1	
55 Mn [2]	CPS	628.7		1768.1	12364.5	24524	48014.1	95839.1	238131.9	476099.7	1.0000
52 Cr [2]	CPS	911.9		3007.7	24132.2	47735.1	95224.4	190259.5	472376.7	946202.7	1.0000
72 Ge (ISTD) [2]	CPS	43075.5	44234.1	44683.2	44431.3	44865.8	45254.8	44965.1	44309.9	44802.3	
75 As [2]	CPS	30.2	91.1	257.3	2465.6	4941.7	9791.5	19327.5	48913.3	97929.7	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MWST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

ASSET Laboratories **Date:** *10-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ICV** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018032**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.631	0.10	10.00	0	106	90	110				
Manganese	103.523	0.50	100.0	0	104	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.098	0.10	0.1000	0	98.4	80	120				
Manganese	0.482	0.50	0.5000	0	96.3	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **CCV** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.674	0.10	20.00	0	103	90	110				
Manganese	20.842	0.50	20.00	0	104	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **CCV** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.291	0.10	20.00	0	96.5	90	110				
Manganese	18.471	0.50	20.00	0	92.4	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **CCV** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018072**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **CCV** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.610	0.10	20.00	0	103	90	110				
Manganese	19.584	0.50	20.00	0	97.9	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	~~ND~~ 0.07392	0.10	0.1000	0	~~0~~ 73.9	70	130				~~S~~
Manganese	0.367	0.50	0.5000	0	73.4	70	130				

5/10/2018

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **ICV** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.836	0.10	10.00	0	98.4	90	110				
Manganese	106.755	0.50	100.0	0	107	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **ZZZZZZ** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.108	0.10	0.1000	0	108	80	120				
Manganese	0.494	0.50	0.5000	0	98.8	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **CCV** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.357	0.10	20.00	0	102	90	110				
Manganese	20.259	0.50	20.00	0	101	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **CCV** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.897	0.10	20.00	0	99.5	90	110				
Manganese	20.183	0.50	20.00	0	101	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **ZZZZZZ** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.092	0.10	0.1000	0	92.4	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **ZZZZZZ** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.506	0.50	0.5000	0	101	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ICV** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3017971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.962	1.0	10.00	0	110	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3017976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.976	1.0	1.000	0	97.6	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **CCV** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3017987**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.310	1.0	20.00	0	107	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **CCV** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3017999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.416	1.0	20.00	0	102	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **CCV** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.497	1.0	20.00	0	102	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.013	1.0	1.000	0	101	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **ICV** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.753	1.0	10.00	0	97.5	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **ZZZZZZ** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.003	1.0	1.000	0	100	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **CCV** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.838	1.0	20.00	0	94.2	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **CCV** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021592**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.717	1.0	20.00	0	98.6	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **ZZZZZZ** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.926	1.0	1.000	0	92.6	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

ASSET Laboratories

Date: *09-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ICB** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018033**

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

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **CCB** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018049**

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

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **CCB** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018061**

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

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **CCB** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018073**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **ICB** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021546**

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

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **CCB** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021562**

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

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **CCB** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021567**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP** Units: **µg/L**	Prep Date:	RunNo: **123880**
Client ID: **ICB**	Batch ID: **R123880**	TestNo: **EPA 6020**	Analysis Date: **5/4/2018**	SeqNo: **3017972**

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

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP** Units: **µg/L**	Prep Date:	RunNo: **123880**
Client ID: **CCB**	Batch ID: **R123880**	TestNo: **EPA 6020**	Analysis Date: **5/4/2018**	SeqNo: **3017988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.133	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP** Units: **µg/L**	Prep Date:	RunNo: **123880**
Client ID: **CCB**	Batch ID: **R123880**	TestNo: **EPA 6020**	Analysis Date: **5/4/2018**	SeqNo: **3018000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.194	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP** Units: **µg/L**	Prep Date:	RunNo: **123880**
Client ID: **CCB**	Batch ID: **R123880**	TestNo: **EPA 6020**	Analysis Date: **5/4/2018**	SeqNo: **3018012**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.173	1.0									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **123952**
Client ID: **ICB**	Batch ID: **R123952**	TestNo: **EPA 6020**		Analysis Date: **5/9/2018**	SeqNo: **3021572**

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

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **123952**
Client ID: **CCB**	Batch ID: **R123952**	TestNo: **EPA 6020**		Analysis Date: **5/9/2018**	SeqNo: **3021588**

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

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **123952**
Client ID: **CCB**	Batch ID: **R123952**	TestNo: **EPA 6020**		Analysis Date: **5/9/2018**	SeqNo: **3021593**

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

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ICSA** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018035**

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

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ICSAB** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.769	0.10	20.00	0	114	80	120				
Manganese	16.626	0.50	20.00	0	83.1	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ICSA** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018075**

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

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ICSAB** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.600	0.10	20.00	0	113	80	120				
Manganese	16.623	0.50	20.00	0	83.1	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **ICSA** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021548**

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

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **ICSAB** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021549**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.025	0.10	20.00	0	105	80	120				
Manganese	17.219	0.50	20.00	0	86.1	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **ICSA** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021569**

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

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **ICSAB** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.602	0.10	20.00	0	103	80	120				
Manganese	16.365	0.50	20.00	0	81.8	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ICSA** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3017974**

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

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ICSAB** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3017975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.718	1.0	20.00	0	104	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ICSA** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018014**

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

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ICSAB** Batch ID: **R123880** TestNo: **EPA 6020** Analysis Date: **5/4/2018** SeqNo: **3018015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	22.854	1.0	20.00	0	114	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **ICSA** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021574**

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

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **ICSAB** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.321	1.0	20.00	0	102	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **ICSA** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021595**

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

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123952**
Client ID: **ICSAB** Batch ID: **R123952** TestNo: **EPA 6020** Analysis Date: **5/9/2018** SeqNo: **3021596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.347	1.0	20.00	0	96.7	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180504A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	51653	51653	100	PASS	70-125	38497.4	38497.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	52231.6	51653	101.12	PASS	70-125	39043.4	38497.4	101.42	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	52669.5	51653	101.97	PASS	70-125	38958.4	38497.4	101.2	PASS	70-125
Std3-5/50 ppb	ICAL	1	52295.1	51653	101.24	PASS	70-125	39207.1	38497.4	101.84	PASS	70-125
Std4-10/100 ppb	ICAL	1	52301.8	51653	101.26	PASS	70-125	39272.5	38497.4	102.01	PASS	70-125
Std5-20/200 ppb	ICAL	1	52483.5	51653	101.61	PASS	70-125	38617.6	38497.4	100.31	PASS	70-125
Std6-40/400 ppb	ICAL	1	52121.3	51653	100.91	PASS	70-125	38469.4	38497.4	99.93	PASS	70-125
Std7-100/1000 ppb	ICAL	1	52727.4	51653	102.08	PASS	70-125	38723.5	38497.4	100.59	PASS	70-125
Std8-200/2000 ppb	ICAL	1	52939.3	51653	102.49	PASS	70-125	38056.4	38497.4	98.85	PASS	70-125
ICV	ICV	1	57327.1	51653	110.99	PASS	70-125	42332.5	38497.4	109.96	PASS	70-125
ICB	ICB	1	50068.3	51653	96.93	PASS	70-125	37228.8	38497.4	96.7	PASS	70-125
LLICV	CCV1	1	61823.2	51653	119.69	PASS	70-125	45577.7	38497.4	118.39	PASS	70-125
ICSA1	ICSA	1	60602.1	51653	117.33	PASS	70-125	43234.7	38497.4	112.31	PASS	70-125
ICSAB1	ICSAB	1	58676	51653	113.6	PASS	70-125	41358.6	38497.4	107.43	PASS	70-125
LLICV	CCV1	1	64134	51653	124.16	PASS	70-125	46919.1	38497.4	121.88	PASS	70-125
MB-67847	MBLK	1	60219.6	51653	116.58	PASS	70-125	44703.2	38497.4	116.12	PASS	70-125
LCS-67847	LCS	1	53084.3	51653	102.77	PASS	70-125	39135.3	38497.4	101.66	PASS	70-125
N029906-001B	SAMP	1	58194.6	51653	112.66	PASS	70-125	41113.7	38497.4	106.8	PASS	70-125
N029906-001B	SAMP	5	56087.3	51653	108.58	PASS	70-125	40397.5	38497.4	104.94	PASS	70-125
N029906-001B-PS	PS	1	58532.4	51653	113.32	PASS	70-125	41015.7	38497.4	106.54	PASS	70-125
N029906-001B-MS	MS	1	60662.2	51653	117.44	PASS	70-125	42174.1	38497.4	109.55	PASS	70-125
N029906-001B-MSD	MSD	1	61783.1	51653	119.61	PASS	70-125	43563.3	38497.4	113.16	PASS	70-125
N029906-001B	SAMP	25	60447.2	51653	117.03	PASS	70-125	44218.4	38497.4	114.86	PASS	70-125
N029906-001B-PS	PS	5	58998.8	51653	114.22	PASS	70-125	43182.2	38497.4	112.17	PASS	70-125
N029906-001B-MS	MS	5	59404.2	51653	115.01	PASS	70-125	43754.9	38497.4	113.66	PASS	70-125
CCV1	CCV	1	60216.2	51653	116.58	PASS	70-125	44540.5	38497.4	115.7	PASS	70-125
CCB1	CCB	1	45351.5	51653	87.8	PASS	70-125	34135.6	38497.4	88.67	PASS	70-125
N029906-001B-MSD	MSD	5	58267.1	51653	112.8	PASS	70-125	42382.4	38497.4	110.09	PASS	70-125
N029906-002B	SAMP	1	47490.8	51653	91.94	PASS	70-125	34054	38497.4	88.46	PASS	70-125
N029906-002B	SAMP	5	63497	51653	122.93	PASS	70-125	45363.7	38497.4	117.84	PASS	70-125
N029906-003B	SAMP	1	48444.6	51653	93.79	PASS	70-125	33674.5	38497.4	87.47	PASS	70-125
N029906-003B	SAMP	10	63232.7	51653	122.42	PASS	70-125	45505.3	38497.4	118.2	PASS	70-125
N029906-004B	SAMP	1	63404.5	51653	122.75	PASS	70-125	44129.2	38497.4	114.63	PASS	70-125
N029906-005B	SAMP	1	52628.2	51653	101.89	PASS	70-125	37266.8	38497.4	96.8	PASS	70-125
N029906-006B	SAMP	1	53979.3	51653	104.5	PASS	70-125	38177.6	38497.4	99.17	PASS	70-125
N029906-006B	SAMP	5	62712.1	51653	121.41	PASS	70-125	45967.8	38497.4	119.4	PASS	70-125
N029906-007B	SAMP	1	63098.8	51653	122.16	PASS	70-125	45173.2	38497.4	117.34	PASS	70-125
CCV2	CCV	1	51546	51653	99.79	PASS	70-125	37776.6	38497.4	98.13	PASS	70-125
CCB2	CCB	1	49103.3	51653	95.064	PASS	70-125	36568.5	38497.4	94.99	PASS	70-125
N029906-009B	SAMP	1	63108.9	51653	122.18	PASS	70-125	44271.7	38497.4	115	PASS	70-125
N029906-010B	SAMP	1	62385.2	51653	120.78	PASS	70-125	44492.6	38497.4	115.57	PASS	70-125

INTERNAL STANDARD: 180504A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N029906-012B	SAMP	1	61235.2	51653	118.55	PASS	70-125	42596.2	38497.4	110.65	PASS	70-125
N029906-012B	SAMP	50	62420.8	51653	120.85	PASS	70-125	45214.2	38497.4	117.45	PASS	70-125
N029906-013B	SAMP	1	61460.6	51653	118.99	PASS	70-125	43514.4	38497.4	113.03	PASS	70-125
N029906-014B	SAMP	1	60384.6	51653	116.9	PASS	70-125	42748.9	38497.4	111.04	PASS	70-125
N029906-014B	SAMP	10	59922.8	51653	116.01	PASS	70-125	43276	38497.4	112.41	PASS	70-125
N029942-001C	SAMP	1	33259.8	51653	64.39	NR!	70-125	21907.7	38497.4	56.91	NR!	70-125
N029942-001C	SAMP	5	43274.4	51653	83.78	PASS	70-125	29213.5	38497.4	75.88	PASS	70-125
N029942-002C	SAMP	1	33470.3	51653	64.8	NR!	70-125	22054.5	38497.4	57.29	NR!	70-125
CCV3	CCV	1	50105.1	51653	97.003	PASS	70-125	36464.8	38497.4	94.72	PASS	70-125
CCB3	CCB	1	50396.2	51653	97.57	PASS	70-125	37774.6	38497.4	98.12	PASS	70-125
LLCCV1	CCV2	1	58341.5	51653	112.95	PASS	70-125	43397.4	38497.4	112.73	PASS	70-125
ICSA2	ICSA	1	64488.8	51653	124.85	PASS	70-125	45336	38497.4	117.76	PASS	70-125
ICSAB2	ICSAB	1	48200.6	51653	93.32	PASS	70-125	34358.2	38497.4	89.25	PASS	70-125
N029942-002C	SAMP	5	53070.7	51653	102.74	PASS	70-125	37535.2	38497.4	97.5	PASS	70-125
N029942-003C	SAMP	1	41033.7	51653	79.44	PASS	70-125	26620.1	38497.4	69.15	NR!	70-125
N029942-003C	SAMP	5	58935.4	51653	114.1	PASS	70-125	38165.3	38497.4	99.14	PASS	70-125
N029942-003C	SAMP	10	66442.8	51653	128.63	NR!	70-125	43417.4	38497.4	112.78	PASS	70-125
N029942-004C	SAMP	1	33102.2	51653	64.086	NR!	70-125	21646	38497.4	56.23	NR!	70-125
N029942-004C	SAMP	5	37333.7	51653	72.28	PASS	70-125	25292.8	38497.4	65.7	NR!	70-125
N029942-004C	SAMP	10	40617.2	51653	78.63	PASS	70-125	29499.6	38497.4	76.63	PASS	70-125
N029942-005C	SAMP	1	23231.4	51653	44.98	NR!	70-125	16004.6	38497.4	41.57	NR!	70-125
N029942-005C	SAMP	5	19096.1	51653	36.97	NR!	70-125	14292.6	38497.4	37.13	NR!	70-125
N029942-005C	SAMP	10	23293.8	51653	45.097	NR!	70-125	17162.9	38497.4	44.58	NR!	70-125
CCV4	CCV	1	30072.5	51653	58.22	NR!	70-125	22087.8	38497.4	57.37	NR!	70-125
CCB4	CCB	1	28556.4	51653	55.29	NR!	70-125	20788.3	38497.4	54	NR!	70-125
N029942-007C	SAMP	5	28034.4	51653	54.27	NR!	70-125	19805.1	38497.4	51.45	NR!	70-125
N029942-007C	SAMP	1	12948.9	51653	25.069	NR!	70-125	10465.3	38497.4	27.18	NR!	70-125
N029942-007C	SAMP	25	11808	51653	22.86	NR!	70-125	9508.6	38497.4	24.7	NR!	70-125

NR

NR=Not Reported

Nancy 5/10/2018

INTERNAL STANDARD: 180509A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	56643.8	56643.8	100	PASS	70-125	43075.5	43075.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	58530.2	56643.8	103.33	PASS	70-125	44234.1	43075.5	102.69	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	58509.9	56643.8	103.29	PASS	70-125	44683.2	43075.5	103.73	PASS	70-125
Std3-5/50 ppb	ICAL	1	58551.3	56643.8	103.37	PASS	70-125	44431.3	43075.5	103.15	PASS	70-125
Std4-10/100 ppb	ICAL	1	57885.7	56643.8	102.19	PASS	70-125	44865.8	43075.5	104.16	PASS	70-125
Std5-20/200 ppb	ICAL	1	58261.5	56643.8	102.86	PASS	70-125	45254.8	43075.5	105.06	PASS	70-125
Std6-40/400 ppb	ICAL	1	58468.8	56643.8	103.22	PASS	70-125	44965.1	43075.5	104.39	PASS	70-125
Std7-100/1000 ppb	ICAL	1	57932.3	56643.8	102.27	PASS	70-125	44309.9	43075.5	102.87	PASS	70-125
Std8-200/2000 ppb	ICAL	1	58480.1	56643.8	103.24	PASS	70-125	44802.3	43075.5	104.01	PASS	70-125
ICV	ICV	1	56888.2	56643.8	100.43	PASS	70-125	43521.2	43075.5	101.04	PASS	70-125
ICB	ICB	1	59247	56643.8	104.6	PASS	70-125	42515.3	43075.5	98.7	PASS	70-125
LLICV	CCV1	1	43376.2	56643.8	76.58	PASS	70-125	33597.7	43075.5	78	PASS	70-125
ICSA1	ICSA	1	61175.1	56643.8	108	PASS	70-125	44021.2	43075.5	102.2	PASS	70-125
ICSAB1	ICSAB	1	58554.9	56643.8	103.37	PASS	70-125	41679.6	43075.5	96.76	PASS	70-125
LLICV	CCV1	1	63350	56643.8	111.84	PASS	70-125	47676	43075.5	110.68	PASS	70-125
N029942-002C	SAMP	5	63466	56643.8	112.04	PASS	70-125	43454.1	43075.5	100.88	PASS	70-125
N029942-003C	SAMP	1	57985.9	56643.8	102.37	PASS	70-125	34719.9	43075.5	80.6	PASS	70-125
N029942-003C	SAMP	5	71922.4	56643.8	126.97	NR!	70-125	45983.4	43075.5	106.75	PASS	70-125
N029942-003C	SAMP	10	59689.8	56643.8	105.38	PASS	70-125	39640	43075.5	92.024	PASS	70-125
N029942-004C	SAMP	1	45646.7	56643.8	80.59	PASS	70-125	27180	43075.5	63.099	NR!	70-125
N029942-004C	SAMP	5	61787.5	56643.8	109.08	PASS	70-125	37515.1	43075.5	87.092	PASS	70-125
N029942-004C	SAMP	10	61161.7	56643.8	107.98	PASS	70-125	39071	43075.5	90.7	PASS	70-125
N029942-005C	SAMP	1	60708.6	56643.8	107.18	PASS	70-125	35328.1	43075.5	82.014	PASS	70-125
N029942-005C	SAMP	5	60363.3	56643.8	106.57	PASS	70-125	39058.7	43075.5	90.67	PASS	70-125
N029942-005C	SAMP	10	60619.4	56643.8	107.02	PASS	70-125	40132.5	43075.5	93.17	PASS	70-125
CCV1	CCV	1	61804.3	56643.8	109.11	PASS	70-125	43326.5	43075.5	100.58	PASS	70-125
CCB1	CCB	1	50581.1	56643.8	89.3	PASS	70-125	34586.3	43075.5	80.29	PASS	70-125
N029942-007C	SAMP	5	62204.7	56643.8	109.82	PASS	70-125	40360.9	43075.5	93.7	PASS	70-125
N029942-007C	SAMP	1	31829.3	56643.8	56.19	NR!	70-125	21461.9	43075.5	49.82	NR!	70-125
N029942-007C	SAMP	25	47292.5	56643.8	83.49	PASS	70-125	31382	43075.5	72.85	PASS	70-125
CCV2	CCV	1	63239.9	56643.8	111.64	PASS	70-125	44440.2	43075.5	103.17	PASS	70-125
CCB2	CCB	1	63705.6	56643.8	112.47	PASS	70-125	44762.2	43075.5	103.92	PASS	70-125
LLCCV1	CCV2	1	62161.1	56643.8	109.74	PASS	70-125	44445.6	43075.5	103.18	PASS	70-125
ICSA2	ICSA	1	67783.9	56643.8	119.67	PASS	70-125	44021.4	43075.5	102.2	PASS	70-125
ICSAB2	ICSAB	1	65229.3	56643.8	115.16	PASS	70-125	41970.3	43075.5	97.43	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water **Dilution Test Summary**

Work Order No.: N029942
Test Method: EPA 6020
Analysis Date: 5/4/2018

Matrix: Groundwater
Batch No.: 67847

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As. The calculated concentration is <25RL.
Dilution test failed for Cr.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N029906-001B DT 5X	Arsenic	ug/L	1.293248	NA	1.171057	10.43%	10
N029906-001B DT 5X	Chromium	ug/L	188.491	FAIL	169.0174	11.52%	10
N029906-001B DT 25X	Manganese	ug/L	318.9833	PASS	305.3371	4.47%	10

Note: NA - Not applicable

ASSET Laboratories **Date:** *09-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N029906-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3018042**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.152	0.10	10.00	1.171	110	80	120				

Sample ID **N029906-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3018046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	413.555	2.5	100.0	305.3	108	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029942
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N029906-001B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **123880**
Client ID: **ZZZZZZ** Batch ID: **67847** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/4/2018** SeqNo: **3017981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	176.479	1.0	10.00	169.0	74.6	80	120				S

Qualifiers:

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

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8 **Matrix: Water**
Digestion Method: EPA 3010A **Units: ug/L**
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

May 14, 2018

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

TEL: (916) 786-3302
FAX:

Workorder No.: N029973

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

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 24, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.0801
Lab Order:	N029973

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N029973-008, -009, -011, -012 and -014 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (11 ug/L) and hexavalent chromium (6.6 ug/L) for sample N029973-007 (MW-36-100-Q218) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.1 ug/L) and hexavalent chromium (0 ug/L) for sample N029973-012 (MW-34-100-Q218) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.3 ug/L) and hexavalent chromium (0 ug/L) for sample N029973-014 (MW-907-Q218) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (3.1 ug/L) and hexavalent chromium (0 ug/L) for sample N029973-018 (MW-44-125-Q218) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N029973-001D-MS and N029973-001D-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Because the results for total dissolved chromium (11 ug/L) and hexavalent chromium (6.6 ug/L) for sample N029973-007 (MW-36-100-Q218) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 11 and 8.5 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.1 ug/L) and hexavalent chromium (0 ug/L) for sample N029973-012 (MW-34-100-Q218) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.1 and 0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.3 ug/L) and hexavalent chromium (0 ug/L) for sample N029973-014 (MW-907-Q218) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.3 and 0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (3.1 ug/L) and hexavalent chromium (0 ug/L) for sample N029973-018 (MW-44-125-Q218) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 3.0 and 0.79 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Analytical Comments for SM 4500-NO3F:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N029973-020CMS and N029973-020CMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *14-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N029973
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N029973-001A	MW-39-100-Q218	Groundwater	4/24/2018 12:47:00 PM	4/24/2018	5/14/2018
N029973-001B	MW-39-100-Q218	Groundwater	4/24/2018 12:47:00 PM	4/24/2018	5/14/2018
N029973-001C	MW-39-100-Q218	Groundwater	4/24/2018 12:47:00 PM	4/24/2018	5/14/2018
N029973-001D	MW-39-100-Q218	Groundwater	4/24/2018 12:47:00 PM	4/24/2018	5/14/2018
N029973-002A	MW-42-055-Q218	Groundwater	4/24/2018 10:37:00 AM	4/24/2018	5/14/2018
N029973-002B	MW-42-055-Q218	Groundwater	4/24/2018 10:37:00 AM	4/24/2018	5/14/2018
N029973-002C	MW-42-055-Q218	Groundwater	4/24/2018 10:37:00 AM	4/24/2018	5/14/2018
N029973-003A	MW-42-065-EB-Q218	Groundwater	4/24/2018 10:13:00 AM	4/24/2018	5/14/2018
N029973-004A	MW-42-065-Q218	Groundwater	4/24/2018 10:34:00 AM	4/24/2018	5/14/2018
N029973-004B	MW-42-065-Q218	Groundwater	4/24/2018 10:34:00 AM	4/24/2018	5/14/2018
N029973-004C	MW-42-065-Q218	Groundwater	4/24/2018 10:34:00 AM	4/24/2018	5/14/2018
N029973-005A	MW-42-055-EB-Q218	Groundwater	4/24/2018 10:00:00 AM	4/24/2018	5/14/2018
N029973-006A	MW-36-090-Q218	Groundwater	4/24/2018 3:45:00 PM	4/24/2018	5/14/2018
N029973-006B	MW-36-090-Q218	Groundwater	4/24/2018 3:45:00 PM	4/24/2018	5/14/2018
N029973-006C	MW-36-090-Q218	Groundwater	4/24/2018 3:45:00 PM	4/24/2018	5/14/2018
N029973-007A	MW-36-100-Q218	Groundwater	4/24/2018 12:58:00 PM	4/24/2018	5/14/2018
N029973-007B	MW-36-100-Q218	Groundwater	4/24/2018 12:58:00 PM	4/24/2018	5/14/2018
N029973-007C	MW-36-100-Q218	Groundwater	4/24/2018 12:58:00 PM	4/24/2018	5/14/2018
N029973-007D	MW-36-100-Q218	Groundwater	4/24/2018 12:58:00 PM	4/24/2018	5/14/2018
N029973-008A	MW-52S-Q218	Groundwater	4/24/2018 2:38:00 PM	4/24/2018	5/14/2018
N029973-008B	MW-52S-Q218	Groundwater	4/24/2018 2:38:00 PM	4/24/2018	5/14/2018
N029973-008C	MW-52S-Q218	Groundwater	4/24/2018 2:38:00 PM	4/24/2018	5/14/2018
N029973-009A	MW-27-085-Q218	Groundwater	4/24/2018 1:59:00 PM	4/24/2018	5/14/2018
N029973-009B	MW-27-085-Q218	Groundwater	4/24/2018 1:59:00 PM	4/24/2018	5/14/2018
N029973-009C	MW-27-085-Q218	Groundwater	4/24/2018 1:59:00 PM	4/24/2018	5/14/2018
N029973-009D	MW-27-085-Q218	Groundwater	4/24/2018 1:59:00 PM	4/24/2018	5/14/2018
N029973-010A	MW-27-085-EB-Q218	Groundwater	4/24/2018 1:35:00 PM	4/24/2018	5/14/2018
N029973-011A	MW-34-080-Q218	Groundwater	4/24/2018 11:42:00 AM	4/24/2018	5/14/2018
N029973-011B	MW-34-080-Q218	Groundwater	4/24/2018 11:42:00 AM	4/24/2018	5/14/2018

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.0801
Lab Order:	N029973
Contract No:	

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N029973-011C	MW-34-080-Q218	Groundwater	4/24/2018 11:42:00 AM	4/24/2018	5/14/2018
N029973-011D	MW-34-080-Q218	Groundwater	4/24/2018 11:42:00 AM	4/24/2018	5/14/2018
N029973-012A	MW-34-100-Q218	Groundwater	4/24/2018 11:40:00 AM	4/24/2018	5/14/2018
N029973-012B	MW-34-100-Q218	Groundwater	4/24/2018 11:40:00 AM	4/24/2018	5/14/2018
N029973-012C	MW-34-100-Q218	Groundwater	4/24/2018 11:40:00 AM	4/24/2018	5/14/2018
N029973-012D	MW-34-100-Q218	Groundwater	4/24/2018 11:40:00 AM	4/24/2018	5/14/2018
N029973-013A	MW-34-080-EB-Q218	Groundwater	4/24/2018 11:20:00 AM	4/24/2018	5/14/2018
N029973-014A	MW-907-Q218	Groundwater	4/24/2018 11:50:00 AM	4/24/2018	5/14/2018
N029973-014B	MW-907-Q218	Groundwater	4/24/2018 11:50:00 AM	4/24/2018	5/14/2018
N029973-014C	MW-907-Q218	Groundwater	4/24/2018 11:50:00 AM	4/24/2018	5/14/2018
N029973-014D	MW-907-Q218	Groundwater	4/24/2018 11:50:00 AM	4/24/2018	5/14/2018
N029973-015A	MW-44-070-Q218	Groundwater	4/24/2018 9:02:00 AM	4/24/2018	5/14/2018
N029973-015B	MW-44-070-Q218	Groundwater	4/24/2018 9:02:00 AM	4/24/2018	5/14/2018
N029973-015C	MW-44-070-Q218	Groundwater	4/24/2018 9:02:00 AM	4/24/2018	5/14/2018
N029973-016A	MW-44-070-EB-Q218	Groundwater	4/24/2018 8:20:00 AM	4/24/2018	5/14/2018
N029973-017A	MW-44-115-Q218	Groundwater	4/24/2018 9:18:00 AM	4/24/2018	5/14/2018
N029973-017B	MW-44-115-Q218	Groundwater	4/24/2018 9:18:00 AM	4/24/2018	5/14/2018
N029973-017C	MW-44-115-Q218	Groundwater	4/24/2018 9:18:00 AM	4/24/2018	5/14/2018
N029973-017D	MW-44-115-Q218	Groundwater	4/24/2018 9:18:00 AM	4/24/2018	5/14/2018
N029973-018A	MW-44-125-Q218	Groundwater	4/24/2018 9:44:00 AM	4/24/2018	5/14/2018
N029973-018B	MW-44-125-Q218	Groundwater	4/24/2018 9:44:00 AM	4/24/2018	5/14/2018
N029973-018C	MW-44-125-Q218	Groundwater	4/24/2018 9:44:00 AM	4/24/2018	5/14/2018
N029973-018D	MW-44-125-Q218	Groundwater	4/24/2018 9:44:00 AM	4/24/2018	5/14/2018
N029973-019A	MW-44-125-EB-Q218	Groundwater	4/24/2018 9:10:00 AM	4/24/2018	5/14/2018
N029973-020A	MW-33-090-Q218	Groundwater	4/24/2018 3:18:00 PM	4/24/2018	5/14/2018
N029973-020B	MW-33-090-Q218	Groundwater	4/24/2018 3:18:00 PM	4/24/2018	5/14/2018
N029973-020C	MW-33-090-Q218	Groundwater	4/24/2018 3:18:00 PM	4/24/2018	5/14/2018
N029973-020D	MW-33-090-Q218	Groundwater	4/24/2018 3:18:00 PM	4/24/2018	5/14/2018
N029973-021A	MW-702-Q218	Groundwater	4/24/2018 3:30:00 PM	4/24/2018	5/14/2018
N029973-022A	MW-703-Q218	Groundwater	4/24/2018 4:12:00 PM	4/24/2018	5/14/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-39-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 12:47:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180425A** QC Batch: **R123624** PrepDate							Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-055-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 10:37:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 10:34:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180425A** QC Batch: **R123624** PrepDate Analyst: **LR**							
Specific Conductance	2000	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-090-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180425A** QC Batch: **R123624** PrepDate Analyst: **LR**							
Specific Conductance	4300	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	5700	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52S-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 1:59:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	9400	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:42:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	7400	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180425A** QC Batch: **R123624** PrepDate							Analyst: **LR**
Specific Conductance	9100	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180425A** QC Batch: **R123624** PrepDate							Analyst: **LR**
Specific Conductance	8800	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-070-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:02:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	1800	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:18:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180425A** QC Batch: **R123624** PrepDate							Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180425A** QC Batch: **R123624** PrepDate							Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180425A** QC Batch: **R123624** PrepDate Analyst: **LR**							
Specific Conductance	8900	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N029973-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123624**
Client ID: **ZZZZZZ** Batch ID: **R123624** TestNo: **EPA 120.1** Analysis Date: **4/25/2018** SeqNo: **3007497**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11920.000	0.10						11900	0.168	2	

Sample ID **N029973-017BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123624**
Client ID: **ZZZZZZ** Batch ID: **R123624** TestNo: **EPA 120.1** Analysis Date: **4/25/2018** SeqNo: **3007509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	10120.000	0.10						10160	0.394	2	

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-39-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 12:47:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	57	0.33	2.0		µg/L	10	4/25/2018 10:01 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	54	0.13	1.0		µg/L	1	5/11/2018 06:36 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-055-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 10:37:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 10:20 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/11/2018 07:37 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-EB-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 10:13:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180425A**	QC Batch: **R123659**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 10:39 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 10:34:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180425A**	QC Batch: **R123659**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 10:58 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/11/2018 07:48 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-055-EB-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 11:36 AM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-090-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180425A** QC Batch: **R123659**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 11:54 AM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67848**				PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/11/2018 07:59 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180425A**	QC Batch: **R123659**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	6.6	0.066	0.40		µg/L	2	4/25/2018 12:13 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate		**4/26/2018**	Analyst: **CEI**
Chromium	11	0.13	1.0		µg/L	1	5/11/2018 08:10 PM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52S-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/25/2018 12:32 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018** Analyst: **CEI**							
Chromium	ND	0.13	1.0		µg/L	1	5/11/2018 08:21 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 1:59:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180425A** QC Batch: **R123659**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/25/2018 12:51 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67848**				PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/11/2018 08:43 PM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-EB-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 1:35:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 01:29 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:42:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180425A**	QC Batch: **R123659**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/25/2018 05:59 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate		**4/26/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/11/2018 08:54 PM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/25/2018 02:07 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	1.1	0.13	1.0		µg/L	1	5/11/2018 09:06 PM

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-EB-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:20:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 02:26 PM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180425A** QC Batch: **R123659**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/25/2018 02:45 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67848**				PrepDate **4/26/2018**			Analyst: **CEI**
Chromium	1.3	0.13	1.0		µg/L	1	5/11/2018 09:17 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-070-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:02:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180425A** QC Batch: **R123659**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 03:23 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67848**				PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/11/2018 09:28 PM

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-070-EB-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 8:20:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180425A**	QC Batch: **R123659**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 04:05 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:18:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180425A**	QC Batch: **R123659**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	8.9	0.066	0.40		µg/L	2	4/25/2018 04:43 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	9.5	0.13	1.0		µg/L	1	5/11/2018 09:50 PM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180425A** QC Batch: **R123659**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 07:52 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67848**				PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	3.1	0.13	1.0		µg/L	1	5/11/2018 10:01 PM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-EB-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:10:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659**			PrepDate				Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 04:24 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180425A**	QC Batch: **R123659**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	3.3	0.033	0.20		µg/L	1	4/25/2018 08:11 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate		**4/26/2018**	Analyst: **CEI**
Chromium	3.8	0.13	1.0		µg/L	1	5/11/2018 10:12 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-702-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-021		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180427A**	QC Batch: **R123709**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/27/2018 09:40 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-703-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 4:12:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-022		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180427A**	QC Batch: **R123709**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/27/2018 09:59 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123659** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **PBW** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009322**

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

Sample ID **LCS-R123659** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **LCSW** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.111	0.20	5.000	0	102	90	110				

Sample ID **N029973-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	106.641	2.0	50.00	57.24	98.8	90	110				

Sample ID **N029973-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.084	0.20	1.000	0	108	90	110				

Sample ID **N029973-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	109	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N029973-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009331**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Sample ID **N029973-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009335**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.066	0.20	1.000	0	107	90	110				

Sample ID **N029973-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.989	0.20	1.000	0	98.9	90	110				

Sample ID **N029973-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.347	0.40	10.00	6.567	97.8	90	110				

Sample ID **N029973-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.629	1.0	5.000	0	92.6	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N029973-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009343**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.148	1.0	5.000	0	103	90	110				

Sample ID **N029973-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009347**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.032	0.20	1.000	0	103	90	110				

Sample ID **N029973-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009349**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.904	1.0	5.000	0	98.1	90	110				

Sample ID **N029973-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009352**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.904	1.0	5.000	0	98.1	90	110				

Sample ID **N029973-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N029973-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	106.675	2.0	50.00	57.24	98.9	90	110	106.6	0.0319	20	

Sample ID **N029973-007ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.418	0.40						6.567	2.29	20	

Sample ID **N029973-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.058	0.20	1.000	0	106	90	110				

Sample ID **N029973-017AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	19.040	0.40	10.00	8.890	101	90	110				

Sample ID **N029973-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.857	1.0	5.000	0	97.1	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N029973-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.980	0.20	1.000	0	98.0	90	110				

Sample ID **N029973-020AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.306	0.20	1.000	3.281	103	90	110				

Sample ID **N029973-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.046	0.20	1.000	0	105	90	110				

Sample ID **N029973-019AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.972	0.20	1.000	0	97.2	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123709** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **PBW** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011140**

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

Sample ID **LCS-R123709** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **LCSW** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.167	0.20	5.000	0	103	90	110				

Sample ID **N029973-021AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0	106	90	110				

Sample ID **N029973-022AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011145**

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

Sample ID **N030017-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	64.091	1.0	25.00	38.52	102	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030017-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.606	1.0	5.000	0.6215	99.7	90	110				

Sample ID **N030017-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.878	0.20	1.000	0.8526	103	90	110				

Sample ID **N030017-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.831	1.0	5.000	0	96.6	90	110				

Sample ID **N030017-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	167.618	4.0	100.0	67.94	99.7	90	110				

Sample ID **N030017-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.779	1.0	5.000	0.8265	99.0	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030017-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.807	1.0	5.000	8.878	98.6	90	110				

Sample ID **N030017-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.667	1.0	5.000	0	93.3	90	110				

Sample ID **N030017-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.241	1.0	5.000	3.263	99.6	90	110				

Sample ID **N030017-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	64.571	1.0	25.00	38.52	104	90	110	64.09	0.745	20	

Sample ID **N030017-005ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.887	0.20						0.8526	3.99	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	
Work Order:	N029973	
Project:	PG&E Topock - GMP, RC000753.0801	

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030017-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.628	1.0	25.00	14.52	100	90	110				

Sample ID **N030017-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	40.401	1.0	25.00	14.42	104	90	110				

Sample ID **N030017-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID **N030017-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011183**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-67848** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **PBW** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024123**

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

Sample ID **LCS-67848** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **LCSW** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.832	1.0	10.00	0	98.3	85	115				

Sample ID **N029973-001D-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	60.453	1.0	10.00	54.04	64.1	75	125				S

Sample ID **N029973-001D-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	60.098	1.0	10.00	54.04	60.6	75	125	60.45	0.589	20	S

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N029973
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N029973-001

Client Sample ID: MW-39-100-Q218
Collection Date: 4/24/2018 12:47:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 1:59:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:42:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

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

ANALYTICAL RESULTS

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Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180504D** QC Batch: **R123845**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:18:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180504D**	QC Batch: **R123845**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.13	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.99	0.063	0.10		mg/L	2	5/4/2018

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R123845** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **PBW** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016315**

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

Sample ID **LCS-R123845** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **LCSW** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	85	115				

Sample ID **N029973-009CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ZZZZZZ** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016320**

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

Sample ID **N029973-020CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ZZZZZZ** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.373	0.10	1.000	0.9934	138	75	125				S

Sample ID **N029973-020CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ZZZZZZ** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.245	0.10	1.000	0.9934	125	75	125	2.373	5.54	20	S

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-39-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 12:47:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	2.3	0.081	0.10		µg/L	1	5/11/2018 06:36 PM
Manganese	5.1	0.26	0.50		µg/L	1	5/11/2018 06:36 PM
Molybdenum	7.1	0.21	0.50		µg/L	1	5/11/2018 06:36 PM
Selenium	ND	0.36	0.50		µg/L	1	5/11/2018 06:36 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-055-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 10:37:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**				PrepDate **4/26/2018**		Analyst: **CEI**
Arsenic	25	0.081	0.10		µg/L	1	5/11/2018 07:37 PM
Manganese	17	0.26	0.50		µg/L	1	5/11/2018 07:37 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 10:34:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-004		

DISSOLVED METALS BY ICP-MS EPA 3010A EPA 6020

RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	12	0.081	0.10		µg/L	1	5/11/2018 07:48 PM
Manganese	170	0.26	0.50		µg/L	1	5/11/2018 07:48 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-090-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate		**4/26/2018**	Analyst: **CEI**
Arsenic	3.9	0.081	0.10		µg/L	1	5/11/2018 07:59 PM
Manganese	83	0.26	0.50		µg/L	1	5/11/2018 07:59 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	4.3	0.081	0.10		µg/L	1	5/11/2018 08:10 PM
Manganese	330	1.3	2.5		µg/L	5	5/11/2018 08:16 PM
Molybdenum	22	0.21	0.50		µg/L	1	5/11/2018 08:10 PM
Selenium	ND	0.36	0.50		µg/L	1	5/11/2018 08:10 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52S-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	3.0	0.081	0.10		µg/L	1	5/11/2018 08:21 PM
Manganese	230	1.3	2.5		µg/L	5	5/11/2018 08:38 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 1:59:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A / **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018** Analyst: **CEI**							
Arsenic	1.5	0.081	0.10		µg/L	1	5/11/2018 08:43 PM
Manganese	83	0.26	0.50		µg/L	1	5/11/2018 08:43 PM
Molybdenum	18	0.21	0.50		µg/L	1	5/11/2018 08:43 PM
Selenium	ND	0.36	0.50		µg/L	1	5/11/2018 08:43 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:42:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	1.5	0.081	0.10		µg/L	1	5/11/2018 08:54 PM
Manganese	48	0.26	0.50		µg/L	1	5/11/2018 08:54 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-012		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.5	0.081	0.10		µg/L	1	5/11/2018 09:06 PM
Manganese	150	0.26	0.50		µg/L	1	5/11/2018 09:06 PM
Molybdenum	47	0.21	0.50		µg/L	1	5/11/2018 09:06 PM
Selenium	ND	0.36	0.50		µg/L	1	5/11/2018 09:06 PM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	1.4	0.081	0.10		µg/L	1	5/11/2018 09:17 PM
Manganese	150	0.26	0.50		µg/L	1	5/11/2018 09:17 PM
Molybdenum	44	0.21	0.50		µg/L	1	5/11/2018 09:17 PM
Selenium	ND	0.36	0.50		µg/L	1	5/11/2018 09:17 PM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-070-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:02:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67848**				PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	3.1	0.081	0.10		µg/L	1	5/11/2018 09:28 PM
Manganese	150	0.26	0.50		µg/L	1	5/11/2018 09:28 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:18:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-017		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	5.3	0.081	0.10		µg/L	1	5/11/2018 09:50 PM
Manganese	9.7	0.26	0.50		µg/L	1	5/11/2018 09:50 PM
Molybdenum	74	0.21	0.50		µg/L	1	5/11/2018 09:50 PM
Selenium	ND	0.36	0.50		µg/L	1	5/11/2018 09:50 PM

Qualifiers:

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

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	2.8	0.081	0.10		µg/L	1	5/11/2018 10:01 PM
Manganese	170	0.26	0.50		µg/L	1	5/11/2018 10:01 PM
Molybdenum	12	0.21	0.50		µg/L	1	5/11/2018 10:01 PM
Selenium	ND	0.36	0.50		µg/L	1	5/11/2018 10:01 PM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	1.1	0.081	0.10		µg/L	1	5/11/2018 10:12 PM
Manganese	3.0	0.26	0.50		µg/L	1	5/11/2018 10:12 PM
Molybdenum	9.8	0.21	0.50		µg/L	1	5/11/2018 10:12 PM
Selenium	ND	0.36	0.50		µg/L	1	5/11/2018 10:12 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-67848** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **PBW** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024224**

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

Sample ID **LCS-67848** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **LCSW** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.799	0.10	10.00	0	98.0	85	115				
Manganese	106.587	0.50	100.0	0	107	85	115				
Molybdenum	9.655	0.50	10.00	0	96.5	85	115				
Selenium	9.700	0.50	10.00	0	97.0	85	115				

Sample ID **N029973-001D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024231**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.359	0.10	10.00	2.325	110	75	125				
Manganese	95.776	0.50	100.0	5.098	90.7	75	125				
Molybdenum	18.873	0.50	10.00	7.058	118	75	125				
Selenium	10.195	0.50	10.00	0	102	75	125				

Sample ID **N029973-001D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.748	0.10	10.00	2.325	104	75	125	13.36	4.69	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	
Work Order:	N029973	
Project:	PG&E Topock - GMP, RC000753.0801	

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N029973-001D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**

Client ID: **ZZZZZZ** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	94.625	0.50	100.0	5.098	89.5	75	125	95.78	1.21	20	
Molybdenum	18.900	0.50	10.00	7.058	118	75	125	18.87	0.143	20	
Selenium	9.961	0.50	10.00	0	99.6	75	125	10.20	2.32	20	

Qualifiers:

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

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: Date: 4/24/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	
Project Name: PG&E Topock - GMP	Signature: Date: 4/24/2018	
Project Number: RC000753.0801		

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

Sample Receipt Condition	Y	N
1. Chilled		—
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		7
6. Method of Cooling: Ice		
Sample Temp: 3.1°C / 2.6°C / 3.5°C		

Courier:

Tracking No.:

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N029973-01	MW-39-100-Q218	4/24/2018	12:47		X			X			X	X				E	4	P	BSN	
2	-02	MW-42-055-Q218	4/24/2018	10:37			X		X							X	E	4	P	BN	
3	-03	MW-42-065-EB-Q218	4/24/2018	10:13		X											E	1	P	B	
4	-04	MW-42-065-Q218	4/24/2018	10:34			X		X							X	E	4	P	BN	
5	-05	MW-42-055-EB-Q218	4/24/2018	10:00		X											E	1	P	B	
6	-06	MW-36-090-Q218	4/24/2018	15:45		X			X							X	E	3	P	BN	
7	-07	MW-36-100-Q218	4/24/2018	12:58		X			X			X	X				E	4	P	BSN	
8	-08	MW-52S-Q218	4/24/2018	14:38			X		X							X	E	4	P	BN	
9	-09	MW-27-085-Q218	4/24/2018	13:59			X		X			X	X				E	5	P	BSN	
10	-10	MW-27-085-EB-Q218	4/24/2018	13:35		X											E	1	P	B	

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
	4/24/18 1630		4/24/18 1630
	4/24/18 1832		4/24/18 1832

Turn Around Time (TAT)

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

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

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

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

Preservatives:

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

Container Type:

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

White=Laboratory Copy Yellow=Customer's Copy

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Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: Date: 4/24/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	
Project Name: PG&E Topock - GMP	Signature: Date: 4/24/2018	
Project Number: RC000753.0801		

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

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	✓	
6. Method of Cooling: ice		
Sample Temp: 3.1°C / 2.6°C / 3.5°C		
Courier:		
Tracking No.:		

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly	Specific Conductance (EPA 120.1) — 1 liter poly	Total Dissolved Solids (SM92540) — 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 — 125 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 — 500 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N029973-11	MW-34-080-Q218	4/24/2018	11:42			X		X			X				X	E	5	P	BSN	
2	-12	MW-34-100-Q218	4/24/2018	11:40		X			X			X	X				E	4	P	BSN	
3	-13	MW-34-080-EB-Q218	4/24/2018	11:20		X											E	1	P	B	
4	-14	MW-907-Q218	4/24/2018	11:50		X			X			X	X				E	4	P	BSN	
5	-15	MW-44-070-Q218	4/24/2018	9:02			X		X							X	E	4	P	BN	
6	-16	MW-44-070-EB-Q218	4/24/2018	8:20		X											E	1	P	B	
7	-17	MW-44-115-Q218	4/24/2018	9:18		X			X			X	X				E	4	P	BSN	
8	-18	MW-44-125-~~2Q18~~ Q218	4/24/2018	9:44			X		X			X	X				E	5	P	BSN	
9	-19	MW-44-125-EB-~~2Q18~~ Q218	4/24/2018	9:10		X											E	1	P	B	
10	-20	MW-33-090-Q218	4/24/2018	15:18		X			X			X	X				E	4	P	BSN	

Relinquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
	4/24/18 1630		4/24/18 1630
	4/24/18 1832		4/24/18 1832

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

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

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

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

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

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

White=Laboratory Copy Yellow=Customer's Copy

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www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Gantt Jeffers
Title: Geologist II
Signature: Date: 4/24/2018
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - GMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
Signature: Date: 4/24/2018

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling: Ice		
Sample Temp: 3.1°/2.6°/3.5°		

Courier:
Tracking No.:

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly	Specific Conductance (EPA 120.1) — 1 liter poly	Total Dissolved Solids (SM92540) — 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 — 125 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 — 500 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N029973-21	MW-702-Q218	4/24/2018	15:30		X											E	1	P	B	
2	-22	MW-703-Q218	4/24/2018	1612		X											E	1	P	B	
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	4/24/18 1630		4/24/18 1630
	4/24/18 1832		4/24/18 1832

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

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

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

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

Preservatives:

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

Container Type:

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

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

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

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

Cooler Received/Opened On: 4/24/2018 Workorder: N029973

Rep sample Temp (Deg C): 3.1/2.6/3.5 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

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

Sample Receipt Checklist

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

Comments:

For:

Checklist Completed By: YR 4/30/2018

Reviewed By: 05/02/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/1/2018 6:08 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>, Kalib Sumter <Kalib.Sumter@critigen.com>, Dan Moore <Daniel.Moore@critigen.com>

Hi Yoandra,
Method 6020 is acceptable.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, April 30, 2018 8:48 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)

Hi Laura,

Please kindly check the attached COCs. Some samples are requested to be analyzed for As, Cr, Mn, Mo and Se by 6010.

Please kindly confirm if they can be analyzed by 6020 instead of 6010, as we have been doing before.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

ASSET Laboratories

WORK ORDER Summary

02-May-18

WorkOrder: N029973

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/24/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029973-001A	MW-39-100-Q218	4/24/2018 12:47:00 PM	5/8/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-001B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-001C			5/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-001D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-002A	MW-42-055-Q218	4/24/2018 10:37:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-002B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-002C			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-003A	MW-42-065-EB-Q218	4/24/2018 10:13:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-004A	MW-42-065-Q218	4/24/2018 10:34:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-004B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-004C			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-005A	MW-42-055-EB-Q218	4/24/2018 10:00:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-006A	MW-36-090-Q218	4/24/2018 3:45:00 PM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-006B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-006C			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

02-May-18

WorkOrder: N029973

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/24/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029973-006C	MW-36-090-Q218	4/24/2018 3:45:00 PM	5/8/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-007A	MW-36-100-Q218	4/24/2018 12:58:00 PM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-007B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-007C			5/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-007D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-008A	MW-52S-Q218	4/24/2018 2:38:00 PM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-008B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-008C			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-009A	MW-27-085-Q218	4/24/2018 1:59:00 PM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-009B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-009C			5/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-009D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-010A	MW-27-085-EB-Q218	4/24/2018 1:35:00 PM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-011A	MW-34-080-Q218	4/24/2018 11:42:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-011B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

02-May-18

WorkOrder: N029973

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/24/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029973-011C	MW-34-080-Q218	4/24/2018 11:42:00 AM	5/8/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-011D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-012A	MW-34-100-Q218	4/24/2018 11:40:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-012B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-012C			5/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-012D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-013A	MW-34-080-EB-Q218	4/24/2018 11:20:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-014A	MW-907-Q218	4/24/2018 11:50:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-014B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-014C			5/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-014D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-015A	MW-44-070-Q218	4/24/2018 9:02:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-015B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-015C			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

02-May-18

WorkOrder: N029973

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/24/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029973-015C	MW-44-070-Q218	4/24/2018 9:02:00 AM	5/8/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-016A	MW-44-070-EB-Q218	4/24/2018 8:20:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-017A	MW-44-115-Q218	4/24/2018 9:18:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-017B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-017C			5/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-017D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-018A	MW-44-125-Q218	4/24/2018 9:44:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-018B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-018C			5/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-018D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-019A	MW-44-125-EB-Q218	4/24/2018 9:10:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-020A	MW-33-090-Q218	4/24/2018 3:18:00 PM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-020B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-020C			5/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-020D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

02-May-18

WorkOrder: N029973

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/24/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029973-021A	MW-702-Q218	4/24/2018 3:30:00 PM	5/8/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-022A	MW-703-Q218	4/24/2018 4:12:00 PM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-023A	FOLDER	5/8/2018	5/8/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/8/2018		Folder	Folder	☐	☐	☐	LAB
			5/8/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.0801

ASSET Laboratories Work Order:

N029973

ANALYTICAL and QC RESULTS SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N029973

May 14, 2018

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

TEL: (916) 786-3302
FAX:

Workorder No.: N029973

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

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 24, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N029973

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N029973-008, -009, -011, -012 and -014 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (11 ug/L) and hexavalent chromium (6.6 ug/L) for sample N029973-007 (MW-36-100-Q218) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.1 ug/L) and hexavalent chromium (0 ug/L) for sample N029973-012 (MW-34-100-Q218) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (1.3 ug/L) and hexavalent chromium (0 ug/L) for sample N029973-014 (MW-907-Q218) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (3.1 ug/L) and hexavalent chromium (0 ug/L) for sample N029973-018 (MW-44-125-Q218) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N029973-001D-MS and N029973-001D-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Because the results for total dissolved chromium (11 ug/L) and hexavalent chromium (6.6 ug/L) for sample N029973-007 (MW-36-100-Q218) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 11 and 8.5 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.1 ug/L) and hexavalent chromium (0 ug/L) for sample N029973-012 (MW-34-100-Q218) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.1 and 0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (1.3 ug/L) and hexavalent chromium (0 ug/L) for sample N029973-014 (MW-907-Q218) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.3 and 0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (3.1 ug/L) and hexavalent chromium (0 ug/L) for sample N029973-018 (MW-44-125-Q218) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 3.0 and 0.79 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Analytical Comments for SM 4500-NO3F:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N029973-020CMS and N029973-020CMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *14-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N029973
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N029973-001A	MW-39-100-Q218	Groundwater	4/24/2018 12:47:00 PM	4/24/2018	5/14/2018
N029973-001B	MW-39-100-Q218	Groundwater	4/24/2018 12:47:00 PM	4/24/2018	5/14/2018
N029973-001C	MW-39-100-Q218	Groundwater	4/24/2018 12:47:00 PM	4/24/2018	5/14/2018
N029973-001D	MW-39-100-Q218	Groundwater	4/24/2018 12:47:00 PM	4/24/2018	5/14/2018
N029973-002A	MW-42-055-Q218	Groundwater	4/24/2018 10:37:00 AM	4/24/2018	5/14/2018
N029973-002B	MW-42-055-Q218	Groundwater	4/24/2018 10:37:00 AM	4/24/2018	5/14/2018
N029973-002C	MW-42-055-Q218	Groundwater	4/24/2018 10:37:00 AM	4/24/2018	5/14/2018
N029973-003A	MW-42-065-EB-Q218	Groundwater	4/24/2018 10:13:00 AM	4/24/2018	5/14/2018
N029973-004A	MW-42-065-Q218	Groundwater	4/24/2018 10:34:00 AM	4/24/2018	5/14/2018
N029973-004B	MW-42-065-Q218	Groundwater	4/24/2018 10:34:00 AM	4/24/2018	5/14/2018
N029973-004C	MW-42-065-Q218	Groundwater	4/24/2018 10:34:00 AM	4/24/2018	5/14/2018
N029973-005A	MW-42-055-EB-Q218	Groundwater	4/24/2018 10:00:00 AM	4/24/2018	5/14/2018
N029973-006A	MW-36-090-Q218	Groundwater	4/24/2018 3:45:00 PM	4/24/2018	5/14/2018
N029973-006B	MW-36-090-Q218	Groundwater	4/24/2018 3:45:00 PM	4/24/2018	5/14/2018
N029973-006C	MW-36-090-Q218	Groundwater	4/24/2018 3:45:00 PM	4/24/2018	5/14/2018
N029973-007A	MW-36-100-Q218	Groundwater	4/24/2018 12:58:00 PM	4/24/2018	5/14/2018
N029973-007B	MW-36-100-Q218	Groundwater	4/24/2018 12:58:00 PM	4/24/2018	5/14/2018
N029973-007C	MW-36-100-Q218	Groundwater	4/24/2018 12:58:00 PM	4/24/2018	5/14/2018
N029973-007D	MW-36-100-Q218	Groundwater	4/24/2018 12:58:00 PM	4/24/2018	5/14/2018
N029973-008A	MW-52S-Q218	Groundwater	4/24/2018 2:38:00 PM	4/24/2018	5/14/2018
N029973-008B	MW-52S-Q218	Groundwater	4/24/2018 2:38:00 PM	4/24/2018	5/14/2018
N029973-008C	MW-52S-Q218	Groundwater	4/24/2018 2:38:00 PM	4/24/2018	5/14/2018
N029973-009A	MW-27-085-Q218	Groundwater	4/24/2018 1:59:00 PM	4/24/2018	5/14/2018
N029973-009B	MW-27-085-Q218	Groundwater	4/24/2018 1:59:00 PM	4/24/2018	5/14/2018
N029973-009C	MW-27-085-Q218	Groundwater	4/24/2018 1:59:00 PM	4/24/2018	5/14/2018
N029973-009D	MW-27-085-Q218	Groundwater	4/24/2018 1:59:00 PM	4/24/2018	5/14/2018
N029973-010A	MW-27-085-EB-Q218	Groundwater	4/24/2018 1:35:00 PM	4/24/2018	5/14/2018
N029973-011A	MW-34-080-Q218	Groundwater	4/24/2018 11:42:00 AM	4/24/2018	5/14/2018
N029973-011B	MW-34-080-Q218	Groundwater	4/24/2018 11:42:00 AM	4/24/2018	5/14/2018

CLIENT:	ARCADIS U.S., Inc. - California	
Project:	PG&E Topock - GMP, RC000753.0801	**Work Order Sample Summary**
Lab Order:	N029973	
Contract No:		

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N029973-011C	MW-34-080-Q218	Groundwater	4/24/2018 11:42:00 AM	4/24/2018	5/14/2018
N029973-011D	MW-34-080-Q218	Groundwater	4/24/2018 11:42:00 AM	4/24/2018	5/14/2018
N029973-012A	MW-34-100-Q218	Groundwater	4/24/2018 11:40:00 AM	4/24/2018	5/14/2018
N029973-012B	MW-34-100-Q218	Groundwater	4/24/2018 11:40:00 AM	4/24/2018	5/14/2018
N029973-012C	MW-34-100-Q218	Groundwater	4/24/2018 11:40:00 AM	4/24/2018	5/14/2018
N029973-012D	MW-34-100-Q218	Groundwater	4/24/2018 11:40:00 AM	4/24/2018	5/14/2018
N029973-013A	MW-34-080-EB-Q218	Groundwater	4/24/2018 11:20:00 AM	4/24/2018	5/14/2018
N029973-014A	MW-907-Q218	Groundwater	4/24/2018 11:50:00 AM	4/24/2018	5/14/2018
N029973-014B	MW-907-Q218	Groundwater	4/24/2018 11:50:00 AM	4/24/2018	5/14/2018
N029973-014C	MW-907-Q218	Groundwater	4/24/2018 11:50:00 AM	4/24/2018	5/14/2018
N029973-014D	MW-907-Q218	Groundwater	4/24/2018 11:50:00 AM	4/24/2018	5/14/2018
N029973-015A	MW-44-070-Q218	Groundwater	4/24/2018 9:02:00 AM	4/24/2018	5/14/2018
N029973-015B	MW-44-070-Q218	Groundwater	4/24/2018 9:02:00 AM	4/24/2018	5/14/2018
N029973-015C	MW-44-070-Q218	Groundwater	4/24/2018 9:02:00 AM	4/24/2018	5/14/2018
N029973-016A	MW-44-070-EB-Q218	Groundwater	4/24/2018 8:20:00 AM	4/24/2018	5/14/2018
N029973-017A	MW-44-115-Q218	Groundwater	4/24/2018 9:18:00 AM	4/24/2018	5/14/2018
N029973-017B	MW-44-115-Q218	Groundwater	4/24/2018 9:18:00 AM	4/24/2018	5/14/2018
N029973-017C	MW-44-115-Q218	Groundwater	4/24/2018 9:18:00 AM	4/24/2018	5/14/2018
N029973-017D	MW-44-115-Q218	Groundwater	4/24/2018 9:18:00 AM	4/24/2018	5/14/2018
N029973-018A	MW-44-125-Q218	Groundwater	4/24/2018 9:44:00 AM	4/24/2018	5/14/2018
N029973-018B	MW-44-125-Q218	Groundwater	4/24/2018 9:44:00 AM	4/24/2018	5/14/2018
N029973-018C	MW-44-125-Q218	Groundwater	4/24/2018 9:44:00 AM	4/24/2018	5/14/2018
N029973-018D	MW-44-125-Q218	Groundwater	4/24/2018 9:44:00 AM	4/24/2018	5/14/2018
N029973-019A	MW-44-125-EB-Q218	Groundwater	4/24/2018 9:10:00 AM	4/24/2018	5/14/2018
N029973-020A	MW-33-090-Q218	Groundwater	4/24/2018 3:18:00 PM	4/24/2018	5/14/2018
N029973-020B	MW-33-090-Q218	Groundwater	4/24/2018 3:18:00 PM	4/24/2018	5/14/2018
N029973-020C	MW-33-090-Q218	Groundwater	4/24/2018 3:18:00 PM	4/24/2018	5/14/2018
N029973-020D	MW-33-090-Q218	Groundwater	4/24/2018 3:18:00 PM	4/24/2018	5/14/2018
N029973-021A	MW-702-Q218	Groundwater	4/24/2018 3:30:00 PM	4/24/2018	5/14/2018
N029973-022A	MW-703-Q218	Groundwater	4/24/2018 4:12:00 PM	4/24/2018	5/14/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-39-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 12:47:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-055-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 10:37:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180425A** QC Batch: **R123624**				PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 10:34:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-090-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	4300	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	5700	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52S-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 1:59:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180425A** QC Batch: **R123624**				PrepDate			Analyst: **LR**
Specific Conductance	9400	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:42:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	7400	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	9100	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	8800	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-070-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:02:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	1800	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N029973
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N029973-017

Client Sample ID: MW-44-115-Q218
Collection Date: 4/24/2018 9:18:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180425A** QC Batch: **R123624** PrepDate							Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180425A**	QC Batch: **R123624**			PrepDate			Analyst: **LR**
Specific Conductance	8900	0.10	0.10		umhos/cm	1	4/25/2018 10:00 AM

Qualifiers:

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

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N029973-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123624**
Client ID: **ZZZZZZ** Batch ID: **R123624** TestNo: **EPA 120.1** Analysis Date: **4/25/2018** SeqNo: **3007497**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11920.000	0.10						11900	0.168	2	

Sample ID **N029973-017BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123624**
Client ID: **ZZZZZZ** Batch ID: **R123624** TestNo: **EPA 120.1** Analysis Date: **4/25/2018** SeqNo: **3007509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	10120.000	0.10						10160	0.394	2	

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-39-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 12:47:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	57	0.33	2.0		µg/L	10	4/25/2018 10:01 AM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	54	0.13	1.0		µg/L	1	5/11/2018 06:36 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-055-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 10:37:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 10:20 AM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/11/2018 07:37 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-EB-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 10:13:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 10:39 AM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 10:34:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 10:58 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/11/2018 07:48 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-055-EB-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180425A**	QC Batch: **R123659**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 11:36 AM

Qualifiers:

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

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-090-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 11:54 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/11/2018 07:59 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	6.6	0.066	0.40		µg/L	2	4/25/2018 12:13 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	11	0.13	1.0		µg/L	1	5/11/2018 08:10 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52S-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/25/2018 12:32 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/11/2018 08:21 PM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 1:59:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/25/2018 12:51 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018** Analyst: **CEI**							
Chromium	ND	0.13	1.0		µg/L	1	5/11/2018 08:43 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-EB-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 1:35:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180425A**	QC Batch: **R123659**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 01:29 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:42:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/25/2018 05:59 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/11/2018 08:54 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/25/2018 02:07 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	1.1	0.13	1.0		µg/L	1	5/11/2018 09:06 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-EB-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:20:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 02:26 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180425A** QC Batch: **R123659**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/25/2018 02:45 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67848**				PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	1.3	0.13	1.0		µg/L	1	5/11/2018 09:17 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-070-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:02:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 03:23 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/11/2018 09:28 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-070-EB-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 8:20:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 04:05 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:18:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	8.9	0.066	0.40		µg/L	2	4/25/2018 04:43 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	9.5	0.13	1.0		µg/L	1	5/11/2018 09:50 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180425A** QC Batch: **R123659**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 07:52 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67848**				PrepDate		**4/26/2018**	Analyst: **CEI**
Chromium	3.1	0.13	1.0		µg/L	1	5/11/2018 10:01 PM

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-EB-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:10:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/25/2018 04:24 PM

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180425A** QC Batch: **R123659** PrepDate							Analyst: **RAB**
Hexavalent Chromium	3.3	0.033	0.20		µg/L	1	4/25/2018 08:11 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	3.8	0.13	1.0		µg/L	1	5/11/2018 10:12 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-702-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-021		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180427A** QC Batch: **R123709**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/27/2018 09:40 AM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-703-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 4:12:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-022		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180427A** QC Batch: **R123709** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/27/2018 09:59 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123659** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **PBW** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009322**

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

Sample ID **LCS-R123659** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **LCSW** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.111	0.20	5.000	0	102	90	110				

Sample ID **N029973-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	106.641	2.0	50.00	57.24	98.8	90	110				

Sample ID **N029973-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.084	0.20	1.000	0	108	90	110				

Sample ID **N029973-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	109	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N029973-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009331**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Sample ID **N029973-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009335**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.066	0.20	1.000	0	107	90	110				

Sample ID **N029973-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.989	0.20	1.000	0	98.9	90	110				

Sample ID **N029973-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16.347	0.40	10.00	6.567	97.8	90	110				

Sample ID **N029973-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.629	1.0	5.000	0	92.6	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N029973-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009343**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.148	1.0	5.000	0	103	90	110				

Sample ID **N029973-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009347**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.032	0.20	1.000	0	103	90	110				

Sample ID **N029973-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009349**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.904	1.0	5.000	0	98.1	90	110				

Sample ID **N029973-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009352**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.904	1.0	5.000	0	98.1	90	110				

Sample ID **N029973-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N029973-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	106.675	2.0	50.00	57.24	98.9	90	110	106.6	0.0319	20	

Sample ID **N029973-007ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.418	0.40						6.567	2.29	20	

Sample ID **N029973-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.058	0.20	1.000	0	106	90	110				

Sample ID **N029973-017AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	19.040	0.40	10.00	8.890	101	90	110				

Sample ID **N029973-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.857	1.0	5.000	0	97.1	90	110				

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	
Work Order:	N029973	
Project:	PG&E Topock - GMP, RC000753.0801	

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N029973-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.980	0.20	1.000	0	98.0	90	110				

Sample ID **N029973-020AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.306	0.20	1.000	3.281	103	90	110				

Sample ID **N029973-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009376**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.046	0.20	1.000	0	105	90	110				

Sample ID **N029973-019AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.972	0.20	1.000	0	97.2	90	110				

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N029973
Project:	PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123709** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **PBW** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011140**

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

Sample ID **LCS-R123709** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **LCSW** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.167	0.20	5.000	0	103	90	110				

Sample ID **N029973-021AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0	106	90	110				

Sample ID **N029973-022AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011145**

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

Sample ID **N030017-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	64.091	1.0	25.00	38.52	102	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030017-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.606	1.0	5.000	0.6215	99.7	90	110				

Sample ID **N030017-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.878	0.20	1.000	0.8526	103	90	110				

Sample ID **N030017-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.831	1.0	5.000	0	96.6	90	110				

Sample ID **N030017-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	167.618	4.0	100.0	67.94	99.7	90	110				

Sample ID **N030017-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.779	1.0	5.000	0.8265	99.0	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030017-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.807	1.0	5.000	8.878	98.6	90	110				

Sample ID **N030017-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.667	1.0	5.000	0	93.3	90	110				

Sample ID **N030017-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.241	1.0	5.000	3.263	99.6	90	110				

Sample ID **N030017-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	64.571	1.0	25.00	38.52	104	90	110	64.09	0.745	20	

Sample ID **N030017-005ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.887	0.20						0.8526	3.99	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030017-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.628	1.0	25.00	14.52	100	90	110				

Sample ID **N030017-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	40.401	1.0	25.00	14.42	104	90	110				

Sample ID **N030017-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID **N030017-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011183**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-67848** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **PBW** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024123**

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

Sample ID **LCS-67848** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **LCSW** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.832	1.0	10.00	0	98.3	85	115				

Sample ID **N029973-001D-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	60.453	1.0	10.00	54.04	64.1	75	125				S

Sample ID **N029973-001D-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	60.098	1.0	10.00	54.04	60.6	75	125	60.45	0.589	20	S

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-39-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 12:47:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

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

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180504D** QC Batch: **R123845**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/4/2018

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 1:59:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180504D**	QC Batch: **R123845**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/4/2018

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:42:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180504D**	QC Batch: **R123845**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

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

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:18:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.13	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.99	0.063	0.10		mg/L	2	5/4/2018

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R123845**	SampType: **MBLK**	TestCode: **4500N03F_W** Units: **mg/L**	Prep Date:	RunNo: **123845**							
Client ID: **PBW**	Batch ID: **R123845**	TestNo: **SM4500-NO3**	Analysis Date: **5/4/2018**	SeqNo: **3016315**							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R123845**	SampType: **LCS**	TestCode: **4500N03F_W** Units: **mg/L**	Prep Date:	RunNo: **123845**							
Client ID: **LCSW**	Batch ID: **R123845**	TestNo: **SM4500-NO3**	Analysis Date: **5/4/2018**	SeqNo: **3016316**							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	85	115				

Sample ID **N029973-009CDUP**	SampType: **DUP**	TestCode: **4500N03F_W** Units: **mg/L**	Prep Date:	RunNo: **123845**							
Client ID: **ZZZZZZ**	Batch ID: **R123845**	TestNo: **SM4500-NO3**	Analysis Date: **5/4/2018**	SeqNo: **3016320**							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID **N029973-020CMS**	SampType: **MS**	TestCode: **4500N03F_W** Units: **mg/L**	Prep Date:	RunNo: **123845**							
Client ID: **ZZZZZZ**	Batch ID: **R123845**	TestNo: **SM4500-NO3**	Analysis Date: **5/4/2018**	SeqNo: **3016322**							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.373	0.10	1.000	0.9934	138	75	125				S

Sample ID **N029973-020CMSD**	SampType: **MSD**	TestCode: **4500N03F_W** Units: **mg/L**	Prep Date:	RunNo: **123845**							
Client ID: **ZZZZZZ**	Batch ID: **R123845**	TestNo: **SM4500-NO3**	Analysis Date: **5/4/2018**	SeqNo: **3016323**							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.245	0.10	1.000	0.9934	125	75	125	2.373	5.54	20	S

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-39-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 12:47:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	2.3	0.081	0.10		µg/L	1	5/11/2018 06:36 PM
Manganese	5.1	0.26	0.50		µg/L	1	5/11/2018 06:36 PM
Molybdenum	7.1	0.21	0.50		µg/L	1	5/11/2018 06:36 PM
Selenium	ND	0.36	0.50		µg/L	1	5/11/2018 06:36 PM

Qualifiers:

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

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ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N029973
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N029973-002

Client Sample ID: MW-42-055-Q218
Collection Date: 4/24/2018 10:37:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	25	0.081	0.10		µg/L	1	5/11/2018 07:37 PM
Manganese	17	0.26	0.50		µg/L	1	5/11/2018 07:37 PM

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N029973
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N029973-004

Client Sample ID: MW-42-065-Q218
Collection Date: 4/24/2018 10:34:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	12	0.081	0.10		µg/L	1	5/11/2018 07:48 PM
Manganese	170	0.26	0.50		µg/L	1	5/11/2018 07:48 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-090-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 3:45:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	3.9	0.081	0.10		µg/L	1	5/11/2018 07:59 PM
Manganese	83	0.26	0.50		µg/L	1	5/11/2018 07:59 PM

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	4.3	0.081	0.10		µg/L	1	5/11/2018 08:10 PM
Manganese	330	1.3	2.5		µg/L	5	5/11/2018 08:16 PM
Molybdenum	22	0.21	0.50		µg/L	1	5/11/2018 08:10 PM
Selenium	ND	0.36	0.50		µg/L	1	5/11/2018 08:10 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52S-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 2:38:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67848**				PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	3.0	0.081	0.10		µg/L	1	5/11/2018 08:21 PM
Manganese	230	1.3	2.5		µg/L	5	5/11/2018 08:38 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 1:59:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67848**				PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	1.5	0.081	0.10		µg/L	1	5/11/2018 08:43 PM
Manganese	83	0.26	0.50		µg/L	1	5/11/2018 08:43 PM
Molybdenum	18	0.21	0.50		µg/L	1	5/11/2018 08:43 PM
Selenium	ND	0.36	0.50		µg/L	1	5/11/2018 08:43 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:42:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-011		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.5	0.081	0.10		µg/L	1	5/11/2018 08:54 PM
Manganese	48	0.26	0.50		µg/L	1	5/11/2018 08:54 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67848**				PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	1.5	0.081	0.10		µg/L	1	5/11/2018 09:06 PM
Manganese	150	0.26	0.50		µg/L	1	5/11/2018 09:06 PM
Molybdenum	47	0.21	0.50		µg/L	1	5/11/2018 09:06 PM
Selenium	ND	0.36	0.50		µg/L	1	5/11/2018 09:06 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 11:50:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	1.4	0.081	0.10		µg/L	1	5/11/2018 09:17 PM
Manganese	150	0.26	0.50		µg/L	1	5/11/2018 09:17 PM
Molybdenum	44	0.21	0.50		µg/L	1	5/11/2018 09:17 PM
Selenium	ND	0.36	0.50		µg/L	1	5/11/2018 09:17 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N029973
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N029973-015

Client Sample ID: MW-44-070-Q218
Collection Date: 4/24/2018 9:02:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	3.1	0.081	0.10		µg/L	1	5/11/2018 09:28 PM
Manganese	150	0.26	0.50		µg/L	1	5/11/2018 09:28 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:18:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	5.3	0.081	0.10		µg/L	1	5/11/2018 09:50 PM
Manganese	9.7	0.26	0.50		µg/L	1	5/11/2018 09:50 PM
Molybdenum	74	0.21	0.50		µg/L	1	5/11/2018 09:50 PM
Selenium	ND	0.36	0.50		µg/L	1	5/11/2018 09:50 PM

Qualifiers:

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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *14-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 9:44:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-018		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180511C** QC Batch: **67848** PrepDate **4/26/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.8	0.081	0.10		µg/L	1	5/11/2018 10:01 PM
Manganese	170	0.26	0.50		µg/L	1	5/11/2018 10:01 PM
Molybdenum	12	0.21	0.50		µg/L	1	5/11/2018 10:01 PM
Selenium	ND	0.36	0.50		µg/L	1	5/11/2018 10:01 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q218
Lab Order:	N029973	**Collection Date:**	4/24/2018 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N029973-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67848**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	1.1	0.081	0.10		µg/L	1	5/11/2018 10:12 PM
Manganese	3.0	0.26	0.50		µg/L	1	5/11/2018 10:12 PM
Molybdenum	9.8	0.21	0.50		µg/L	1	5/11/2018 10:12 PM
Selenium	ND	0.36	0.50		µg/L	1	5/11/2018 10:12 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-67848** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **PBW** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024224**

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

Sample ID **LCS-67848** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **LCSW** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.799	0.10	10.00	0	98.0	85	115				
Manganese	106.587	0.50	100.0	0	107	85	115				
Molybdenum	9.655	0.50	10.00	0	96.5	85	115				
Selenium	9.700	0.50	10.00	0	97.0	85	115				

Sample ID **N029973-001D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024231**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.359	0.10	10.00	2.325	110	75	125				
Manganese	95.776	0.50	100.0	5.098	90.7	75	125				
Molybdenum	18.873	0.50	10.00	7.058	118	75	125				
Selenium	10.195	0.50	10.00	0	102	75	125				

Sample ID **N029973-001D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.748	0.10	10.00	2.325	104	75	125	13.36	4.69	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	
Work Order:	N029973	
Project:	PG&E Topock - GMP, RC000753.0801	

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N029973-001D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**

Client ID: **ZZZZZZ** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	94.625	0.50	100.0	5.098	89.5	75	125	95.78	1.21	20	
Molybdenum	18.900	0.50	10.00	7.058	118	75	125	18.87	0.143	20	
Selenium	9.961	0.50	10.00	0	99.6	75	125	10.20	2.32	20	

Qualifiers:

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

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

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

Client:	Arcadis
Address:	1410 Rocky Ridge Dr # 330
Address:	Roseville, CA 95661
Phone:	916-786-3302
Fax:	
Submitted By:	Gantt Jeffers
Title:	Geologist II
Signature:	
Date:	4/24/2018
Project Name:	PG&E Topock - GMP
Project Number:	RC000753.0801

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

Report to:	Dan Bush
Company:	Arcadis
Email:	dan.bush@arcadis.com daniel.moore@critigen.com
Address:	1410 Rocky Ridge Dr # 330, Roseville, CA 95661
Phone:	916-786-3302
Fax:	
Sampled By:	Jason Mahn
Signature:	
Date:	4/24/2018

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

Bill to:	Marty Bloes
Address:	
Address:	
Email to:	mbloes@pivox.com
P.O.#	
Phone:	949-727-1400, ext 200
Fax:	

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

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	y	
6. Method of Cooling: Ice		
Sample Temp: 3.1°C / 2.6°C / 3.5°C		

Courier:

Tracking No.:

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N029973-01	MW-39-100-Q218	4/24/2018	12:47		X			X			X	X				E	4	P	BSN	
2	-02	MW-42-055-Q218	4/24/2018	10:37			X		X							X	E	4	P	BN	
3	-03	MW-42-065-EB-Q218	4/24/2018	10:13		X											E	1	P	B	
4	-04	MW-42-065-Q218	4/24/2018	10:34			X		X							X	E	4	P	BN	
5	-05	MW-42-055-EB-Q218	4/24/2018	10:00		X											E	1	P	B	
6	-06	MW-36-090-Q218	4/24/2018	15:45		X			X							X	E	3	P	BN	
7	-07	MW-36-100-Q218	4/24/2018	12:58		X			X			X	X				E	4	P	BSN	
8	-08	MW-52S-Q218	4/24/2018	14:38			X		X							X	E	4	P	BN	
9	-09	MW-27-085-Q218	4/24/2018	13:59			X		X			X	X				E	5	P	BSN	
10	-10	MW-27-085-EB-Q218	4/24/2018	13:35		X											E	1	P	B	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	4/24/18 1630	pmg aday	4/24/18 1630
pmg aday	4/24/18 1832	pmg aday	4/24/18 1832

Turn Around Time (TAT)

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

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

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

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

Preservatives:

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

Container Type:

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

White=Laboratory Copy Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

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

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#:
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: Date: 4/24/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*	
Project Name: PG&E Topock - GMP	Signature: [signature] Date: 4/24/2018	
Project Number: RC000753.0801		

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

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	>	
6. Method of Cooling: ice		
Sample Temp: 3.1°C / 2.6°C / 3.5°C		
Courier:		
Tracking No.:		

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N029973-11	MW-34-080-Q218	4/24/2018	11:42			X		X			X				X	E	5	P	BSN	
2	-12	MW-34-100-Q218	4/24/2018	11:40		X			X			X	X				E	4	P	BSN	
3	-13	MW-34-080-EB-Q218	4/24/2018	11:20		X											E	1	P	B	
4	-14	MW-907-Q218	4/24/2018	11:50		X			X			X	X				E	4	P	BSN	
5	-15	MW-44-070-Q218	4/24/2018	9:02			X		X							X	E	4	P	BN	
6	-16	MW-44-070-EB-Q218	4/24/2018	8:20		X											E	1	P	B	
7	-17	MW-44-115-Q218	4/24/2018	9:18		X			X			X	X				E	4	P	BSN	
8	-18	MW-44-125-~~2018~~ Q218	4/24/2018	9:44			X		X			X	X				E	5	P	BSN	
9	-19	MW-44-125-EB-~~2018~~ Q218	4/24/2018	9:10		X											E	1	P	B	
10	-20	MW-33-090-Q218	4/24/2018	15:18		X			X			X	X				E	4	P	BSN	

Relinquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
[signature]	4/24/18 1630	[signature]	4/24/18 1630
[signature]	4/24/18 1832	[signature]	4/24/18 1832

Turn Around Time (TAT)

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

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

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

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

Preservatives:

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

Container Type:

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

White=Laboratory Copy Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

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

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com, daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: Date: 4/24/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*	
Project Name: PG&E Topock - GMP	Signature: [signature] Date: 4/24/2018	
Project Number: RC000753.0801		

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE				
Geotracker		RWQCB	✓	1. Chilled		
Labspec		CalTrans		2. Headspace		
Others	✓	LEVEL III		3. Container Intact		
Specify: RWQCB		LEVEL IV		4. Seal Present		
		Regulatory		5. IR number	2	
Global ID:		Specify State:		6. Method of Cooling:		

Sample Temp: 1.2 / 3.1°C / 2.6°C / 3.5°C

Courier:

Tracking No.:

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly	Specific Conductance (EPA 120.1) — 1 liter poly	Total Dissolved Solids (SM92540) — 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 — 125 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 — 500 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N029973-21	MW-702-Q218	4/24/2018	15:30		X											E	1	P	B	
2	-22	MW-703-Q218	4/24/2018	1612		X											E	1	P	B	
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
[signature]	4/24/18 1630	[signature]	4/24/18 1630
[signature]	4/24/18 1832	[signature]	4/24/18 1832

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

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

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

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Others/Specify:	B	(NH4)2SO4/NH4OH	

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

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

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

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

Cooler Received/Opened On: 4/24/2018 — Workorder: N029973

Rep sample Temp (Deg C): 3.1/2.6/3.5 — IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA — Packing Material Used: None

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

Sample Receipt Checklist

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

Comments:

For:

Checklist Completed By: YR [signature] 4/30/2018

Reviewed By: [signature] 05/02/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/1/2018 6:08 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>, Kalib Sumter <Kalib.Sumter@critigen.com>, Dan Moore <Daniel.Moore@critigen.com>

Hi Yoandra,
Method 6020 is acceptable.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, April 30, 2018 8:48 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)

Hi Laura,

Please kindly check the attached COCs. Some samples are requested to be analyzed for As, Cr, Mn, Mo and Se by 6010.

Please kindly confirm if they can be analyzed by 6020 instead of 6010, as we have been doing before.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

ASSET Laboratories

WORK ORDER Summary

02-May-18

WorkOrder: N029973

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/24/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029973-001A	MW-39-100-Q218	4/24/2018 12:47:00 PM	5/8/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-001B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-001C			5/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-001D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-002A	MW-42-055-Q218	4/24/2018 10:37:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-002B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-002C			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-003A	MW-42-065-EB-Q218	4/24/2018 10:13:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-004A	MW-42-065-Q218	4/24/2018 10:34:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-004B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-004C			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-005A	MW-42-055-EB-Q218	4/24/2018 10:00:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-006A	MW-36-090-Q218	4/24/2018 3:45:00 PM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-006B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-006C			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

02-May-18

WorkOrder: N029973

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/24/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029973-006C	MW-36-090-Q218	4/24/2018 3:45:00 PM	5/8/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-007A	MW-36-100-Q218	4/24/2018 12:58:00 PM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-007B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-007C			5/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-007D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-008A	MW-52S-Q218	4/24/2018 2:38:00 PM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-008B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-008C			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-009A	MW-27-085-Q218	4/24/2018 1:59:00 PM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-009B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-009C			5/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-009D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-010A	MW-27-085-EB-Q218	4/24/2018 1:35:00 PM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-011A	MW-34-080-Q218	4/24/2018 11:42:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-011B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

02-May-18

WorkOrder: N029973

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/24/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029973-011C	MW-34-080-Q218	4/24/2018 11:42:00 AM	5/8/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-011D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-012A	MW-34-100-Q218	4/24/2018 11:40:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-012B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-012C			5/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-012D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-013A	MW-34-080-EB-Q218	4/24/2018 11:20:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-014A	MW-907-Q218	4/24/2018 11:50:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-014B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-014C			5/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-014D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-015A	MW-44-070-Q218	4/24/2018 9:02:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-015B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-015C			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

02-May-18

WorkOrder: N029973

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/24/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029973-015C	MW-44-070-Q218	4/24/2018 9:02:00 AM	5/8/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-016A	MW-44-070-EB-Q218	4/24/2018 8:20:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-017A	MW-44-115-Q218	4/24/2018 9:18:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-017B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-017C			5/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-017D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-018A	MW-44-125-Q218	4/24/2018 9:44:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-018B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-018C			5/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-018D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N029973-019A	MW-44-125-EB-Q218	4/24/2018 9:10:00 AM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-020A	MW-33-090-Q218	4/24/2018 3:18:00 PM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-020B			5/8/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N029973-020C			5/8/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N029973-020D			5/8/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/8/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

02-May-18

WorkOrder: N029973

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/24/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N029973-021A	MW-702-Q218	4/24/2018 3:30:00 PM	5/8/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-022A	MW-703-Q218	4/24/2018 4:12:00 PM	5/8/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N029973-023A	FOLDER	5/8/2018	5/8/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/8/2018		Folder	Folder	☐	☐	☐	LAB
			5/8/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N029973

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123624 **Analyst:** LSR

ASSET #: N029973 **Date Analyzed:** 4/25/2018

Method: EPA 120.1

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer Julia Ramit Date: 5/1/2018

2nd Level Reviewer [illegible] 5/7/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: 4/24/18 1015
Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV-180108A	9.95 @25.6°C	% Rec: (90-110%)
1412	180131A	1437 @25.5°C	
9987	180108B	10060 @25.4°C	
99601	180201A	100800 @25.4°C	

	Sample ID	Matrix	Reading	Comments
1	N029711-001A	H2O	382 @24.8°C	
2	1ADUP		384 @23.9°C	
3	N029942-001B		19790 @22.8°C	19790
4	2B		14450 @22.8°C	
5	3B		23600 @23.5°C	
6	4B		18140 @22.4°C	
7	5B		8140 @22.7°C	
8	3B DUP		23500 @22.2°C	
9	7B		10150 @22.8°C	
10	1413 uS/cm	CINV-171121C	1440 @25.8°C	2%
Dup	10,000	180108C	9990 @25.8°C	Accept: ~~10% water, 20% soil~~ 4/24/18 LSR
	Std Chk: 99672	171215A	98000 @25.8°C	% Rec: (90-110%)

Date: 4/25/18 1000
Analyst: LSR

Standard	Std ID	Reading	Comments
9.65	CINV-180108A	9.78 @25.2°C	% Rec: (90-110%)
1412	180131A	1423 @25.4°C	
9987	180108B	9930 @25.4°C	
99601	180201A	99400 @25.4°C	

	Sample ID	Matrix	Reading	Comments
1	N029973-001B	H2O	11900 @21.1°C	
2	1B DUP		11920 @20.9°C	
3	2B		931 @21.3°C	
4	4B		1960 @21.0°C	1413 - CINV171121C
5	6B		4270 @21.3°C	= 1439 @25.3°C
6	7B		5710 @21.5°C	10,000 - CINV180108C
7	8B		18820 @21.7°C	= 10060 @25.4°C
8	9B		9410 @21.5°C	99672 - CINV171215A
9	11B		7380 @21.4°C	= 98900 @25.4°C
10	12B		9060 @21.7°C	
Dup	14B		8850 @21.6°C	Accept: ~~10% water, 20% soil~~ 2% 4/25/18 LSR
	Std Chk:			% Rec: (90-110%)

Julia Ramit 5/1/2018

Logbook # 6

Conductivity Logbook

Date: 4/25/18 1000

Analyst: LSR CONTD

Standard	Std ID	Reading	Comments
9.65 uS/cm	GNV-1801084A	978 @ 25.2°C	% Rec: (90-110%)
1412	1804317	1423 @ 25.4°C	
9987	1801088	9930 25.4°C	
99601	1802018	99000 25.4°C	

	Sample ID	Matrix	Reading	Comments
1	N029973-015B	H2O	1773 @21.6°C	
2	17B		10160 @21.6°C	
3	17B DUP		10120 @21.2°C	
4	18B		2050 @22.2°C	
5	20B		8880 @22.4°C	
6				
7				
8				
9	1413 uS/cm	GNV-1711121C	1436 @25.2°C	
10	10000	1801180C	10060 @25.4°C	Accept: ~~10% water, 20% soil~~ 2% 4/25/18 LSR
Dup	99672	1712154	99600 @25.4°C	% Rec: (90-110%)
	Std Chk:			

Julia Ramit 5/1/2018

Date: ______

Analyst: ______

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

	Sample ID	Matrix	Reading	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				Accept: 10% water, 20% soil
Dup				% Rec: (90-110%)
	Std Chk:			

Logbook # 6

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R123659
ASSET #: N029973

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 4/25/2018

Method:

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

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

Comments:
Dilutions were necessary for N029973-008A, -009A, -011A, -012A and -014A due to matrix interference.

~~with confirmation for samples N029973-007, -012, -014 and -018~~

SECOND LEVEL REVIEW:

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

1st Level Reviewer rba Date: 5/1/2018

2nd Level Reviewer [signature] 5/7/2018 Date:

IC ARCUS
REV 2.0
011416

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R123709
ASSET #: N029973

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 4/27/2018

Method:

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

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer: rba   Date: 5/1/2018

2nd Level Reviewer: Nancy 5/7/2018   Date: —

SAMPLE CALCULATION

Sample Calculation

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

FORMULA:

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

$$Cr^{+6}\text{ ,µg/L} = A * DF$$

where:

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

For Sample **N029973-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}\text{ ,µg/L} = 5.7238 \quad * 10$$

$$Cr^{+6}\text{ ,µg/L} = 57.2380$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}\text{ ,µg/L} = 57}$$

rba 5/1/2018

ANALYSIS RUN LOG

INJECTION LOG: 180402B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	ICV	ICV	1	Hexavalent Chromium	04/02/18 1:50 PM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/02/18 2:01 PM	Reported
13	ICB	ICB	1	Hexavalent Chromium	04/02/18 2:18 PM	Reported
14	MB-R123054	MBLK	1	Hexavalent Chromium	04/02/18 2:30 PM	Reported
15	LCS-R123054	LCS	1	Hexavalent Chromium	04/02/18 2:39 PM	Reported
16	N029480-001A	SAMP	1	Hexavalent Chromium	04/02/18 2:49 PM	Not Reported
17	N029443-001G	SAMP	1	Hexavalent Chromium	04/02/18 2:58 PM	Reported
18	N029444-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:08 PM	Reported
19	N029445-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:17 PM	Reported
20	N029446-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:27 PM	Reported
21	N029480-001A	SAMP	5	Hexavalent Chromium	04/02/18 3:36 PM	Reported
22	N029480-002A	SAMP	5	Hexavalent Chromium	04/02/18 3:45 PM	Reported
23	N029480-001ADUP	DUP	5	Hexavalent Chromium	04/02/18 3:55 PM	Reported
24	CCV-1	CCV1	1	Hexavalent Chromium	04/02/18 4:04 PM	Reported
25	CCB-1	CCB	1	Hexavalent Chromium	04/02/18 4:14 PM	Reported
26	N029480-001AMS	MS	5	Hexavalent Chromium	04/02/18 4:23 PM	Reported
27	N029480-001AMSD	MSD	5	Hexavalent Chromium	04/02/18 4:33 PM	Reported
28	CCV-2	CCV	1	Hexavalent Chromium	04/02/18 4:42 PM	Reported
29	CCB-2	CCB	1	Hexavalent Chromium	04/02/18 4:52 PM	Reported

rba 4/3/2018

Injection Log Summary

Sequence Details

Name:	**IC-07_180402B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**02/Apr/18 17:22:28**
No. of Injections:	**32**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
	Hexavalent Chromium							
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	ICV,ICV,1,	11	1000	Unknown		04/02/2018 13:50	Finished	ICV @5ppb, IWST-180129B
12	PQL@0.2ppb,CCV2,1	12	1000	Unknown		04/02/2018 14:01	Finished	PQL @ 0.2ppb
13	ICB,ICB,1,	13	1000	Unknown		04/02/2018 14:18	Finished	ICB R180329A
14	MB-H2O,MBLK,1,	14	1000	Unknown		04/02/2018 14:30	Finished	MB R180302A
15	LCS-H2O,LCS,1,	15	1000	Unknown		04/02/2018 14:39	Finished	LCS, IWST-180129B
16	N029480-001A,SAMP	16	1000	Unknown		04/02/2018 14:49	Finished	SAMP,10mL
17	N029443-001G,SAMP	17	1000	Unknown		04/02/2018 14:58	Finished	SAMP,10mL
18	N029444-001G,SAMP	18	1000	Unknown		04/02/2018 15:08	Finished	SAMP,10mL
19	N029445-001G,SAMP	19	1000	Unknown		04/02/2018 15:17	Finished	SAMP,10mL
20	N029446-001G,SAMP	20	1000	Unknown		04/02/2018 15:27	Finished	SAMP,10mL
21	N029480-001A,SAMP	21	1000	Unknown		04/02/2018 15:36	Finished	SAMP,2>10mL
22	N029480-002A,SAMP	22	1000	Unknown		04/02/2018 15:45	Finished	SAMP,2>10mL
23	N029480-001ADUP,D	23	1000	Unknown		04/02/2018 15:55	Finished	DUP,2>10mL
24	CCV-1,CCV1,1,	24	1000	Unknown		04/02/2018 16:04	Finished	CCV @10ppb, IWST-180129A
25	CCB-1,CCB,1,	25	1000	Unknown		04/02/2018 16:14	Finished	CCB R180302A
26	N029480-001AMS,MS	26	1000	Unknown		04/02/2018 16:23	Finished	SAMP,10mL
27	N029480-001AMSD,M	27	1000	Unknown		04/02/2018 16:33	Finished	MS (1ppb), IWST-180129B,1>1
28	CCV-2,CCV,1,	28	1000	Unknown		04/02/2018 16:42	Finished	CCV @5ppb, IWST-180129A
29	CCB-2,CCB,1,	29	1000	Unknown		04/02/2018 16:52	Finished	CCB R180302A
30	SHUTDOWN	30	1000	Unknown		04/02/2018 17:01	Finished	
31	Eluent: R180402B	31	1000	Unknown		n.a.	Finished	Eluent
32	PCR: R180402C	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 4/3/2018

INJECTION LOG: 180425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	04/25/18 8:53 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	04/25/18 9:04 AM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	04/25/18 9:14 AM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/25/18 9:23 AM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	04/25/18 9:33 AM	Reported
16	MB-R123659	MBLK	1	Hexavalent Chromium	04/25/18 9:42 AM	Reported
17	LCS-R123659	LCS	1	Hexavalent Chromium	04/25/18 9:51 AM	Reported
18	N029973-001A	SAMP	10	Hexavalent Chromium	04/25/18 10:01 AM	Reported
19	N029973-001AMS	MS	10	Hexavalent Chromium	04/25/18 10:10 AM	Reported
20	N029973-002A	SAMP	1	Hexavalent Chromium	04/25/18 10:20 AM	Reported
21	N029973-002AMS	MS	1	Hexavalent Chromium	04/25/18 10:29 AM	Reported
22	N029973-003A	SAMP	1	Hexavalent Chromium	04/25/18 10:39 AM	Reported
23	N029973-003AMS	MS	1	Hexavalent Chromium	04/25/18 10:48 AM	Reported
24	N029973-004A	SAMP	1	Hexavalent Chromium	04/25/18 10:58 AM	Reported
25	N029973-004AMS	MS	1	Hexavalent Chromium	04/25/18 11:07 AM	Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	04/25/18 11:17 AM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	04/25/18 11:26 AM	Reported
28	N029973-005A	SAMP	1	Hexavalent Chromium	04/25/18 11:36 AM	Reported
29	N029973-005AMS	MS	1	Hexavalent Chromium	04/25/18 11:45 AM	Reported
30	N029973-006A	SAMP	1	Hexavalent Chromium	04/25/18 11:54 AM	Reported
31	N029973-006AMS	MS	1	Hexavalent Chromium	04/25/18 12:04 PM	Reported
32	N029973-007A	SAMP	2	Hexavalent Chromium	04/25/18 12:13 PM	Reported
33	N029973-007AMS	MS	2	Hexavalent Chromium	04/25/18 12:23 PM	Reported
34	N029973-008A	SAMP	5	Hexavalent Chromium	04/25/18 12:32 PM	Reported
35	N029973-008AMS	MS	5	Hexavalent Chromium	04/25/18 12:42 PM	Reported
36	N029973-009A	SAMP	5	Hexavalent Chromium	04/25/18 12:51 PM	Reported
37	N029973-009AMS	MS	5	Hexavalent Chromium	04/25/18 1:01 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	04/25/18 1:10 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	04/25/18 1:20 PM	Reported
40	N029973-010A	SAMP	1	Hexavalent Chromium	04/25/18 1:29 PM	Reported
41	N029973-010AMS	MS	1	Hexavalent Chromium	04/25/18 1:39 PM	Reported
42	N029973-011A	SAMP	1	Hexavalent Chromium	04/25/18 1:48 PM	Not Reported

INJECTION LOG: 180425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N029973-011AMS	MS	1	Hexavalent Chromium	04/25/18 1:57 PM	Not Reported
44	N029973-012A	SAMP	5	Hexavalent Chromium	04/25/18 2:07 PM	Reported
45	N029973-012AMS	MS	5	Hexavalent Chromium	04/25/18 2:16 PM	Reported
46	N029973-013A	SAMP	1	Hexavalent Chromium	04/25/18 2:26 PM	Reported
47	N029973-013AMS	MS	1	Hexavalent Chromium	04/25/18 2:35 PM	Not Reported
48	N029973-014A	SAMP	5	Hexavalent Chromium	04/25/18 2:45 PM	Reported
49	N029973-014AMS	MS	5	Hexavalent Chromium	04/25/18 2:54 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	04/25/18 3:04 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	04/25/18 3:13 PM	Reported
52	N029973-015A	SAMP	1	Hexavalent Chromium	04/25/18 3:23 PM	Reported
53	N029973-015AMS	MS	1	Hexavalent Chromium	04/25/18 3:32 PM	Reported
54	N029973-001AMSD	MSD	10	Hexavalent Chromium	04/25/18 3:45 PM	Reported
55	N029973-007ADUP	DUP	2	Hexavalent Chromium	04/25/18 3:56 PM	Reported
56	N029973-016A	SAMP	1	Hexavalent Chromium	04/25/18 4:05 PM	Reported
57	N029973-016AMS	MS	1	Hexavalent Chromium	04/25/18 4:15 PM	Reported
58	N029973-019A	SAMP	1	Hexavalent Chromium	04/25/18 4:24 PM	Reported
59	N029973-019AMS	MS	1	Hexavalent Chromium	04/25/18 4:33 PM	Not Reported
60	N029973-017A	SAMP	2	Hexavalent Chromium	04/25/18 4:43 PM	Reported
61	N029973-017AMS	MS	2	Hexavalent Chromium	04/25/18 4:52 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	04/25/18 5:02 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	04/25/18 5:11 PM	Reported
64	N029973-018A	SAMP	5	Hexavalent Chromium	04/25/18 5:21 PM	Not Reported
65	N029973-018AMS	MS	5	Hexavalent Chromium	04/25/18 5:30 PM	Not Reported
66	N029973-020A	SAMP	5	Hexavalent Chromium	04/25/18 5:40 PM	Not Reported
67	N029973-020AMS	MS	5	Hexavalent Chromium	04/25/18 5:49 PM	Not Reported
68	N029973-011A	SAMP	5	Hexavalent Chromium	04/25/18 5:59 PM	Reported
69	N029973-011AMS	MS	5	Hexavalent Chromium	04/25/18 6:08 PM	Reported
70	N029973-008A	SAMP	1	Hexavalent Chromium	04/25/18 6:18 PM	Not Reported
71	N029973-008AMS	MS	1	Hexavalent Chromium	04/25/18 6:27 PM	Not Reported
72	N029973-009A	SAMP	1	Hexavalent Chromium	04/25/18 6:36 PM	Not Reported
73	N029973-009AMS	MS	1	Hexavalent Chromium	04/25/18 6:46 PM	Not Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	04/25/18 6:55 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	04/25/18 7:05 PM	Reported
76	N029973-012A	SAMP	1	Hexavalent Chromium	04/25/18 7:14 PM	Not Reported
77	N029973-012AMS	MS	1	Hexavalent Chromium	04/25/18 7:24 PM	Not Reported
78	N029973-014A	SAMP	1	Hexavalent Chromium	04/25/18 7:33 PM	Not Reported
79	N029973-014AMS	MS	1	Hexavalent Chromium	04/25/18 7:43 PM	Not Reported
80	N029973-018A	SAMP	1	Hexavalent Chromium	04/25/18 7:52 PM	Reported
81	N029973-018AMS	MS	1	Hexavalent Chromium	04/25/18 8:02 PM	Reported
82	N029973-020A	SAMP	1	Hexavalent Chromium	04/25/18 8:11 PM	Reported
83	N029973-020AMS	MS	1	Hexavalent Chromium	04/25/18 8:20 PM	Reported
84	N029973-013AMS	MS	1	Hexavalent Chromium	04/25/18 8:30 PM	Reported

INJECTION LOG: 180425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N029973-019AMS	MS	1	Hexavalent Chromium	04/25/18 8:39 PM	Reported
86	N029973-018AMS	MS	5	Hexavalent Chromium	04/25/18 8:49 PM	Not Reported
87	CCV-7	CCV	1	Hexavalent Chromium	04/25/18 8:58 PM	Reported
88	CCB-7	CCB	1	Hexavalent Chromium	04/25/18 9:08 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180425A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**25/Apr/18 21:38:37**
No. of Injections:	**91**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	BLANK	1	1000	Unknown		04/25/2018 08:53	Finished	BLANK
12	BLANK	2	1000	Unknown		04/25/2018 09:04	Finished	BLANK
13	CCV-1,CCV,1,	3	1000	Unknown		04/25/2018 09:14	Finished	CCV @5ppb, IWST-180129A
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		04/25/2018 09:23	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		04/25/2018 09:33	Finished	CCB R180418A
16	MB-H2O,MBLK,1,	6	1000	Unknown		04/25/2018 09:42	Finished	MB R180418A
17	LCS-H2O,LCS,1,	7	1000	Unknown		04/25/2018 09:51	Finished	LCS, IWST-180129B
18	N029973-001A,SAMP	8	1000	Unknown		04/25/2018 10:01	Finished	SAMP,1>10mL
19	N029973-001AMS,MS	9	1000	Unknown		04/25/2018 10:10	Finished	MS (5ppb), IWST-180129B,1>1
20	N029973-002A,SAMP	10	1000	Unknown		04/25/2018 10:20	Finished	SAMP,10mL
21	N029973-002AMS,MS	11	1000	Unknown		04/25/2018 10:29	Finished	MS (1ppb), IWST-180129B,10
22	N029973-003A,SAMP	12	1000	Unknown		04/25/2018 10:39	Finished	SAMP,10mL
23	N029973-003AMS,MS	13	1000	Unknown		04/25/2018 10:48	Finished	MS (1ppb), IWST-180129B,10
24	N029973-004A,SAMP	14	1000	Unknown		04/25/2018 10:58	Finished	SAMP,10mL
25	N029973-004AMS,MS	15	1000	Unknown		04/25/2018 11:07	Finished	MS (1ppb), IWST-180129B,10
26	CCV-2,CCV1,1,	16	1000	Unknown		04/25/2018 11:17	Finished	CCV @10ppb, IWST-180129A
27	CCB-2,CCB,1,	17	1000	Unknown		04/25/2018 11:26	Finished	CCB R180418A
28	N029973-005A,SAMP	18	1000	Unknown		04/25/2018 11:36	Finished	SAMP,10mL
29	N029973-005AMS,MS	19	1000	Unknown		04/25/2018 11:45	Finished	MS (1ppb), IWST-180129B,10
30	N029973-006A,SAMP	20	1000	Unknown		04/25/2018 11:54	Finished	SAMP,10mL
31	N029973-006AMS,MS	21	1000	Unknown		04/25/2018 12:04	Finished	MS (1ppb), IWST-180129B,10
32	N029973-007A,SAMP	22	1000	Unknown		04/25/2018 12:13	Finished	SAMP,5>10mL
33	N029973-007AMS,MS	23	1000	Unknown		04/25/2018 12:23	Finished	MS (5ppb), IWST-180129B,5>1
34	N029973-008A,SAMP	24	1000	Unknown		04/25/2018 12:32	Finished	SAMP,2>10mL
35	N029973-008AMS,MS	25	1000	Unknown		04/25/2018 12:42	Finished	MS (1ppb), IWST-180129B,2>1
36	N029973-009A,SAMP	26	1000	Unknown		04/25/2018 12:51	Finished	SAMP,2>10mL
37	N029973-009AMS,MS	27	1000	Unknown		04/25/2018 13:01	Finished	MS (1ppb), IWST-180129B,2>1
38	CCV-3,CCV,1,	28	1000	Unknown		04/25/2018 13:10	Finished	CCV @5ppb, IWST-180129A
39	CCB-3,CCB,1,	29	1000	Unknown		04/25/2018 13:20	Finished	CCB R180418A
40	N029973-010A,SAMP	30	1000	Unknown		04/25/2018 13:29	Finished	SAMP,10mL
41	N029973-010AMS,MS	31	1000	Unknown		04/25/2018 13:39	Finished	MS (1ppb), IWST-180129B,10
42	N029973-011A,SAMP	32	1000	Unknown		04/25/2018 13:48	Finished	SAMP,10mL
43	N029973-011AMS,MS	33	1000	Unknown		04/25/2018 13:57	Finished	MS (1ppb), IWST-180129B,10
44	N029973-012A,SAMP	34	1000	Unknown		04/25/2018 14:07	Finished	SAMP,2>10mL
45	N029973-012AMS,MS	35	1000	Unknown		04/25/2018 14:16	Finished	MS (1ppb), IWST-180129B,2>1
46	N029973-013A,SAMP	36	1000	Unknown		04/25/2018 14:26	Finished	SAMP,10mL
47	N029973-013AMS,MS	37	1000	Unknown		04/25/2018 14:35	Finished	MS (1ppb), IWST-180129B,10
48	N029973-014A,SAMP	38	1000	Unknown		04/25/2018 14:45	Finished	SAMP,2>10mL
49	N029973-014AMS,MS	39	1000	Unknown		04/25/2018 14:54	Finished	MS (1ppb), IWST-180129B,2>1
50	CCV-4,CCV1,1,	40	1000	Unknown		04/25/2018 15:04	Finished	CCV @10ppb, IWST-180129A
51	CCB-4,CCB,1,	41	1000	Unknown		04/25/2018 15:13	Finished	CCB R180418A
52	N029973-015A,SAMP	42	1000	Unknown		04/25/2018 15:23	Finished	SAMP,10mL
53	N029973-015AMS,MS	43	1000	Unknown		04/25/2018 15:32	Finished	MS (1ppb), IWST-180129B,10
54	N029973-001AMSD,M	1	1000	Unknown		04/25/2018 15:45	Finished	MSD (5ppb), IWST-180129B,1
55	N029973-007ADUP,D	2	1000	Unknown		04/25/2018 15:56	Finished	MS (5ppb), IWST-180129B,10
56	N029973-016A,SAMP	3	1000	Unknown		04/25/2018 16:05	Finished	SAMP,10mL
57	N029973-016AMS,MS	4	1000	Unknown		04/25/2018 16:15	Finished	MS (1ppb), IWST-180129B,10
58	N029973-019A,SAMP	5	1000	Unknown		04/25/2018 16:24	Finished	SAMP,10mL
59	N029973-019AMS,MS	6	1000	Unknown		04/25/2018 16:33	Finished	MS (1ppb), IWST-180129B,10
60	N029973-017A,SAMP	7	1000	Unknown		04/25/2018 16:43	Finished	SAMP,5>10mL

61	N029973-017AMS,MS	8	1000	Unknown		04/25/2018 16:52	Finished	MS (5ppb), IWST-180129B,5>1
62	CCV-5,CCV,1,	9	1000	Unknown		04/25/2018 17:02	Finished	CCV @5ppb, IWST-180129A
63	CCB-5,CCB,1,	10	1000	Unknown		04/25/2018 17:11	Finished	CCB R180418A
64	N029973-018A,SAMP	11	1000	Unknown		04/25/2018 17:21	Finished	SAMP,2>10mL
65	N029973-018AMS,MS	12	1000	Unknown		04/25/2018 17:30	Finished	MS (1ppb), IWST-180129B,2>1
66	N029973-020A,SAMP	13	1000	Unknown		04/25/2018 17:40	Finished	SAMP,2>10mL
67	N029973-020AMS,MS	14	1000	Unknown		04/25/2018 17:49	Finished	MS (1ppb), IWST-180129B,2>1
68	N029973-011A,SAMP	15	1000	Unknown		04/25/2018 17:59	Finished	SAMP,2>10mL
69	N029973-011AMS,MS	16	1000	Unknown		04/25/2018 18:08	Finished	MS (1ppb), IWST-180129B,2>1
70	N029973-008A,SAMP	17	1000	Unknown		04/25/2018 18:18	Finished	SAMP,10mL
71	N029973-008AMS,MS	18	1000	Unknown		04/25/2018 18:27	Finished	MS (1ppb), IWST-180129B,10
72	N029973-009A,SAMP	19	1000	Unknown		04/25/2018 18:36	Finished	SAMP,10mL
73	N029973-009AMS,MS	20	1000	Unknown		04/25/2018 18:46	Finished	MS (1ppb), IWST-180129B,10
74	CCV-6,CCV1,1,	21	1000	Unknown		04/25/2018 18:55	Finished	CCV @10ppb, IWST-180129A
75	CCB-6,CCB,1,	22	1000	Unknown		04/25/2018 19:05	Finished	CCB R180418A
76	N029973-012A,SAMP	23	1000	Unknown		04/25/2018 19:14	Finished	SAMP,10mL
77	N029973-012AMS,MS	24	1000	Unknown		04/25/2018 19:24	Finished	MS (1ppb), IWST-180129B,10
78	N029973-014A,SAMP	25	1000	Unknown		04/25/2018 19:33	Finished	SAMP,10mL
79	N029973-014AMS,MS	26	1000	Unknown		04/25/2018 19:43	Finished	MS (1ppb), IWST-180129B,10
80	N029973-018A,SAMP	27	1000	Unknown		04/25/2018 19:52	Finished	SAMP,10mL
81	N029973-018AMS,MS	28	1000	Unknown		04/25/2018 20:02	Finished	MS (1ppb), IWST-180129B,10
82	N029973-020A,SAMP	29	1000	Unknown		04/25/2018 20:11	Finished	SAMP,10mL
83	N029973-020AMS,MS	30	1000	Unknown		04/25/2018 20:20	Finished	MS (1ppb), IWST-180129B,10
84	N029973-013AMS,MS	31	1000	Unknown		04/25/2018 20:30	Finished	MS (1ppb), IWST-180129B,10
85	N029973-019AMS,MS	32	1000	Unknown		04/25/2018 20:39	Finished	MS (1ppb), IWST-180129B,10
86	N029973-018AMS,MS	33	1000	Unknown		04/25/2018 20:49	Finished	MS (1ppb), IWST-180129B,2>1
87	CCV-7,CCV,1,	34	1000	Unknown		04/25/2018 20:58	Finished	CCV @5ppb, IWST-180129A
88	CCB-7,CCB,1,	35	1000	Unknown		04/25/2018 21:08	Finished	CCB R180418A
89	SHUTDOWN	36	1000	Unknown		04/25/2018 21:18	Finished	
90	Eluent: R180424A	37	1000	Unknown		n.a.	Finished	Eluent
91	PCR: R180423B	38	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180427A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	04/27/18 8:33 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	04/27/18 8:43 AM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	04/27/18 8:53 AM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/27/18 9:02 AM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	04/27/18 9:12 AM	Reported
16	MB-R123709	MBLK	1	Hexavalent Chromium	04/27/18 9:21 AM	Reported
17	LCS-R123709	LCS	1	Hexavalent Chromium	04/27/18 9:31 AM	Reported
18	N029973-021A	SAMP	1	Hexavalent Chromium	04/27/18 9:40 AM	Reported
19	N029973-021AMS	MS	1	Hexavalent Chromium	04/27/18 9:50 AM	Reported
20	N029973-022A	SAMP	1	Hexavalent Chromium	04/27/18 9:59 AM	Reported
21	N029973-022AMS	MS	1	Hexavalent Chromium	04/27/18 10:38 AM	Reported
22	N029819-003A	SAMP	1	Hexavalent Chromium	04/27/18 10:47 AM	Not Reported
23	N029819-003AMS	MS	1	Hexavalent Chromium	04/27/18 10:57 AM	Not Reported
24	N029820-001A	SAMP	1	Hexavalent Chromium	04/27/18 11:06 AM	Not Reported
25	N029820-001AMS	MS	1	Hexavalent Chromium	04/27/18 11:15 AM	Not Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	04/27/18 11:25 AM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	04/27/18 11:34 AM	Reported
28	N029820-002A	SAMP	1	Hexavalent Chromium	04/27/18 11:44 AM	Not Reported
29	N029820-002AMS	MS	1	Hexavalent Chromium	04/27/18 11:53 AM	Not Reported
30	N030017-001A	SAMP	5	Hexavalent Chromium	04/27/18 12:03 PM	Reported
31	N030017-001AMS	MS	5	Hexavalent Chromium	04/27/18 12:12 PM	Reported
32	N030017-002A	SAMP	5	Hexavalent Chromium	04/27/18 12:22 PM	Reported
33	N030017-002AMS	MS	5	Hexavalent Chromium	04/27/18 12:31 PM	Reported
34	N030017-005A	SAMP	1	Hexavalent Chromium	04/27/18 12:41 PM	Reported
35	N030017-005AMS	MS	1	Hexavalent Chromium	04/27/18 12:50 PM	Reported
36	N030017-006A	SAMP	5	Hexavalent Chromium	04/27/18 1:00 PM	Reported
37	N030017-006AMS	MS	5	Hexavalent Chromium	04/27/18 1:09 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	04/27/18 1:18 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	04/27/18 1:28 PM	Reported
40	N030017-008A	SAMP	20	Hexavalent Chromium	04/27/18 1:37 PM	Reported
41	N030017-008AMS	MS	20	Hexavalent Chromium	04/27/18 1:47 PM	Reported
42	N030017-007A	SAMP	5	Hexavalent Chromium	04/27/18 1:56 PM	Reported

INJECTION LOG: 180427A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030017-007AMS	MS	5	Hexavalent Chromium	04/27/18 2:06 PM	Reported
44	N030017-009A	SAMP	5	Hexavalent Chromium	04/27/18 2:15 PM	Reported
45	N030017-009AMS	MS	5	Hexavalent Chromium	04/27/18 2:25 PM	Reported
46	N030017-010A	SAMP	5	Hexavalent Chromium	04/27/18 2:34 PM	Reported
47	N030017-010AMS	MS	5	Hexavalent Chromium	04/27/18 2:44 PM	Reported
48	N030017-011A	SAMP	5	Hexavalent Chromium	04/27/18 2:53 PM	Reported
49	N030017-011AMS	MS	5	Hexavalent Chromium	04/27/18 3:03 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	04/27/18 3:12 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	04/27/18 3:21 PM	Reported
52	N030017-001AMSD	MSD	5	Hexavalent Chromium	04/27/18 3:31 PM	Reported
53	N030017-005ADUP	DUP	1	Hexavalent Chromium	04/27/18 3:40 PM	Reported
54	N030017-012A	SAMP	5	Hexavalent Chromium	04/27/18 3:59 PM	Reported
55	N030017-012AMS	MS	5	Hexavalent Chromium	04/27/18 4:10 PM	Reported
56	N030017-013A	SAMP	5	Hexavalent Chromium	04/27/18 4:19 PM	Reported
57	N030017-013AMS	MS	5	Hexavalent Chromium	04/27/18 4:29 PM	Reported
58	N030017-003A	SAMP	1	Hexavalent Chromium	04/27/18 4:38 PM	Reported
59	N030017-003AMS	MS	1	Hexavalent Chromium	04/27/18 4:48 PM	Reported
60	N030017-004A	SAMP	1	Hexavalent Chromium	04/27/18 4:57 PM	Reported
61	N030017-004AMS	MS	1	Hexavalent Chromium	04/27/18 5:07 PM	Not Reported
62	CCV-5	CCV	1	Hexavalent Chromium	04/27/18 5:16 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	04/27/18 5:26 PM	Reported
64	N030017-002A	SAMP	1	Hexavalent Chromium	04/27/18 5:35 PM	Not Reported
65	N030017-002AMS	MS	1	Hexavalent Chromium	04/27/18 5:45 PM	Not Reported
66	N030017-006A	SAMP	1	Hexavalent Chromium	04/27/18 5:54 PM	Not Reported
67	N030017-006AMS	MS	1	Hexavalent Chromium	04/27/18 6:04 PM	Not Reported
68	N030017-007A	SAMP	1	Hexavalent Chromium	04/27/18 6:13 PM	Not Reported
69	N030017-007AMS	MS	1	Hexavalent Chromium	04/27/18 6:23 PM	Not Reported
70	N030017-009A	SAMP	1	Hexavalent Chromium	04/27/18 6:32 PM	Not Reported
71	N030017-009AMS	MS	1	Hexavalent Chromium	04/27/18 6:41 PM	Not Reported
72	N030017-010A	SAMP	1	Hexavalent Chromium	04/27/18 6:51 PM	Not Reported
73	N030017-010AMS	MS	1	Hexavalent Chromium	04/27/18 7:00 PM	Not Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	04/27/18 7:10 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	04/27/18 7:19 PM	Reported
76	N030017-011A	SAMP	1	Hexavalent Chromium	04/27/18 7:29 PM	Not Reported
77	N030017-011AMS	MS	1	Hexavalent Chromium	04/27/18 7:38 PM	Not Reported
78	N029858-001A	SAMP	1	Hexavalent Chromium	04/27/18 7:48 PM	Not Reported
79	N029858-001AMS	MS	1	Hexavalent Chromium	04/27/18 7:57 PM	Not Reported
80	N030017-004AMS	MS	1	Hexavalent Chromium	04/27/18 8:07 PM	Reported
81	CCV-7	CCV	1	Hexavalent Chromium	04/27/18 8:16 PM	Reported
82	CCB-7	CCB	1	Hexavalent Chromium	04/27/18 8:26 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180427A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**27/Apr/18 20:56:21**
No. of Injections:	**85**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	BLANK	1	1000	Unknown		04/27/2018 08:33	Finished	BLANK
12	BLANK	2	1000	Unknown		04/27/2018 08:43	Finished	BLANK
13	CCV-1,CCV,1,	3	1000	Unknown		04/27/2018 08:53	Finished	CCV @5ppb, IWST-180129A
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		04/27/2018 09:02	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		04/27/2018 09:12	Finished	CCB R180418A
16	MB-H2O,MBLK,1,	6	1000	Unknown		04/27/2018 09:21	Finished	MB R180418A
17	LCS-H2O,LCS,1,	7	1000	Unknown		04/27/2018 09:31	Finished	LCS, IWST-180129B
18	N029973-021A,SAMF	8	1000	Unknown		04/27/2018 09:40	Finished	SAMP,10mL
19	N029973-021AMS,MS	9	1000	Unknown		04/27/2018 09:50	Finished	MS (1ppb), IWST-180129B,10
20	N029973-022A,SAMF	10	1000	Unknown		04/27/2018 09:59	Finished	SAMP,10mL
21	N029973-022AMS,MS	11	1000	Unknown		04/27/2018 10:38	Finished	MS (1ppb), IWST-180129B,10
22	N029819-003A,SAMF	12	1000	Unknown		04/27/2018 10:47	Finished	SAMP,10mL
23	N029819-003AMS,MS	13	1000	Unknown		04/27/2018 10:57	Finished	MS (1ppb), IWST-180129B,10
24	N029820-001A,SAMF	14	1000	Unknown		04/27/2018 11:06	Finished	SAMP,10mL
25	N029820-001AMS,MS	15	1000	Unknown		04/27/2018 11:15	Finished	MS (1ppb), IWST-180129B,10
26	CCV-2,CCV1,1,	16	1000	Unknown		04/27/2018 11:25	Finished	CCV @10ppb, IWST-180129A
27	CCB-2,CCB,1,	17	1000	Unknown		04/27/2018 11:34	Finished	CCB R180418A
28	N029820-002A,SAMF	18	1000	Unknown		04/27/2018 11:44	Finished	SAMP,10mL
29	N029820-002AMS,MS	19	1000	Unknown		04/27/2018 11:53	Finished	MS (1ppb), IWST-180129B,10
30	N030017-001A,SAMF	20	1000	Unknown		04/27/2018 12:03	Finished	SAMP,2>10mL
31	N030017-001AMS,MS	21	1000	Unknown		04/27/2018 12:12	Finished	MS (5ppb), IWST-180129B,2>1
32	N030017-002A,SAMF	22	1000	Unknown		04/27/2018 12:22	Finished	SAMP,2>10mL
33	N030017-002AMS,MS	23	1000	Unknown		04/27/2018 12:31	Finished	MS (1ppb), IWST-180129B,2>1
34	N030017-005A,SAMF	24	1000	Unknown		04/27/2018 12:41	Finished	SAMP,10mL
35	N030017-005AMS,MS	25	1000	Unknown		04/27/2018 12:50	Finished	MS (1ppb), IWST-180129B,10
36	N030017-006A,SAMF	26	1000	Unknown		04/27/2018 13:00	Finished	SAMP,2>10mL
37	N030017-006AMS,MS	27	1000	Unknown		04/27/2018 13:09	Finished	MS (1ppb), IWST-180129B,2>1
38	CCV-3,CCV,1,	28	1000	Unknown		04/27/2018 13:18	Finished	CCV @5ppb, IWST-180129A
39	CCB-3,CCB,1,	29	1000	Unknown		04/27/2018 13:28	Finished	CCB R180418A
40	N030017-008A,SAMF	30	1000	Unknown		04/27/2018 13:37	Finished	SAMP,0.5>10mL
41	N030017-008AMS,MS	31	1000	Unknown		04/27/2018 13:47	Finished	MS (5ppb), IWST-180129B,0.5
42	N030017-007A,SAMF	32	1000	Unknown		04/27/2018 13:56	Finished	SAMP,2>10mL
43	N030017-007AMS,MS	33	1000	Unknown		04/27/2018 14:06	Finished	MS (1ppb), IWST-180129B,2>1
44	N030017-009A,SAMF	34	1000	Unknown		04/27/2018 14:15	Finished	SAMP,2>10mL
45	N030017-009AMS,MS	35	1000	Unknown		04/27/2018 14:25	Finished	MS (1ppb), IWST-180129B,2>1
46	N030017-010A,SAMF	36	1000	Unknown		04/27/2018 14:34	Finished	SAMP,2>10mL
47	N030017-010AMS,MS	37	1000	Unknown		04/27/2018 14:44	Finished	MS (1ppb), IWST-180129B,2>1
48	N030017-011A,SAMF	38	1000	Unknown		04/27/2018 14:53	Finished	SAMP,2>10mL
49	N030017-011AMS,MS	39	1000	Unknown		04/27/2018 15:03	Finished	MS (1ppb), IWST-180129B,2>1
50	CCV-4,CCV1,1,	40	1000	Unknown		04/27/2018 15:12	Finished	CCV @10ppb, IWST-180129A
51	CCB-4,CCB,1,	41	1000	Unknown		04/27/2018 15:21	Finished	CCB R180418A
52	N030017-001AMSD,M	42	1000	Unknown		04/27/2018 15:31	Finished	MSD (5ppb), IWST-180129B,2
53	N030017-005ADUP,D	43	1000	Unknown		04/27/2018 15:40	Finished	DUP,10mL
54	N030017-012A,SAMF	1	1000	Unknown		04/27/2018 15:59	Finished	SAMP,2>10mL
55	N030017-012AMS,MS	2	1000	Unknown		04/27/2018 16:10	Finished	MS (5ppb), IWST-180129B,2>1
56	N030017-013A,SAMF	3	1000	Unknown		04/27/2018 16:19	Finished	SAMP,10mL
57	N030017-013AMS,MS	4	1000	Unknown		04/27/2018 16:29	Finished	MS (5ppb), IWST-180129B,10
58	N030017-003A,SAMF	5	1000	Unknown		04/27/2018 16:38	Finished	SAMP,10mL
59	N030017-003AMS,MS	6	1000	Unknown		04/27/2018 16:48	Finished	MS (1ppb), IWST-180129B,10
60	N030017-004A,SAMF	7	1000	Unknown		04/27/2018 16:57	Finished	SAMP,10mL

61	N030017-004AMS,M$	8	1000	Unknown		04/27/2018 17:07	Finished	MS (1ppb), IWST-180129B,10
62	CCV-5,CCV,1,	9	1000	Unknown		04/27/2018 17:16	Finished	CCV @5ppb, IWST-180129A
63	CCB-5,CCB,1,	10	1000	Unknown		04/27/2018 17:26	Finished	CCB R180418A
64	N030017-002A,SAMF	11	1000	Unknown		04/27/2018 17:35	Finished	SAMP,10mL
65	N030017-002AMS,M$	12	1000	Unknown		04/27/2018 17:45	Finished	MS (1ppb), IWST-180129B,10
66	N030017-006A,SAMF	13	1000	Unknown		04/27/2018 17:54	Finished	SAMP,10mL
67	N030017-006AMS,M$	14	1000	Unknown		04/27/2018 18:04	Finished	MS (1ppb), IWST-180129B,10
68	N030017-007A,SAMF	15	1000	Unknown		04/27/2018 18:13	Finished	SAMP,10mL
69	N030017-007AMS,M$	16	1000	Unknown		04/27/2018 18:23	Finished	MS (1ppb), IWST-180129B,10
70	N030017-009A,SAMF	17	1000	Unknown		04/27/2018 18:32	Finished	SAMP,10mL
71	N030017-009AMS,M$	18	1000	Unknown		04/27/2018 18:41	Finished	MS (1ppb), IWST-180129B,10
72	N030017-010A,SAMF	19	1000	Unknown		04/27/2018 18:51	Finished	SAMP,10mL
73	N030017-010AMS,M$	20	1000	Unknown		04/27/2018 19:00	Finished	MS (1ppb), IWST-180129B,10
74	CCV-6,CCV1,1,	21	1000	Unknown		04/27/2018 19:10	Finished	CCV @10ppb, IWST-180129A
75	CCB-6,CCB,1,	22	1000	Unknown		04/27/2018 19:19	Finished	CCB R180418A
76	N030017-011A,SAMF	23	1000	Unknown		04/27/2018 19:29	Finished	SAMP,10mL
77	N030017-011AMS,M$	24	1000	Unknown		04/27/2018 19:38	Finished	MS (1ppb), IWST-180129B,10
78	N029858-001A,SAMF	25	1000	Unknown		04/27/2018 19:48	Finished	SAMP,10mL
79	N029858-001AMS,M$	26	1000	Unknown		04/27/2018 19:57	Finished	MS (1ppb), IWST-180129B,10
80	N030017-004AMS,M$	27	1000	Unknown		04/27/2018 20:07	Finished	MS (1ppb), IWST-180129B,10
81	CCV-7,CCV,1,	28	1000	Unknown		04/27/2018 20:16	Finished	CCV @5ppb, IWST-180129A
82	CCB-7,CCB,1,	29	1000	Unknown		04/27/2018 20:26	Finished	CCB R180418A
83	SHUTDOWN	30	1000	Unknown		04/27/2018 20:35	Finished	
84	Eluent: R180426A	31	1000	Unknown		n.a.	Finished	Eluent
85	PCR: R180426B	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Sample Preparation

Date Prepared: 4/25/18
Time Prepared: 0900H
Prepared By: MSA

slope: 98.82
pH 4: 4.01 @ 25.0°C
7: 7.01 @ 25.0°C
10: 9.99 @ 25.0°C
LCS: 7.03 @ 25.0°C

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINU-1711 16A
NH4OH + NH4SO4 eluent: N1804244A
NH4OH + NH4SO4 buffer: N1804118A

6N NaOH: N1712259A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N029973-001A	9.12	9.34	~250mL	~250mL	+5 drps NaOH	
2)	2A	9.55	-				1/2
3)	2A	9.52	-				2/2
4)	3A	9.66	-				
5)	4A	9.44	-				1/2
6)	4A	9.47	-				2/2
7)	5A	9.60	-				
8)	6A	9.28	9.31			+1 drp NaOH	
9)	7A	9.20	9.34			+4 " "	
10)	8A	9.49	-				1/2
11)	8A	9.50	-				2/2
12)	9A	9.13	9.50			+6 " "	1/2
13)	9A	9.16	9.47			+6 " "	2/2
14)	10A	9.53	-				
15)	11A	9.11	9.61			+7 " "	1/2
	11A	9.07	9.55			+7 " "	2/2

Sample Preparation

Date Prepared: 4/25/18
Time Prepared: 0900H
Prepared By: MSA

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINU-1711 16A
NH4OH + NH4SO4 eluent: N1804244A
NH4OH + NH4SO4 buffer: N1804118A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N029973-12A	9.30	-	~250mL	~250mL		
2)	13A	9.62	-				
3)	14A	9.31	-				
4)	15A	9.38	-				1/2
5)	15A	9.40	-				2/2
6)	16A	9.57	-				
7)	17A	9.41	-				
8)	18A	9.36	-				1/2
9)	18A	9.39	-				2/2
10)	19A	9.60	-				
11)	20A	9.20	9.48			+4 drps NaOH	
12)	21A	9.52	-				
13)	22A	9.46	-				
14)							
15)							

Logbook No. 14

nba 5/1/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/2/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0611	0.2744	1.2772	2.5376	3.7905	5.0743	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

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

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ICV** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **3009316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.068	0.20	5.000	0	101	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **3009317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.240	0.20	0.2000	0	120	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **CCV** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.966	0.20	5.000	0	99.3	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.191	0.20	0.2000	0	95.5	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.066	0.20	10.00	0	101	95	105				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **CCV** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009344**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.037	0.20	5.000	0	101	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009353**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.023	0.20	10.00	0	100	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **CCV** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.004	0.20	5.000	0	100	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ZZZZZZ** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.079	0.20	10.00	0	101	95	105				

Sample ID **CCV-7** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **CCV** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.078	0.20	5.000	0	102	95	105				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ICV** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **3011134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.068	0.20	5.000	0	101	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **3011135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.240	0.20	0.2000	0	120	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCV** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.231	0.20	5.000	0	105	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.214	0.20	0.2000	0	107	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.465	0.20	10.00	0	105	95	105				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCV** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.028	0.20	5.000	0	101	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.060	0.20	10.00	0	101	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCV** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.954	0.20	5.000	0	99.1	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011181**

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

Sample ID **CCV-7** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCV** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.962	0.20	5.000	0	99.2	95	105				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **ICB** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **3009318**

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

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **CCB** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009321**

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

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **CCB** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009333**

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

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **CCB** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009345**

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

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123659**
Client ID: **CCB** Batch ID: **R123659** TestNo: **EPA 218.6** Analysis Date: **4/25/2018** SeqNo: **3009354**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **123659**
Client ID: **CCB**	Batch ID: **R123659**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2018**	SeqNo: **3009365**

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

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **123659**
Client ID: **CCB**	Batch ID: **R123659**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2018**	SeqNo: **3009371**

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

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **123659**
Client ID: **CCB**	Batch ID: **R123659**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2018**	SeqNo: **3009379**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ICB** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **3011136**

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

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCB** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011139**

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

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCB** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011147**

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

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCB** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011157**

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

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCB** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011169**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCB** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011180**

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

Sample ID **CCB-6** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCB** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011182**

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

Sample ID **CCB-7** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCB** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011185**

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

Qualifiers:

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/25/2018

Sample Name	Retention Time	Evaluation
ICV	4.140	
CCV-1	4.248	
CCV-2	4.248	
CCV-3	4.248	
CCV-4	4.248	
CCV-5	4.248	
CCV-6	4.248	
CCV-7	4.248	

Average	4.248	
Actual RT Window	4.168 -	4.328
Applied RT Window	4.048 -	4.448

MB-R123659	N.A.	N.A.
LCS-R123659	4.248	PASS
N029973-001A	4.231	PASS
N029973-001AMS	4.231	PASS
N029973-002A	N.A.	N.A.
N029973-002AMS	4.248	PASS
N029973-003A	N.A.	N.A.
N029973-003AMS	4.256	PASS
N029973-004A	N.A.	N.A.
N029973-004AMS	4.231	PASS
N029973-005A	N.A.	N.A.
N029973-005AMS	4.256	PASS
N029973-006A	N.A.	N.A.
N029973-006AMS	4.173	PASS
N029973-007A	4.198	PASS
N029973-007AMS	4.198	PASS
N029973-008A	N.A.	N.A.
N029973-008AMS	4.173	PASS
N029973-009A	N.A.	N.A.
N029973-009AMS	4.223	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/25/2018

Sample Name	Retention Time		Evaluation
ICV	4.140		
CCV-1	4.248		
CCV-2	4.248		
CCV-3	4.248		
CCV-4	4.248		
CCV-5	4.248		
CCV-6	4.248		
CCV-7	4.248		
Average	4.248		
Actual RT Window	4.168 -	4.328	
Applied RT Window	4.048 -	4.448	
N029973-010A	N.A.		N.A.
N029973-010AMS	4.248		PASS
N029973-011A	N.A.		N.A.
N029973-011AMS	4.090		PASS
N029973-012A	N.A.		N.A.
N029973-012AMS	4.215		PASS
N029973-013A	N.A.		N.A.
N029973-013AMS	4.248		PASS
N029973-014A	N.A.		N.A.
N029973-014AMS	4.215		PASS
N029973-015A	N.A.		N.A.
N029973-015AMS	4.231		PASS
N029973-001AMSD	4.231		PASS
N029973-007ADUP	4.181		PASS
N029973-016A	N.A.		N.A.
N029973-016AMS	4.248		PASS
N029973-019A	N.A.		N.A.
N029973-019AMS	4.248		PASS
N029973-017A	4.148		PASS
N029973-017AMS	4.148		PASS
N029973-018A	N.A.		N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/25/2018

Sample Name	Retention Time		Evaluation
ICV	4.140		
CCV-1	4.248		
CCV-2	4.248		
CCV-3	4.248		
CCV-4	4.248		
CCV-5	4.248		
CCV-6	4.248		
CCV-7	4.248		
Average	4.248		
Actual RT Window	4.168 -	4.328	
Applied RT Window	4.048 -	4.448	
N029973-018AMS	4.240		PASS
N029973-020A	4.215		PASS
N029973-020AMS	4.215		PASS
N029973-011A	N.A.		N.A.
N029973-011AMS	4.215		PASS
N029973-008A	N.A.		N.A.
N029973-008AMS	N.A.		N.A.
N029973-009A	N.A.		N.A.
N029973-009AMS	4.031		FAIL
N029973-012A	N.A.		N.A.
N029973-012AMS	4.031		FAIL
N029973-014A	N.A.		N.A.
N029973-014AMS	4.040		FAIL
N029973-018A	N.A.		N.A.
N029973-018AMS	4.223		PASS
N029973-020A	4.056		PASS
N029973-020AMS	4.056		PASS
N029973-013AMS	4.248		PASS
N029973-019AMS	4.248		PASS
N029973-018AMS	4.240		PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/27/2018

Sample Name	Retention Time	Evaluation
ICV	4.140	
CCV-1	4.248	
CCV-2	4.256	
CCV-3	4.256	
CCV-4	4.256	
CCV-5	4.256	
CCV-6	4.256	
CCV-7	4.248	

Average	4.254	
Actual RT Window	4.174 -	4.334
Applied RT Window	4.054 -	4.454

MB-R123709	N.A.	N.A.
LCS-R123709	4.248	PASS
N029973-021A	N.A.	N.A.
N029973-021AMS	4.248	PASS
N029973-022A	N.A.	N.A.
N029973-022AMS	4.256	PASS
N029819-003A	4.231	PASS
N029819-003AMS	4.231	PASS
N029820-001A	4.173	PASS
N029820-001AMS	4.173	PASS
N029820-002A	4.181	PASS
N029820-002AMS	4.190	PASS
N030017-001A	4.190	PASS
N030017-001AMS	4.190	PASS
N030017-002A	4.181	PASS
N030017-002AMS	4.190	PASS
N030017-005A	4.148	PASS
N030017-005AMS	4.140	PASS
N030017-006A	N.A.	N.A.
N030017-006AMS	4.198	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/27/2018

Sample Name	Retention Time		Evaluation
ICV	4.140		
CCV-1	4.248		
CCV-2	4.256		
CCV-3	4.256		
CCV-4	4.256		
CCV-5	4.256		
CCV-6	4.256		
CCV-7	4.248		
Average	4.254		
Actual RT Window	4.174 -	4.334	
Applied RT Window	4.054 -	4.454	
N030017-008A	4.248		PASS
N030017-008AMS	4.240		PASS
N030017-007A	4.181		PASS
N030017-007AMS	4.198		PASS
N030017-009A	4.173		PASS
N030017-009AMS	4.173		PASS
N030017-010A	N.A.		N.A.
N030017-010AMS	4.173		PASS
N030017-011A	4.198		PASS
N030017-011AMS	4.206		PASS
N030017-001AMSD	4.190		PASS
N030017-005ADUP	4.148		PASS
N030017-012A	4.240		PASS
N030017-012AMS	4.240		PASS
N030017-013A	4.240		PASS
N030017-013AMS	4.240		PASS
N030017-003A	N.A.		N.A.
N030017-003AMS	4.256		PASS
N030017-004A	N.A.		N.A.
N030017-004AMS	4.256		PASS
N030017-002A	N.A.		N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/27/2018

Sample Name	Retention Time		Evaluation
ICV	4.140		
CCV-1	4.248		
CCV-2	4.256		
CCV-3	4.256		
CCV-4	4.256		
CCV-5	4.256		
CCV-6	4.256		
CCV-7	4.248		
Average	4.254		
Actual RT Window	4.174 -	4.334	
Applied RT Window	4.054 -	4.454	
N030017-002AMS	N.A.		N.A.
N030017-006A	N.A.		N.A.
N030017-006AMS	N.A.		N.A.
N030017-007A	N.A.		N.A.
N030017-007AMS	3.815		FAIL
N030017-009A	N.A.		N.A.
N030017-009AMS	N.A.		N.A.
N030017-010A	N.A.		N.A.
N030017-010AMS	N.A.		N.A.
N030017-011A	3.865		FAIL
N030017-011AMS	3.848		FAIL
N029858-001A	N.A.		N.A.
N029858-001AMS	4.248		PASS
N030017-004AMS	4.256		PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

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

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

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

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

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

LOD & PQL Verification 2018 (1st Quarter)

Method Name:	**Hexavalent Chromium by IC**	Matrix:	**WATER**
Method Number:	EPA Method 218.6/7199	Unit:	µg/L
Analysis Date(s):	3/21/2018		
Analyst:	Ria Abes		

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.116

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.201	**100**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180402B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	ICV	ICV	1	Hexavalent Chromium	04/02/18 1:50 PM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/02/18 2:01 PM	Reported
13	ICB	ICB	1	Hexavalent Chromium	04/02/18 2:18 PM	Reported
14	MB-R123054	MBLK	1	Hexavalent Chromium	04/02/18 2:30 PM	Reported
15	LCS-R123054	LCS	1	Hexavalent Chromium	04/02/18 2:39 PM	Reported
16	N029480-001A	SAMP	1	Hexavalent Chromium	04/02/18 2:49 PM	Not Reported
17	N029443-001G	SAMP	1	Hexavalent Chromium	04/02/18 2:58 PM	Reported
18	N029444-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:08 PM	Reported
19	N029445-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:17 PM	Reported
20	N029446-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:27 PM	Reported
21	N029480-001A	SAMP	5	Hexavalent Chromium	04/02/18 3:36 PM	Reported
22	N029480-002A	SAMP	5	Hexavalent Chromium	04/02/18 3:45 PM	Reported
23	N029480-001ADUP	DUP	5	Hexavalent Chromium	04/02/18 3:55 PM	Reported
24	CCV-1	CCV1	1	Hexavalent Chromium	04/02/18 4:04 PM	Reported
25	CCB-1	CCB	1	Hexavalent Chromium	04/02/18 4:14 PM	Reported
26	N029480-001AMS	MS	5	Hexavalent Chromium	04/02/18 4:23 PM	Reported
27	N029480-001AMSD	MSD	5	Hexavalent Chromium	04/02/18 4:33 PM	Reported
28	CCV-2	CCV	1	Hexavalent Chromium	04/02/18 4:42 PM	Reported
29	CCB-2	CCB	1	Hexavalent Chromium	04/02/18 4:52 PM	Reported

rba 4/3/2018

Injection Log Summary

Sequence Details

Name:	**IC-07_180402B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**02/Apr/18 17:22:28**
No. of Injections:	**32**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	ICV,ICV,1,	11	1000	Unknown		04/02/2018 13:50	Finished	ICV @5ppb, IWST-180129B
12	PQL@0.2ppb,CCV2,1	12	1000	Unknown		04/02/2018 14:01	Finished	PQL @ 0.2ppb
13	ICB,ICB,1,	13	1000	Unknown		04/02/2018 14:18	Finished	ICB R180329A
14	MB-H2O,MBLK,1,	14	1000	Unknown		04/02/2018 14:30	Finished	MB R180302A
15	LCS-H2O,LCS,1,	15	1000	Unknown		04/02/2018 14:39	Finished	LCS, IWST-180129B
16	N029480-001A,SAMF	16	1000	Unknown		04/02/2018 14:49	Finished	SAMP,10mL
17	N029443-001G,SAMF	17	1000	Unknown		04/02/2018 14:58	Finished	SAMP,10mL
18	N029444-001G,SAMF	18	1000	Unknown		04/02/2018 15:08	Finished	SAMP,10mL
19	N029445-001G,SAMF	19	1000	Unknown		04/02/2018 15:17	Finished	SAMP,10mL
20	N029446-001G,SAMF	20	1000	Unknown		04/02/2018 15:27	Finished	SAMP,10mL
21	N029480-001A,SAMF	21	1000	Unknown		04/02/2018 15:36	Finished	SAMP,2>10mL
22	N029480-002A,SAMF	22	1000	Unknown		04/02/2018 15:45	Finished	SAMP,2>10mL
23	N029480-001ADUP,D	23	1000	Unknown		04/02/2018 15:55	Finished	DUP,2>10mL
24	CCV-1,CCV1,1,	24	1000	Unknown		04/02/2018 16:04	Finished	CCV @10ppb, IWST-180129A
25	CCB-1,CCB,1,	25	1000	Unknown		04/02/2018 16:14	Finished	CCB R180302A
26	N029480-001AMS,MS	26	1000	Unknown		04/02/2018 16:23	Finished	SAMP,10mL
27	N029480-001AMSD,M	27	1000	Unknown		04/02/2018 16:33	Finished	MS (1ppb), IWST-180129B,1>1
28	CCV-2,CCV,1,	28	1000	Unknown		04/02/2018 16:42	Finished	CCV @5ppb, IWST-180129A
29	CCB-2,CCB,1,	29	1000	Unknown		04/02/2018 16:52	Finished	CCB R180302A
30	SHUTDOWN	30	1000	Unknown		04/02/2018 17:01	Finished	
31	Eluent: R180402B	31	1000	Unknown		n.a.	Finished	Eluent
32	PCR: R180402C	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 4/3/2018

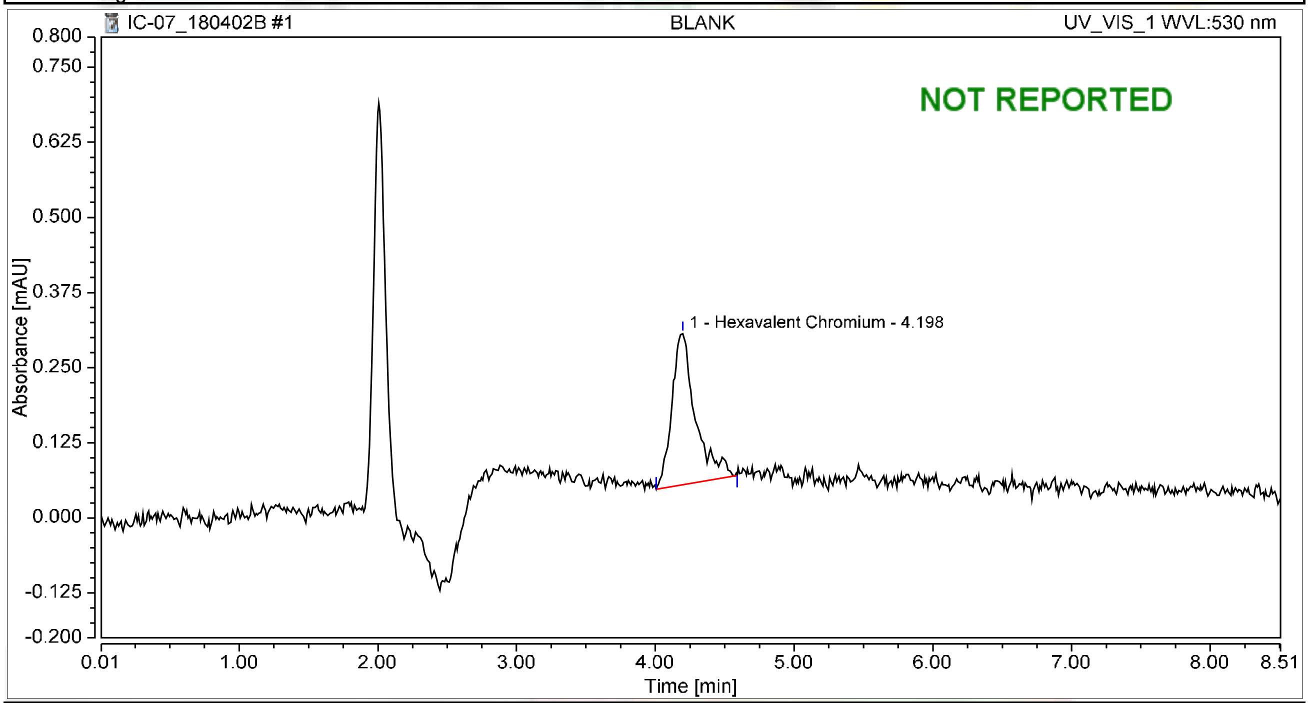
IC-07 RBA 4/2/2018 5:25:11 PM

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 11:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

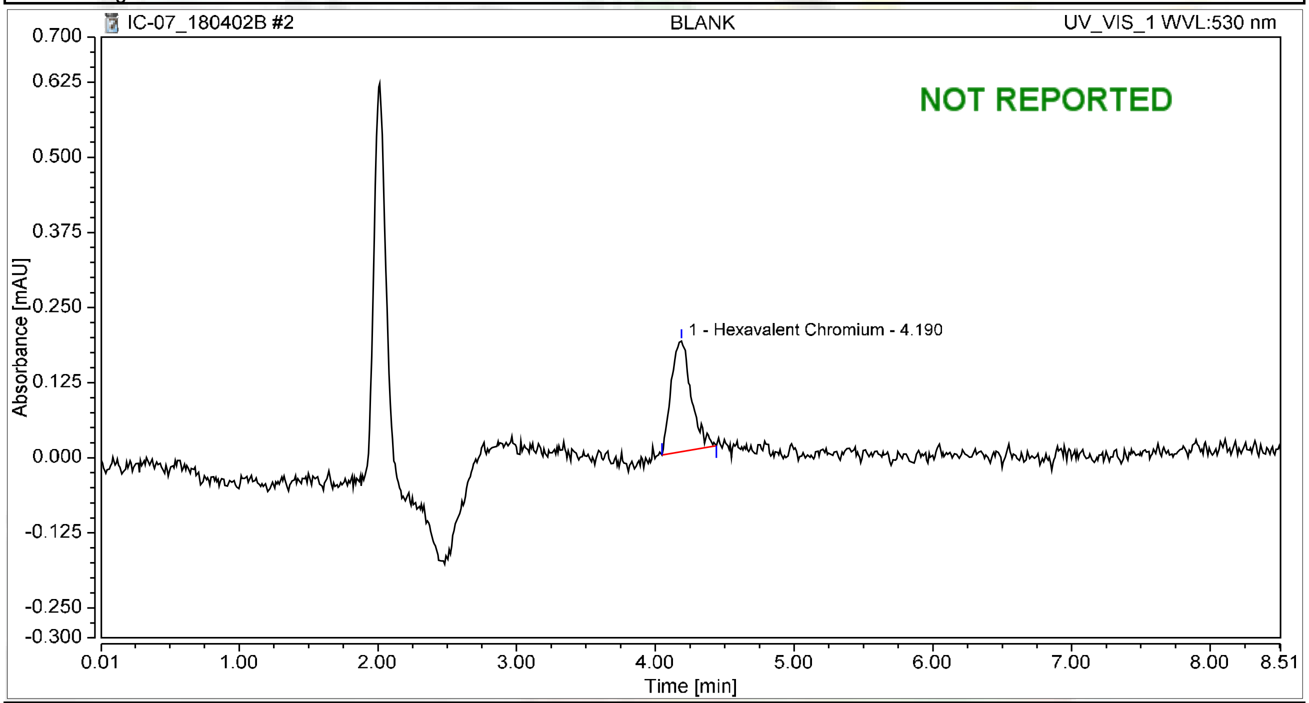
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.050	0.252	100.00	100.00	0.1965
Total:			**0.050**	**0.252**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 11:38**	*Sample Weight:*	**1.0000**

Chromatogram



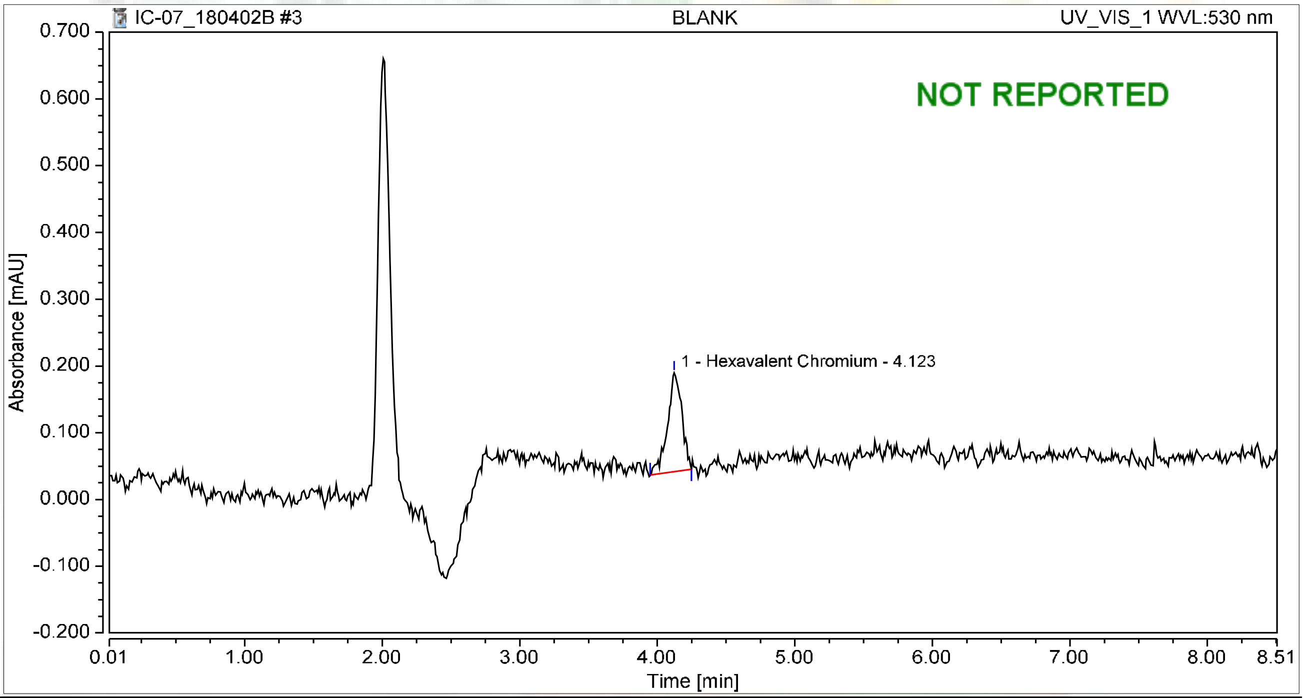
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.031	0.184	100.00	100.00	0.1224
Total:			**0.031**	**0.184**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details			
Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 11:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

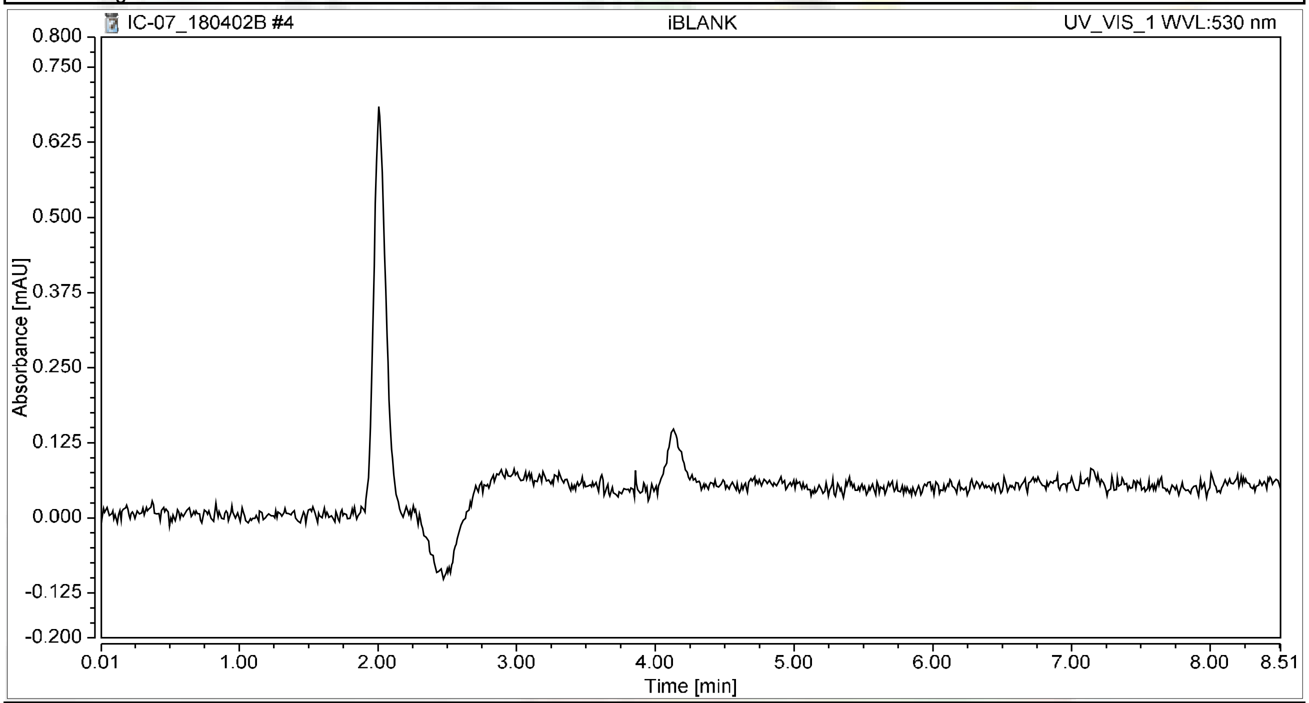
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.018	0.148	100.00	100.00	0.0704
Total:			**0.018**	**0.148**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

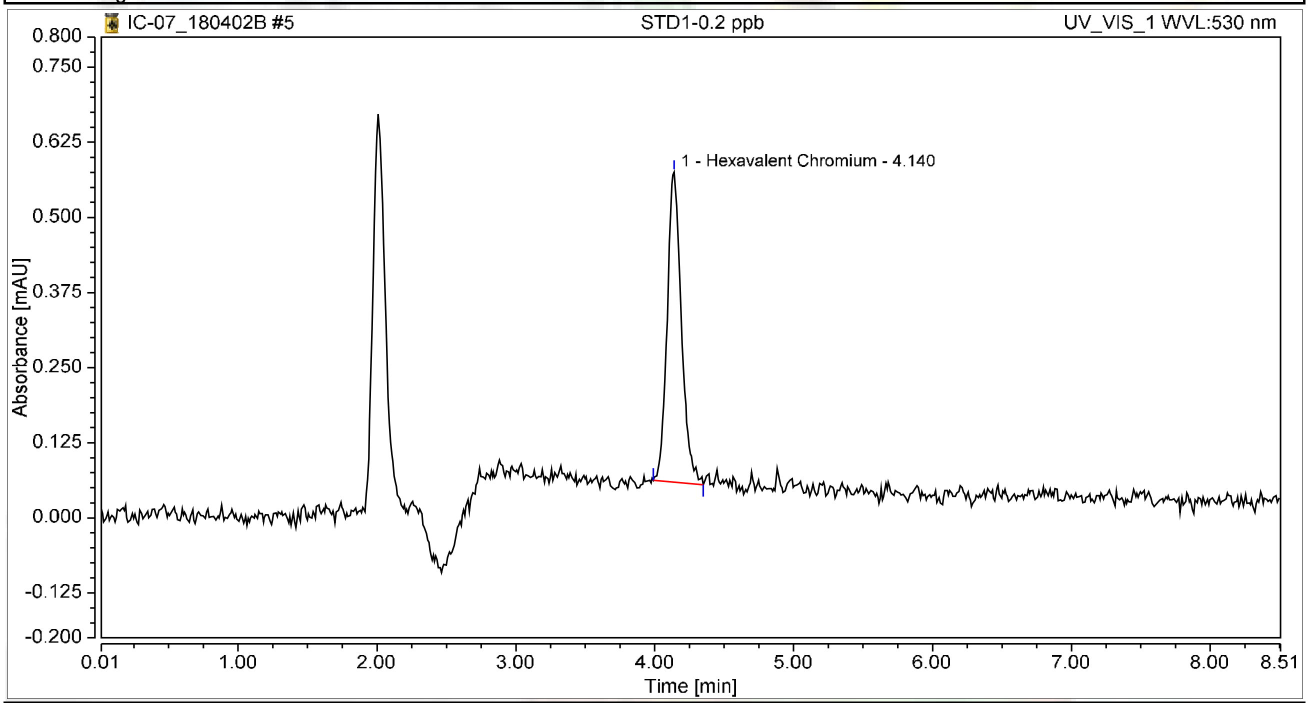
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

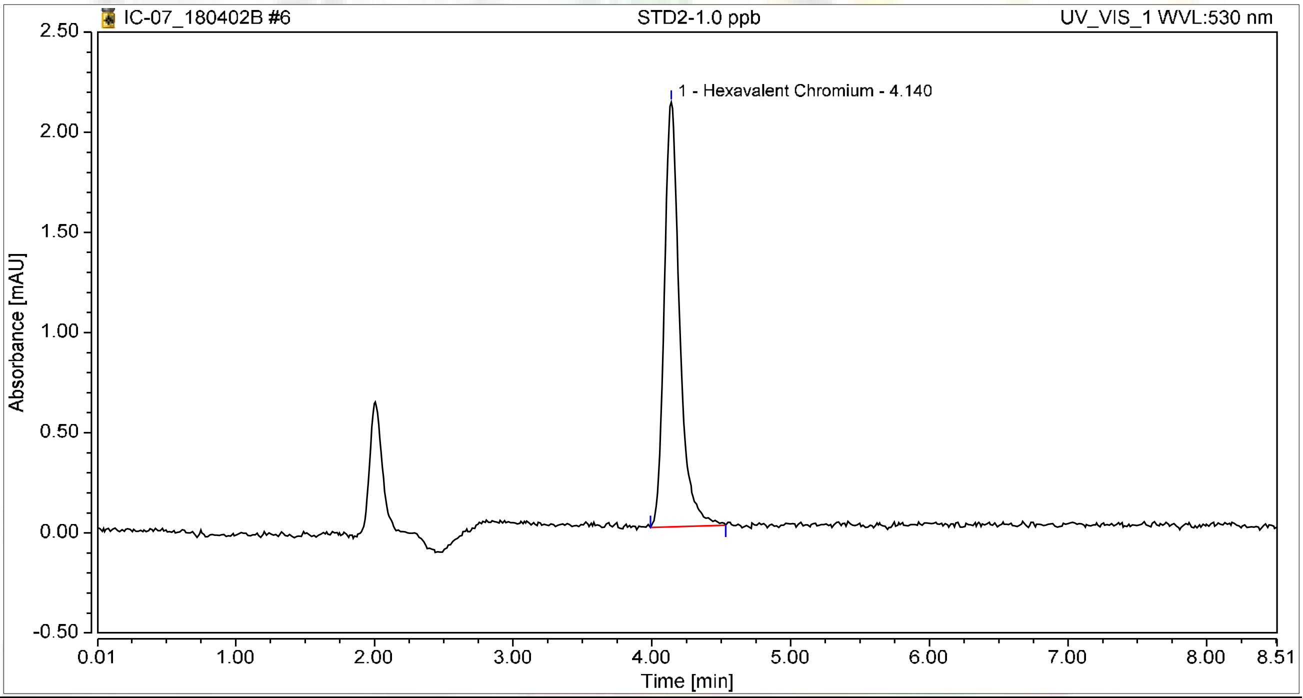
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.061	0.516	100.00	100.00	0.2409
Total:			**0.061**	**0.516**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 12:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

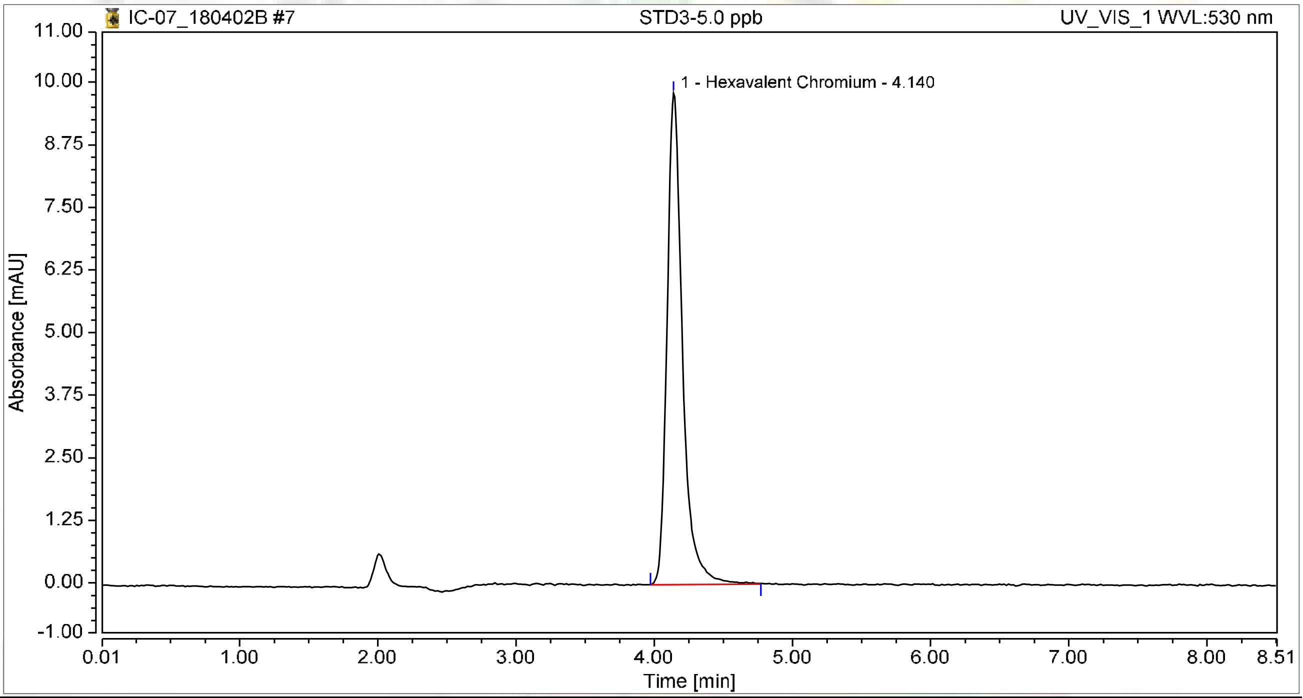
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.274	2.121	100.00	100.00	1.0825
Total:			**0.274**	**2.121**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

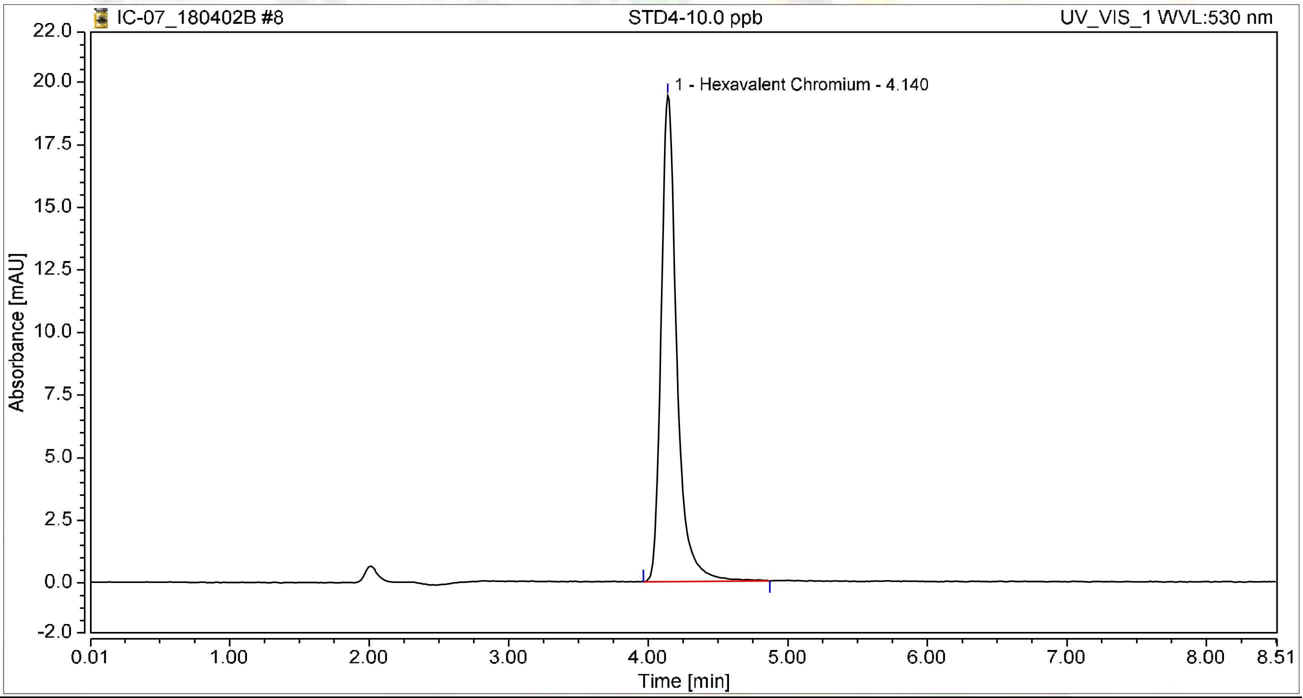
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.277	9.813	100.00	100.00	5.0383
Total:			**1.277**	**9.813**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

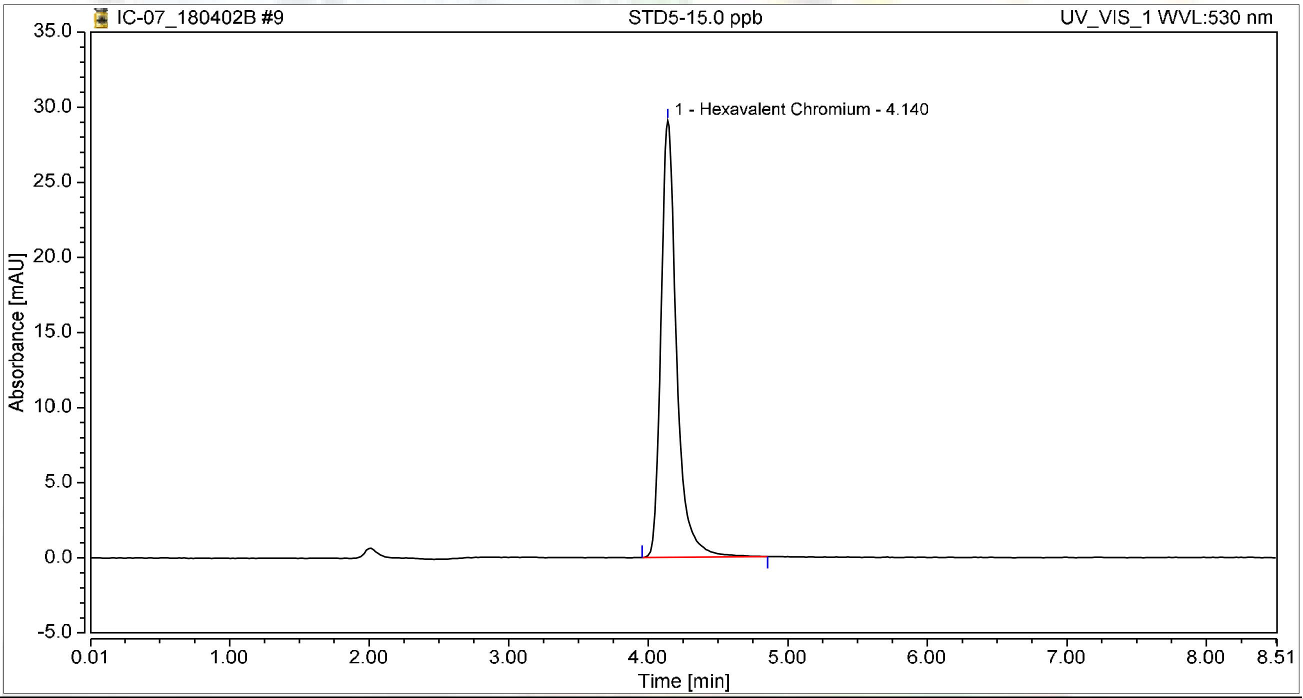
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.538	19.408	100.00	100.00	10.0099
Total:			**2.538**	**19.408**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

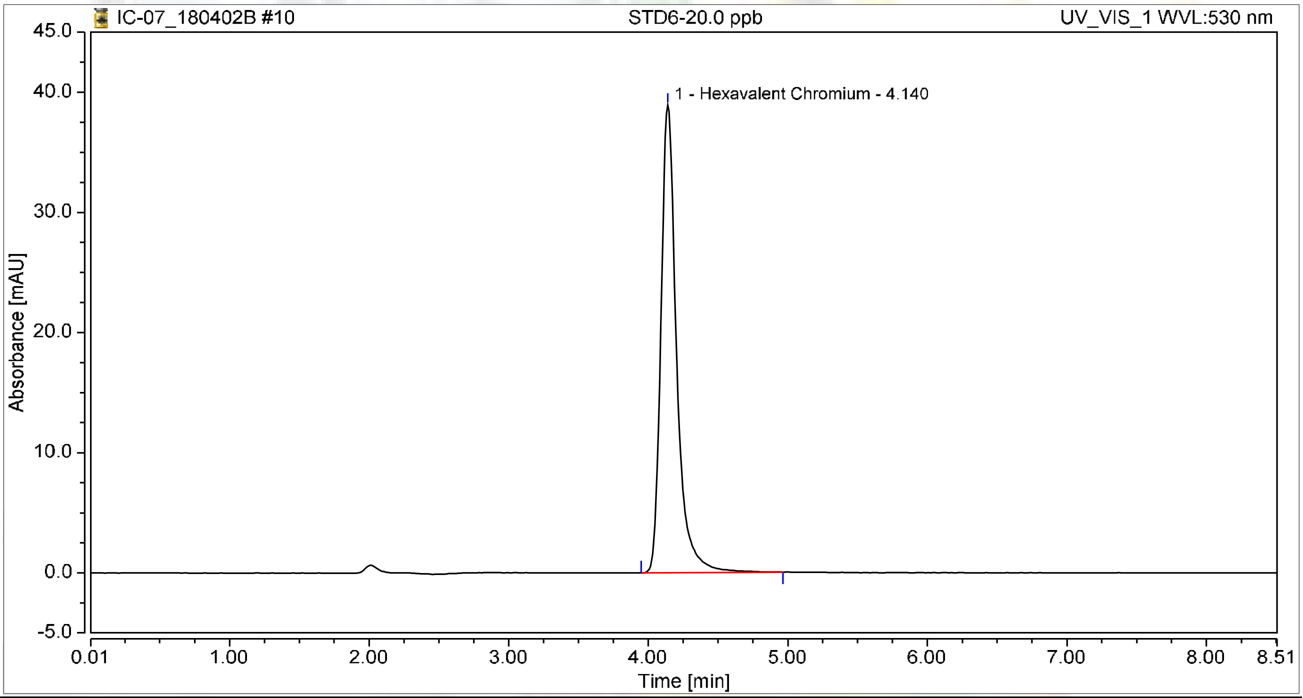
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.791	29.078	100.00	100.00	14.9525
Total:			**3.791**	**29.078**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:31**	*Sample Weight:*	**1.0000**

Chromatogram



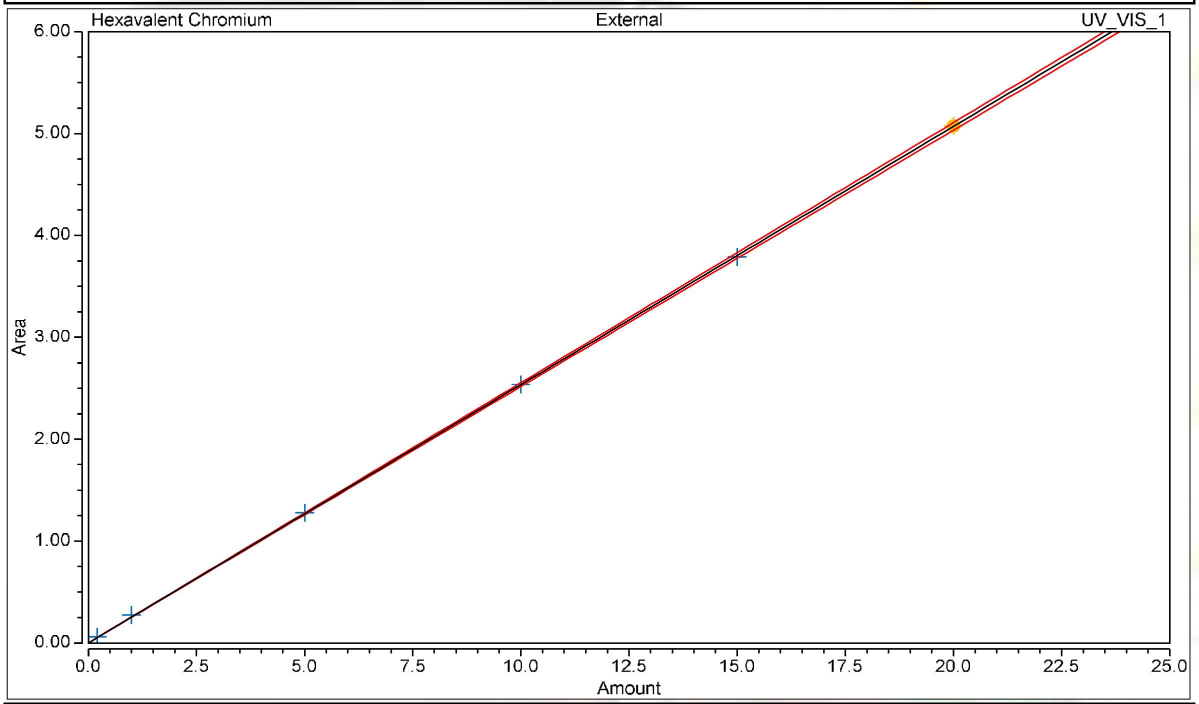
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	5.074	38.904	100.00	100.00	20.0166
Total:			**5.074**	**38.904**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2535
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

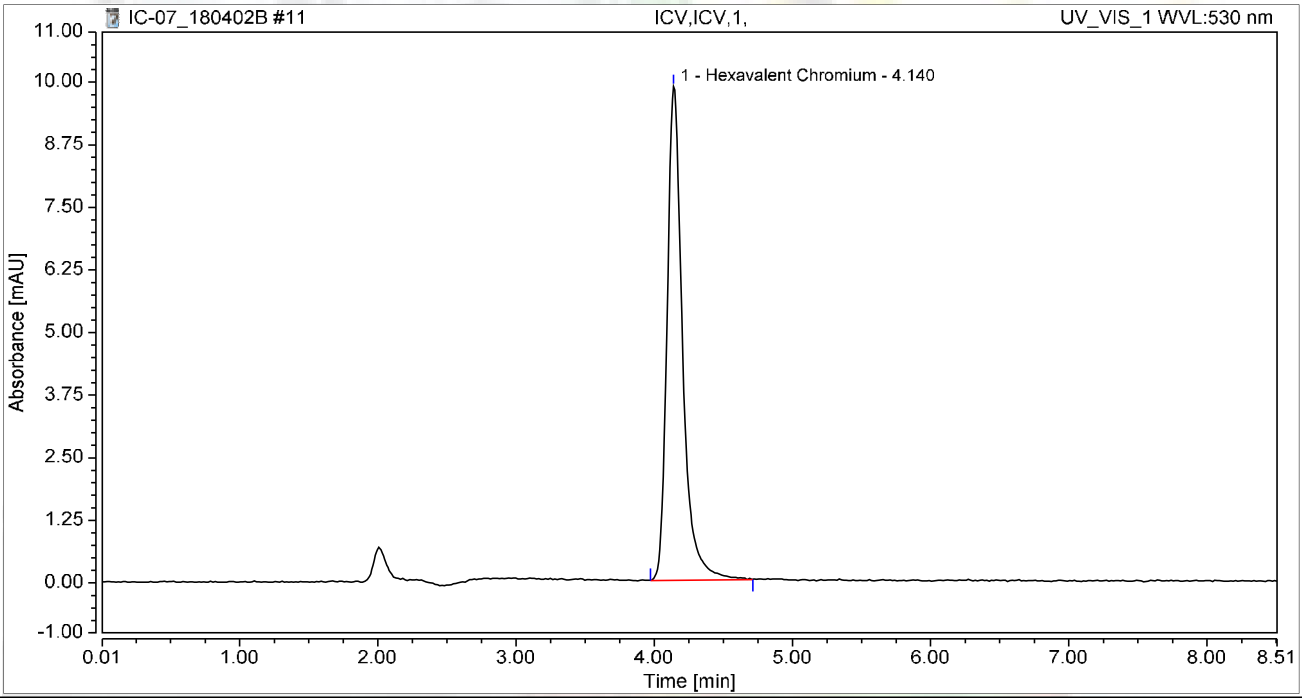
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
5	STD1-0.2 ppb	01	0.2000	0.0611	0.061	0.516
6	STD2-1.0 ppb	02	1.0000	0.2744	0.274	2.121
7	STD3-5.0 ppb	03	5.0000	1.2772	1.277	9.813
8	STD4-10.0 ppb	04	10.0000	2.5376	2.538	19.408
9	STD5-15.0 ppb	05	15.0000	3.7905	3.791	29.078
10	STD6-20.0 ppb	06	20.0000	5.0743	5.074	38.904

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

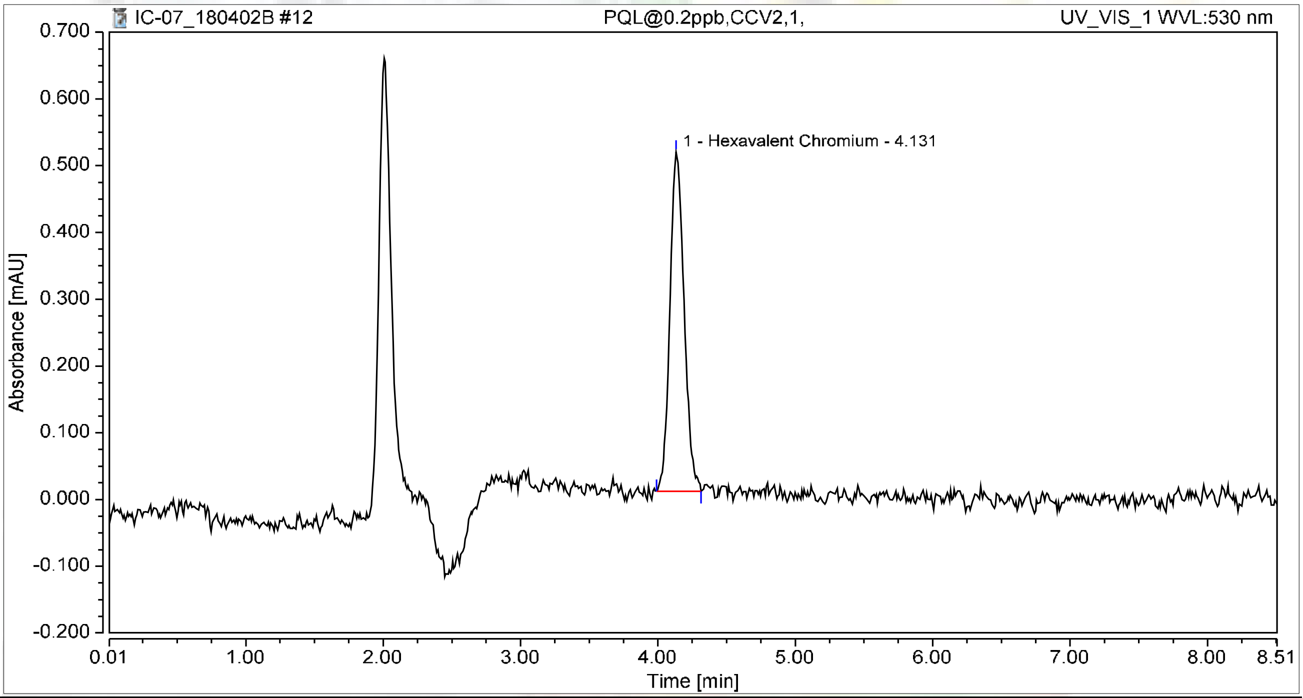
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.285	9.862	100.00	100.00	5.0684
Total:			**1.285**	**9.862**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

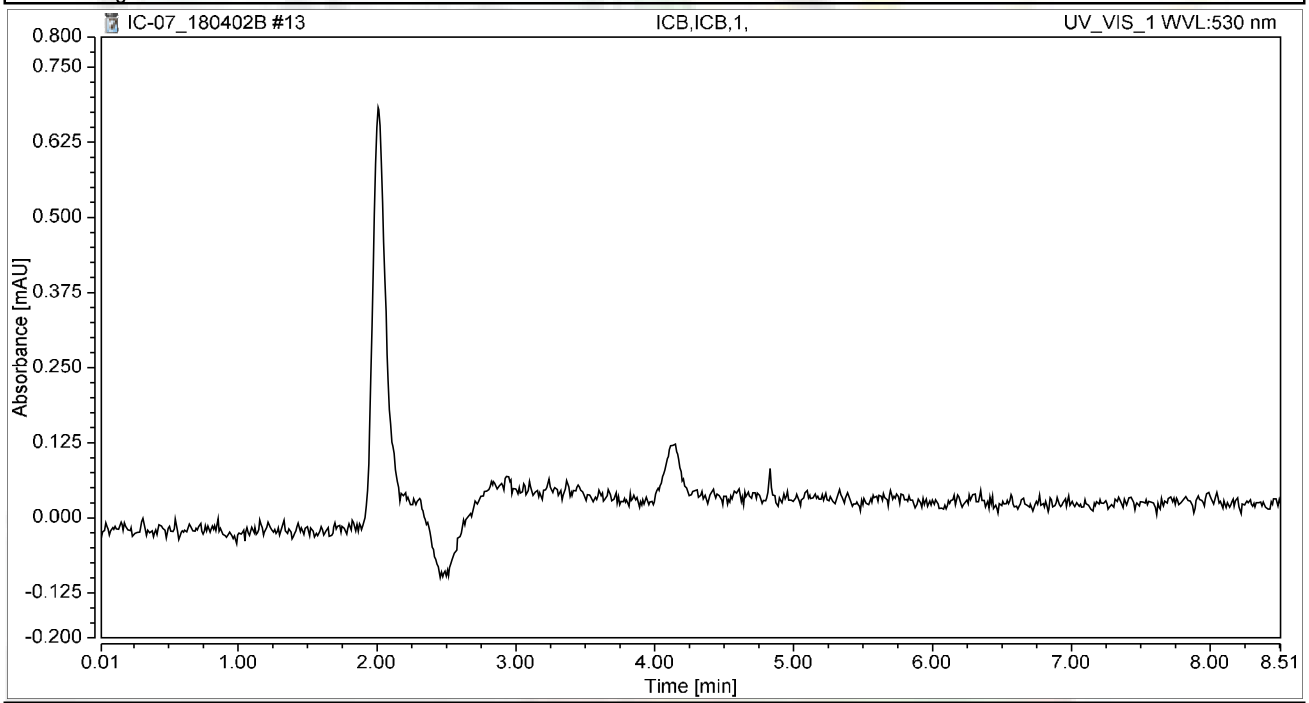
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.061	0.508	100.00	100.00	0.2395
Total:			**0.061**	**0.508**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 14:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

RAW DATA

INJECTION LOG: 180425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	04/25/18 8:53 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	04/25/18 9:04 AM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	04/25/18 9:14 AM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/25/18 9:23 AM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	04/25/18 9:33 AM	Reported
16	MB-R123659	MBLK	1	Hexavalent Chromium	04/25/18 9:42 AM	Reported
17	LCS-R123659	LCS	1	Hexavalent Chromium	04/25/18 9:51 AM	Reported
18	N029973-001A	SAMP	10	Hexavalent Chromium	04/25/18 10:01 AM	Reported
19	N029973-001AMS	MS	10	Hexavalent Chromium	04/25/18 10:10 AM	Reported
20	N029973-002A	SAMP	1	Hexavalent Chromium	04/25/18 10:20 AM	Reported
21	N029973-002AMS	MS	1	Hexavalent Chromium	04/25/18 10:29 AM	Reported
22	N029973-003A	SAMP	1	Hexavalent Chromium	04/25/18 10:39 AM	Reported
23	N029973-003AMS	MS	1	Hexavalent Chromium	04/25/18 10:48 AM	Reported
24	N029973-004A	SAMP	1	Hexavalent Chromium	04/25/18 10:58 AM	Reported
25	N029973-004AMS	MS	1	Hexavalent Chromium	04/25/18 11:07 AM	Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	04/25/18 11:17 AM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	04/25/18 11:26 AM	Reported
28	N029973-005A	SAMP	1	Hexavalent Chromium	04/25/18 11:36 AM	Reported
29	N029973-005AMS	MS	1	Hexavalent Chromium	04/25/18 11:45 AM	Reported
30	N029973-006A	SAMP	1	Hexavalent Chromium	04/25/18 11:54 AM	Reported
31	N029973-006AMS	MS	1	Hexavalent Chromium	04/25/18 12:04 PM	Reported
32	N029973-007A	SAMP	2	Hexavalent Chromium	04/25/18 12:13 PM	Reported
33	N029973-007AMS	MS	2	Hexavalent Chromium	04/25/18 12:23 PM	Reported
34	N029973-008A	SAMP	5	Hexavalent Chromium	04/25/18 12:32 PM	Reported
35	N029973-008AMS	MS	5	Hexavalent Chromium	04/25/18 12:42 PM	Reported
36	N029973-009A	SAMP	5	Hexavalent Chromium	04/25/18 12:51 PM	Reported
37	N029973-009AMS	MS	5	Hexavalent Chromium	04/25/18 1:01 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	04/25/18 1:10 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	04/25/18 1:20 PM	Reported
40	N029973-010A	SAMP	1	Hexavalent Chromium	04/25/18 1:29 PM	Reported
41	N029973-010AMS	MS	1	Hexavalent Chromium	04/25/18 1:39 PM	Reported
42	N029973-011A	SAMP	1	Hexavalent Chromium	04/25/18 1:48 PM	Not Reported

4/29/2018

Nancy 5/7/2018

IC7 RBA 4/27/2018 10:51 AM

rba 4/29/2018

INJECTION LOG: 180425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N029973-011AMS	MS	1	Hexavalent Chromium	04/25/18 1:57 PM	Not Reported
44	N029973-012A	SAMP	5	Hexavalent Chromium	04/25/18 2:07 PM	Reported
45	N029973-012AMS	MS	5	Hexavalent Chromium	04/25/18 2:16 PM	Reported
46	N029973-013A	SAMP	1	Hexavalent Chromium	04/25/18 2:26 PM	Reported
47	N029973-013AMS	MS	1	Hexavalent Chromium	04/25/18 2:35 PM	Not Reported
48	N029973-014A	SAMP	5	Hexavalent Chromium	04/25/18 2:45 PM	Reported
49	N029973-014AMS	MS	5	Hexavalent Chromium	04/25/18 2:54 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	04/25/18 3:04 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	04/25/18 3:13 PM	Reported
52	N029973-015A	SAMP	1	Hexavalent Chromium	04/25/18 3:23 PM	Reported
53	N029973-015AMS	MS	1	Hexavalent Chromium	04/25/18 3:32 PM	Reported
54	N029973-001AMSD	MSD	10	Hexavalent Chromium	04/25/18 3:45 PM	Reported
55	N029973-007ADUP	DUP	2	Hexavalent Chromium	04/25/18 3:56 PM	Reported
56	N029973-016A	SAMP	1	Hexavalent Chromium	04/25/18 4:05 PM	Reported
57	N029973-016AMS	MS	1	Hexavalent Chromium	04/25/18 4:15 PM	Reported
58	N029973-019A	SAMP	1	Hexavalent Chromium	04/25/18 4:24 PM	Reported
59	N029973-019AMS	MS	1	Hexavalent Chromium	04/25/18 4:33 PM	Not Reported
60	N029973-017A	SAMP	2	Hexavalent Chromium	04/25/18 4:43 PM	Reported
61	N029973-017AMS	MS	2	Hexavalent Chromium	04/25/18 4:52 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	04/25/18 5:02 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	04/25/18 5:11 PM	Reported
64	N029973-018A	SAMP	5	Hexavalent Chromium	04/25/18 5:21 PM	Not Reported
65	N029973-018AMS	MS	5	Hexavalent Chromium	04/25/18 5:30 PM	Not Reported
66	N029973-020A	SAMP	5	Hexavalent Chromium	04/25/18 5:40 PM	Not Reported
67	N029973-020AMS	MS	5	Hexavalent Chromium	04/25/18 5:49 PM	Not Reported
68	N029973-011A	SAMP	5	Hexavalent Chromium	04/25/18 5:59 PM	Reported
69	N029973-011AMS	MS	5	Hexavalent Chromium	04/25/18 6:08 PM	Reported
70	N029973-008A	SAMP	1	Hexavalent Chromium	04/25/18 6:18 PM	Not Reported
71	N029973-008AMS	MS	1	Hexavalent Chromium	04/25/18 6:27 PM	Not Reported
72	N029973-009A	SAMP	1	Hexavalent Chromium	04/25/18 6:36 PM	Not Reported
73	N029973-009AMS	MS	1	Hexavalent Chromium	04/25/18 6:46 PM	Not Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	04/25/18 6:55 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	04/25/18 7:05 PM	Reported
76	N029973-012A	SAMP	1	Hexavalent Chromium	04/25/18 7:14 PM	Not Reported
77	N029973-012AMS	MS	1	Hexavalent Chromium	04/25/18 7:24 PM	Not Reported
78	N029973-014A	SAMP	1	Hexavalent Chromium	04/25/18 7:33 PM	Not Reported
79	N029973-014AMS	MS	1	Hexavalent Chromium	04/25/18 7:43 PM	Not Reported
80	N029973-018A	SAMP	1	Hexavalent Chromium	04/25/18 7:52 PM	Reported
81	N029973-018AMS	MS	1	Hexavalent Chromium	04/25/18 8:02 PM	Reported
82	N029973-020A	SAMP	1	Hexavalent Chromium	04/25/18 8:11 PM	Reported
83	N029973-020AMS	MS	1	Hexavalent Chromium	04/25/18 8:20 PM	Reported
84	N029973-013AMS	MS	1	Hexavalent Chromium	04/25/18 8:30 PM	Reported

INJECTION LOG: 180425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N029973-019AMS	MS	1	Hexavalent Chromium	04/25/18 8:39 PM	Reported
86	N029973-018AMS	MS	5	Hexavalent Chromium	04/25/18 8:49 PM	Not Reported
87	CCV-7	CCV	1	Hexavalent Chromium	04/25/18 8:58 PM	Reported
88	CCB-7	CCB	1	Hexavalent Chromium	04/25/18 9:08 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180425A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**25/Apr/18 21:38:37**
No. of Injections:	**91**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	BLANK	1	1000	Unknown		04/25/2018 08:53	Finished	BLANK
12	BLANK	2	1000	Unknown		04/25/2018 09:04	Finished	BLANK
13	CCV-1,CCV,1,	3	1000	Unknown		04/25/2018 09:14	Finished	CCV @5ppb, IWST-180129A
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		04/25/2018 09:23	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		04/25/2018 09:33	Finished	CCB R180418A
16	MB-H2O,MBLK,1,	6	1000	Unknown		04/25/2018 09:42	Finished	MB R180418A
17	LCS-H2O,LCS,1,	7	1000	Unknown		04/25/2018 09:51	Finished	LCS, IWST-180129B
18	N029973-001A,SAMF	8	1000	Unknown		04/25/2018 10:01	Finished	SAMP,1>10mL
19	N029973-001AMS,MS	9	1000	Unknown		04/25/2018 10:10	Finished	MS (5ppb), IWST-180129B,1>1
20	N029973-002A,SAMF	10	1000	Unknown		04/25/2018 10:20	Finished	SAMP,10mL
21	N029973-002AMS,MS	11	1000	Unknown		04/25/2018 10:29	Finished	MS (1ppb), IWST-180129B,10
22	N029973-003A,SAMF	12	1000	Unknown		04/25/2018 10:39	Finished	SAMP,10mL
23	N029973-003AMS,MS	13	1000	Unknown		04/25/2018 10:48	Finished	MS (1ppb), IWST-180129B,10
24	N029973-004A,SAMF	14	1000	Unknown		04/25/2018 10:58	Finished	SAMP,10mL
25	N029973-004AMS,MS	15	1000	Unknown		04/25/2018 11:07	Finished	MS (1ppb), IWST-180129B,10
26	CCV-2,CCV1,1,	16	1000	Unknown		04/25/2018 11:17	Finished	CCV @10ppb, IWST-180129A
27	CCB-2,CCB,1,	17	1000	Unknown		04/25/2018 11:26	Finished	CCB R180418A
28	N029973-005A,SAMF	18	1000	Unknown		04/25/2018 11:36	Finished	SAMP,10mL
29	N029973-005AMS,MS	19	1000	Unknown		04/25/2018 11:45	Finished	MS (1ppb), IWST-180129B,10
30	N029973-006A,SAMF	20	1000	Unknown		04/25/2018 11:54	Finished	SAMP,10mL
31	N029973-006AMS,MS	21	1000	Unknown		04/25/2018 12:04	Finished	MS (1ppb), IWST-180129B,10
32	N029973-007A,SAMF	22	1000	Unknown		04/25/2018 12:13	Finished	SAMP,5>10mL
33	N029973-007AMS,MS	23	1000	Unknown		04/25/2018 12:23	Finished	MS (5ppb), IWST-180129B,5>1
34	N029973-008A,SAMF	24	1000	Unknown		04/25/2018 12:32	Finished	SAMP,2>10mL
35	N029973-008AMS,MS	25	1000	Unknown		04/25/2018 12:42	Finished	MS (1ppb), IWST-180129B,2>1
36	N029973-009A,SAMF	26	1000	Unknown		04/25/2018 12:51	Finished	SAMP,2>10mL
37	N029973-009AMS,MS	27	1000	Unknown		04/25/2018 13:01	Finished	MS (1ppb), IWST-180129B,2>1
38	CCV-3,CCV,1,	28	1000	Unknown		04/25/2018 13:10	Finished	CCV @5ppb, IWST-180129A
39	CCB-3,CCB,1,	29	1000	Unknown		04/25/2018 13:20	Finished	CCB R180418A
40	N029973-010A,SAMF	30	1000	Unknown		04/25/2018 13:29	Finished	SAMP,10mL
41	N029973-010AMS,MS	31	1000	Unknown		04/25/2018 13:39	Finished	MS (1ppb), IWST-180129B,10
42	N029973-011A,SAMF	32	1000	Unknown		04/25/2018 13:48	Finished	SAMP,10mL
43	N029973-011AMS,MS	33	1000	Unknown		04/25/2018 13:57	Finished	MS (1ppb), IWST-180129B,10
44	N029973-012A,SAMF	34	1000	Unknown		04/25/2018 14:07	Finished	SAMP,2>10mL
45	N029973-012AMS,MS	35	1000	Unknown		04/25/2018 14:16	Finished	MS (1ppb), IWST-180129B,2>1
46	N029973-013A,SAMF	36	1000	Unknown		04/25/2018 14:26	Finished	SAMP,10mL
47	N029973-013AMS,MS	37	1000	Unknown		04/25/2018 14:35	Finished	MS (1ppb), IWST-180129B,10
48	N029973-014A,SAMF	38	1000	Unknown		04/25/2018 14:45	Finished	SAMP,2>10mL
49	N029973-014AMS,MS	39	1000	Unknown		04/25/2018 14:54	Finished	MS (1ppb), IWST-180129B,2>1
50	CCV-4,CCV1,1,	40	1000	Unknown		04/25/2018 15:04	Finished	CCV @10ppb, IWST-180129A
51	CCB-4,CCB,1,	41	1000	Unknown		04/25/2018 15:13	Finished	CCB R180418A
52	N029973-015A,SAMF	42	1000	Unknown		04/25/2018 15:23	Finished	SAMP,10mL
53	N029973-015AMS,MS	43	1000	Unknown		04/25/2018 15:32	Finished	MS (1ppb), IWST-180129B,10
54	N029973-001AMSD,M	1	1000	Unknown		04/25/2018 15:45	Finished	MSD (5ppb), IWST-180129B,1:
55	N029973-007ADUP,D	2	1000	Unknown		04/25/2018 15:56	Finished	MS (5ppb), IWST-180129B,10
56	N029973-016A,SAMF	3	1000	Unknown		04/25/2018 16:05	Finished	SAMP,10mL
57	N029973-016AMS,MS	4	1000	Unknown		04/25/2018 16:15	Finished	MS (1ppb), IWST-180129B,10
58	N029973-019A,SAMF	5	1000	Unknown		04/25/2018 16:24	Finished	SAMP,10mL
59	N029973-019AMS,MS	6	1000	Unknown		04/25/2018 16:33	Finished	MS (1ppb), IWST-180129B,10
60	N029973-017A,SAMF	7	1000	Unknown		04/25/2018 16:43	Finished	SAMP,5>10mL

rba 4/29/2018

IC-07 RBA 4/26/2018 2:37:18 PM

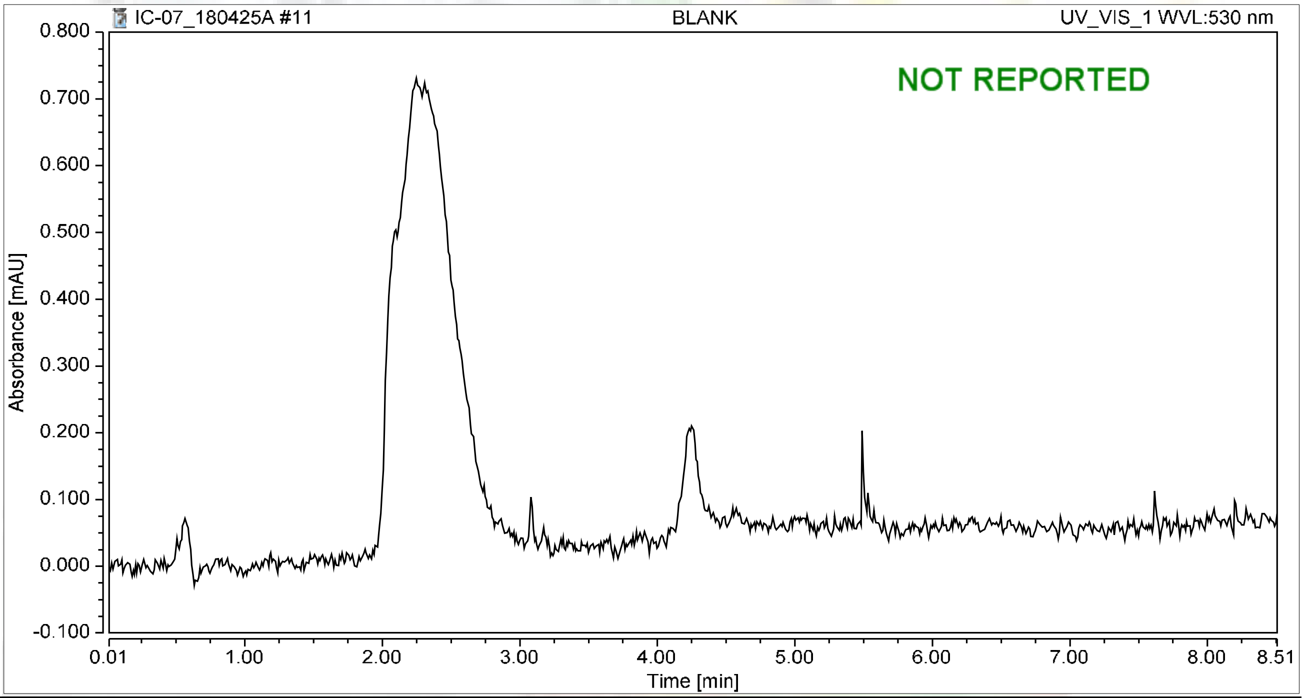
61	N029973-017AMS,MS	8	1000	Unknown		04/25/2018 16:52	Finished	MS (5ppb), IWST-180129B,5>1
62	CCV-5,CCV,1,	9	1000	Unknown		04/25/2018 17:02	Finished	CCV @5ppb, IWST-180129A
63	CCB-5,CCB,1,	10	1000	Unknown		04/25/2018 17:11	Finished	CCB R180418A
64	N029973-018A,SAMP	11	1000	Unknown		04/25/2018 17:21	Finished	SAMP,2>10mL
65	N029973-018AMS,MS	12	1000	Unknown		04/25/2018 17:30	Finished	MS (1ppb), IWST-180129B,2>1
66	N029973-020A,SAMP	13	1000	Unknown		04/25/2018 17:40	Finished	SAMP,2>10mL
67	N029973-020AMS,MS	14	1000	Unknown		04/25/2018 17:49	Finished	MS (1ppb), IWST-180129B,2>1
68	N029973-011A,SAMP	15	1000	Unknown		04/25/2018 17:59	Finished	SAMP,2>10mL
69	N029973-011AMS,MS	16	1000	Unknown		04/25/2018 18:08	Finished	MS (1ppb), IWST-180129B,2>1
70	N029973-008A,SAMP	17	1000	Unknown		04/25/2018 18:18	Finished	SAMP,10mL
71	N029973-008AMS,MS	18	1000	Unknown		04/25/2018 18:27	Finished	MS (1ppb), IWST-180129B,10
72	N029973-009A,SAMP	19	1000	Unknown		04/25/2018 18:36	Finished	SAMP,10mL
73	N029973-009AMS,MS	20	1000	Unknown		04/25/2018 18:46	Finished	MS (1ppb), IWST-180129B,10
74	CCV-6,CCV1,1,	21	1000	Unknown		04/25/2018 18:55	Finished	CCV @10ppb, IWST-180129A
75	CCB-6,CCB,1,	22	1000	Unknown		04/25/2018 19:05	Finished	CCB R180418A
76	N029973-012A,SAMP	23	1000	Unknown		04/25/2018 19:14	Finished	SAMP,10mL
77	N029973-012AMS,MS	24	1000	Unknown		04/25/2018 19:24	Finished	MS (1ppb), IWST-180129B,10
78	N029973-014A,SAMP	25	1000	Unknown		04/25/2018 19:33	Finished	SAMP,10mL
79	N029973-014AMS,MS	26	1000	Unknown		04/25/2018 19:43	Finished	MS (1ppb), IWST-180129B,10
80	N029973-018A,SAMP	27	1000	Unknown		04/25/2018 19:52	Finished	SAMP,10mL
81	N029973-018AMS,MS	28	1000	Unknown		04/25/2018 20:02	Finished	MS (1ppb), IWST-180129B,10
82	N029973-020A,SAMP	29	1000	Unknown		04/25/2018 20:11	Finished	SAMP,10mL
83	N029973-020AMS,MS	30	1000	Unknown		04/25/2018 20:20	Finished	MS (1ppb), IWST-180129B,10
84	N029973-013AMS,MS	31	1000	Unknown		04/25/2018 20:30	Finished	MS (1ppb), IWST-180129B,10
85	N029973-019AMS,MS	32	1000	Unknown		04/25/2018 20:39	Finished	MS (1ppb), IWST-180129B,10
86	N029973-018AMS,MS	33	1000	Unknown		04/25/2018 20:49	Finished	MS (1ppb), IWST-180129B,2>1
87	CCV-7,CCV,1,	34	1000	Unknown		04/25/2018 20:58	Finished	CCV @5ppb, IWST-180129A
88	CCB-7,CCB,1,	35	1000	Unknown		04/25/2018 21:08	Finished	CCB R180418A
89	SHUTDOWN	36	1000	Unknown		04/25/2018 21:18	Finished	
90	Eluent: R180424A	37	1000	Unknown		n.a.	Finished	Eluent
91	PCR: R180423B	38	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 08:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

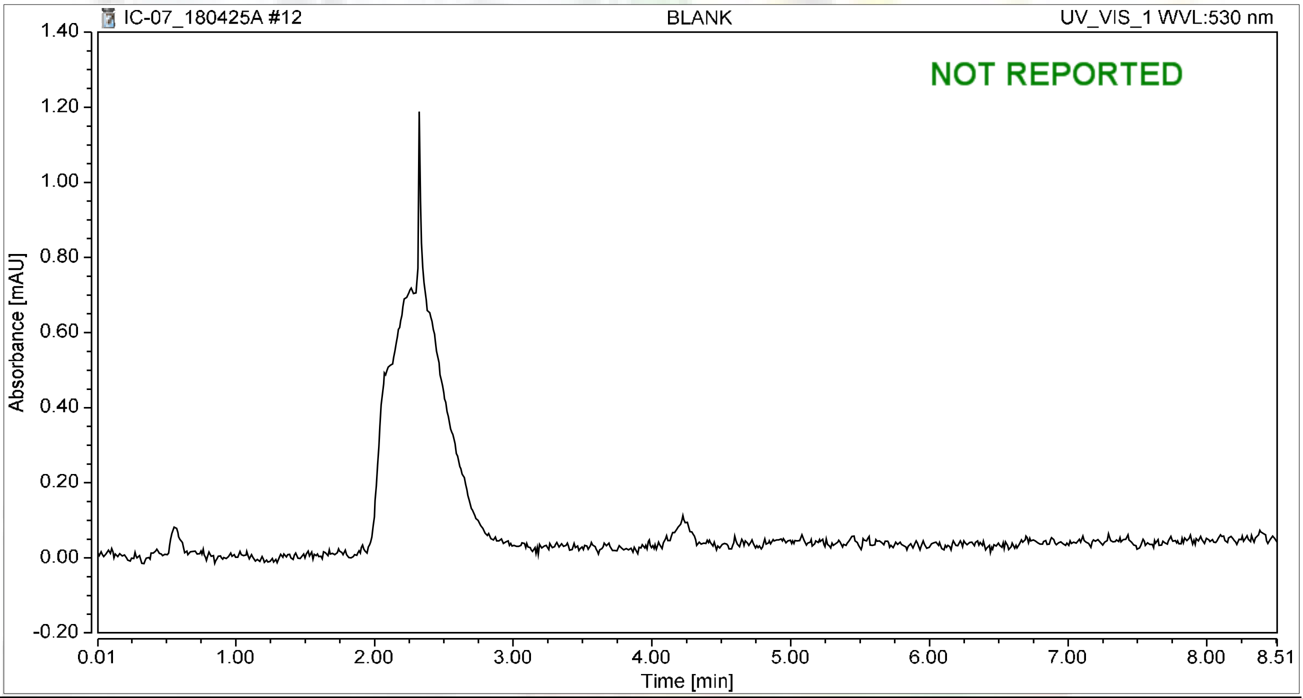
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 09:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

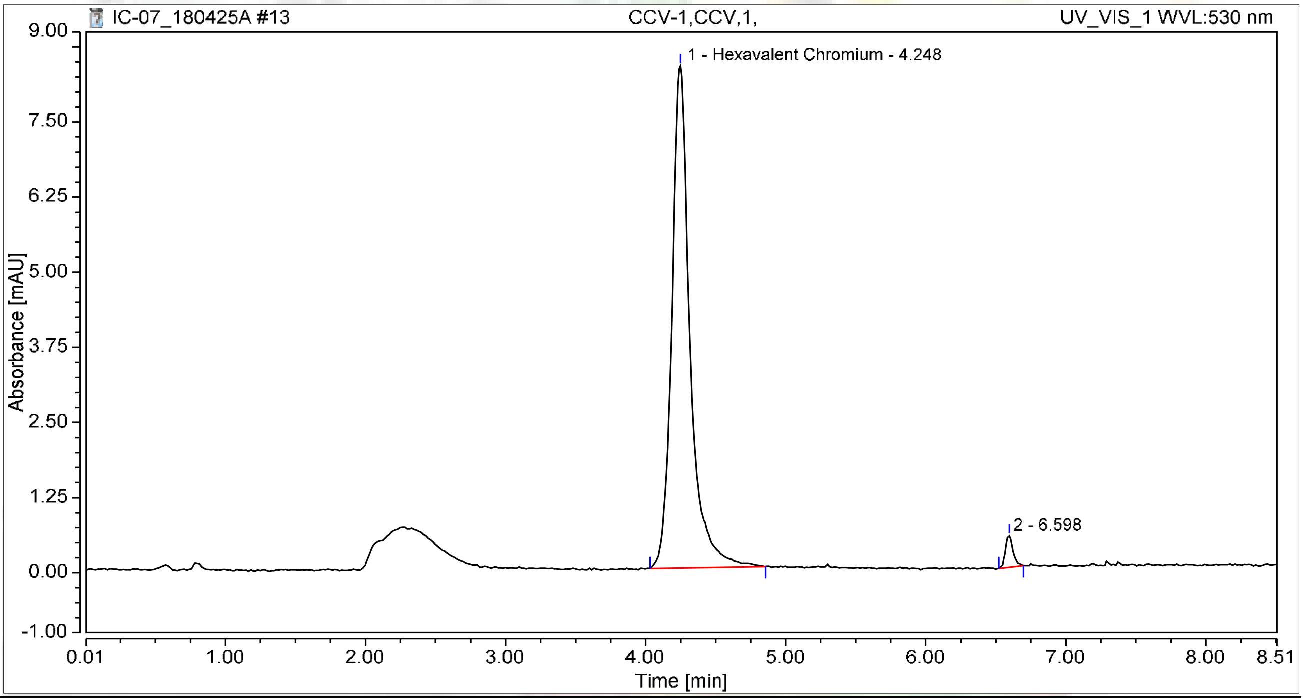
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 09:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

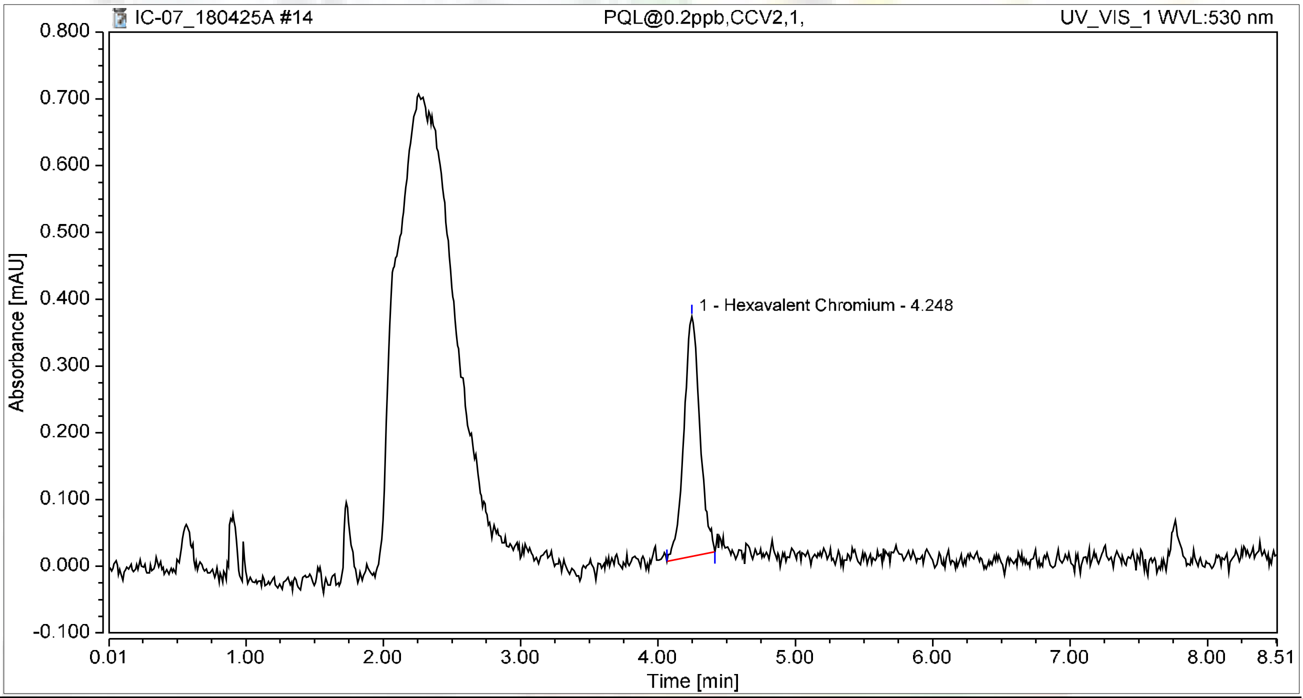
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.259	8.359	97.39	94.12	4.9658
2		6.598	0.034	0.522	2.61	5.88	n.a.
Total:			**1.293**	**8.881**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 09:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

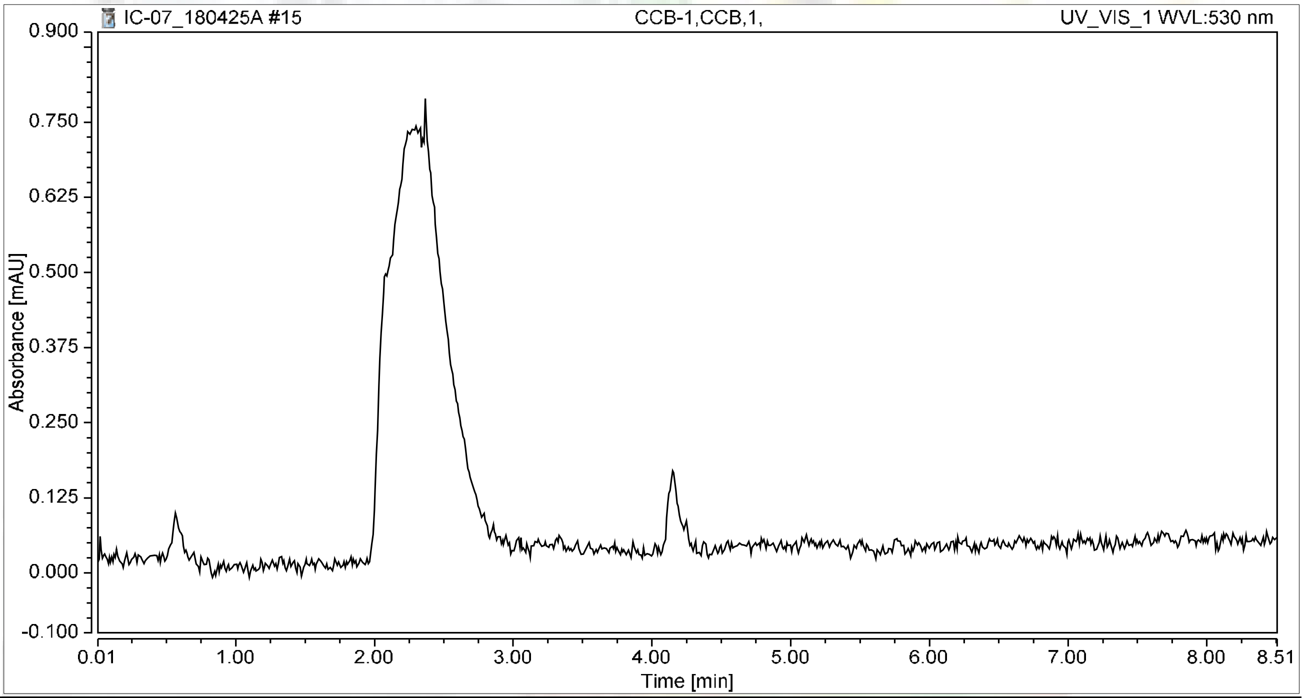
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.048	0.359	100.00	100.00	0.1910
Total:			**0.048**	**0.359**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

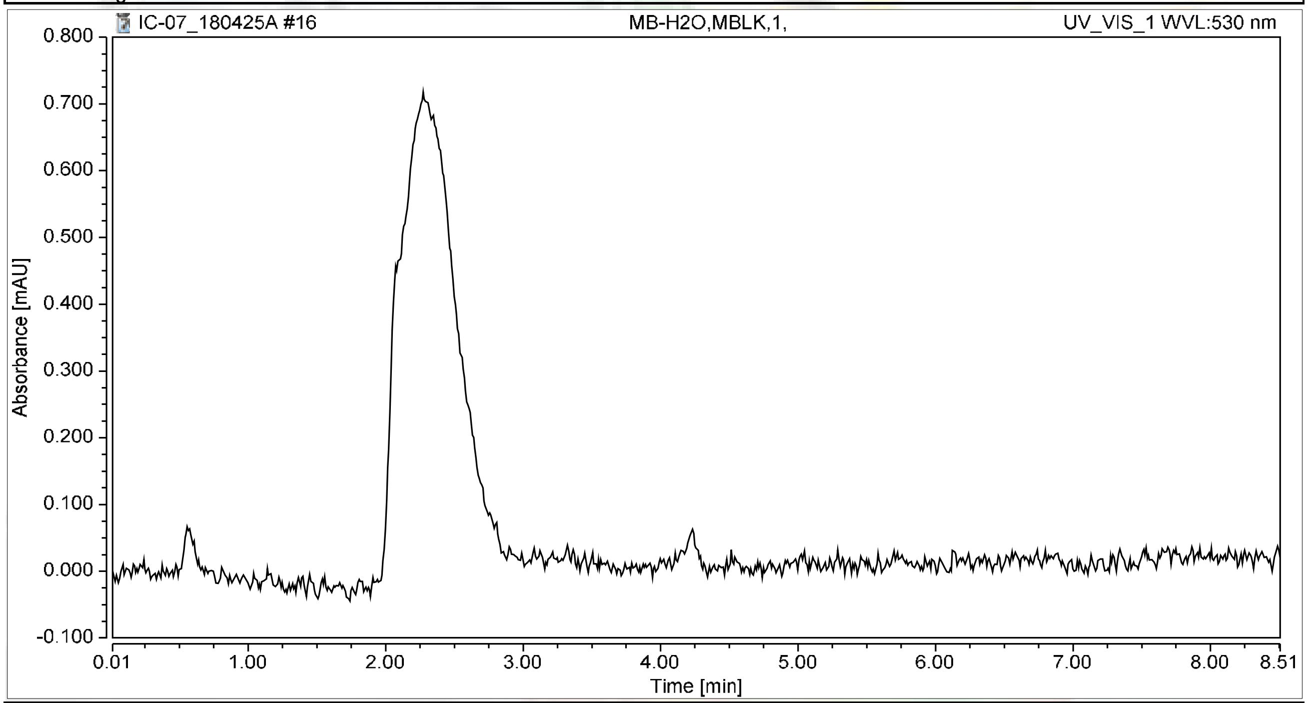
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

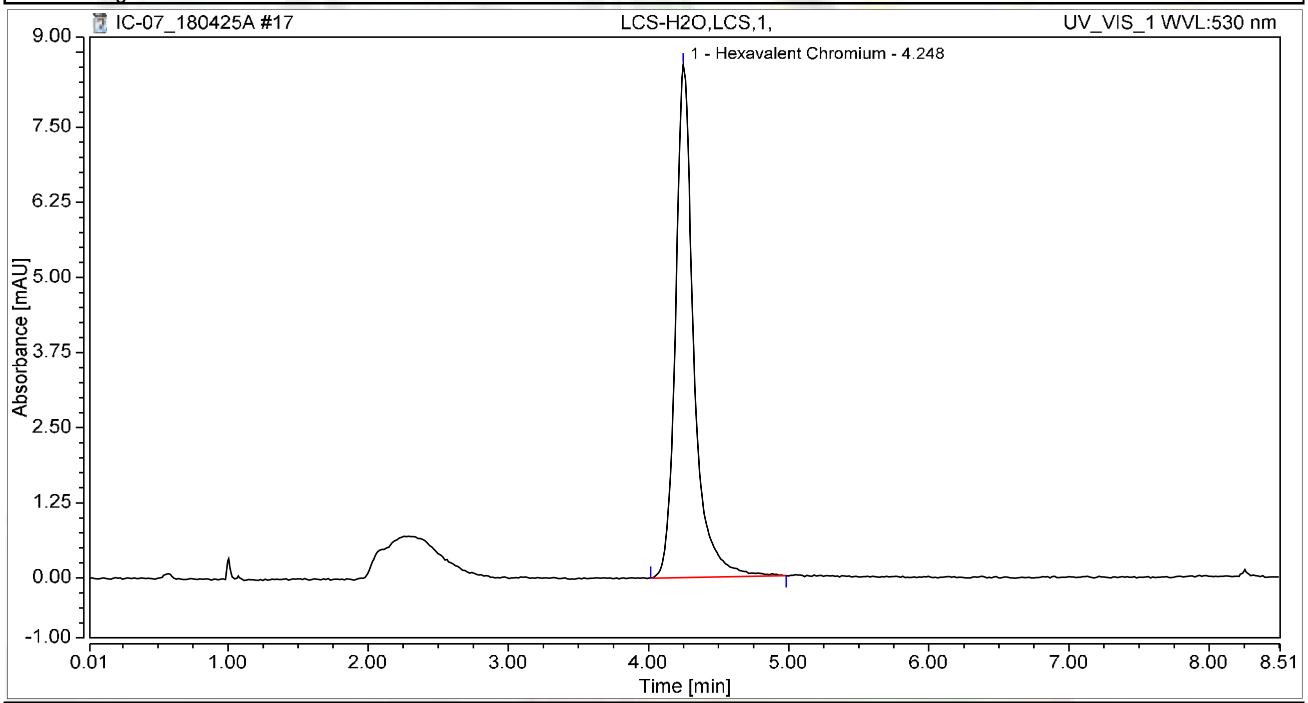
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 09:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

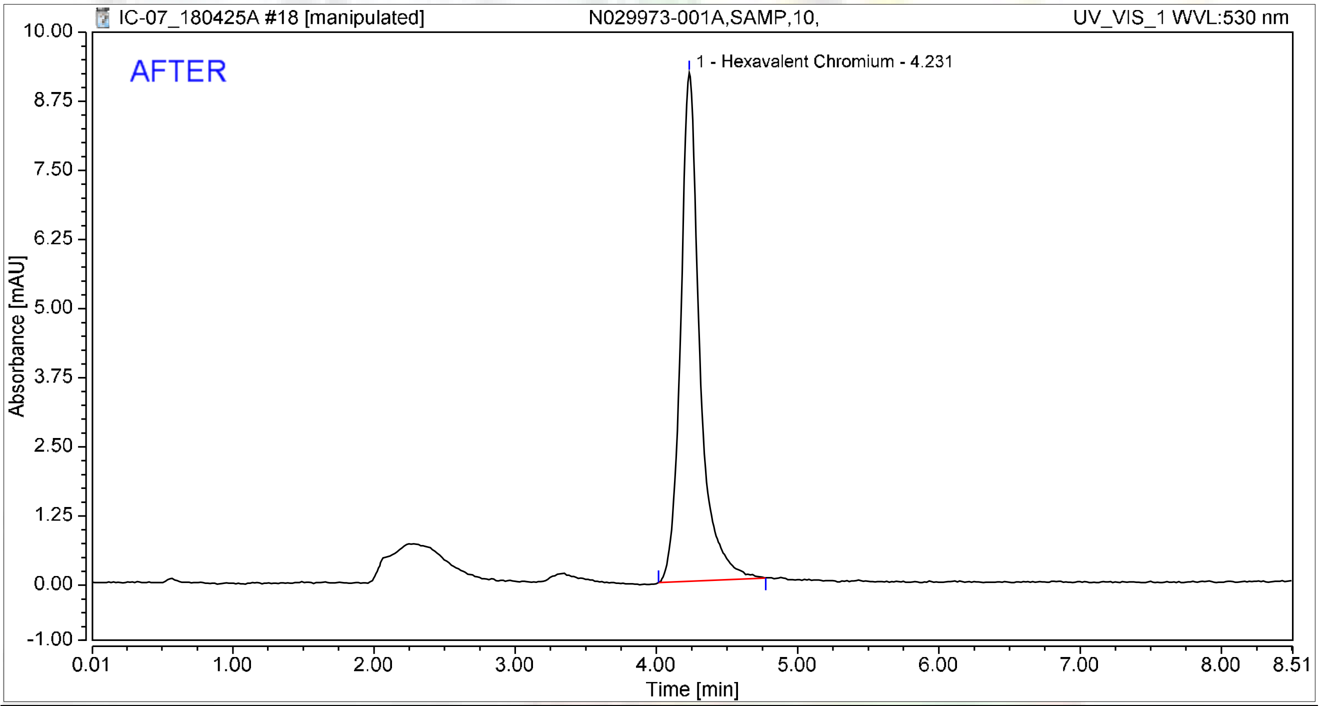
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.296	8.536	100.00	100.00	5.1113
Total:			**1.296**	**8.536**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-001A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.451	9.194	100.00	100.00	5.7238
Total:			**1.451**	**9.194**	**100.00**	**100.00**	

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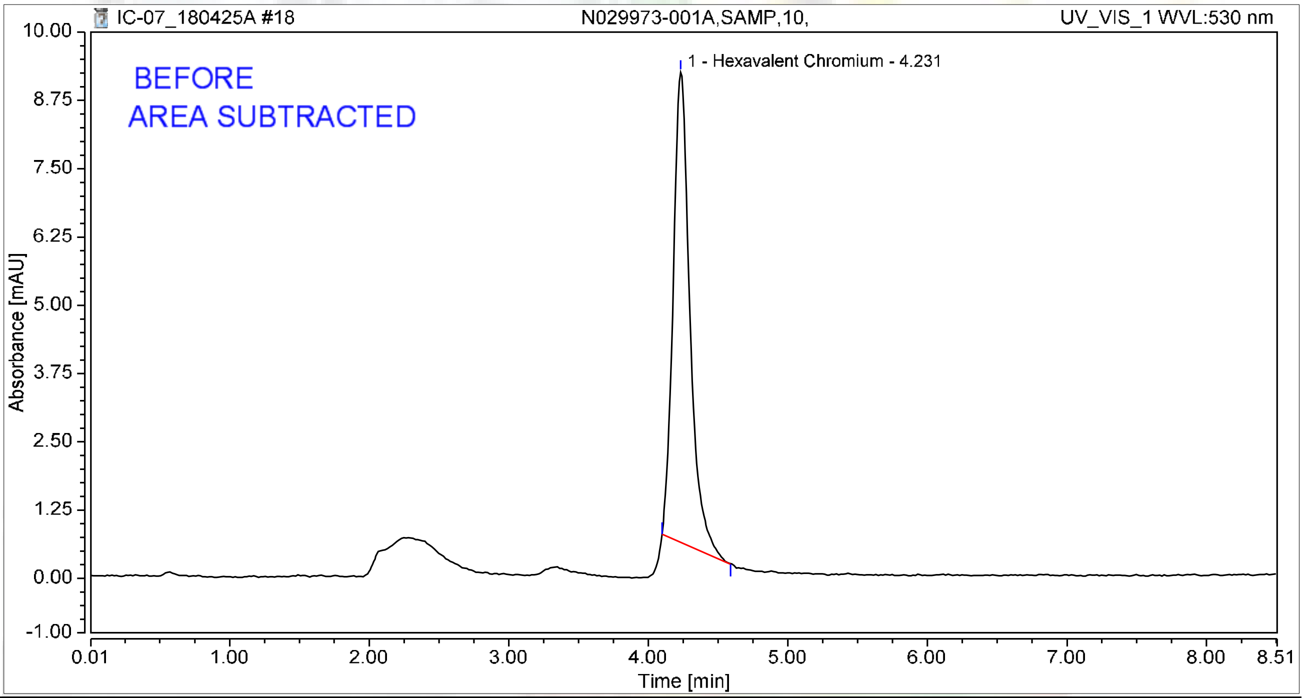
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029973-001A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.198	8.605	100.00	100.00	4.7247
Total:			**1.198**	**8.605**	**100.00**	**100.00**	

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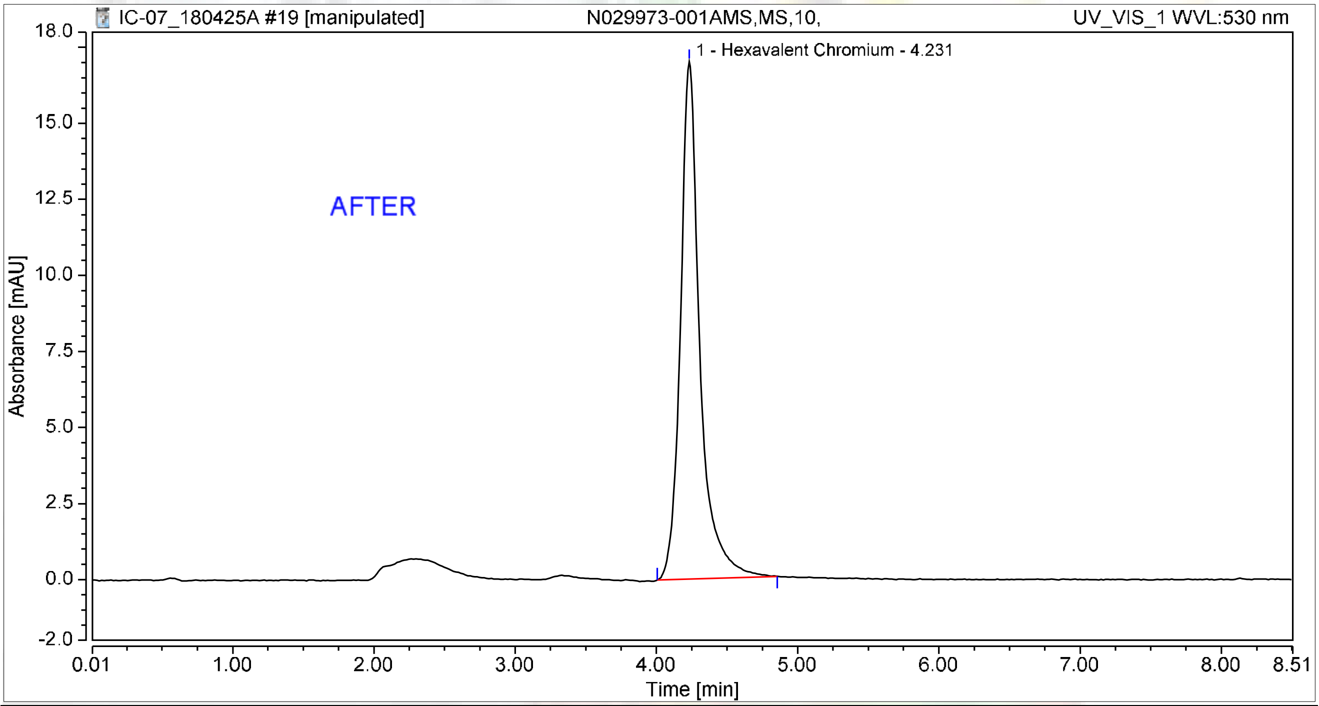
Chromatogram and Results

Injection Details

Injection Name:	**N029973-001AMS,MS,10,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.703	17.015	100.00	100.00	10.6641
Total:			**2.703**	**17.015**	**100.00**	**100.00**	

rba 4/29/2018

Reviewed by:
Nancy 5/7/2018

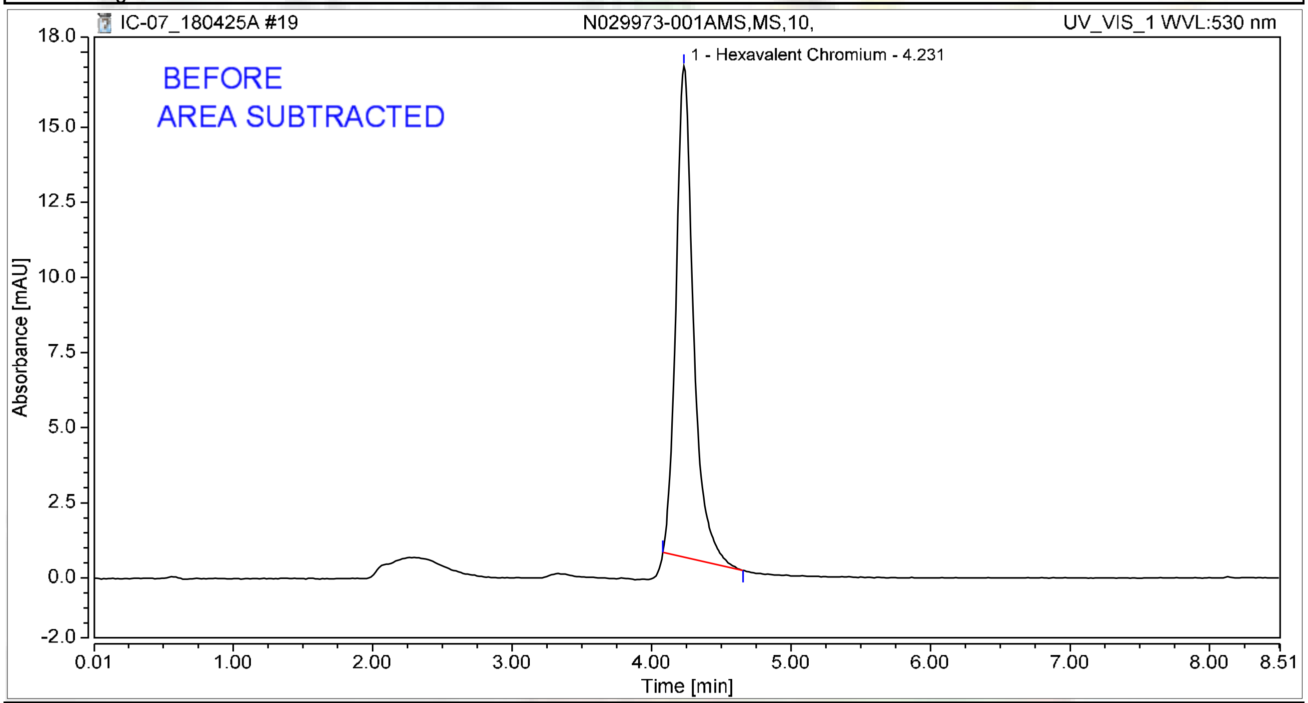
My first report/Integration

Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details			
Injection Name:	**N029973-001AMS,MS,10,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 10:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.379	16.343	100.00	100.00	9.3846
Total:			**2.379**	**16.343**	**100.00**	**100.00**	

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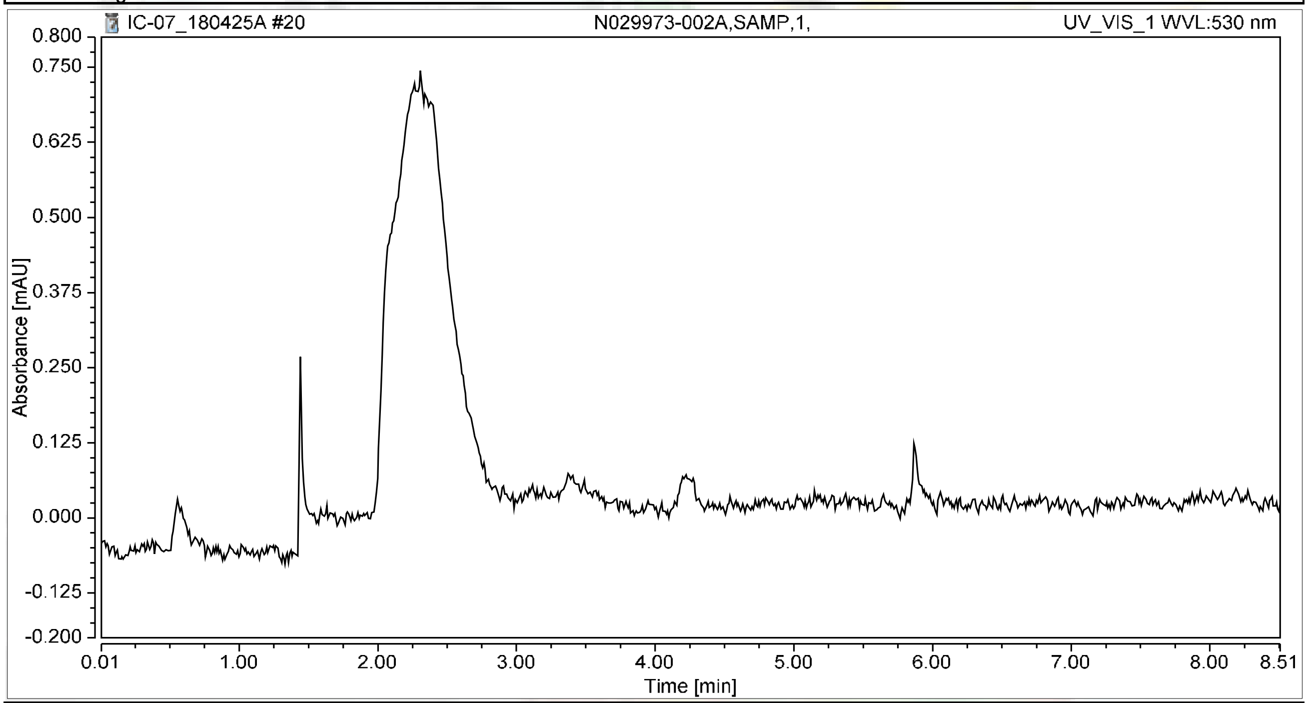
Chromatogram and Results

Injection Details

Injection Name:	**N029973-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

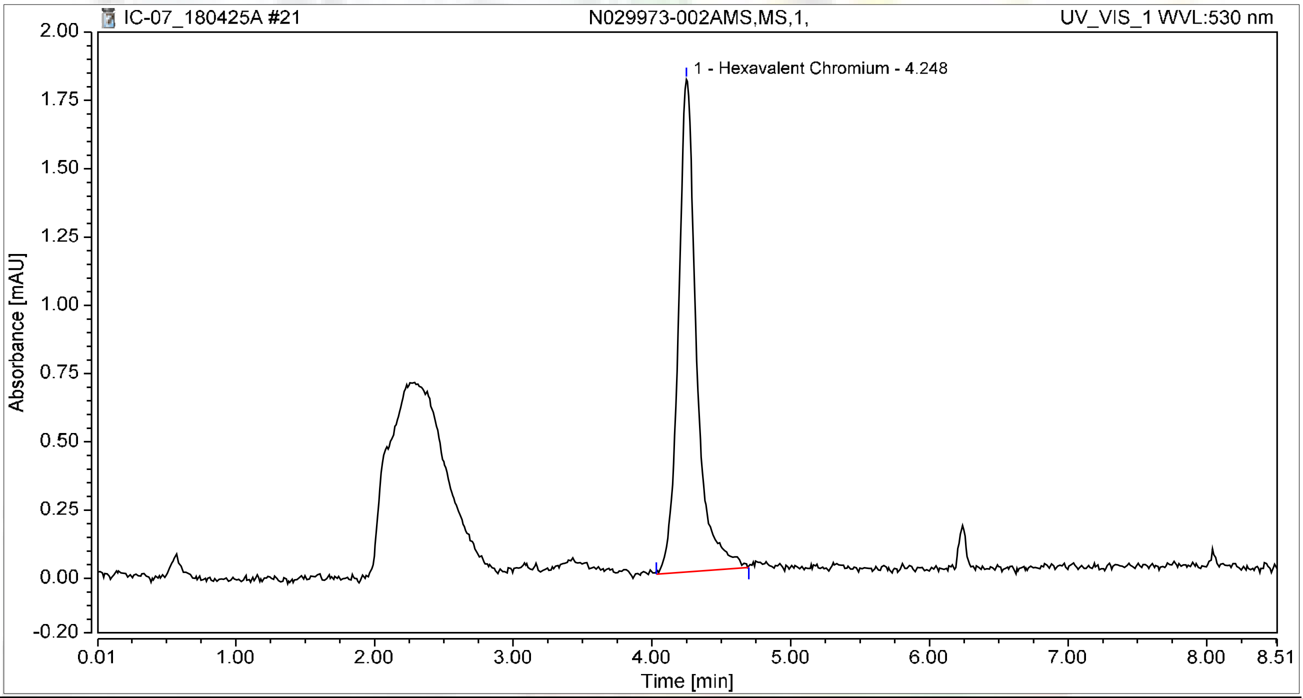
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 10:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

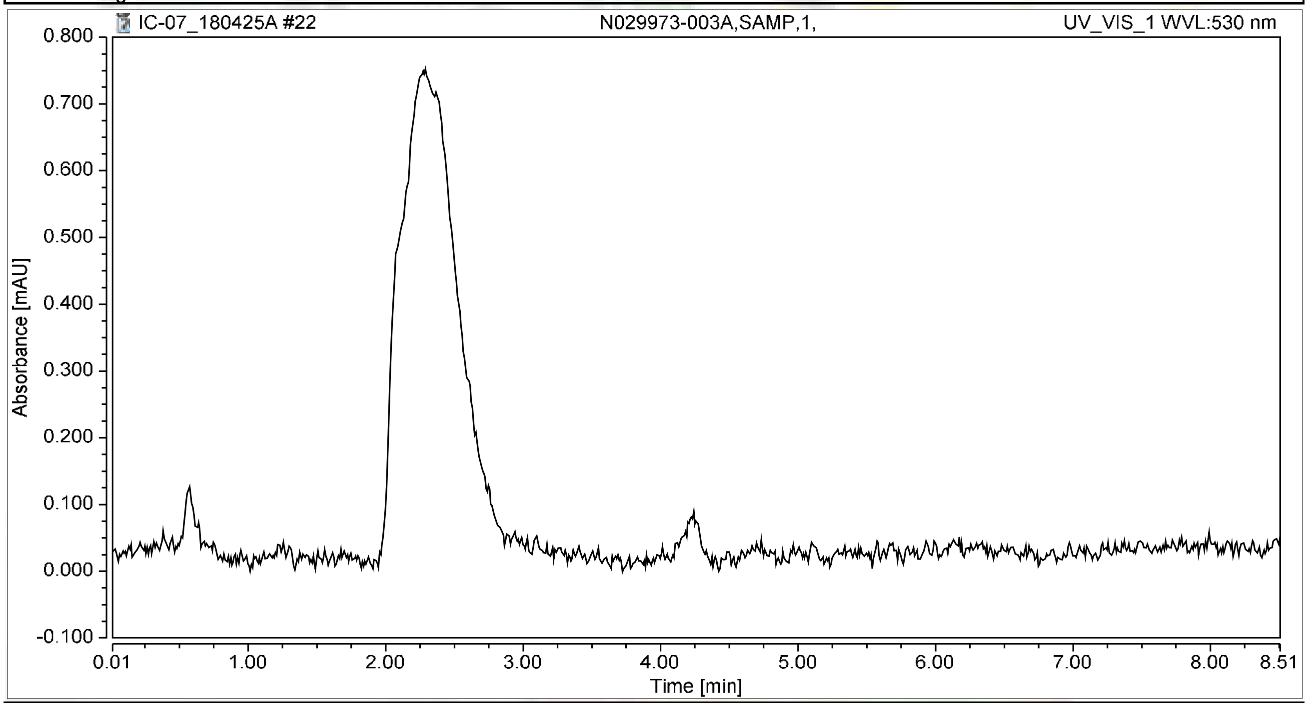
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.275	1.803	100.00	100.00	1.0844
Total:			**0.275**	**1.803**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-003A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

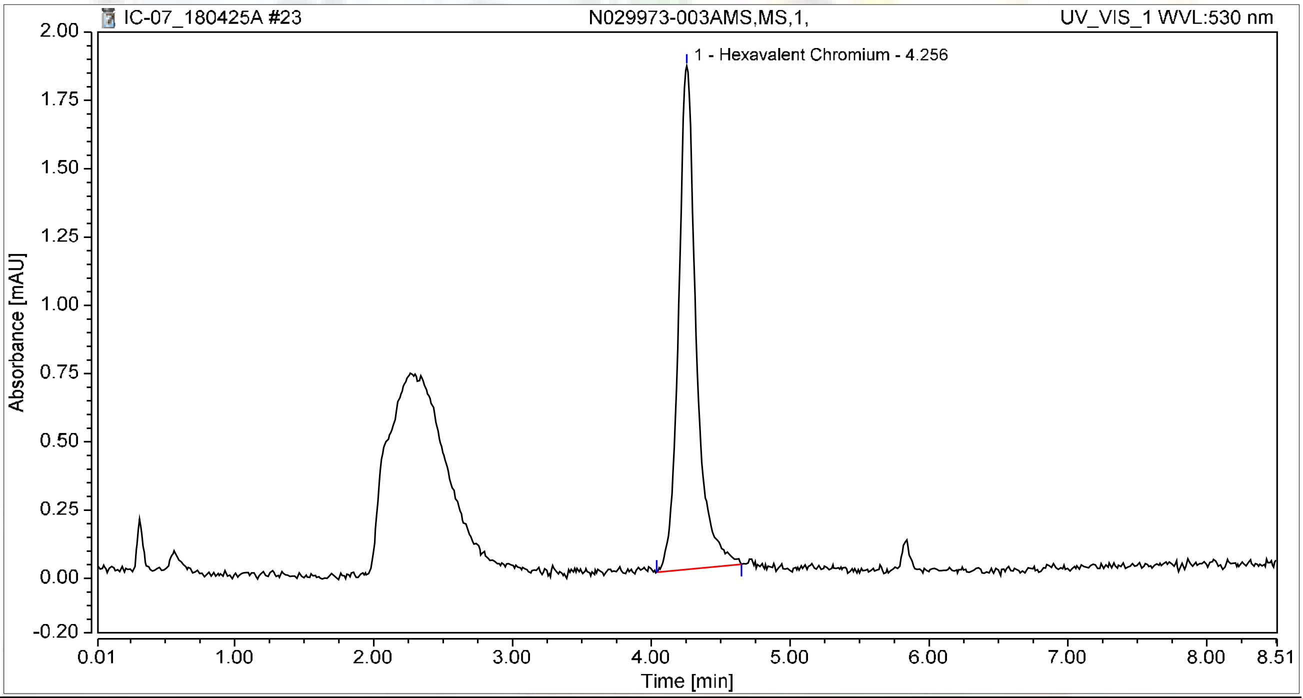
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-003AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 10:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

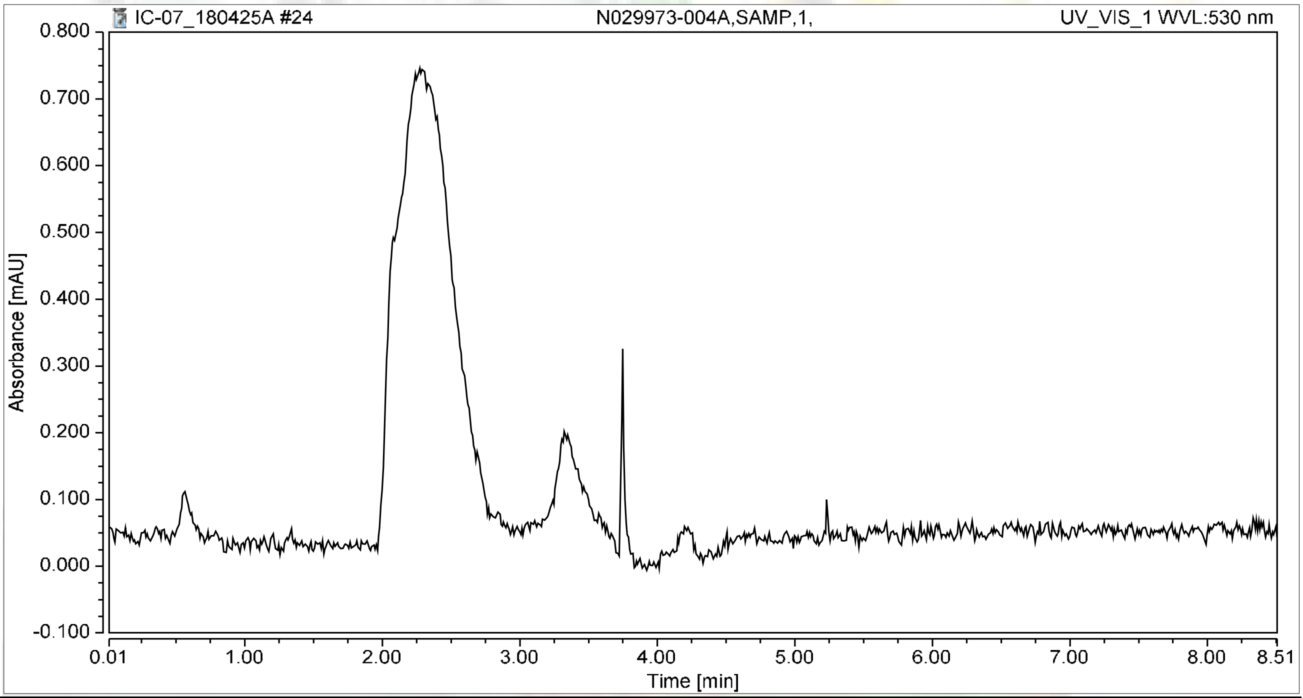
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.275	1.844	100.00	100.00	1.0851
Total:			**0.275**	**1.844**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-004A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

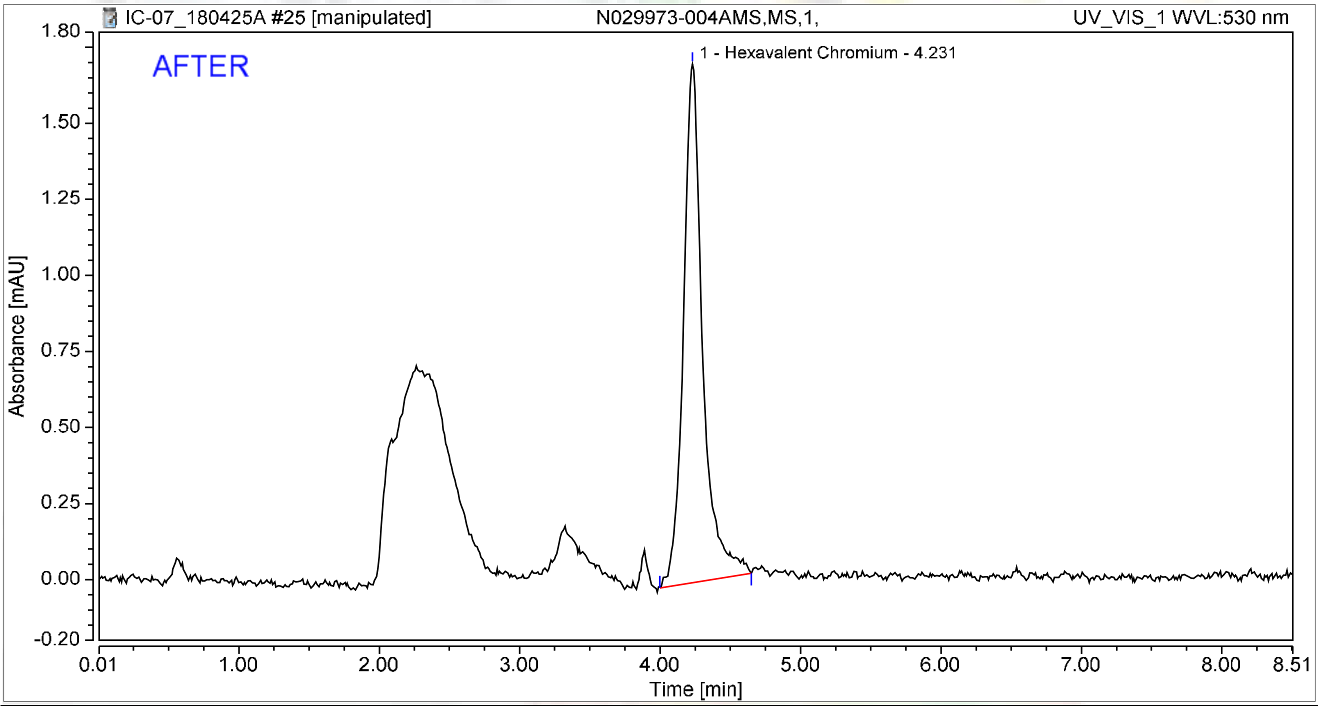
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.271	1.705	100.00	100.00	1.0690
Total:			**0.271**	**1.705**	**100.00**	**100.00**	

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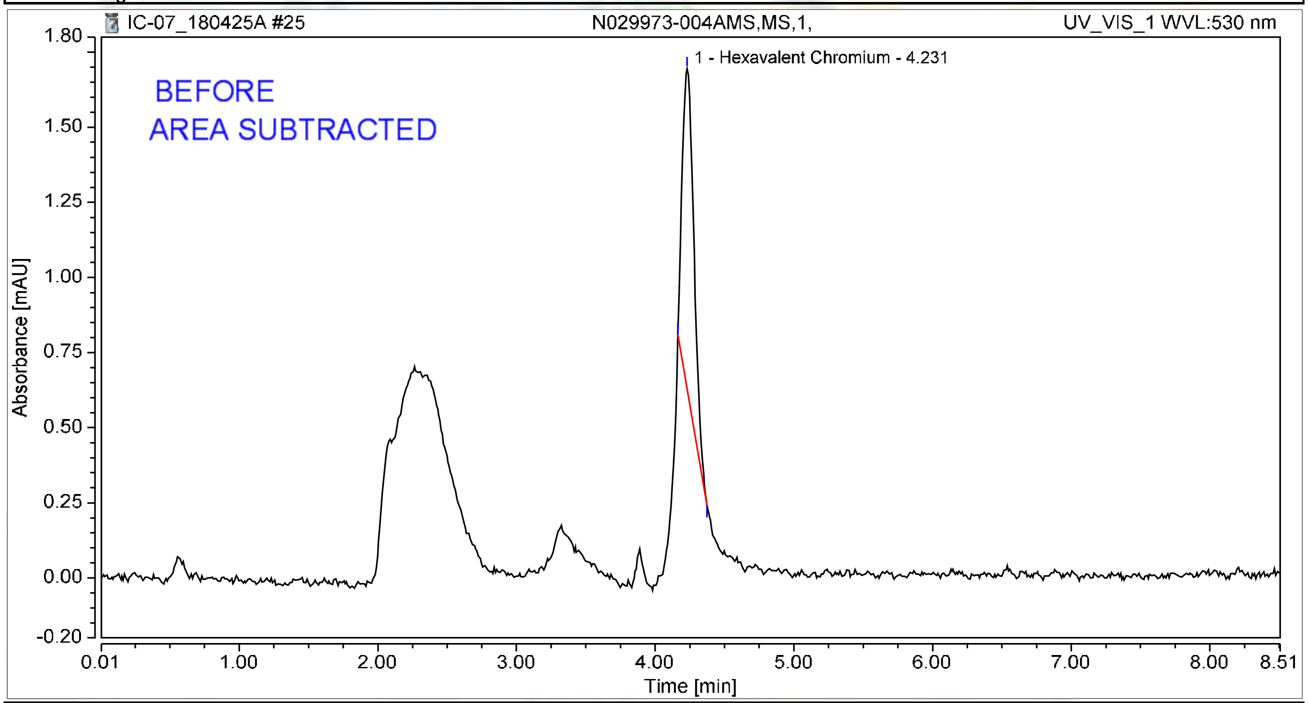
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029973-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 11:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.103	1.066	100.00	100.00	0.4068
Total:			**0.103**	**1.066**	**100.00**	**100.00**	

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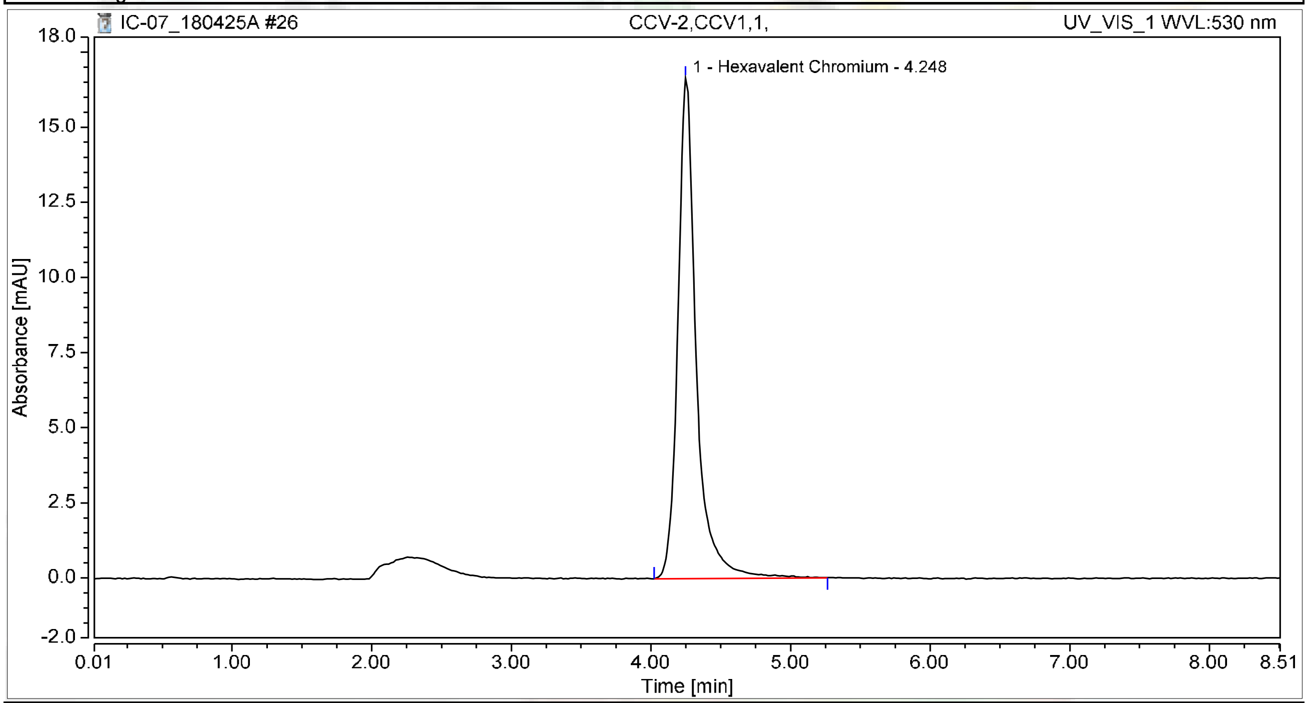
Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 11:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

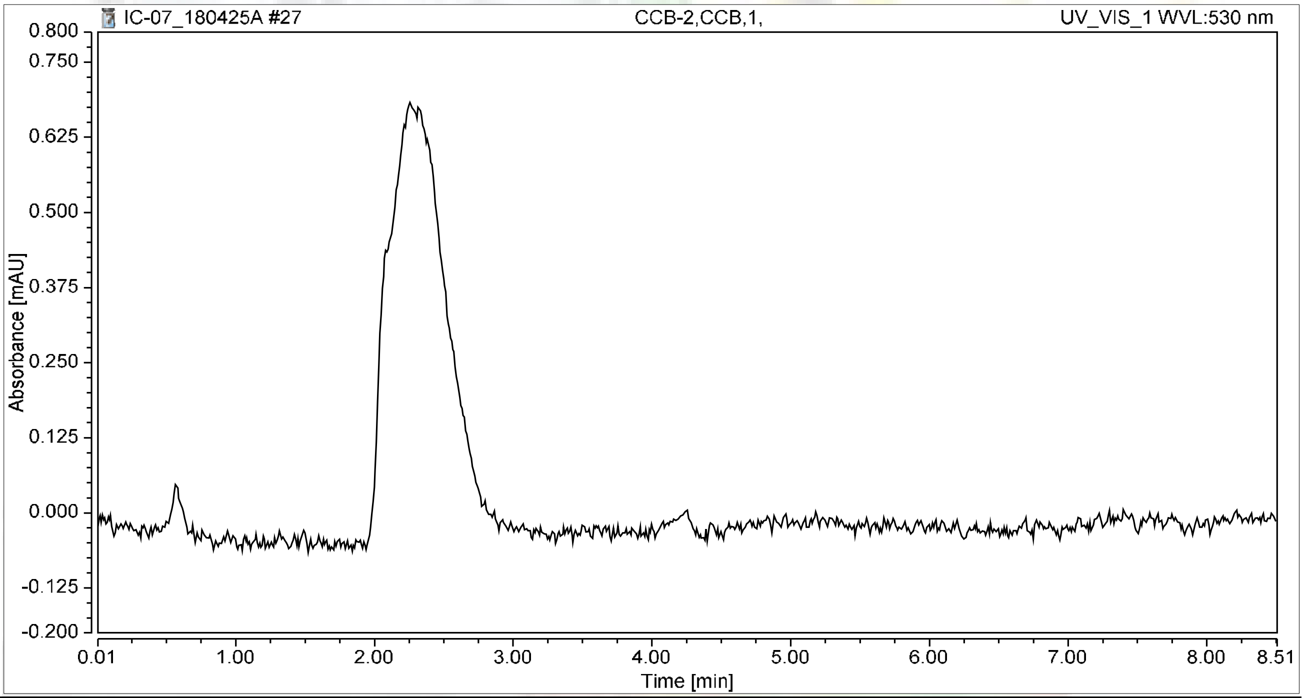
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.552	16.657	100.00	100.00	10.0661
Total:			**2.552**	**16.657**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 11:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

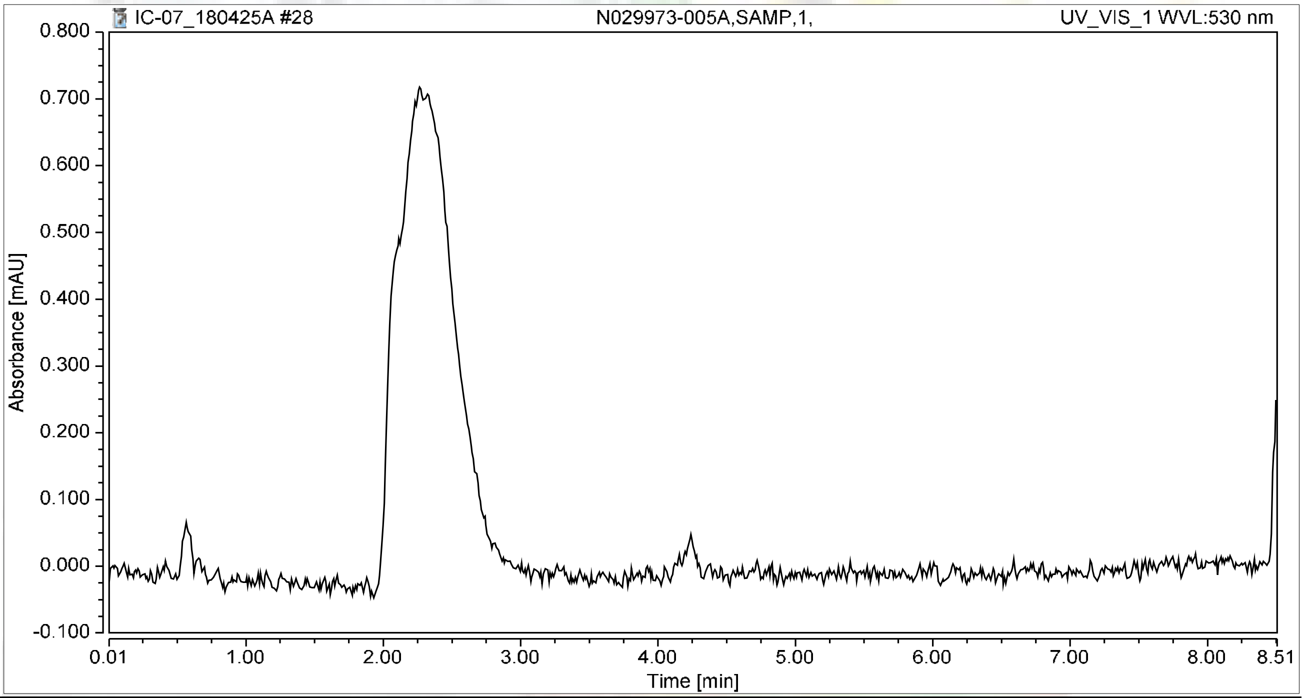
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

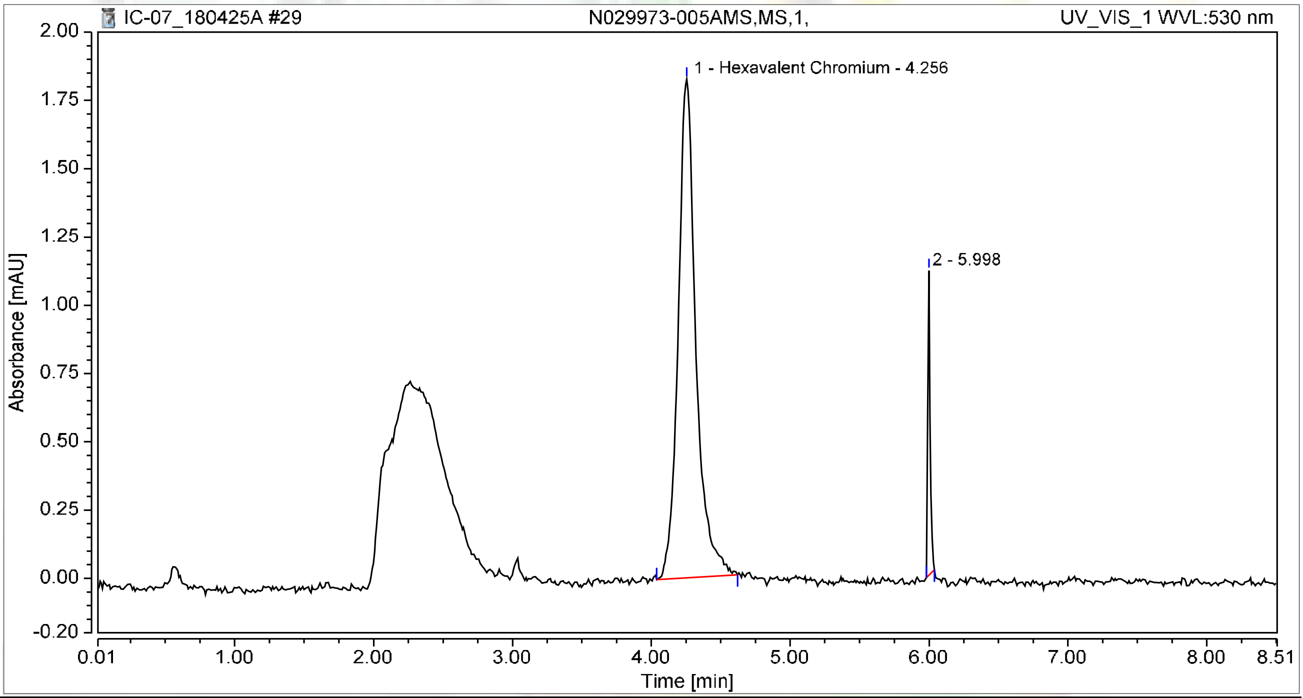
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-005AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

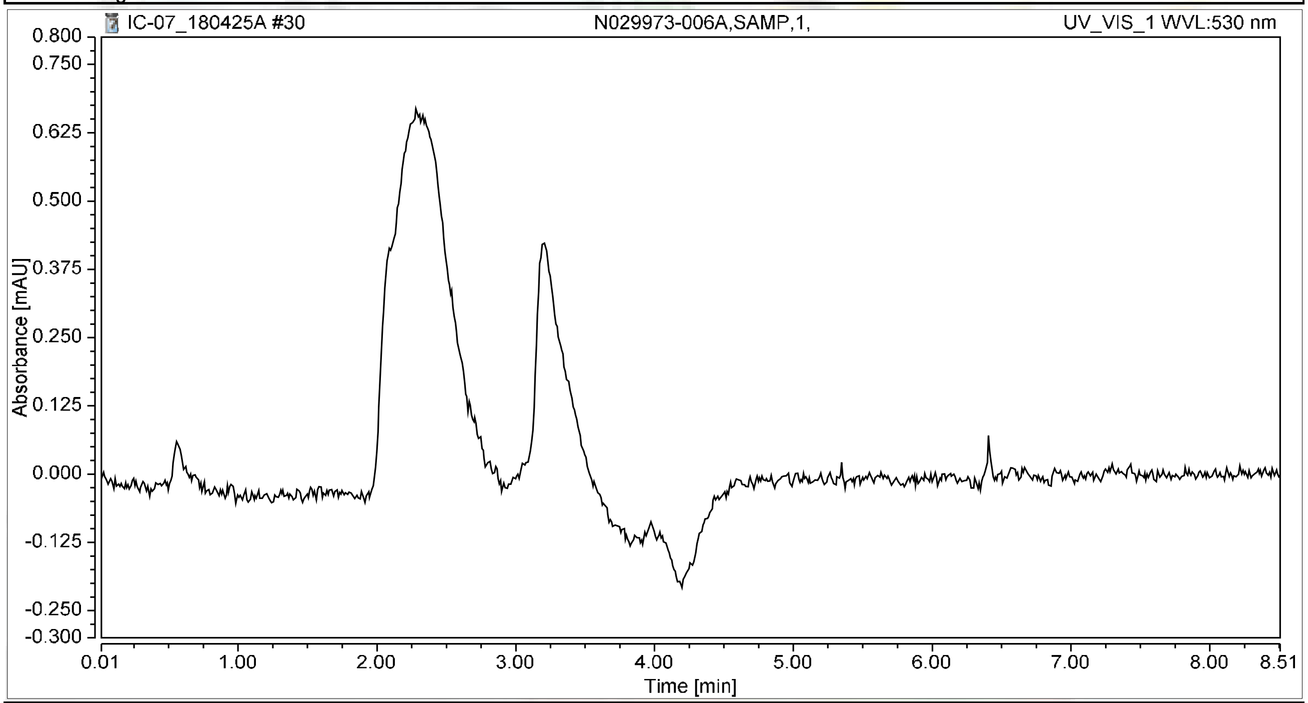
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.270	1.826	92.17	62.04	1.0661
2		5.998	0.023	1.117	7.83	37.96	n.a.
Total:			**0.293**	**2.943**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

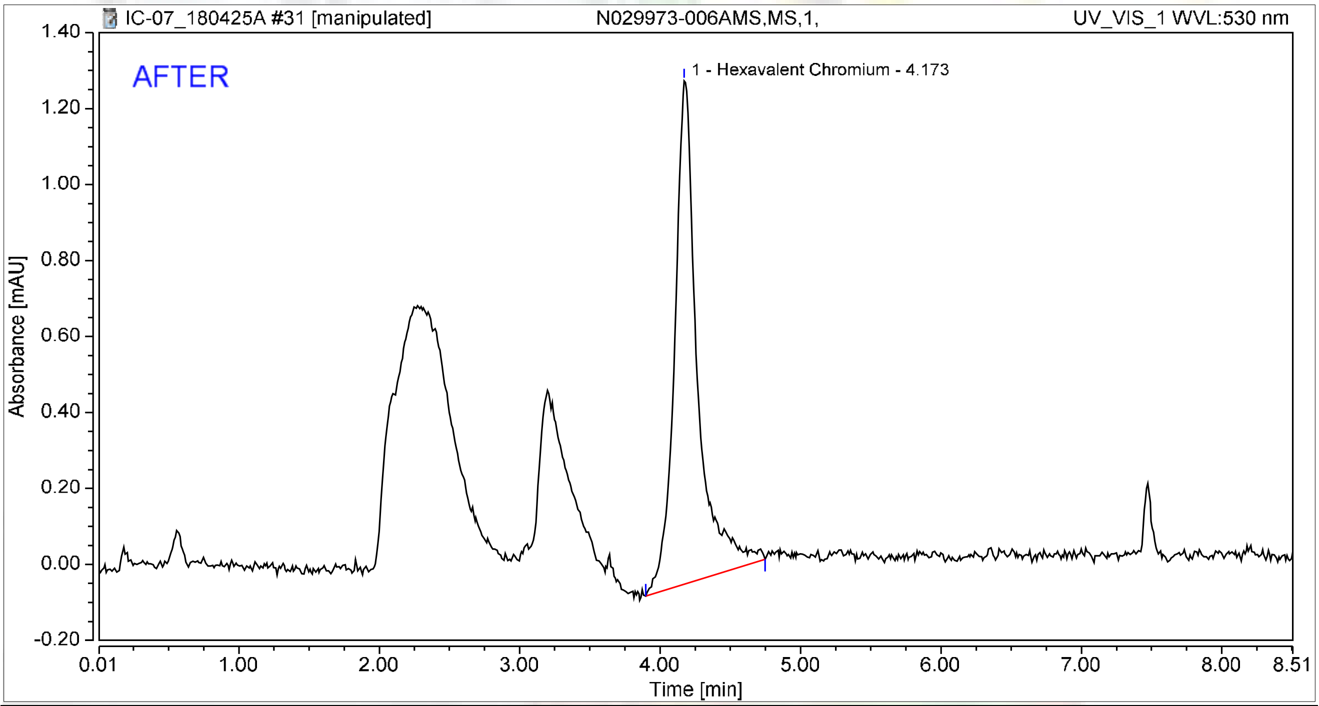
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 12:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.251	1.325	100.00	100.00	0.9891
Total:			**0.251**	**1.325**	**100.00**	**100.00**	

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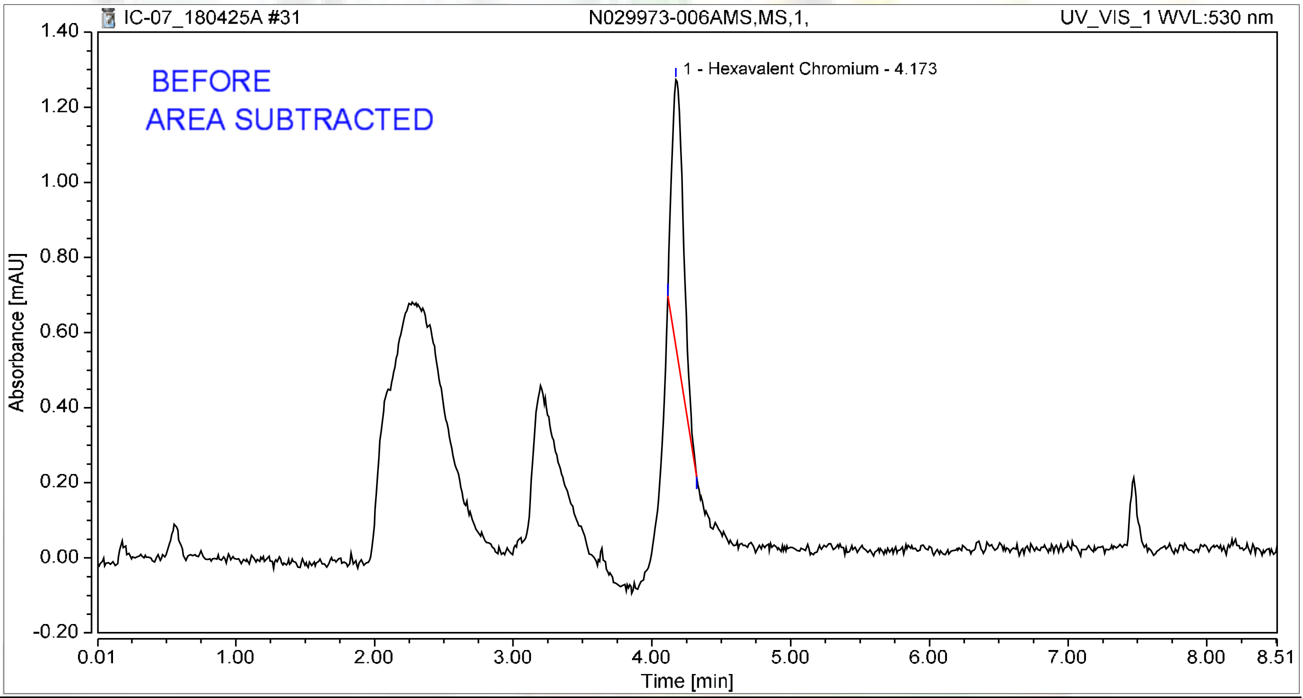
Chromatogram and Results

Injection Details

Injection Name:	**N029973-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 12:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.071	0.710	100.00	100.00	0.2791
Total:			**0.071**	**0.710**	**100.00**	**100.00**	

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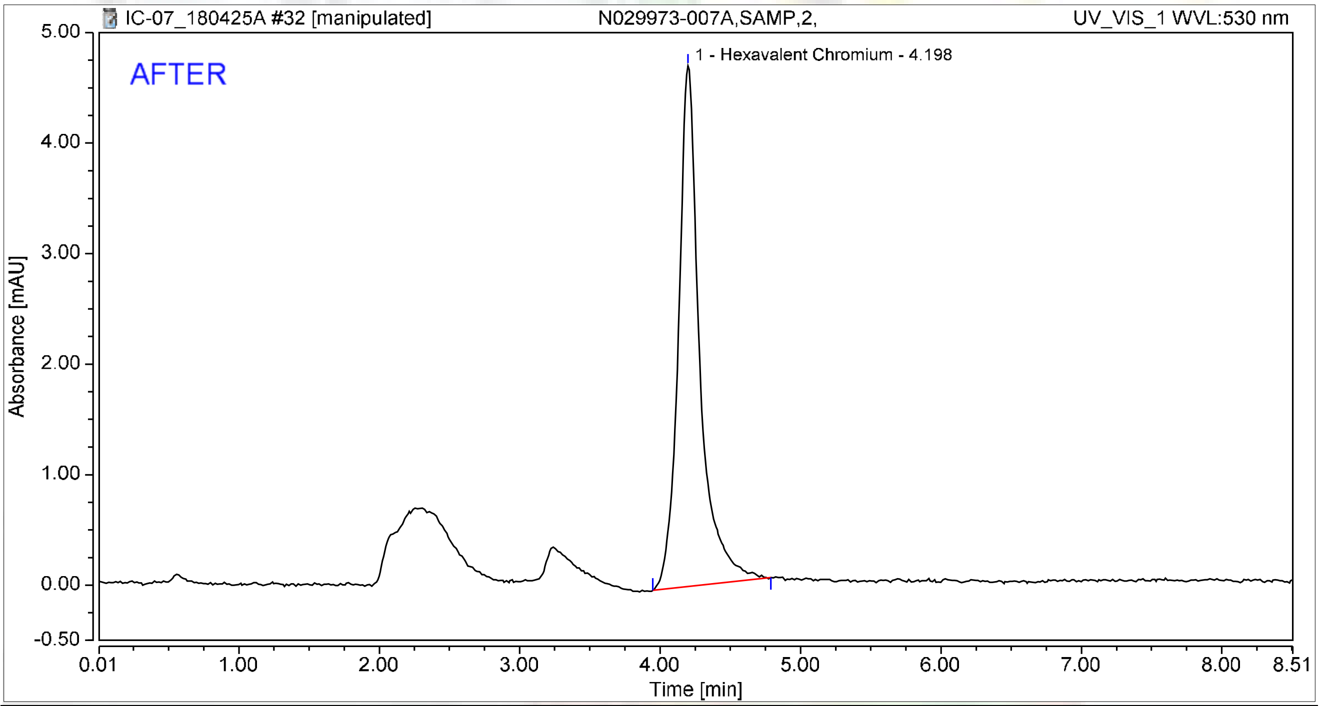
Chromatogram and Results

Injection Details

Injection Name:	**N029973-007A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.832	4.710	100.00	100.00	3.2833
Total:			**0.832**	**4.710**	**100.00**	**100.00**	

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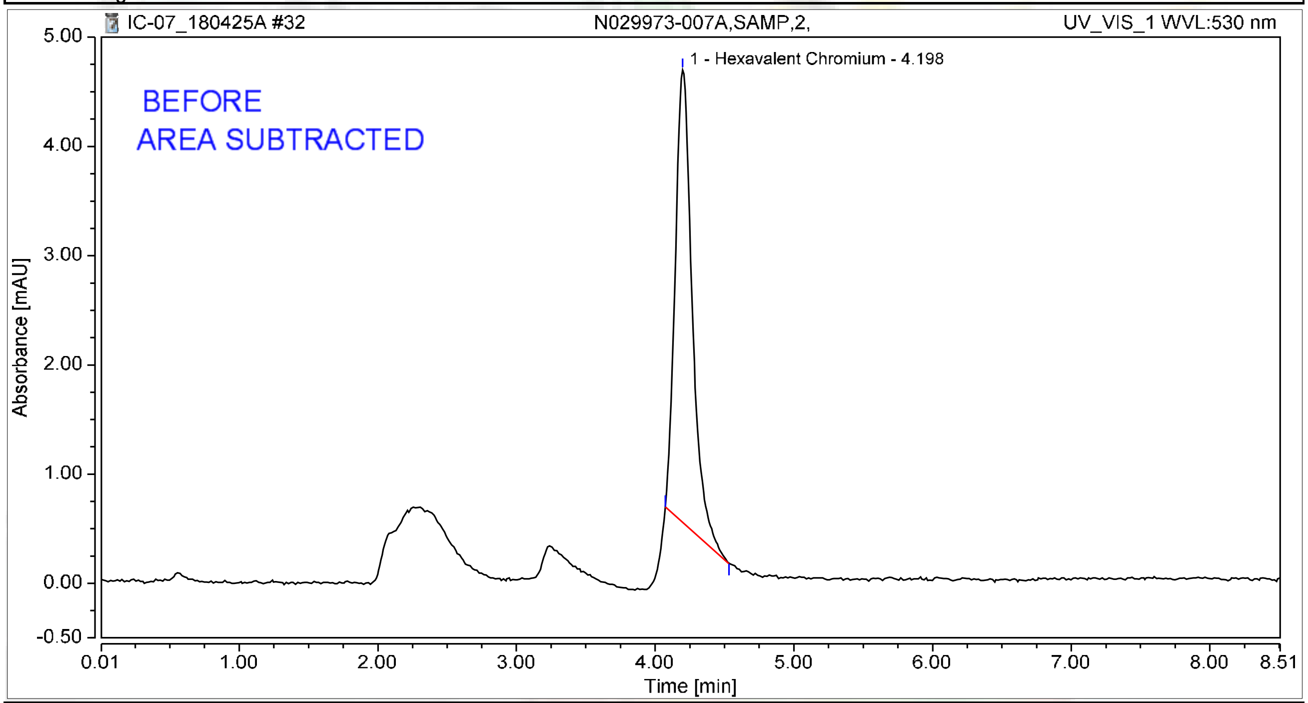
Chromatogram and Results

Injection Details

Injection Name:	**N029973-007A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.588	4.139	100.00	100.00	2.3203
Total:			**0.588**	**4.139**	**100.00**	**100.00**	

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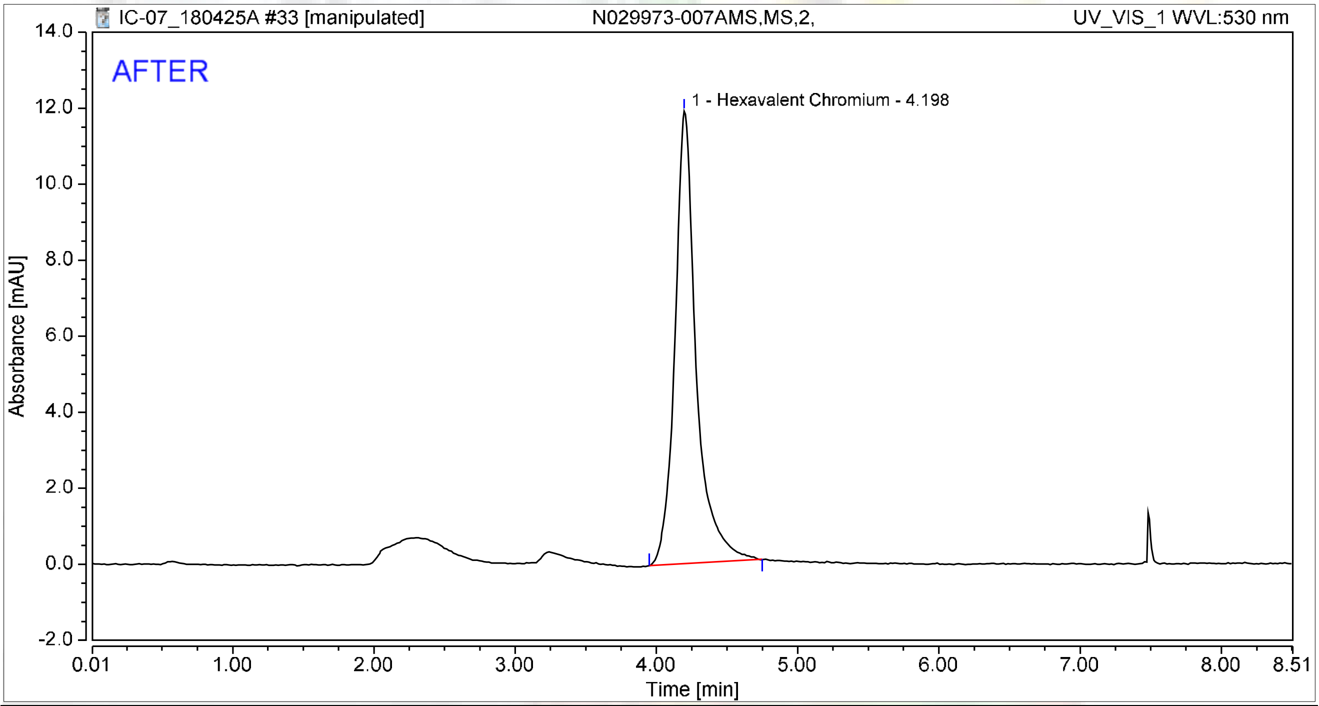
Chromatogram and Results

Injection Details

Injection Name:	**N029973-007AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	2.072	11.892	100.00	100.00	8.1737
Total:			**2.072**	**11.892**	**100.00**	**100.00**	

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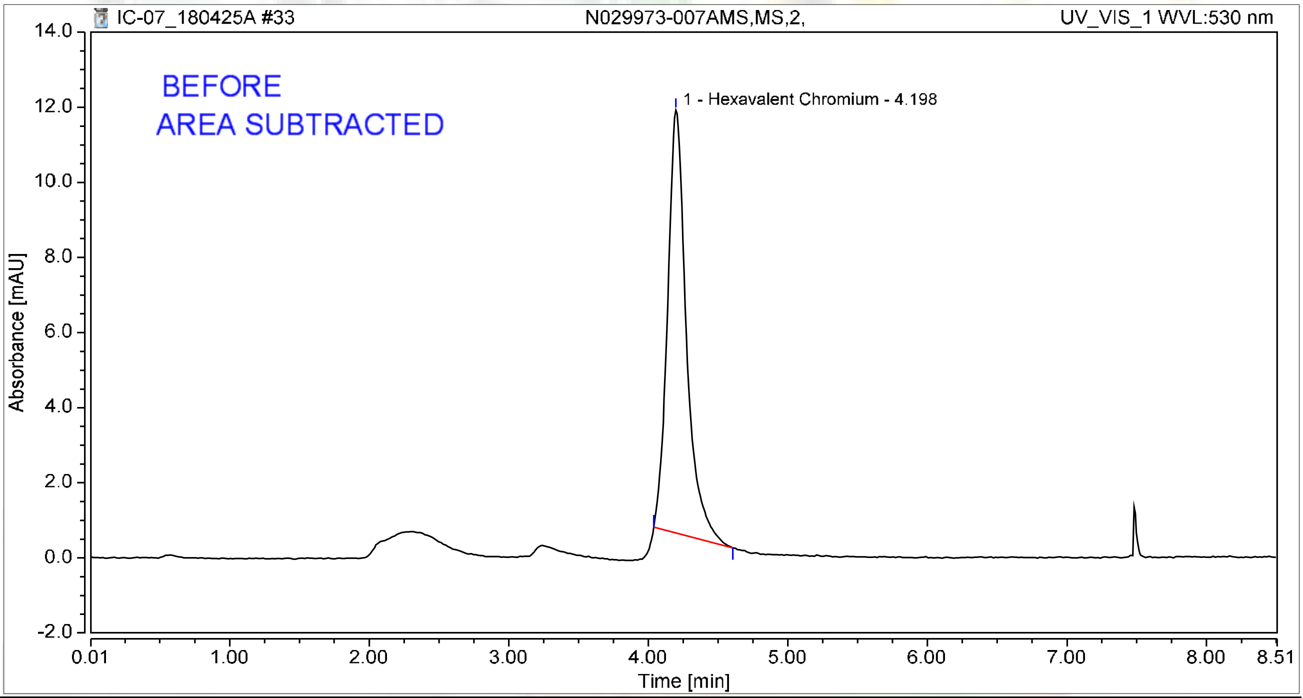
Chromatogram and Results

Injection Details

Injection Name:	**N029973-007AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 12:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.760	11.250	100.00	100.00	6.9438
Total:			**1.760**	**11.250**	**100.00**	**100.00**	

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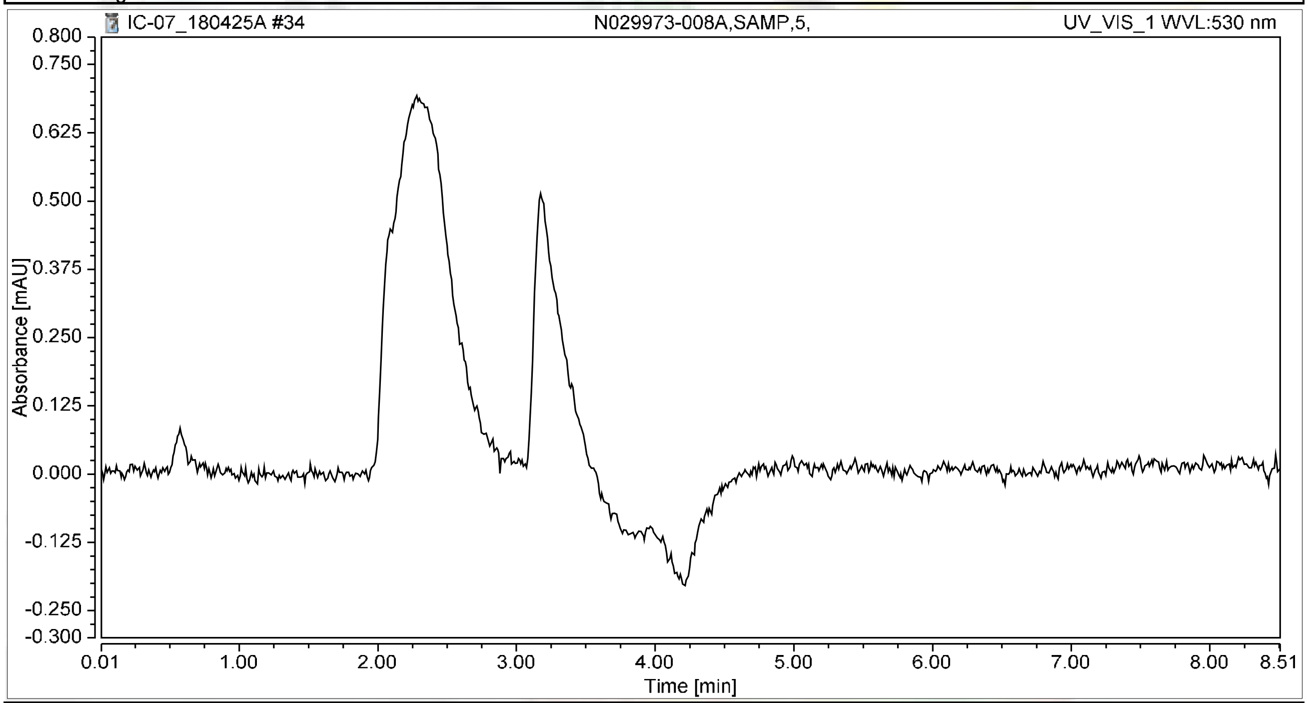
Chromatogram and Results

Injection Details

Injection Name:	**N029973-008A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 12:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

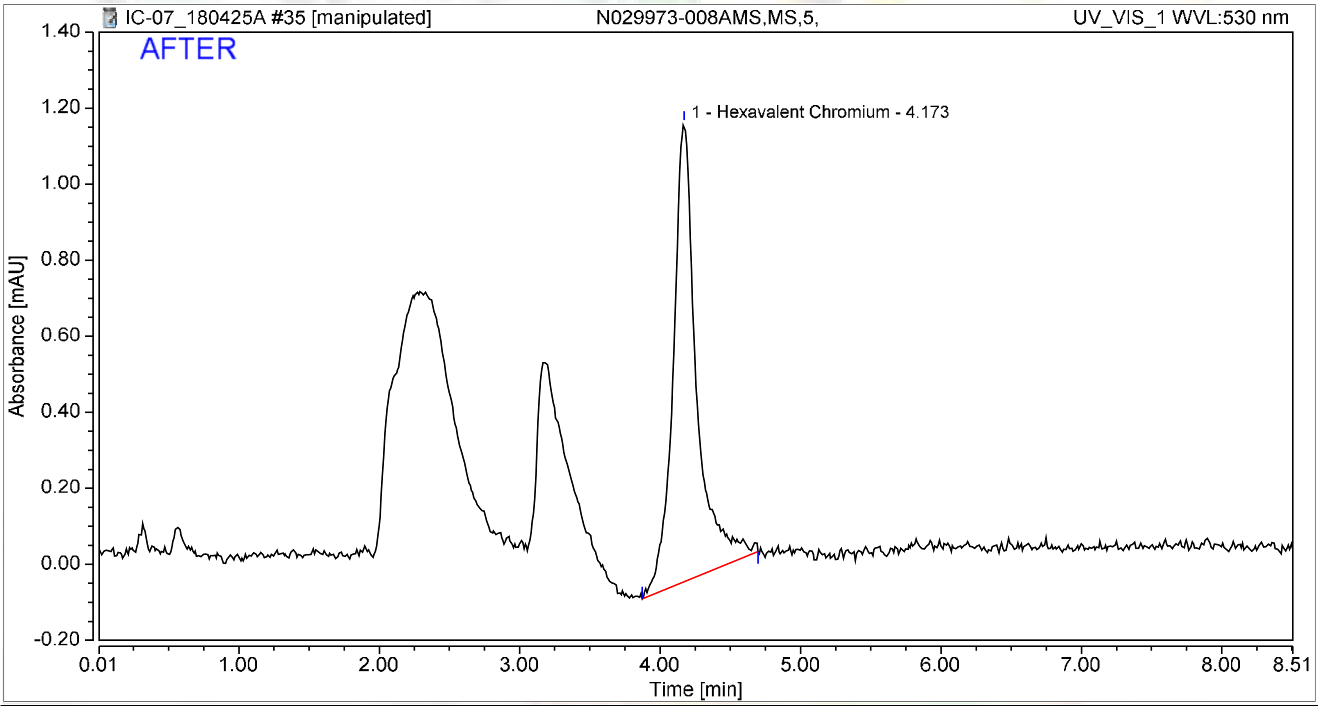
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-008AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.235	1.205	100.00	100.00	0.9257
Total:			**0.235**	**1.205**	**100.00**	**100.00**	

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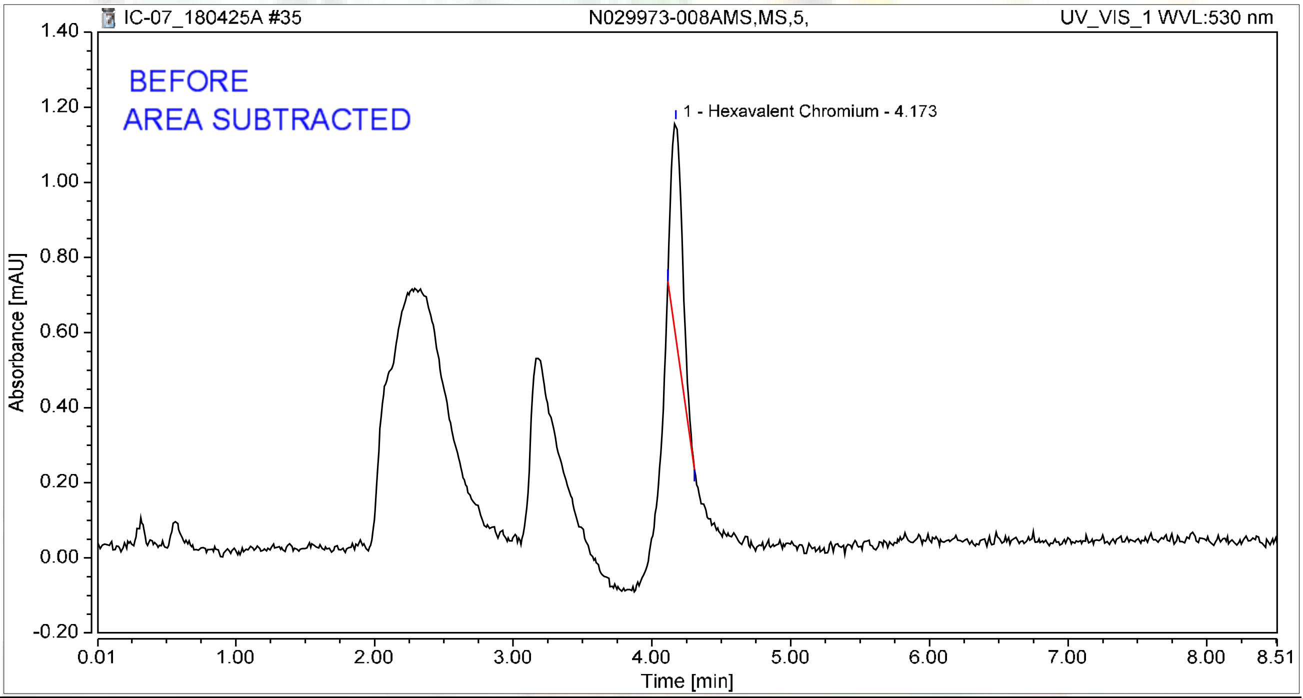
Chromatogram and Results

Injection Details

Injection Name:	**N029973-008AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.054	0.575	100.00	100.00	0.2134
Total:			**0.054**	**0.575**	**100.00**	**100.00**	

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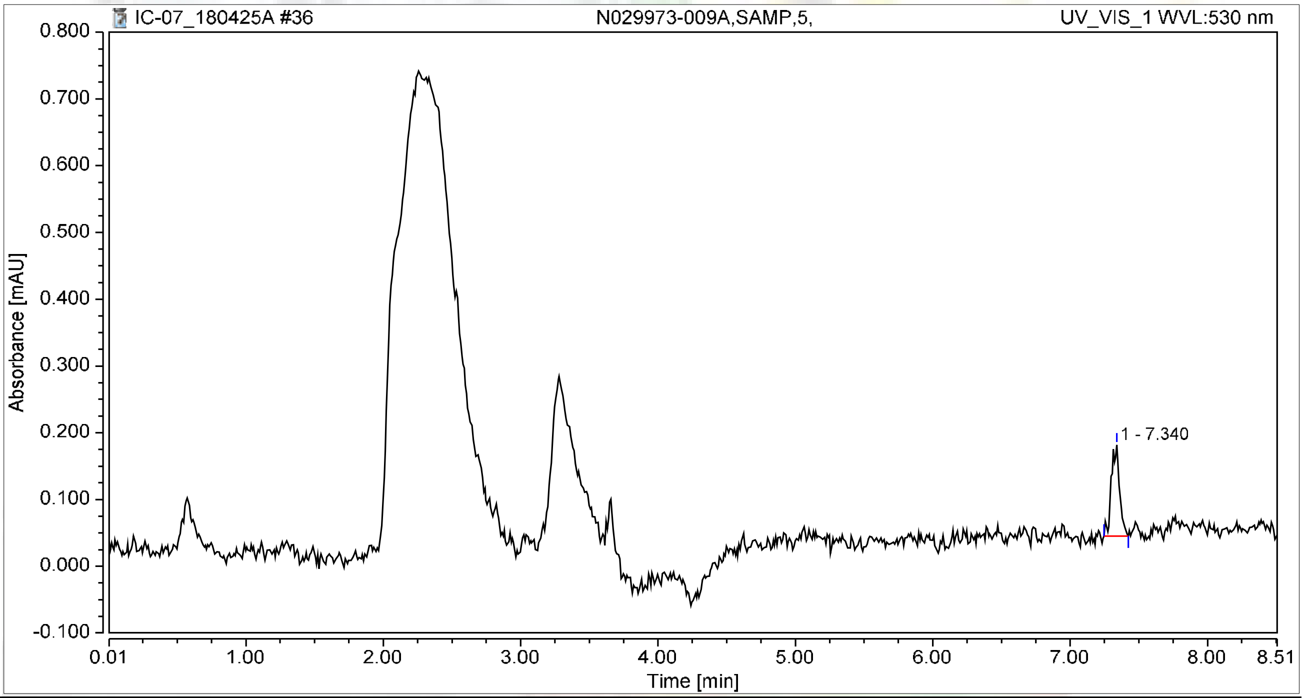
Chromatogram and Results

Injection Details

Injection Name:	**N029973-009A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 12:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

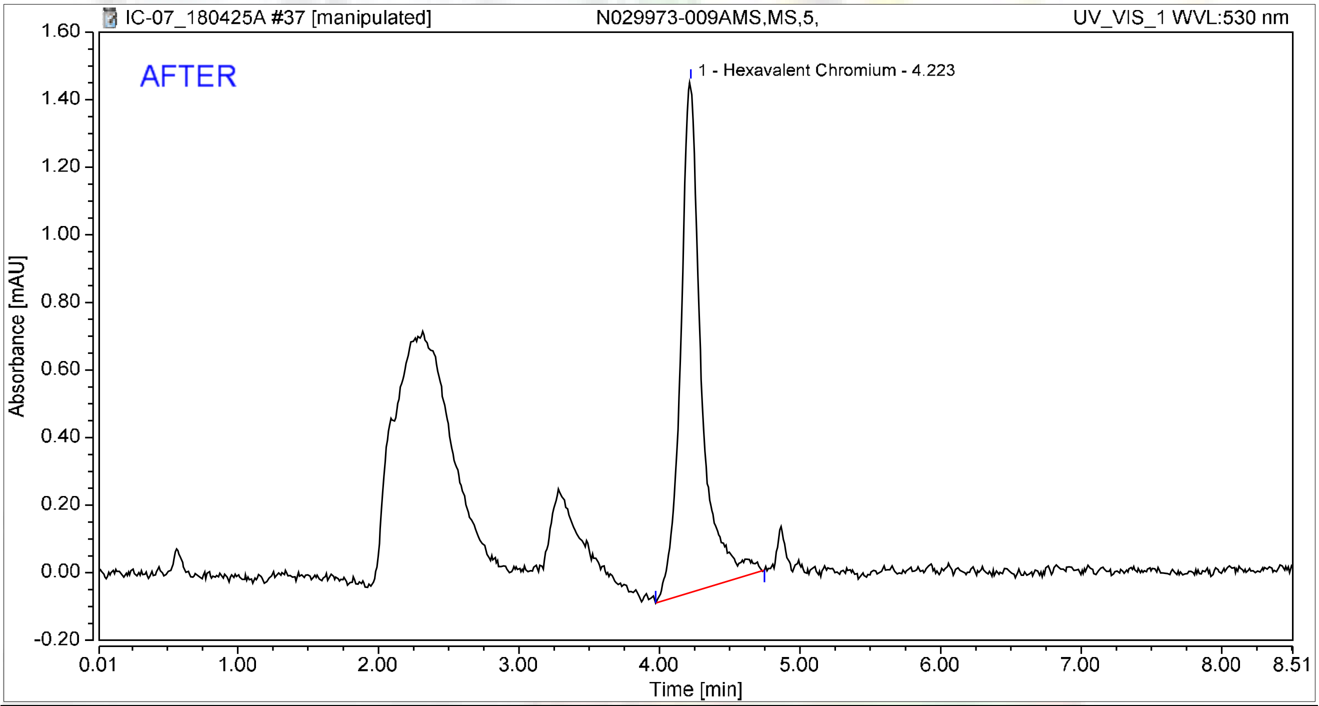
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.340	0.010	0.136	100.00	100.00	n.a.
Total:			**0.010**	**0.136**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-009AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 13:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.261	1.512	100.00	100.00	1.0296
Total:			**0.261**	**1.512**	**100.00**	**100.00**	

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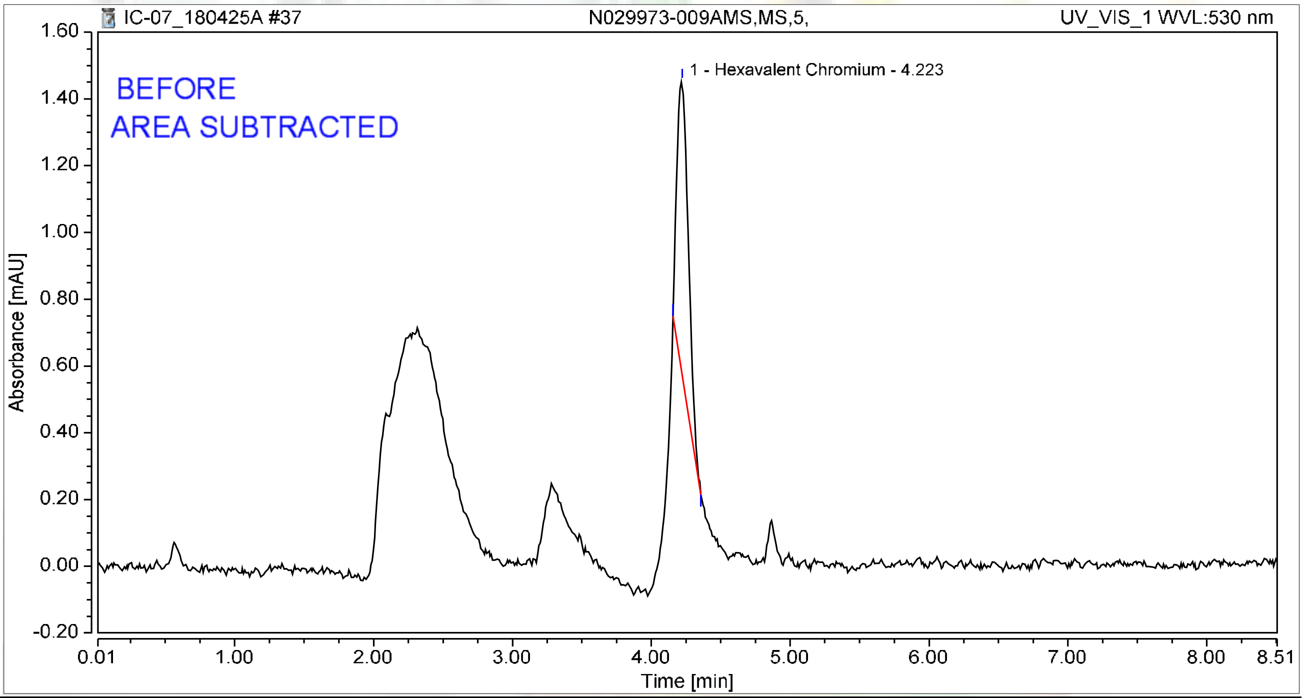
Chromatogram and Results

Injection Details

Injection Name:	**N029973-009AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 13:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.084	0.882	100.00	100.00	0.3301
Total:			**0.084**	**0.882**	**100.00**	**100.00**	

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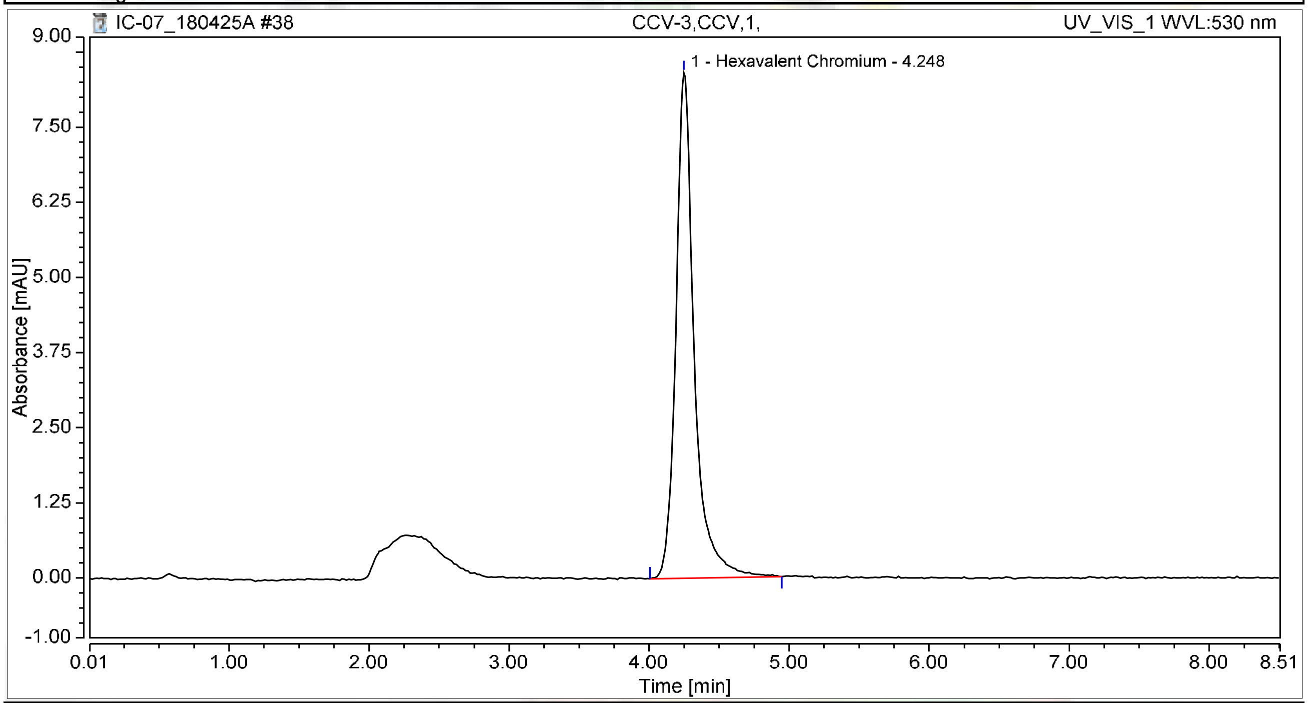
Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 13:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

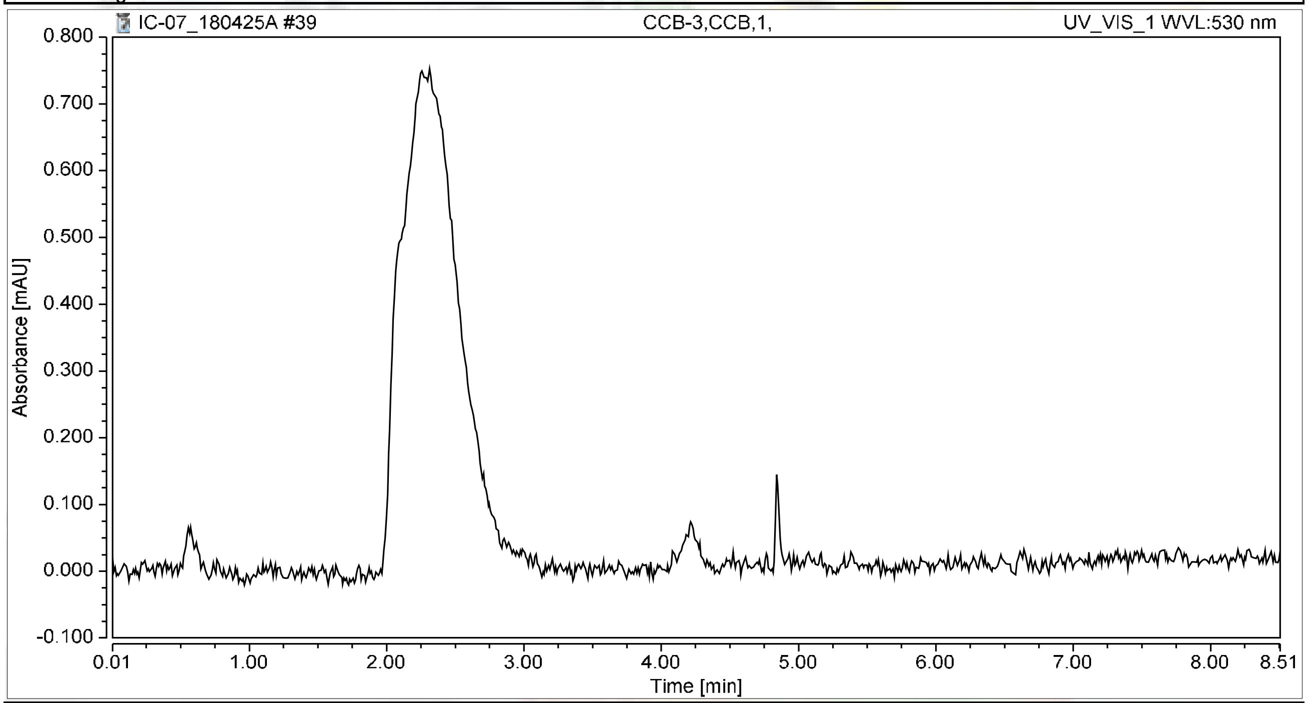
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.277	8.415	100.00	100.00	5.0374
Total:			**1.277**	**8.415**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 13:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

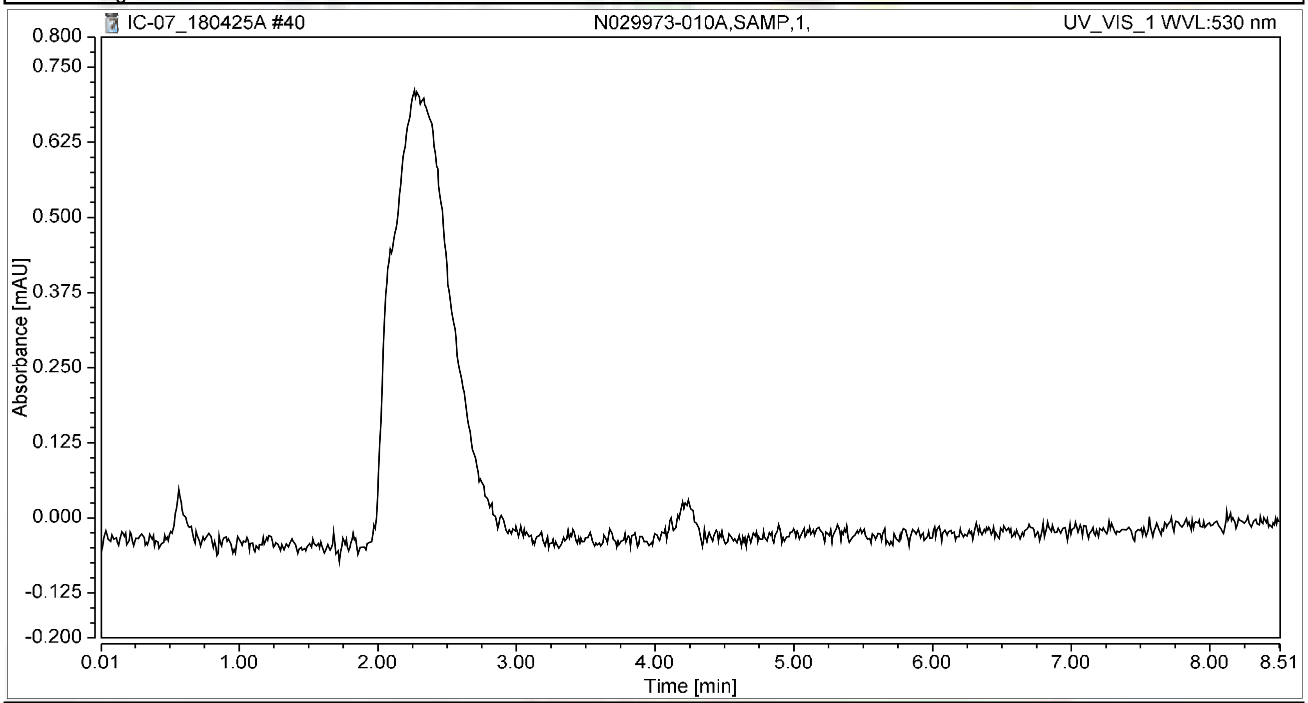
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 13:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

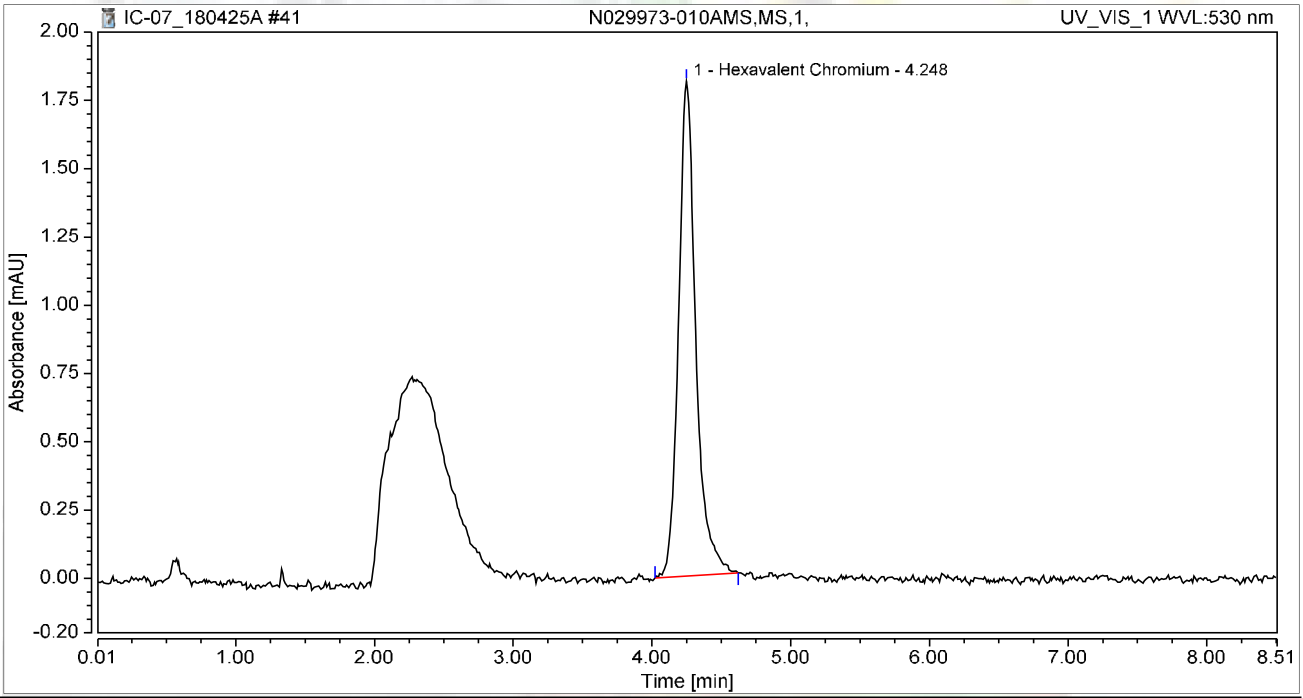
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 13:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

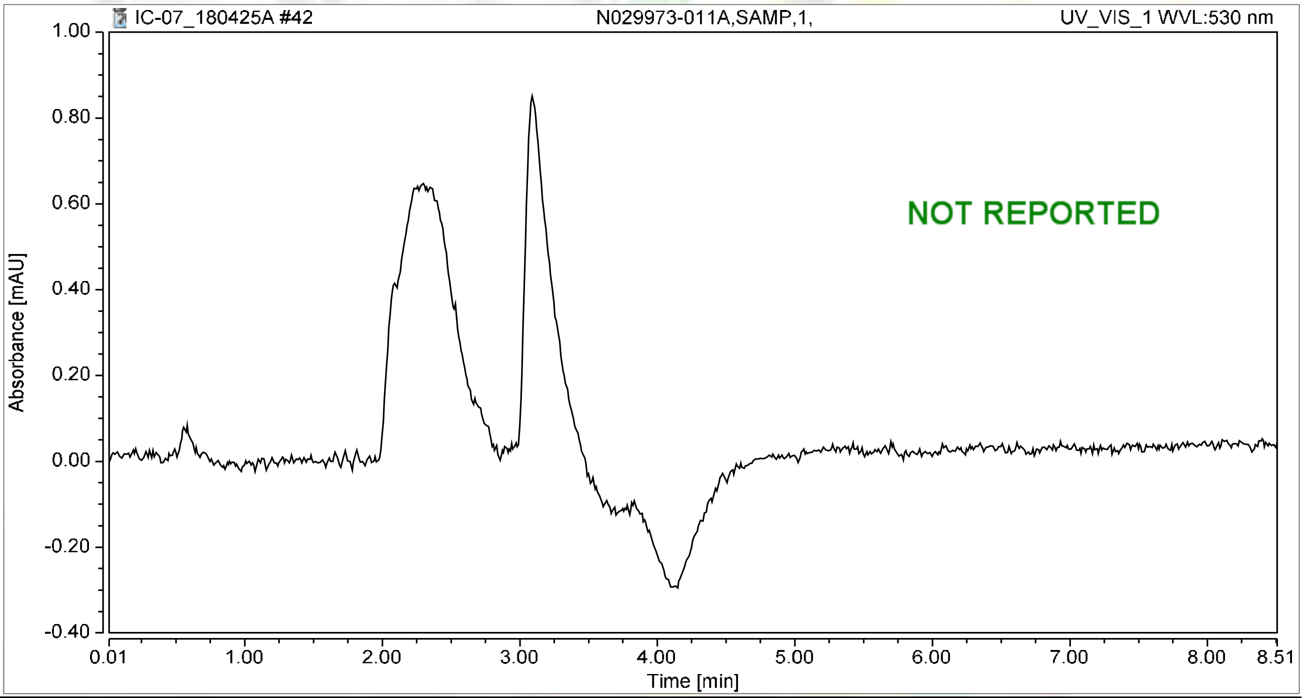
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.262	1.812	100.00	100.00	1.0322
Total:			**0.262**	**1.812**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-011A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 13:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

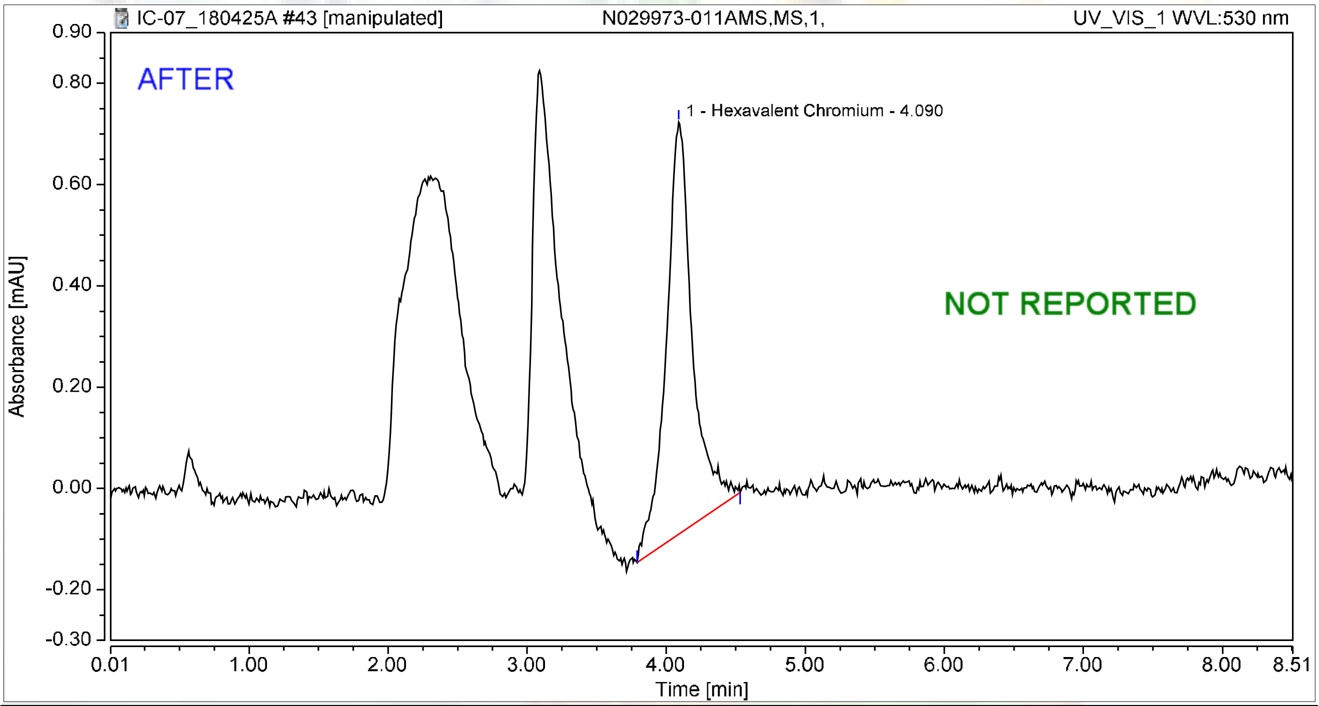
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 13:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.178	0.813	100.00	100.00	0.7039
Total:			**0.178**	**0.813**	**100.00**	**100.00**	

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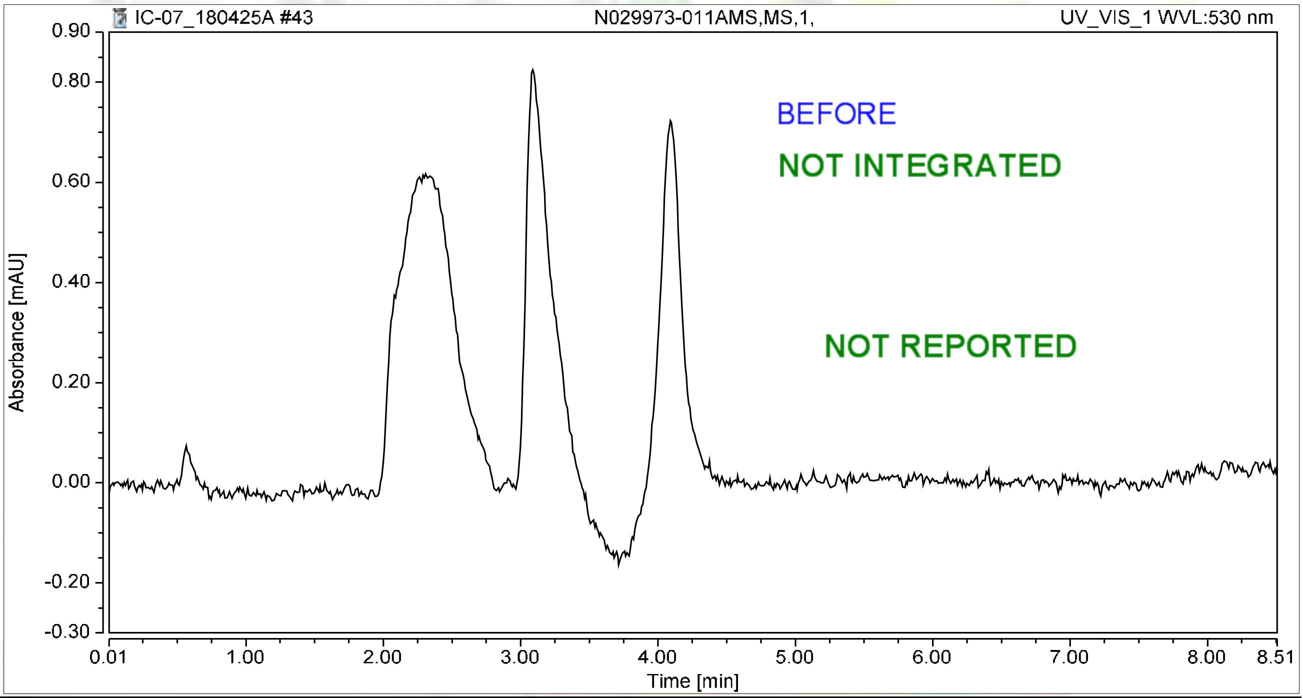
Chromatogram and Results

Injection Details

Injection Name:	**N029973-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 13:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

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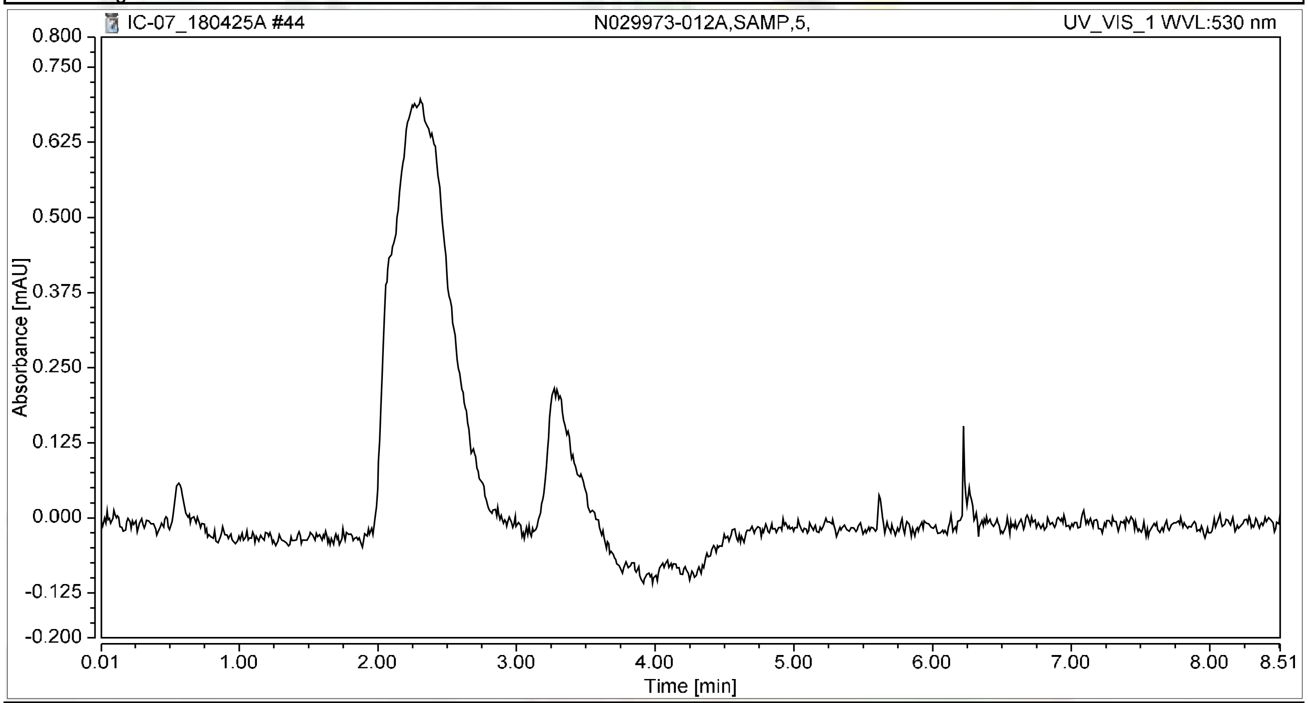
Chromatogram and Results

Injection Details

Injection Name:	**N029973-012A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 14:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

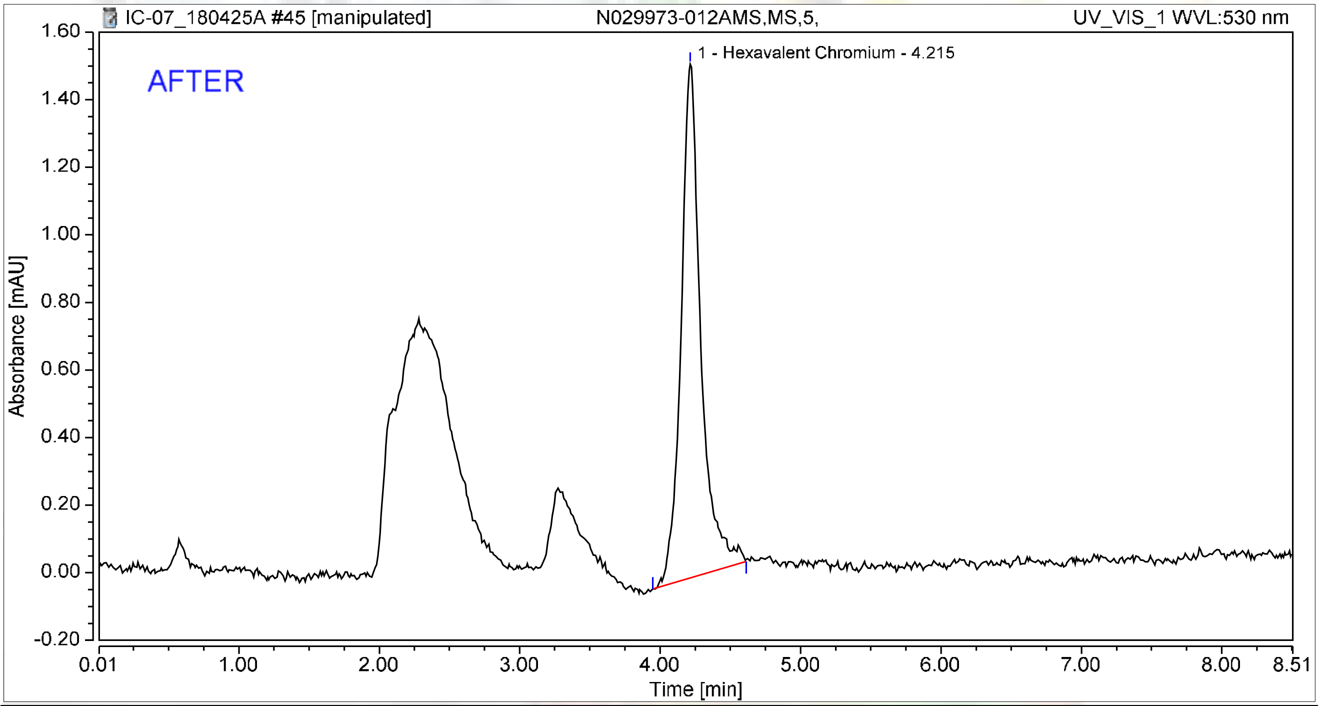
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-012AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.249	1.520	100.00	100.00	0.9808
Total:			**0.249**	**1.520**	**100.00**	**100.00**	

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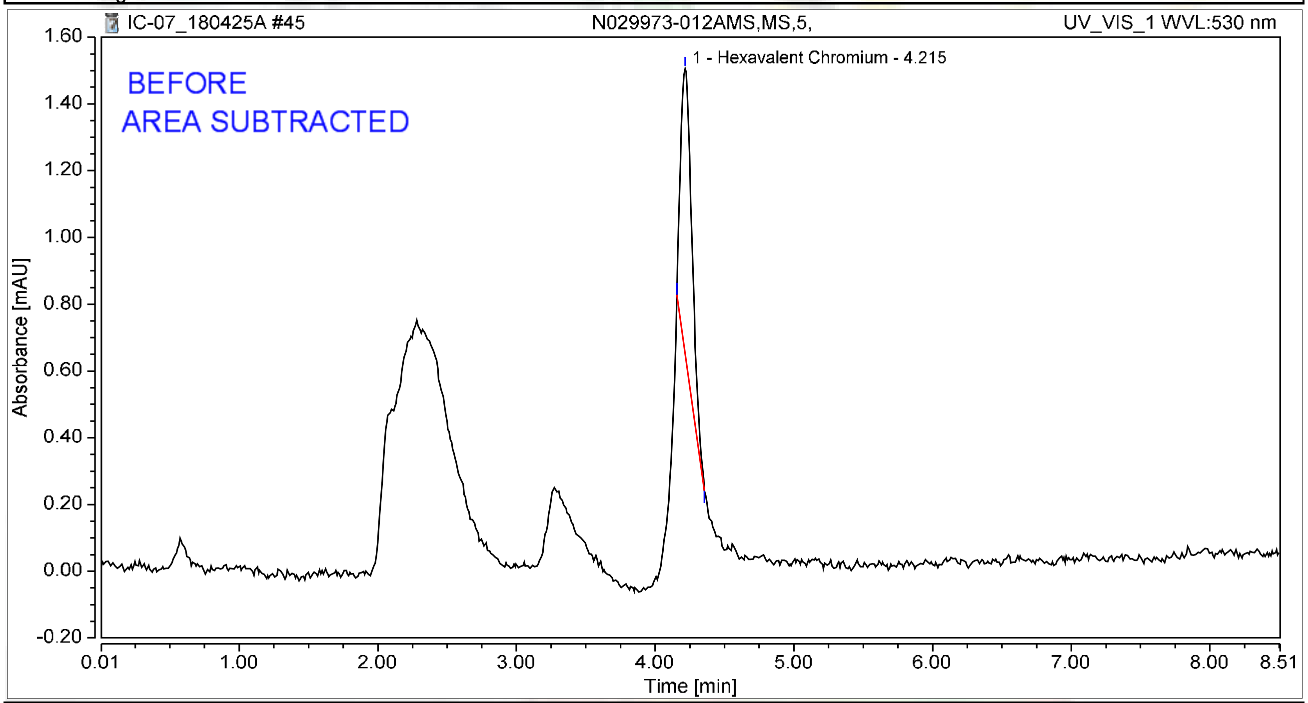
Chromatogram and Results

Injection Details

Injection Name:	**N029973-012AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.080	0.848	100.00	100.00	0.3154
Total:			**0.080**	**0.848**	**100.00**	**100.00**	

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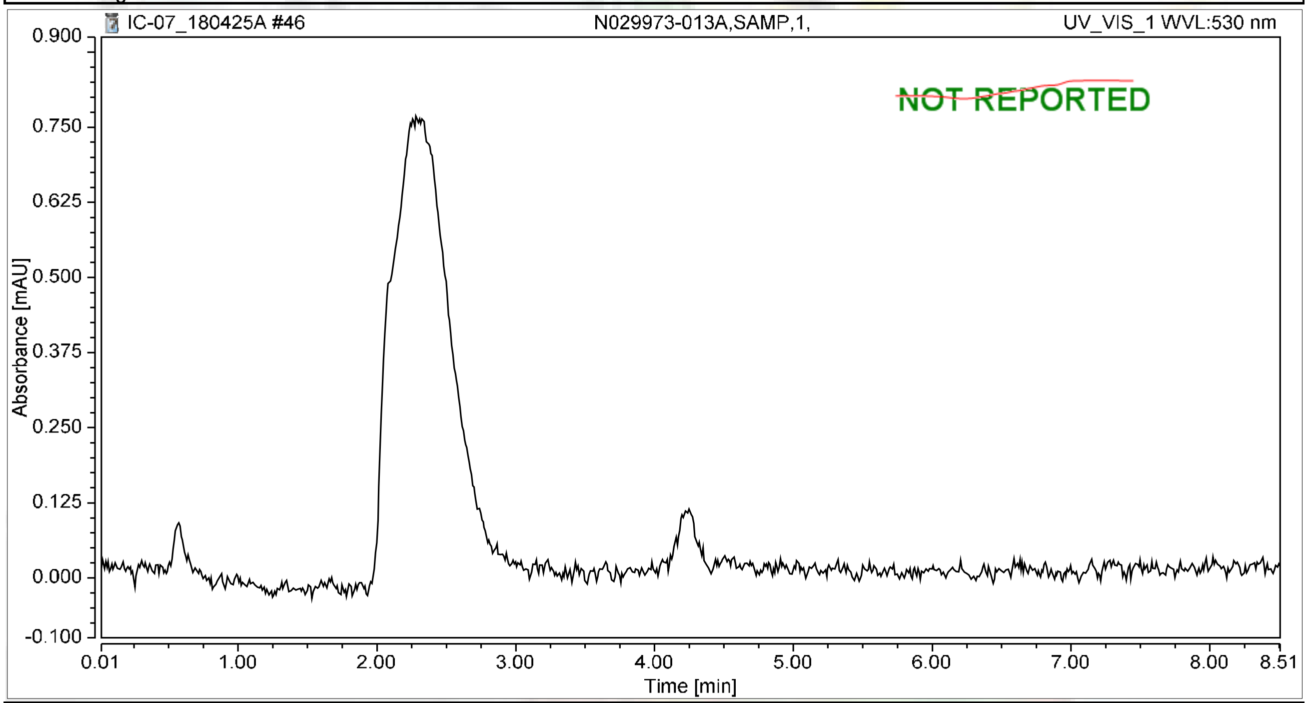
Chromatogram and Results

Injection Details

Injection Name:	**N029973-013A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 14:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

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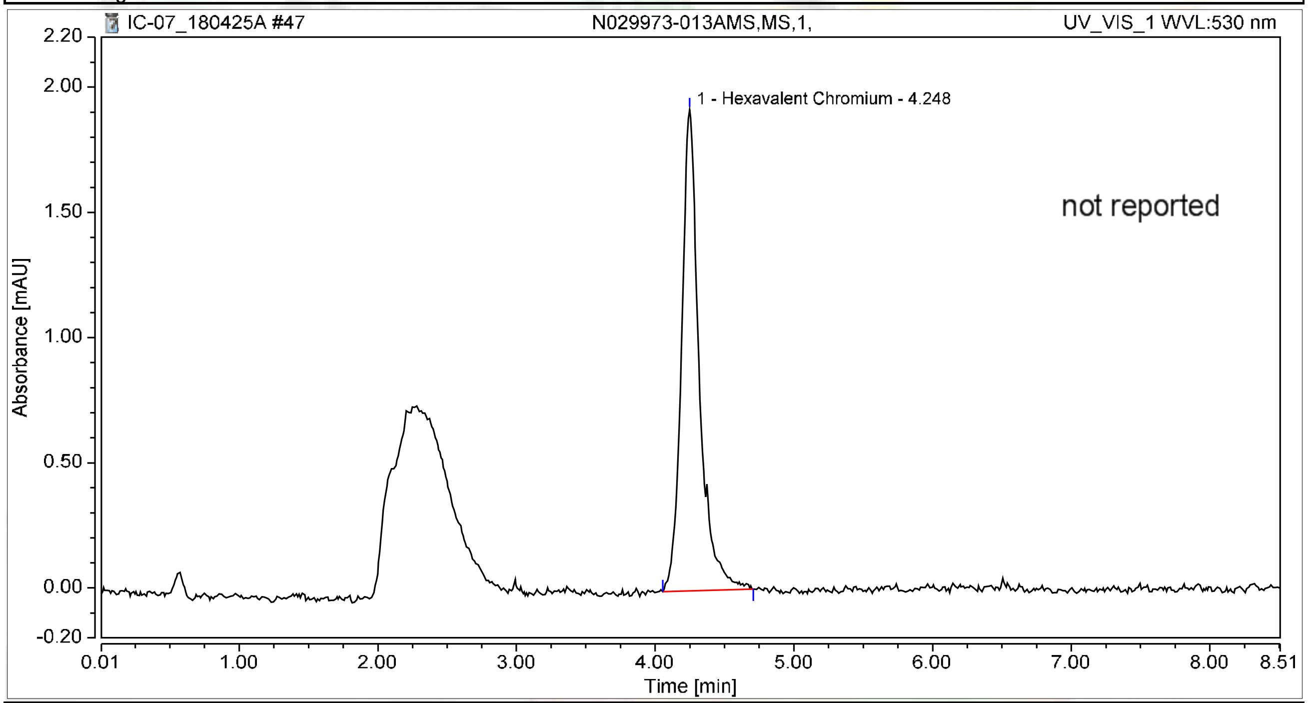
Chromatogram and Results

Injection Details

Injection Name:	**N029973-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 14:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

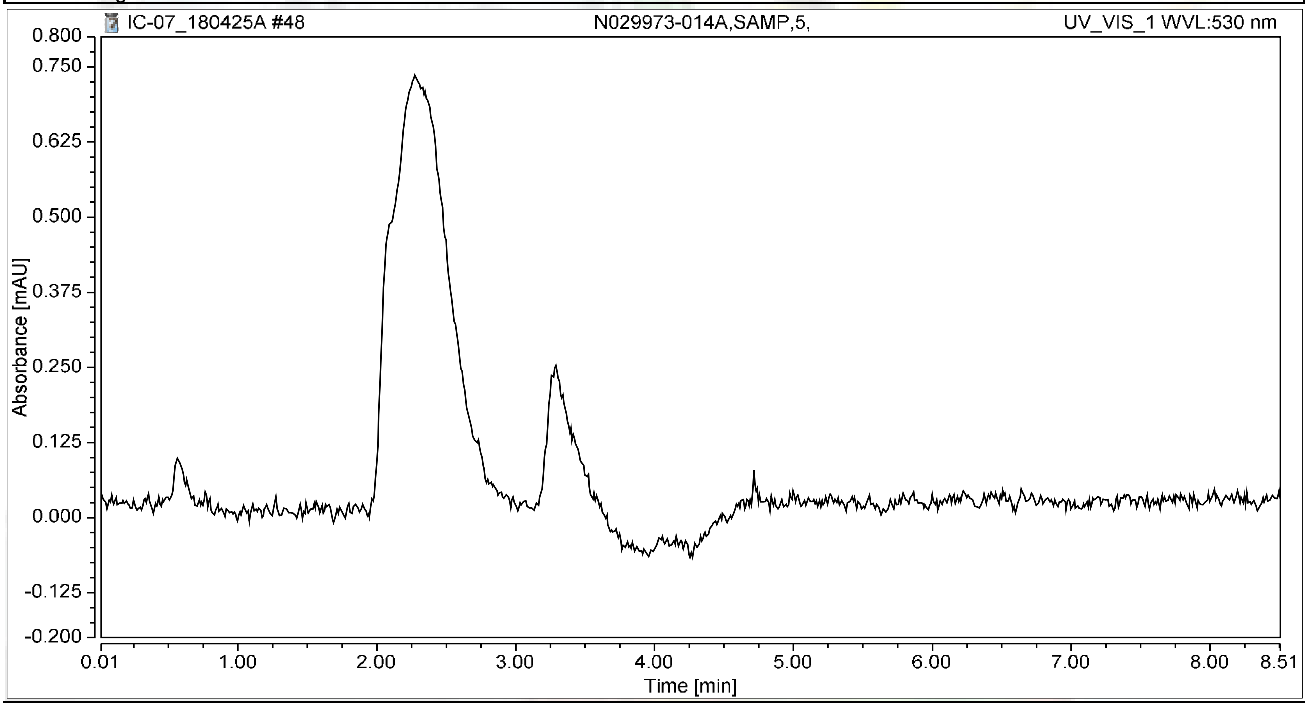
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.285	1.922	100.00	100.00	1.1238
Total:			**0.285**	**1.922**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-014A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 14:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

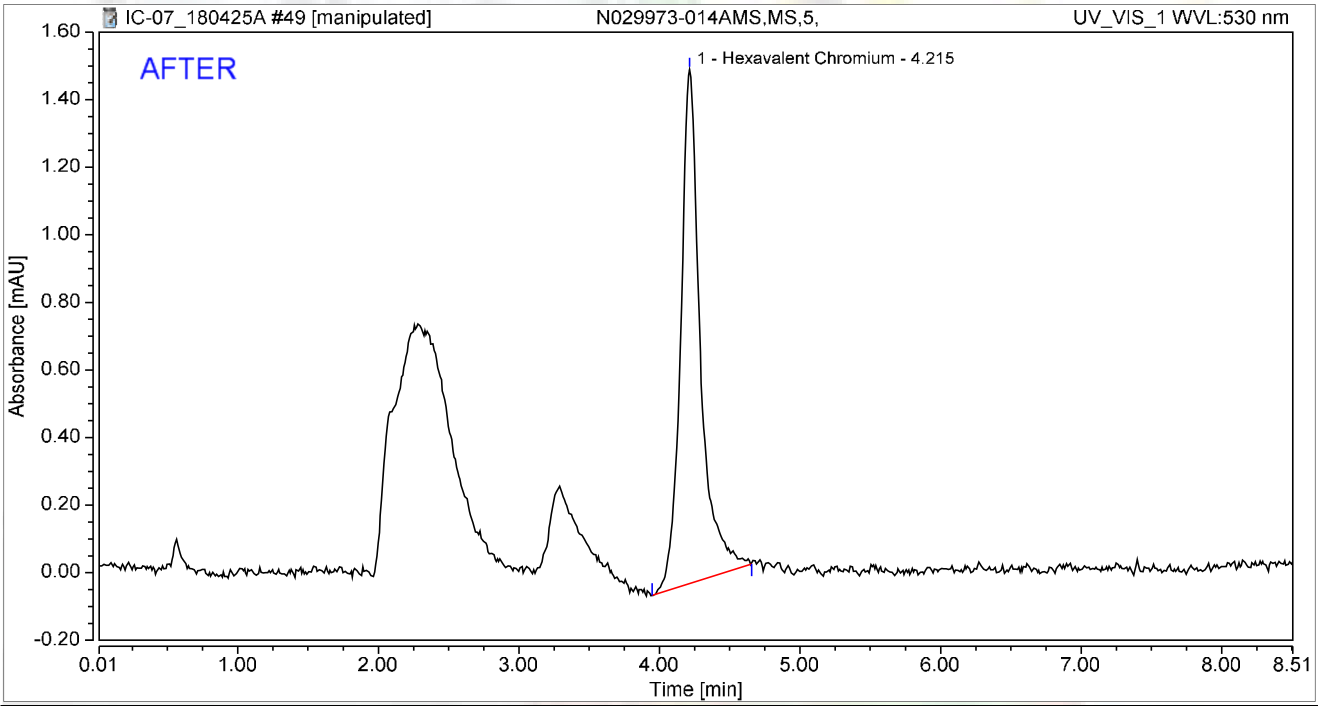
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-014AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.249	1.521	100.00	100.00	0.9807
Total:			**0.249**	**1.521**	**100.00**	**100.00**	

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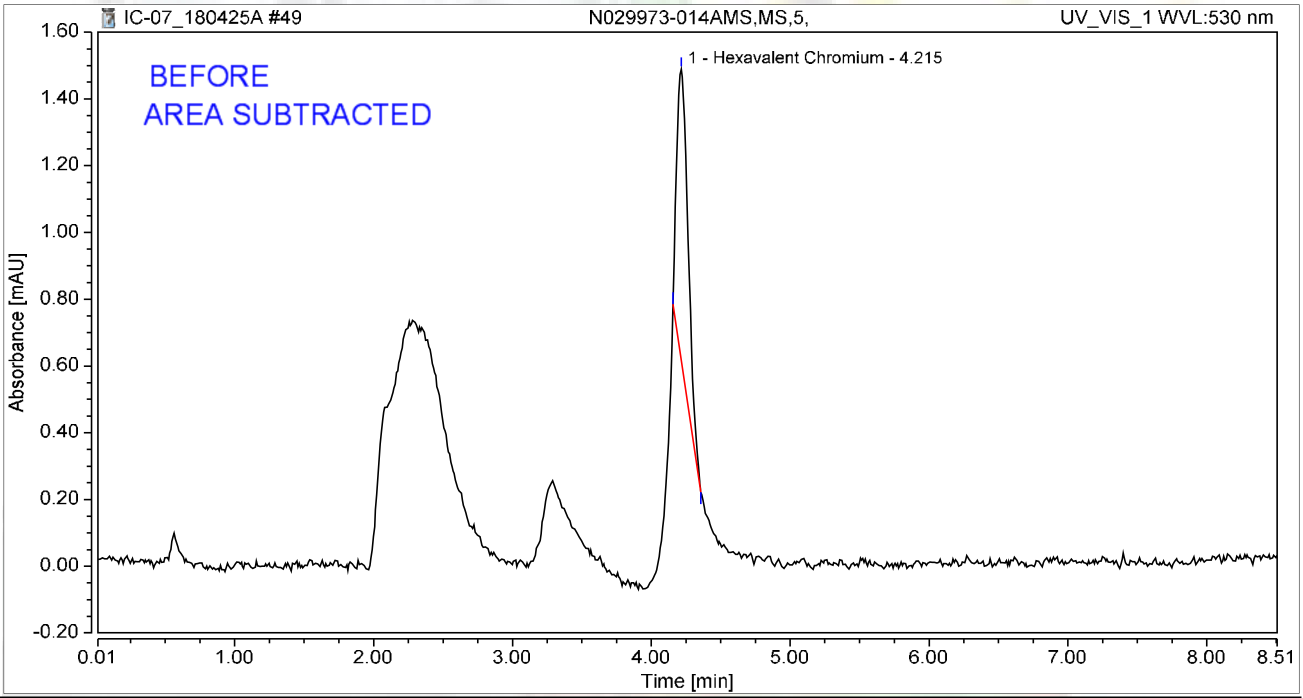
Chromatogram and Results

Injection Details

Injection Name:	**N029973-014AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.083	0.868	100.00	100.00	0.3256
Total:			**0.083**	**0.868**	**100.00**	**100.00**	

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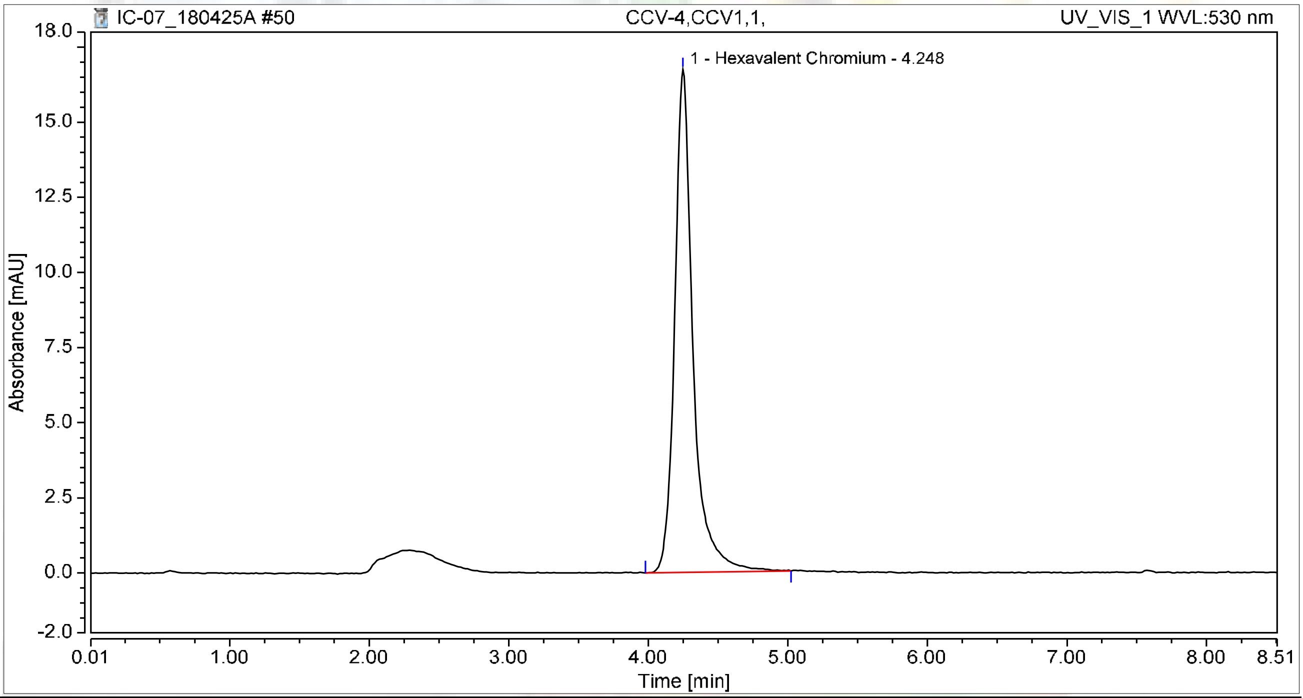
Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 15:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

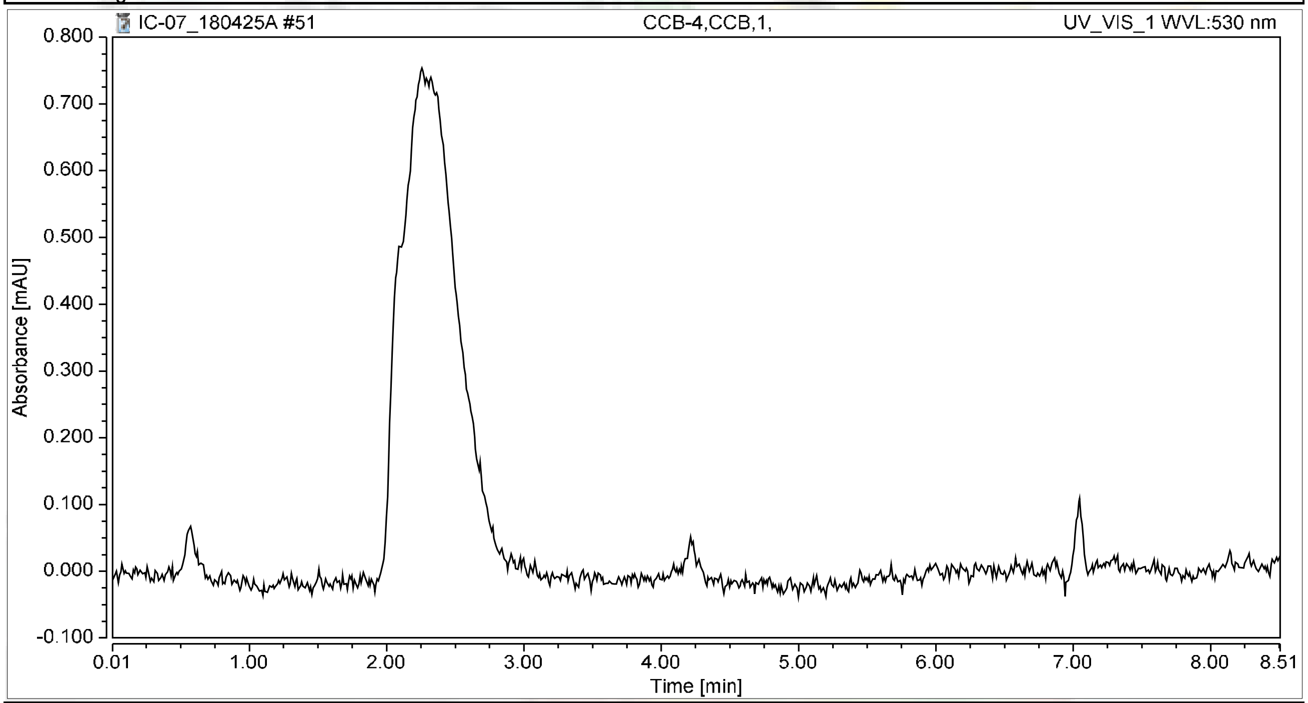
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.541	16.730	100.00	100.00	10.0229
Total:			**2.541**	**16.730**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 15:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

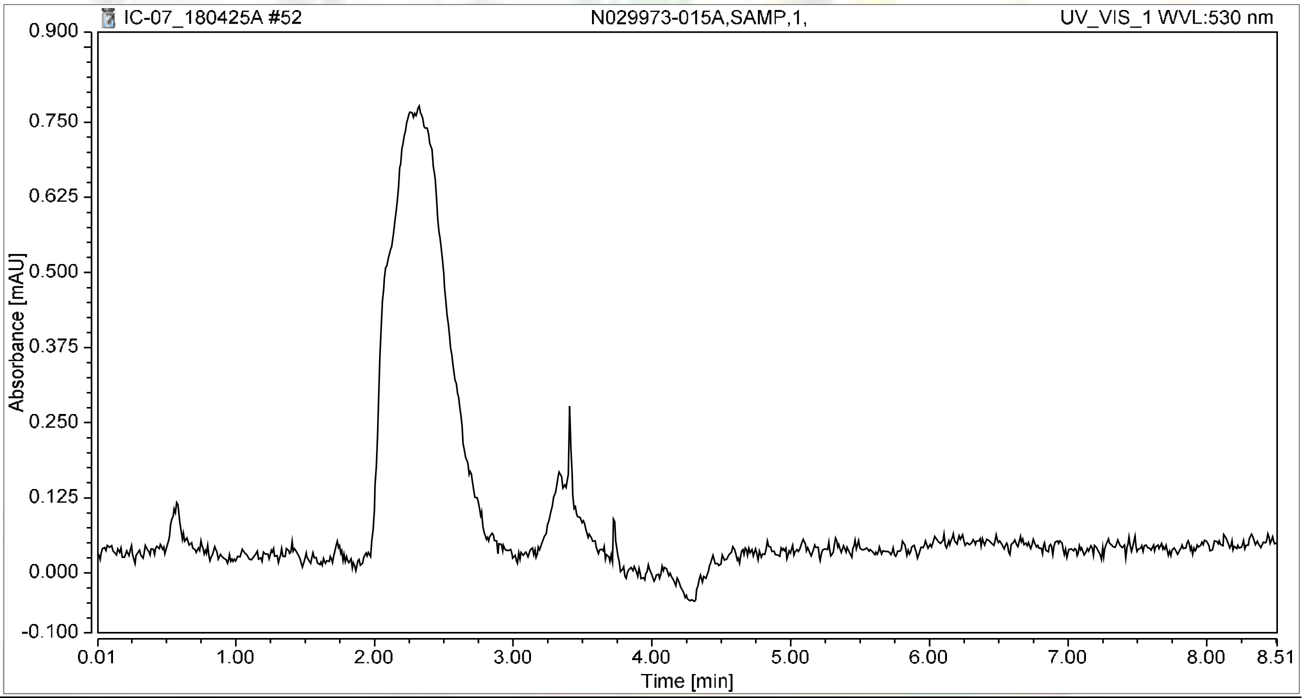
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 15:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

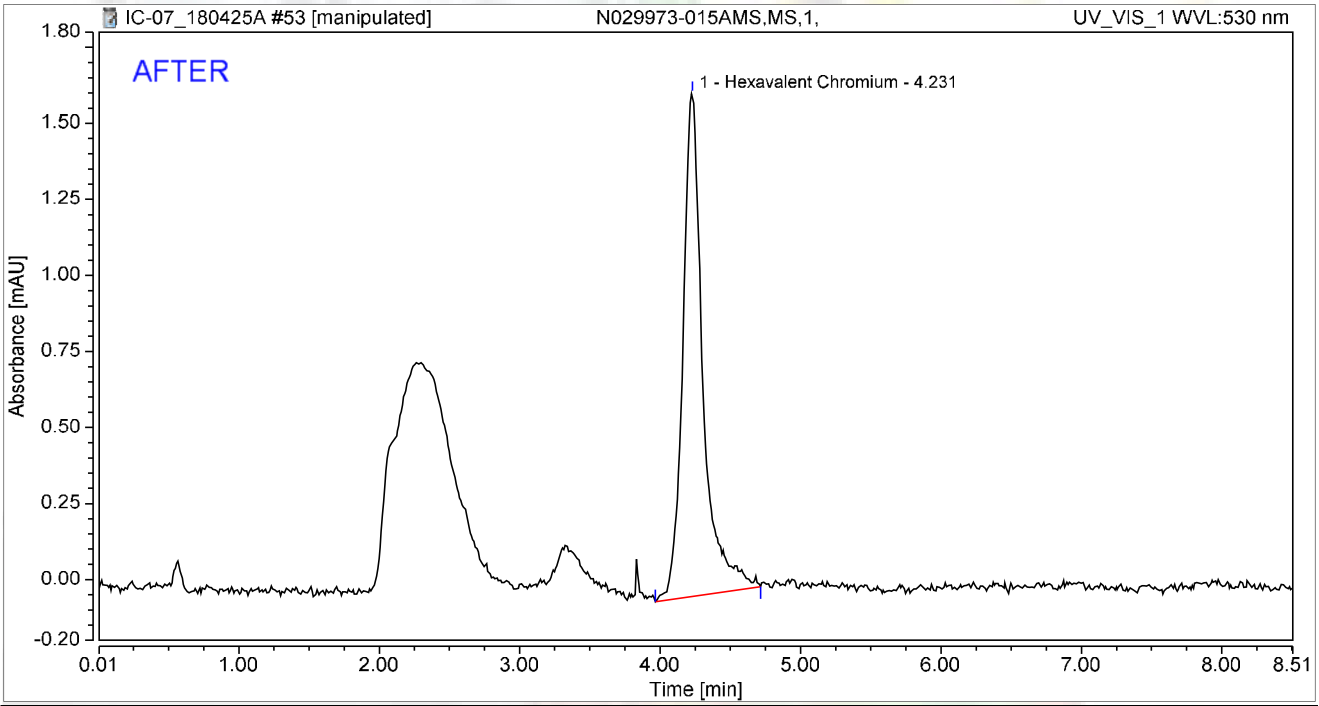
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.275	1.653	100.00	100.00	1.0829
Total:			**0.275**	**1.653**	**100.00**	**100.00**	

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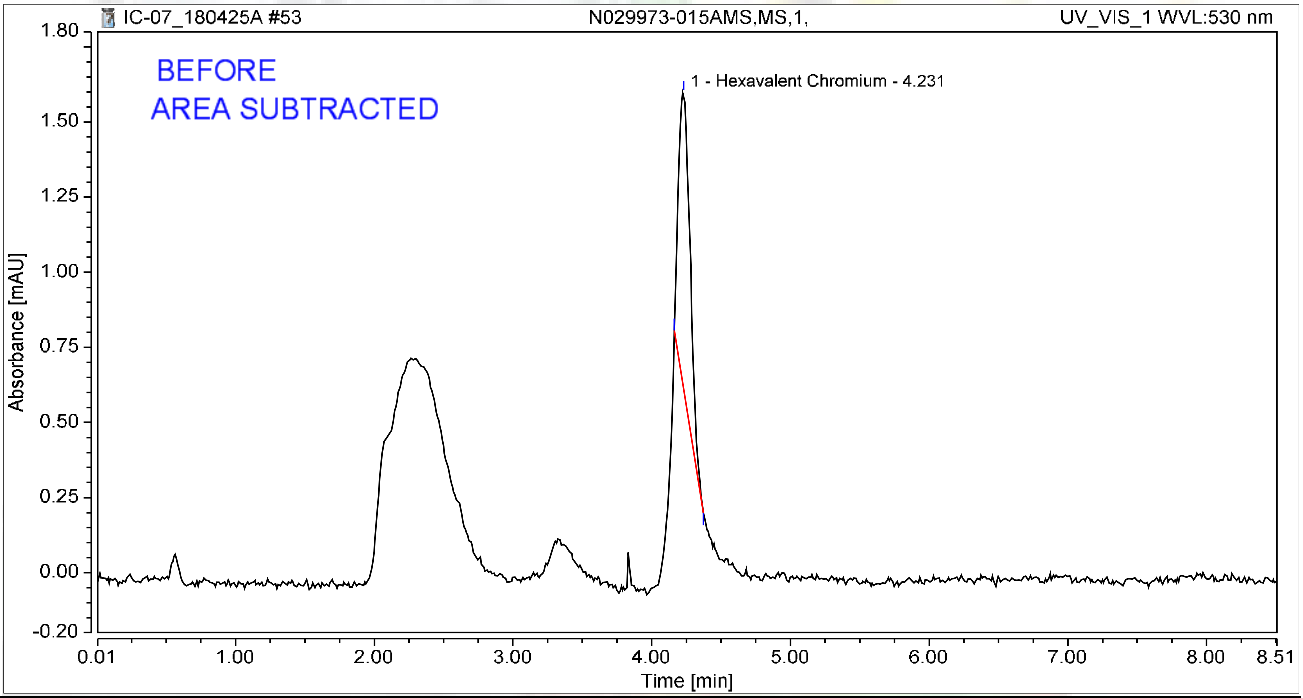
Chromatogram and Results

Injection Details

Injection Name:	**N029973-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 15:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.094	0.986	100.00	100.00	0.3727
Total:			**0.094**	**0.986**	**100.00**	**100.00**	

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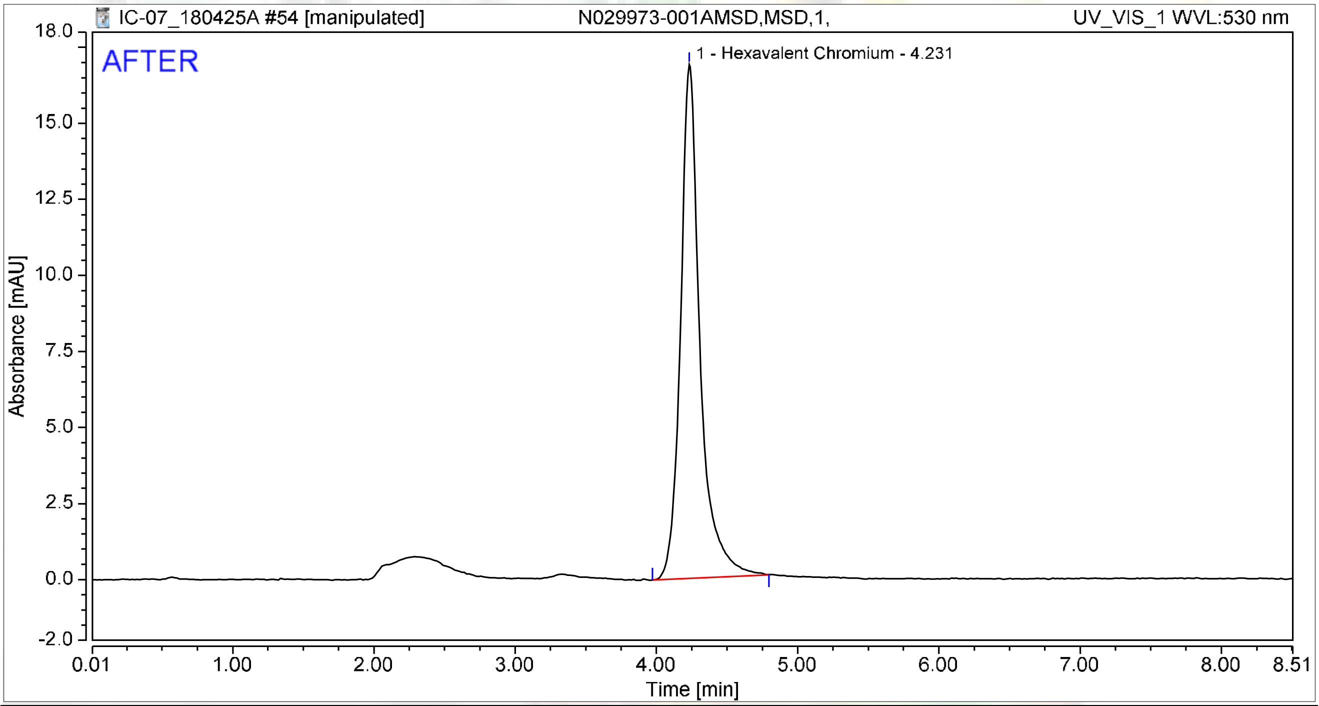
Chromatogram and Results

Injection Details	10		
Injection Name:	**N029973-001AMSD,MSD,~~1~~,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 15:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.704	16.891	100.00	100.00	10.6675
Total:			**2.704**	**16.891**	**100.00**	**100.00**	

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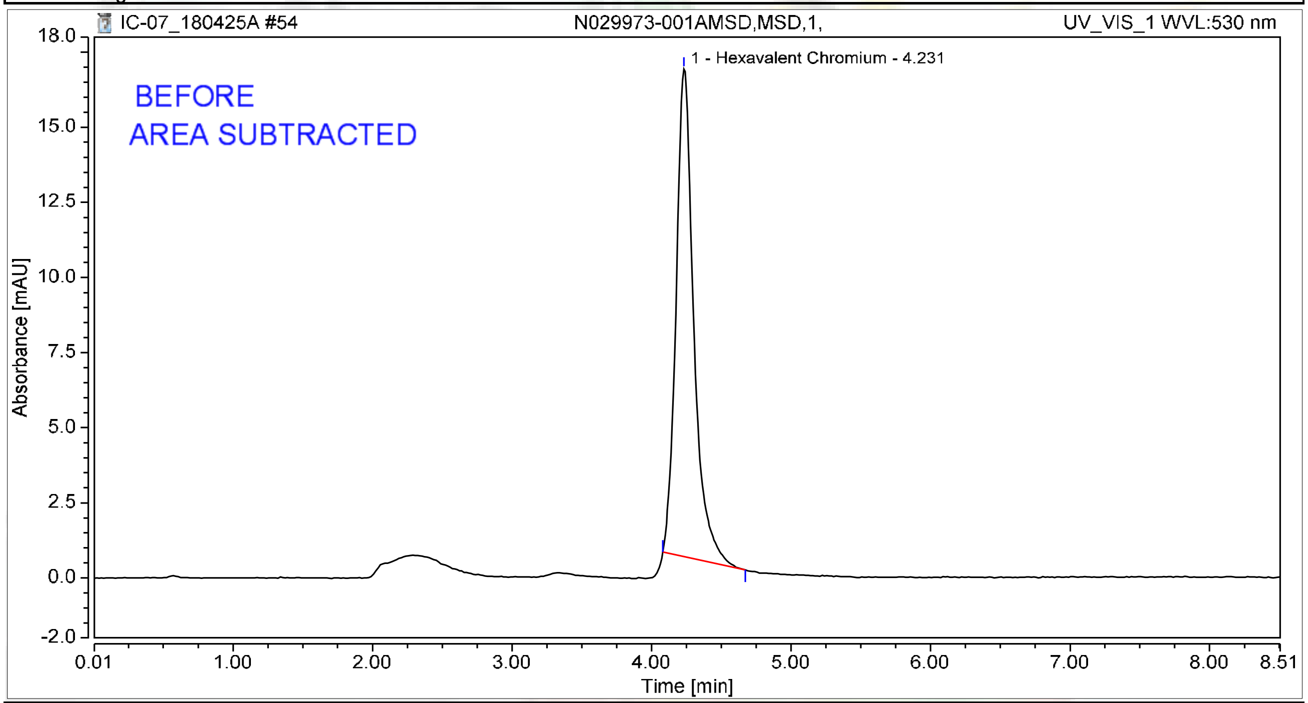
Chromatogram and Results

Injection Details

Injection Name:	**N029973-001AMSD,MSD,~~1,~~** 10	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 15:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.386	16.224	100.00	100.00	9.4103
Total:			**2.386**	**16.224**	**100.00**	**100.00**	

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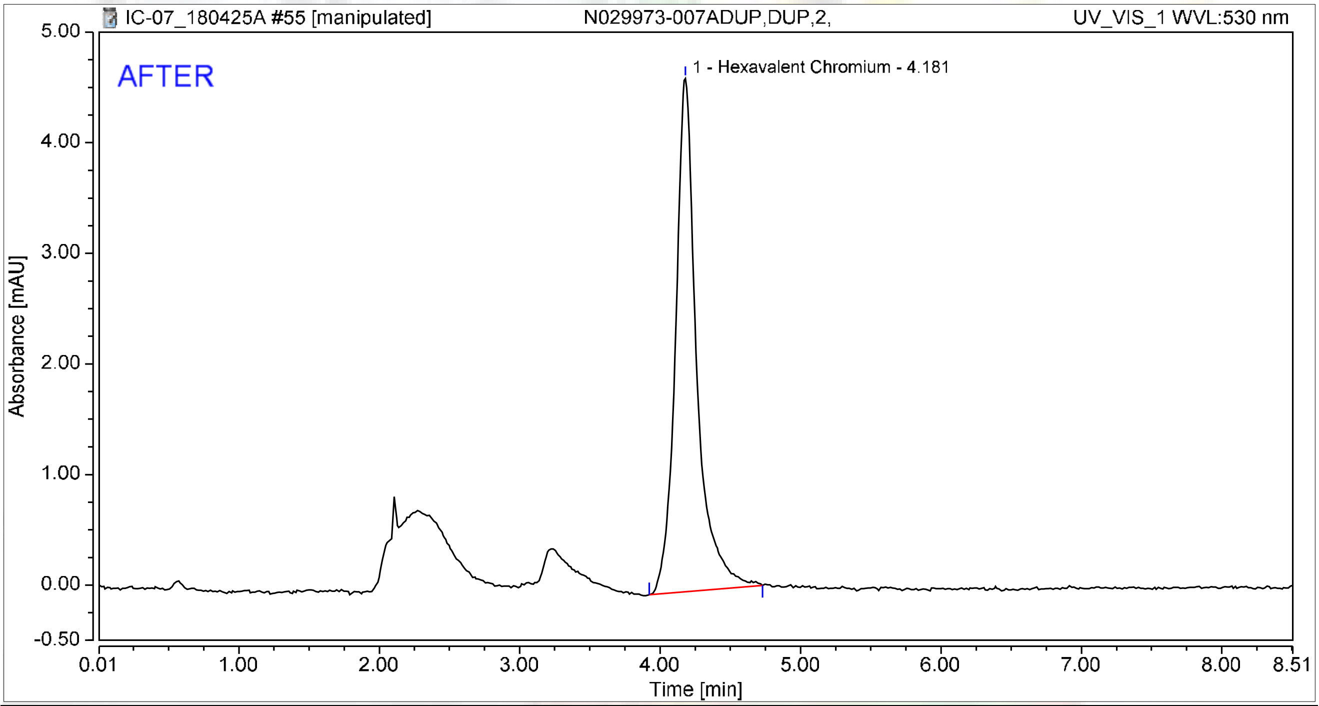
Chromatogram and Results

Injection Details

Injection Name:	**N029973-007ADUP,DUP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 15:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.814	4.643	100.00	100.00	3.2091
Total:			**0.814**	**4.643**	**100.00**	**100.00**	

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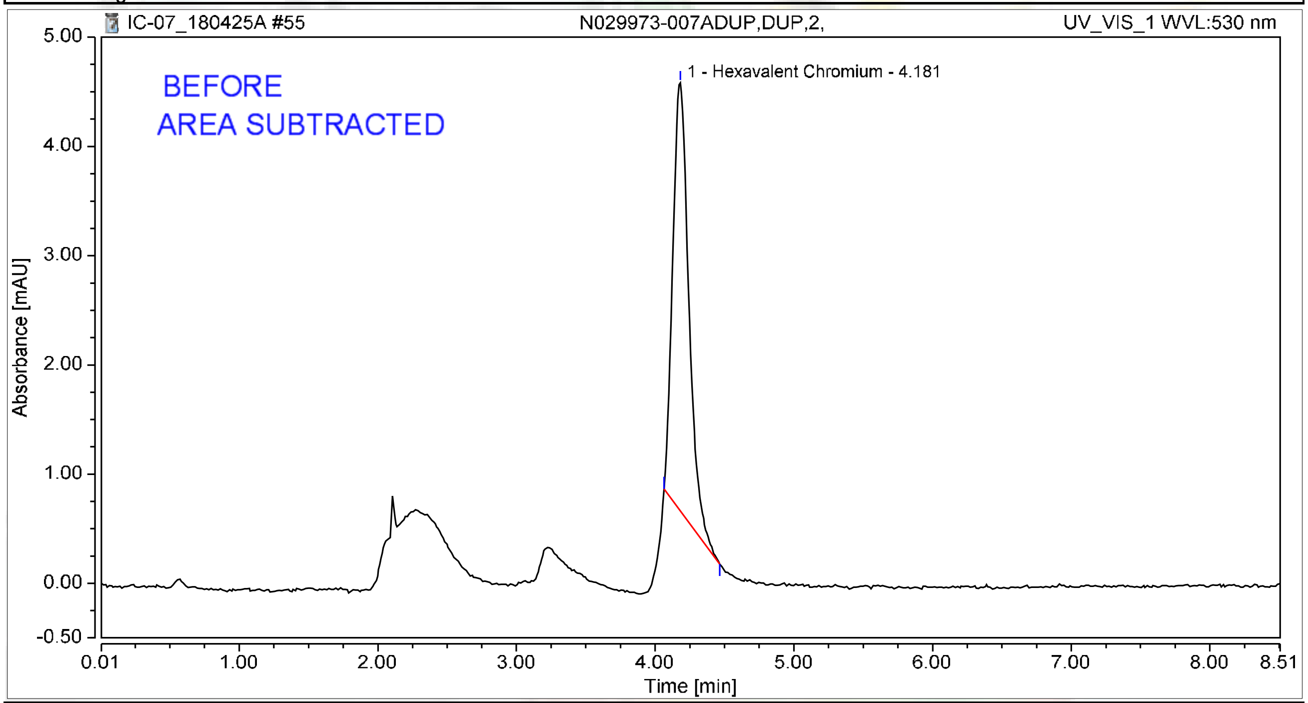
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029973-007ADUP,DUP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 15:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.526	3.918	100.00	100.00	2.0758
Total:			**0.526**	**3.918**	**100.00**	**100.00**	

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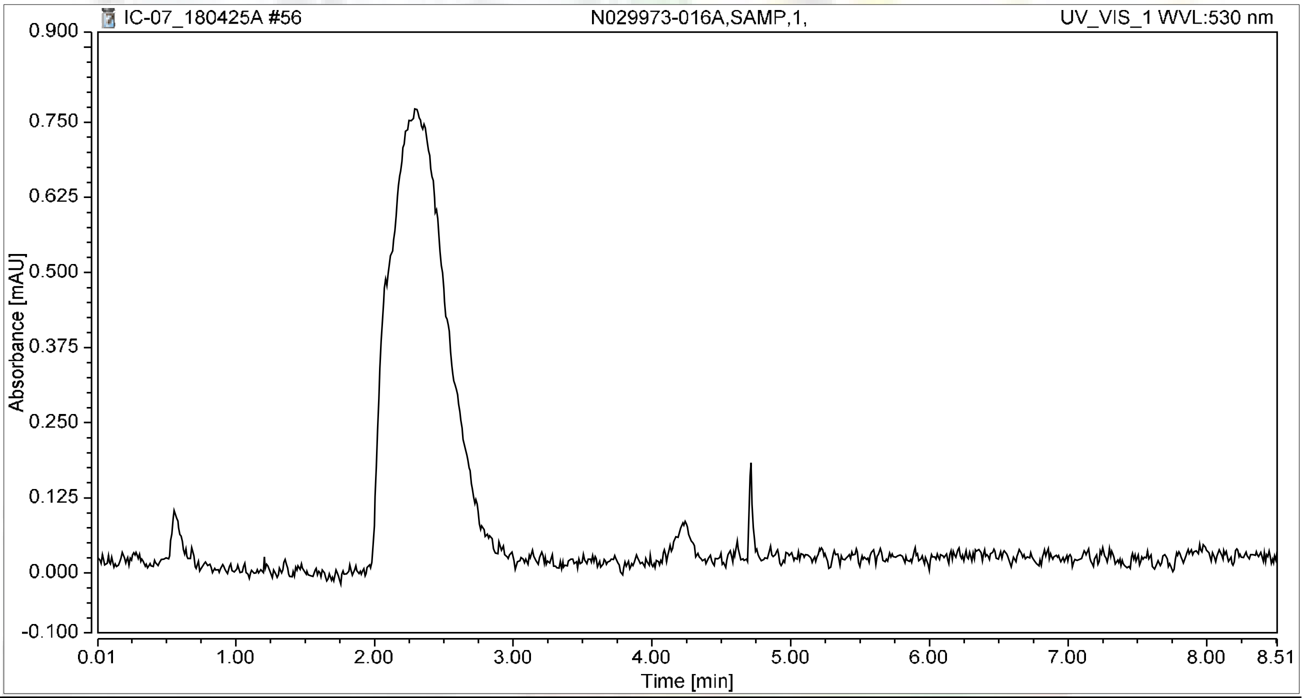
Chromatogram and Results

Injection Details

Injection Name:	**N029973-016A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 16:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

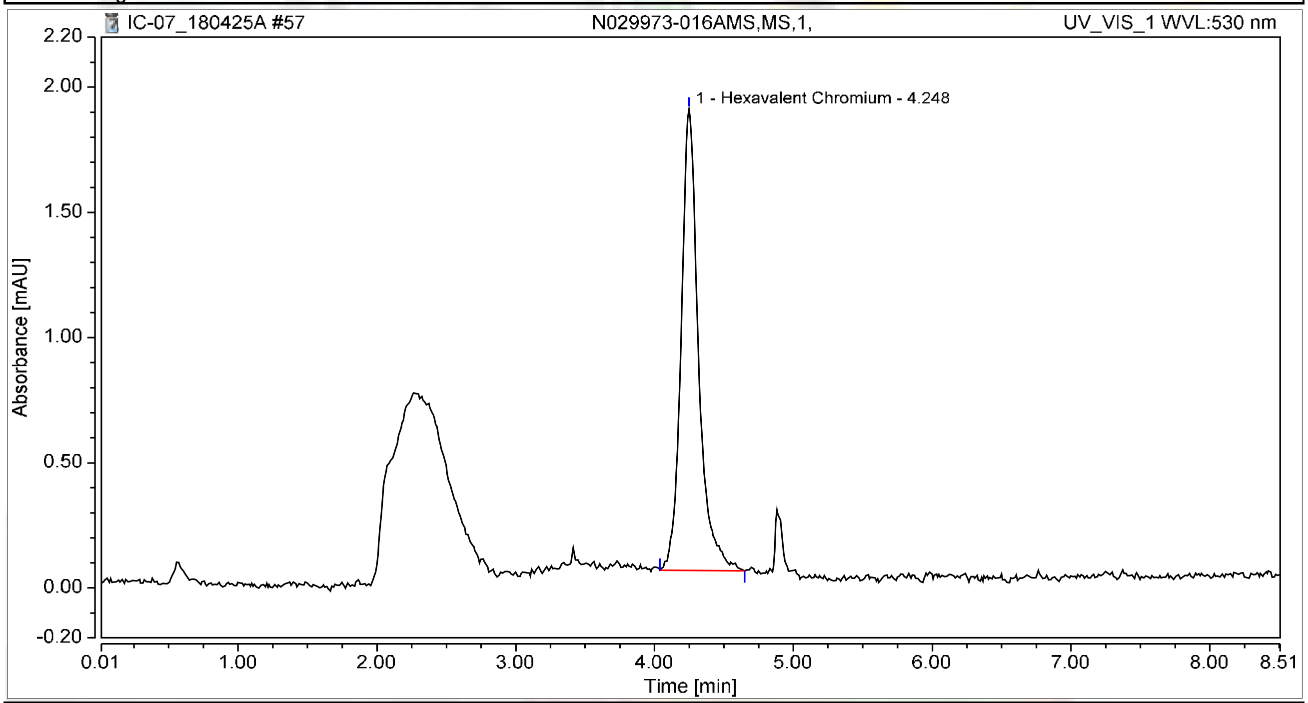
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-016AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

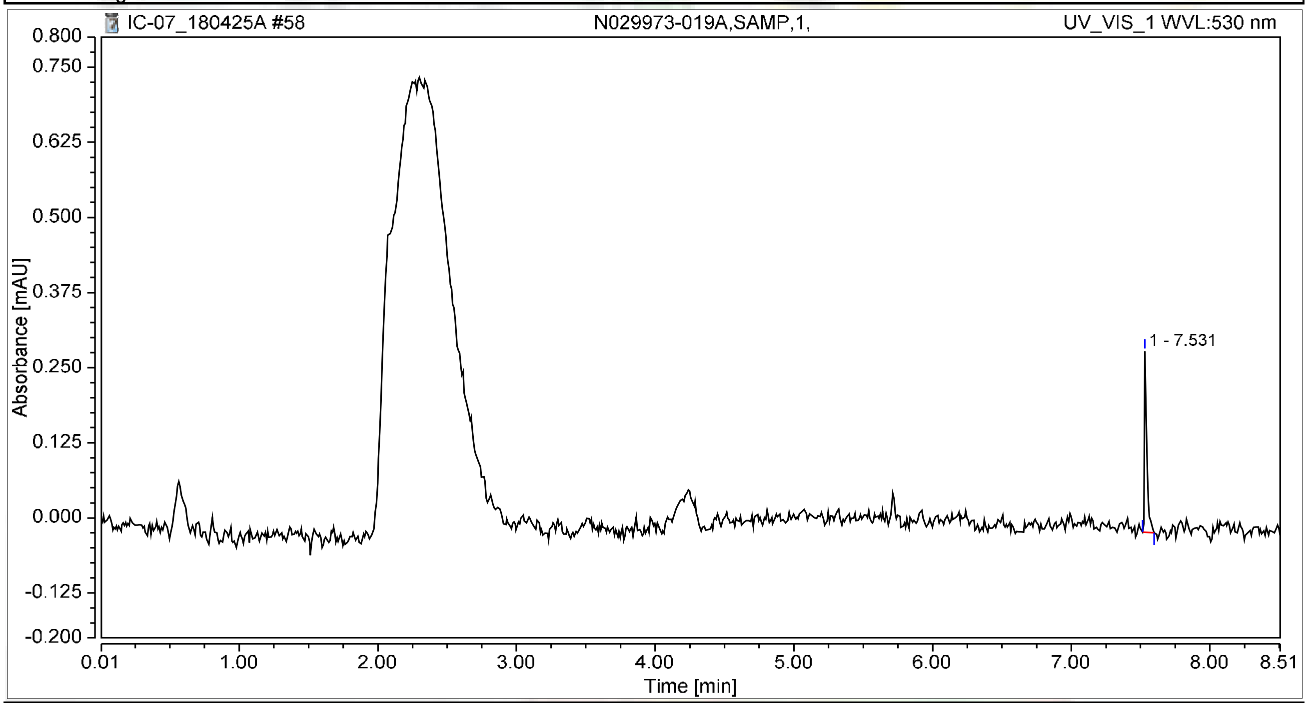
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.268	1.843	100.00	100.00	1.0581
Total:			**0.268**	**1.843**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-019A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 16:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

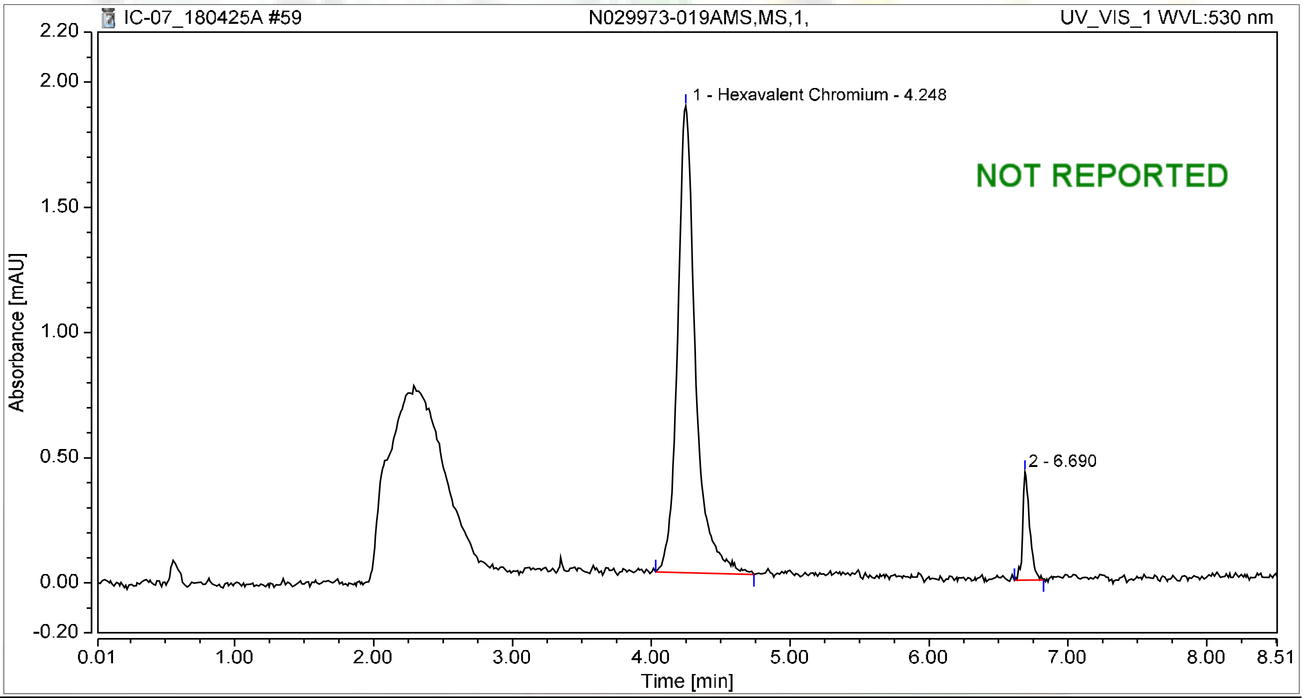
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.531	0.006	0.301	100.00	100.00	n.a.
Total:			**0.006**	**0.301**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-019AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 16:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

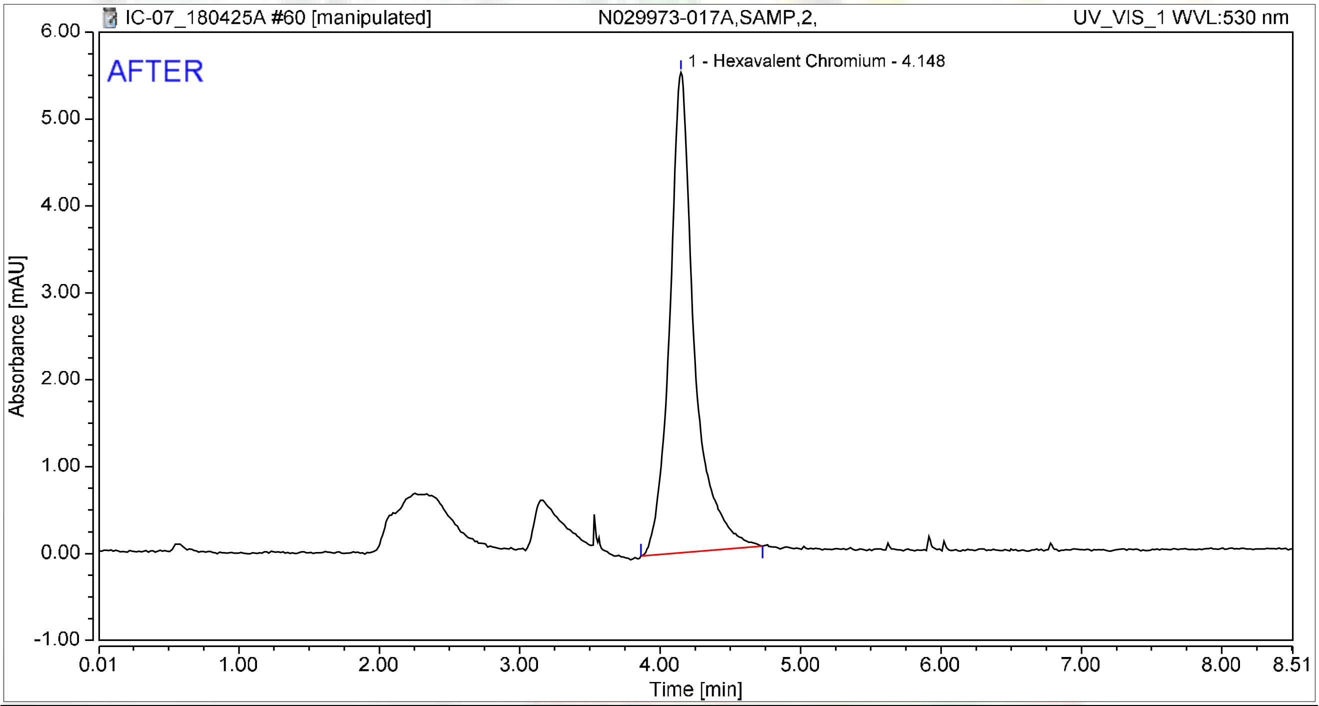
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.281	1.864	91.73	81.23	1.1072
2		6.690	0.025	0.431	8.27	18.77	n.a.
Total:			**0.306**	**2.295**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-017A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 16:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	1.127	5.529	100.00	100.00	4.4451
Total:			**1.127**	**5.529**	**100.00**	**100.00**	

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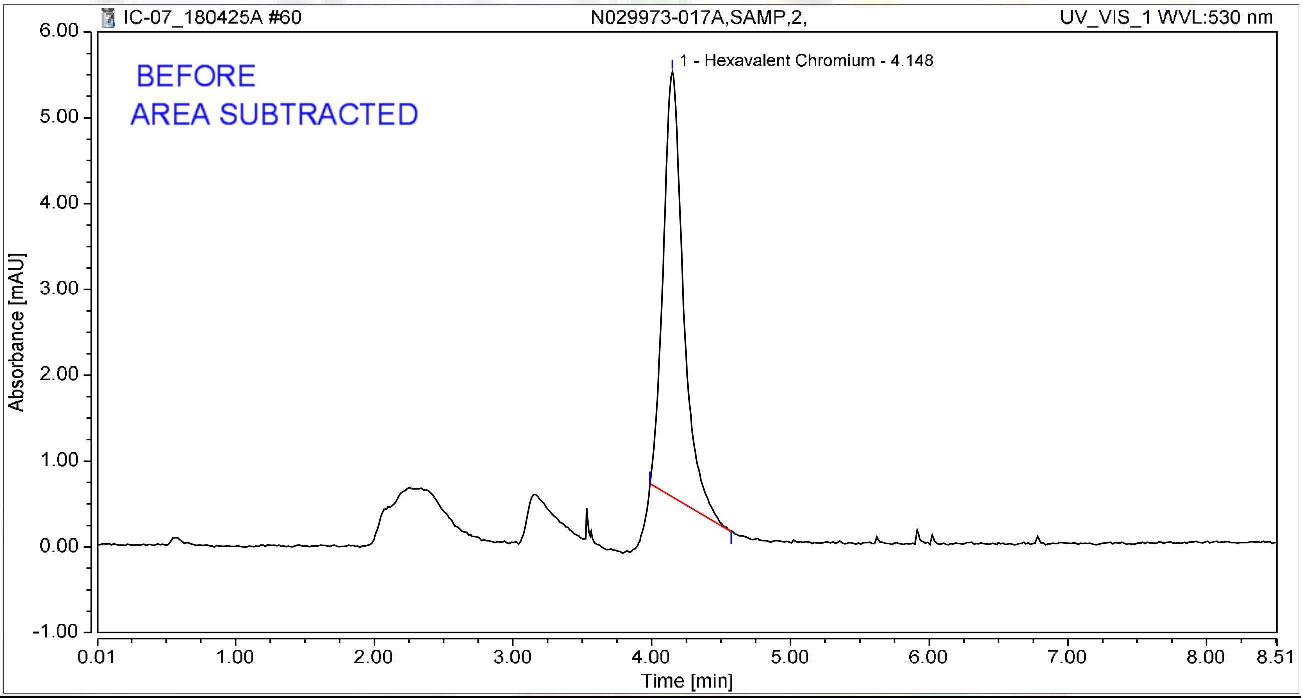
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029973-017A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 16:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.838	4.951	100.00	100.00	3.3048
Total:			**0.838**	**4.951**	**100.00**	**100.00**	

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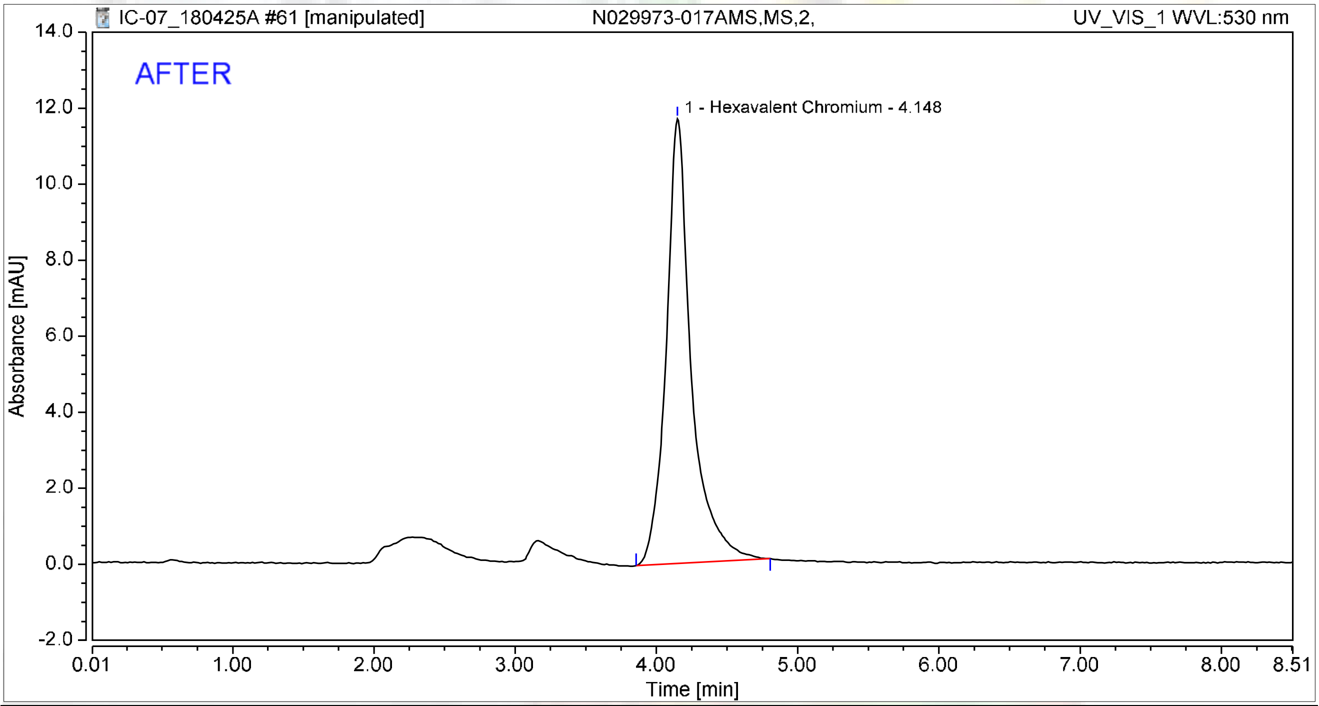
Chromatogram and Results

Injection Details

Injection Name:	**N029973-017AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 16:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.413	11.699	100.00	100.00	9.5198
Total:			**2.413**	**11.699**	**100.00**	**100.00**	

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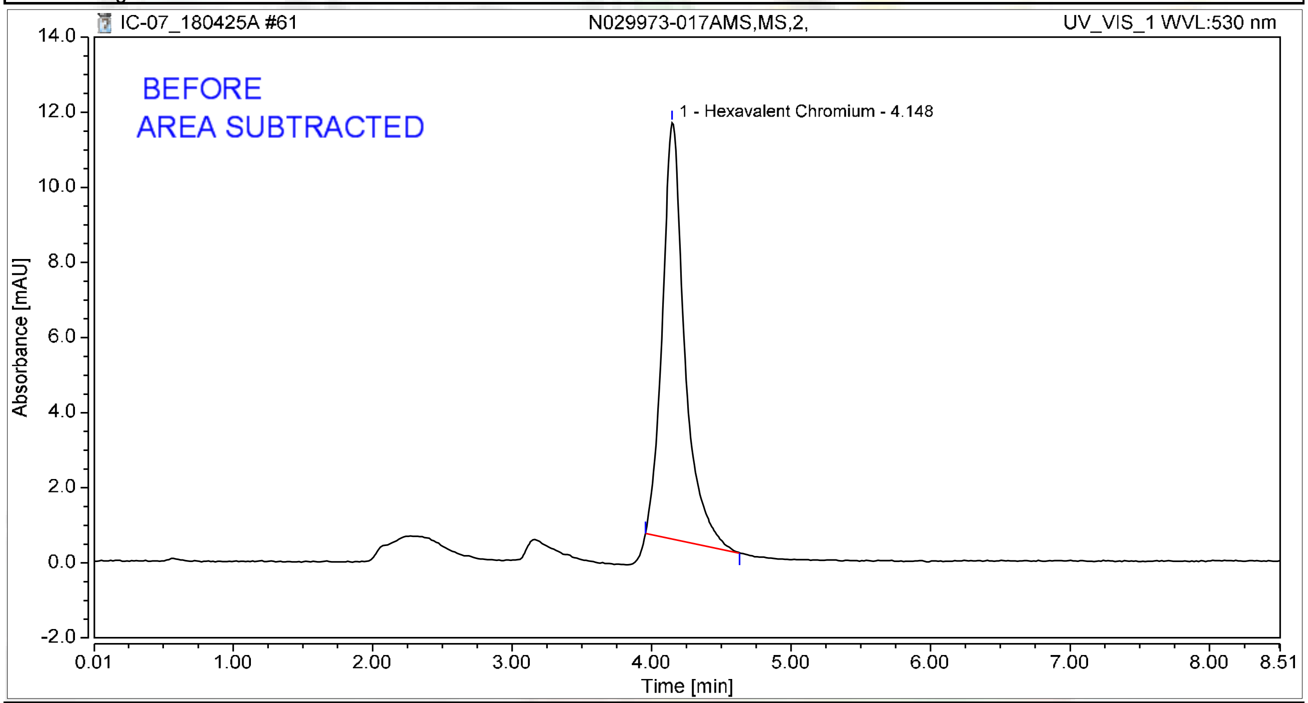
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029973-017AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 16:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.062	11.087	100.00	100.00	8.1347
Total:			**2.062**	**11.087**	**100.00**	**100.00**	

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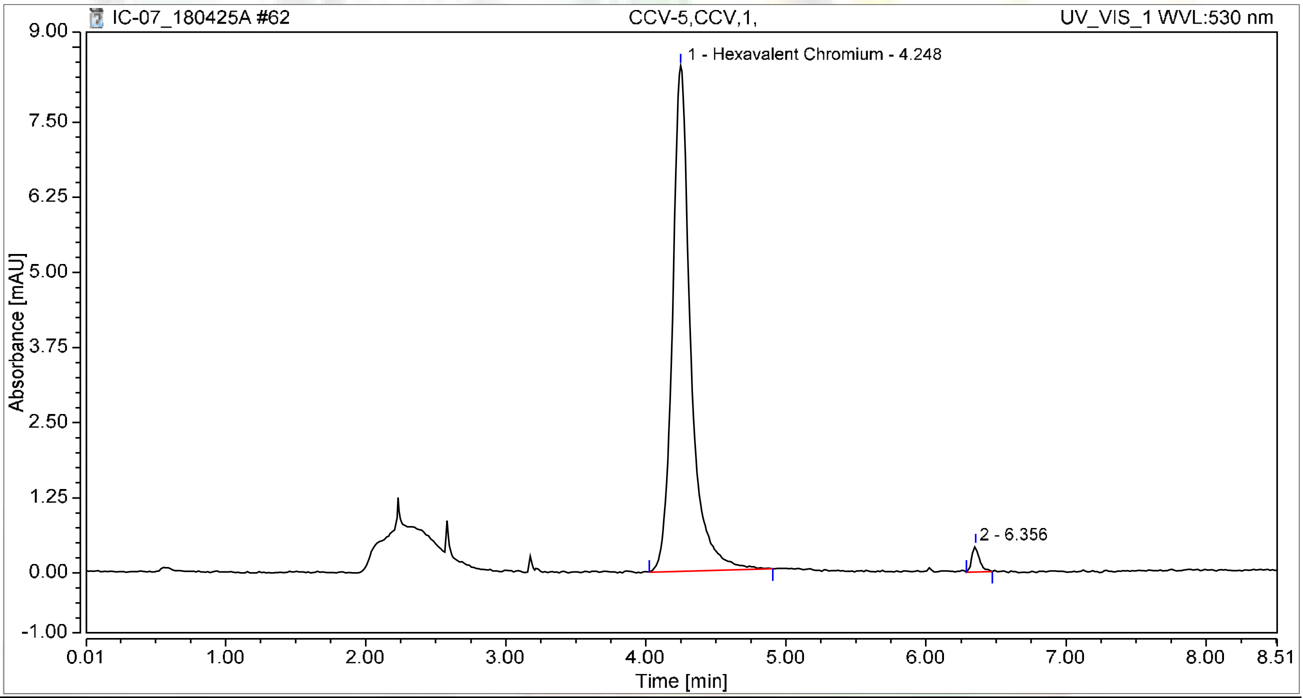
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 17:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

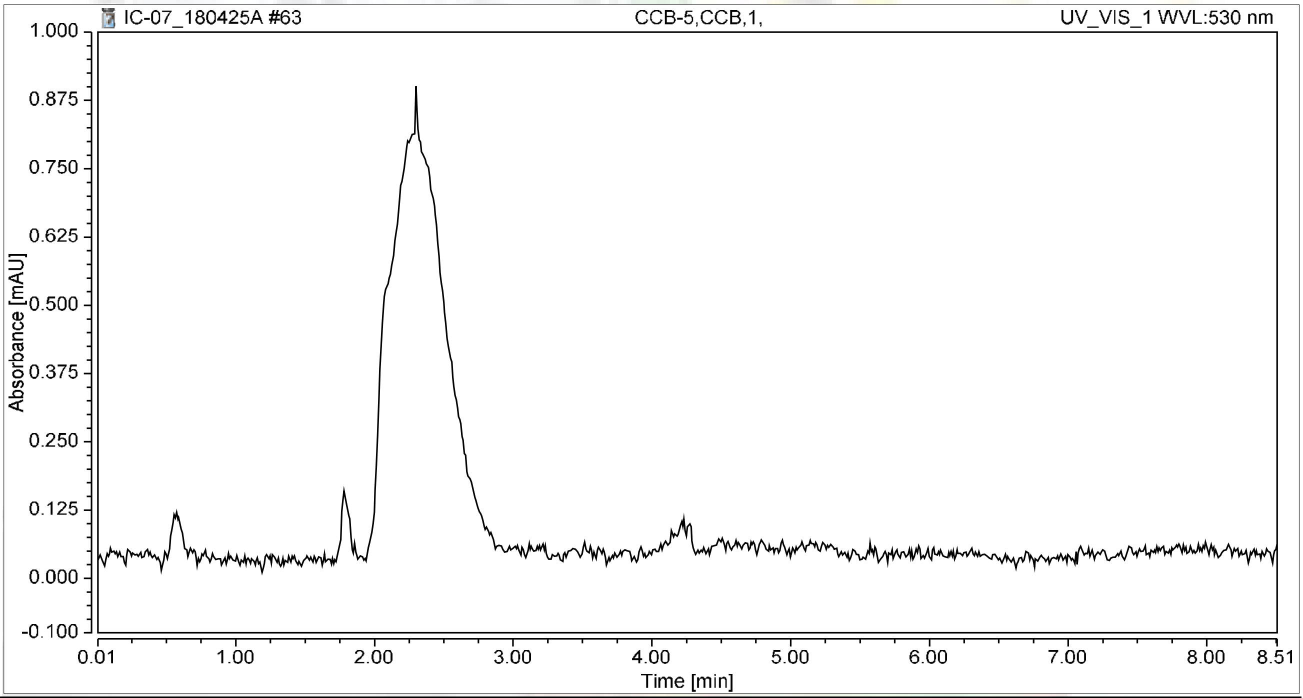
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.269	8.419	97.85	95.08	5.0040
2		6.356	0.028	0.436	2.15	4.92	n.a.
Total:			**1.296**	**8.855**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 17:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

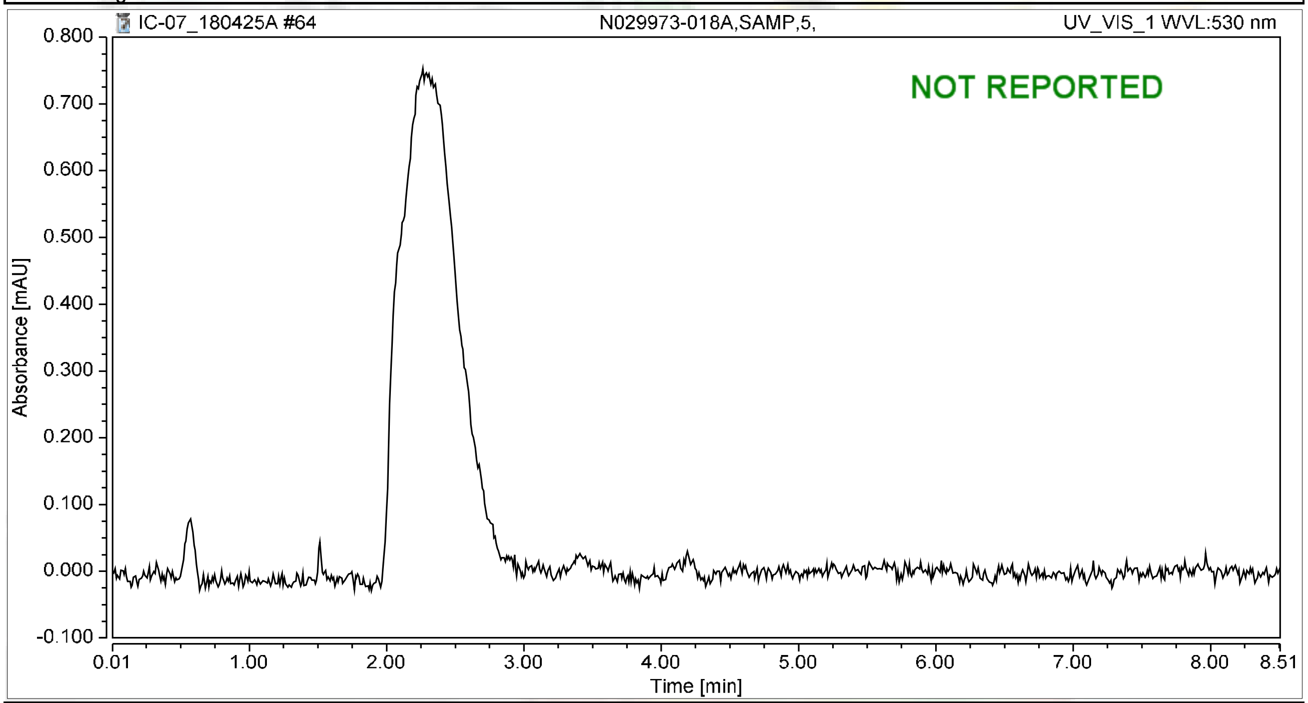
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-018A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

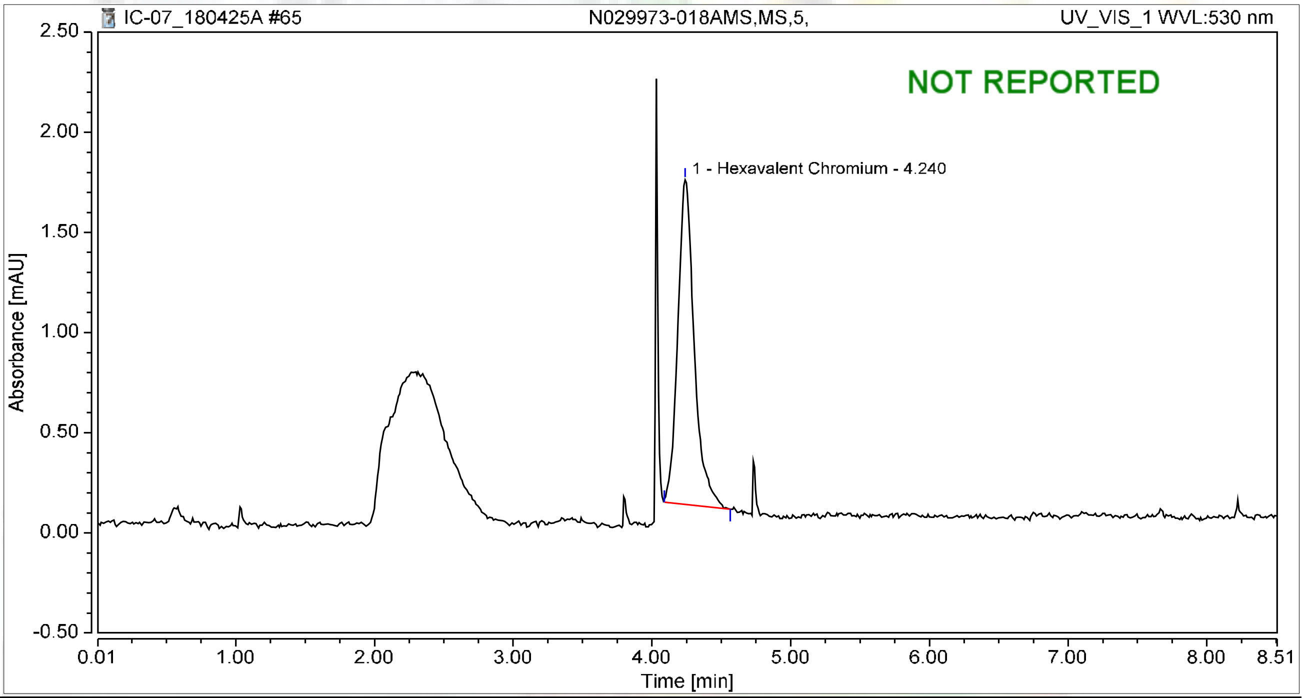
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-018AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 17:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

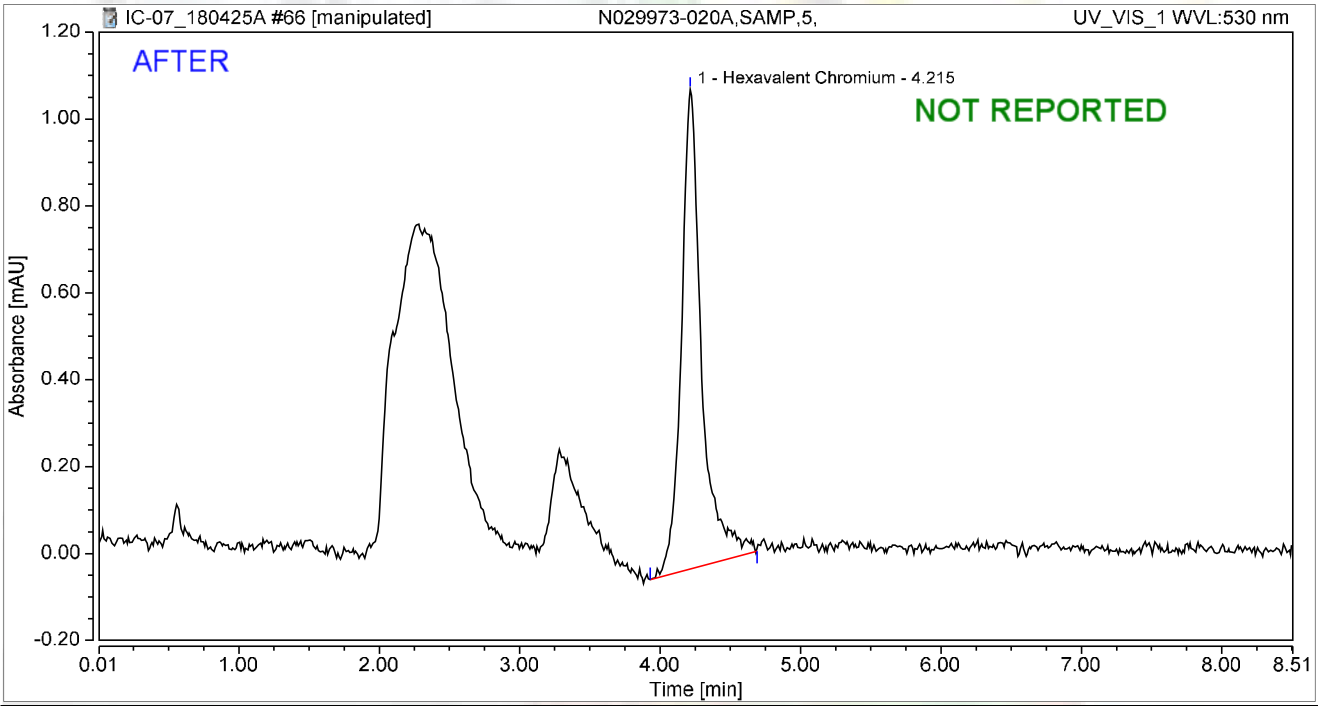
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.224	1.619	100.00	100.00	0.8825
Total:			**0.224**	**1.619**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-020A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 17:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.185	1.104	100.00	100.00	0.7287
Total:			**0.185**	**1.104**	**100.00**	**100.00**	

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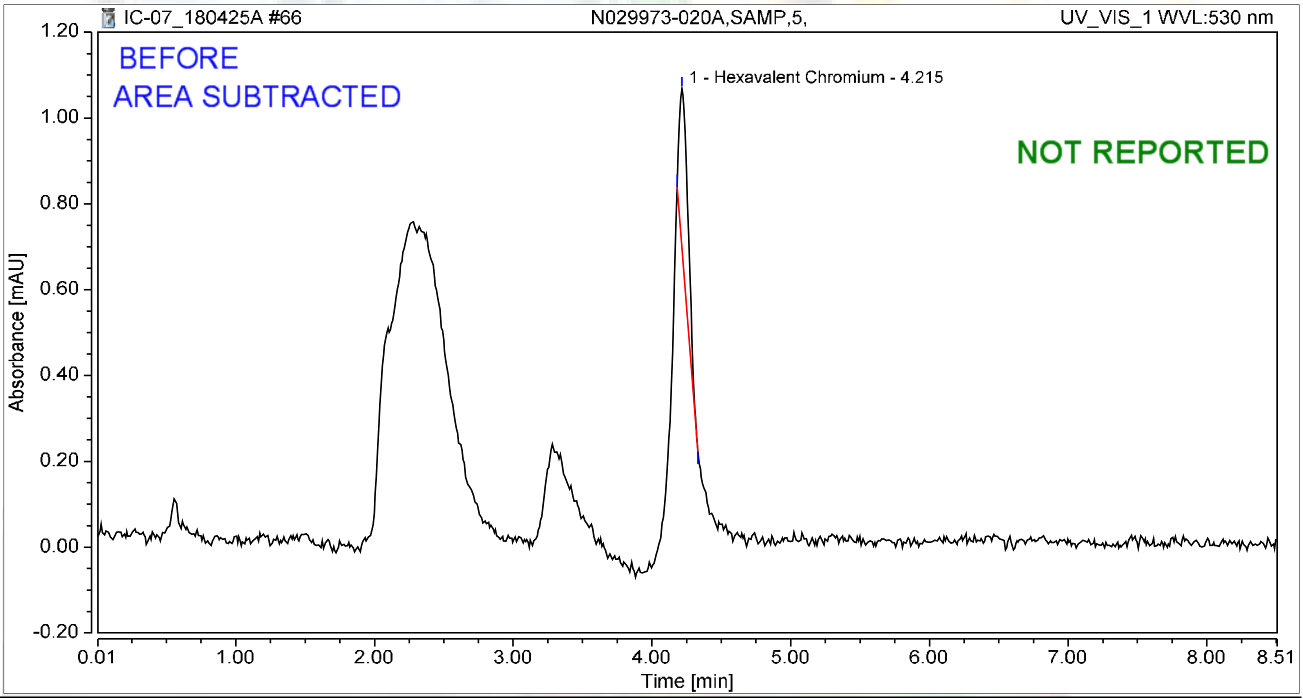
Chromatogram and Results

Injection Details

Injection Name:	**N029973-020A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 17:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.029	0.366	100.00	100.00	0.1130
Total:			**0.029**	**0.366**	**100.00**	**100.00**	

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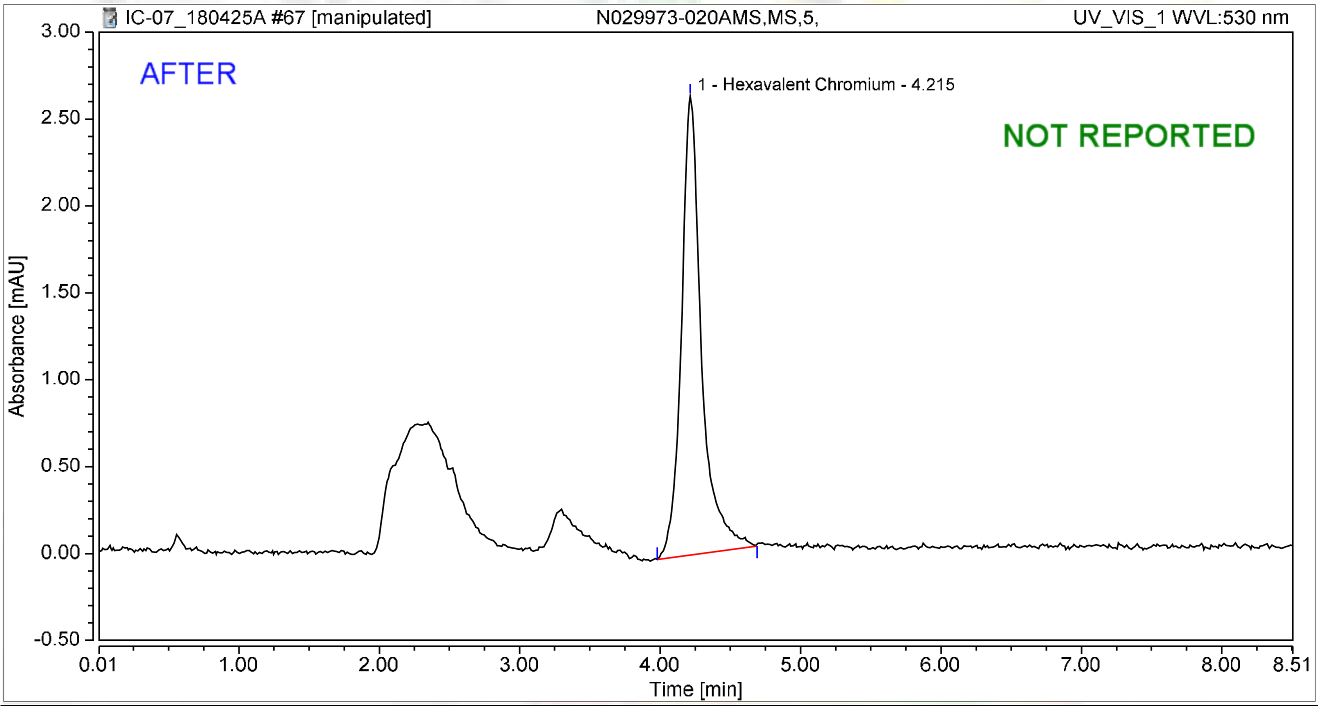
Chromatogram and Results

Injection Details

Injection Name:	**N029973-020AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 17:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.438	2.641	100.00	100.00	1.7275
Total:			**0.438**	**2.641**	**100.00**	**100.00**	

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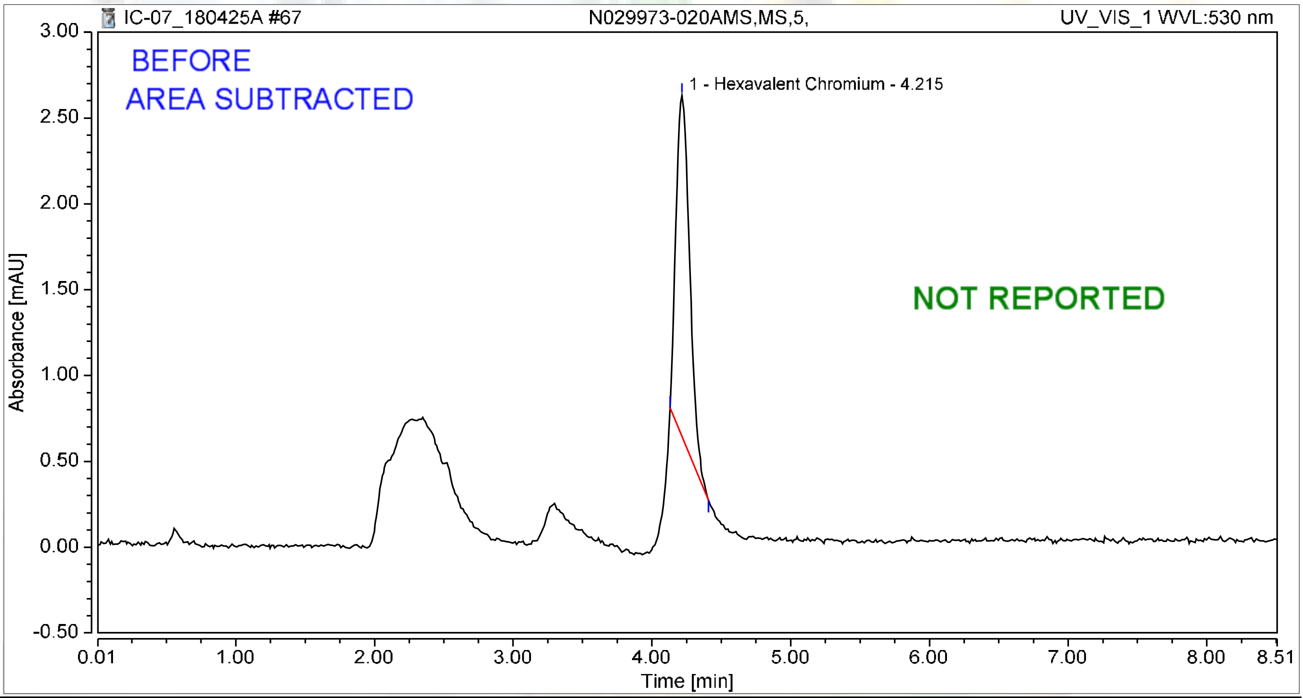
Chromatogram and Results

Injection Details

Injection Name:	**N029973-020AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 17:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.228	1.984	100.00	100.00	0.8983
Total:			**0.228**	**1.984**	**100.00**	**100.00**	

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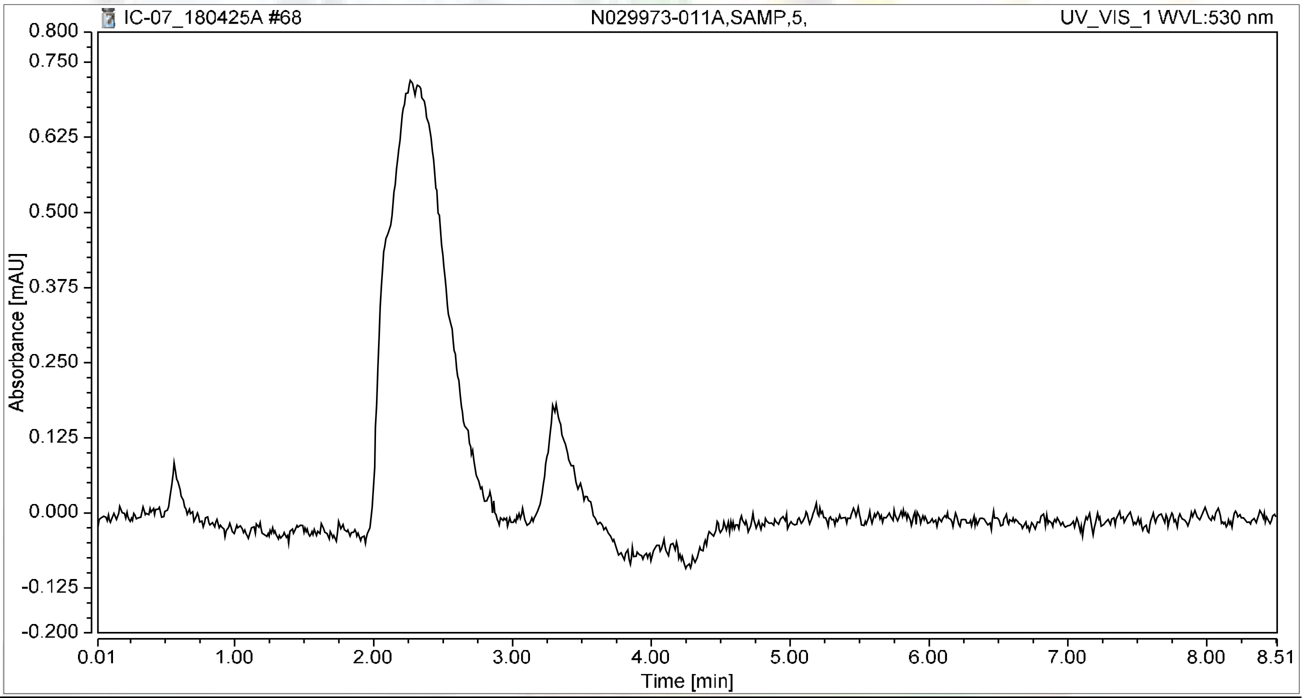
Chromatogram and Results

Injection Details

Injection Name:	**N029973-011A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 17:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

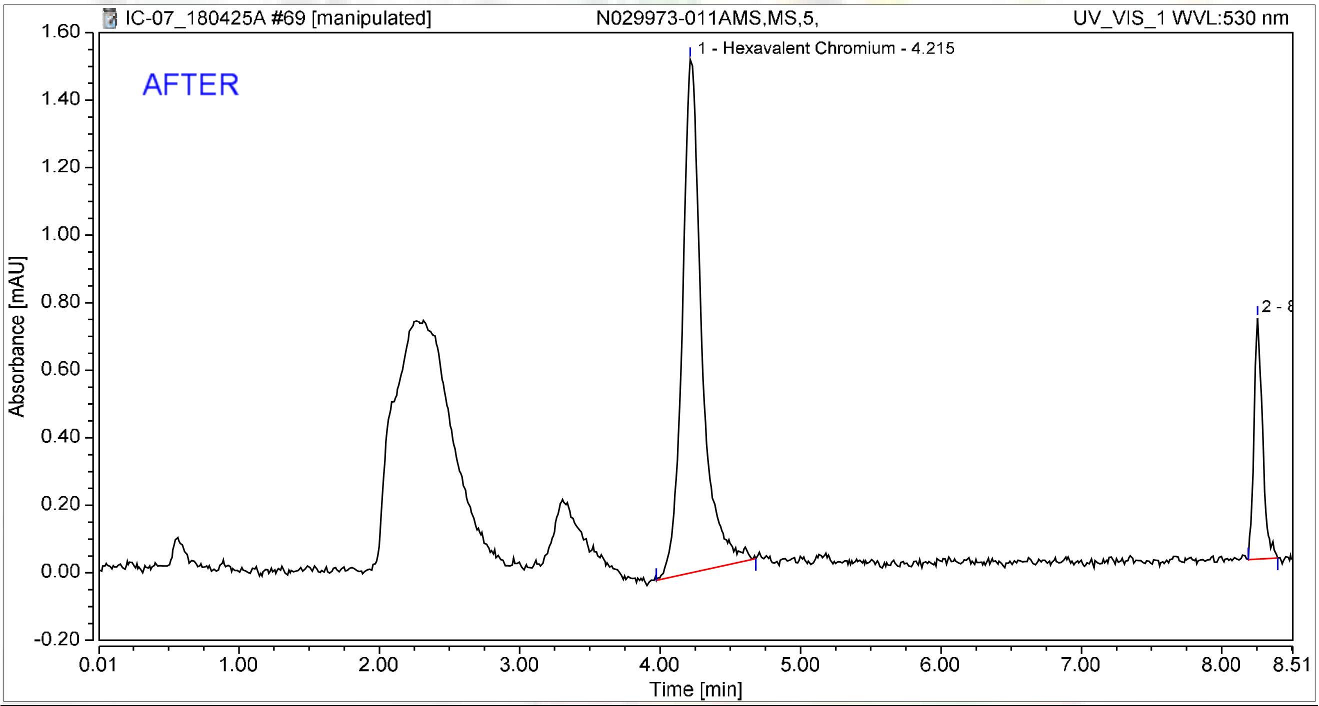
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-011AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 18:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.246	1.520	83.12	68.03	0.9714
2		8.256	0.050	0.714	16.88	31.97	n.a.
Total:			**0.296**	**2.234**	**100.00**	**100.00**	

rba 4/29/2018

My first report/integration

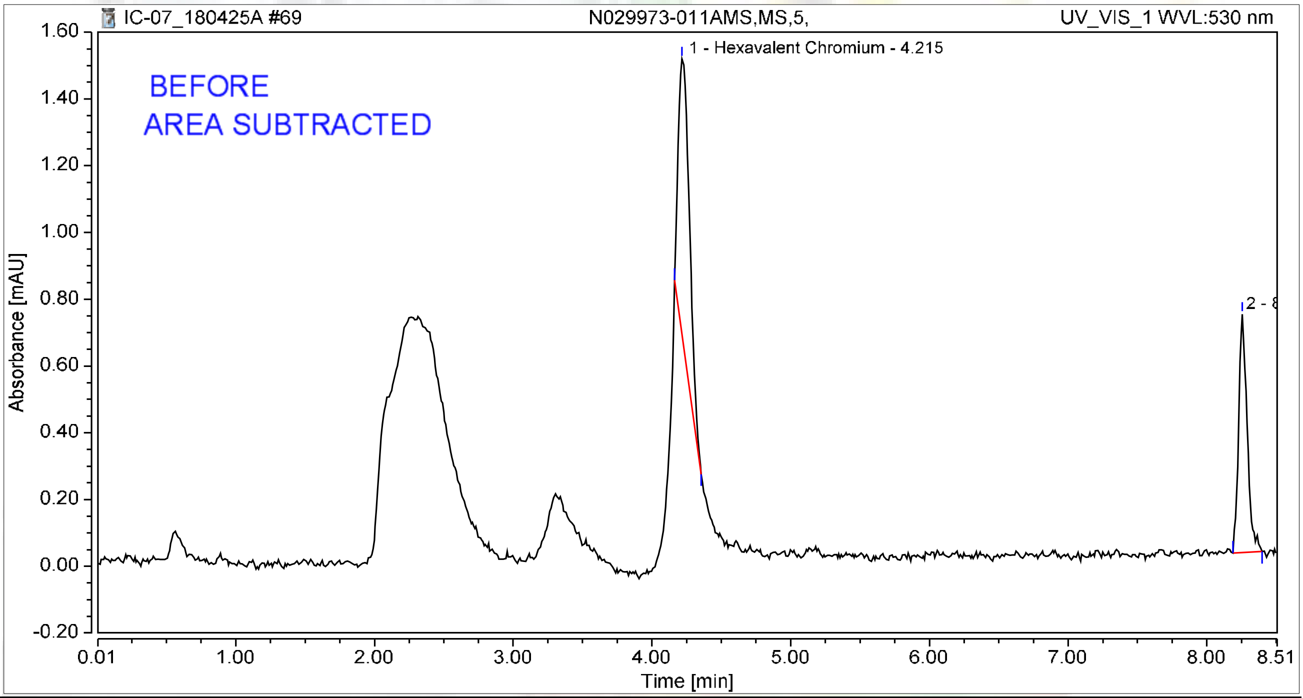
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029973-011AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 18:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.078	0.815	60.89	53.28	0.3073
2		8.256	0.050	0.714	39.11	46.72	n.a.
Total:			**0.128**	**1.529**	**100.00**	**100.00**	

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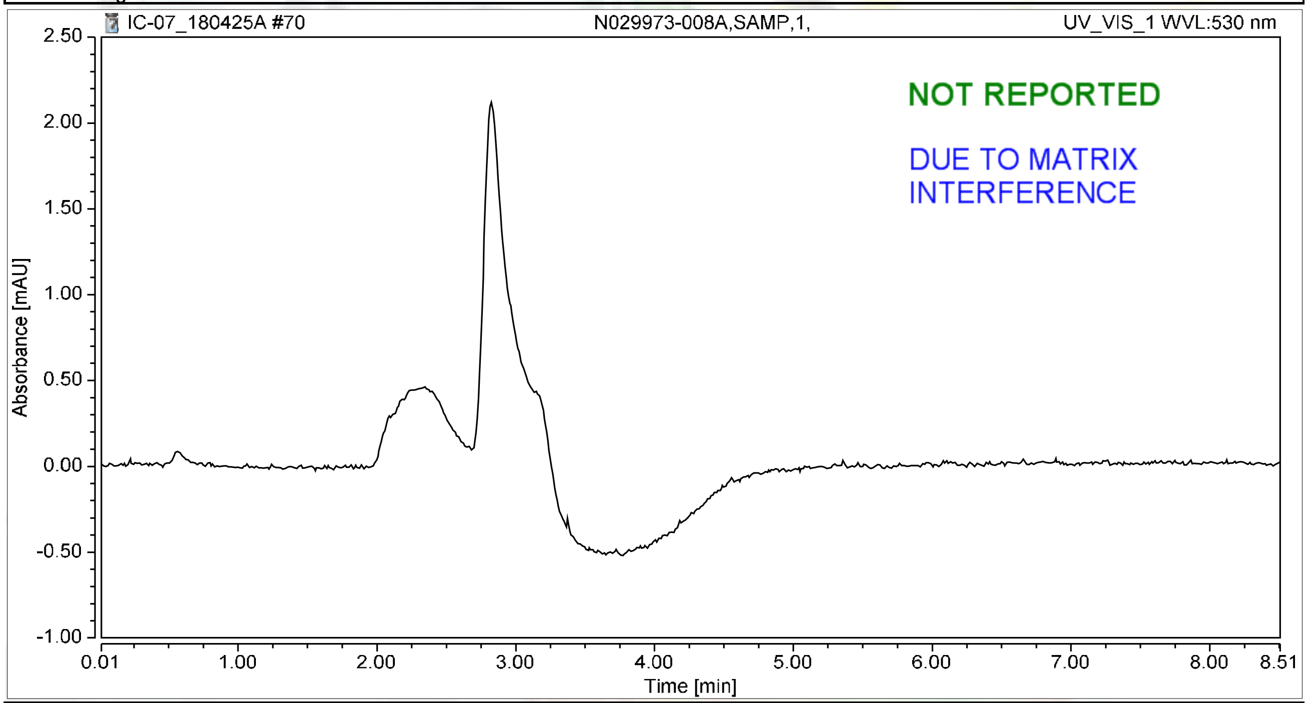
Chromatogram and Results

Injection Details

Injection Name:	**N029973-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 18:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

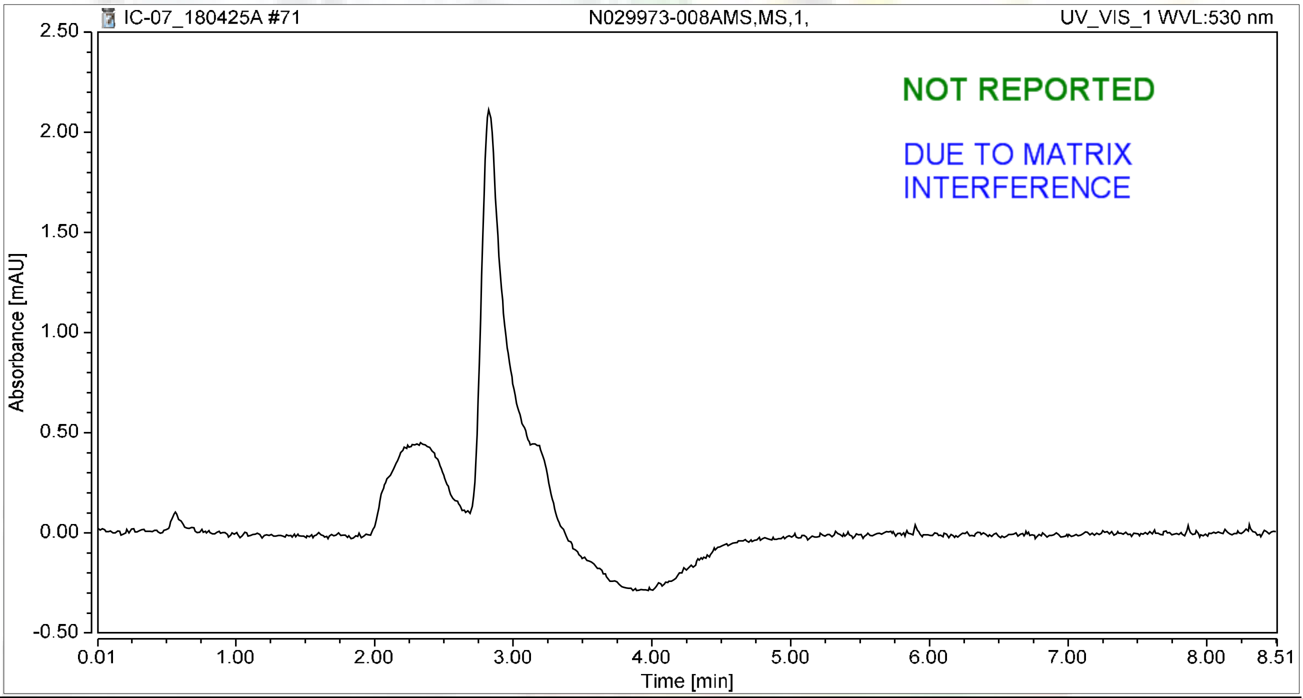
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 18:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

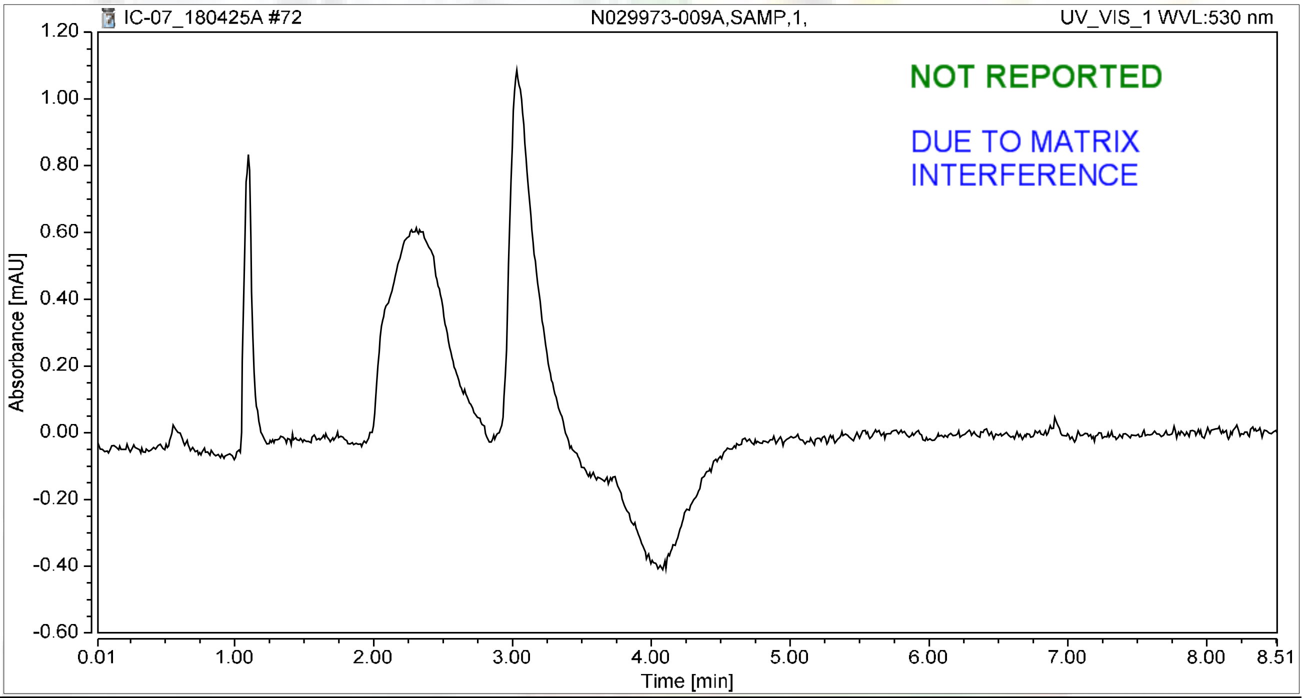
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-009A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 18:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

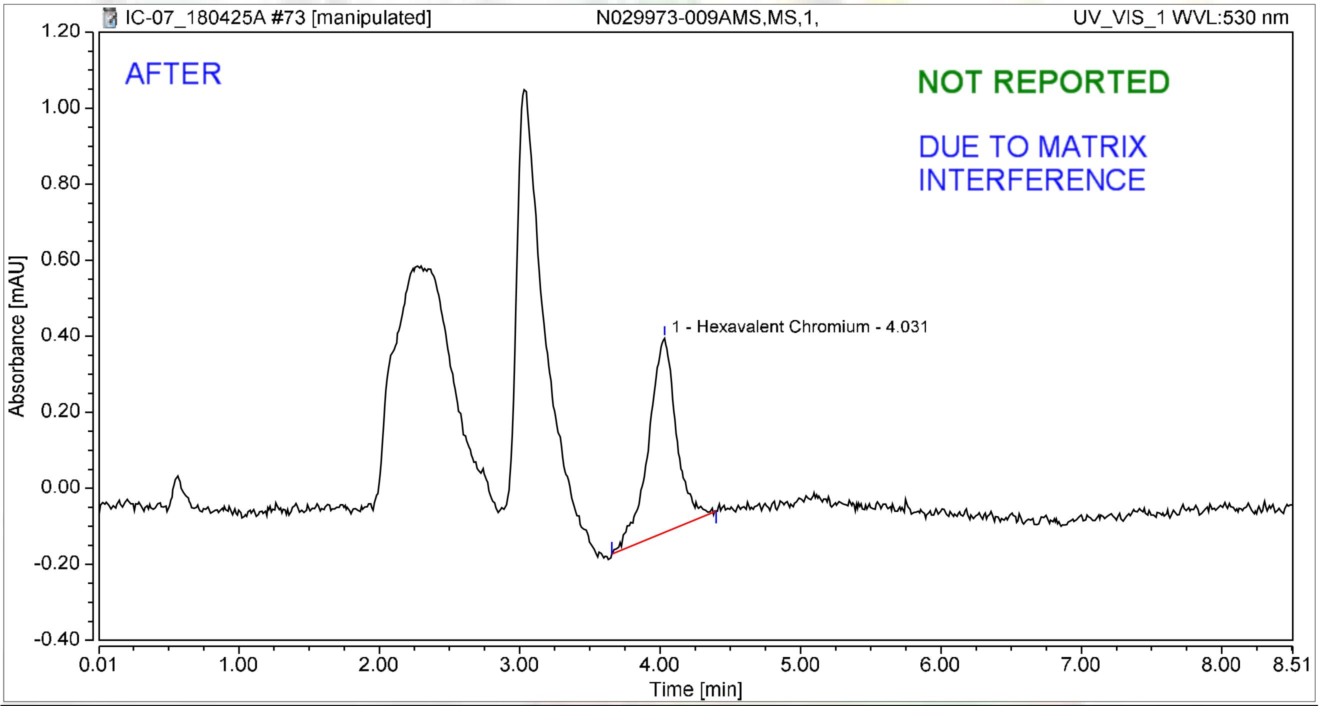
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 18:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	0.117	0.510	100.00	100.00	0.4622
Total:			**0.117**	**0.510**	**100.00**	**100.00**	

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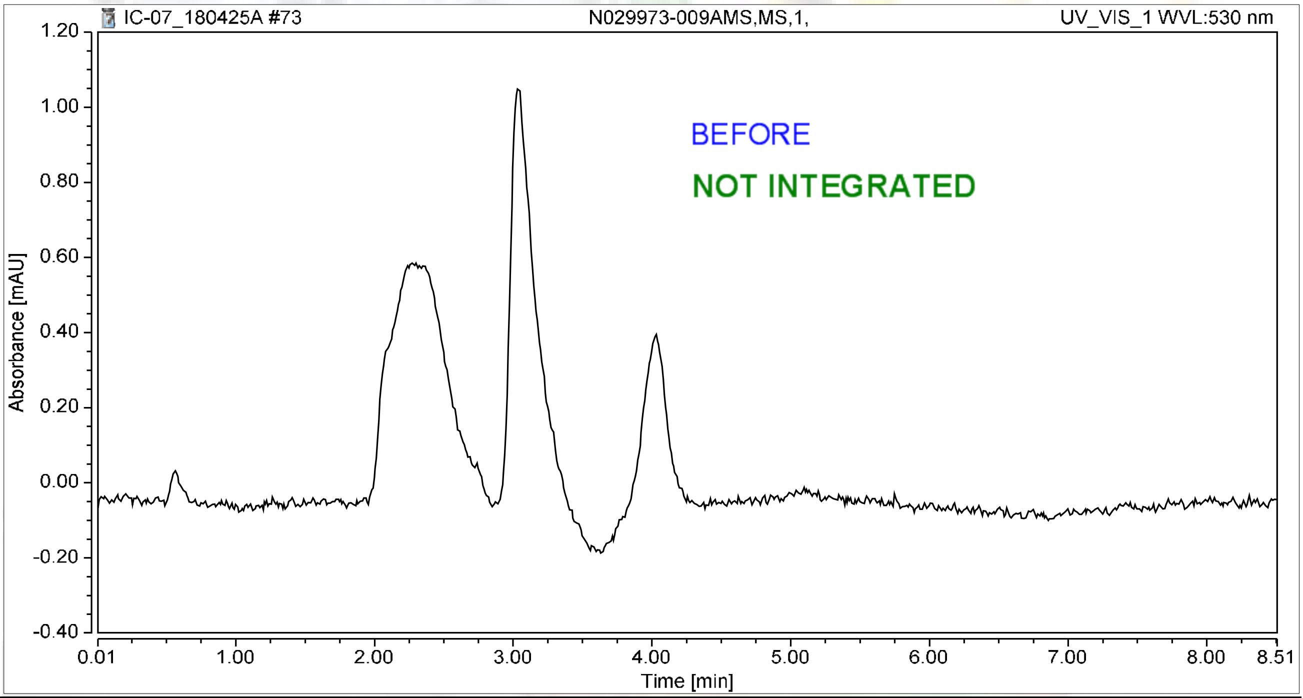
Chromatogram and Results

Injection Details

Injection Name:	**N029973-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 18:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

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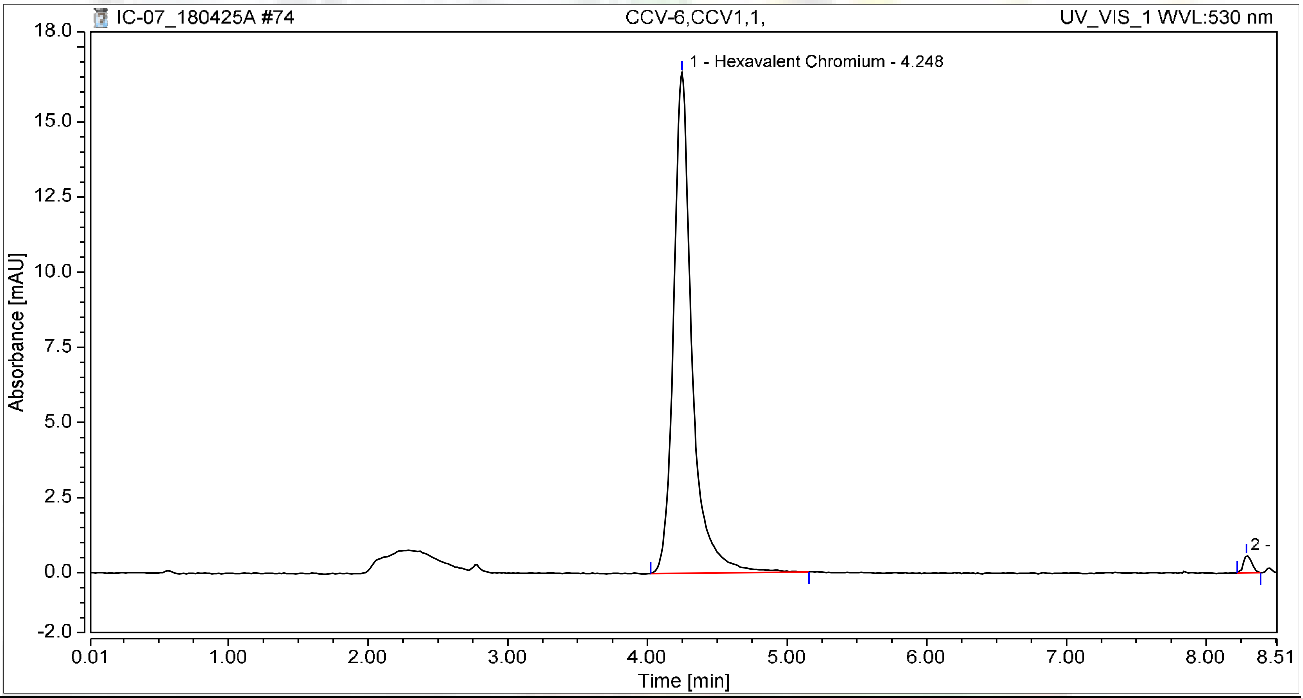
Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 18:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

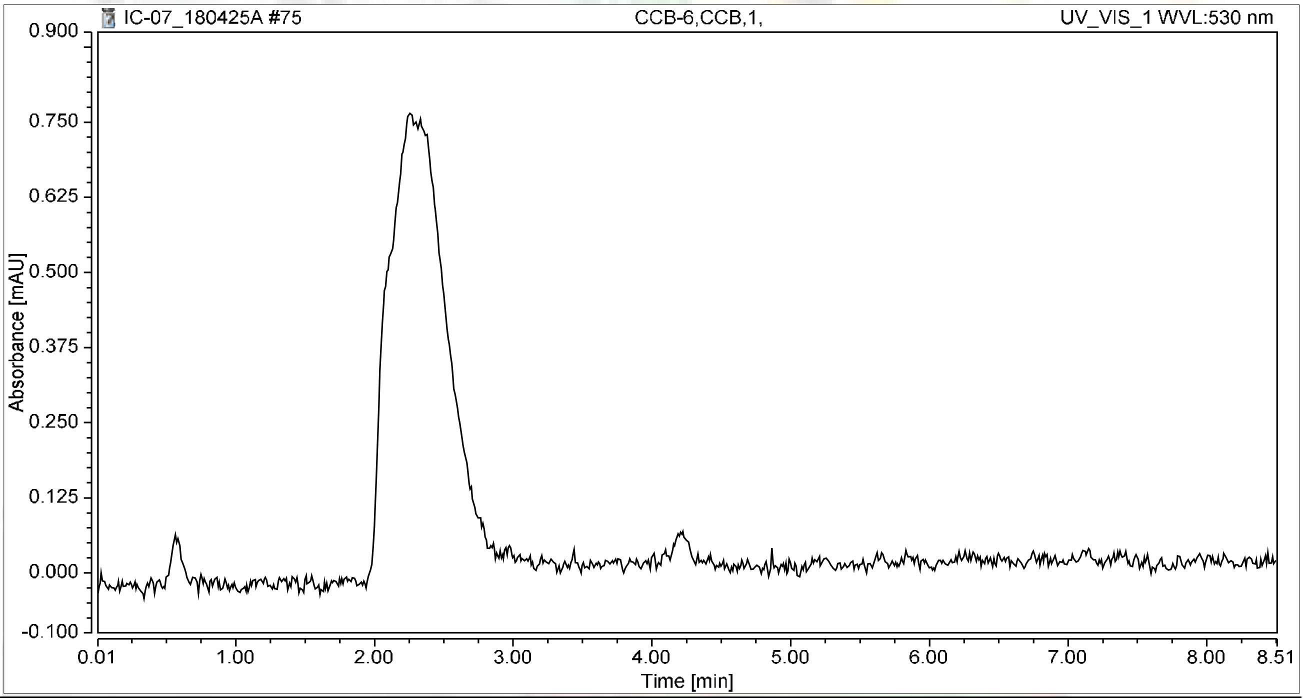
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.555	16.659	98.42	96.68	10.0785
2		8.290	0.041	0.573	1.58	3.32	n.a.
Total:			**2.596**	**17.232**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 19:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

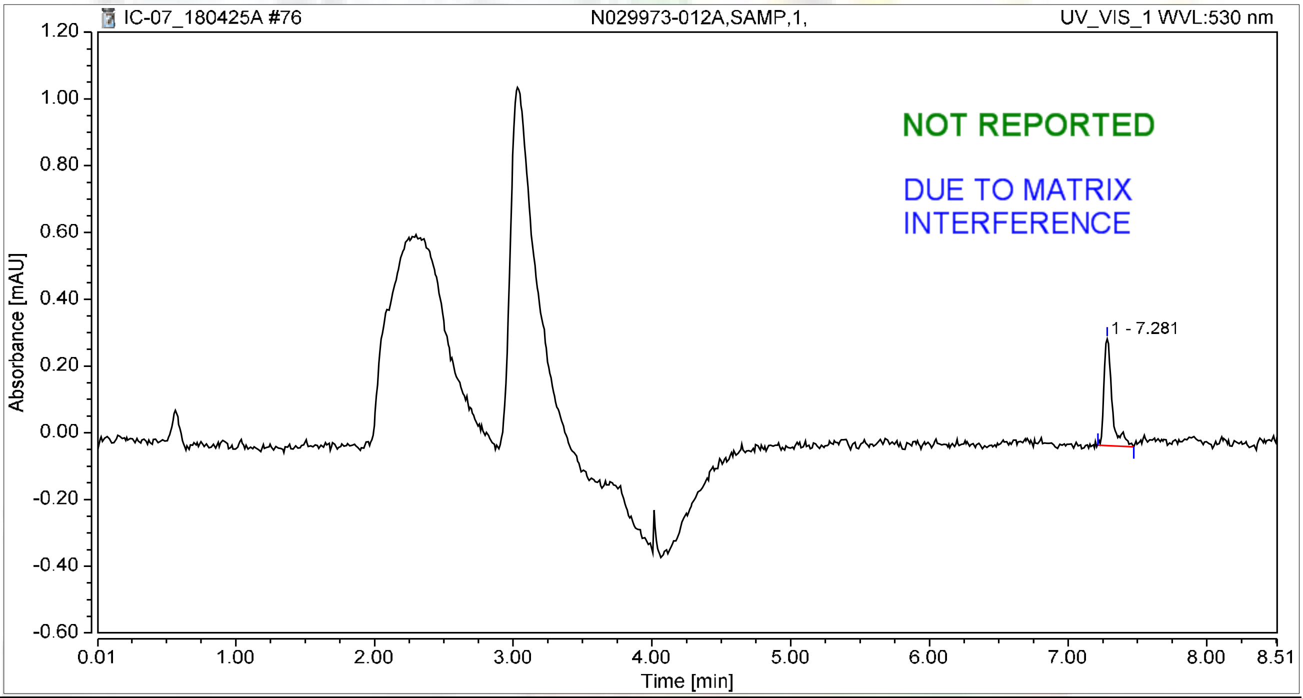
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 19:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

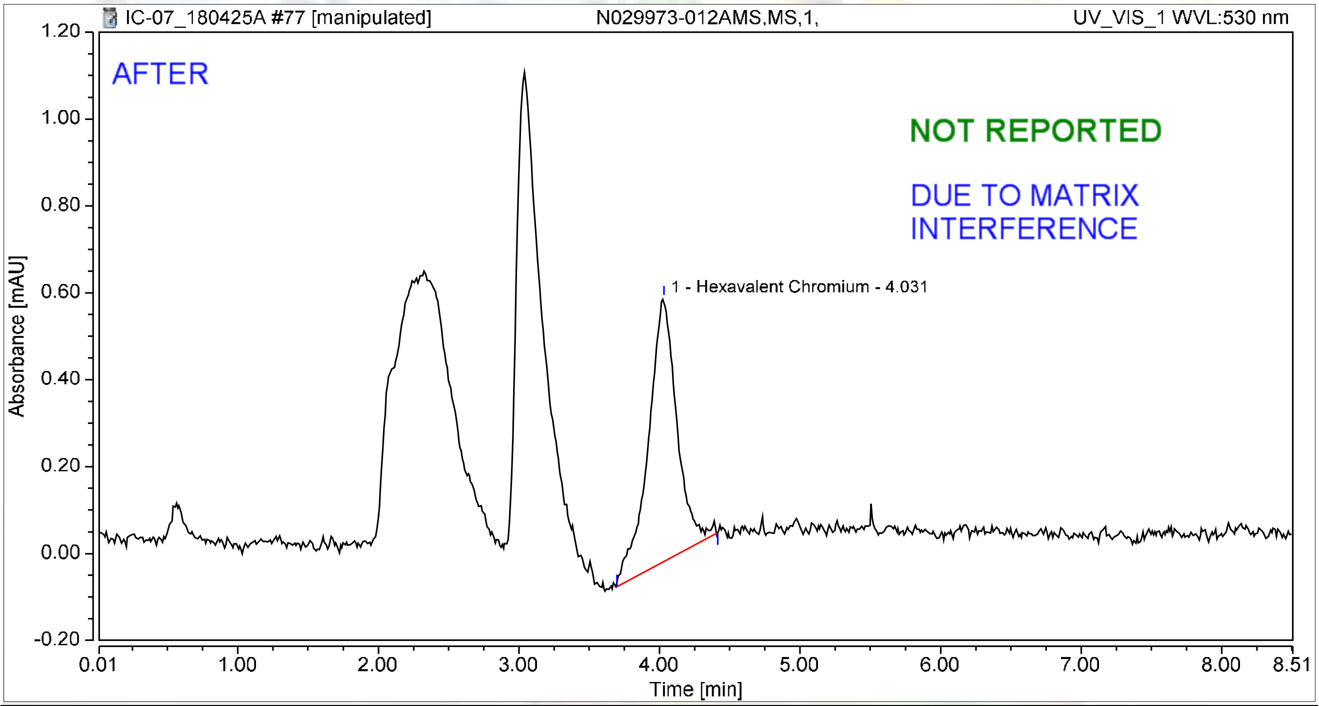
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.281	0.022	0.319	100.00	100.00	n.a.
Total:			**0.022**	**0.319**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-012AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	0.143	0.607	100.00	100.00	0.5633
Total:			**0.143**	**0.607**	**100.00**	**100.00**	

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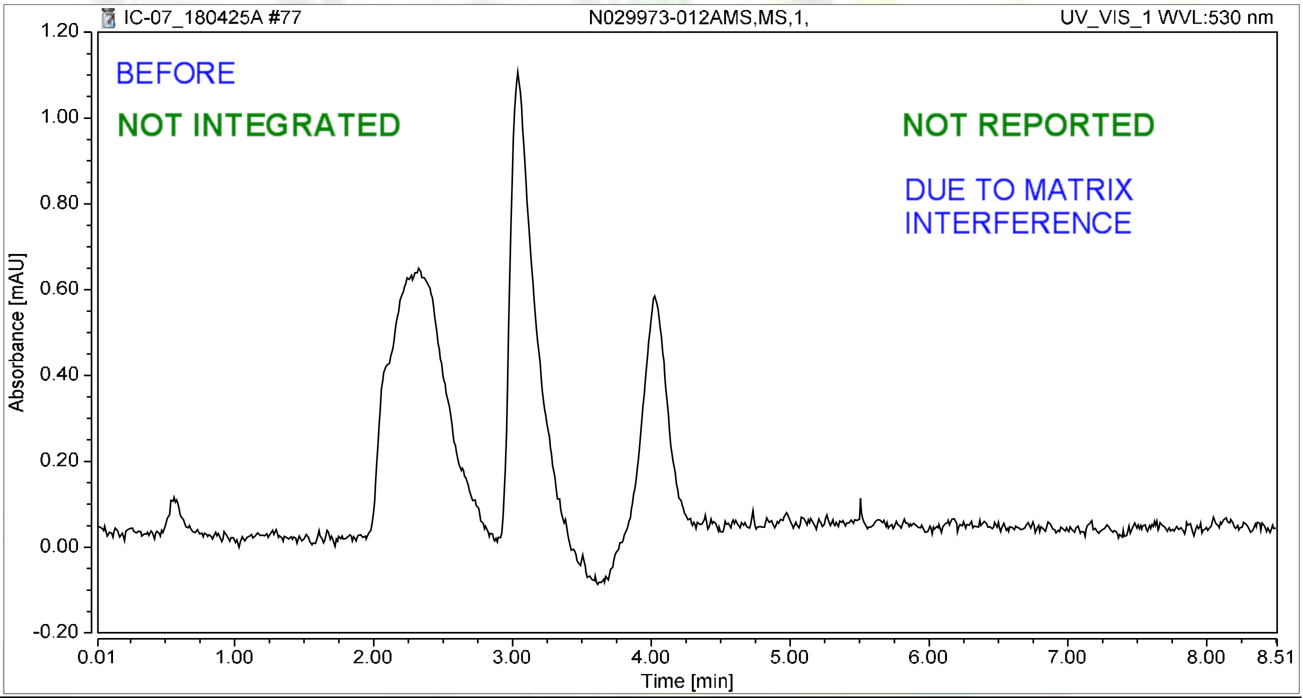
Chromatogram and Results

Injection Details			
Injection Name:	**N029973-012AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

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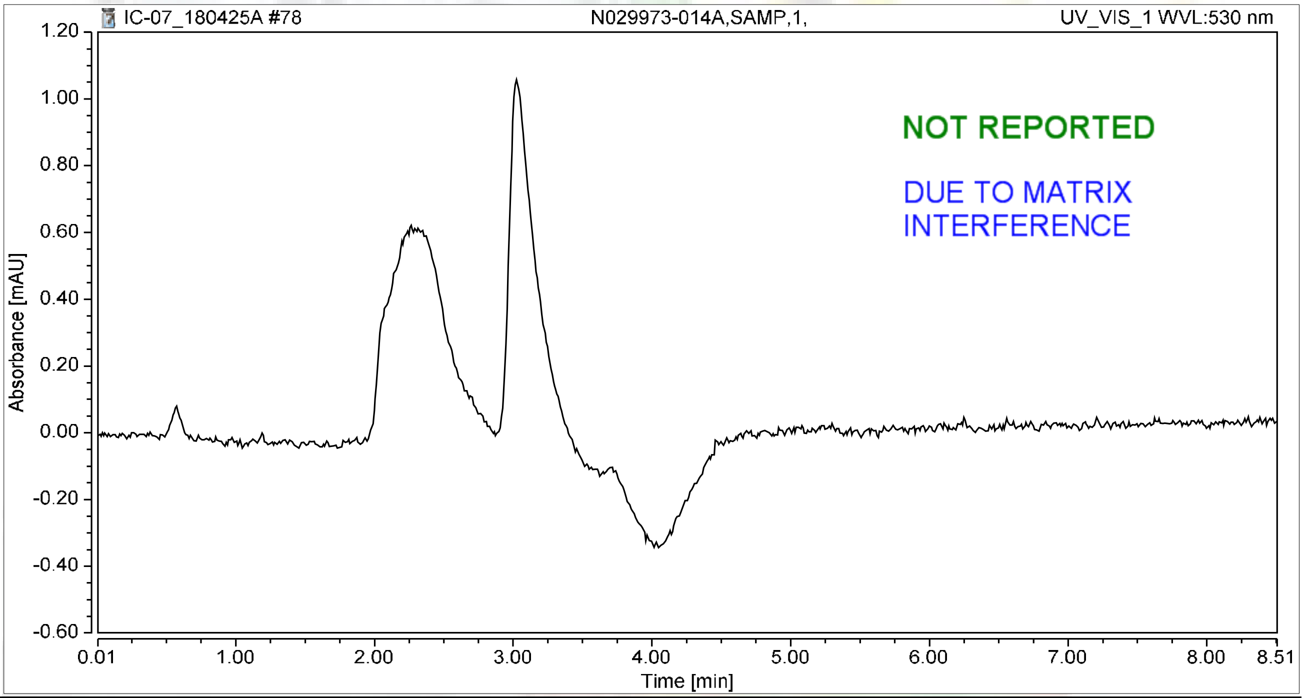
Chromatogram and Results

Injection Details

Injection Name:	**N029973-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 19:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

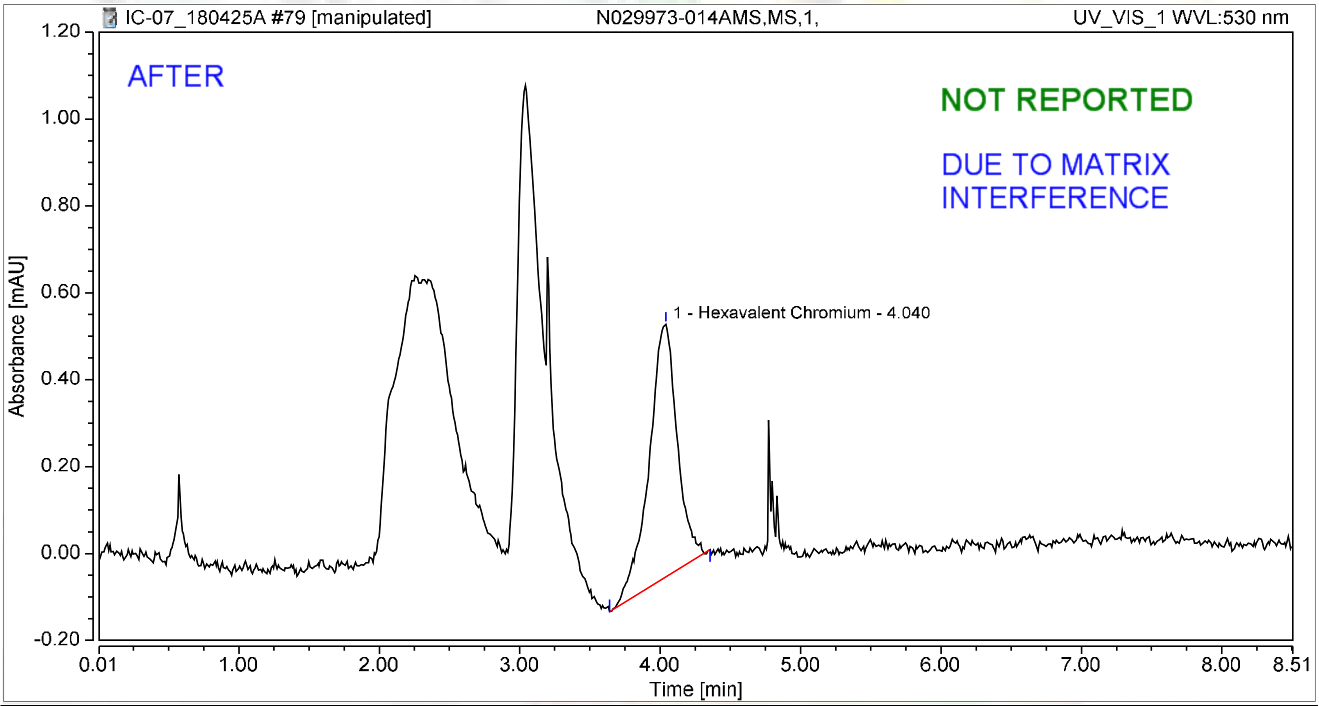
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 19:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.135	0.582	100.00	100.00	0.5344
Total:			**0.135**	**0.582**	**100.00**	**100.00**	

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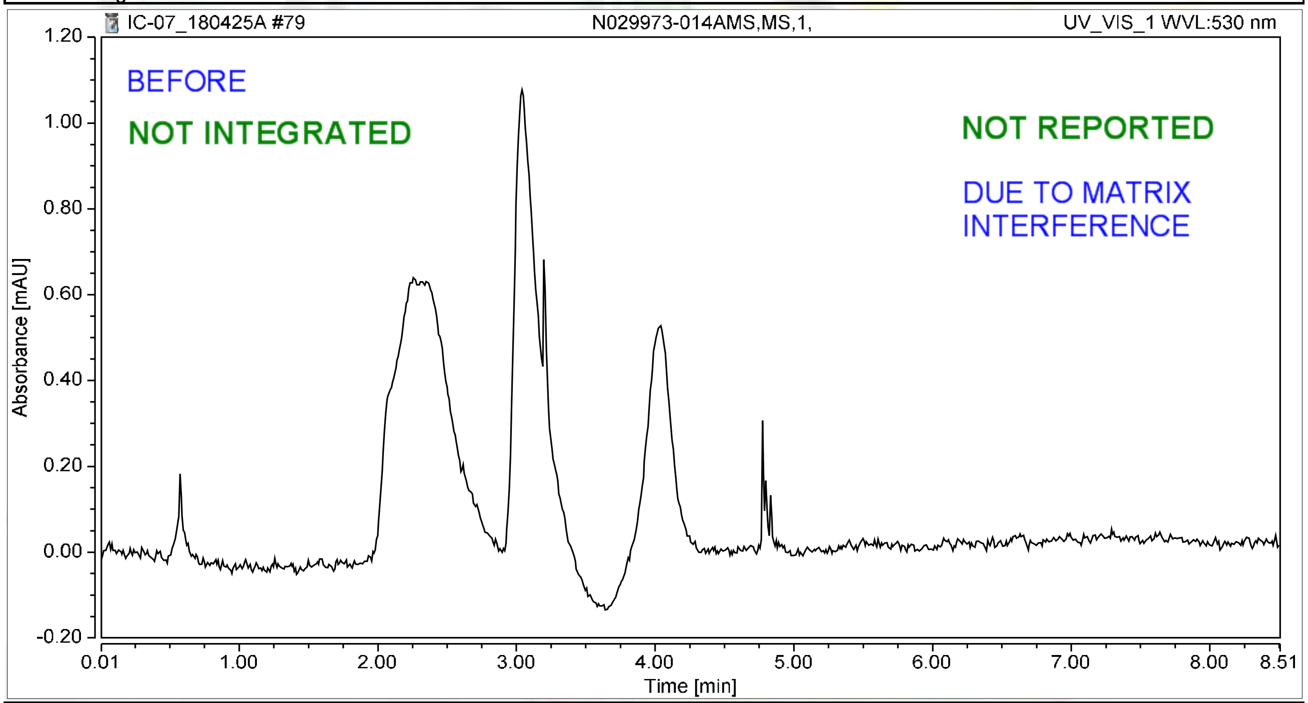
Chromatogram and Results

Injection Details

Injection Name:	**N029973-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 19:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

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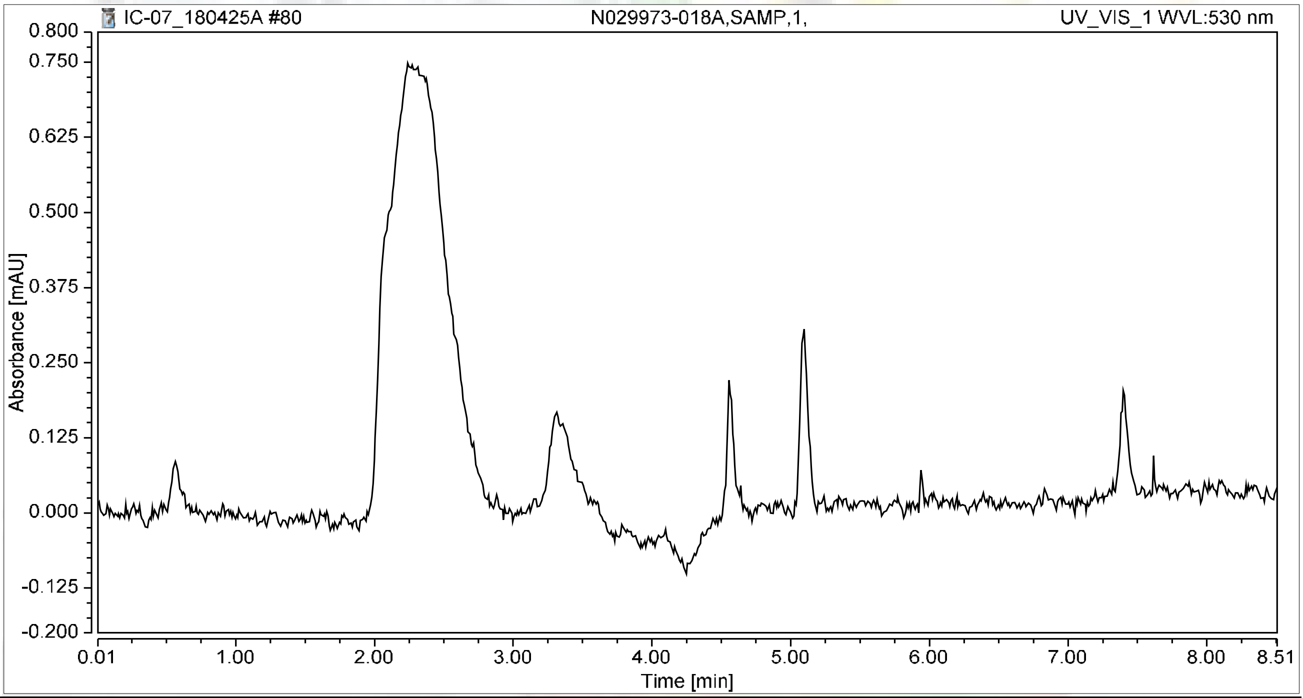
Chromatogram and Results

Injection Details

Injection Name:	**N029973-018A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

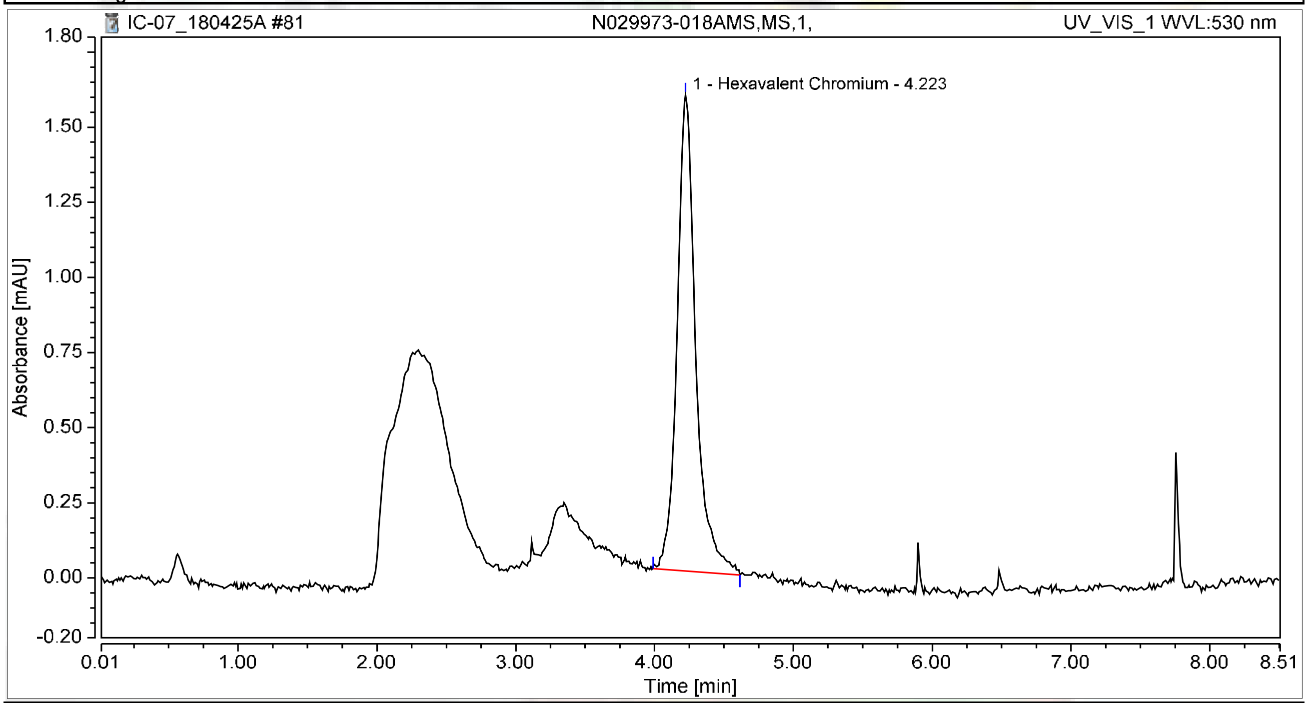
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-018AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 20:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

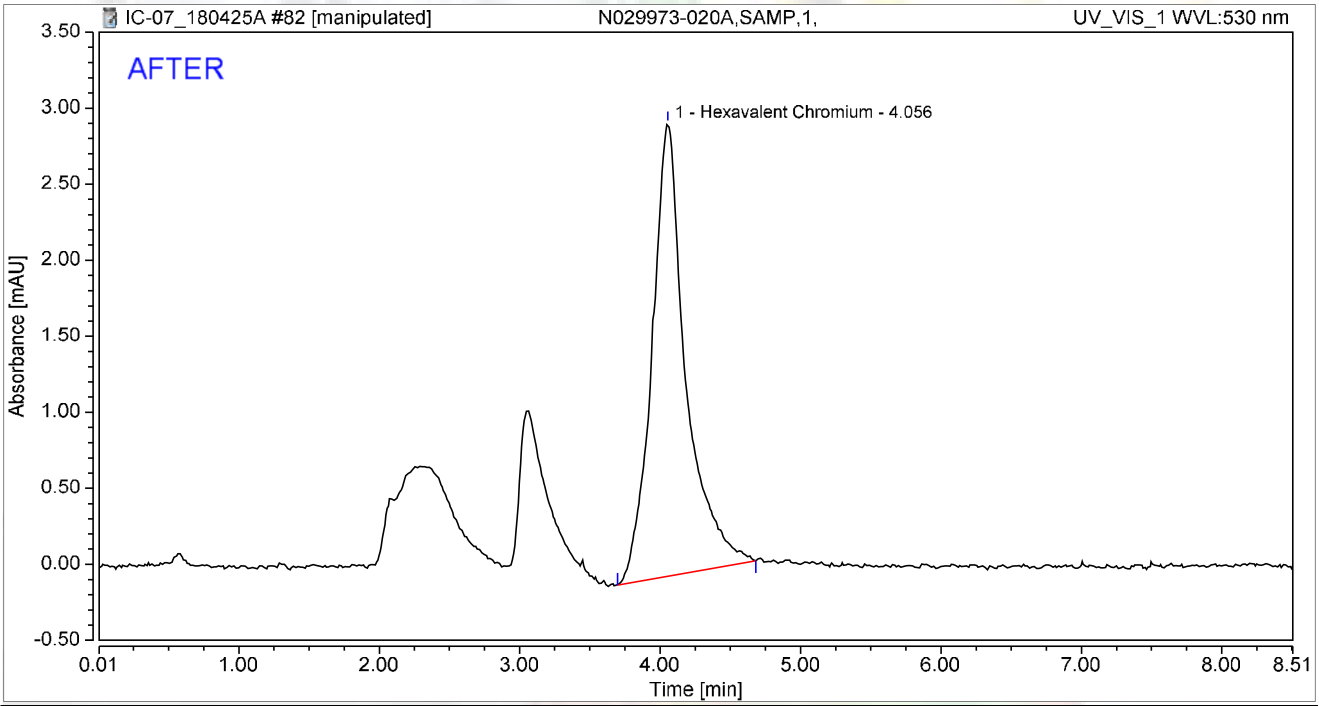
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.248	1.585	100.00	100.00	0.9795
Total:			**0.248**	**1.585**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-020A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 20:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.832	2.978	100.00	100.00	3.2809
Total:			**0.832**	**2.978**	**100.00**	**100.00**	

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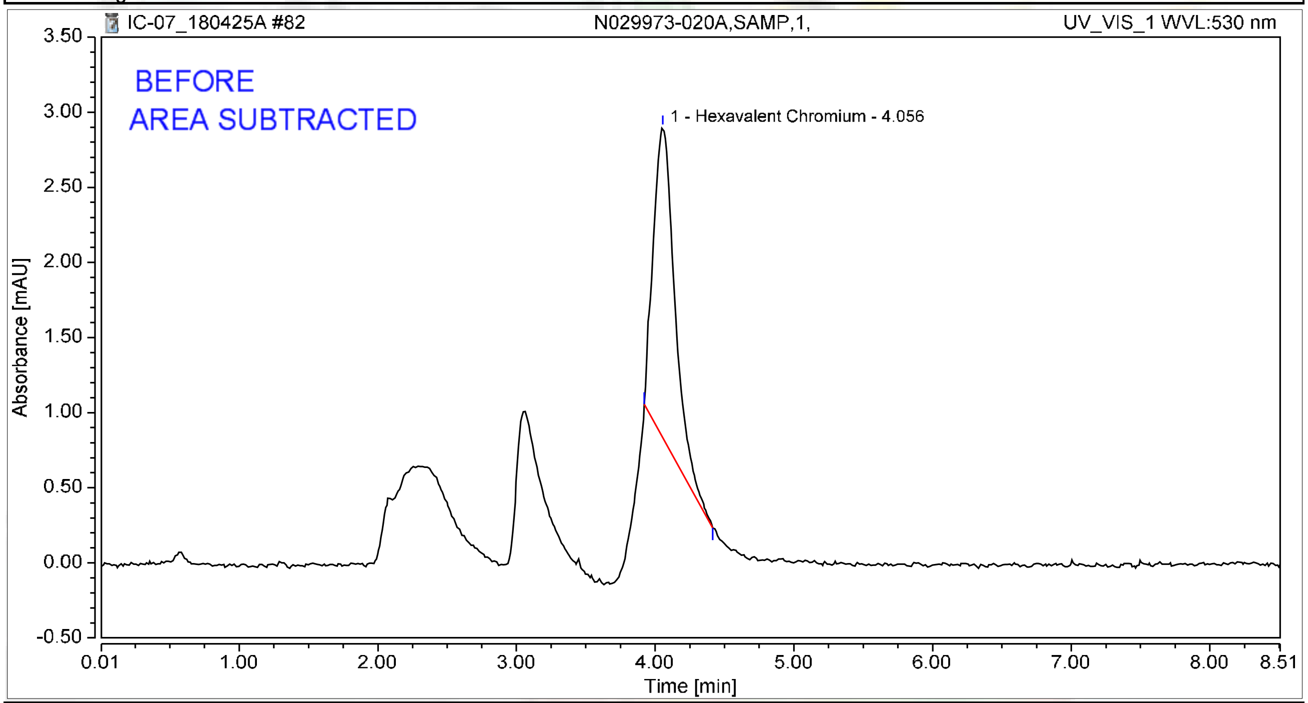
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029973-020A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 20:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	0.370	2.066	100.00	100.00	1.4595
Total:			**0.370**	**2.066**	**100.00**	**100.00**	

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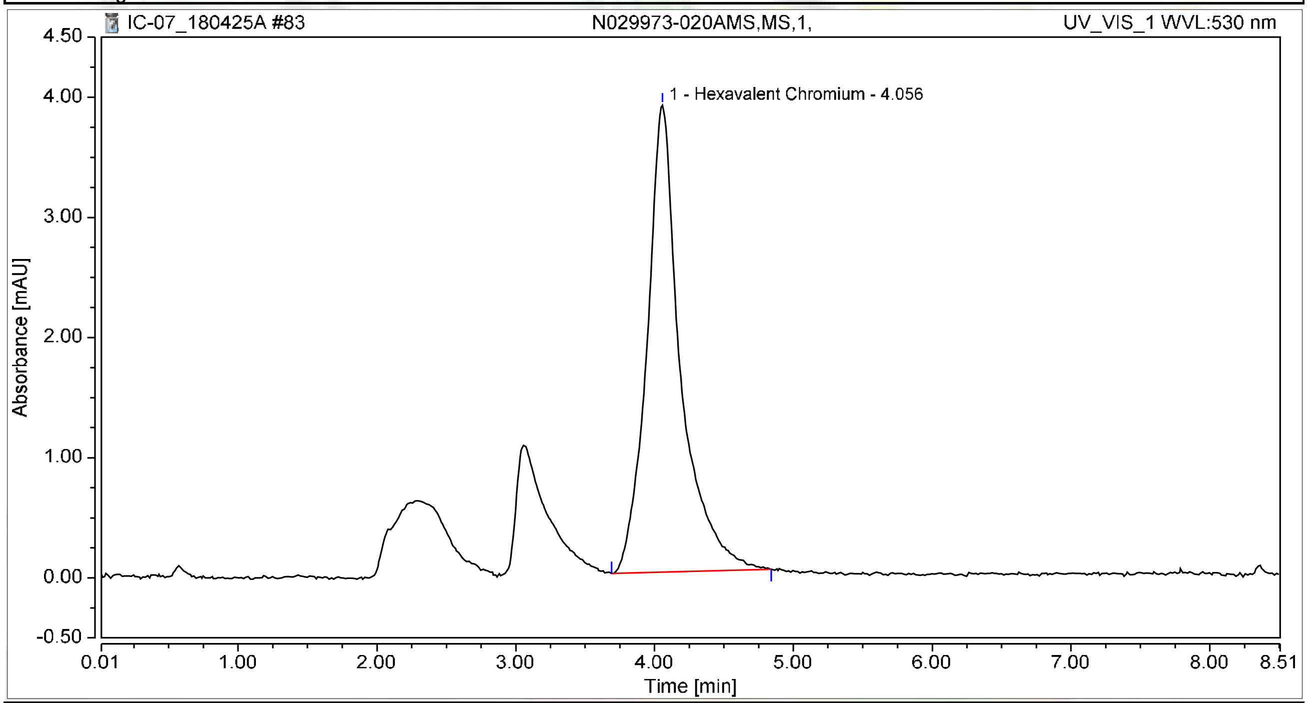
Chromatogram and Results

Injection Details

Injection Name:	**N029973-020AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 20:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

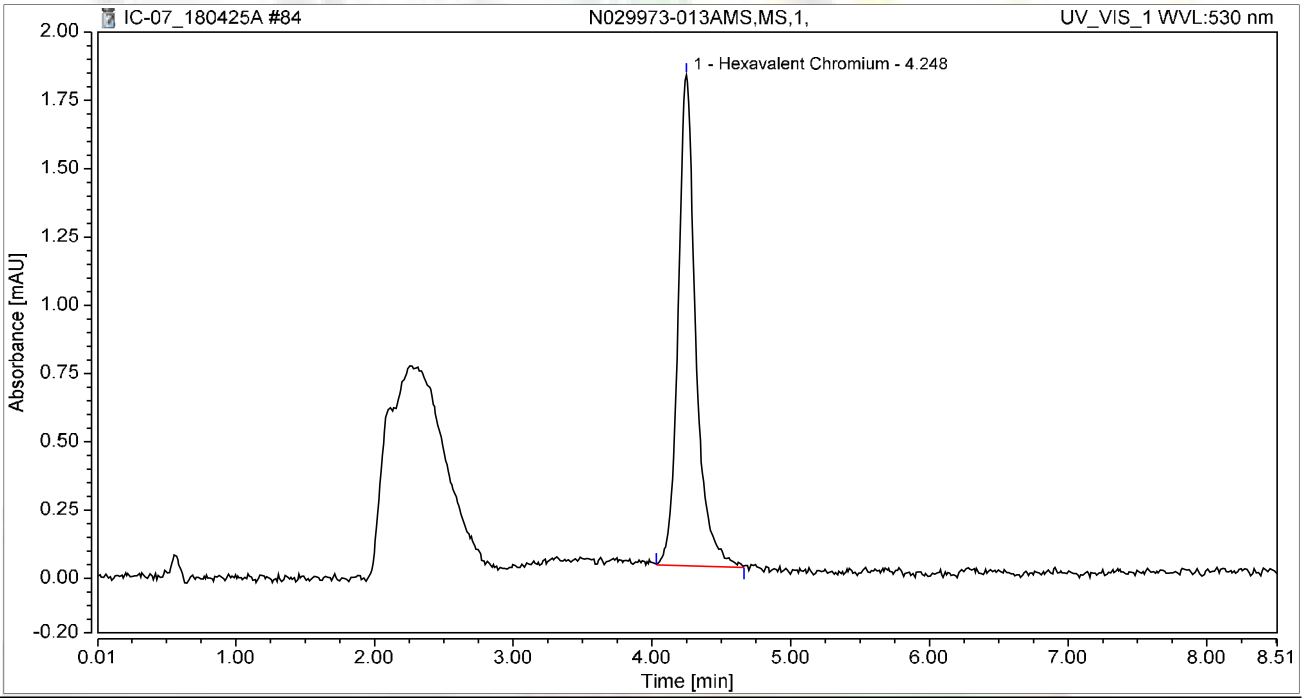
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.056	1.092	3.886	100.00	100.00	4.3060
Total:			**1.092**	**3.886**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 20:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

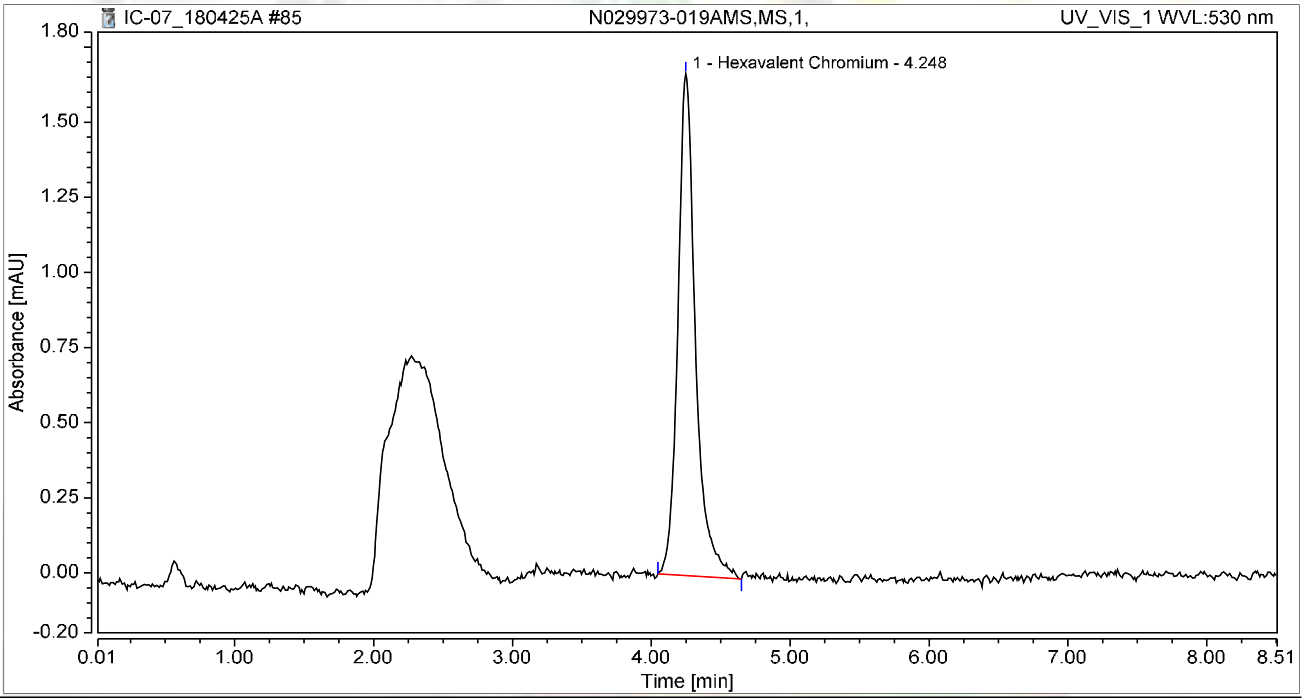
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.265	1.797	100.00	100.00	1.0455
Total:			**0.265**	**1.797**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-019AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 20:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

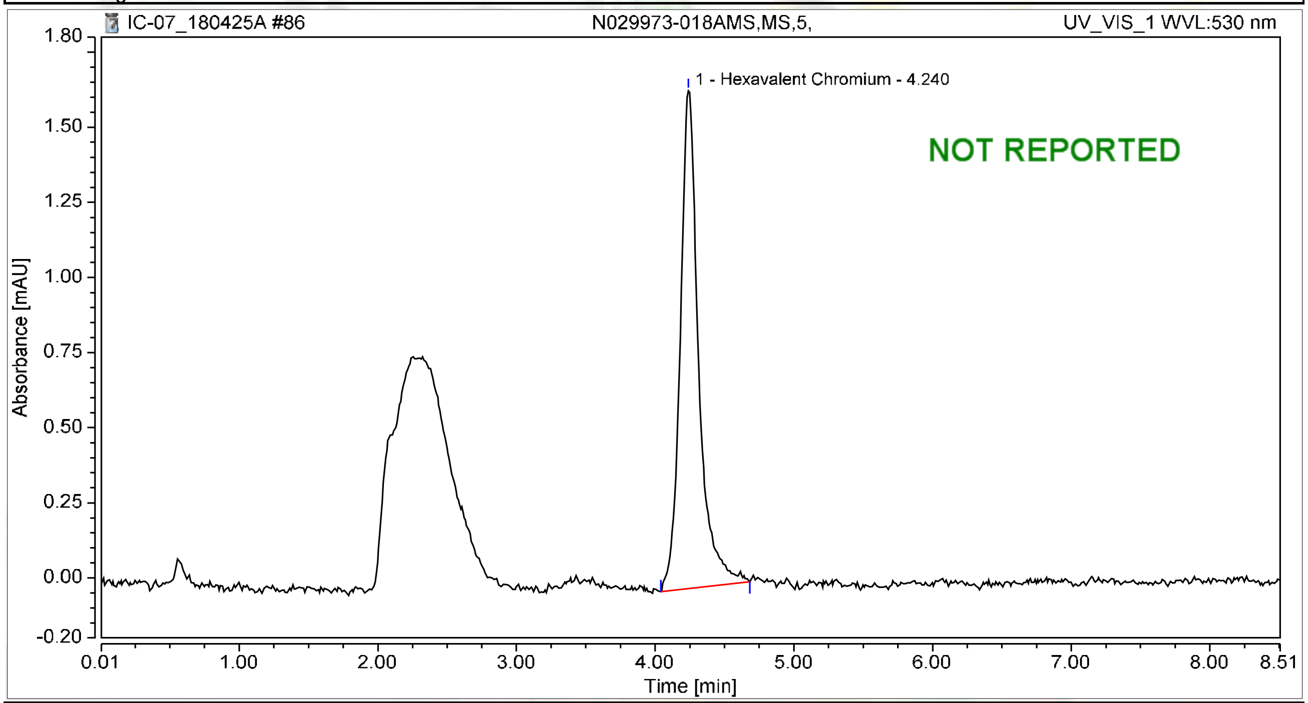
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.246	1.670	100.00	100.00	0.9722
Total:			**0.246**	**1.670**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-018AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 20:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

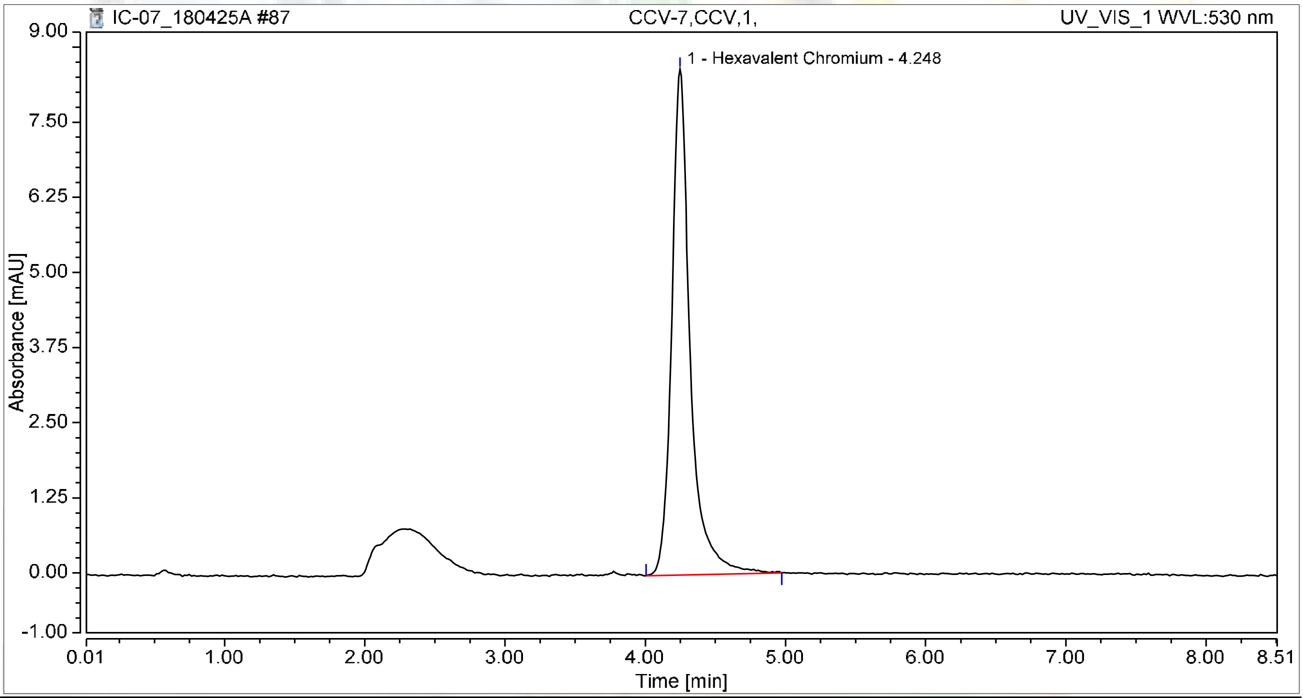
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.255	1.658	100.00	100.00	1.0054
Total:			**0.255**	**1.658**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 20:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

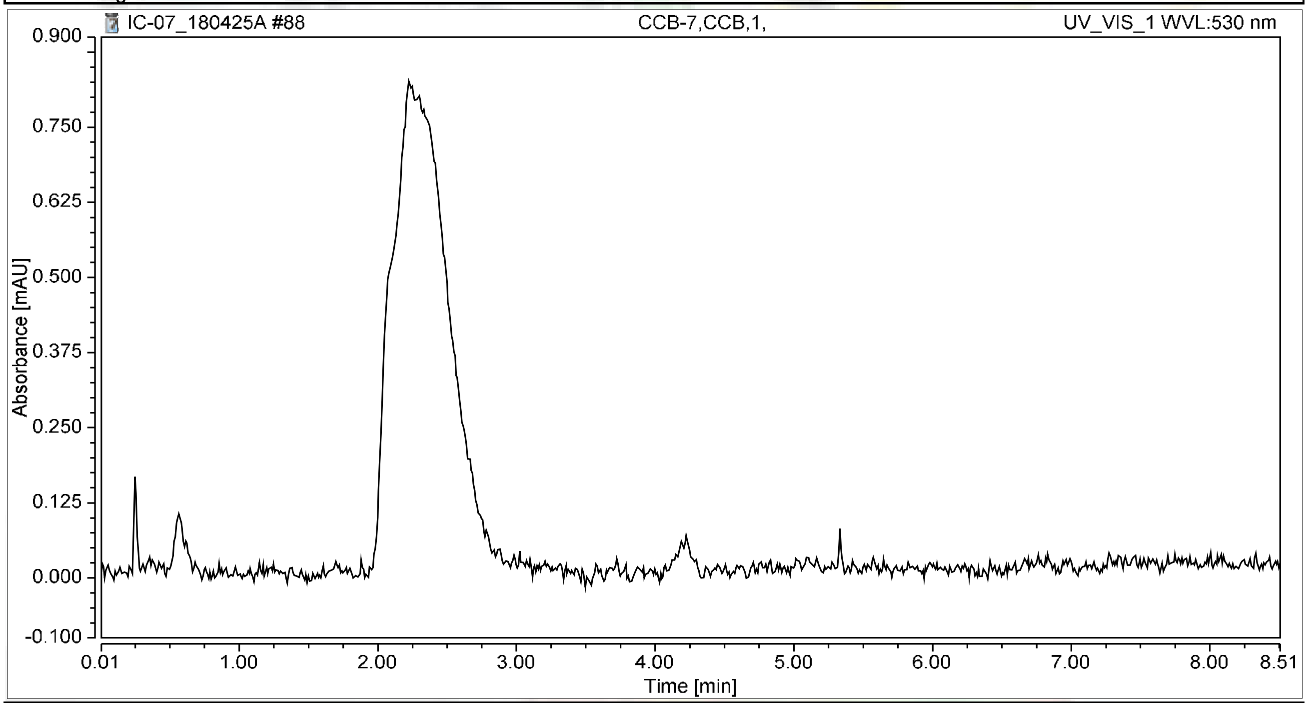
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.287	8.417	100.00	100.00	5.0779
Total:			**1.287**	**8.417**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/18 21:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

RAW DATA

INJECTION LOG: 180427A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	04/27/18 8:33 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	04/27/18 8:43 AM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	04/27/18 8:53 AM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/27/18 9:02 AM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	04/27/18 9:12 AM	Reported
16	MB-R123709	MBLK	1	Hexavalent Chromium	04/27/18 9:21 AM	Reported
17	LCS-R123709	LCS	1	Hexavalent Chromium	04/27/18 9:31 AM	Reported
18	N029973-021A	SAMP	1	Hexavalent Chromium	04/27/18 9:40 AM	Reported
19	N029973-021AMS	MS	1	Hexavalent Chromium	04/27/18 9:50 AM	Reported
20	N029973-022A	SAMP	1	Hexavalent Chromium	04/27/18 9:59 AM	Reported
21	N029973-022AMS	MS	1	Hexavalent Chromium	04/27/18 10:38 AM	Reported
22	N029819-003A	SAMP	1	Hexavalent Chromium	04/27/18 10:47 AM	Not Reported
23	N029819-003AMS	MS	1	Hexavalent Chromium	04/27/18 10:57 AM	Not Reported
24	N029820-001A	SAMP	1	Hexavalent Chromium	04/27/18 11:06 AM	Not Reported
25	N029820-001AMS	MS	1	Hexavalent Chromium	04/27/18 11:15 AM	Not Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	04/27/18 11:25 AM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	04/27/18 11:34 AM	Reported
28	N029820-002A	SAMP	1	Hexavalent Chromium	04/27/18 11:44 AM	Not Reported
29	N029820-002AMS	MS	1	Hexavalent Chromium	04/27/18 11:53 AM	Not Reported
30	N030017-001A	SAMP	5	Hexavalent Chromium	04/27/18 12:03 PM	Reported
31	N030017-001AMS	MS	5	Hexavalent Chromium	04/27/18 12:12 PM	Reported
32	N030017-002A	SAMP	5	Hexavalent Chromium	04/27/18 12:22 PM	Reported
33	N030017-002AMS	MS	5	Hexavalent Chromium	04/27/18 12:31 PM	Reported
34	N030017-005A	SAMP	1	Hexavalent Chromium	04/27/18 12:41 PM	Reported
35	N030017-005AMS	MS	1	Hexavalent Chromium	04/27/18 12:50 PM	Reported
36	N030017-006A	SAMP	5	Hexavalent Chromium	04/27/18 1:00 PM	Reported
37	N030017-006AMS	MS	5	Hexavalent Chromium	04/27/18 1:09 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	04/27/18 1:18 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	04/27/18 1:28 PM	Reported
40	N030017-008A	SAMP	20	Hexavalent Chromium	04/27/18 1:37 PM	Reported
41	N030017-008AMS	MS	20	Hexavalent Chromium	04/27/18 1:47 PM	Reported
42	N030017-007A	SAMP	5	Hexavalent Chromium	04/27/18 1:56 PM	Reported

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INJECTION LOG: 180427A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030017-007AMS	MS	5	Hexavalent Chromium	04/27/18 2:06 PM	Reported
44	N030017-009A	SAMP	5	Hexavalent Chromium	04/27/18 2:15 PM	Reported
45	N030017-009AMS	MS	5	Hexavalent Chromium	04/27/18 2:25 PM	Reported
46	N030017-010A	SAMP	5	Hexavalent Chromium	04/27/18 2:34 PM	Reported
47	N030017-010AMS	MS	5	Hexavalent Chromium	04/27/18 2:44 PM	Reported
48	N030017-011A	SAMP	5	Hexavalent Chromium	04/27/18 2:53 PM	Reported
49	N030017-011AMS	MS	5	Hexavalent Chromium	04/27/18 3:03 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	04/27/18 3:12 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	04/27/18 3:21 PM	Reported
52	N030017-001AMSD	MSD	5	Hexavalent Chromium	04/27/18 3:31 PM	Reported
53	N030017-005ADUP	DUP	1	Hexavalent Chromium	04/27/18 3:40 PM	Reported
54	N030017-012A	SAMP	5	Hexavalent Chromium	04/27/18 3:59 PM	Reported
55	N030017-012AMS	MS	5	Hexavalent Chromium	04/27/18 4:10 PM	Reported
56	N030017-013A	SAMP	5	Hexavalent Chromium	04/27/18 4:19 PM	Reported
57	N030017-013AMS	MS	5	Hexavalent Chromium	04/27/18 4:29 PM	Reported
58	N030017-003A	SAMP	1	Hexavalent Chromium	04/27/18 4:38 PM	Reported
59	N030017-003AMS	MS	1	Hexavalent Chromium	04/27/18 4:48 PM	Reported
60	N030017-004A	SAMP	1	Hexavalent Chromium	04/27/18 4:57 PM	Reported
61	N030017-004AMS	MS	1	Hexavalent Chromium	04/27/18 5:07 PM	Not Reported
62	CCV-5	CCV	1	Hexavalent Chromium	04/27/18 5:16 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	04/27/18 5:26 PM	Reported
64	N030017-002A	SAMP	1	Hexavalent Chromium	04/27/18 5:35 PM	Not Reported
65	N030017-002AMS	MS	1	Hexavalent Chromium	04/27/18 5:45 PM	Not Reported
66	N030017-006A	SAMP	1	Hexavalent Chromium	04/27/18 5:54 PM	Not Reported
67	N030017-006AMS	MS	1	Hexavalent Chromium	04/27/18 6:04 PM	Not Reported
68	N030017-007A	SAMP	1	Hexavalent Chromium	04/27/18 6:13 PM	Not Reported
69	N030017-007AMS	MS	1	Hexavalent Chromium	04/27/18 6:23 PM	Not Reported
70	N030017-009A	SAMP	1	Hexavalent Chromium	04/27/18 6:32 PM	Not Reported
71	N030017-009AMS	MS	1	Hexavalent Chromium	04/27/18 6:41 PM	Not Reported
72	N030017-010A	SAMP	1	Hexavalent Chromium	04/27/18 6:51 PM	Not Reported
73	N030017-010AMS	MS	1	Hexavalent Chromium	04/27/18 7:00 PM	Not Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	04/27/18 7:10 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	04/27/18 7:19 PM	Reported
76	N030017-011A	SAMP	1	Hexavalent Chromium	04/27/18 7:29 PM	Not Reported
77	N030017-011AMS	MS	1	Hexavalent Chromium	04/27/18 7:38 PM	Not Reported
78	N029858-001A	SAMP	1	Hexavalent Chromium	04/27/18 7:48 PM	Not Reported
79	N029858-001AMS	MS	1	Hexavalent Chromium	04/27/18 7:57 PM	Not Reported
80	N030017-004AMS	MS	1	Hexavalent Chromium	04/27/18 8:07 PM	Reported
81	CCV-7	CCV	1	Hexavalent Chromium	04/27/18 8:16 PM	Reported
82	CCB-7	CCB	1	Hexavalent Chromium	04/27/18 8:26 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180427A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**27/Apr/18 20:56:21**
No. of Injections:	**85**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	BLANK	1	1000	Unknown		04/27/2018 08:33	Finished	BLANK
12	BLANK	2	1000	Unknown		04/27/2018 08:43	Finished	BLANK
13	CCV-1,CCV,1,	3	1000	Unknown		04/27/2018 08:53	Finished	CCV @5ppb, IWST-180129A
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		04/27/2018 09:02	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		04/27/2018 09:12	Finished	CCB R180418A
16	MB-H2O,MBLK,1,	6	1000	Unknown		04/27/2018 09:21	Finished	MB R180418A
17	LCS-H2O,LCS,1,	7	1000	Unknown		04/27/2018 09:31	Finished	LCS, IWST-180129B
18	N029973-021A,SAMF	8	1000	Unknown		04/27/2018 09:40	Finished	SAMP,10mL
19	N029973-021AMS,MS	9	1000	Unknown		04/27/2018 09:50	Finished	MS (1ppb), IWST-180129B,10
20	N029973-022A,SAMF	10	1000	Unknown		04/27/2018 09:59	Finished	SAMP,10mL
21	N029973-022AMS,MS	11	1000	Unknown		04/27/2018 10:38	Finished	MS (1ppb), IWST-180129B,10
22	N029819-003A,SAMF	12	1000	Unknown		04/27/2018 10:47	Finished	SAMP,10mL
23	N029819-003AMS,MS	13	1000	Unknown		04/27/2018 10:57	Finished	MS (1ppb), IWST-180129B,10
24	N029820-001A,SAMF	14	1000	Unknown		04/27/2018 11:06	Finished	SAMP,10mL
25	N029820-001AMS,MS	15	1000	Unknown		04/27/2018 11:15	Finished	MS (1ppb), IWST-180129B,10
26	CCV-2,CCV1,1,	16	1000	Unknown		04/27/2018 11:25	Finished	CCV @10ppb, IWST-180129A
27	CCB-2,CCB,1,	17	1000	Unknown		04/27/2018 11:34	Finished	CCB R180418A
28	N029820-002A,SAMF	18	1000	Unknown		04/27/2018 11:44	Finished	SAMP,10mL
29	N029820-002AMS,MS	19	1000	Unknown		04/27/2018 11:53	Finished	MS (1ppb), IWST-180129B,10
30	N030017-001A,SAMF	20	1000	Unknown		04/27/2018 12:03	Finished	SAMP,2>10mL
31	N030017-001AMS,MS	21	1000	Unknown		04/27/2018 12:12	Finished	MS (5ppb), IWST-180129B,2>1
32	N030017-002A,SAMF	22	1000	Unknown		04/27/2018 12:22	Finished	SAMP,2>10mL
33	N030017-002AMS,MS	23	1000	Unknown		04/27/2018 12:31	Finished	MS (1ppb), IWST-180129B,2>1
34	N030017-005A,SAMF	24	1000	Unknown		04/27/2018 12:41	Finished	SAMP,10mL
35	N030017-005AMS,MS	25	1000	Unknown		04/27/2018 12:50	Finished	MS (1ppb), IWST-180129B,10
36	N030017-006A,SAMF	26	1000	Unknown		04/27/2018 13:00	Finished	SAMP,2>10mL
37	N030017-006AMS,MS	27	1000	Unknown		04/27/2018 13:09	Finished	MS (1ppb), IWST-180129B,2>1
38	CCV-3,CCV,1,	28	1000	Unknown		04/27/2018 13:18	Finished	CCV @5ppb, IWST-180129A
39	CCB-3,CCB,1,	29	1000	Unknown		04/27/2018 13:28	Finished	CCB R180418A
40	N030017-008A,SAMF	30	1000	Unknown		04/27/2018 13:37	Finished	SAMP,0.5>10mL
41	N030017-008AMS,MS	31	1000	Unknown		04/27/2018 13:47	Finished	MS (5ppb), IWST-180129B,0.5
42	N030017-007A,SAMF	32	1000	Unknown		04/27/2018 13:56	Finished	SAMP,2>10mL
43	N030017-007AMS,MS	33	1000	Unknown		04/27/2018 14:06	Finished	MS (1ppb), IWST-180129B,2>1
44	N030017-009A,SAMF	34	1000	Unknown		04/27/2018 14:15	Finished	SAMP,2>10mL
45	N030017-009AMS,MS	35	1000	Unknown		04/27/2018 14:25	Finished	MS (1ppb), IWST-180129B,2>1
46	N030017-010A,SAMF	36	1000	Unknown		04/27/2018 14:34	Finished	SAMP,2>10mL
47	N030017-010AMS,MS	37	1000	Unknown		04/27/2018 14:44	Finished	MS (1ppb), IWST-180129B,2>1
48	N030017-011A,SAMF	38	1000	Unknown		04/27/2018 14:53	Finished	SAMP,2>10mL
49	N030017-011AMS,MS	39	1000	Unknown		04/27/2018 15:03	Finished	MS (1ppb), IWST-180129B,2>1
50	CCV-4,CCV1,1,	40	1000	Unknown		04/27/2018 15:12	Finished	CCV @10ppb, IWST-180129A
51	CCB-4,CCB,1,	41	1000	Unknown		04/27/2018 15:21	Finished	CCB R180418A
52	N030017-001AMSD,M	42	1000	Unknown		04/27/2018 15:31	Finished	MSD (5ppb), IWST-180129B,2
53	N030017-005ADUP,D	43	1000	Unknown		04/27/2018 15:40	Finished	DUP,10mL
54	N030017-012A,SAMF	1	1000	Unknown		04/27/2018 15:59	Finished	SAMP,2>10mL
55	N030017-012AMS,MS	2	1000	Unknown		04/27/2018 16:10	Finished	MS (5ppb), IWST-180129B,2>1
56	N030017-013A,SAMF	3	1000	Unknown		04/27/2018 16:19	Finished	SAMP,10mL
57	N030017-013AMS,MS	4	1000	Unknown		04/27/2018 16:29	Finished	MS (5ppb), IWST-180129B,10
58	N030017-003A,SAMF	5	1000	Unknown		04/27/2018 16:38	Finished	SAMP,10mL
59	N030017-003AMS,MS	6	1000	Unknown		04/27/2018 16:48	Finished	MS (1ppb), IWST-180129B,10
60	N030017-004A,SAMF	7	1000	Unknown		04/27/2018 16:57	Finished	SAMP,10mL

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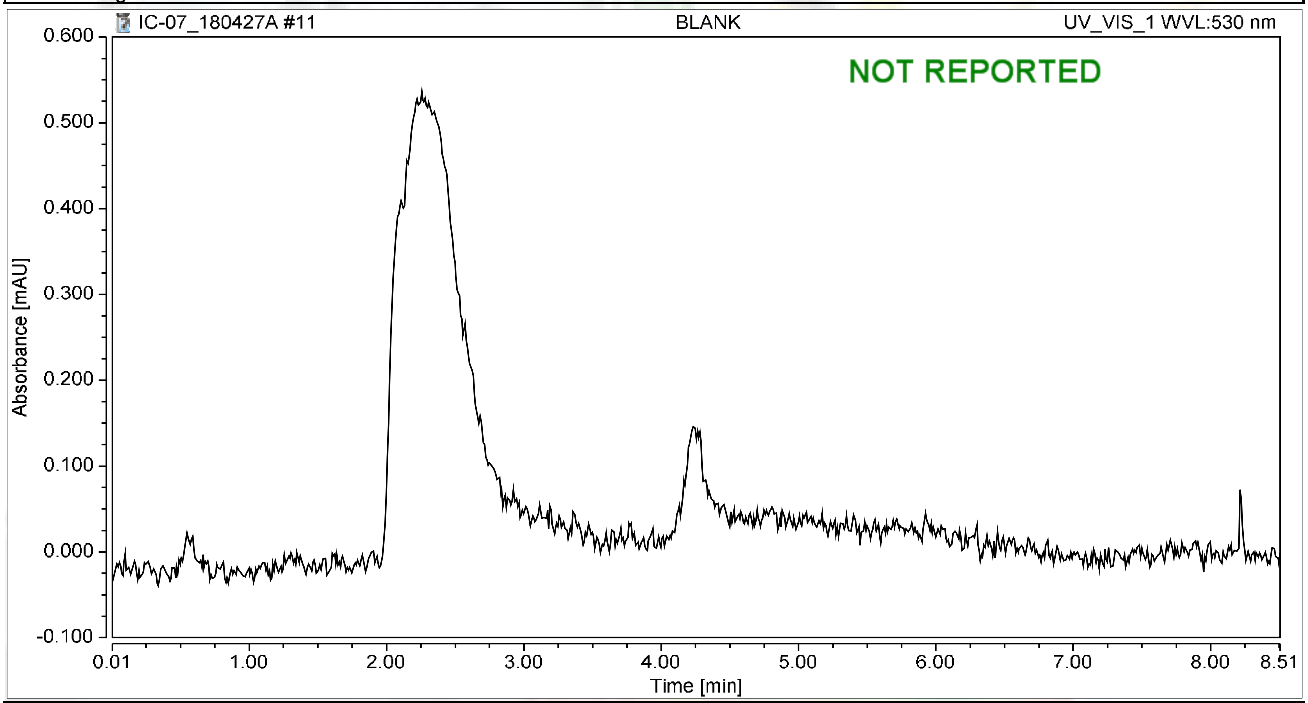
61	N030017-004AMS,MS	8	1000	Unknown		04/27/2018 17:07	Finished	MS (1ppb), IWST-180129B,10
62	CCV-5,CCV,1,	9	1000	Unknown		04/27/2018 17:16	Finished	CCV @5ppb, IWST-180129A
63	CCB-5,CCB,1,	10	1000	Unknown		04/27/2018 17:26	Finished	CCB R180418A
64	N030017-002A,SAMP	11	1000	Unknown		04/27/2018 17:35	Finished	SAMP,10mL
65	N030017-002AMS,MS	12	1000	Unknown		04/27/2018 17:45	Finished	MS (1ppb), IWST-180129B,10
66	N030017-006A,SAMP	13	1000	Unknown		04/27/2018 17:54	Finished	SAMP,10mL
67	N030017-006AMS,MS	14	1000	Unknown		04/27/2018 18:04	Finished	MS (1ppb), IWST-180129B,10
68	N030017-007A,SAMP	15	1000	Unknown		04/27/2018 18:13	Finished	SAMP,10mL
69	N030017-007AMS,MS	16	1000	Unknown		04/27/2018 18:23	Finished	MS (1ppb), IWST-180129B,10
70	N030017-009A,SAMP	17	1000	Unknown		04/27/2018 18:32	Finished	SAMP,10mL
71	N030017-009AMS,MS	18	1000	Unknown		04/27/2018 18:41	Finished	MS (1ppb), IWST-180129B,10
72	N030017-010A,SAMP	19	1000	Unknown		04/27/2018 18:51	Finished	SAMP,10mL
73	N030017-010AMS,MS	20	1000	Unknown		04/27/2018 19:00	Finished	MS (1ppb), IWST-180129B,10
74	CCV-6,CCV1,1,	21	1000	Unknown		04/27/2018 19:10	Finished	CCV @10ppb, IWST-180129A
75	CCB-6,CCB,1,	22	1000	Unknown		04/27/2018 19:19	Finished	CCB R180418A
76	N030017-011A,SAMP	23	1000	Unknown		04/27/2018 19:29	Finished	SAMP,10mL
77	N030017-011AMS,MS	24	1000	Unknown		04/27/2018 19:38	Finished	MS (1ppb), IWST-180129B,10
78	N029858-001A,SAMP	25	1000	Unknown		04/27/2018 19:48	Finished	SAMP,10mL
79	N029858-001AMS,MS	26	1000	Unknown		04/27/2018 19:57	Finished	MS (1ppb), IWST-180129B,10
80	N030017-004AMS,MS	27	1000	Unknown		04/27/2018 20:07	Finished	MS (1ppb), IWST-180129B,10
81	CCV-7,CCV,1,	28	1000	Unknown		04/27/2018 20:16	Finished	CCV @5ppb, IWST-180129A
82	CCB-7,CCB,1,	29	1000	Unknown		04/27/2018 20:26	Finished	CCB R180418A
83	SHUTDOWN	30	1000	Unknown		04/27/2018 20:35	Finished	
84	Eluent: R180426A	31	1000	Unknown		n.a.	Finished	Eluent
85	PCR: R180426B	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 08:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

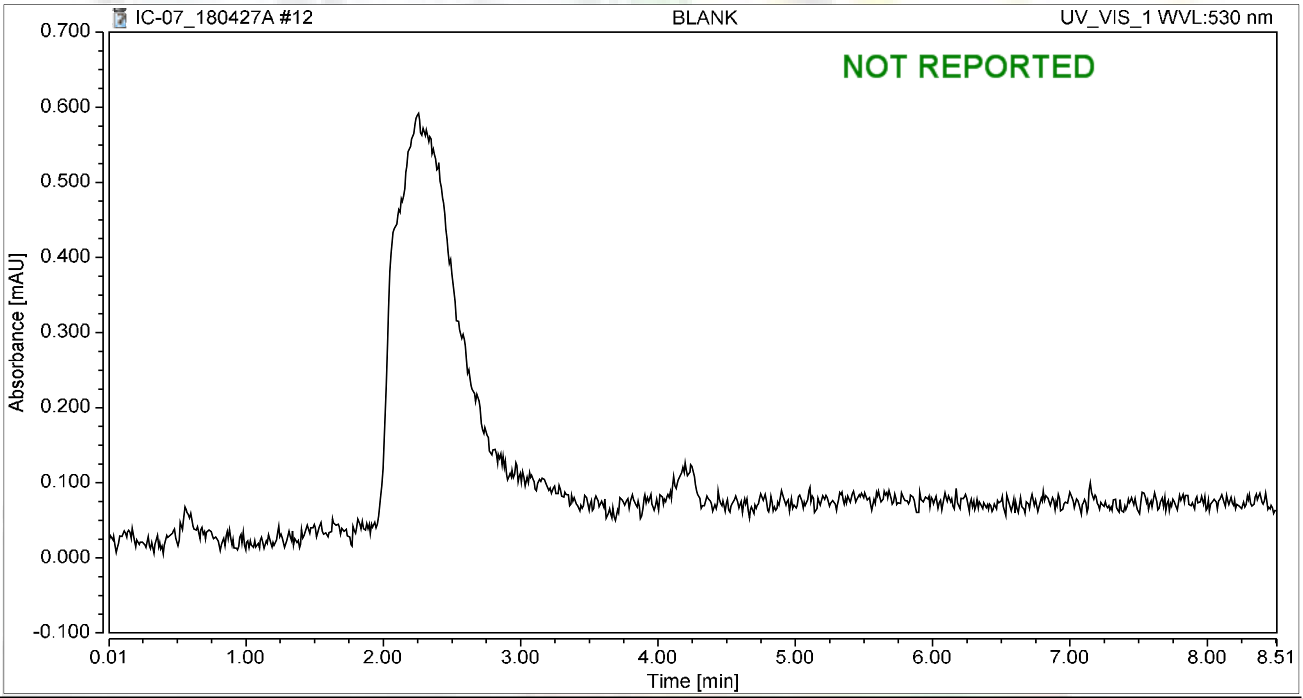
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 08:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

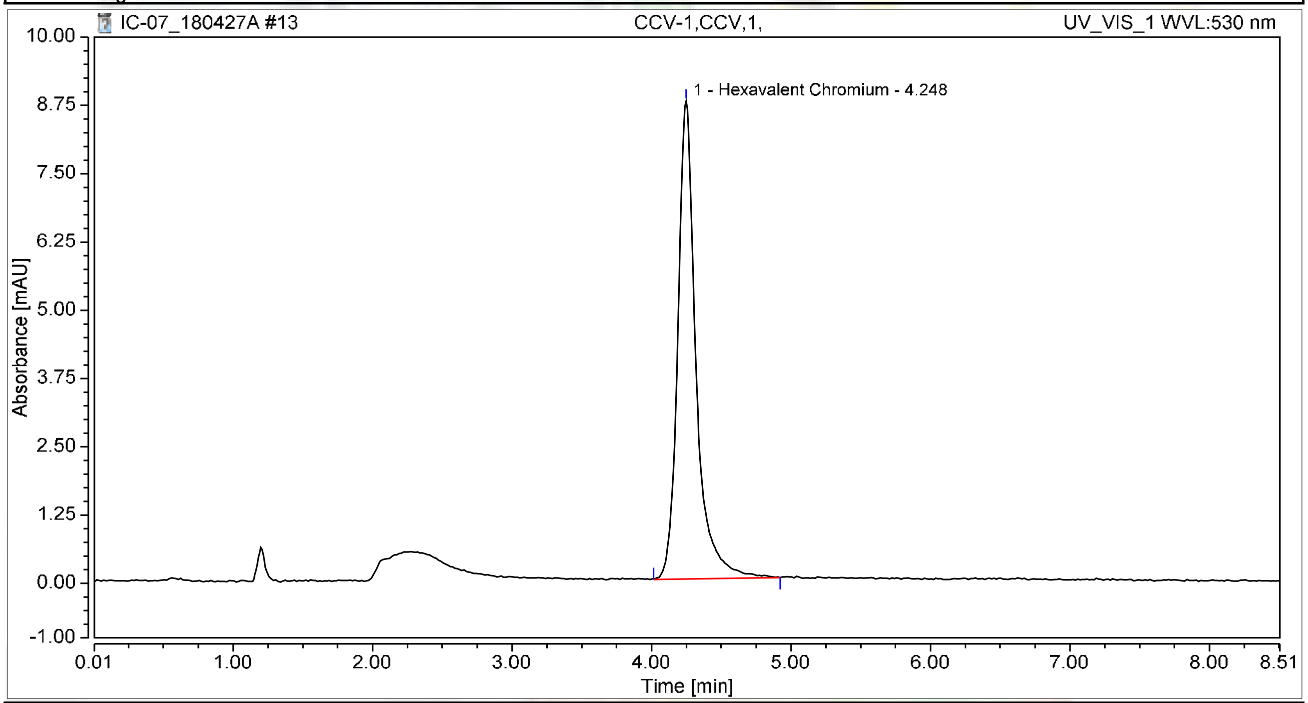
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 08:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

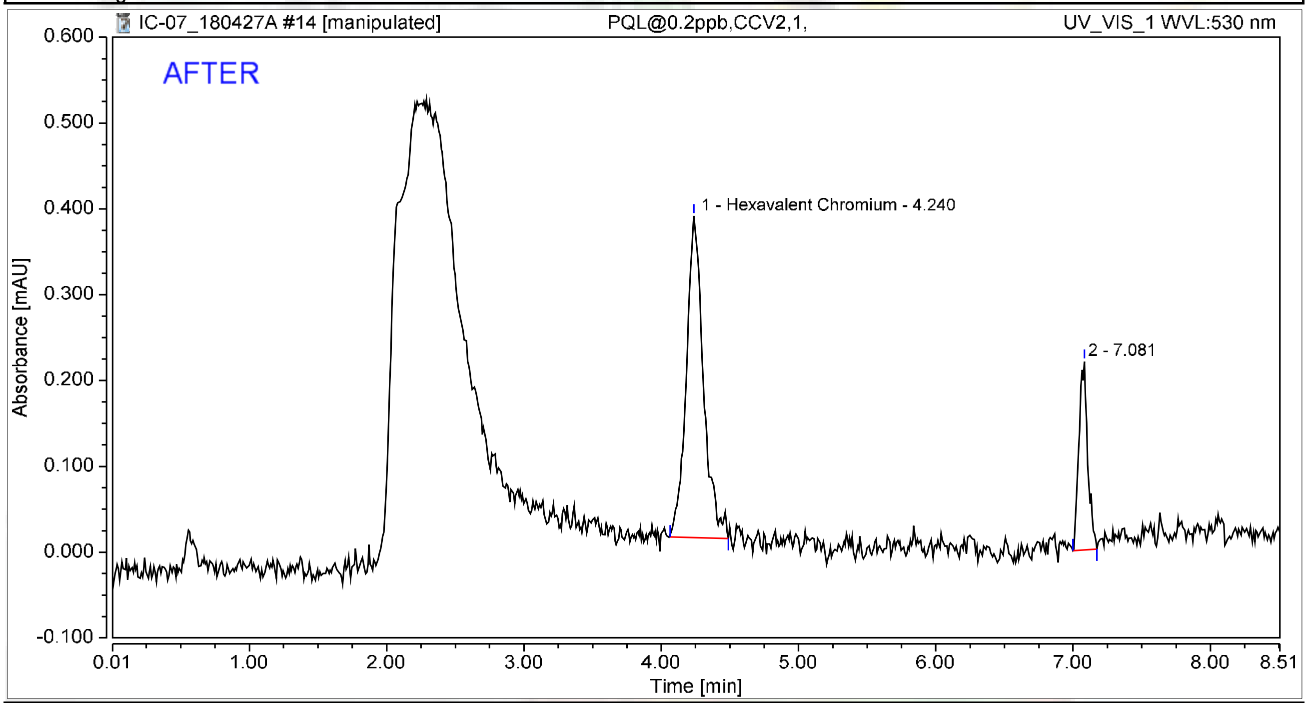
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.326	8.748	100.00	100.00	5.2308
Total:			**1.326**	**8.748**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 09:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.054	0.374	77.25	63.02	0.2135
2		7.081	0.016	0.220	22.75	36.98	n.a.
Total:			**0.070**	**0.594**	**100.00**	**100.00**	

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Reviewed by:
Nancy 5/7/2018

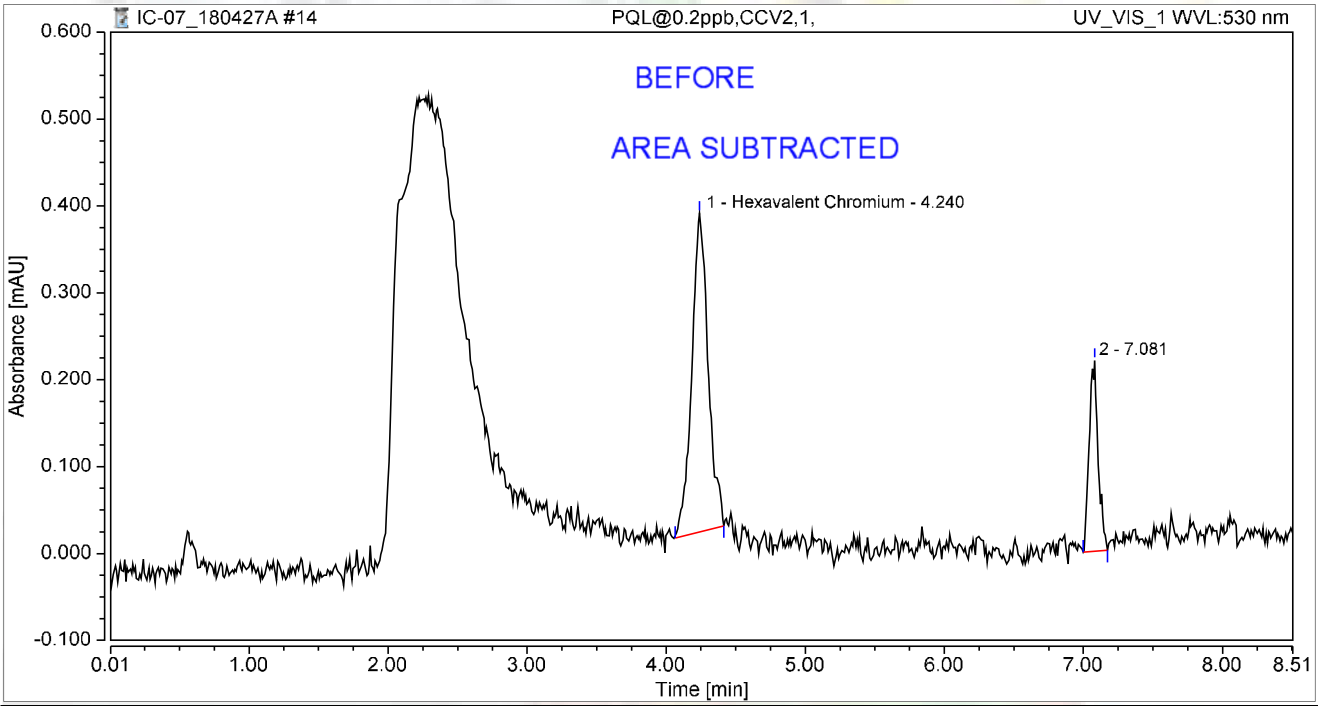
My first report/Integration

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 09:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.050	0.367	75.83	62.53	0.1972
2		7.081	0.016	0.220	24.17	37.47	n.a.
Total:			**0.066**	**0.586**	**100.00**	**100.00**	

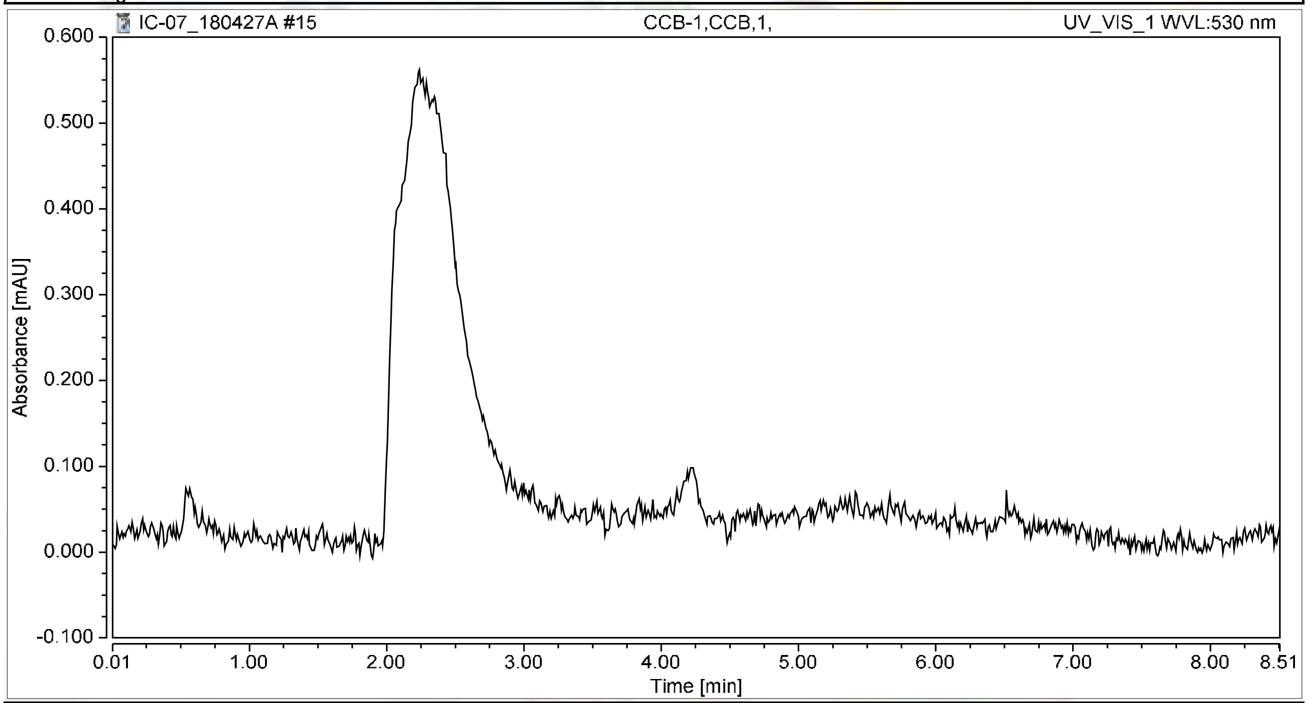
rba 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 09:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

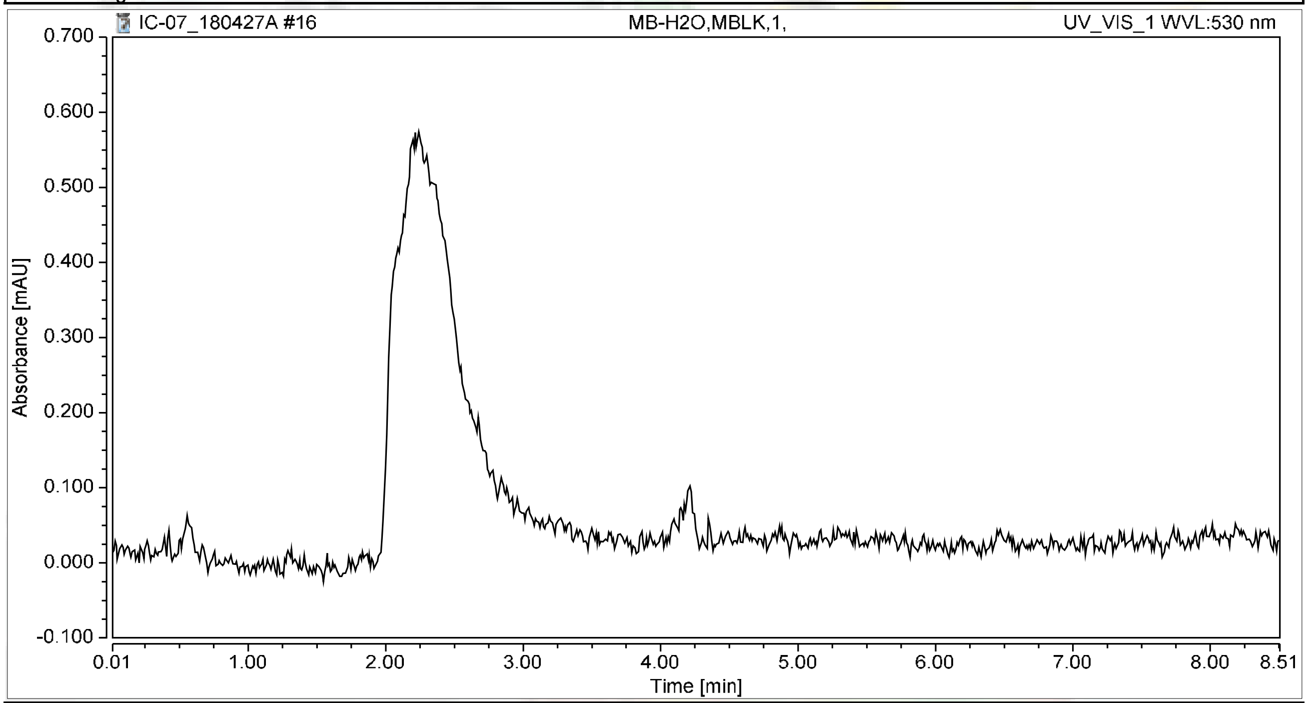
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 09:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

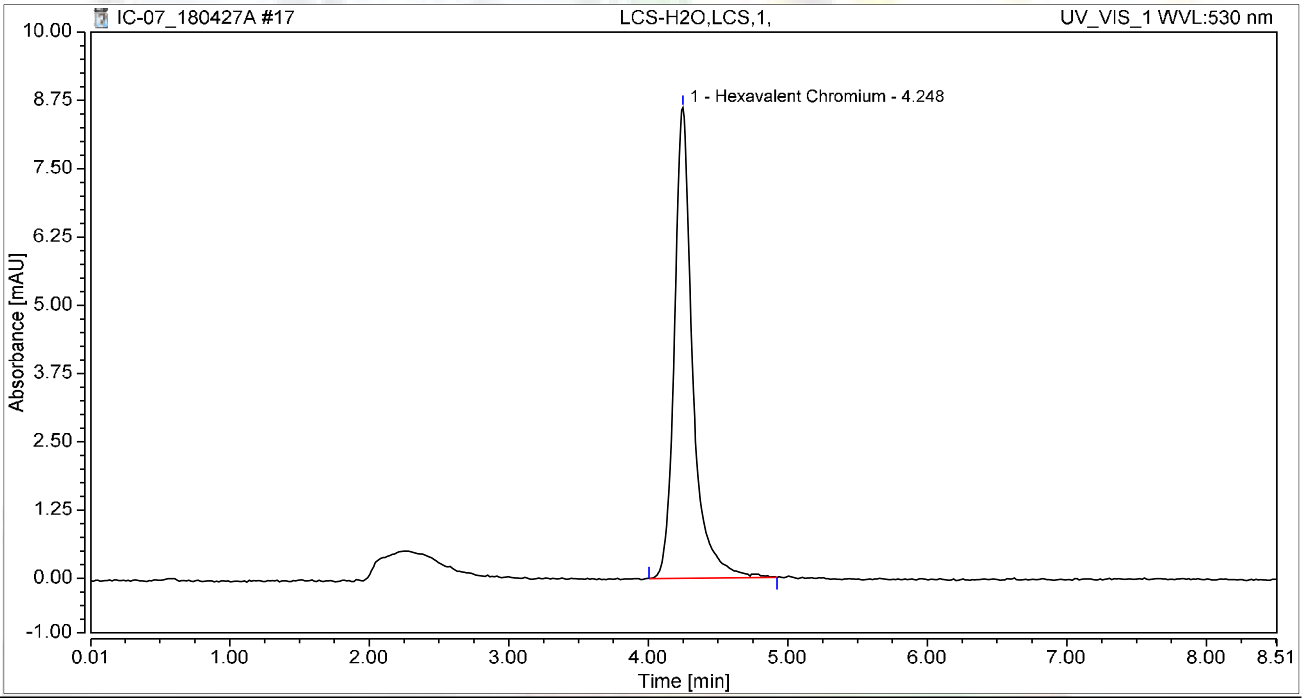
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 09:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

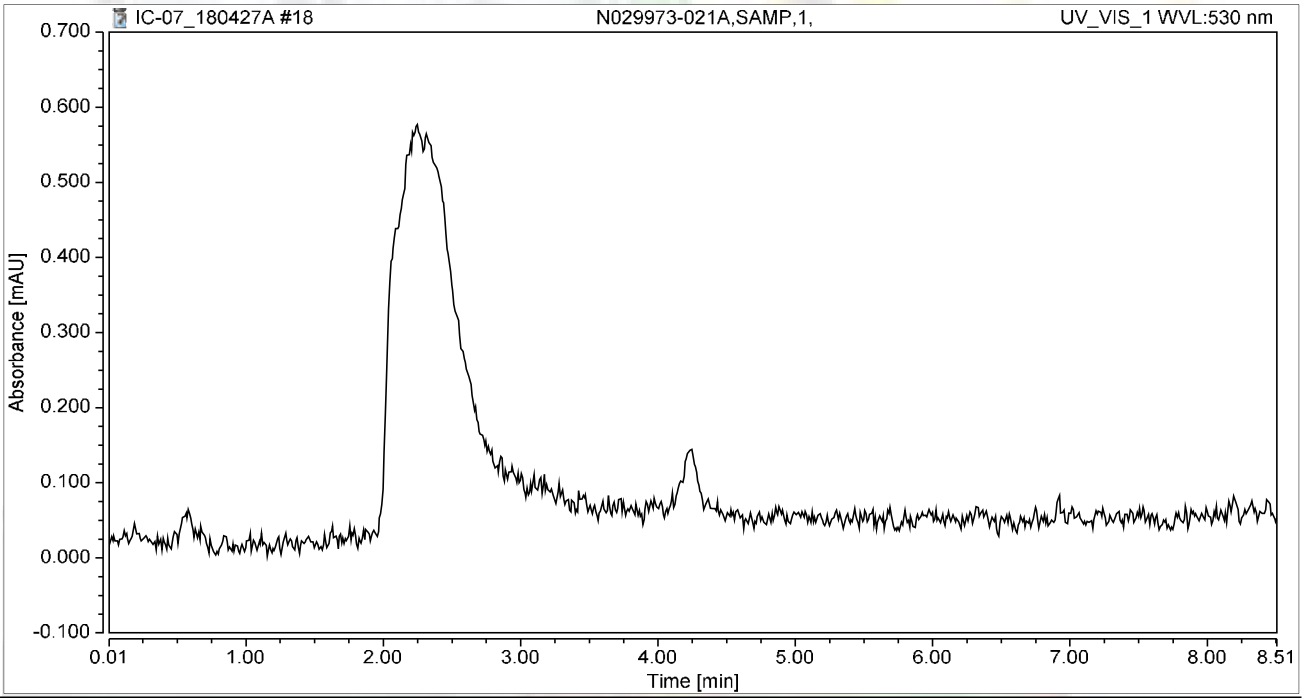
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.310	8.622	100.00	100.00	5.1669
Total:			**1.310**	**8.622**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-021A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 09:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

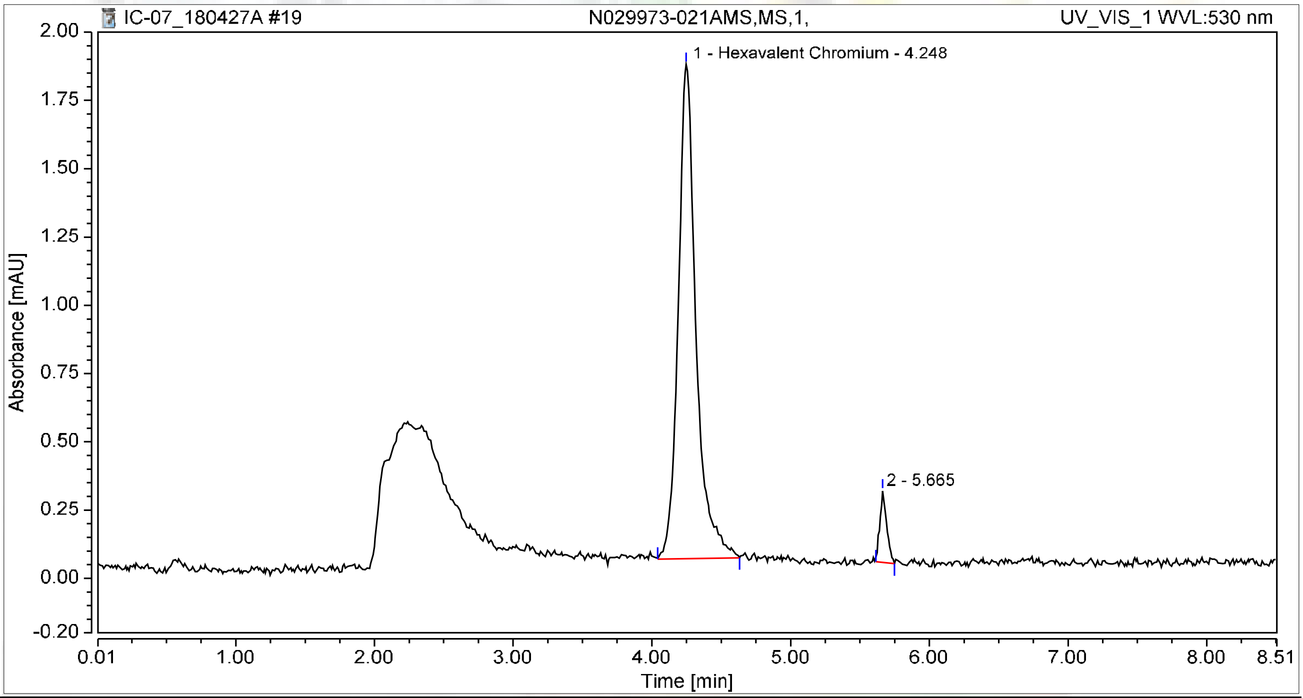
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-021AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 09:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

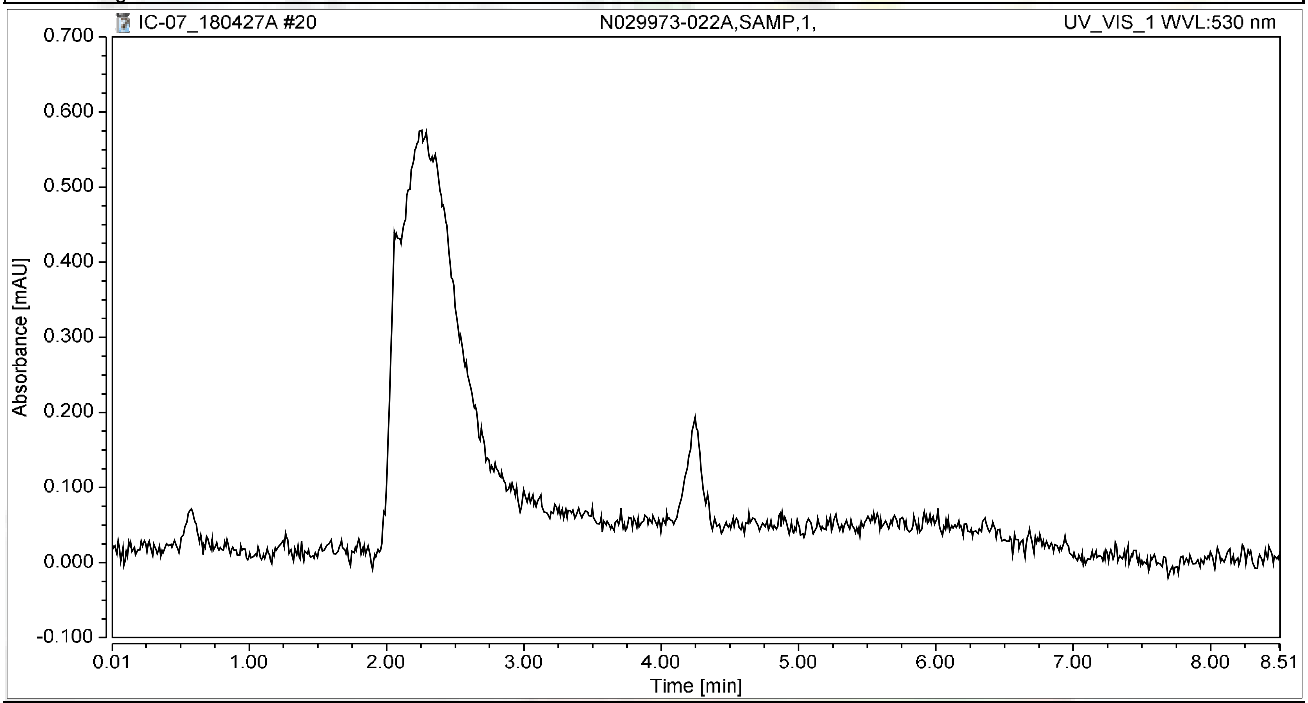
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.269	1.810	94.78	87.40	1.0615
2		5.665	0.015	0.261	5.22	12.60	n.a.
Total:			**0.284**	**2.071**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-022A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 09:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

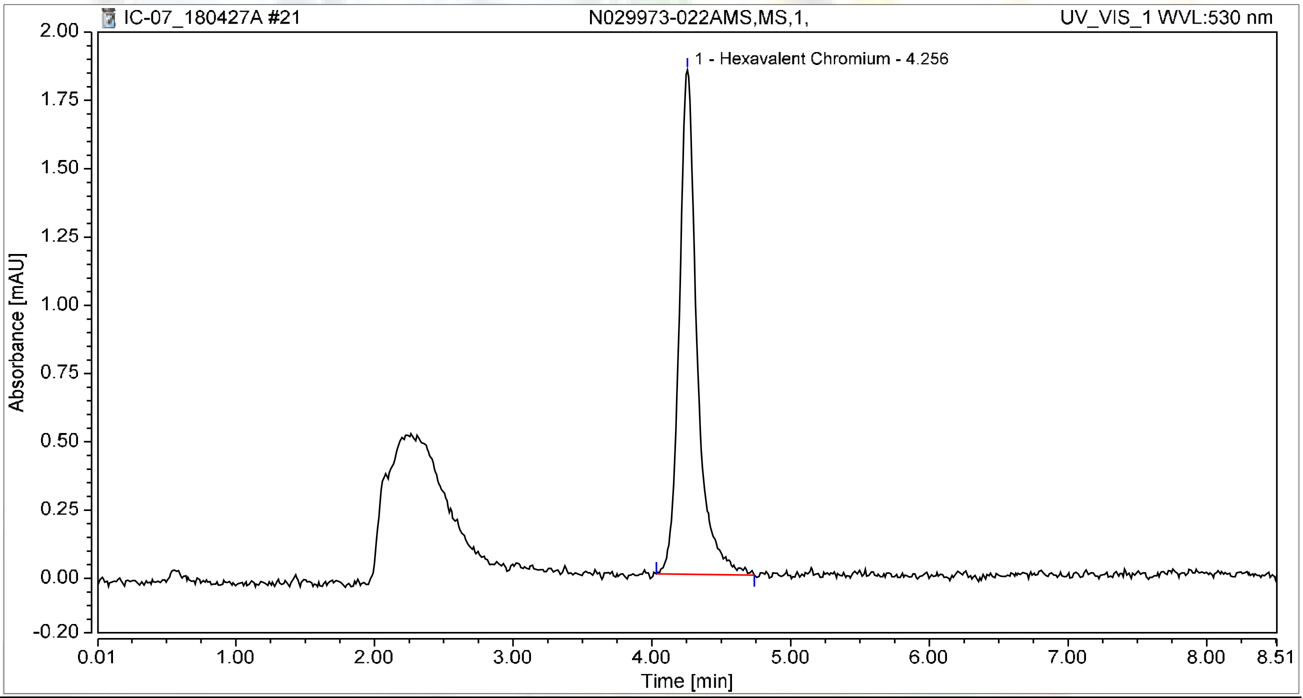
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-022AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 10:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

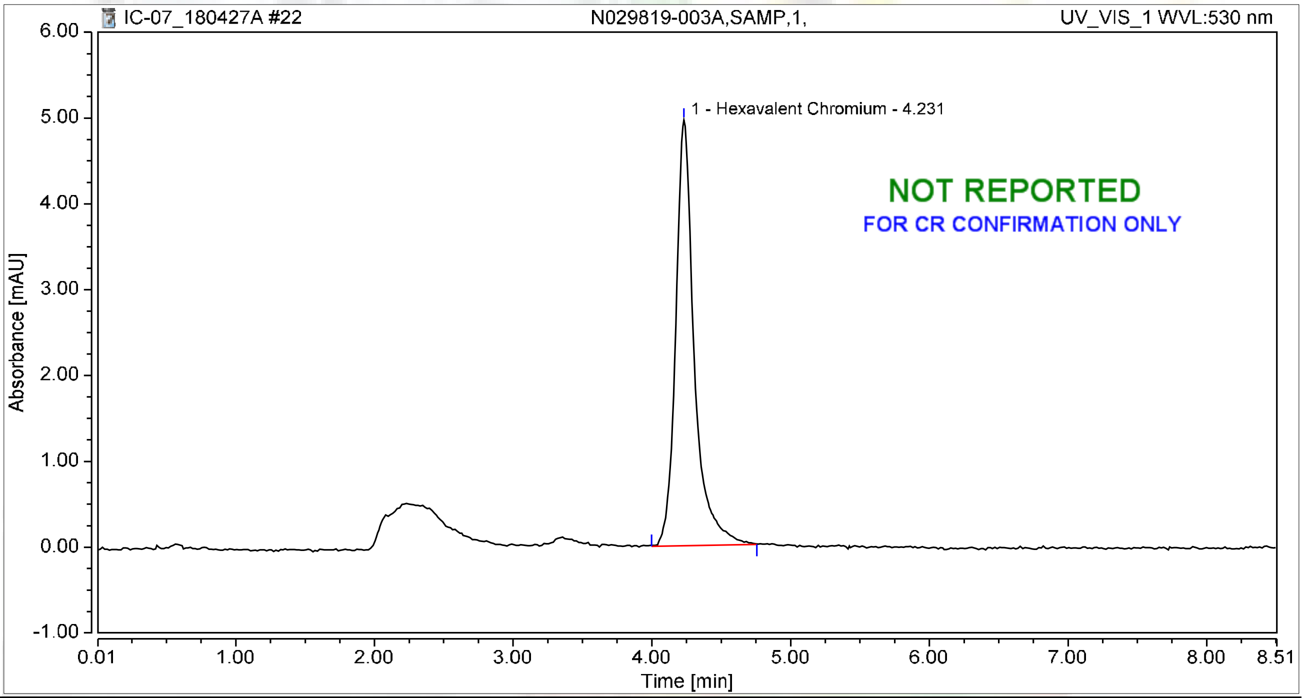
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.276	1.846	100.00	100.00	1.0893
Total:			**0.276**	**1.846**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029819-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 10:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

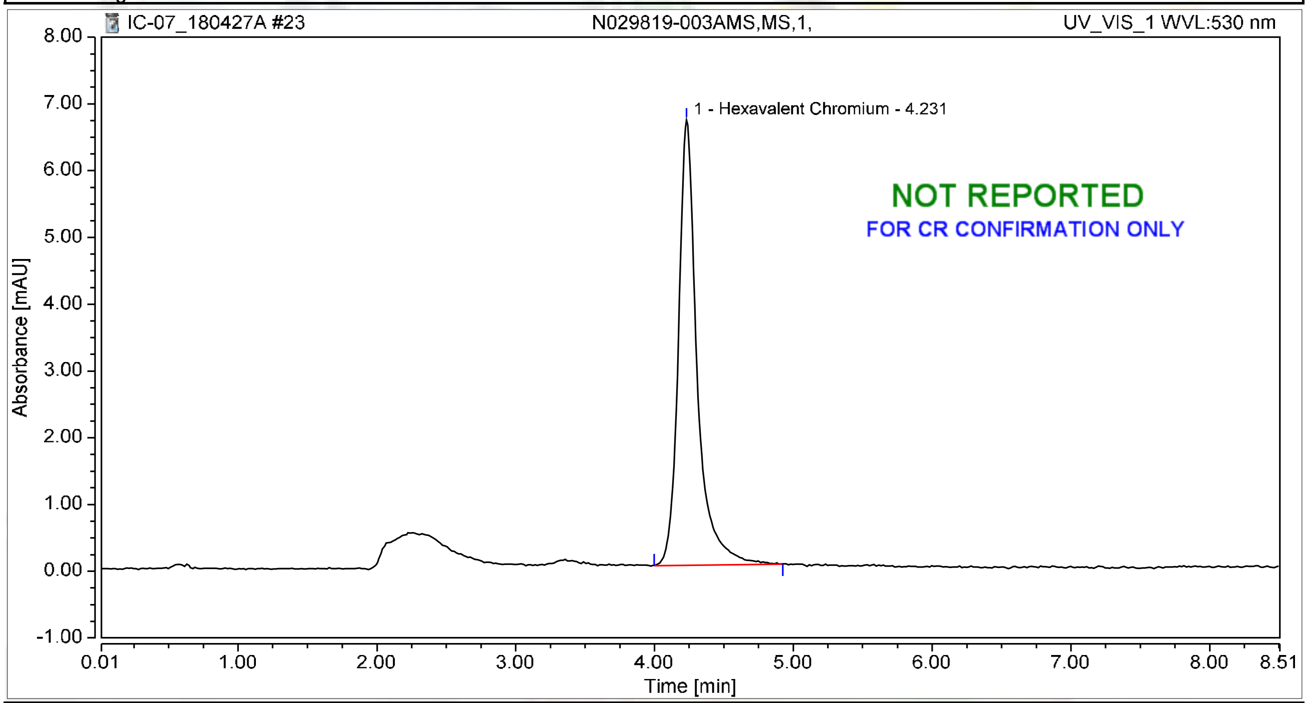
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.769	4.961	100.00	100.00	3.0318
Total:			**0.769**	**4.961**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029819-003AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

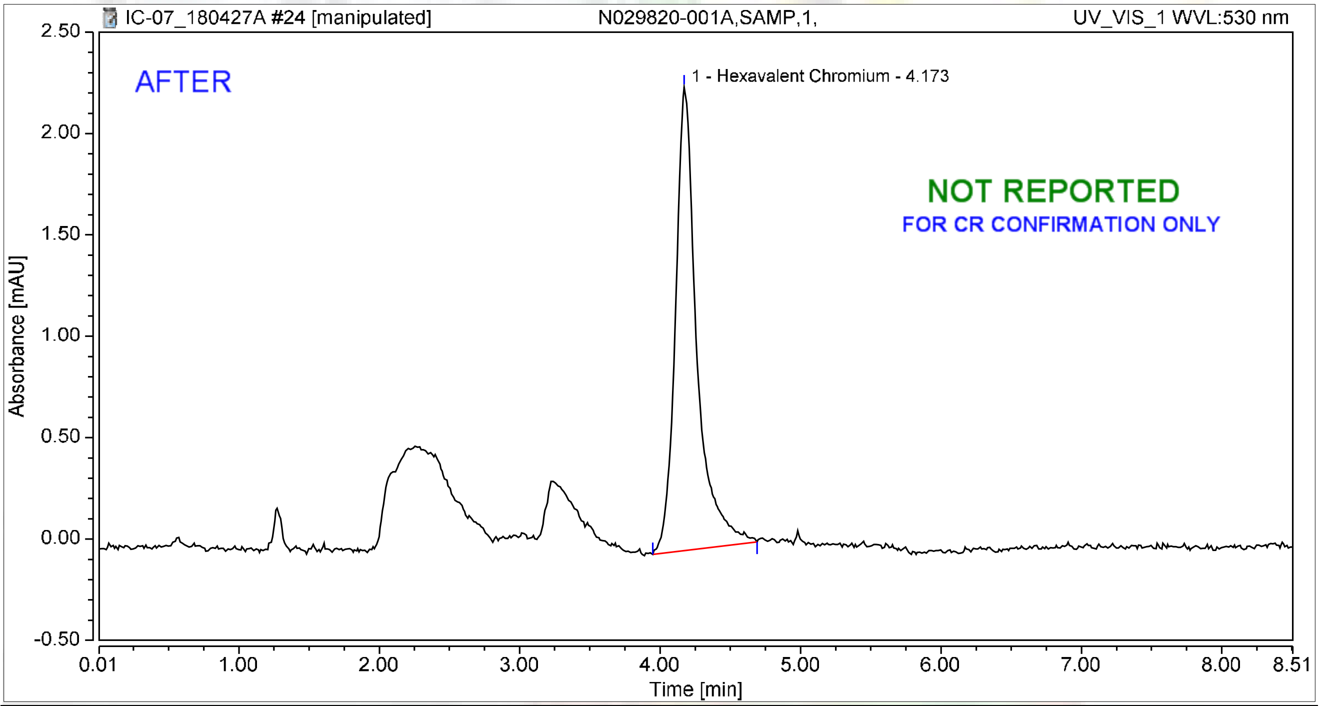
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.043	6.671	100.00	100.00	4.1153
Total:			**1.043**	**6.671**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029820-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.405	2.285	100.00	100.00	1.5970
Total:			**0.405**	**2.285**	**100.00**	**100.00**	

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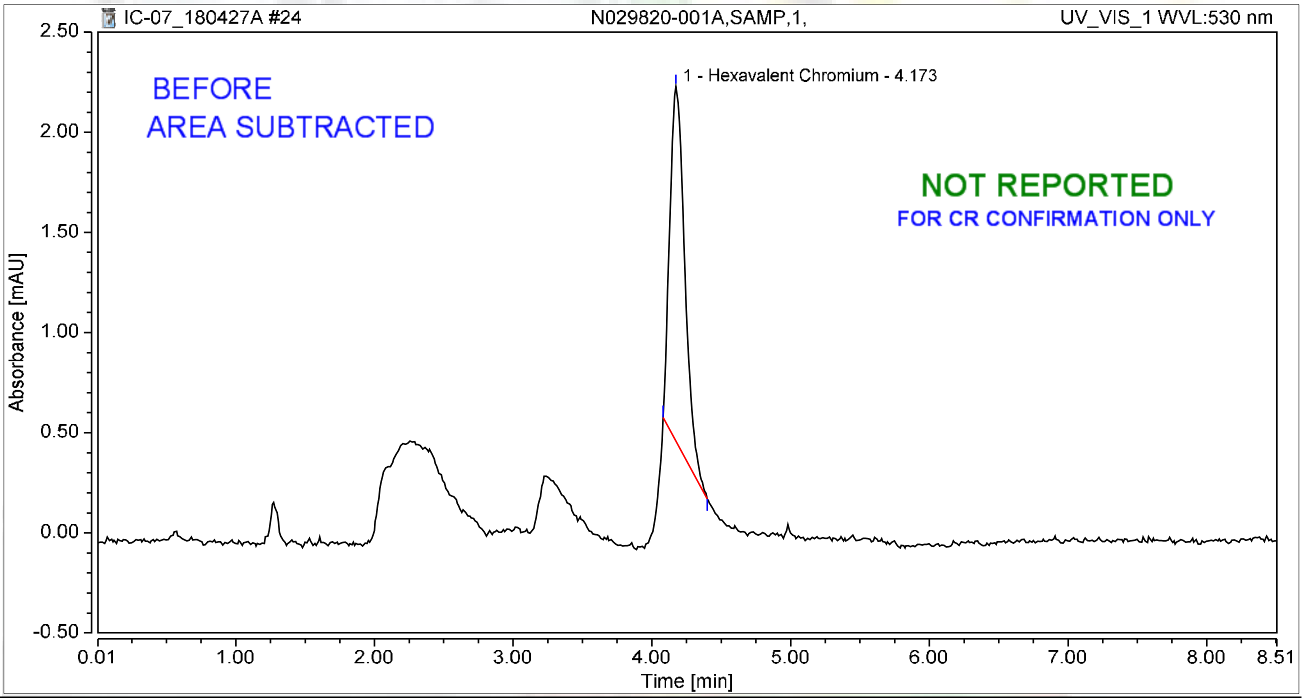
Chromatogram and Results

Injection Details

Injection Name:	**N029820-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.222	1.769	100.00	100.00	0.8772
Total:			**0.222**	**1.769**	**100.00**	**100.00**	

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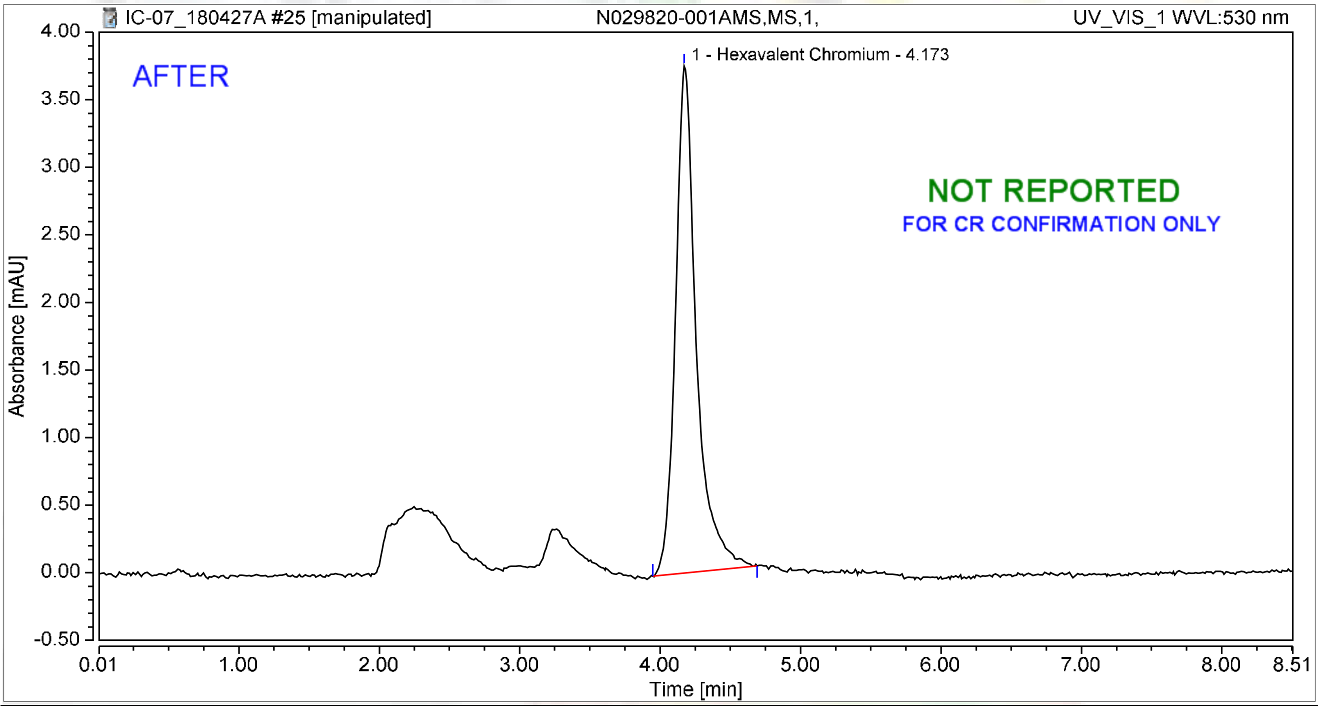
Chromatogram and Results

Injection Details

Injection Name:	**N029820-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.646	3.750	100.00	100.00	2.5478
Total:			**0.646**	**3.750**	**100.00**	**100.00**	

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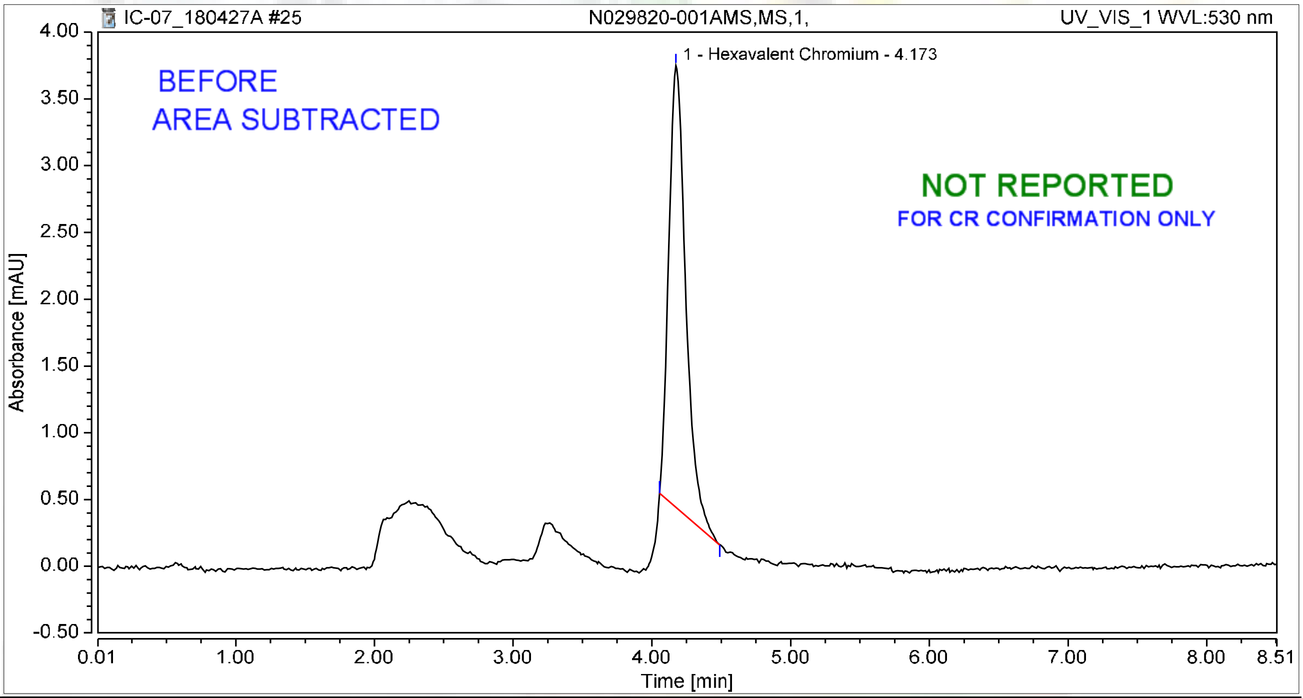
Chromatogram and Results

Injection Details

Injection Name:	**N029820-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.470	3.306	100.00	100.00	1.8523
Total:			**0.470**	**3.306**	**100.00**	**100.00**	

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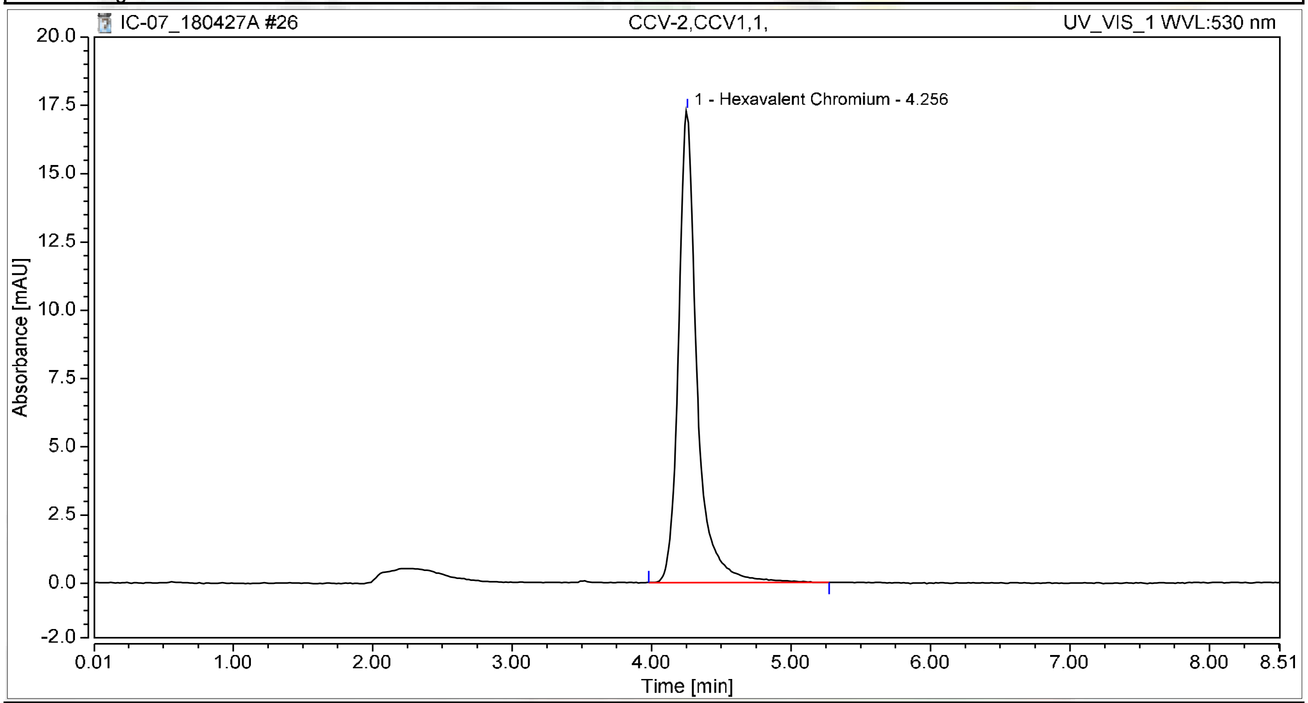
Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

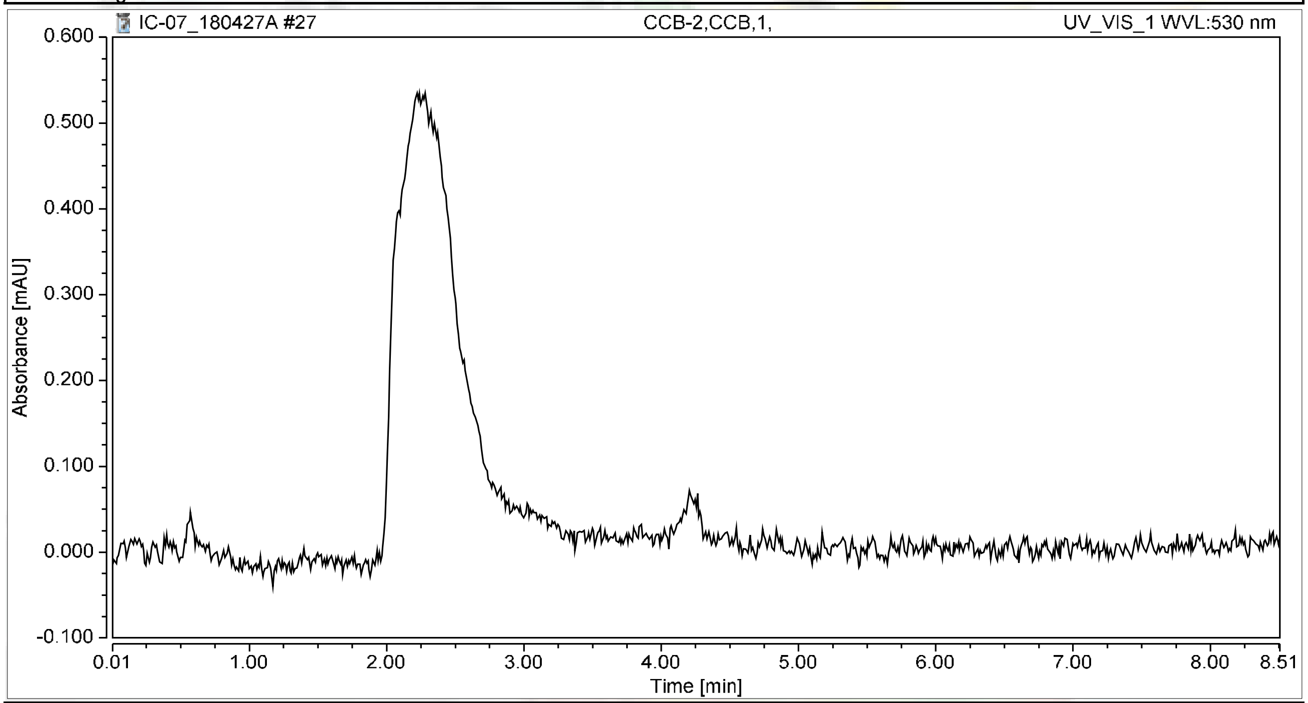
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.653	17.277	100.00	100.00	10.4646
Total:			**2.653**	**17.277**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

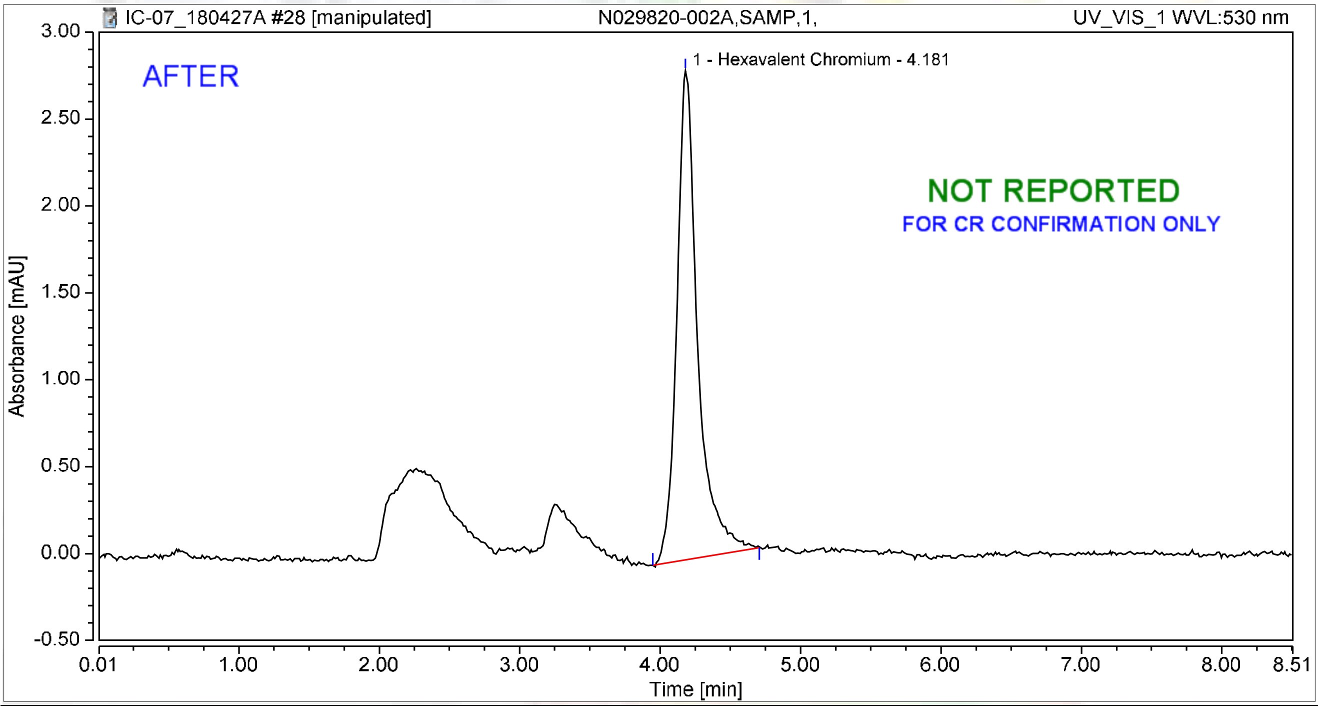
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029820-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.483	2.812	100.00	100.00	1.9066
Total:			**0.483**	**2.812**	**100.00**	**100.00**	

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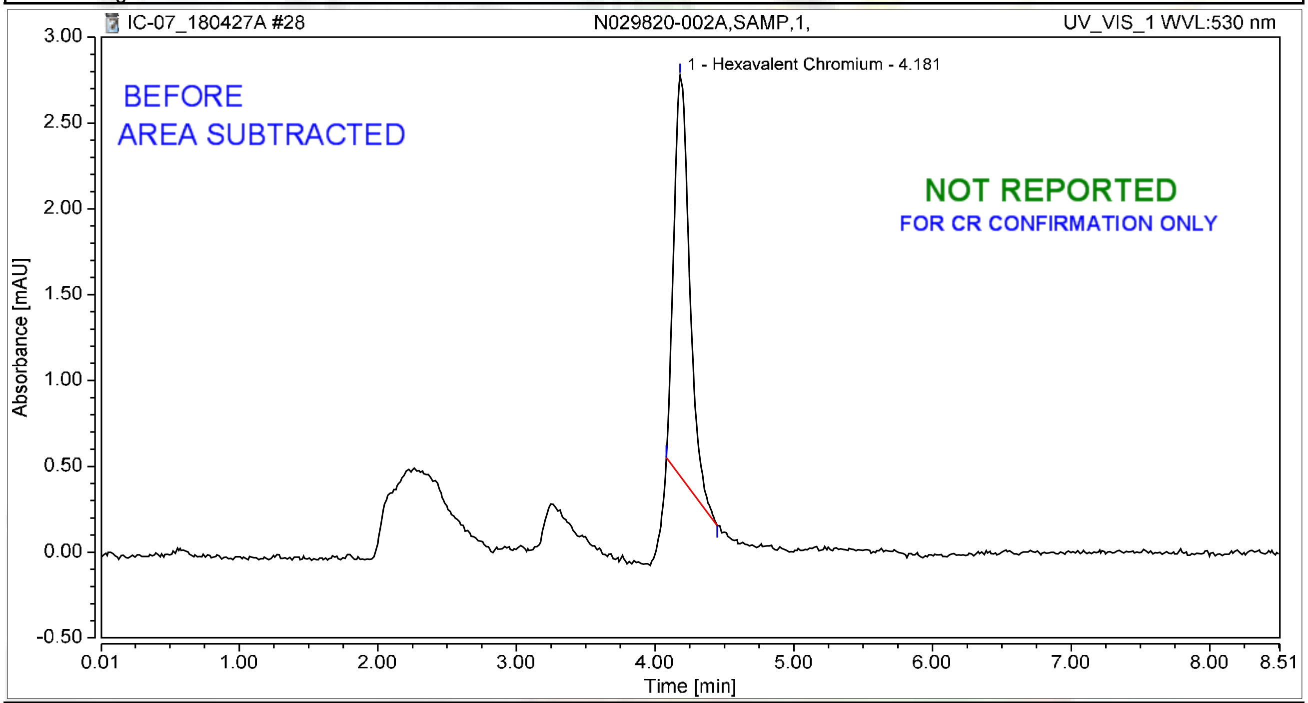
Chromatogram and Results

Injection Details

Injection Name:	**N029820-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.308	2.333	100.00	100.00	1.2164
Total:			**0.308**	**2.333**	**100.00**	**100.00**	

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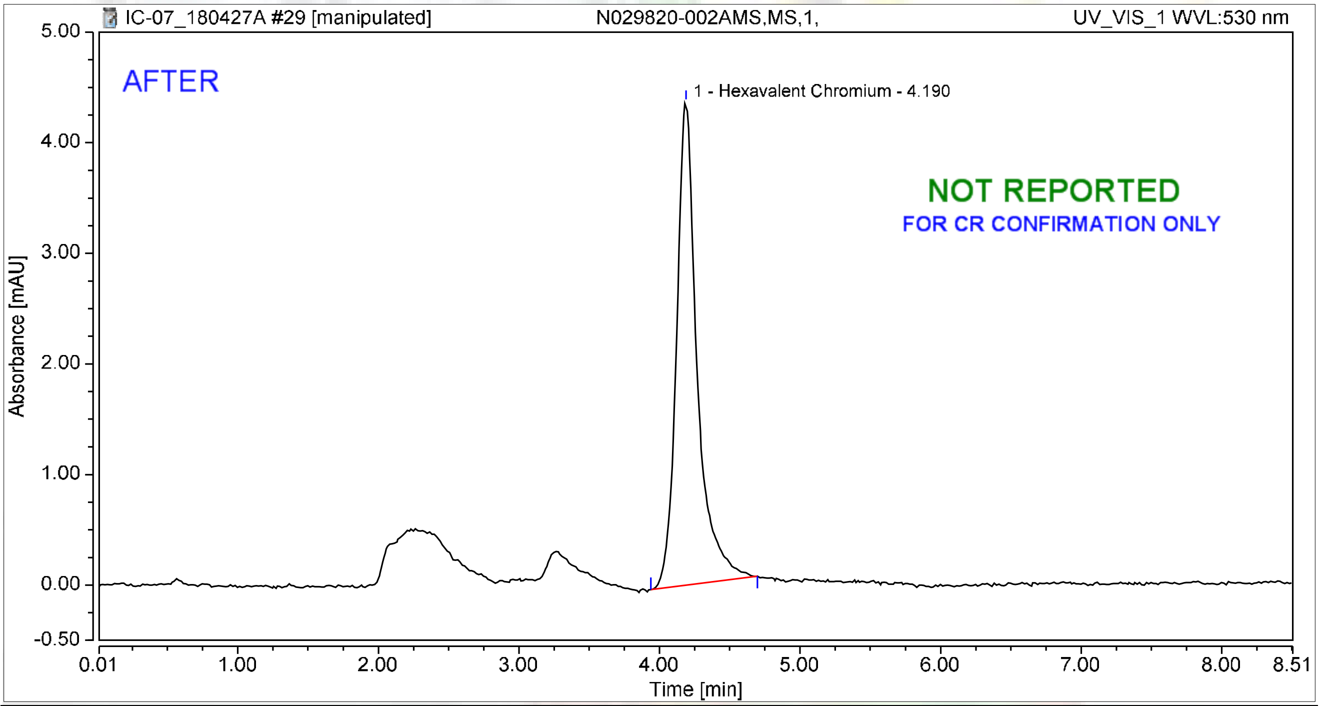
Chromatogram and Results

Injection Details

Injection Name:	**N029820-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.745	4.367	100.00	100.00	2.9399
Total:			**0.745**	**4.367**	**100.00**	**100.00**	

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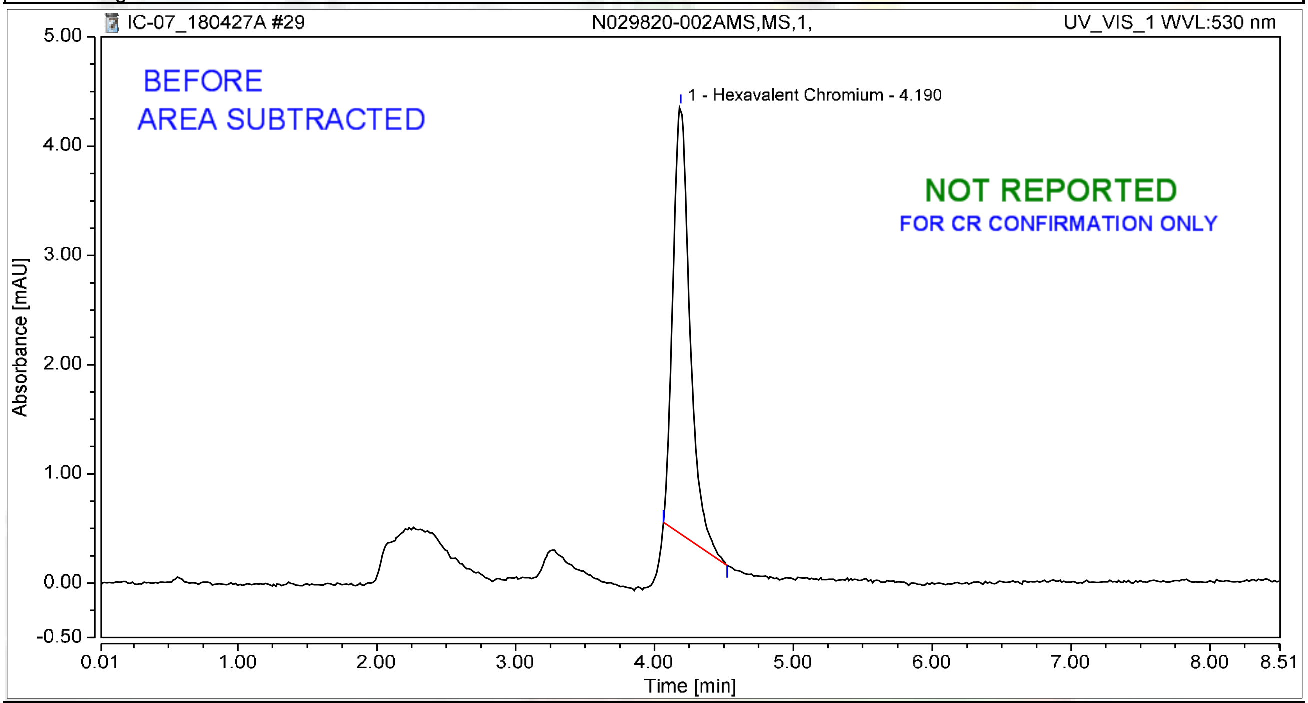
Chromatogram and Results

Injection Details

Injection Name:	**N029820-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.561	3.916	100.00	100.00	2.2138
Total:			**0.561**	**3.916**	**100.00**	**100.00**	

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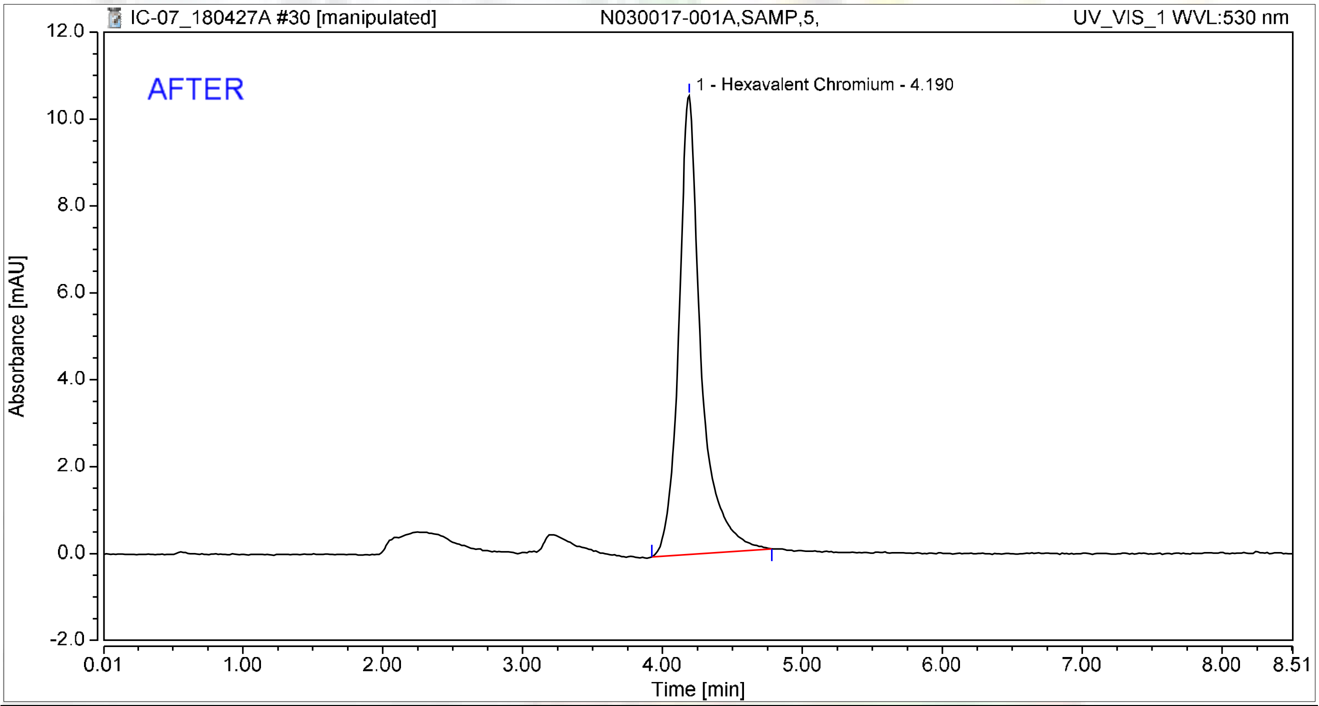
Chromatogram and Results

Injection Details

Injection Name:	**N030017-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.953	10.559	100.00	100.00	7.7048
Total:			**1.953**	**10.559**	**100.00**	**100.00**	

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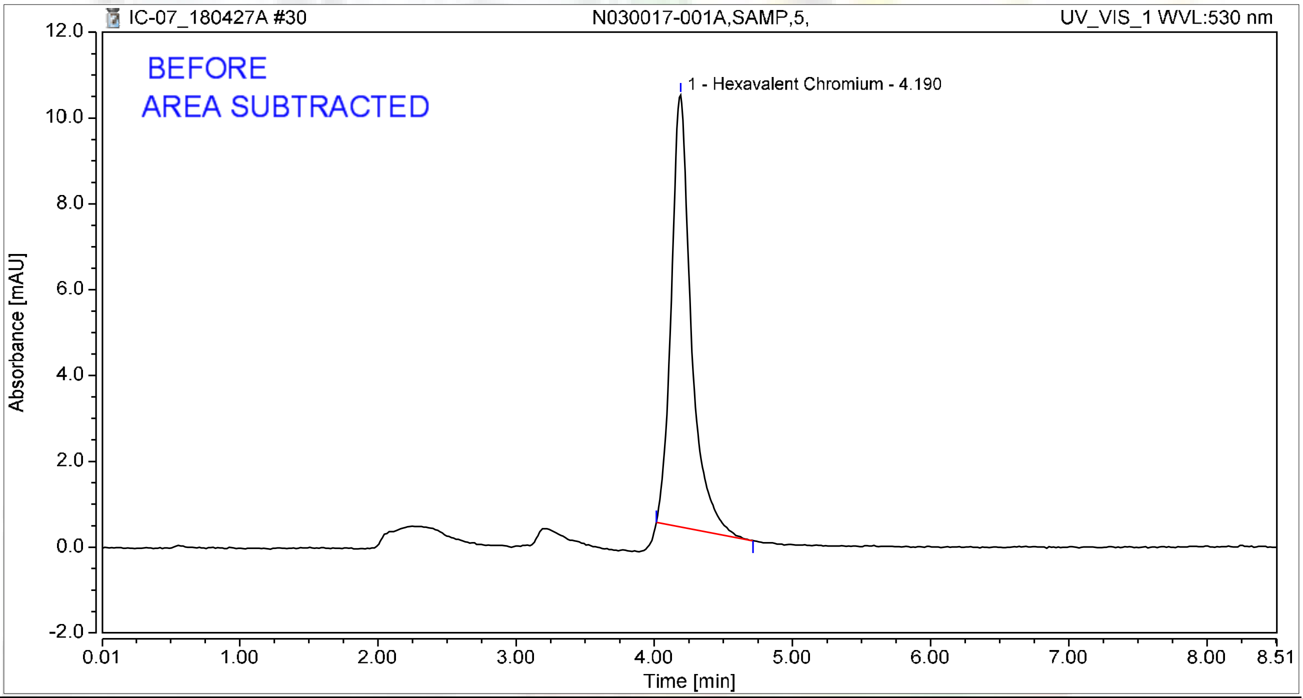
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.689	10.065	100.00	100.00	6.6609
Total:			**1.689**	**10.065**	**100.00**	**100.00**	

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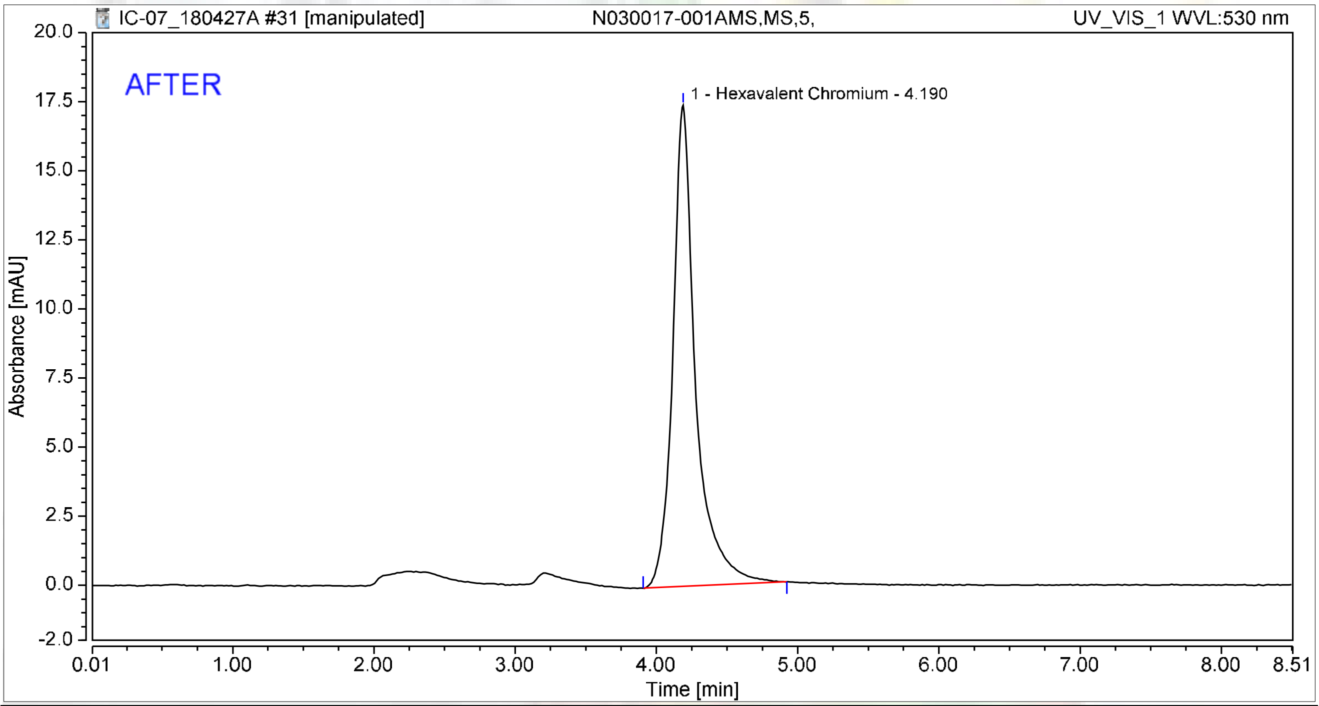
Chromatogram and Results

Injection Details

Injection Name:	**N030017-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	3.249	17.414	100.00	100.00	12.8182
Total:			**3.249**	**17.414**	**100.00**	**100.00**	

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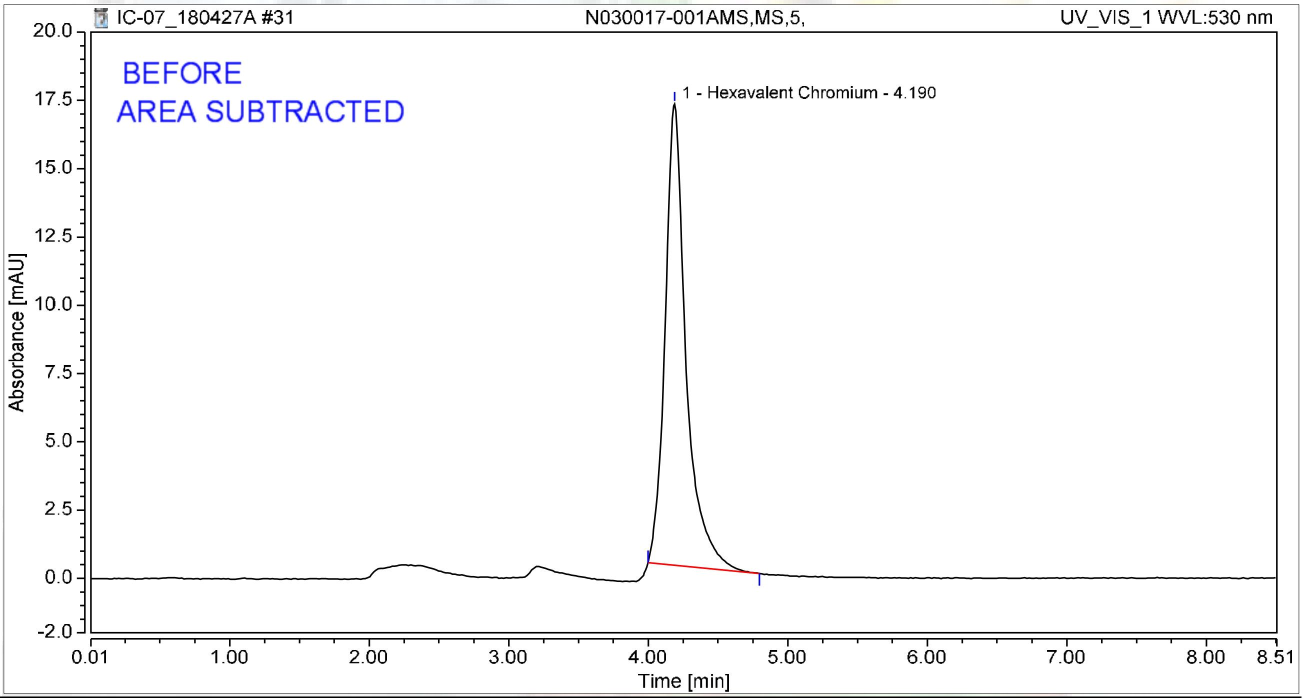
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.937	16.895	100.00	100.00	11.5857
Total:			**2.937**	**16.895**	**100.00**	**100.00**	

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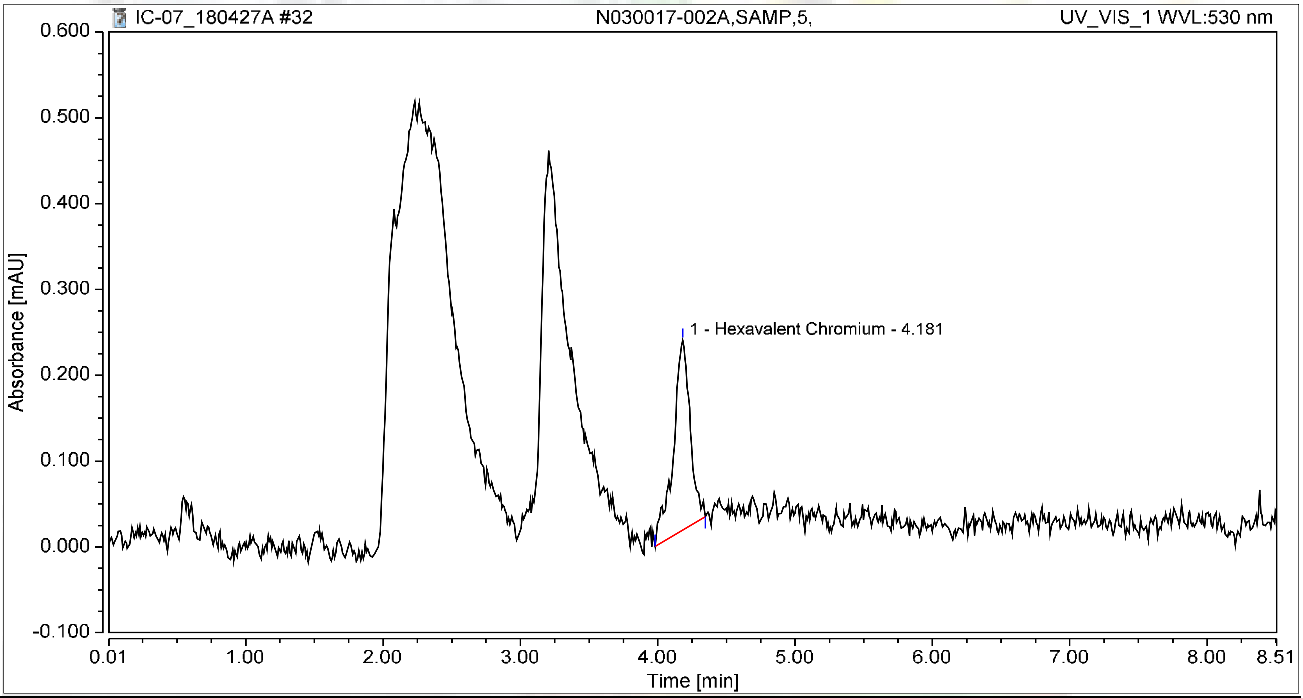
Chromatogram and Results

Injection Details

Injection Name:	**N030017-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

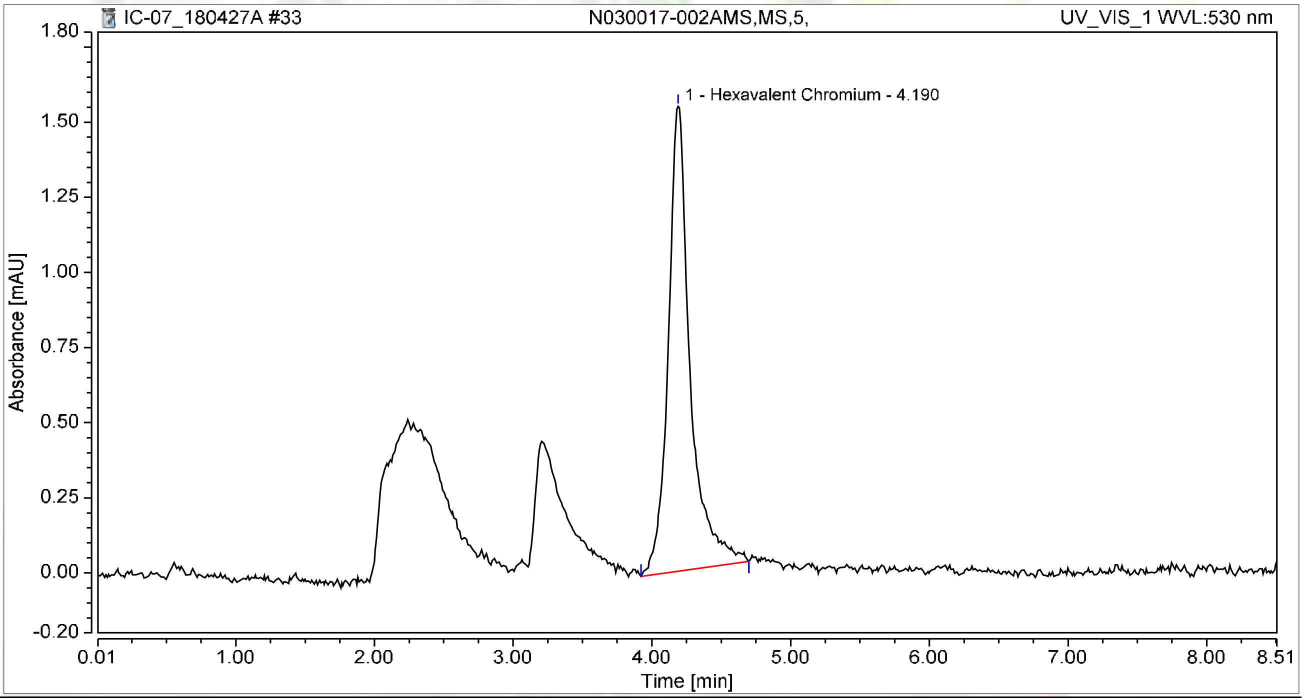
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.032	0.221	100.00	100.00	0.1243
Total:			**0.032**	**0.221**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

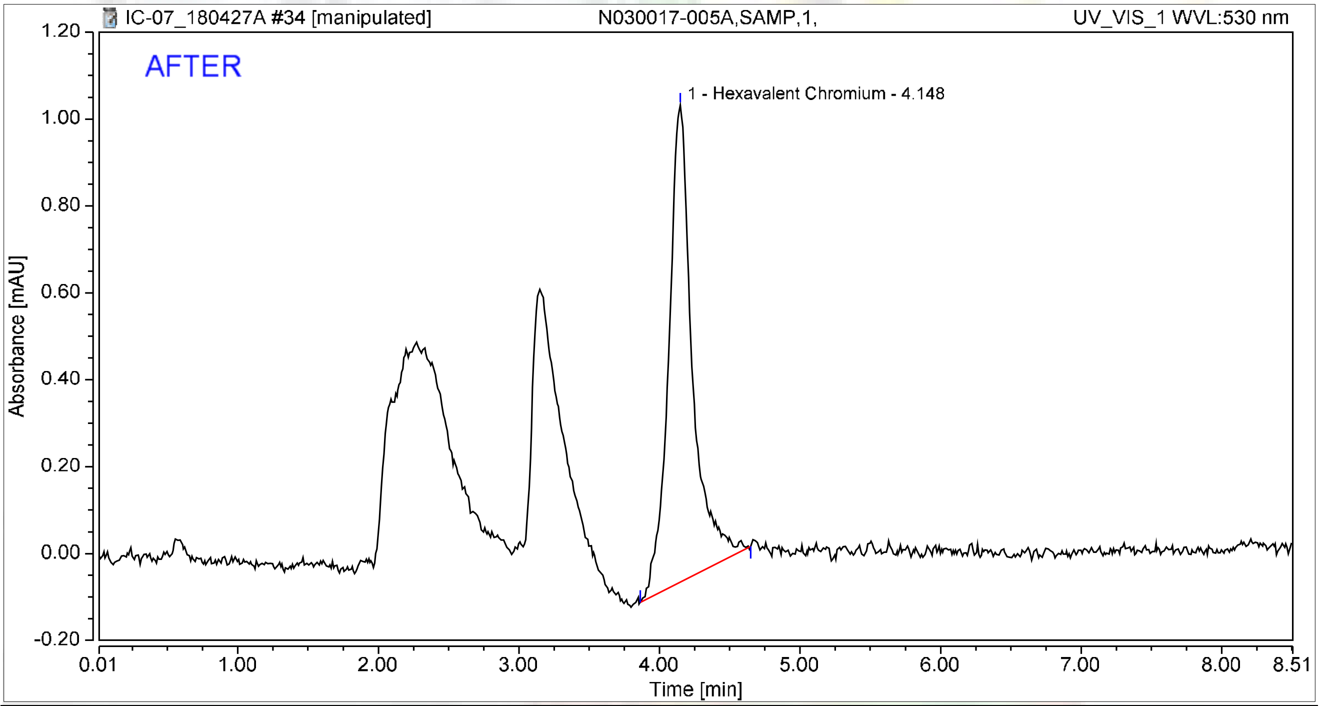
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.284	1.548	100.00	100.00	1.1211
Total:			**0.284**	**1.548**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.216	1.098	100.00	100.00	0.8526
Total:			**0.216**	**1.098**	**100.00**	**100.00**	

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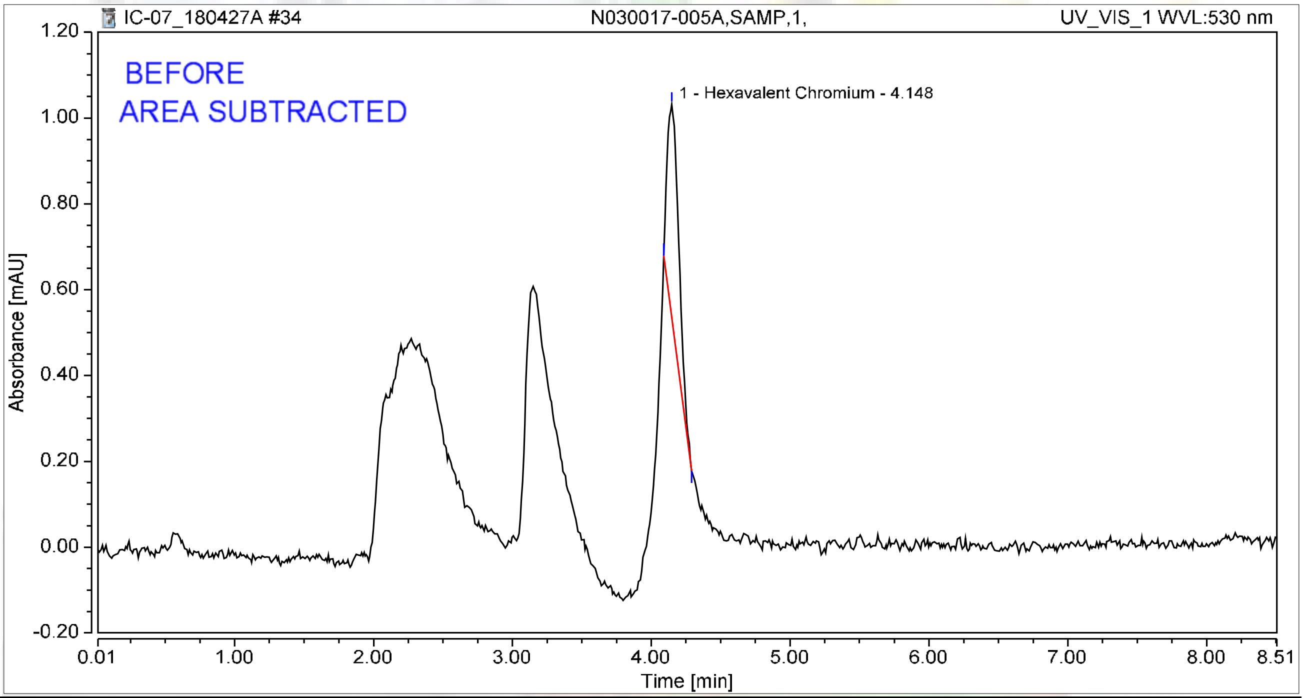
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.048	0.499	100.00	100.00	0.1904
Total:			**0.048**	**0.499**	**100.00**	**100.00**	

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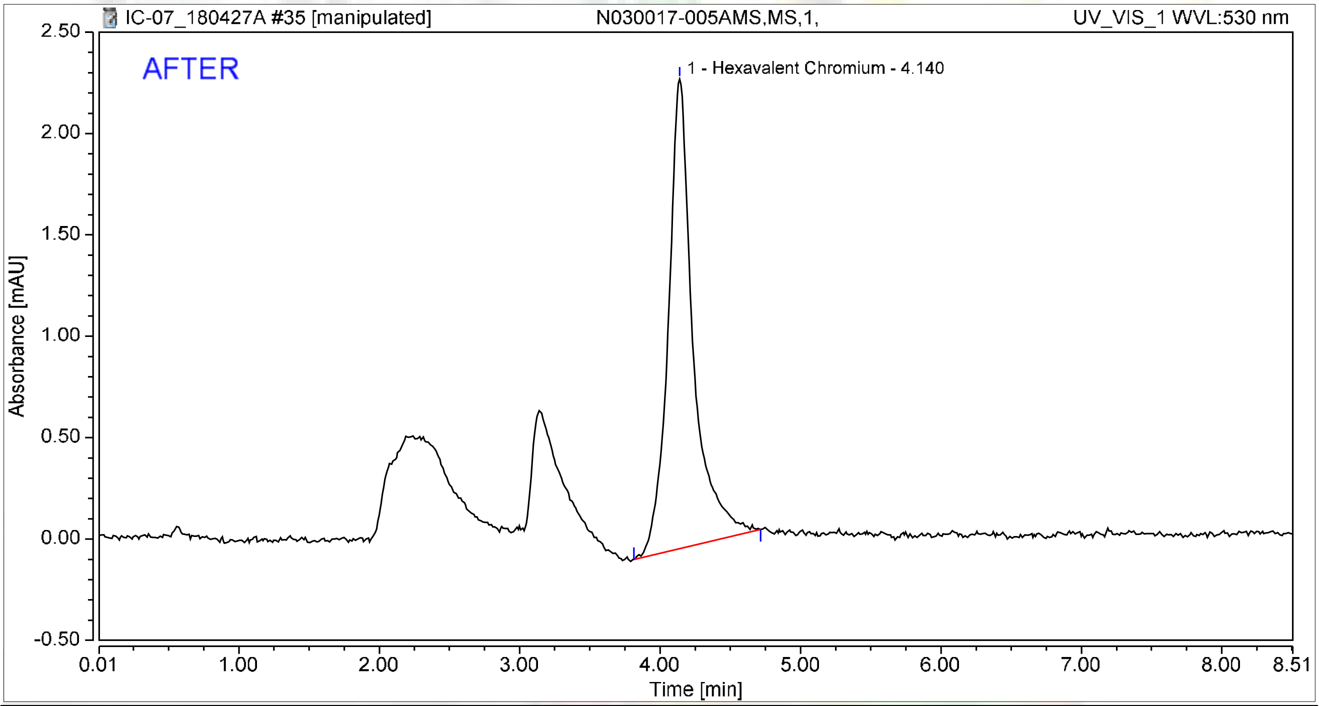
Chromatogram and Results

Injection Details

Injection Name:	**N030017-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.476	2.315	100.00	100.00	1.8777
Total:			**0.476**	**2.315**	**100.00**	**100.00**	

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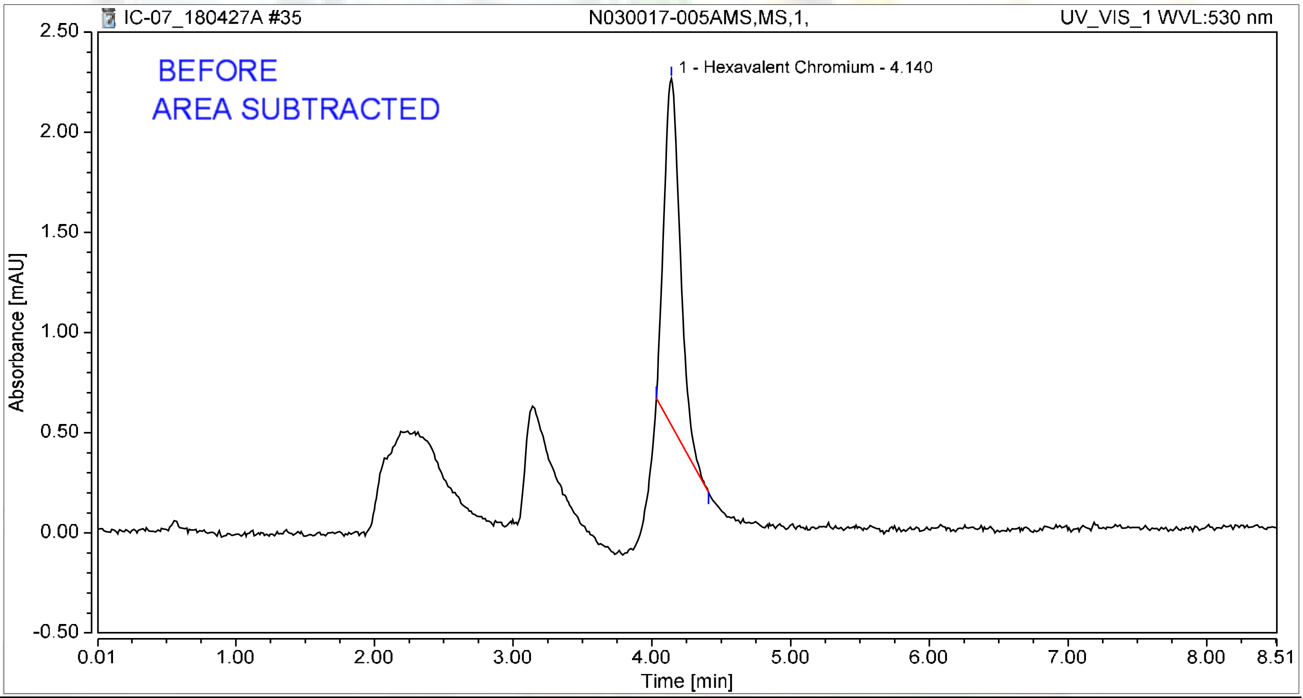
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.237	1.731	100.00	100.00	0.9337
Total:			**0.237**	**1.731**	**100.00**	**100.00**	

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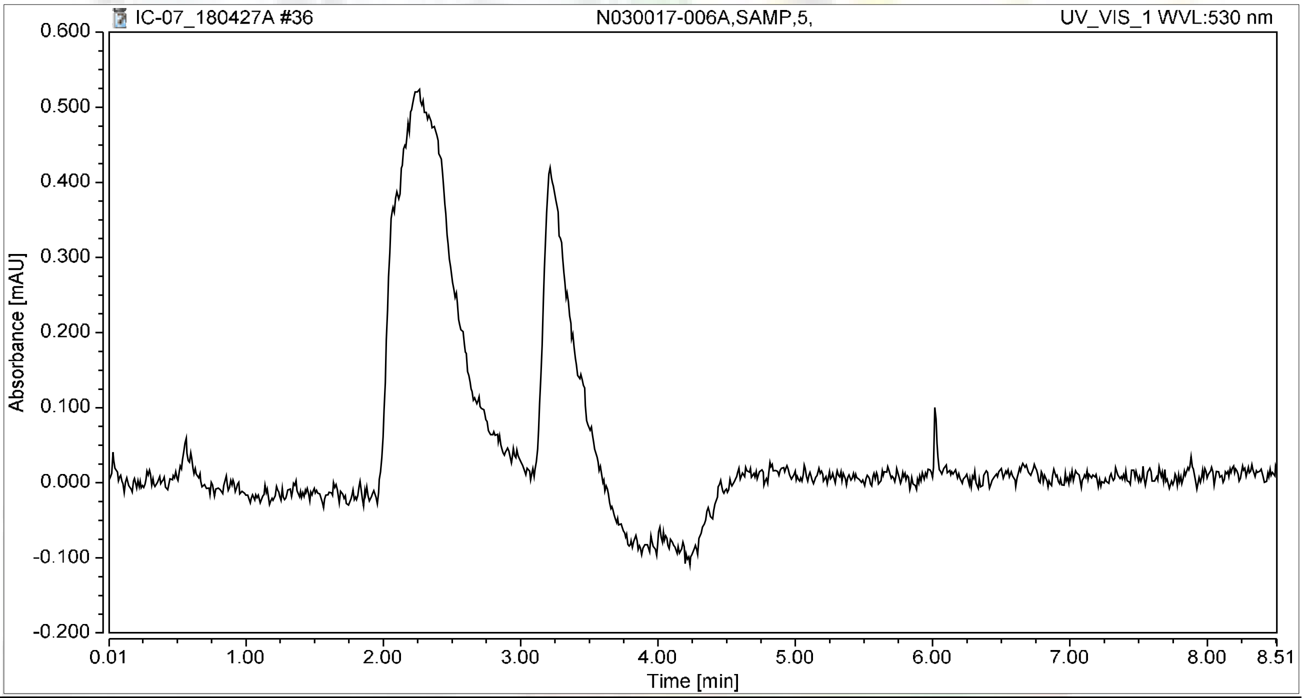
Chromatogram and Results

Injection Details

Injection Name:	**N030017-006A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

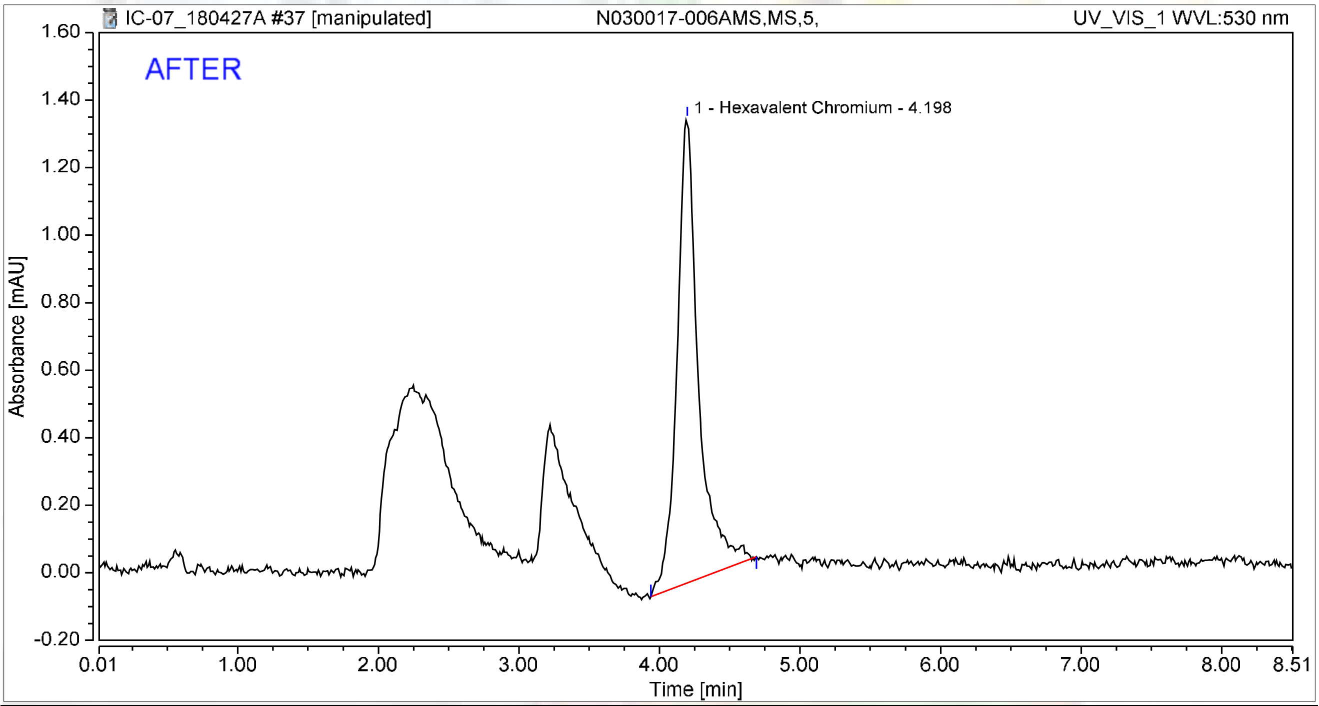
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-006AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.245	1.374	100.00	100.00	0.9662
Total:			**0.245**	**1.374**	**100.00**	**100.00**	

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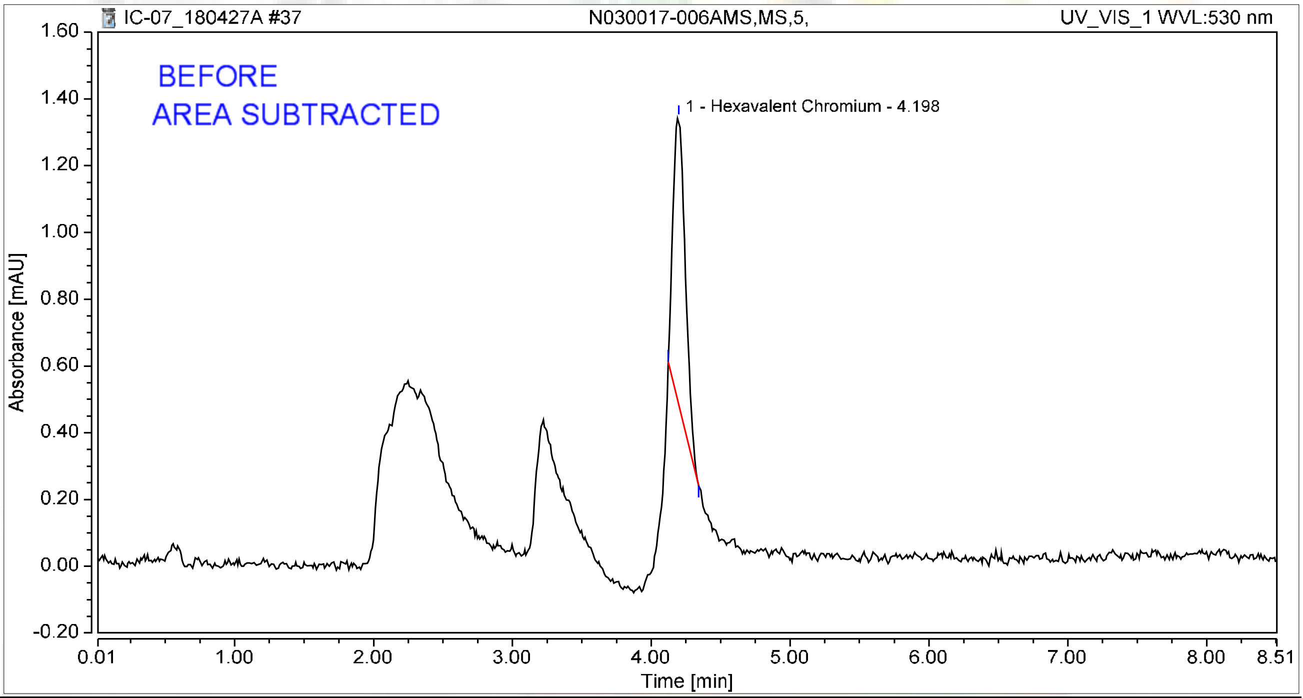
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-006AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.088	0.860	100.00	100.00	0.3476
Total:			**0.088**	**0.860**	**100.00**	**100.00**	

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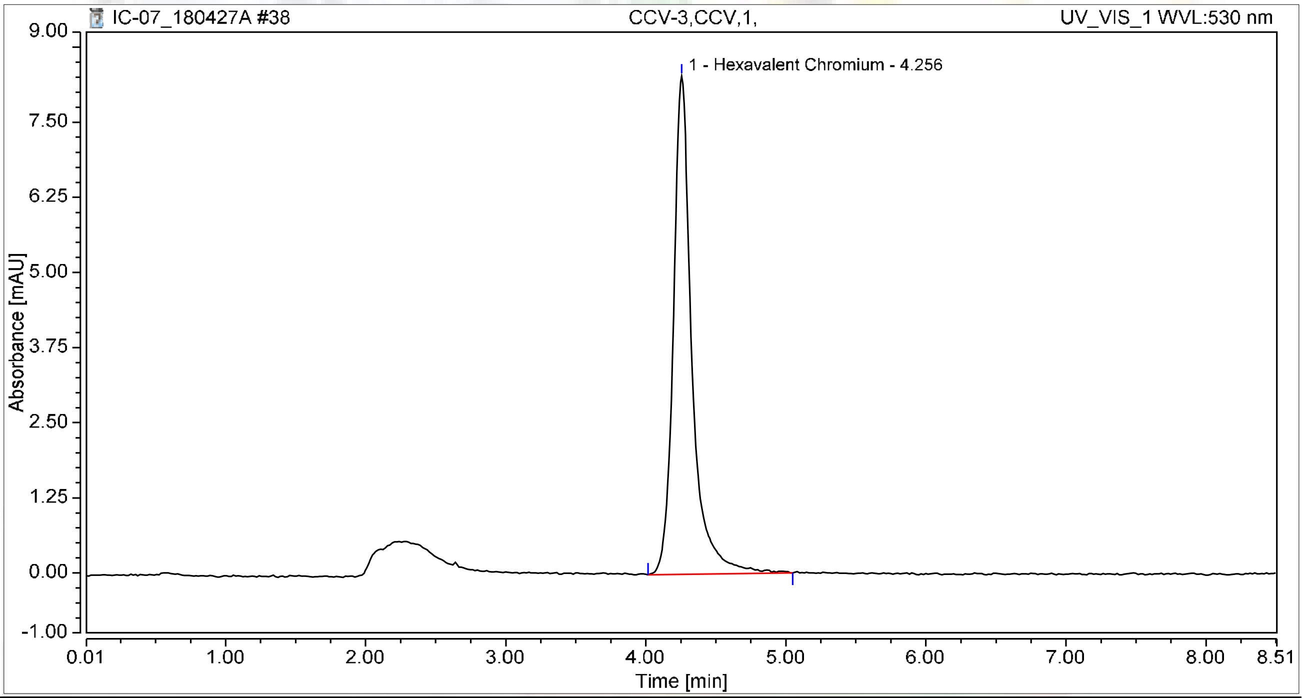
Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

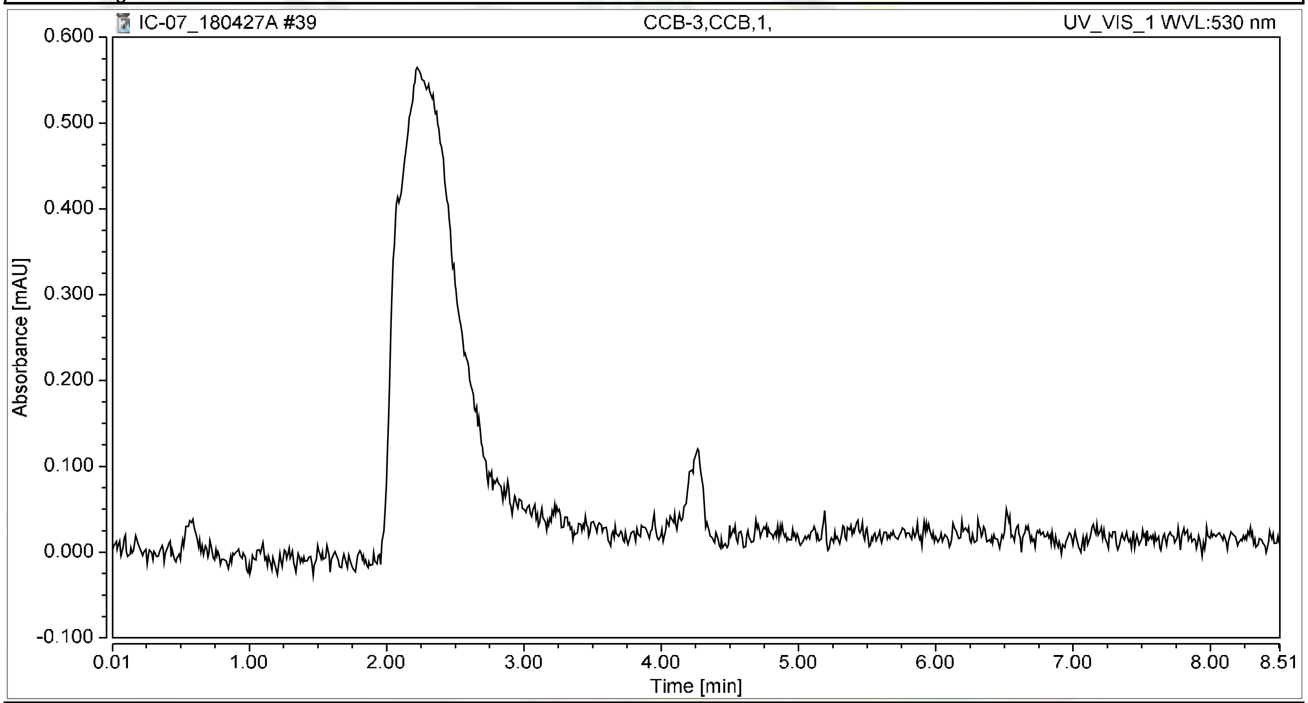
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.275	8.293	100.00	100.00	5.0276
Total:			**1.275**	**8.293**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

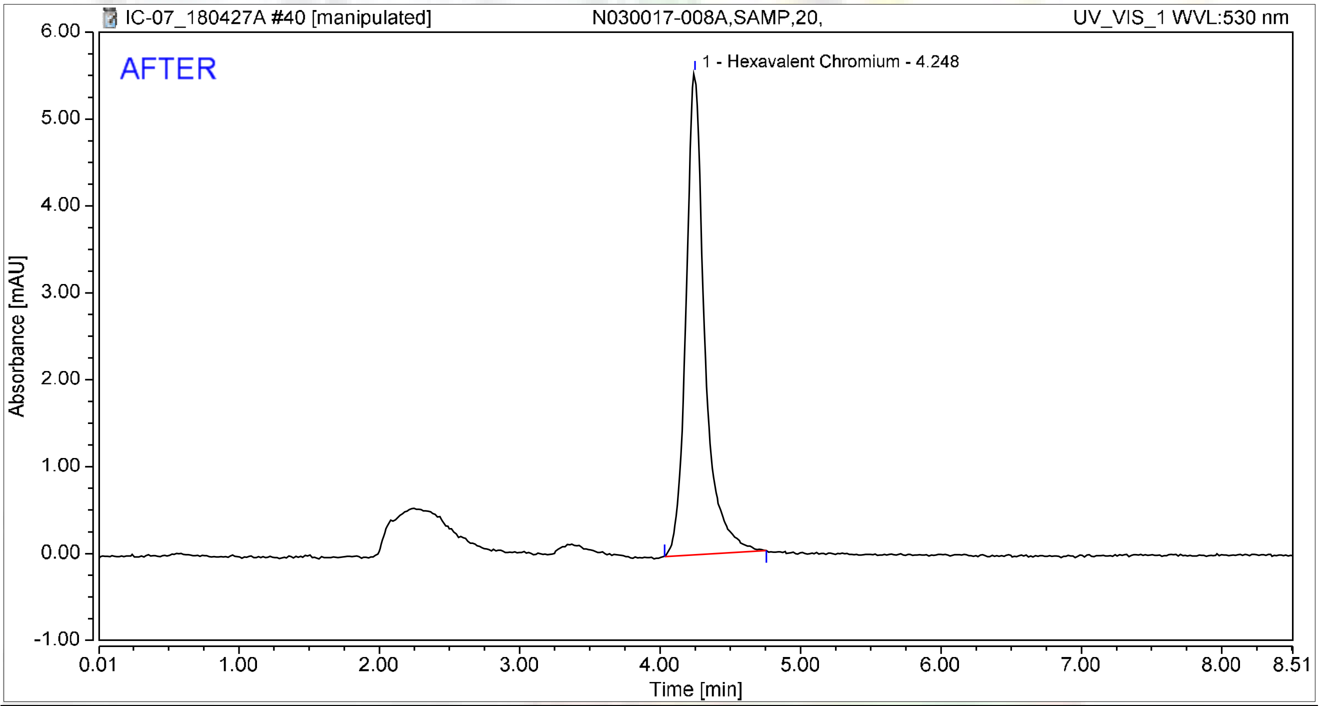
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-008A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.861	5.545	100.00	100.00	3.3969
Total:			**0.861**	**5.545**	**100.00**	**100.00**	

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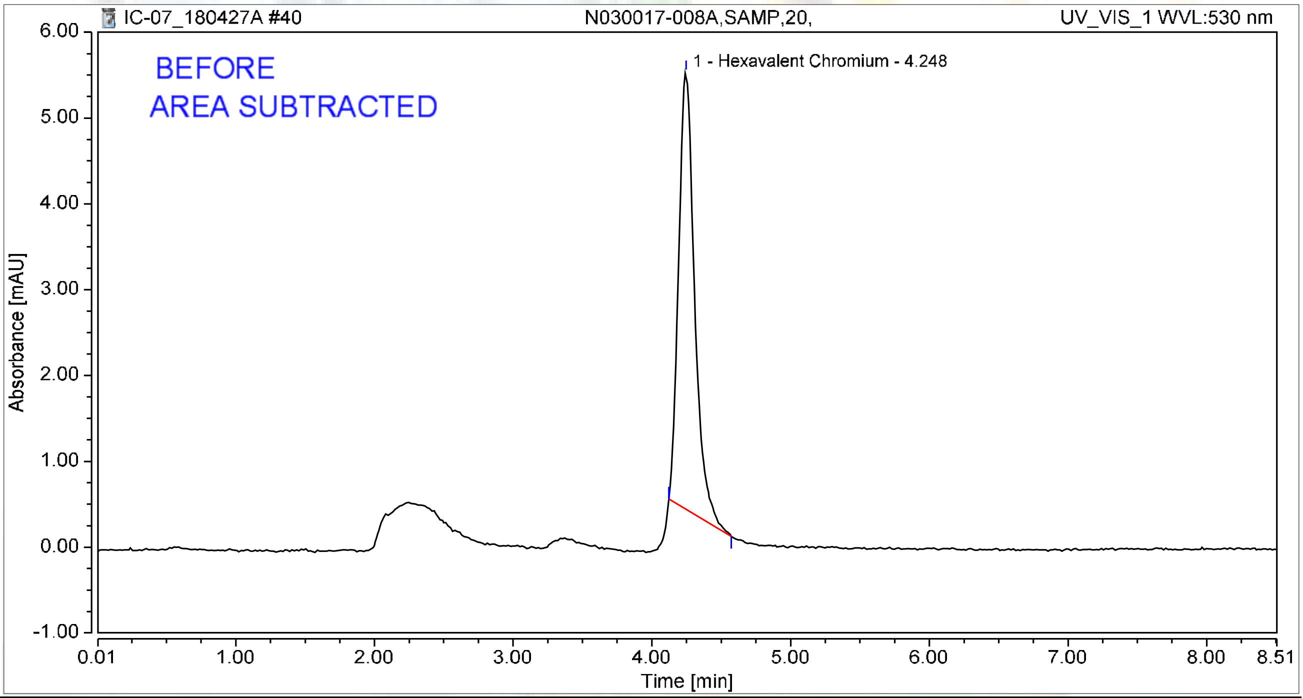
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-008A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.681	5.090	100.00	100.00	2.6851
Total:			**0.681**	**5.090**	**100.00**	**100.00**	

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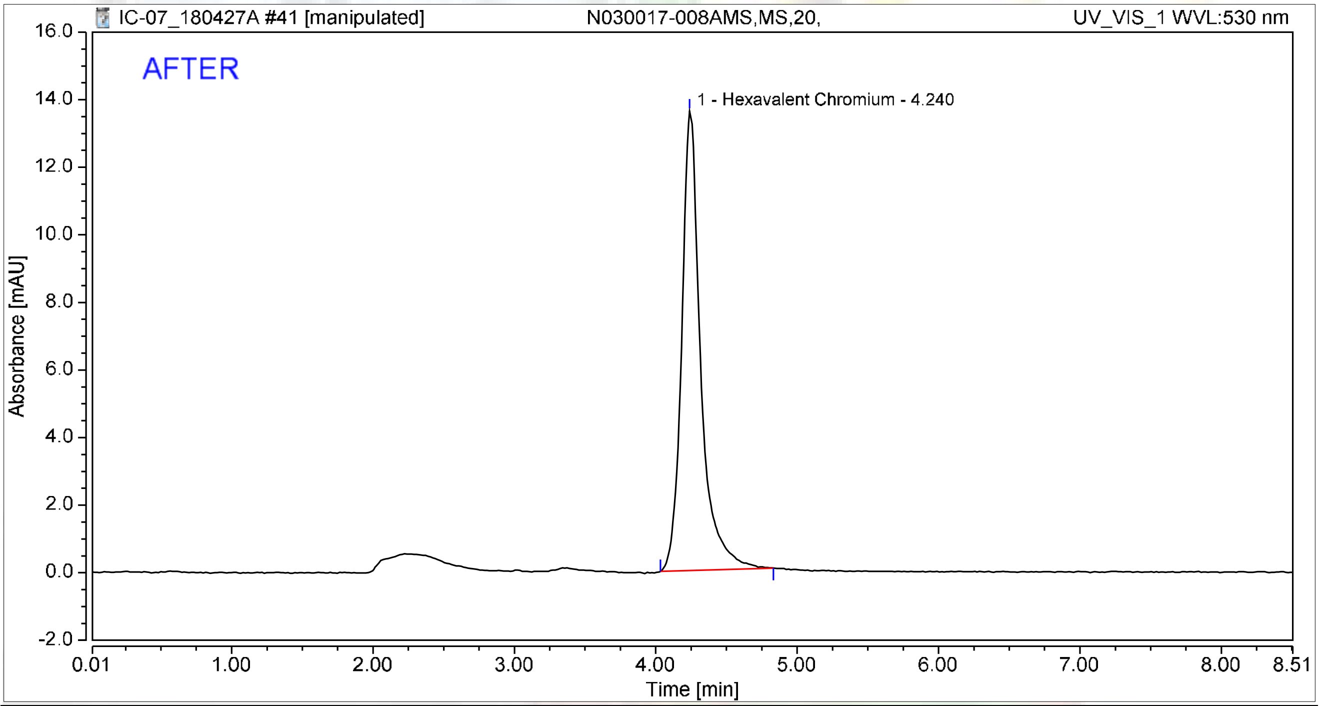
Chromatogram and Results

Injection Details

Injection Name:	**N030017-008AMS,MS,20,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	2.125	13.595	100.00	100.00	8.3809
Total:			**2.125**	**13.595**	**100.00**	**100.00**	

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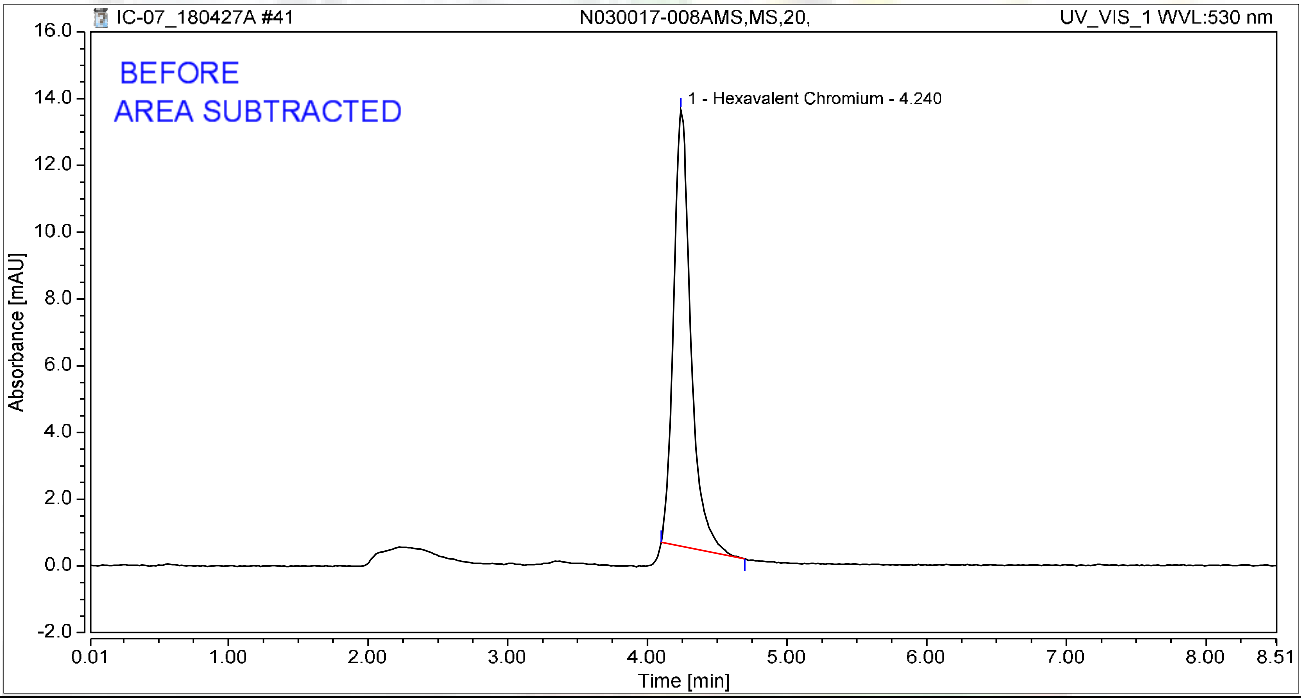
Chromatogram and Results

Injection Details

Injection Name:	**N030017-008AMS,MS,20,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	1.881	13.069	100.00	100.00	7.4189
Total:			**1.881**	**13.069**	**100.00**	**100.00**	

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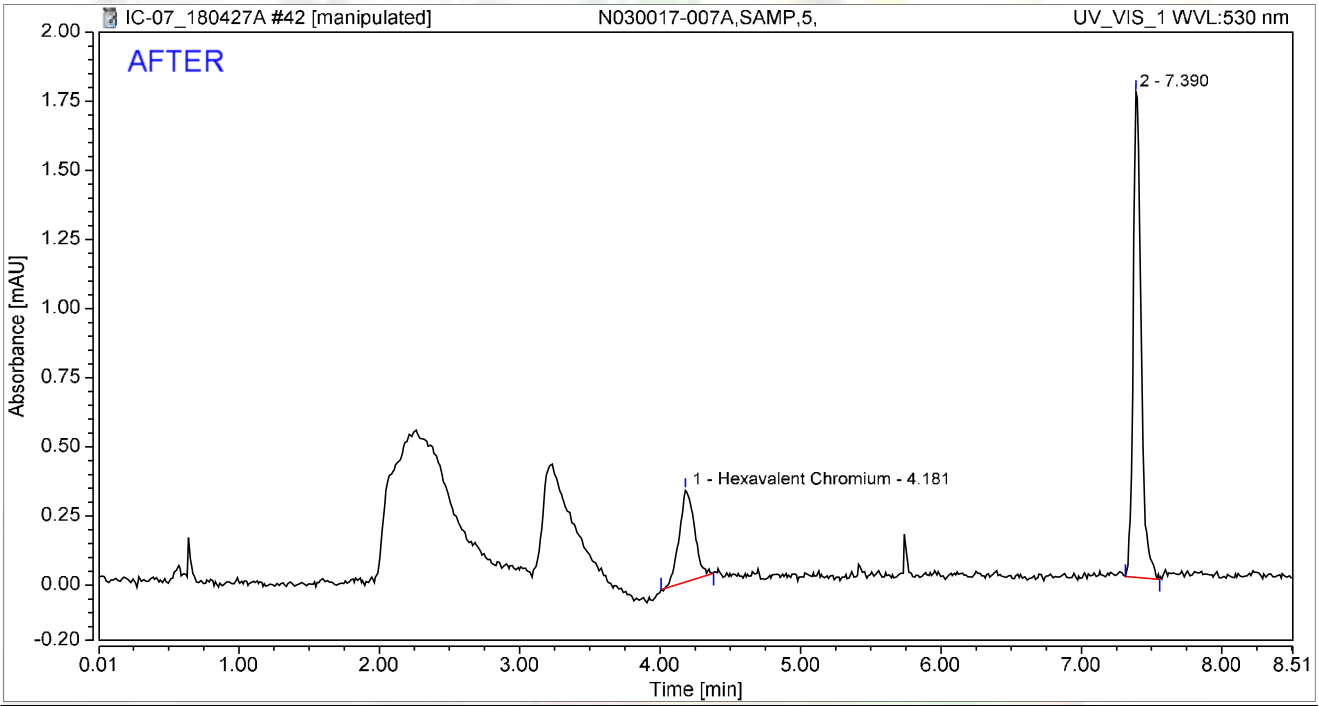
Chromatogram and Results

Injection Details

Injection Name:	**N030017-007A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.042	0.332	26.64	15.93	0.1653
2		7.390	0.115	1.755	73.36	84.07	n.a.
Total:			**0.157**	**2.087**	**100.00**	**100.00**	

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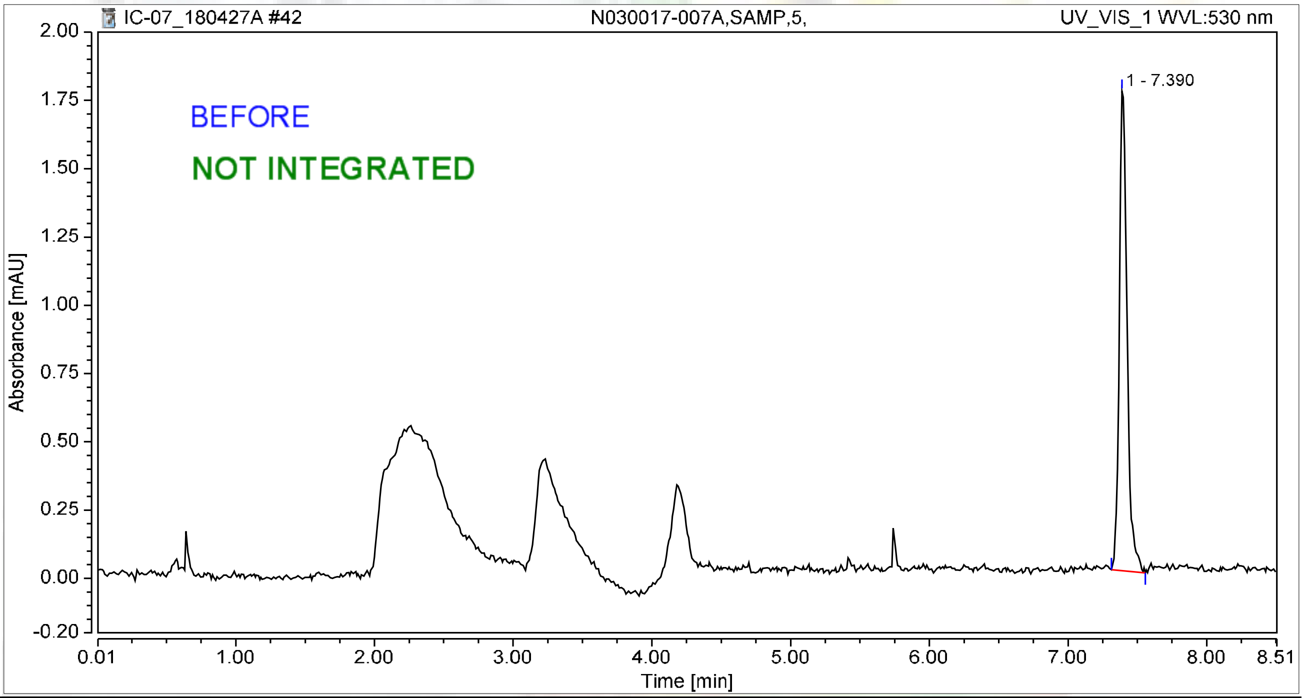
Chromatogram and Results

Injection Details

Injection Name:	**N030017-007A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.390	0.115	1.755	100.00	100.00	n.a.
Total:			**0.115**	**1.755**	**100.00**	**100.00**	

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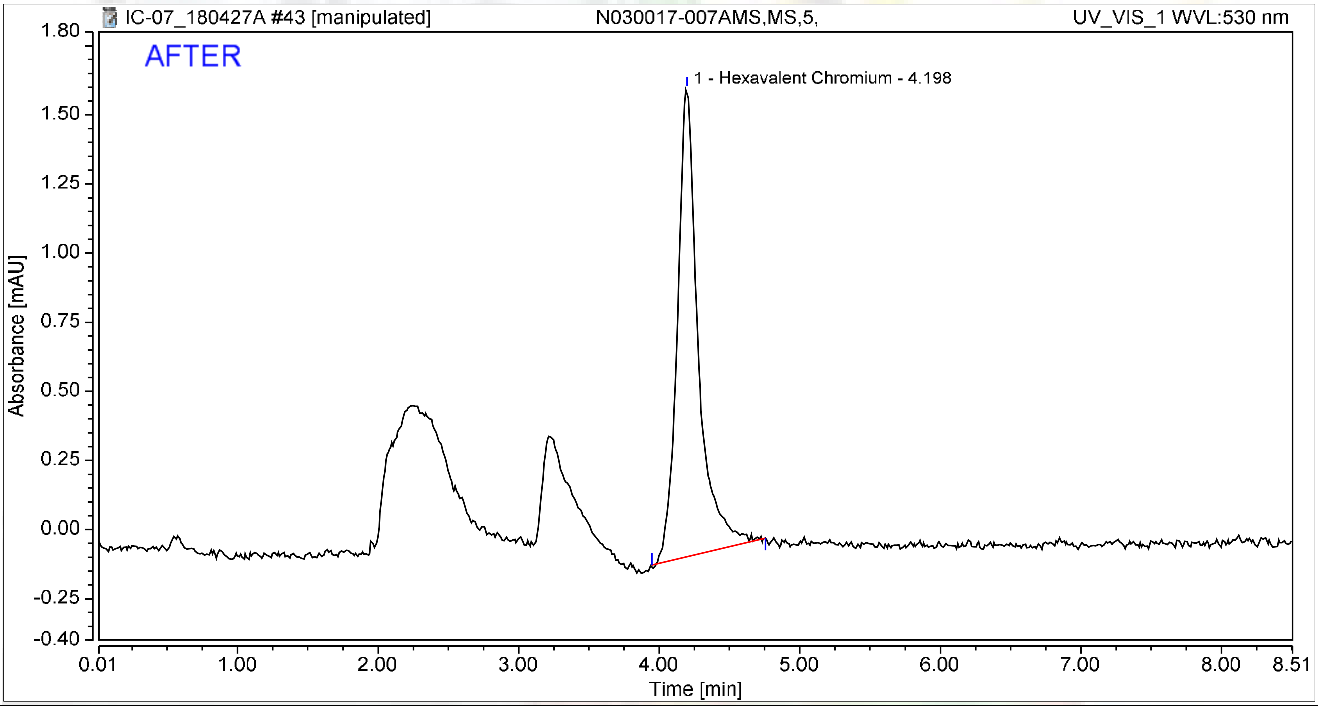
Chromatogram and Results

Injection Details

Injection Name:	**N030017-007AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.293	1.690	100.00	100.00	1.1557
Total:			**0.293**	**1.690**	**100.00**	**100.00**	

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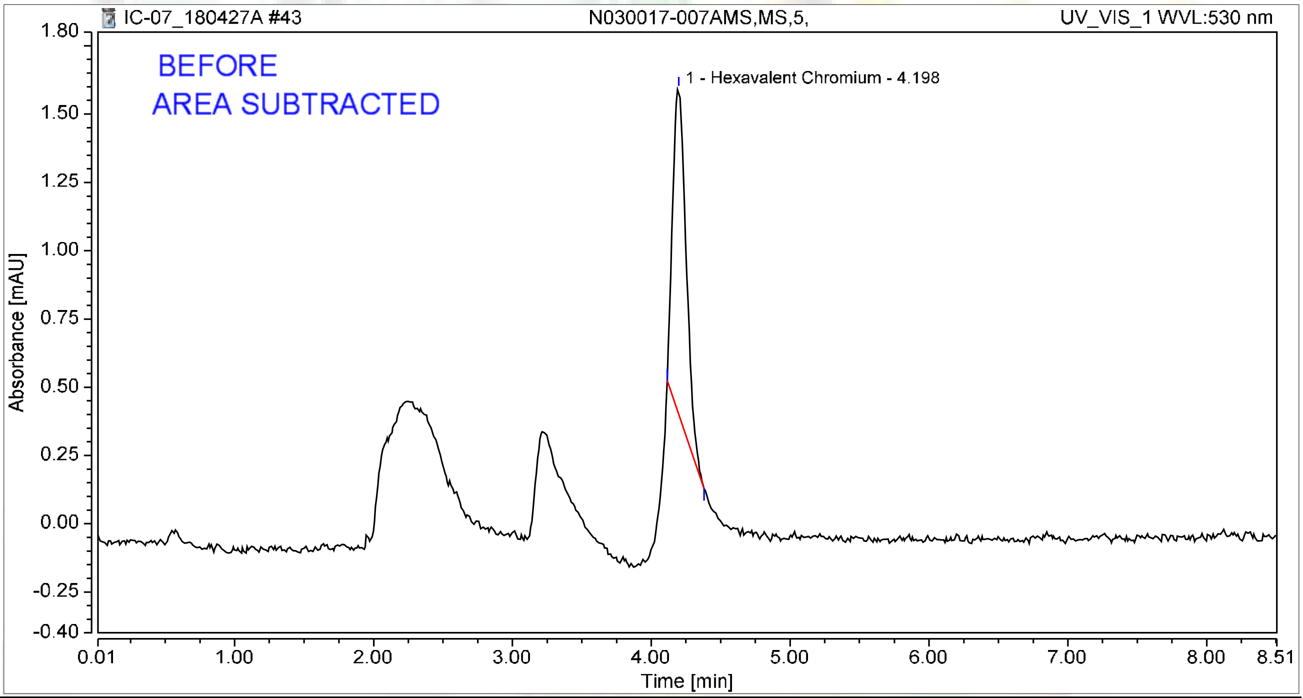
Chromatogram and Results

Injection Details

Injection Name:	**N030017-007AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.134	1.193	100.00	100.00	0.5288
Total:			**0.134**	**1.193**	**100.00**	**100.00**	

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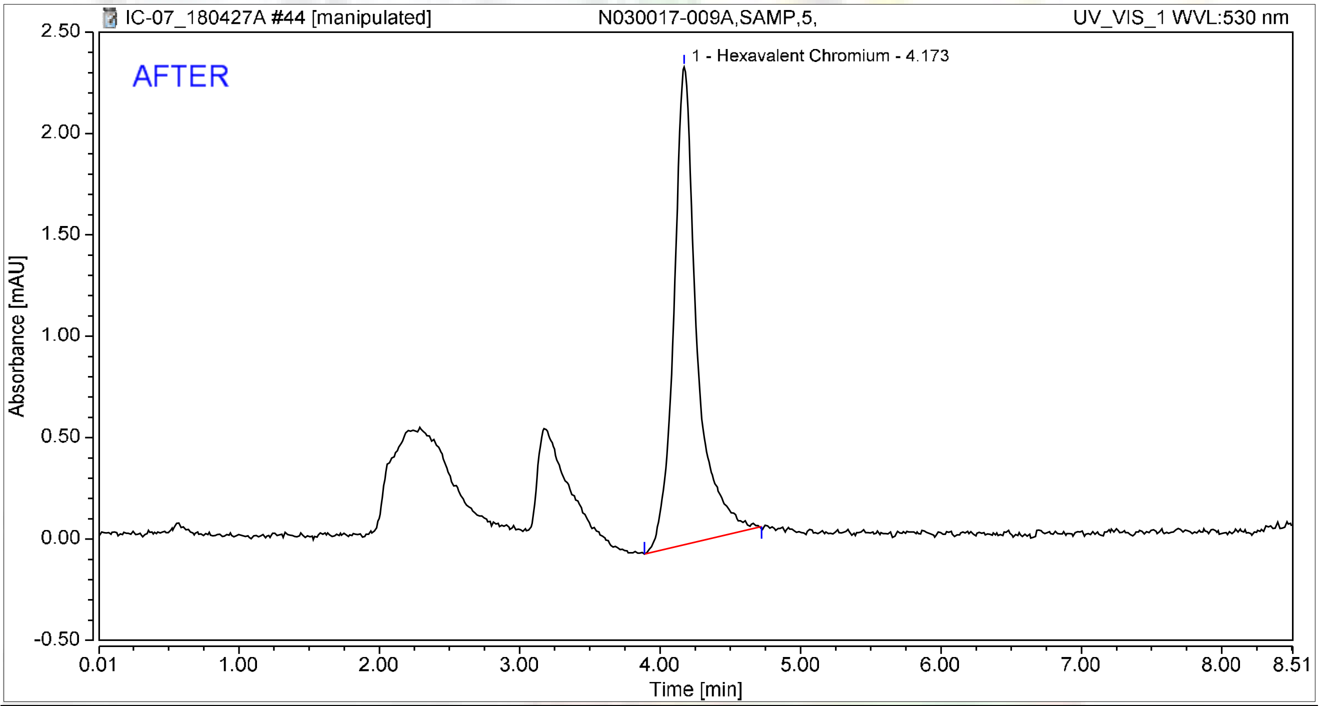
Chromatogram and Results

Injection Details

Injection Name:	**N030017-009A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.450	2.356	100.00	100.00	1.7756
Total:			**0.450**	**2.356**	**100.00**	**100.00**	

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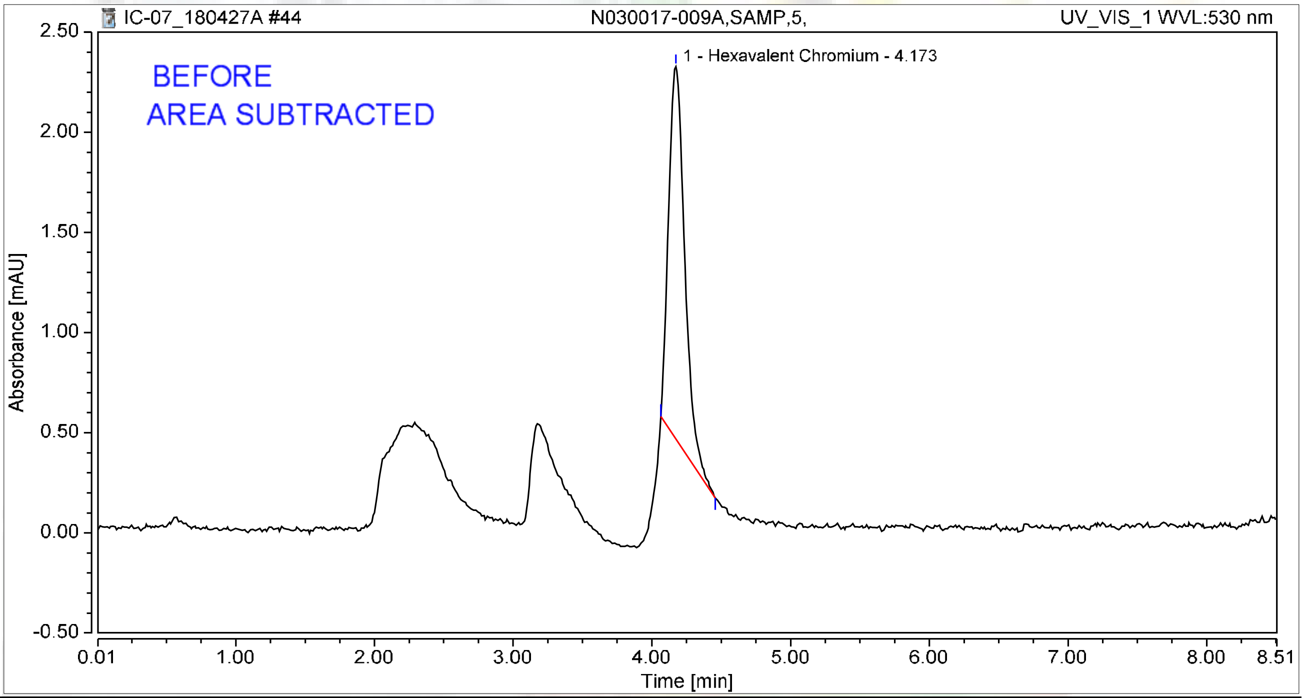
Chromatogram and Results

Injection Details

Injection Name:	**N030017-009A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.251	1.859	100.00	100.00	0.9910
Total:			**0.251**	**1.859**	**100.00**	**100.00**	

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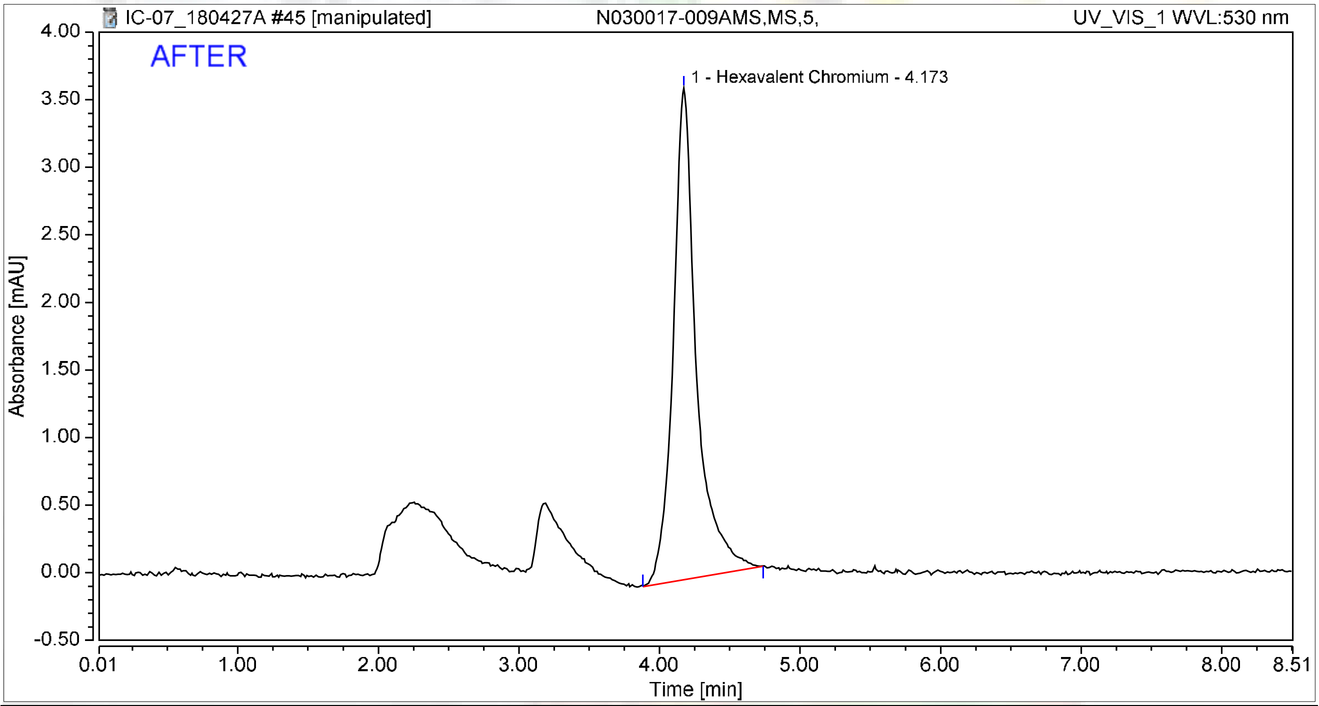
Chromatogram and Results

Injection Details

Injection Name:	**N030017-009AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.700	3.637	100.00	100.00	2.7614
Total:			**0.700**	**3.637**	**100.00**	**100.00**	

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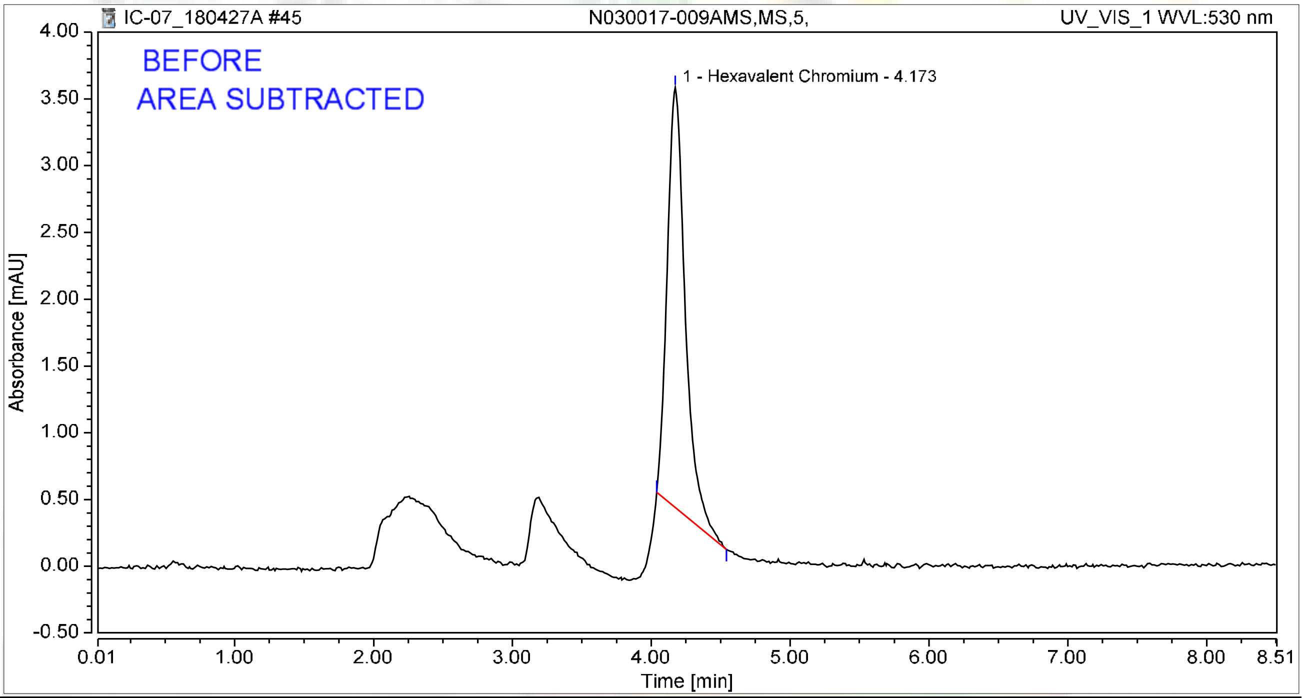
Chromatogram and Results

Injection Details

Injection Name:	**N030017-009AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.476	3.145	100.00	100.00	1.8785
Total:			**0.476**	**3.145**	**100.00**	**100.00**	

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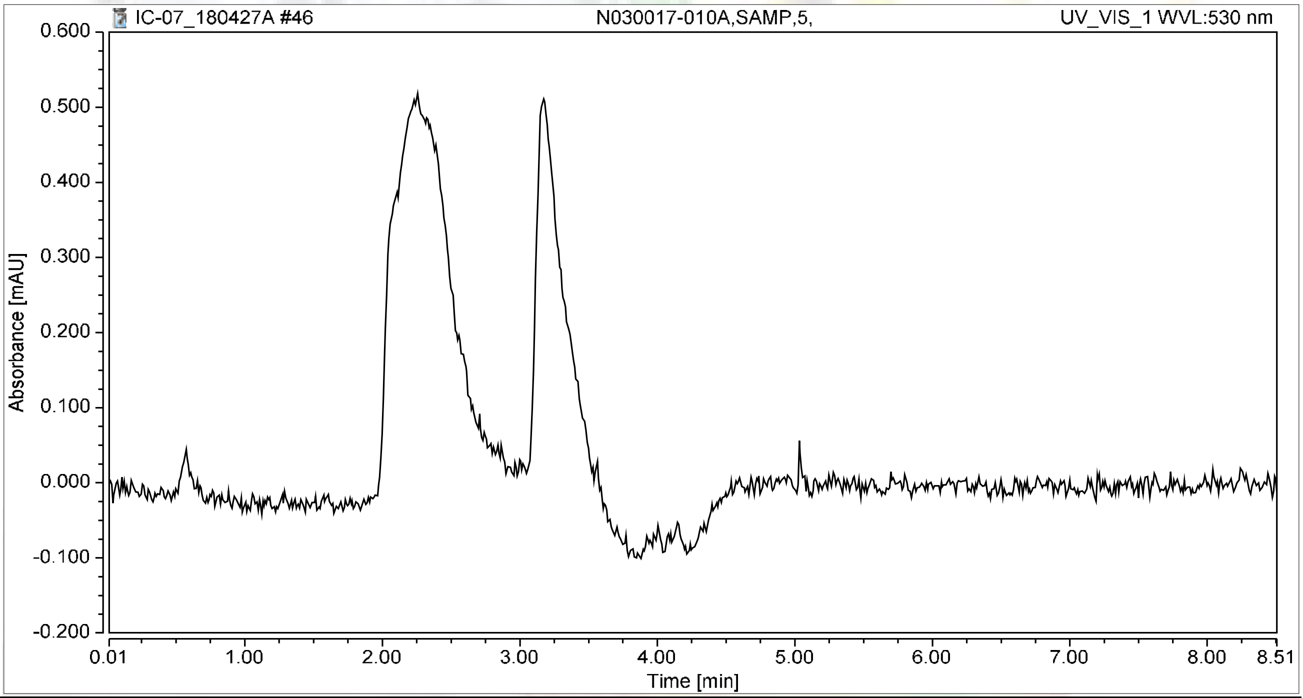
Chromatogram and Results

Injection Details

Injection Name:	**N030017-010A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

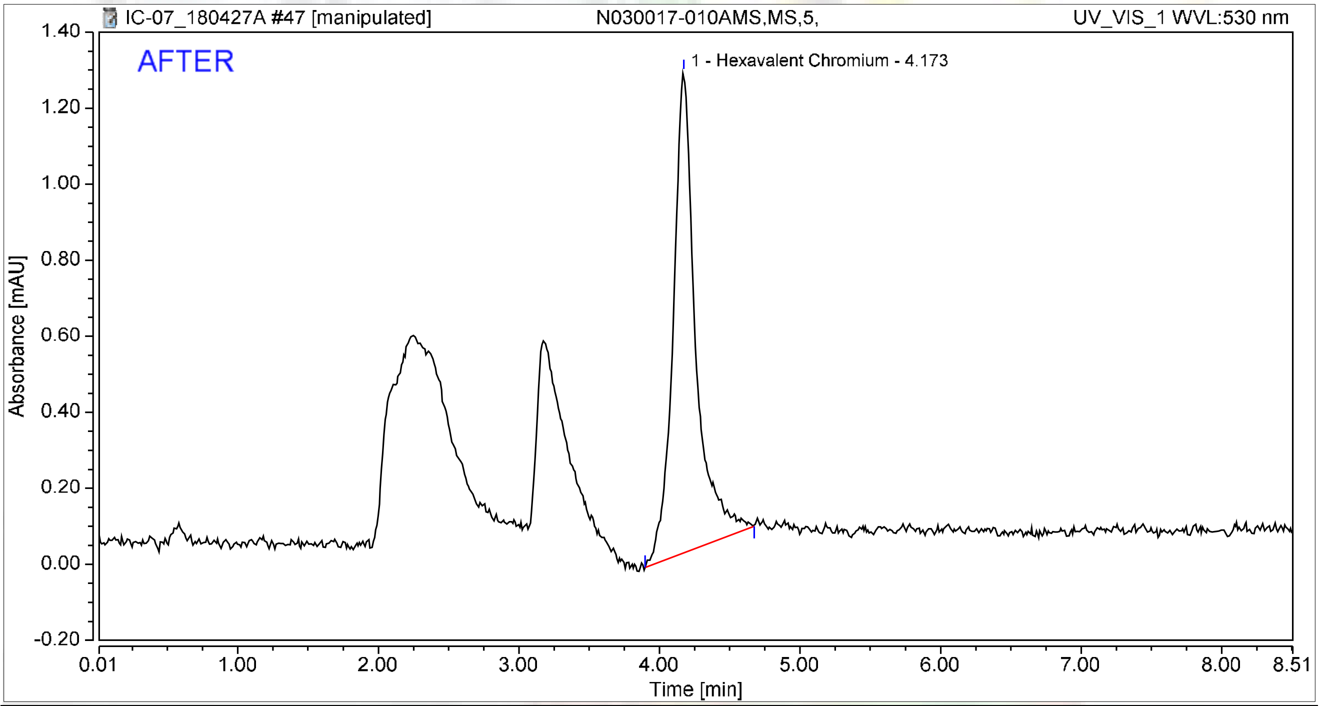
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-010AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.237	1.266	100.00	100.00	0.9333
Total:			**0.237**	**1.266**	**100.00**	**100.00**	

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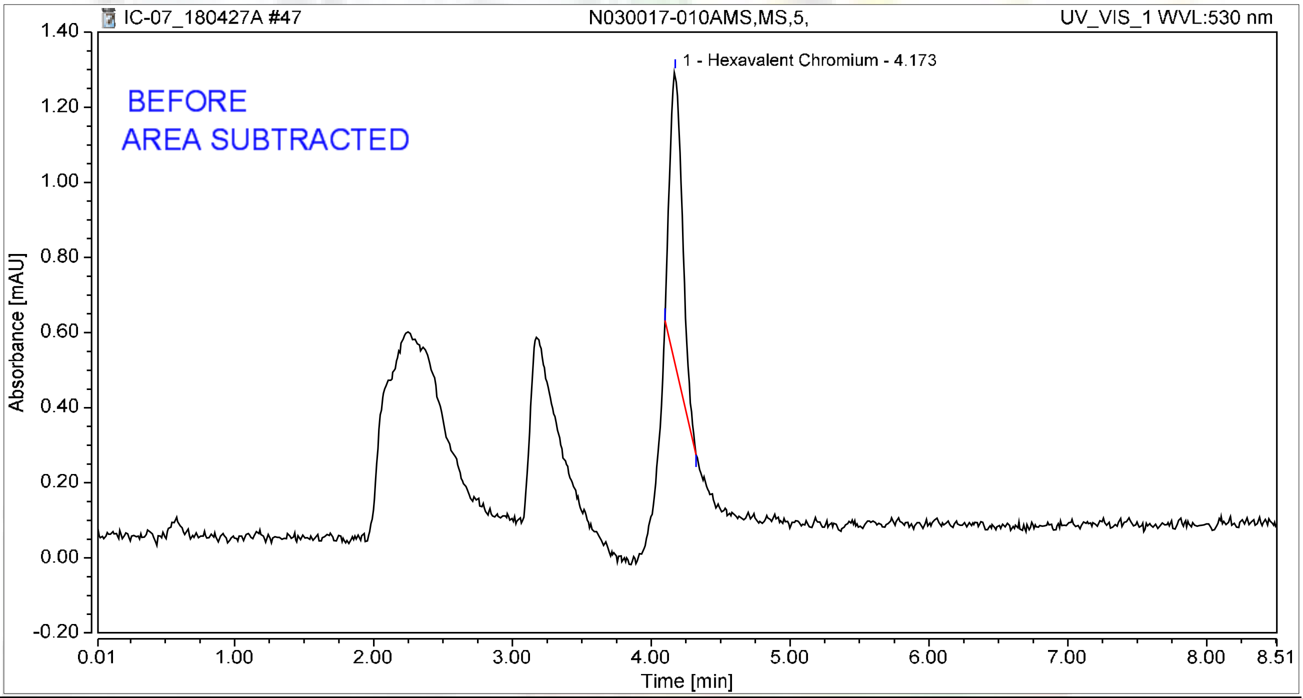
Chromatogram and Results

Injection Details

Injection Name:	**N030017-010AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.083	0.782	100.00	100.00	0.3278
Total:			**0.083**	**0.782**	**100.00**	**100.00**	

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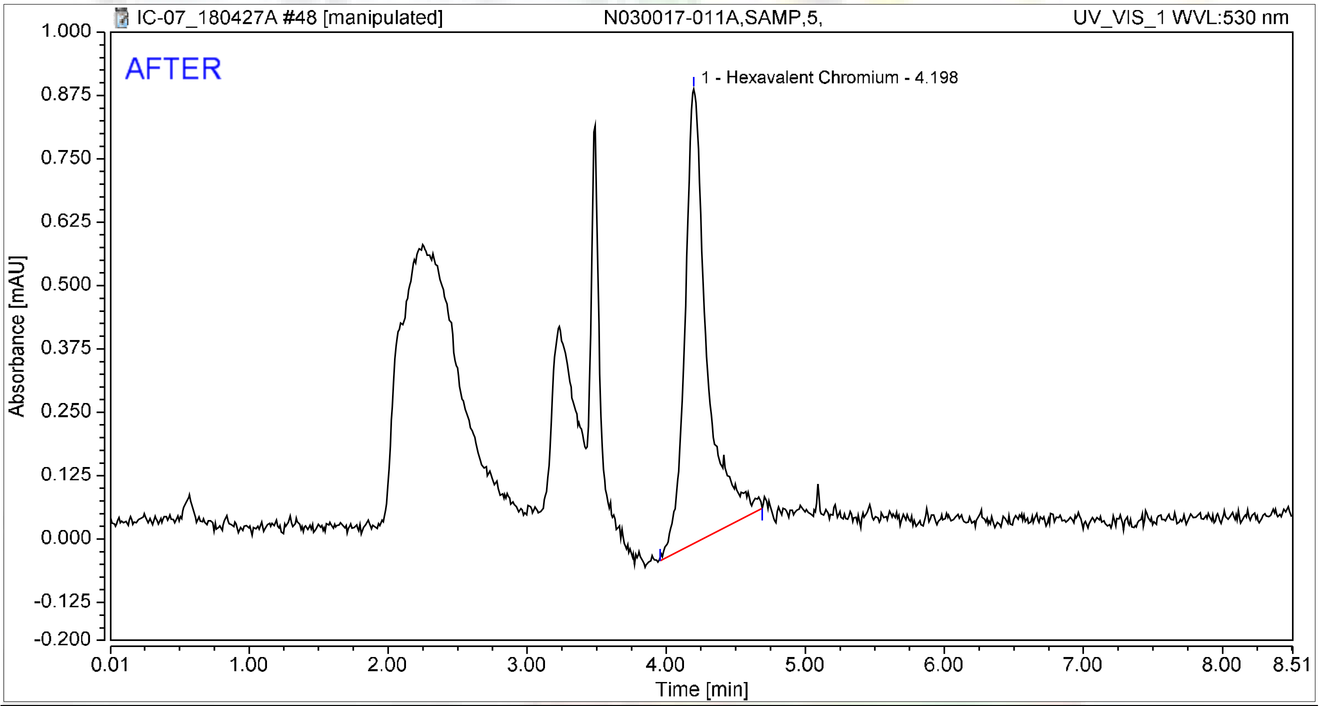
Chromatogram and Results

Injection Details

Injection Name:	**N030017-011A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.165	0.897	100.00	100.00	0.6525
Total:			**0.165**	**0.897**	**100.00**	**100.00**	

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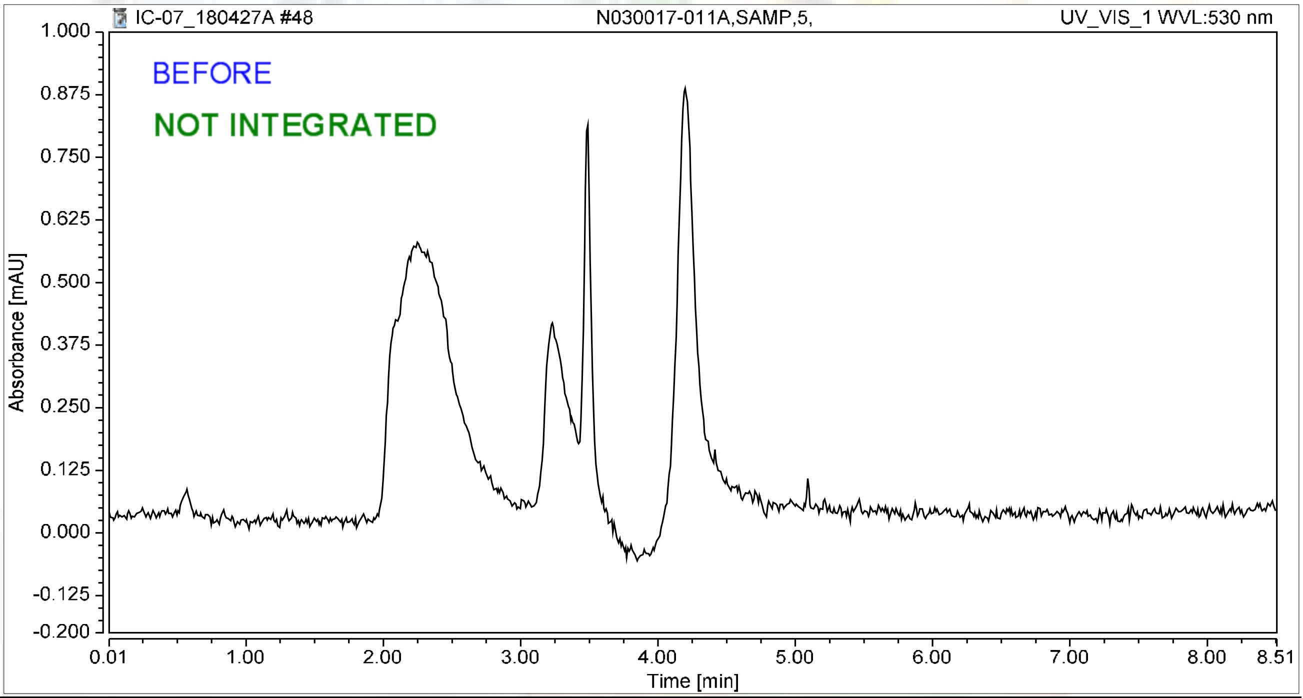
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-011A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

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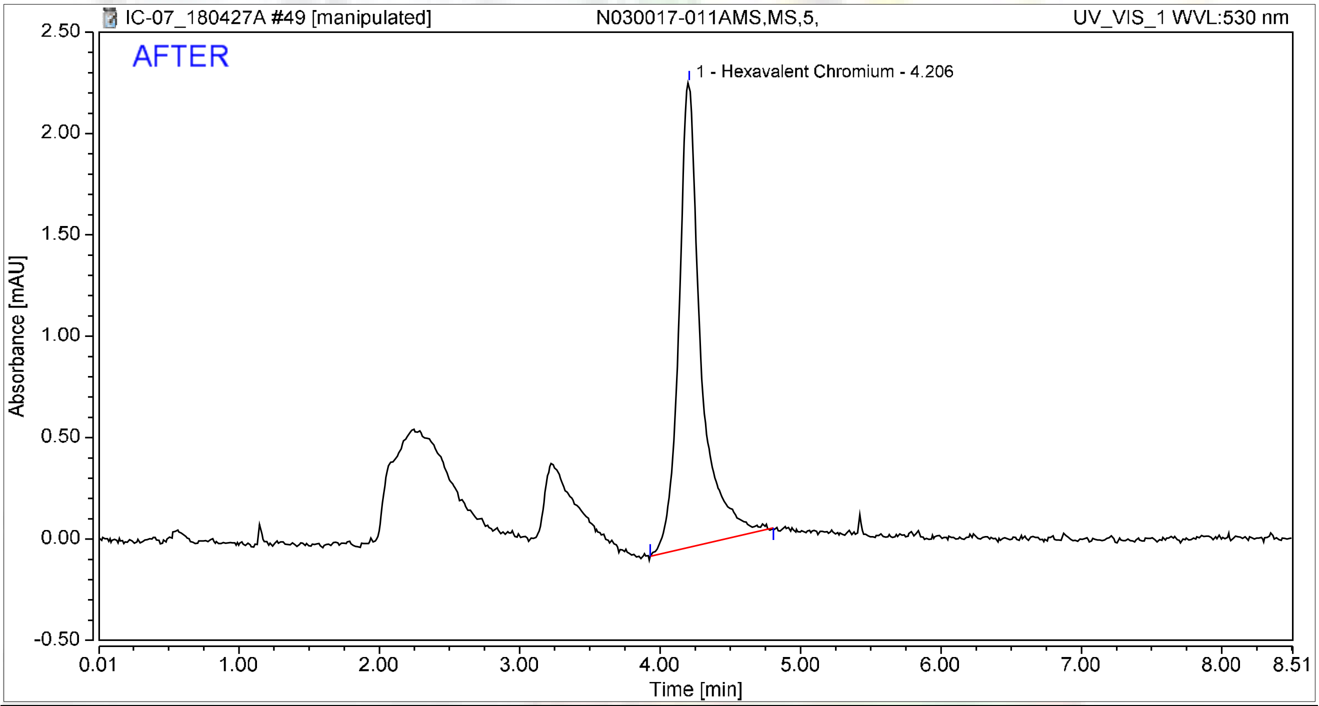
Chromatogram and Results

Injection Details

Injection Name:	**N030017-011AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.418	2.291	100.00	100.00	1.6481
Total:			**0.418**	**2.291**	**100.00**	**100.00**	

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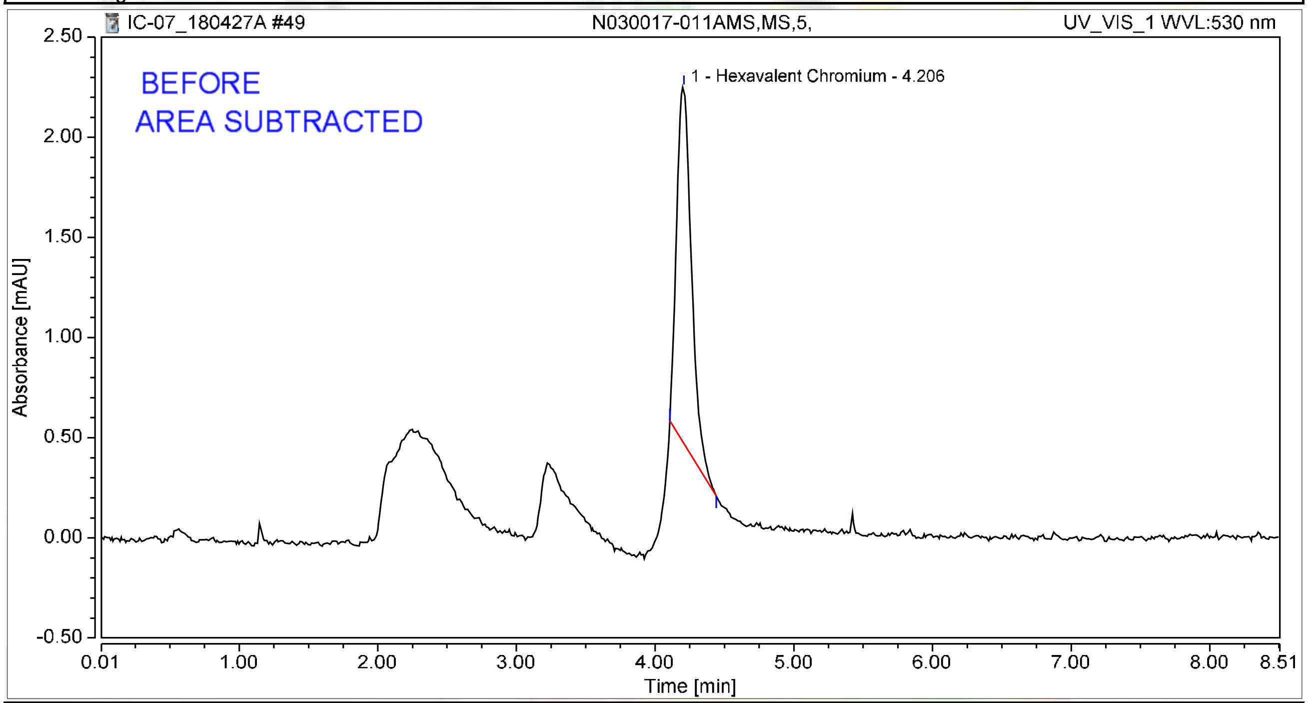
Chromatogram and Results

Injection Details

Injection Name:	**N030017-011AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.221	1.777	100.00	100.00	0.8724
Total:			**0.221**	**1.777**	**100.00**	**100.00**	

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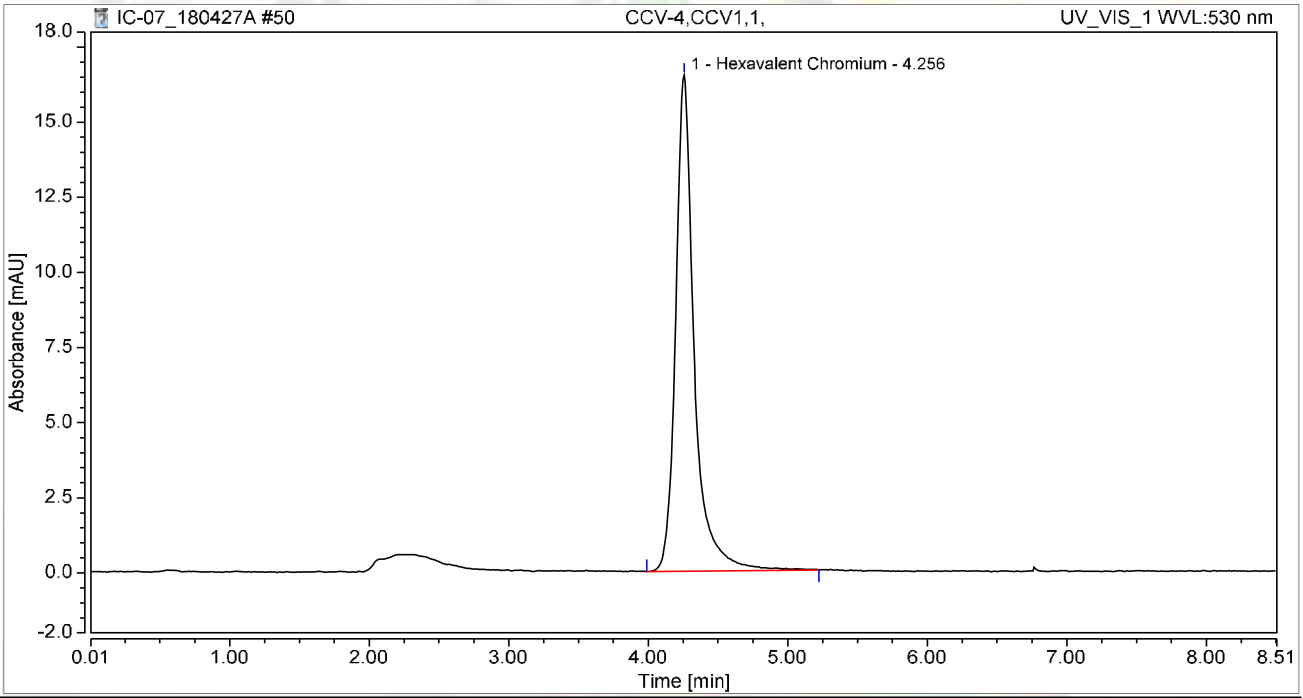
Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

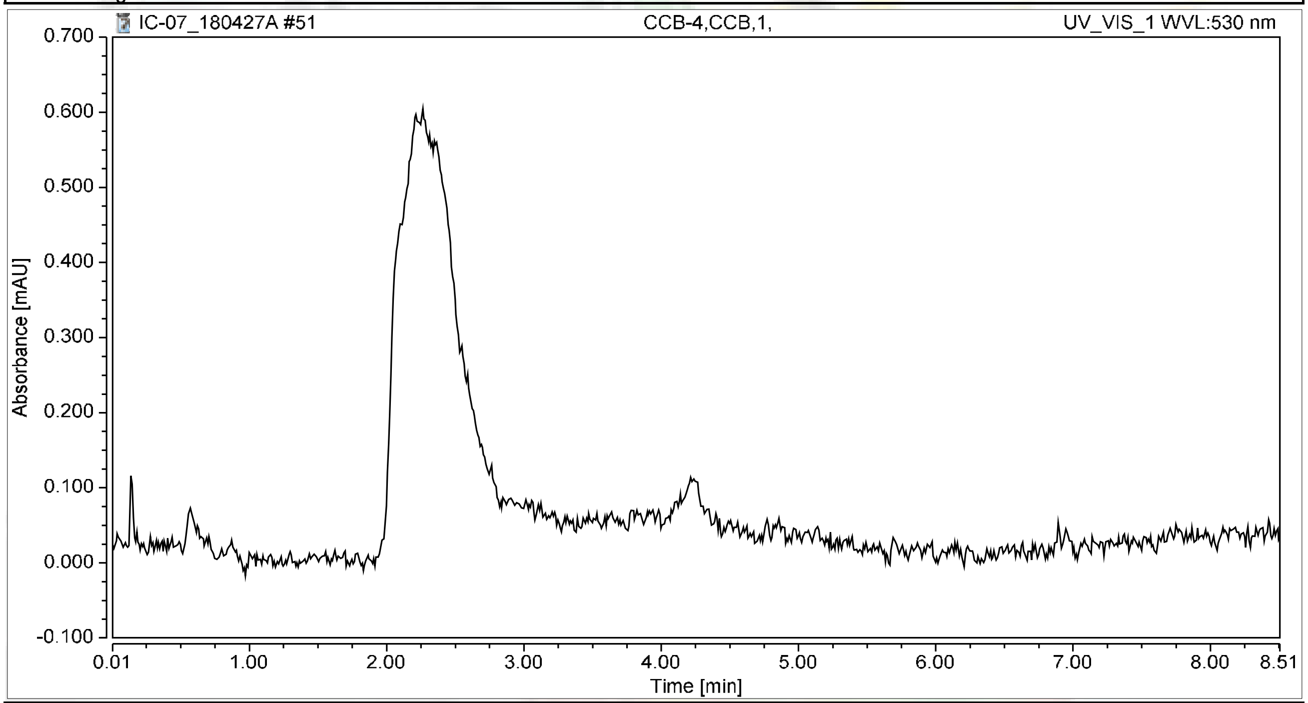
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.550	16.523	100.00	100.00	10.0598
Total:			**2.550**	**16.523**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

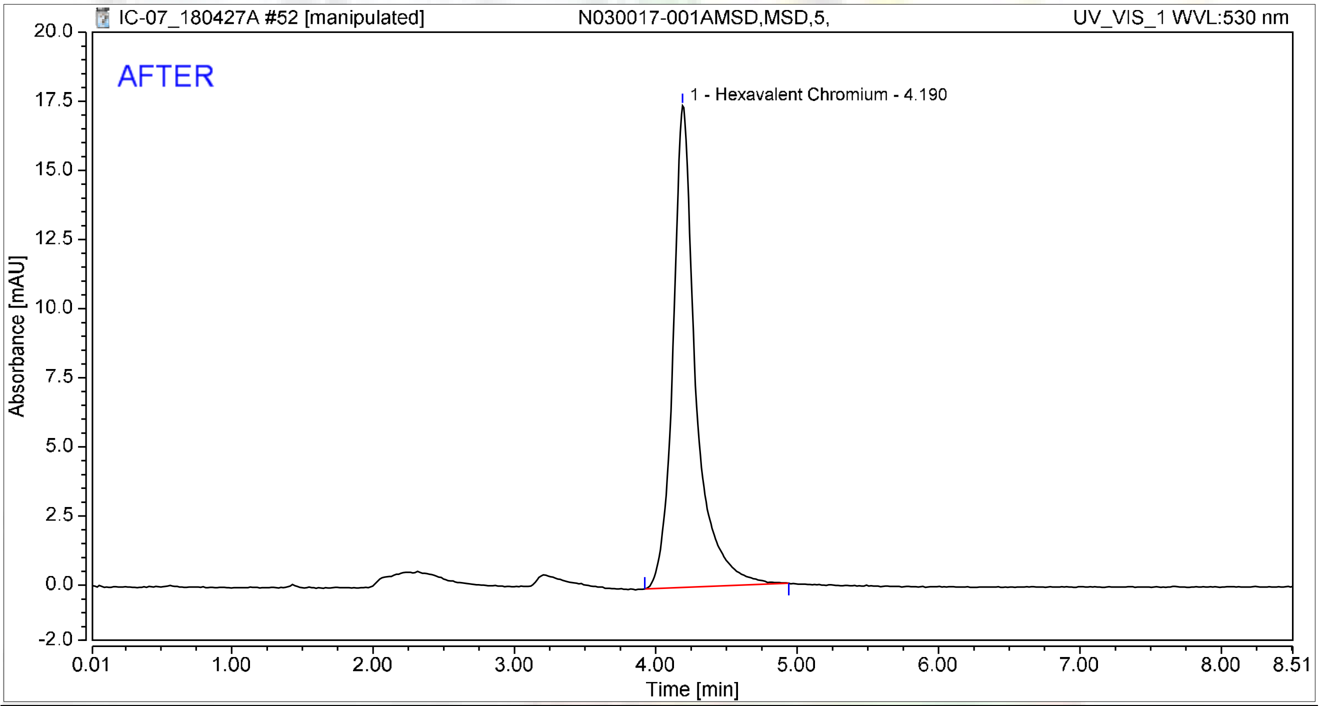
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-001AMSD,MSD,5,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	3.274	17.429	100.00	100.00	12.9141
Total:			**3.274**	**17.429**	**100.00**	**100.00**	

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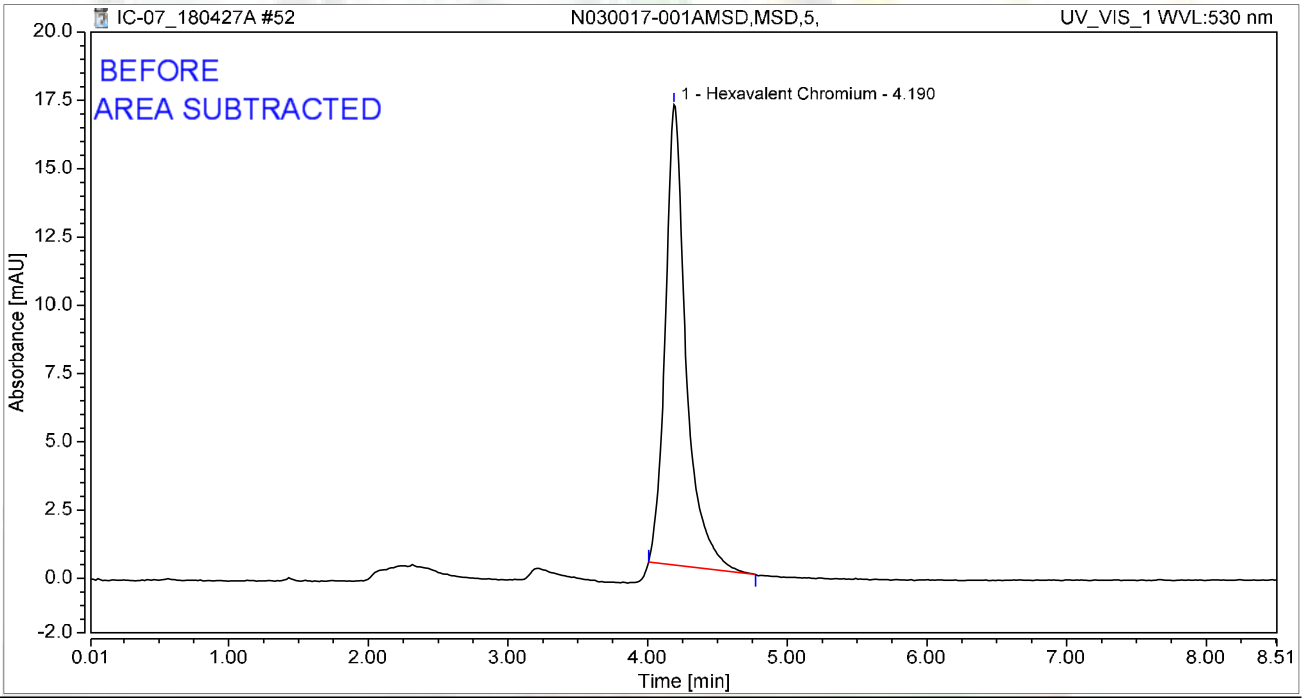
Chromatogram and Results

Injection Details

Injection Name:	**N030017-001AMSD,MSD,5,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.923	16.842	100.00	100.00	11.5285
Total:			**2.923**	**16.842**	**100.00**	**100.00**	

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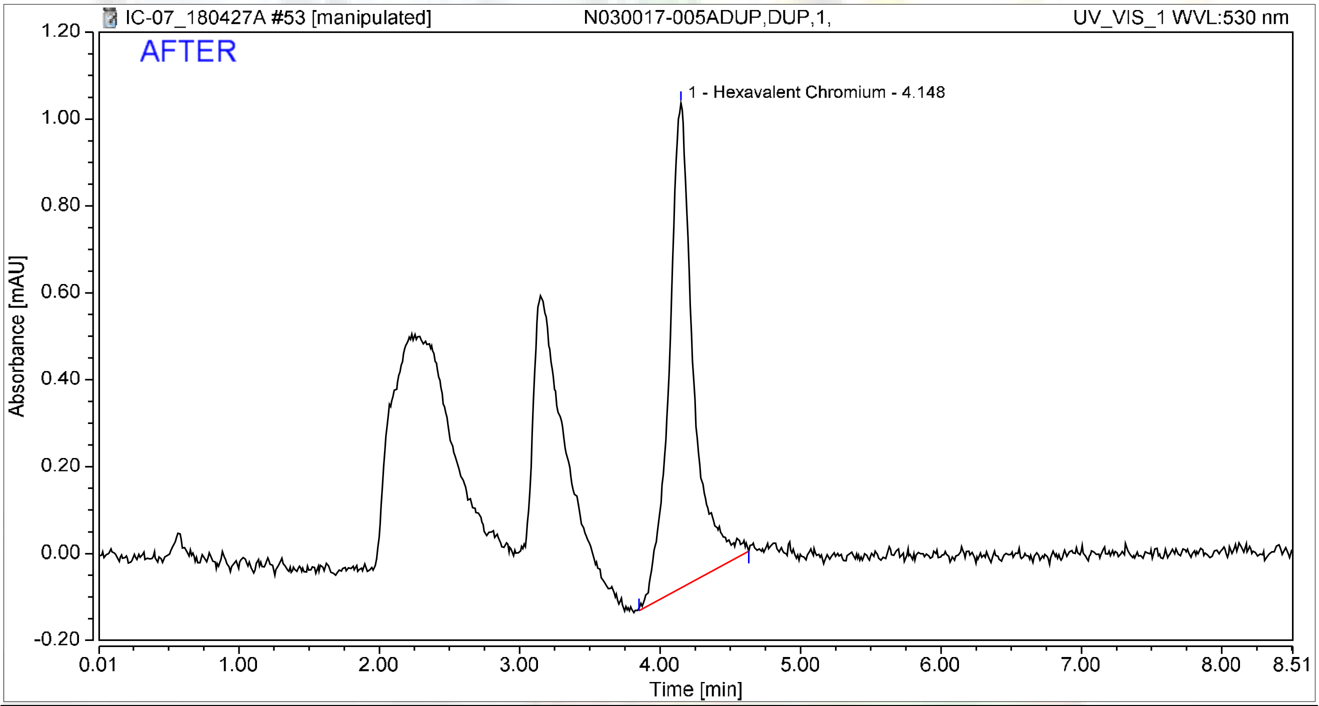
Chromatogram and Results

Injection Details

Injection Name:	**N030017-005ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.225	1.115	100.00	100.00	0.8873
Total:			**0.225**	**1.115**	**100.00**	**100.00**	

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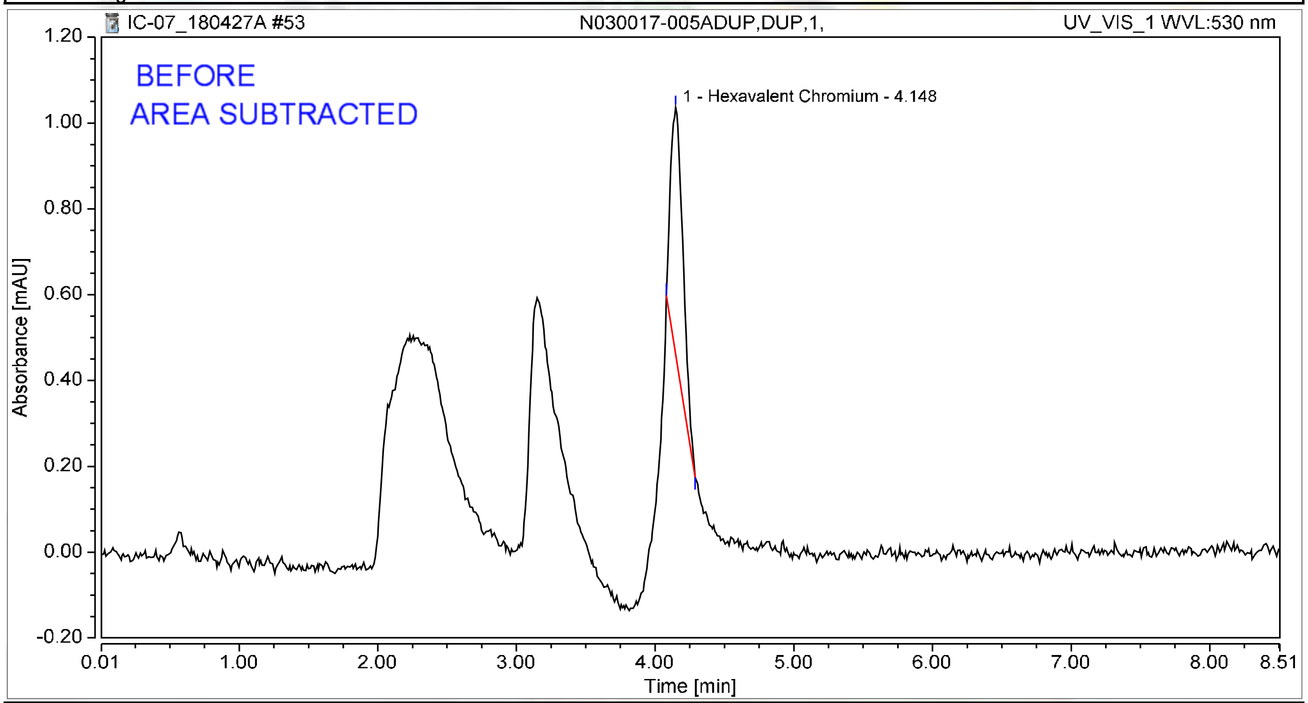
Chromatogram and Results

Injection Details

Injection Name:	**N030017-005ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.059	0.573	100.00	100.00	0.2346
Total:			**0.059**	**0.573**	**100.00**	**100.00**	

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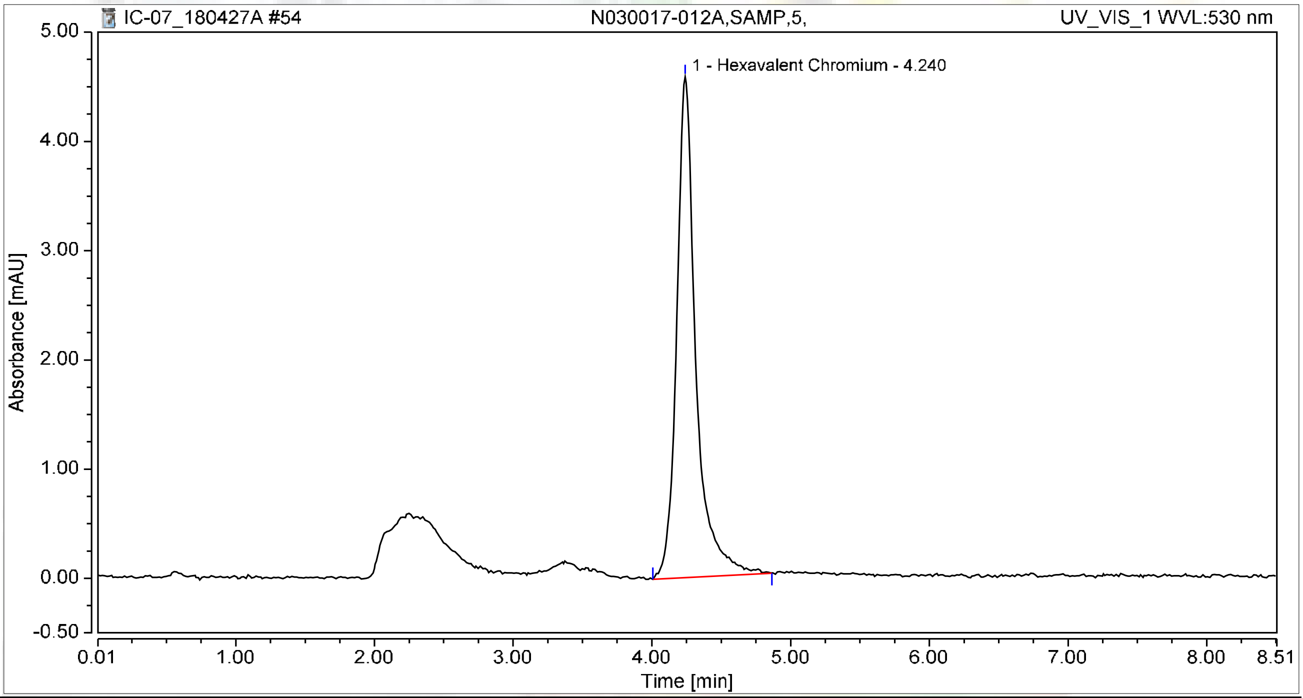
Chromatogram and Results

Injection Details

Injection Name:	**N030017-012A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

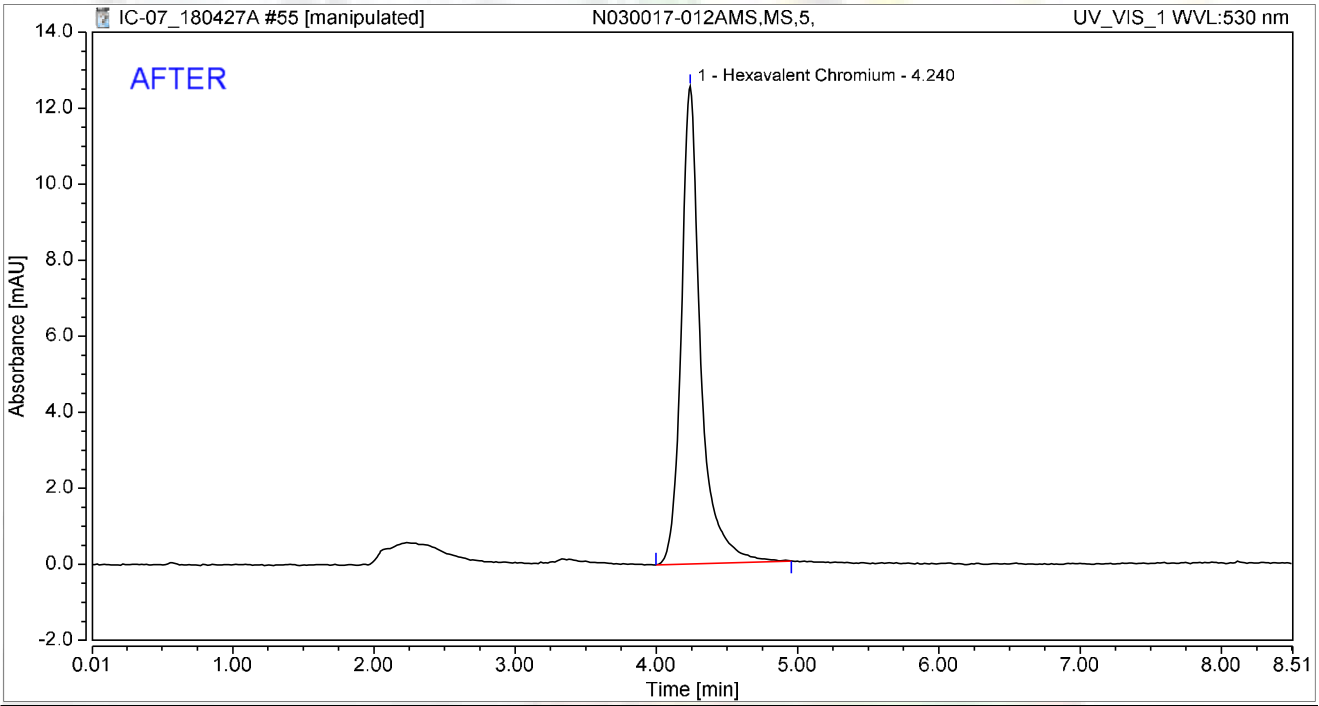
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.736	4.585	100.00	100.00	2.9034
Total:			**0.736**	**4.585**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-012AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	2.009	12.561	100.00	100.00	7.9255
Total:			**2.009**	**12.561**	**100.00**	**100.00**	

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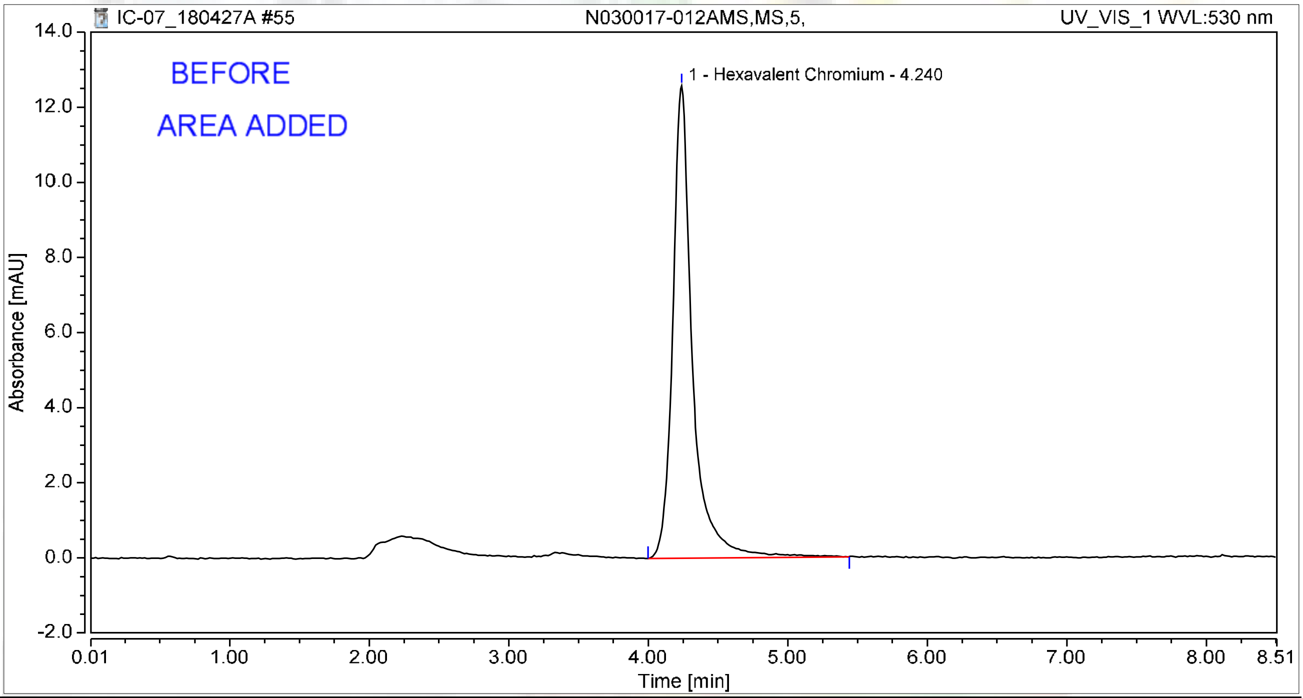
Chromatogram and Results

Injection Details

Injection Name:	**N030017-012AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	2.063	12.579	100.00	100.00	8.1379
Total:			**2.063**	**12.579**	**100.00**	**100.00**	

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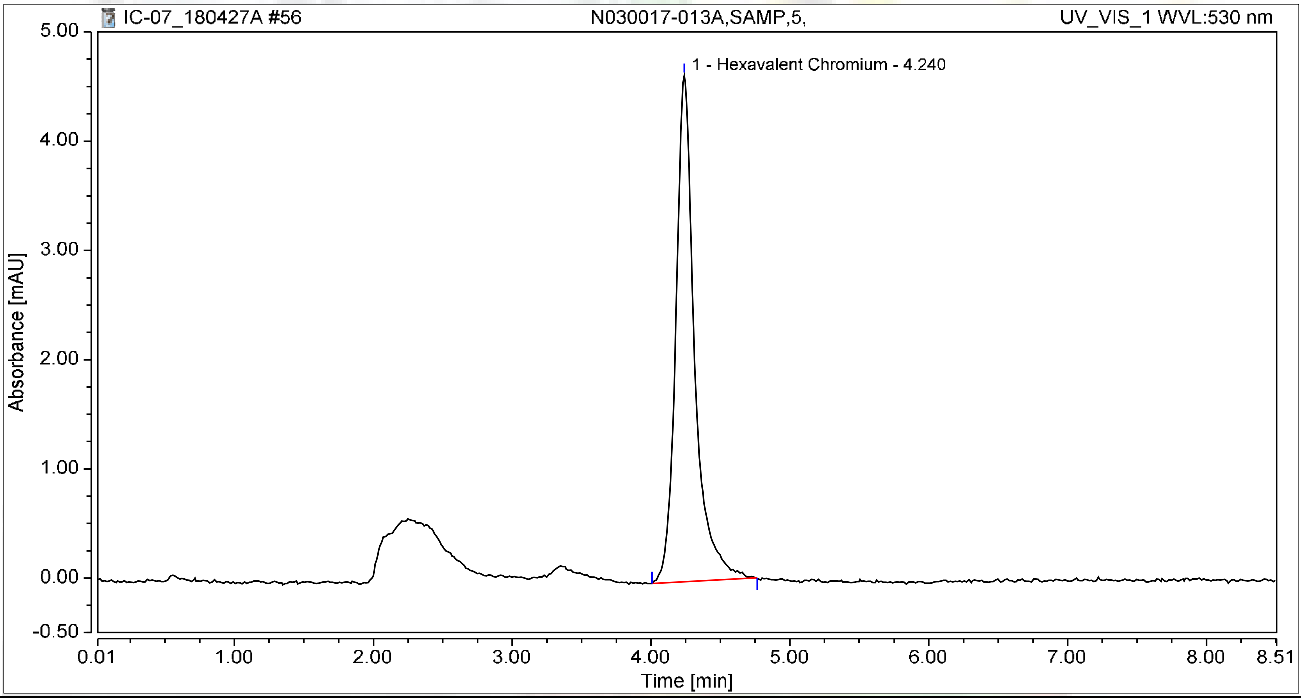
Chromatogram and Results

Injection Details

Injection Name:	**N030017-013A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 16:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

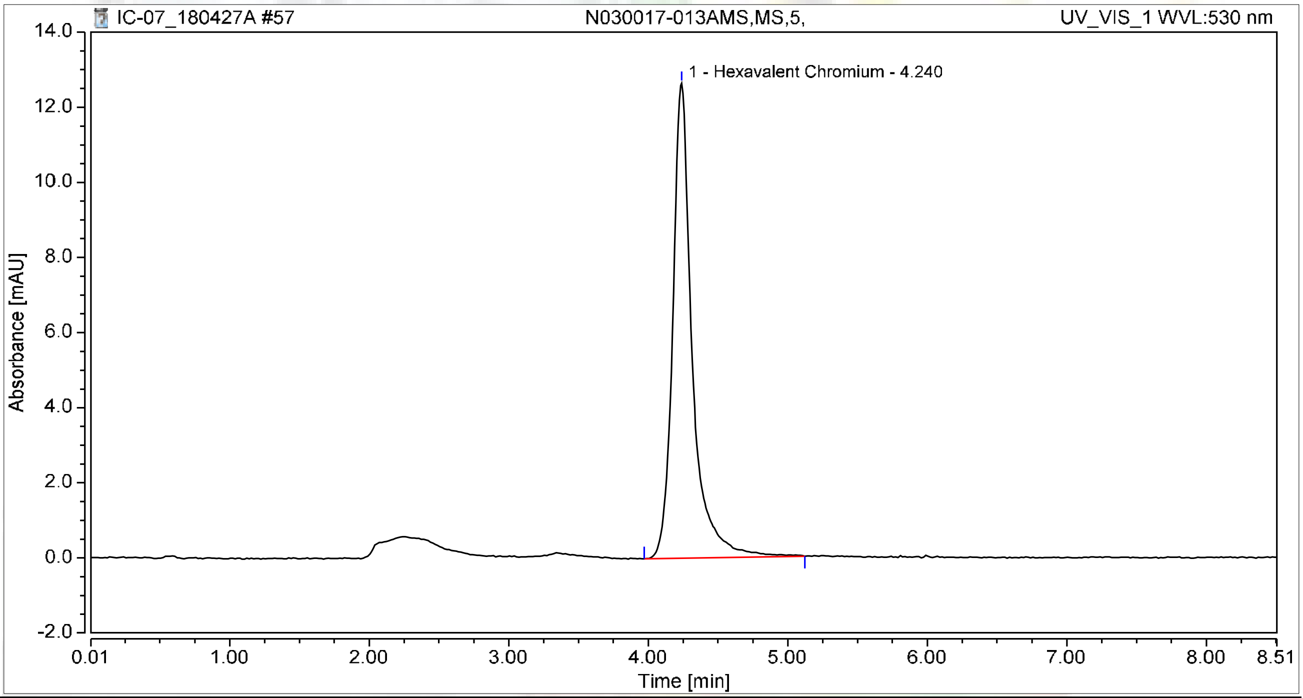
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.731	4.633	100.00	100.00	2.8843
Total:			**0.731**	**4.633**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-013AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

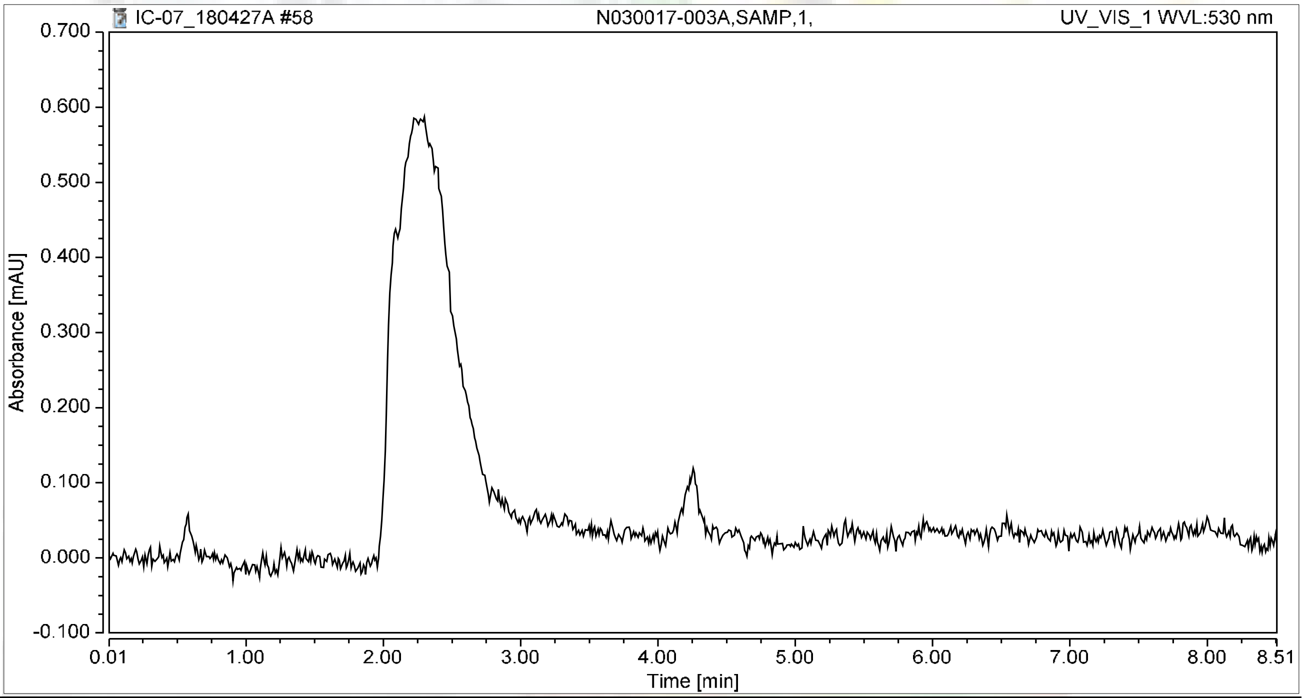
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	2.048	12.648	100.00	100.00	8.0801
Total:			**2.048**	**12.648**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 16:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

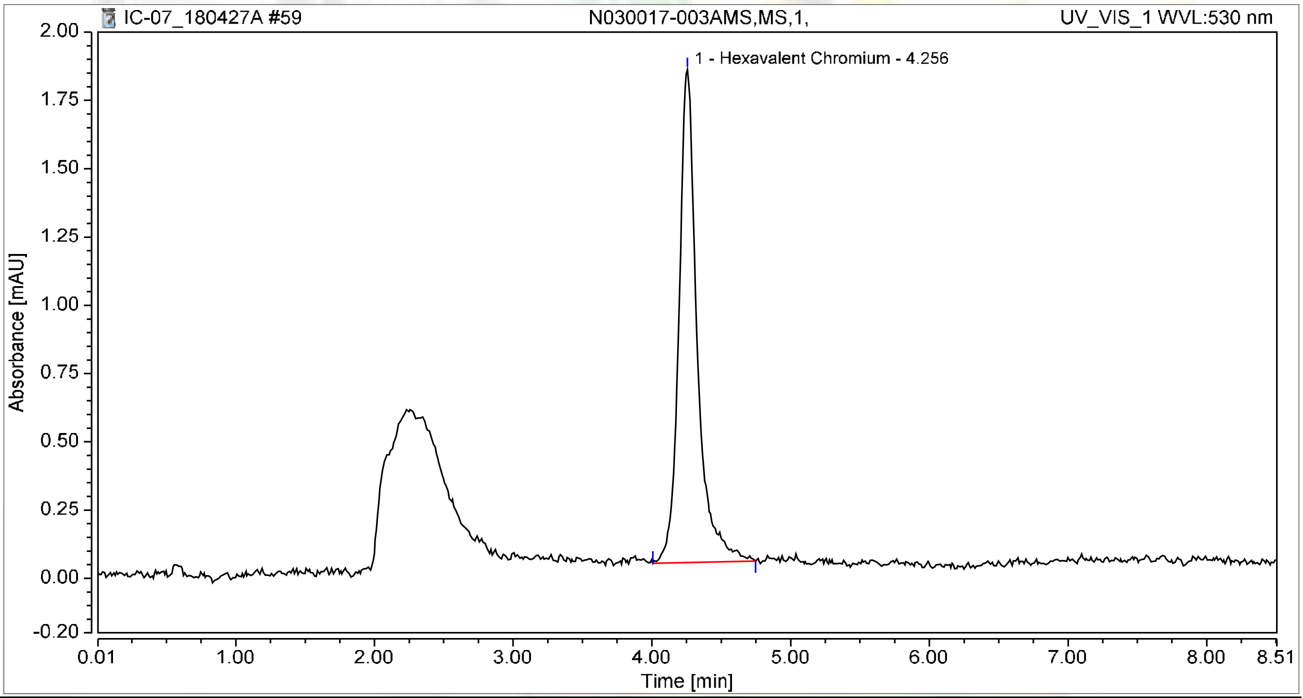
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

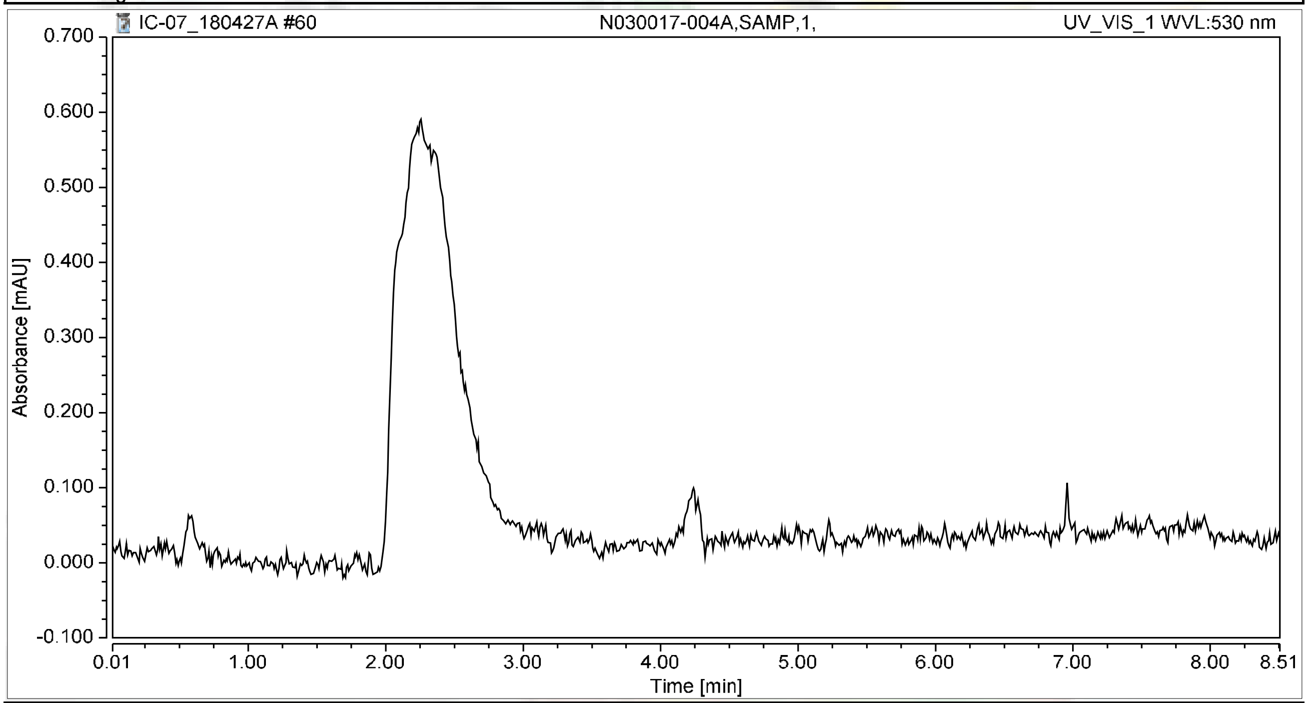
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.275	1.805	100.00	100.00	1.0847
Total:			**0.275**	**1.805**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-004A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 16:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

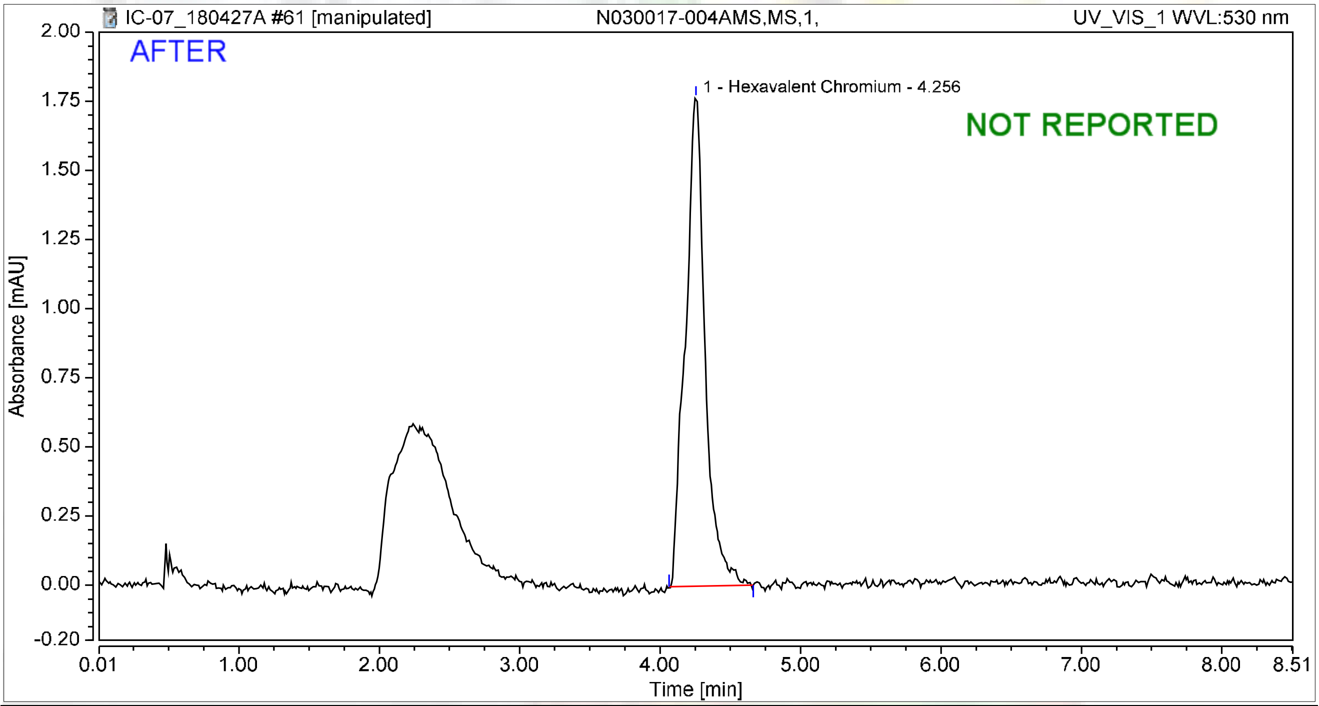
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.289	1.765	100.00	100.00	1.1401
Total:			**0.289**	**1.765**	**100.00**	**100.00**	

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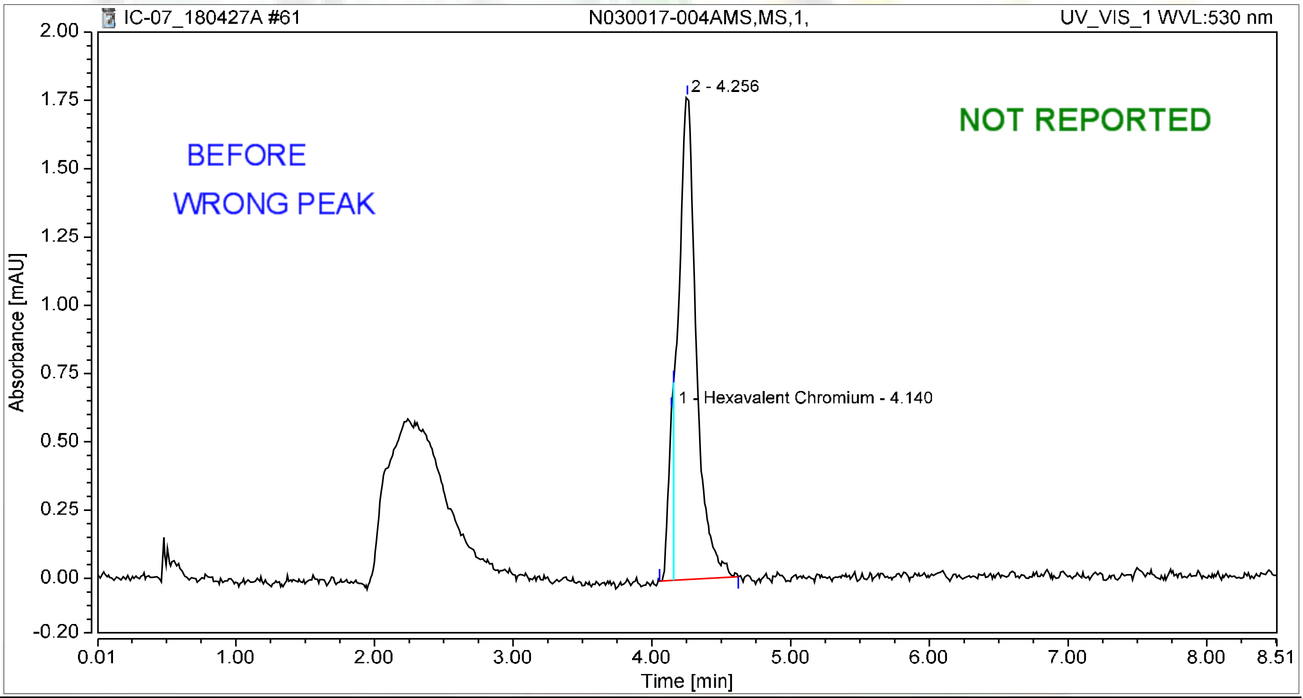
Chromatogram and Results

Injection Details

Injection Name:	**N030017-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.027	0.626	9.31	26.18	0.1058
2		4.256	0.261	1.766	90.69	73.82	n.a.
Total:			**0.288**	**2.392**	**100.00**	**100.00**	

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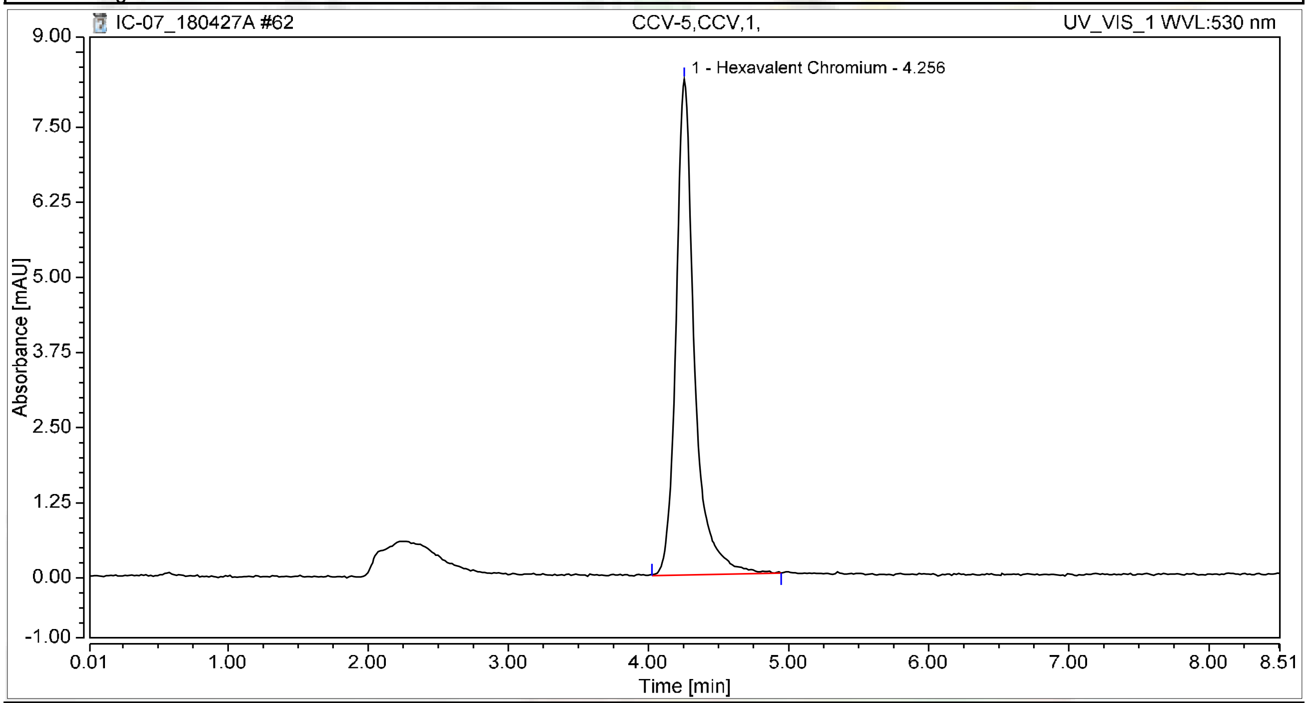
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 17:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

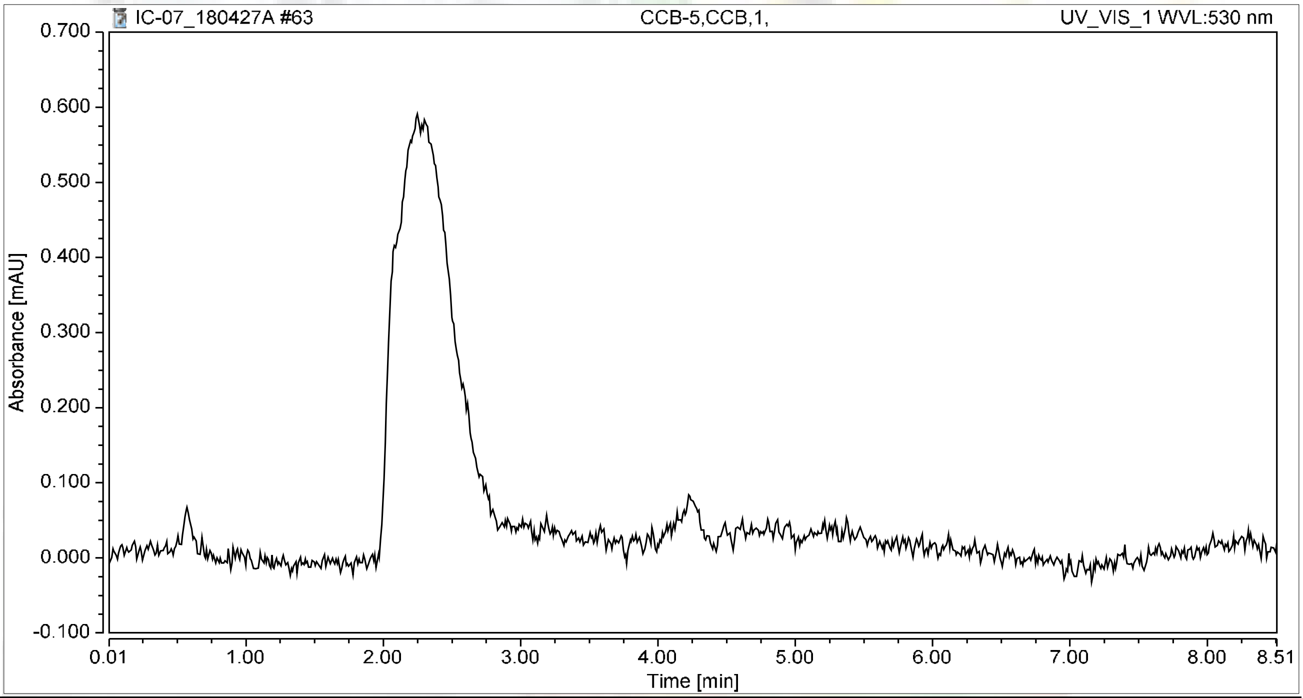
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.256	8.250	100.00	100.00	4.9540
Total:			**1.256**	**8.250**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

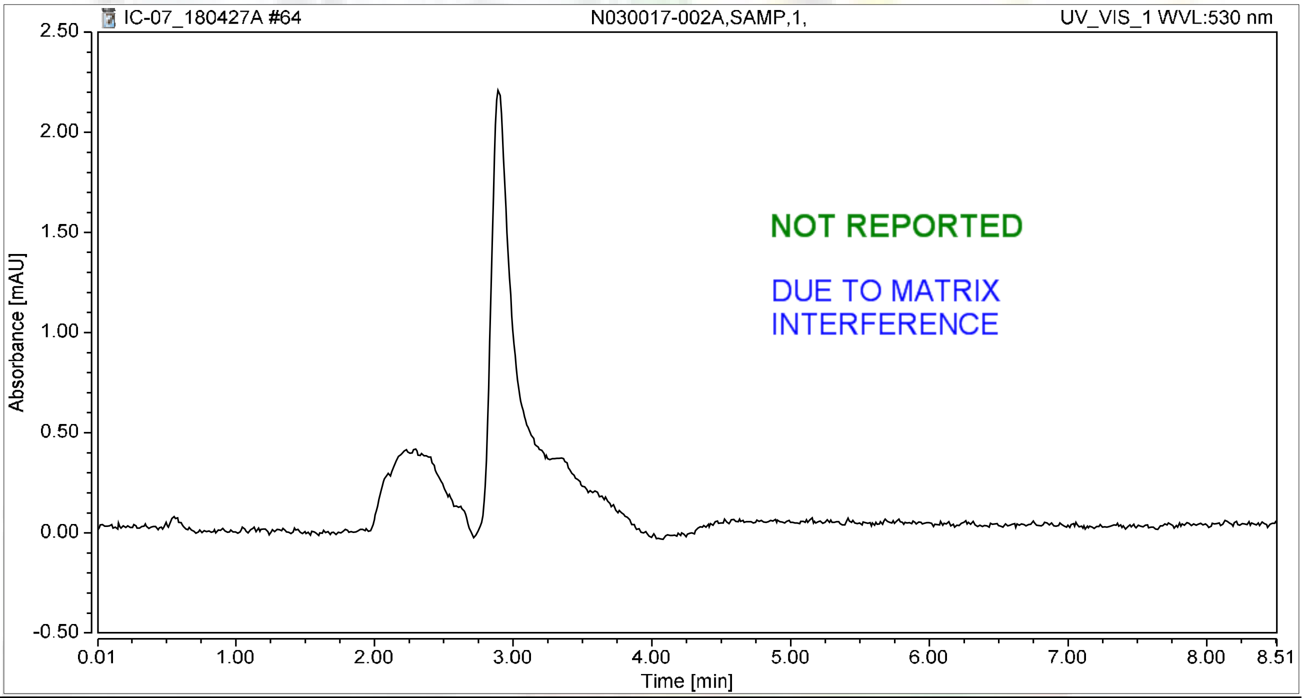
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

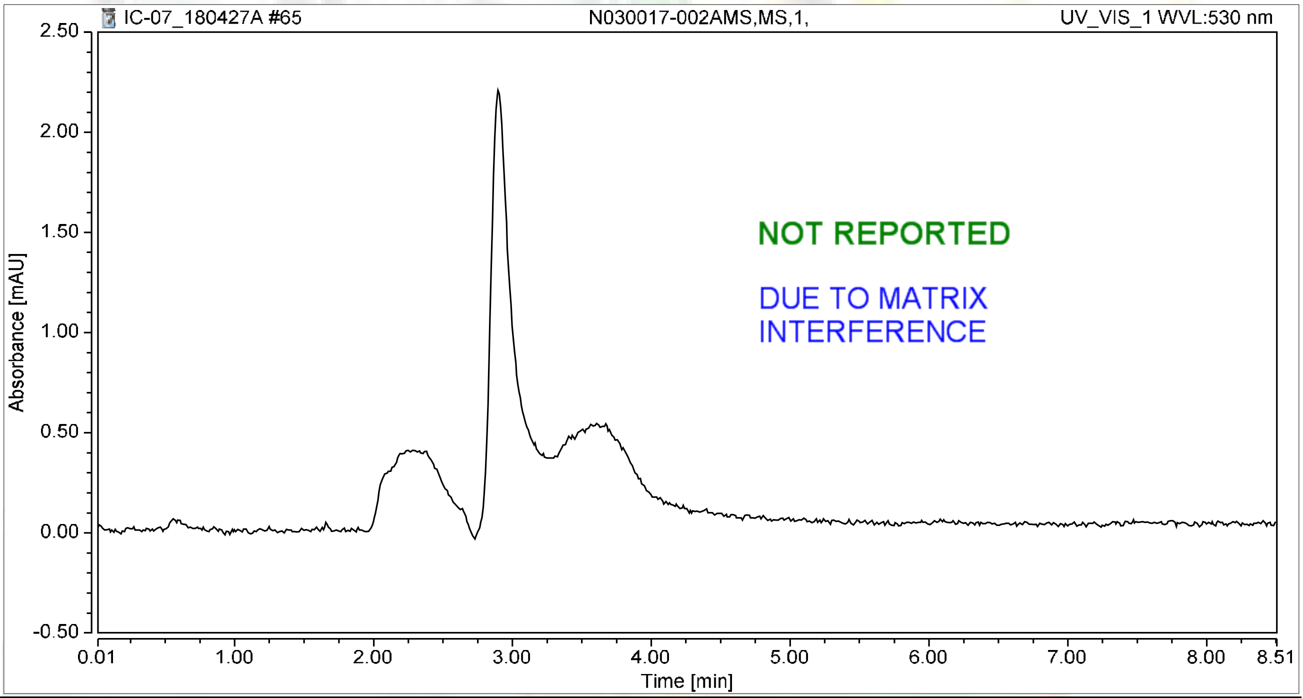
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 17:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

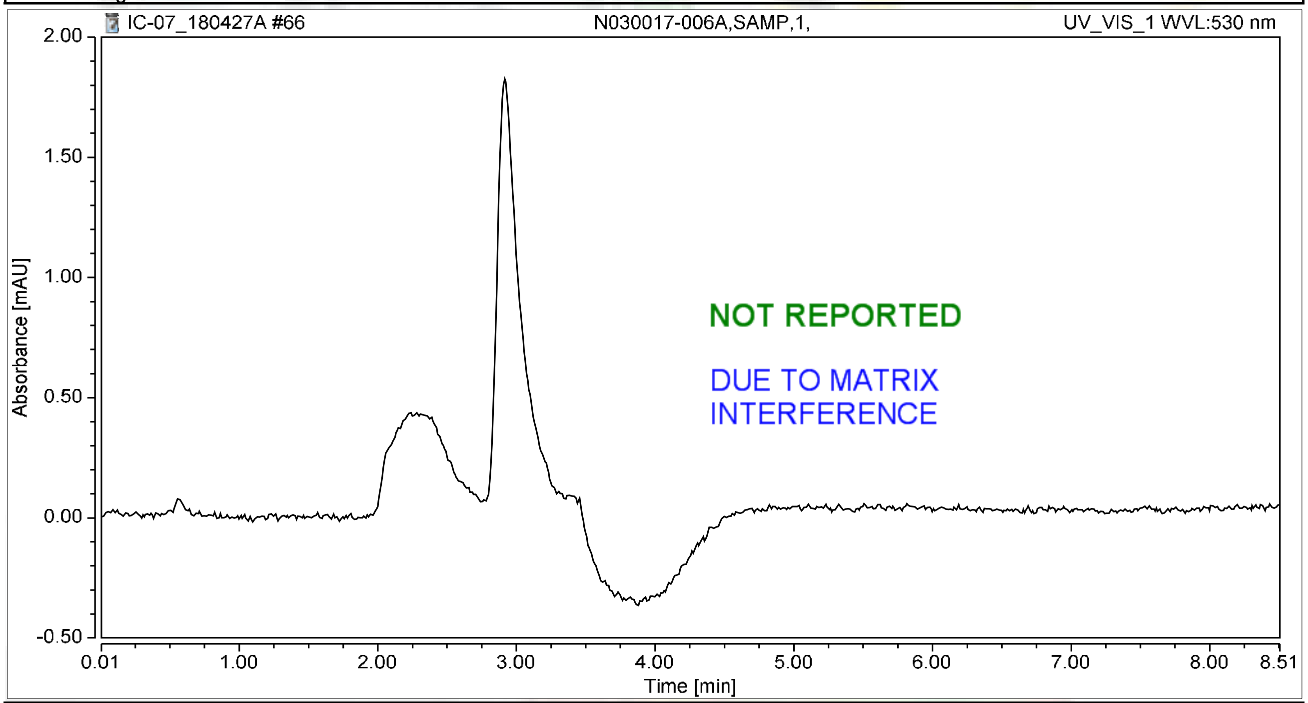
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 17:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

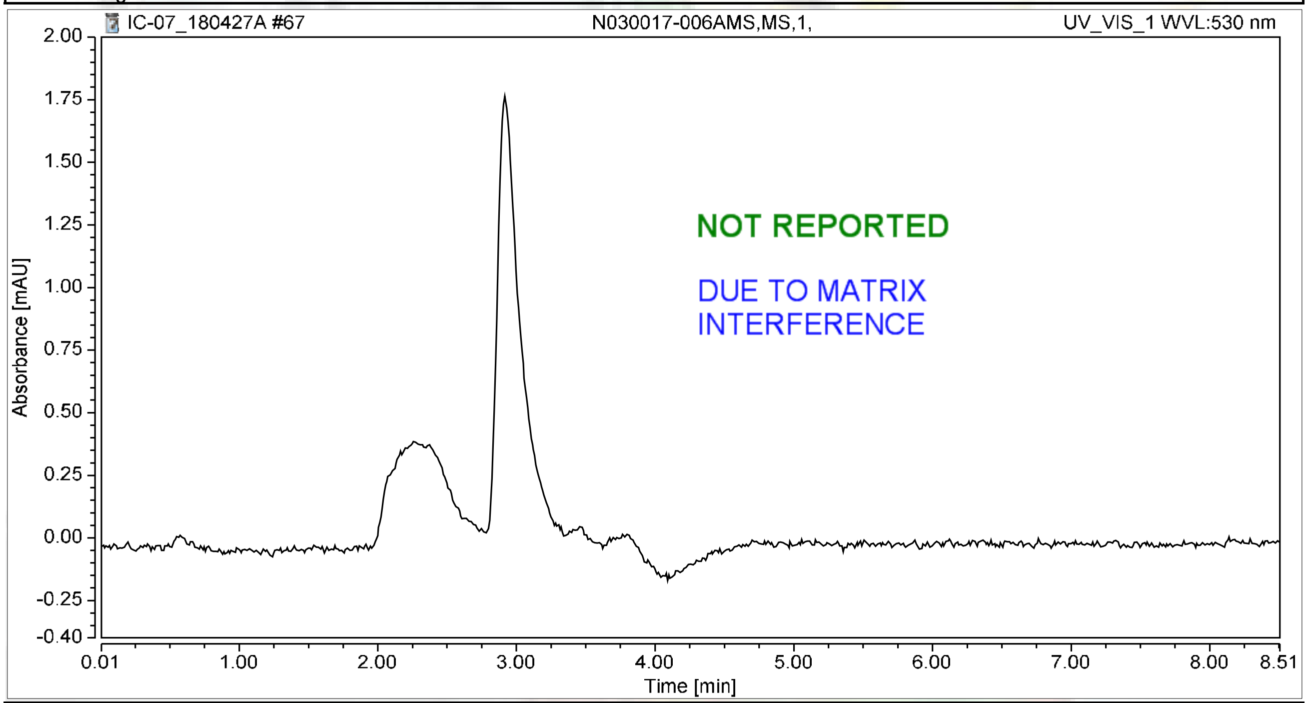
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

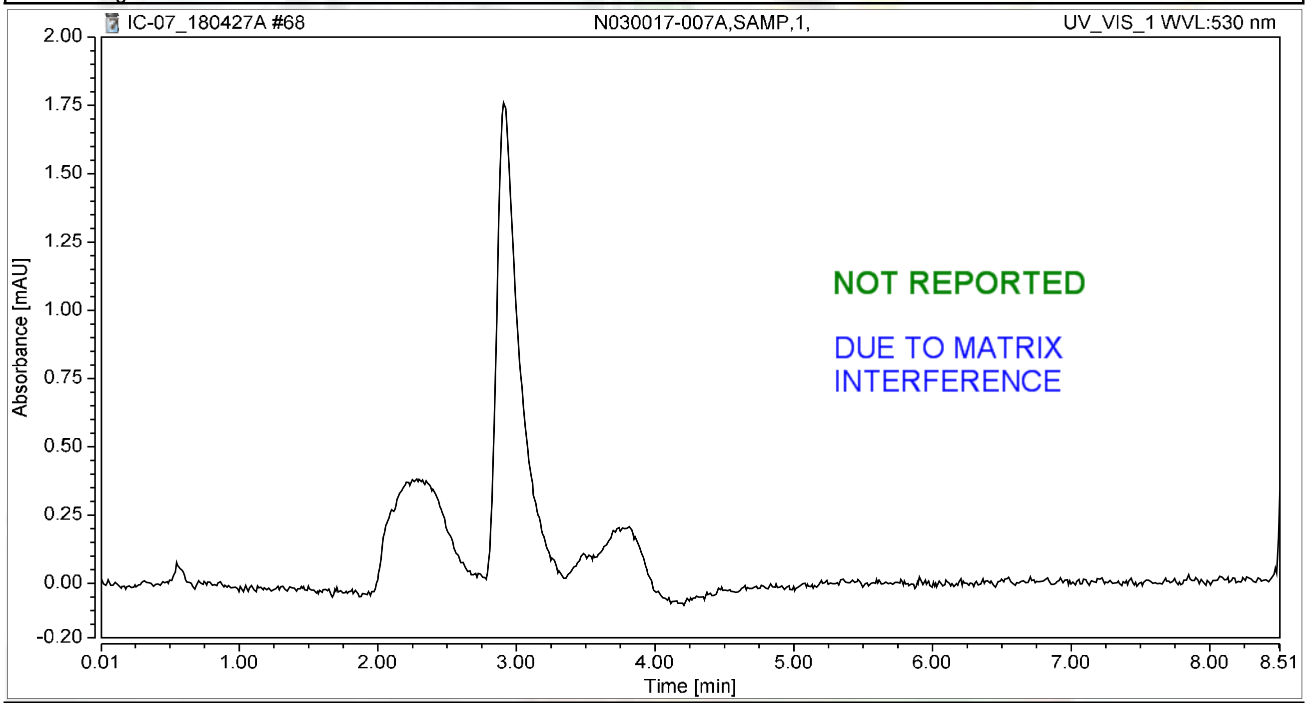
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

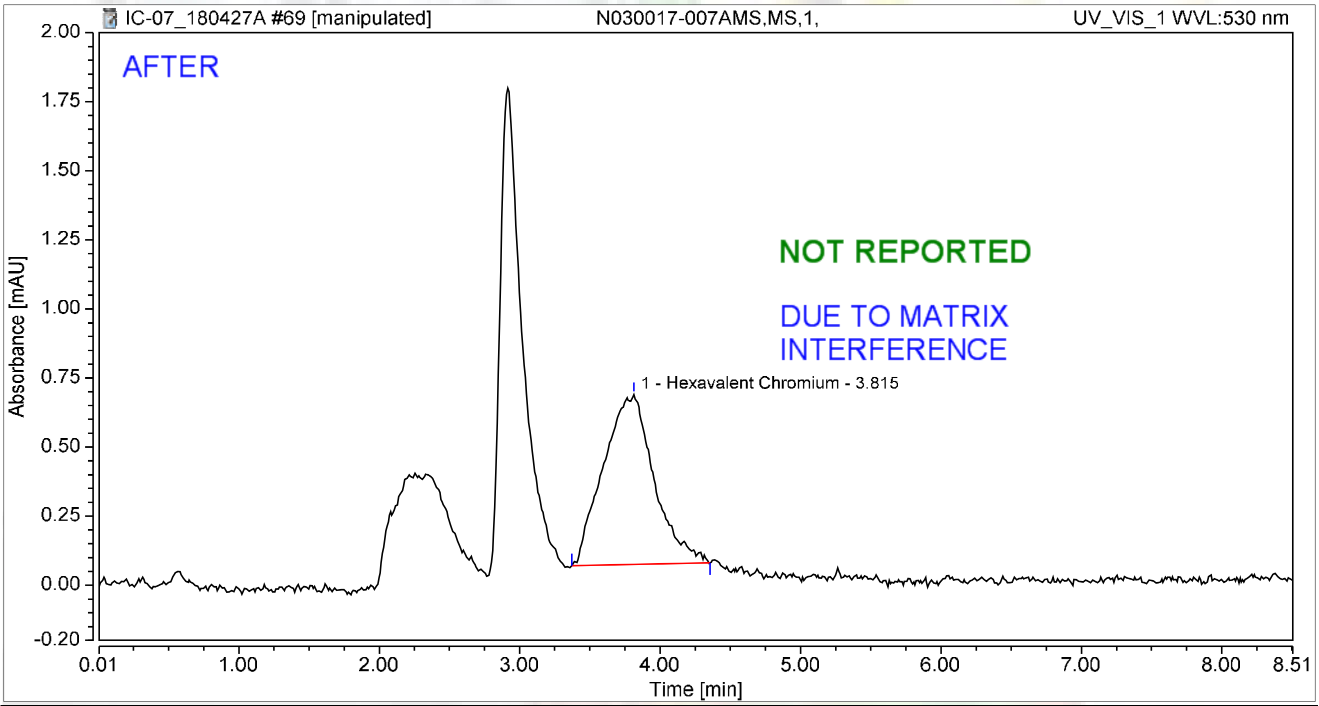
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.815	0.256	0.615	100.00	100.00	1.0118
Total:			**0.256**	**0.615**	**100.00**	**100.00**	

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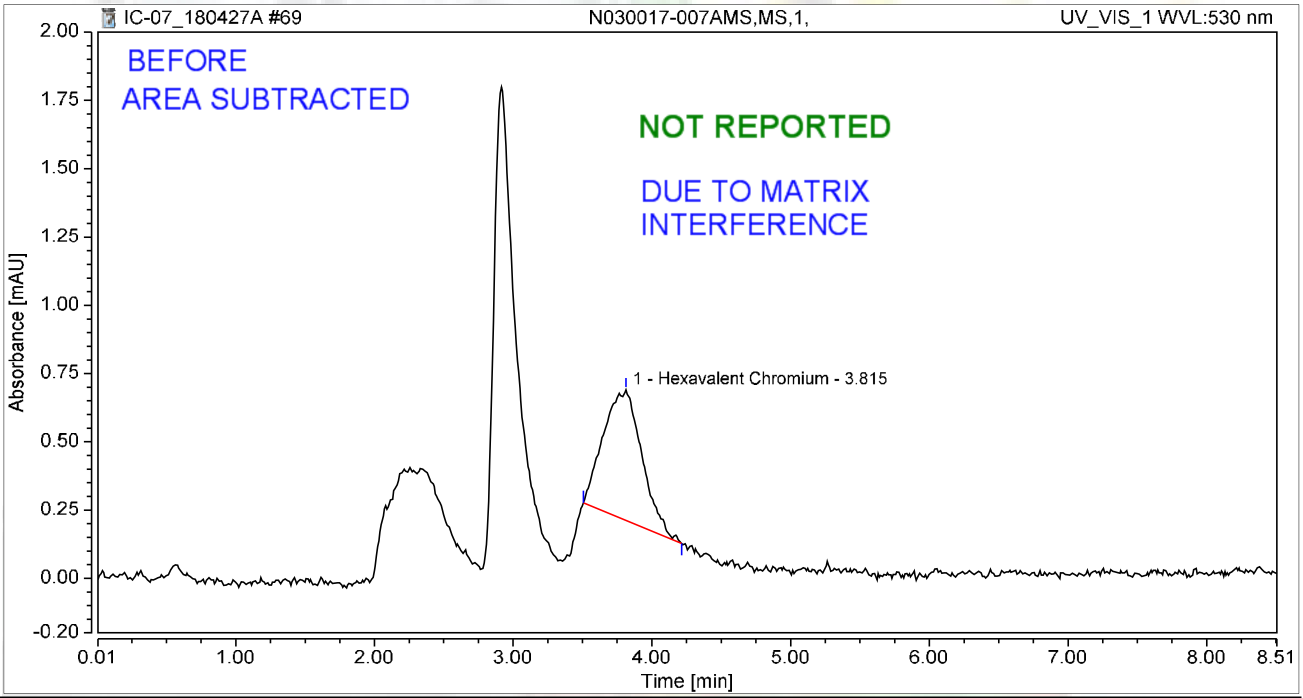
Chromatogram and Results

Injection Details

Injection Name:	**N030017-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.815	0.151	0.478	100.00	100.00	0.5974
Total:			**0.151**	**0.478**	**100.00**	**100.00**	

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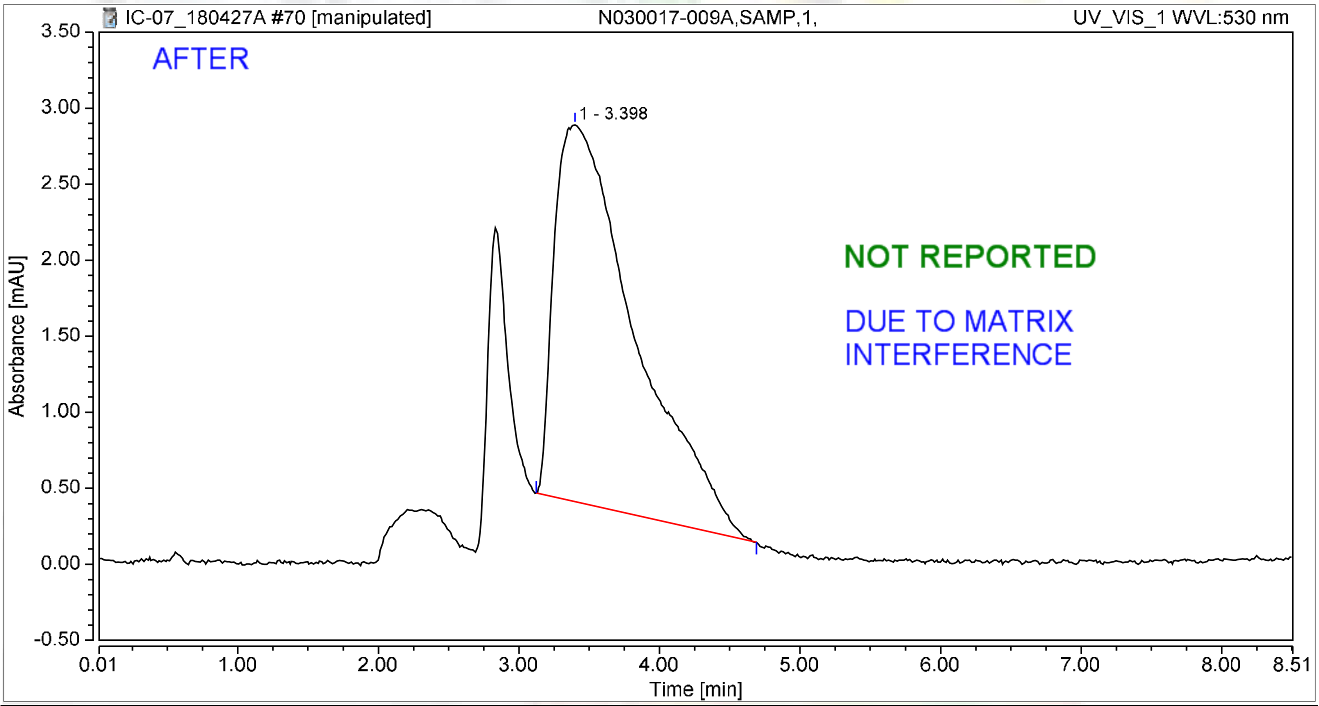
Chromatogram and Results

Injection Details

Injection Name:	**N030017-009A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.398	1.648	2.479	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.648**	**2.479**	**100.00**	**100.00**	

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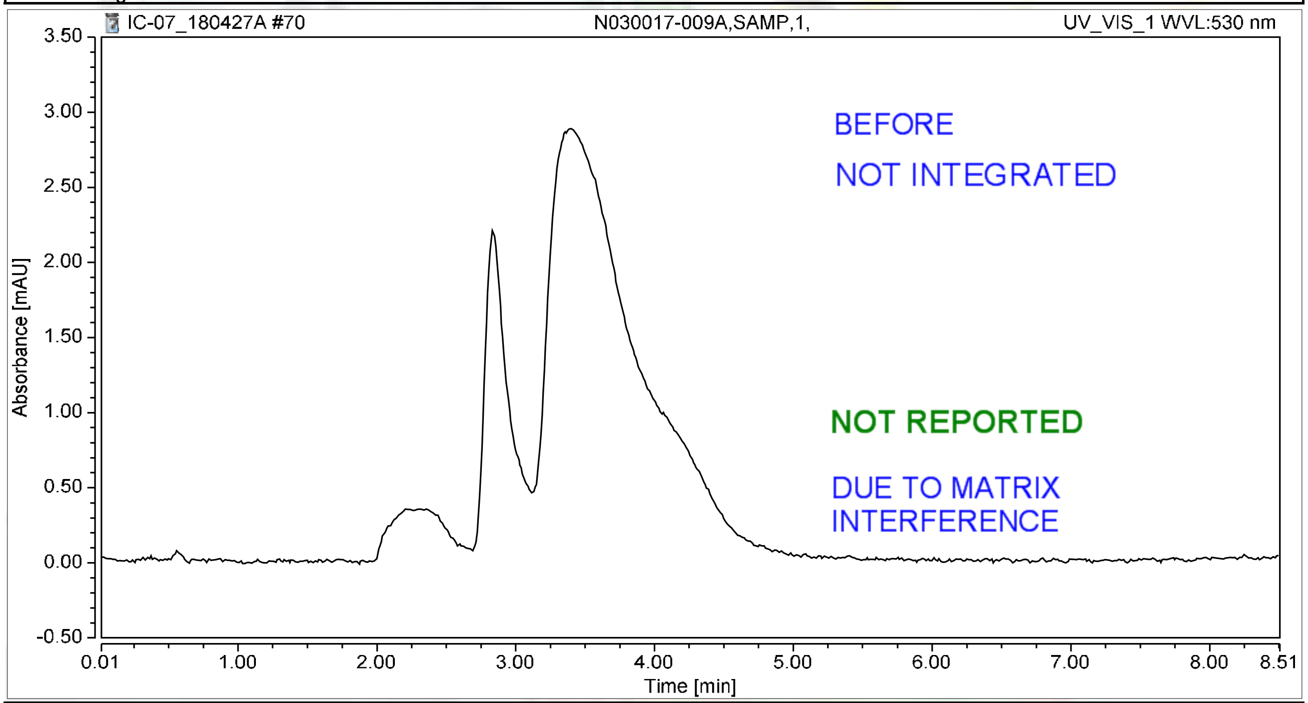
Chromatogram and Results

Injection Details

Injection Name:	**N030017-009A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

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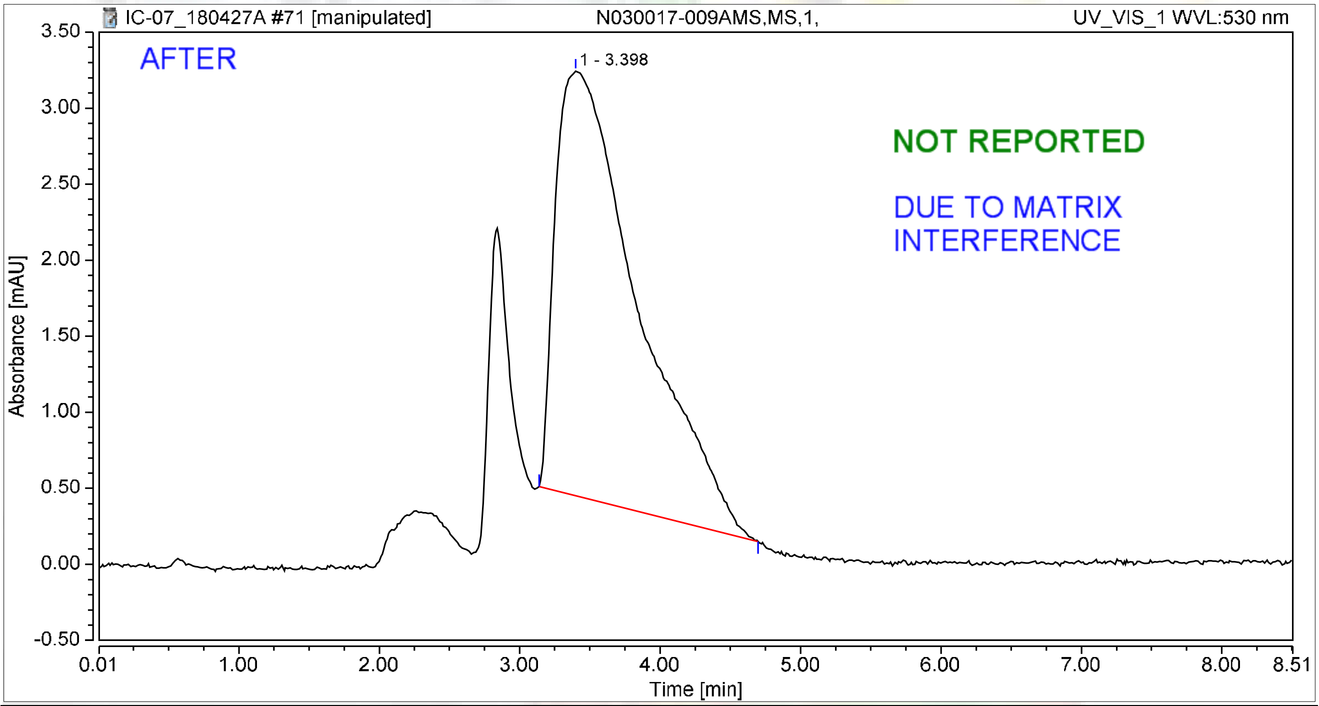
Chromatogram and Results

Injection Details

Injection Name:	**N030017-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.398	1.903	2.791	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.903**	**2.791**	**100.00**	**100.00**	

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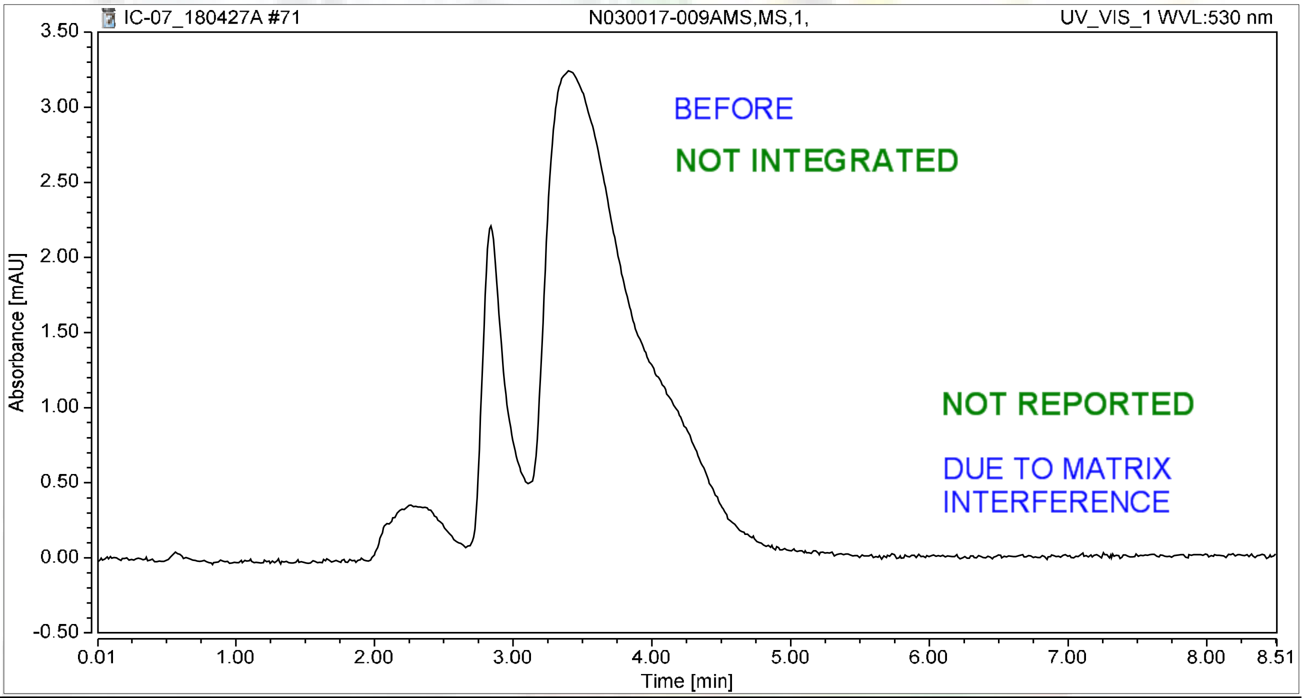
Chromatogram and Results

Injection Details

Injection Name:	**N030017-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

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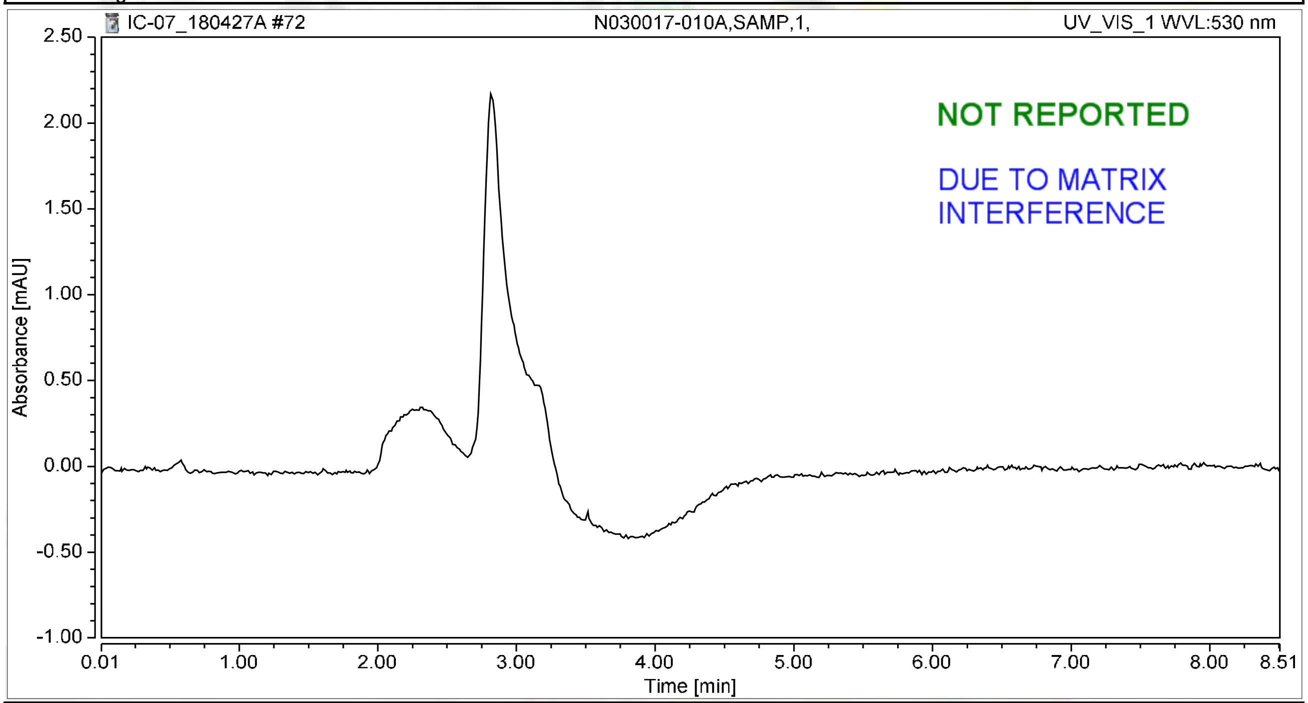
Chromatogram and Results

Injection Details

Injection Name:	**N030017-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

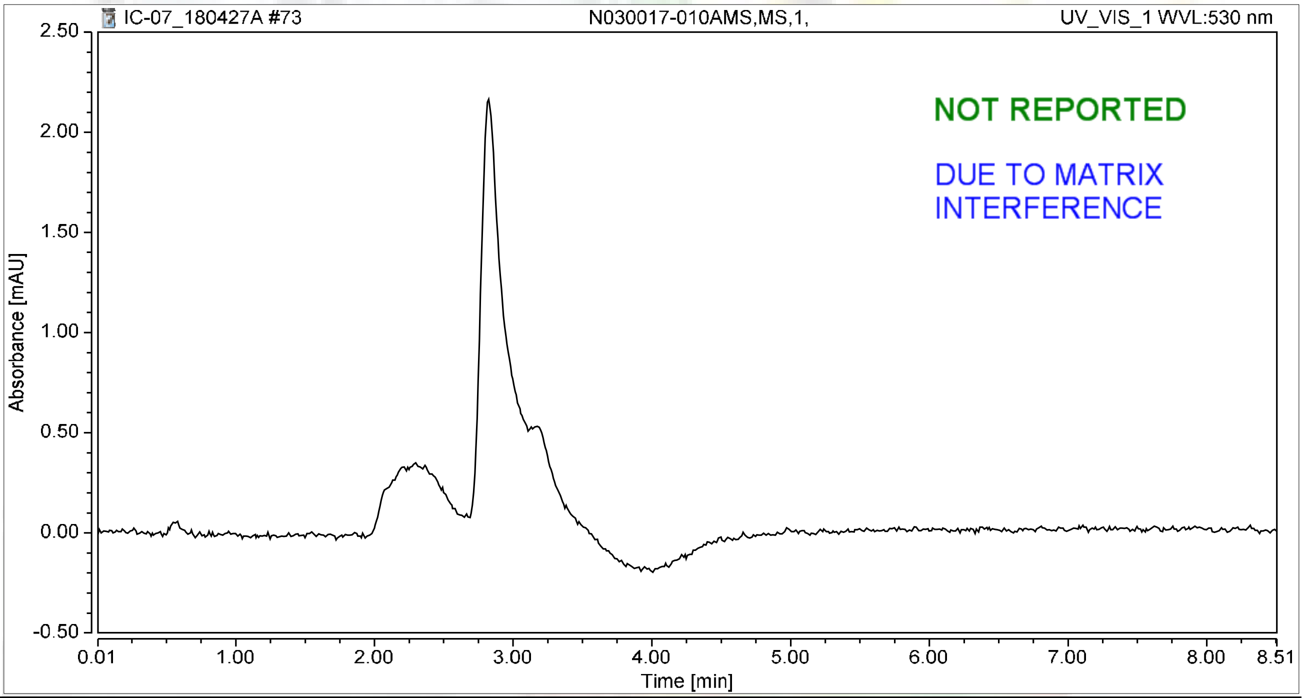
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

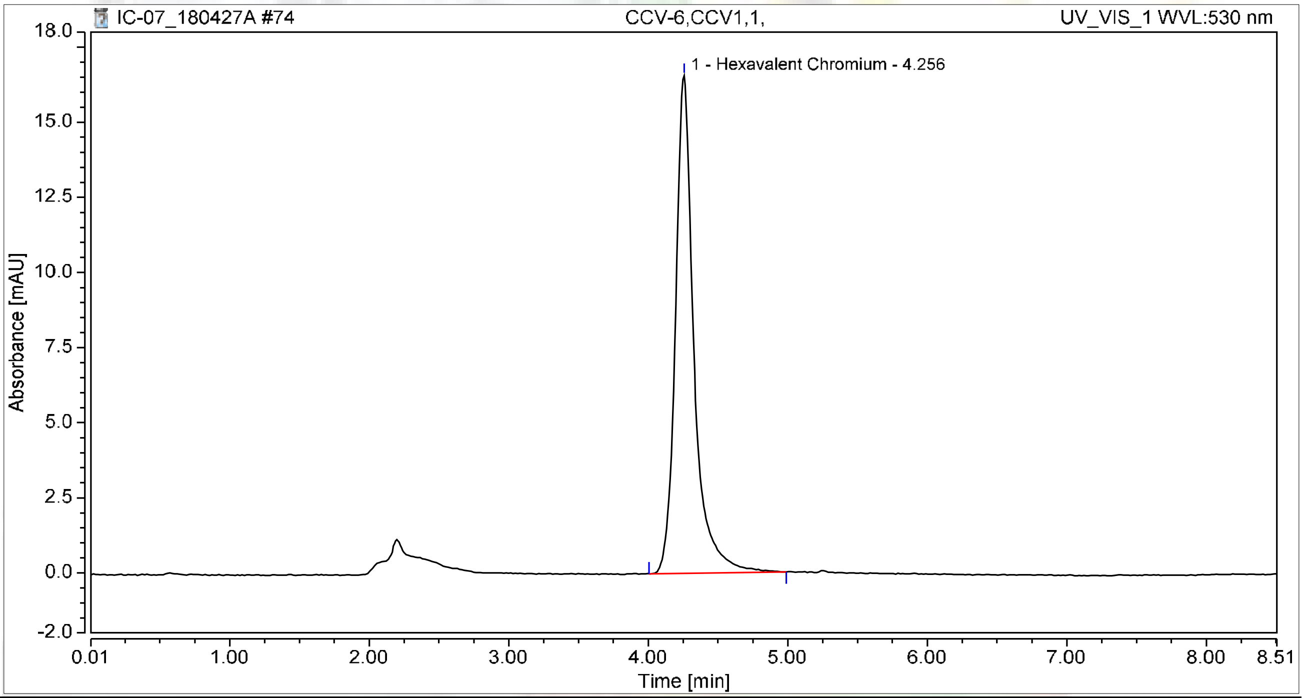
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

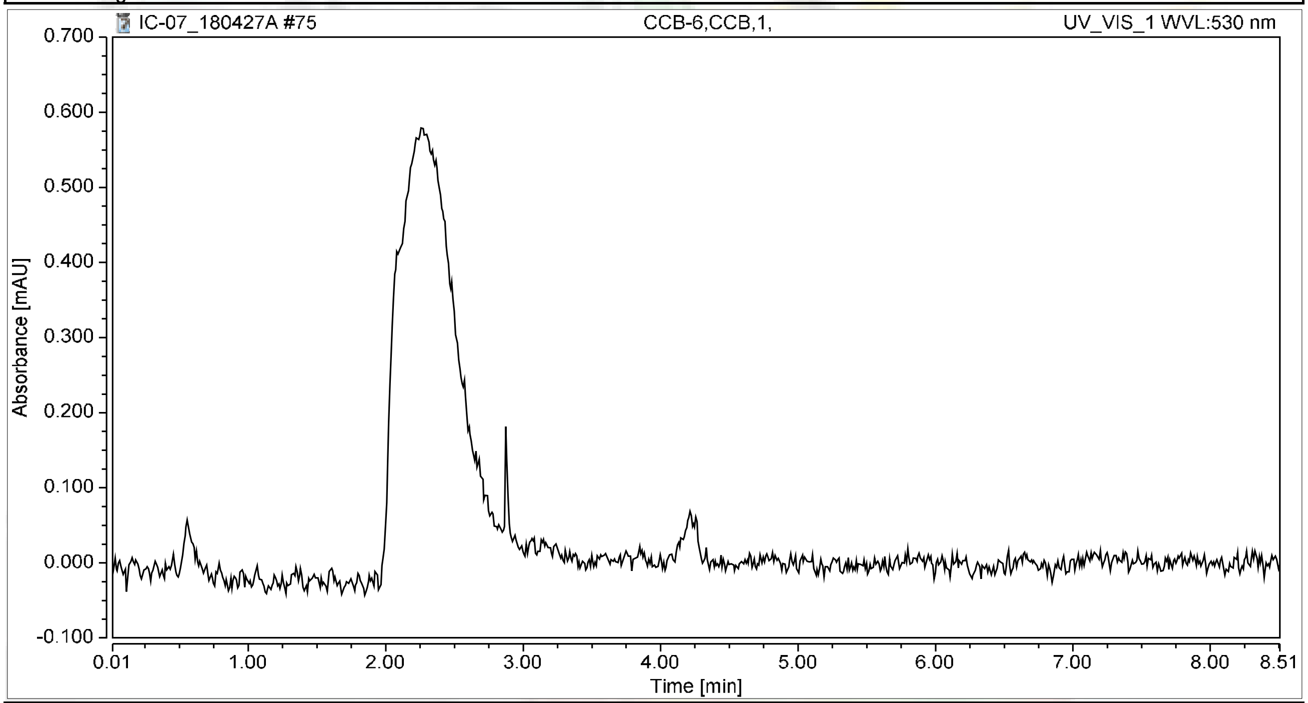
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.542	16.576	100.00	100.00	10.0271
Total:			**2.542**	**16.576**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

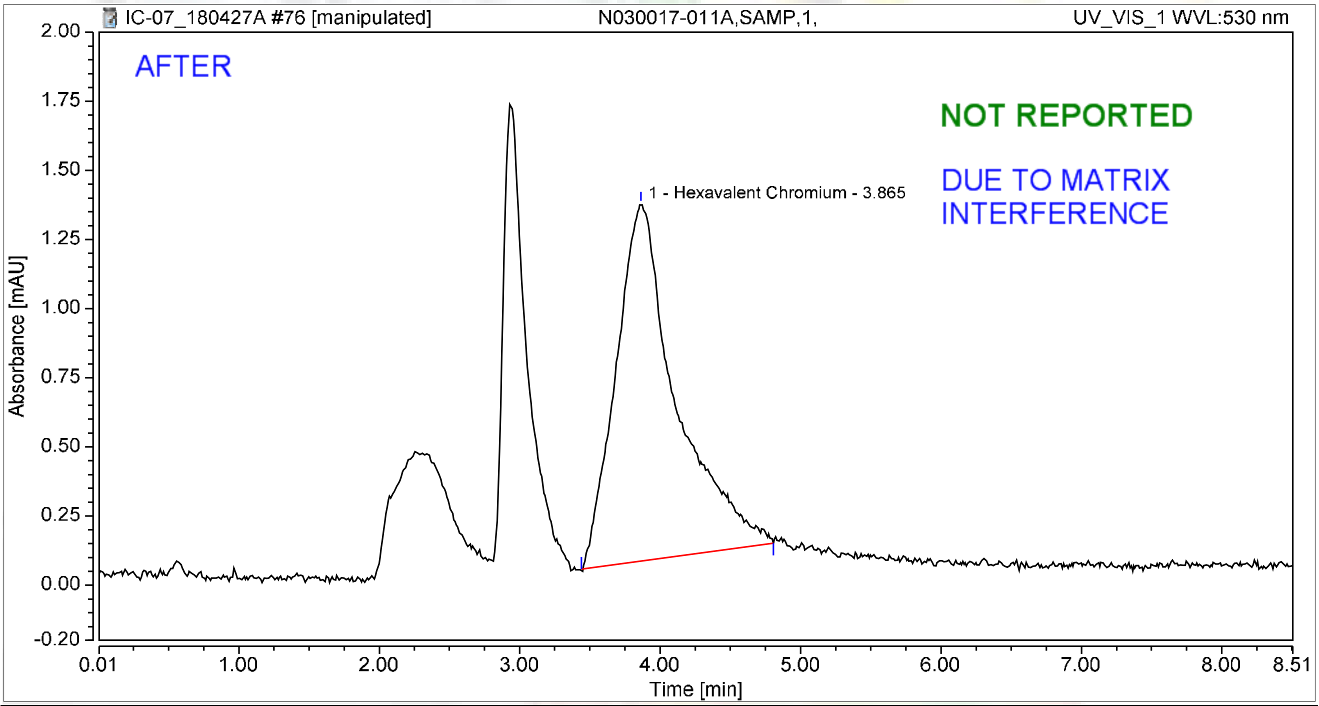
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.865	0.642	1.292	100.00	100.00	2.5325
Total:			**0.642**	**1.292**	**100.00**	**100.00**	

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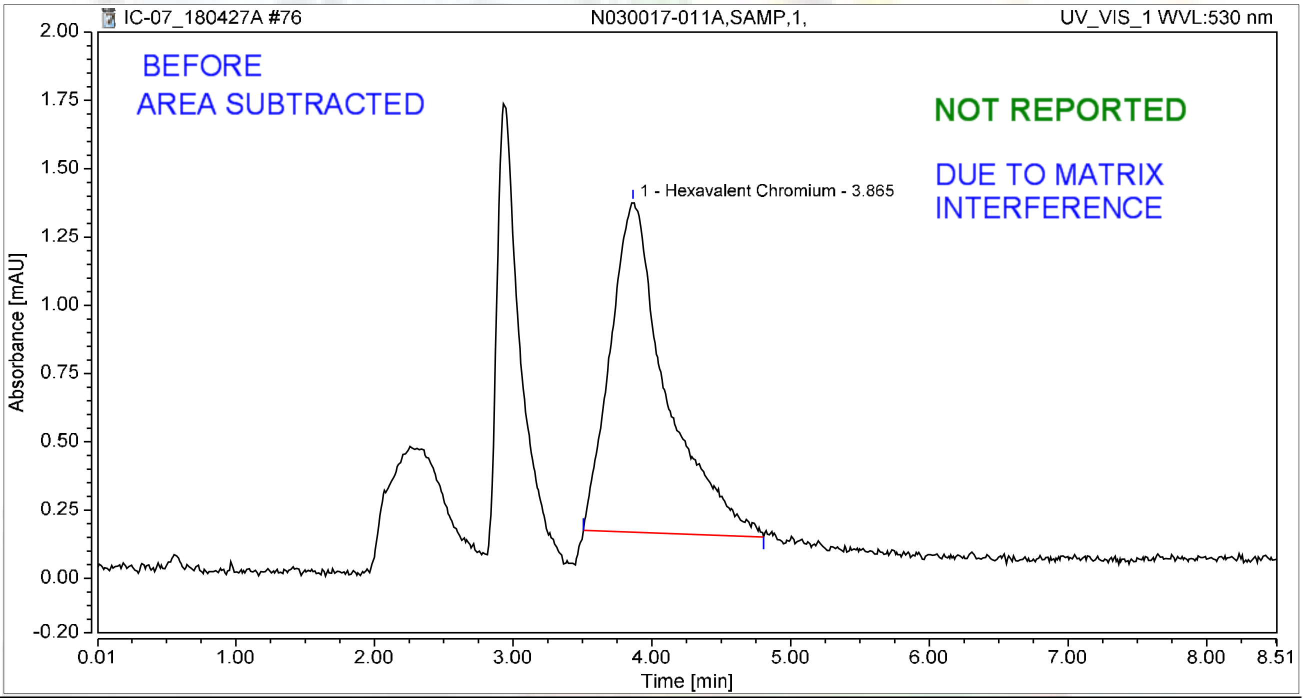
Chromatogram and Results

Injection Details

Injection Name:	**N030017-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.865	0.565	1.209	100.00	100.00	2.2270
Total:			**0.565**	**1.209**	**100.00**	**100.00**	

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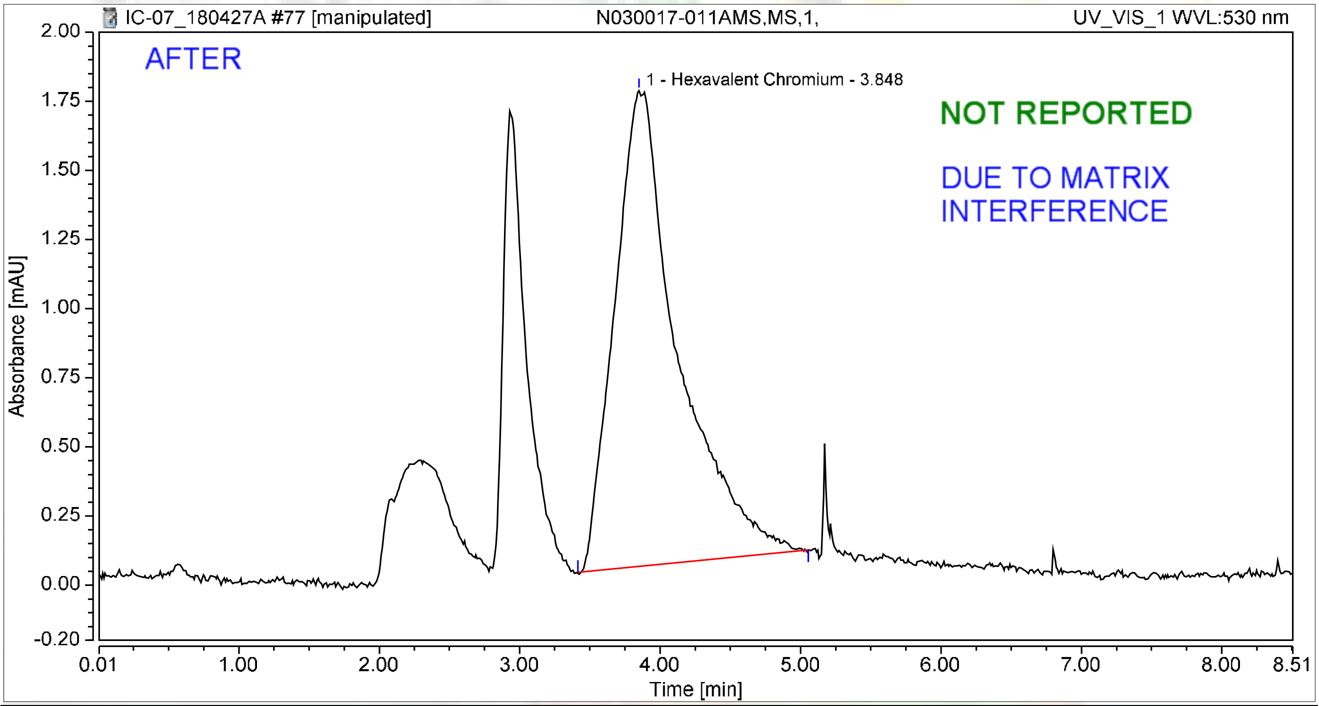
Chromatogram and Results

Injection Details			
Injection Name:	**N030017-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.848	0.901	1.721	100.00	100.00	3.5554
Total:			**0.901**	**1.721**	**100.00**	**100.00**	

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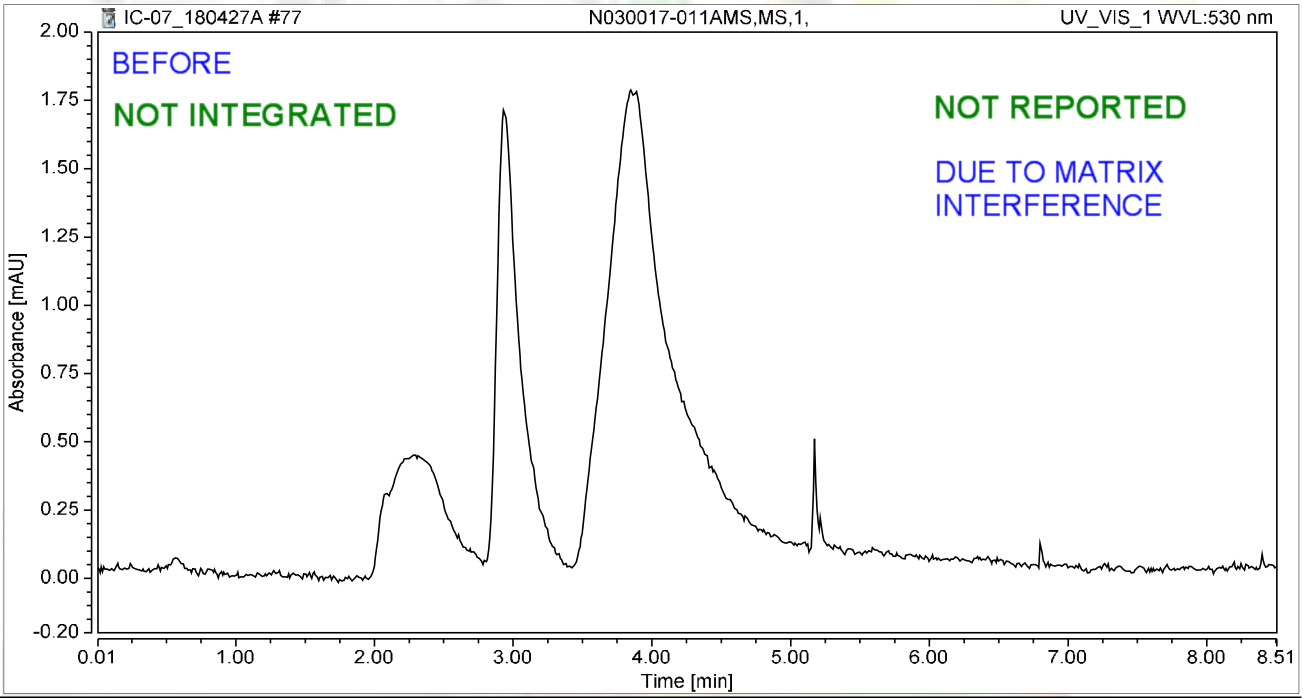
Chromatogram and Results

Injection Details

Injection Name:	**N030017-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

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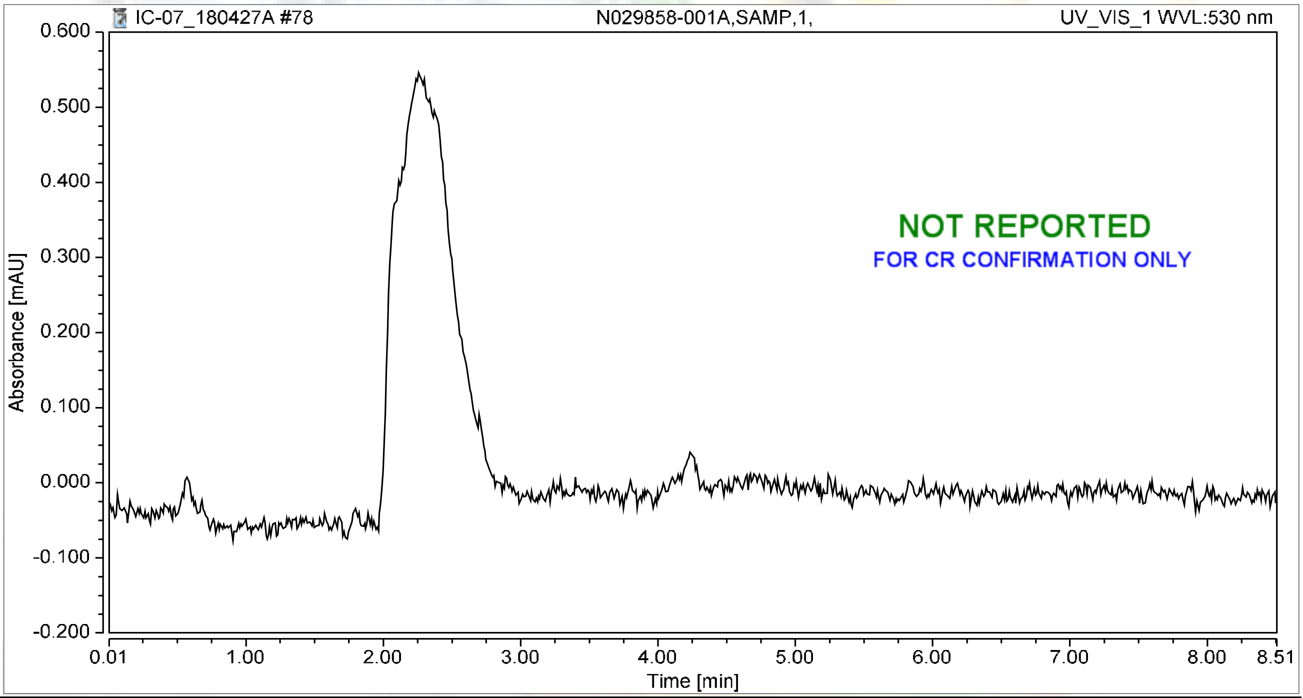
Chromatogram and Results

Injection Details

Injection Name:	**N029858-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

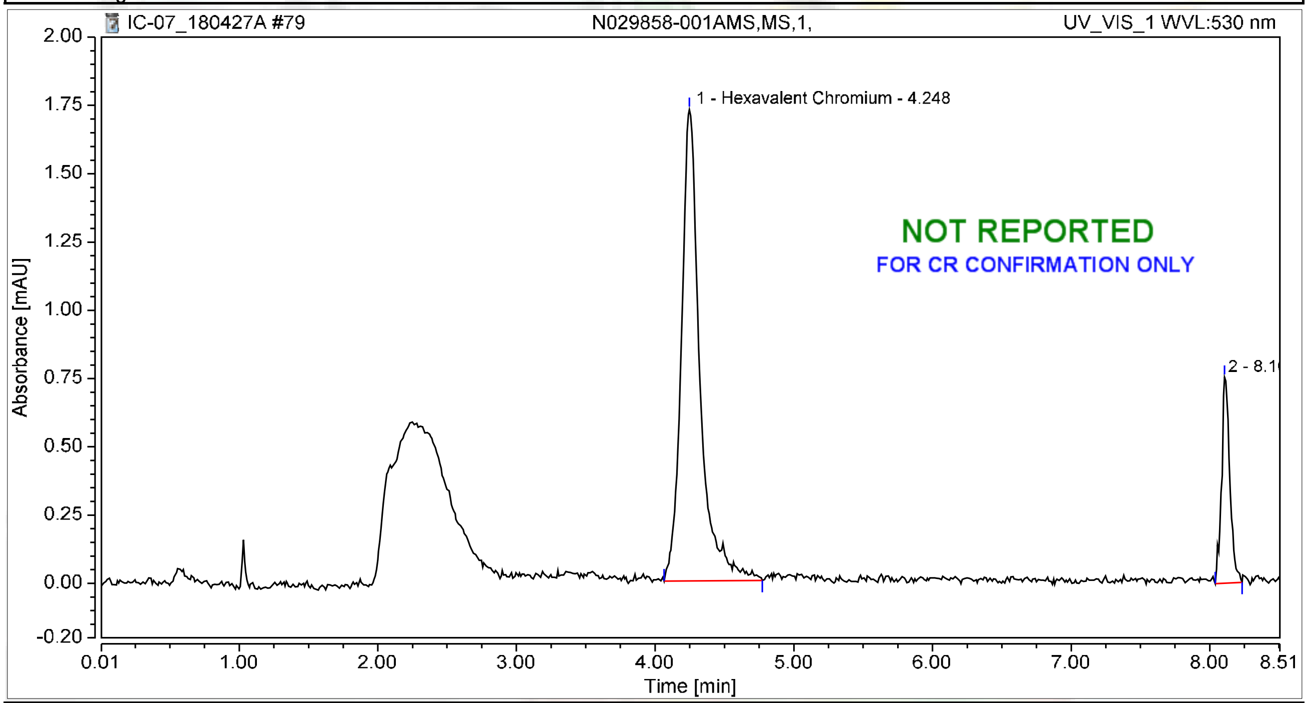
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029858-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

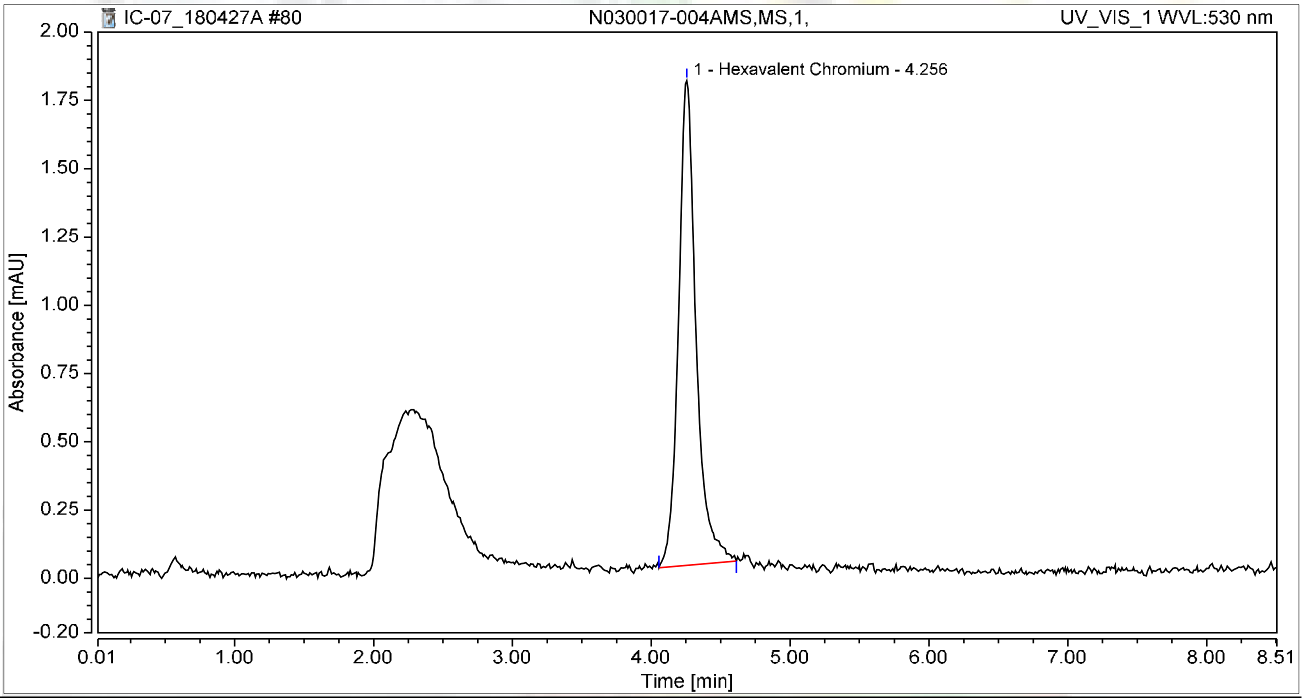
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.269	1.726	83.55	69.62	1.0599
2		8.106	0.053	0.753	16.45	30.38	n.a.
Total:			**0.322**	**2.479**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 20:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

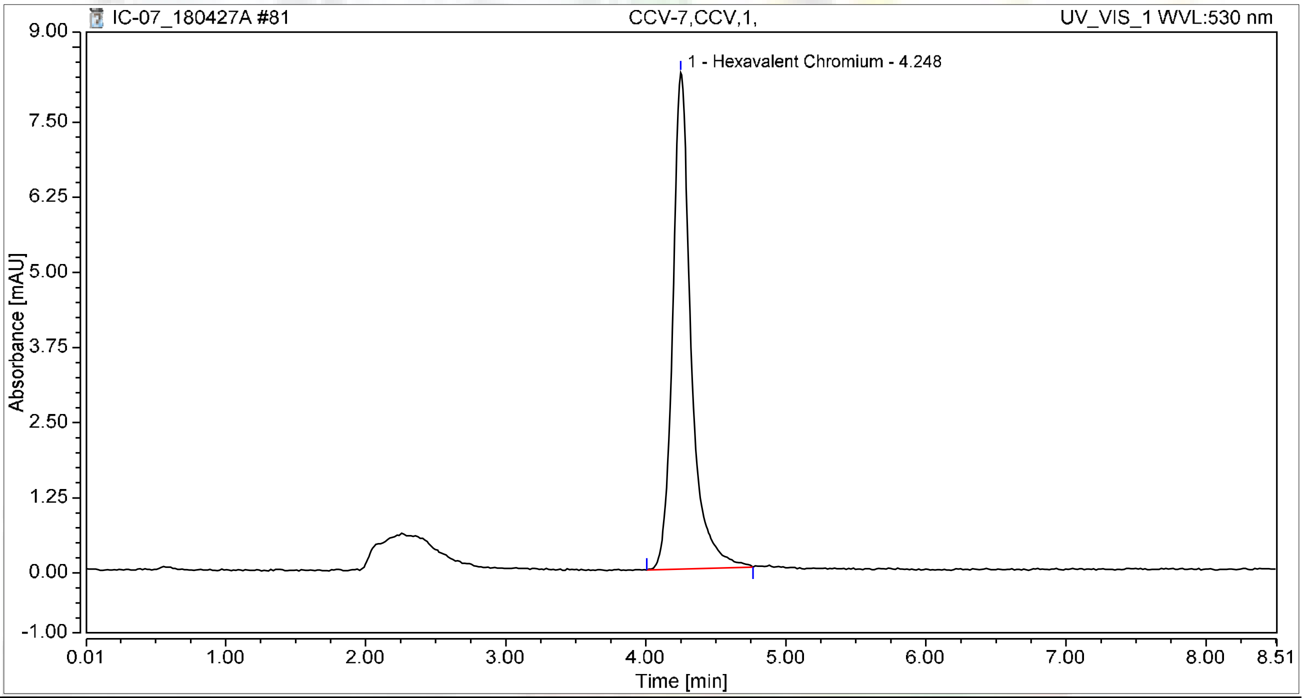
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.261	1.774	100.00	100.00	1.0281
Total:			**0.261**	**1.774**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 20:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

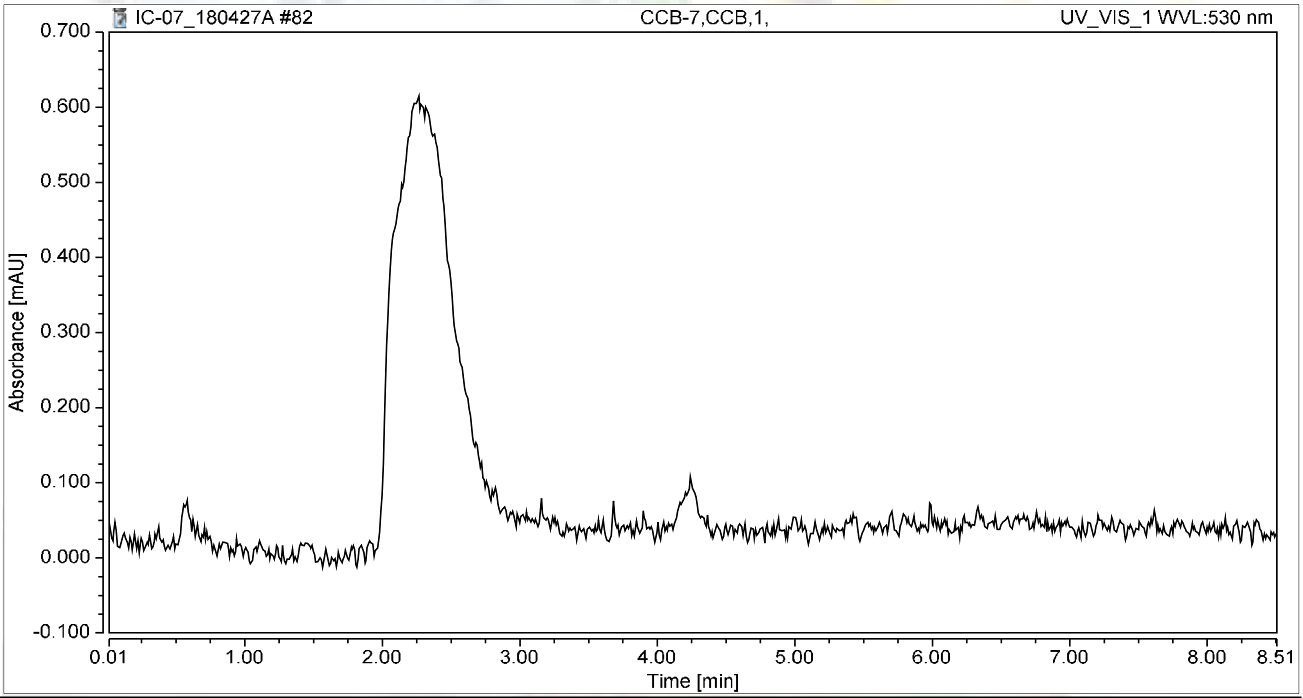
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.258	8.261	100.00	100.00	4.9623
Total:			**1.258**	**8.261**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 20:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

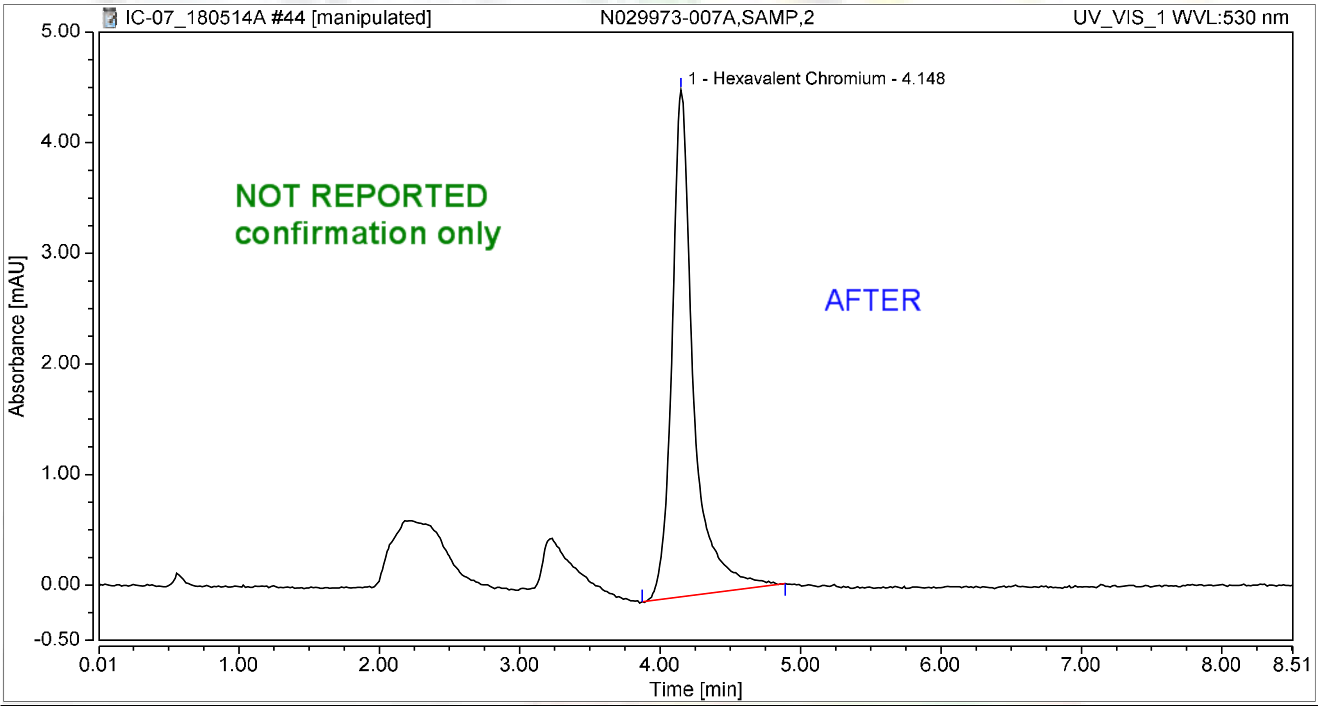
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-007A,SAMP,2**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 14:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.814	4.583	100.00	100.00	3.1720
Total:			**0.814**	**4.583**	**100.00**	**100.00**	

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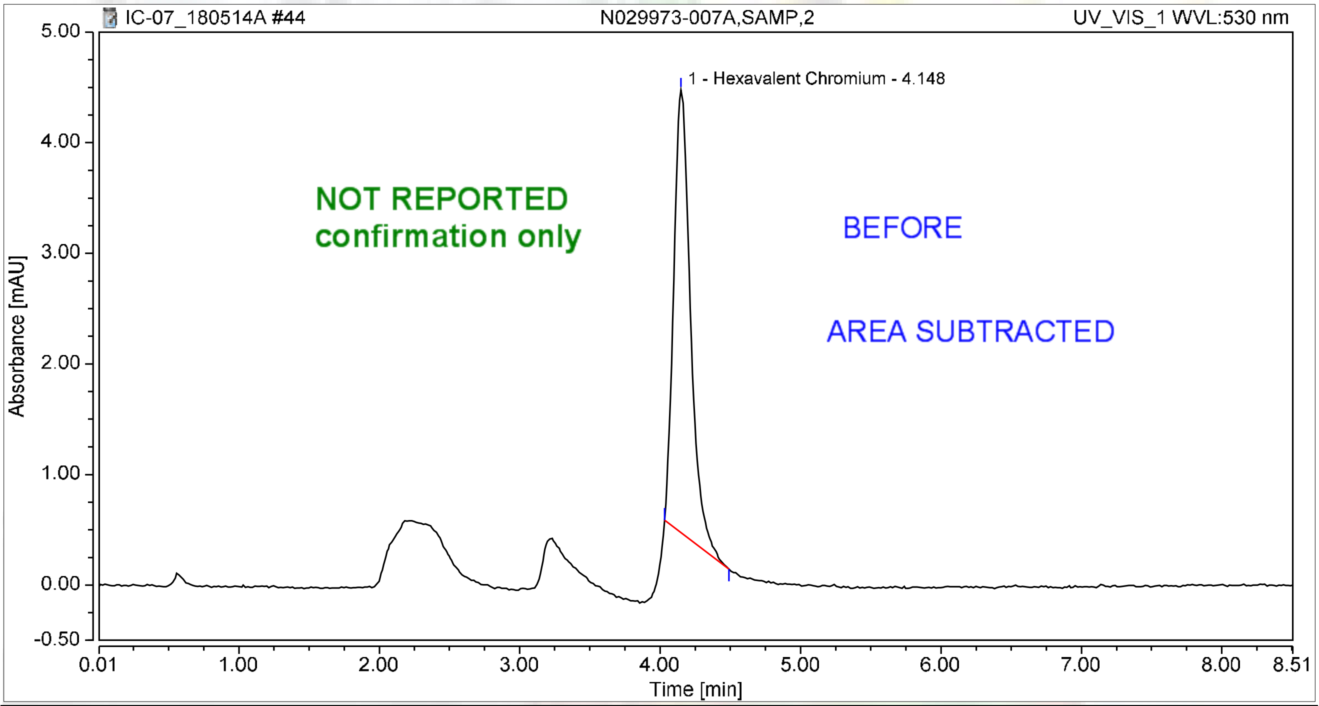
Chromatogram and Results

Injection Details

Injection Name:	**N029973-007A,SAMP,2**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 14:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.553	4.002	100.00	100.00	2.1538
Total:			**0.553**	**4.002**	**100.00**	**100.00**	

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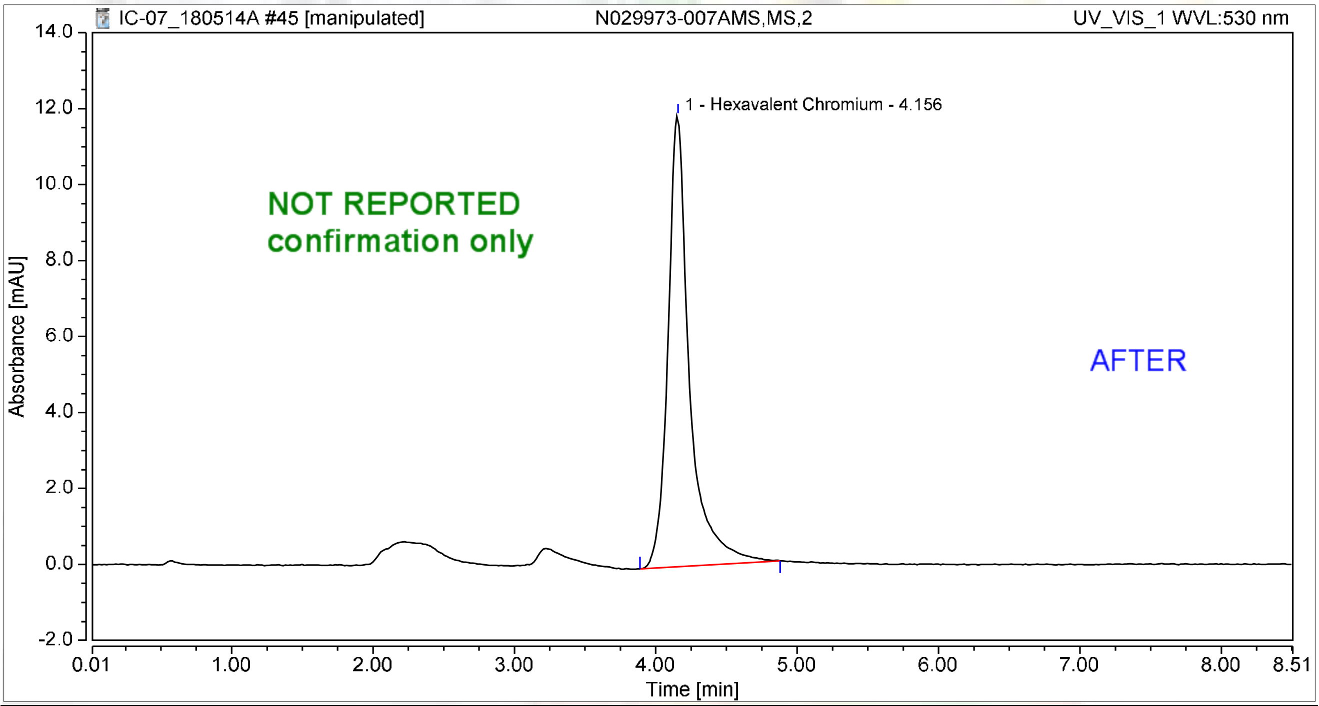
Chromatogram and Results

Injection Details

Injection Name:	**N029973-007AMS,MS,2**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 14:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	2.103	11.864	100.00	100.00	8.1951
Total:			**2.103**	**11.864**	**100.00**	**100.00**	

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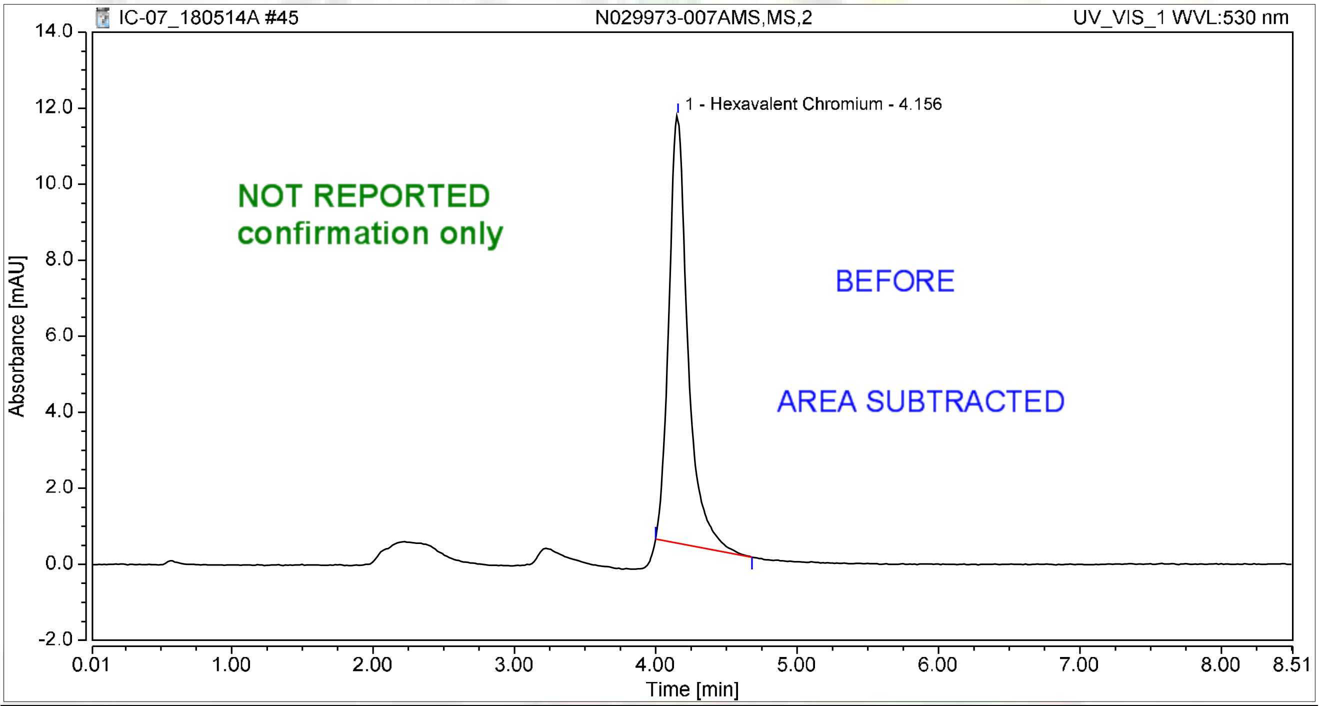
Chromatogram and Results

Injection Details

Injection Name:	**N029973-007AMS,MS,2**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 14:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.764	11.250	100.00	100.00	6.8750
Total:			**1.764**	**11.250**	**100.00**	**100.00**	

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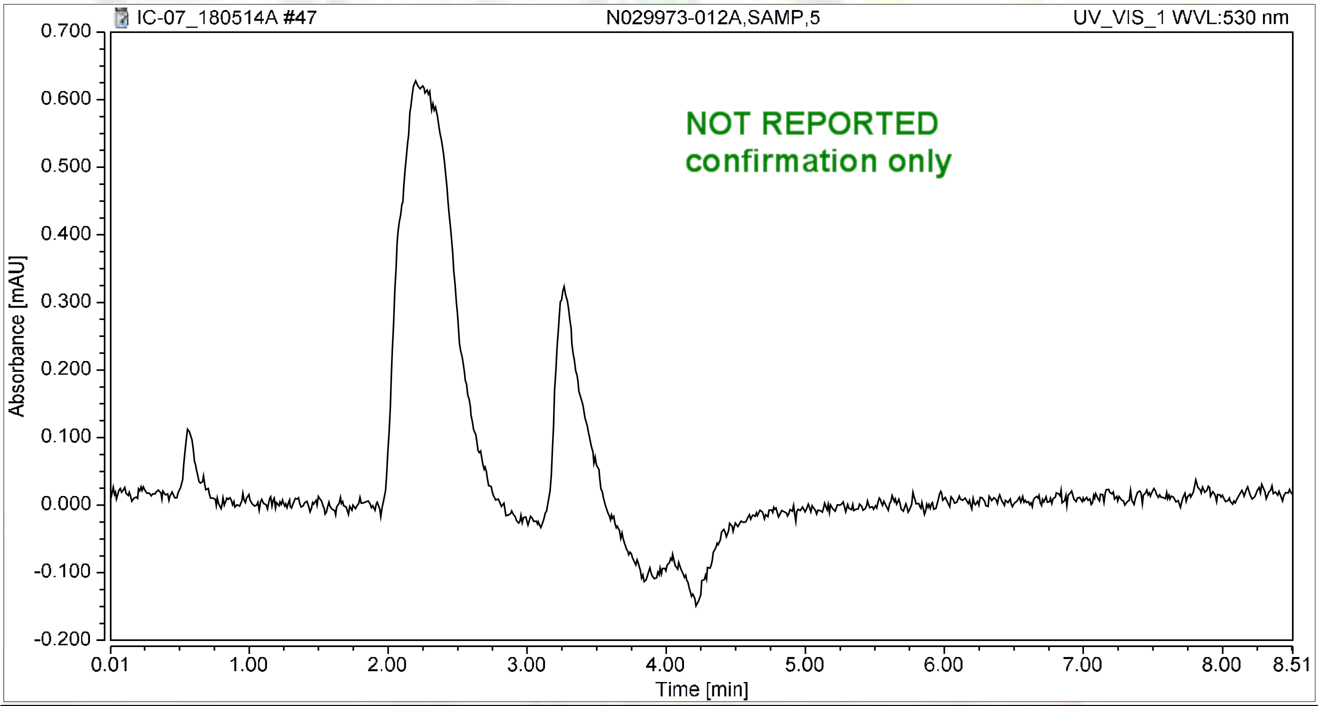
Chromatogram and Results

Injection Details

Injection Name:	**N029973-012A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 15:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

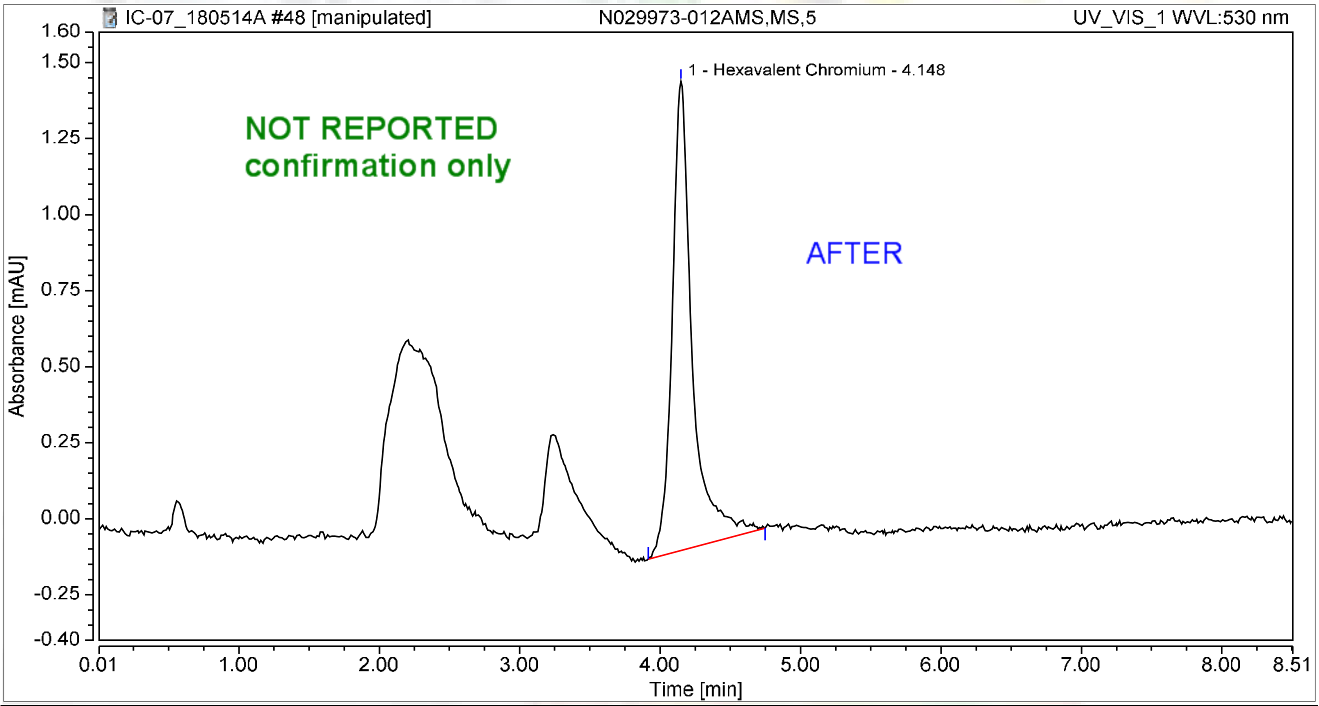
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-012AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 15:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.257	1.542	100.00	100.00	1.0017
Total:			**0.257**	**1.542**	**100.00**	**100.00**	

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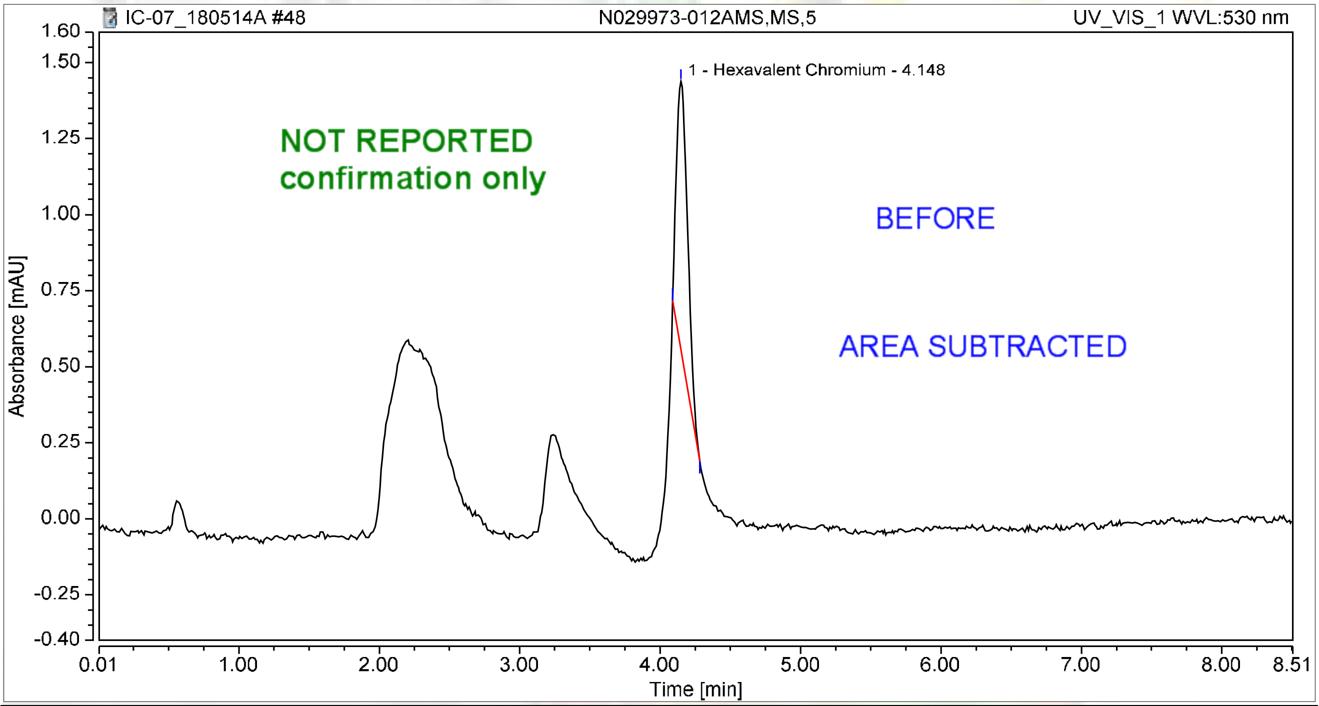
Chromatogram and Results

Injection Details

Injection Name:	**N029973-012AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 15:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.081	0.880	100.00	100.00	0.3172
Total:			**0.081**	**0.880**	**100.00**	**100.00**	

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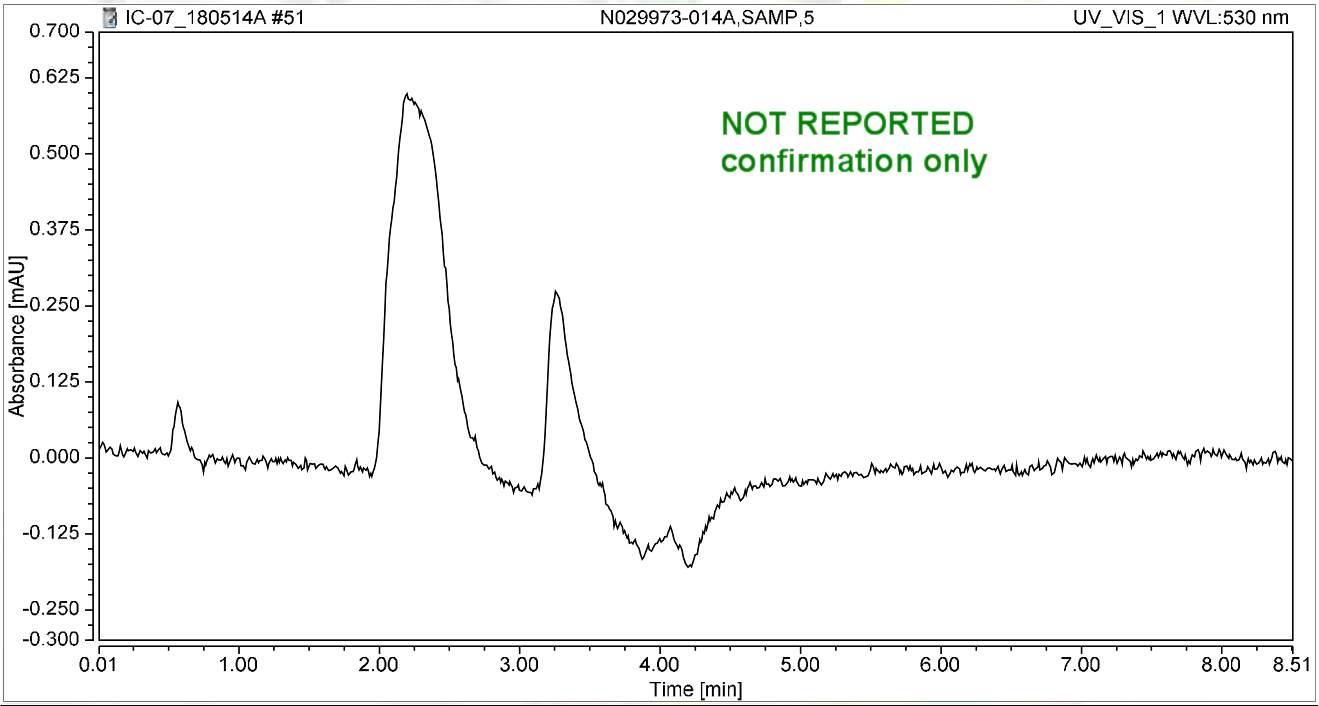
Chromatogram and Results

Injection Details

Injection Name:	**N029973-014A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 16:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

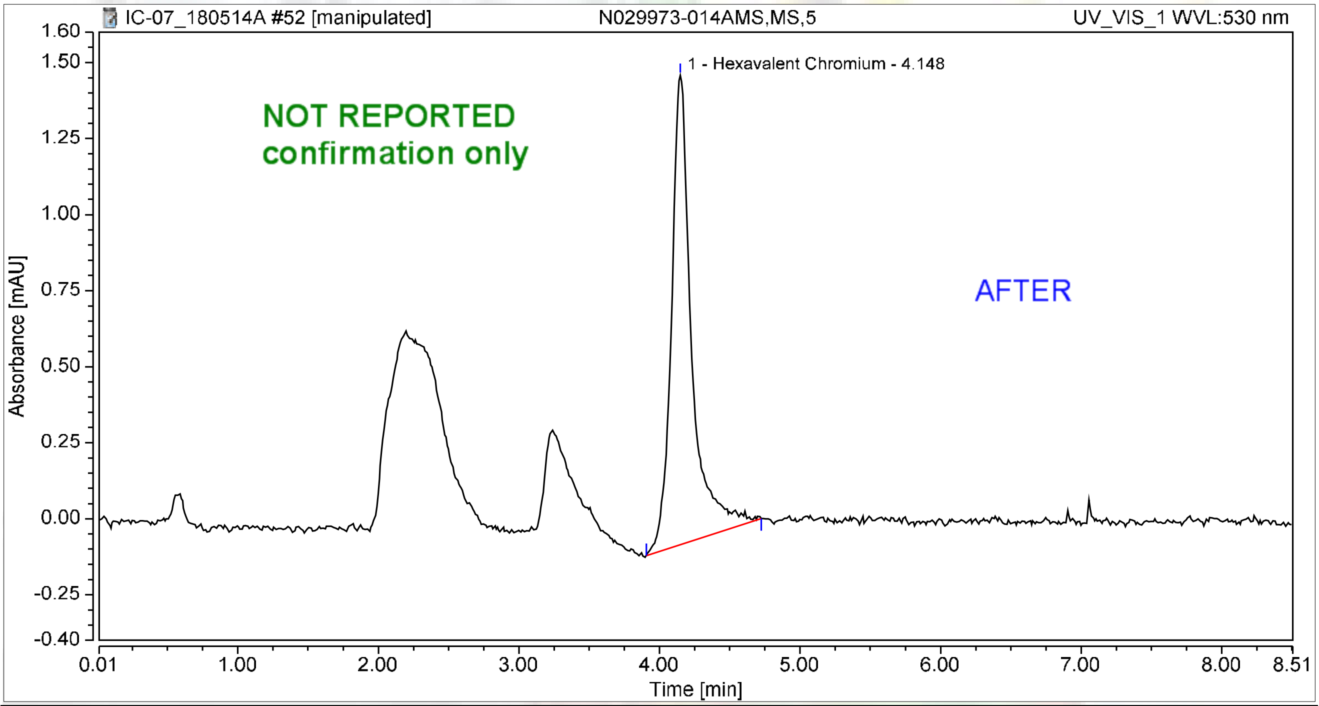
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-014AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.258	1.543	100.00	100.00	1.0051
Total:			**0.258**	**1.543**	**100.00**	**100.00**	

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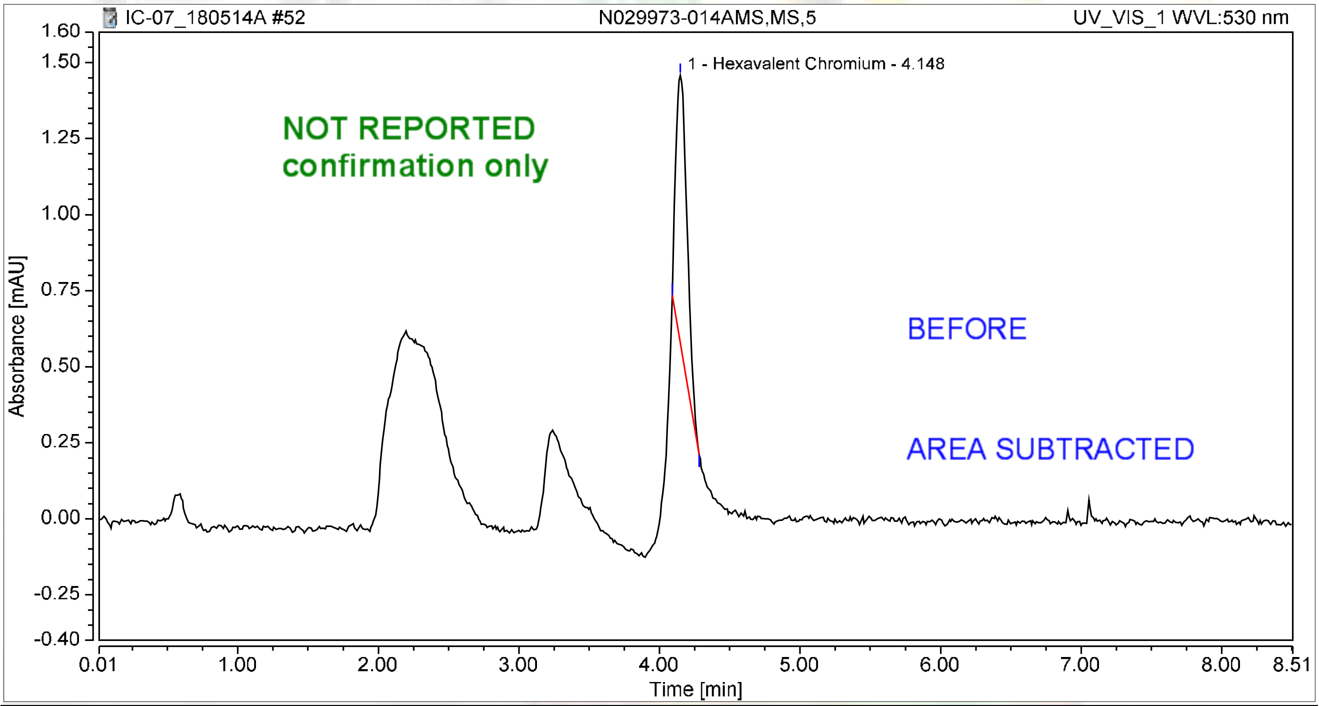
Chromatogram and Results

Injection Details

Injection Name:	**N029973-014AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.083	0.883	100.00	100.00	0.3222
Total:			**0.083**	**0.883**	**100.00**	**100.00**	

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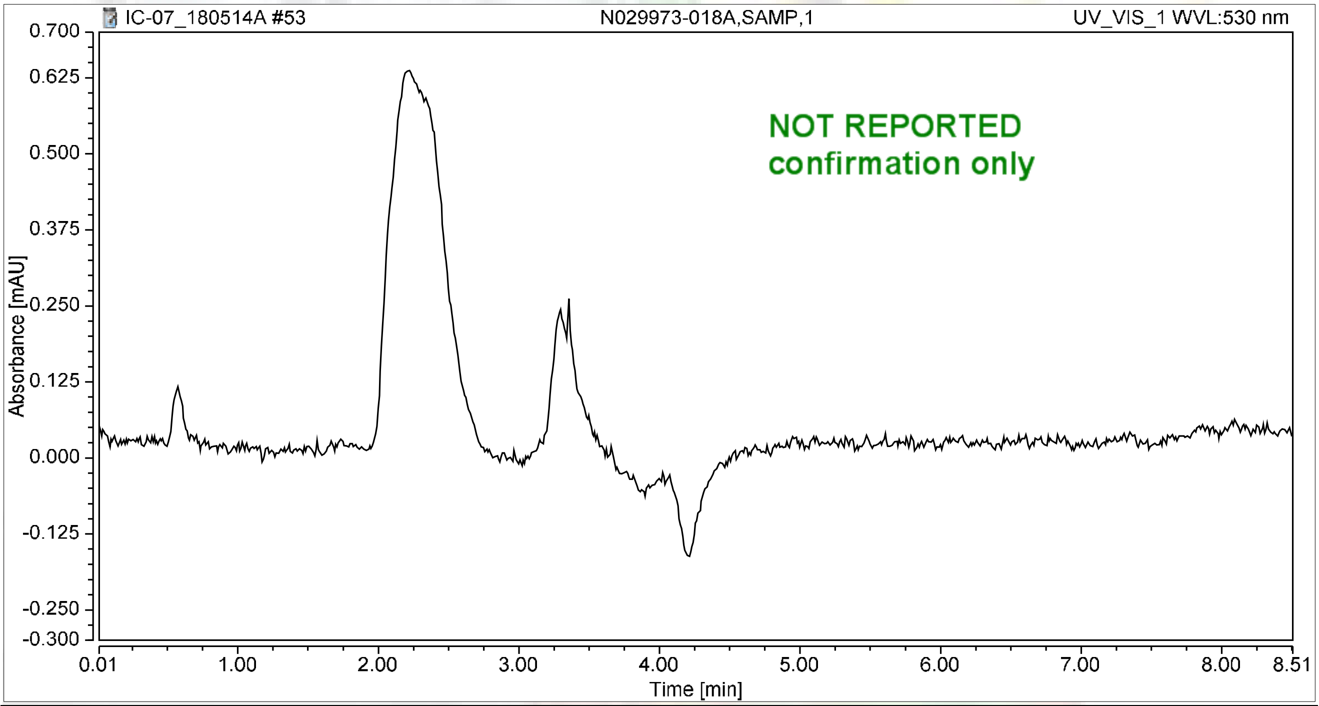
Chromatogram and Results

Injection Details

Injection Name:	**N029973-018A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 16:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

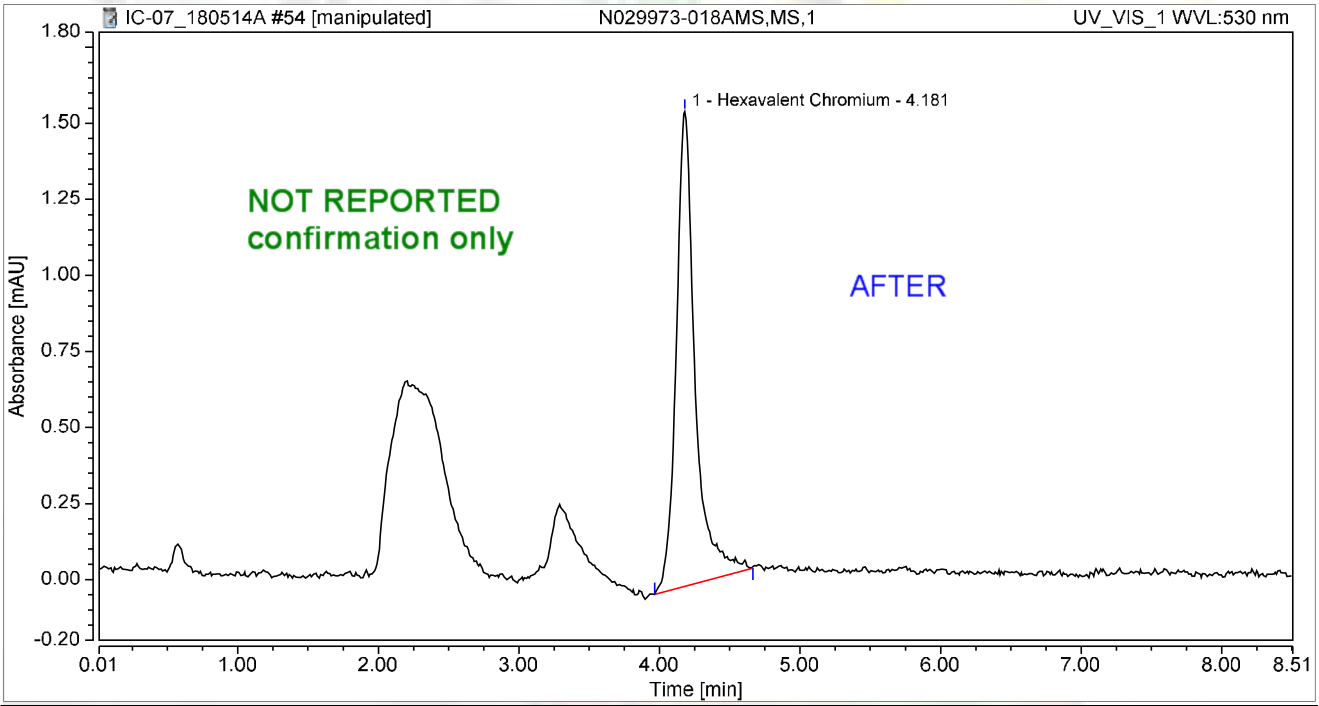
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-018AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.244	1.561	100.00	100.00	0.9515
Total:			**0.244**	**1.561**	**100.00**	**100.00**	

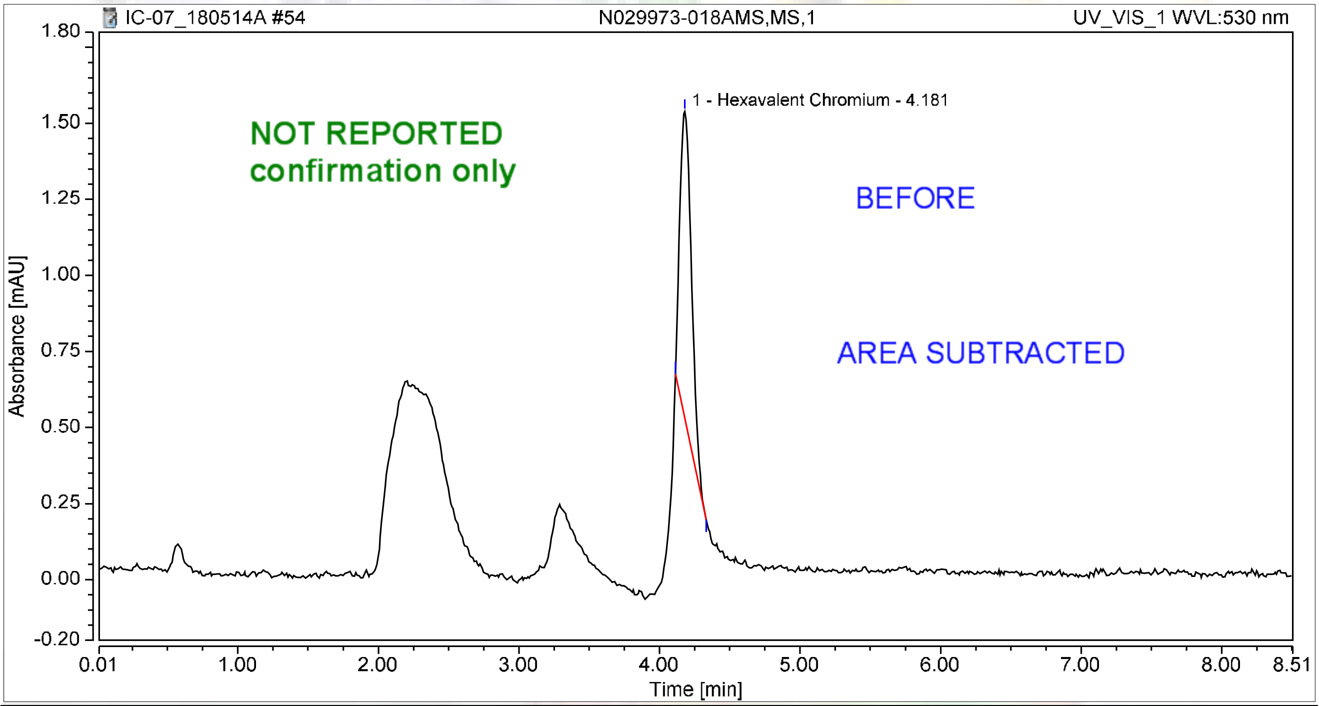
rba 5/14/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029973-018AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.097	1.010	100.00	100.00	0.3795
Total:			**0.097**	**1.010**	**100.00**	**100.00**	

rba 5/14/2018

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123845 **Analyst:** QBM

ASSET #: N029973, N030017, N030044 **Date Analyzed:** 5/4/2018

Method: **4500_NO3**

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

Comments:

%Rec in MS/MSD failed, high bias. Possibly due to matrix interference.

SECOND LEVEL REVIEW:

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

1st Level Reviewer QBM Date: 5/8/2018

2nd Level Reviewer [signature] 05/08/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N029973-020C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.4967	*	2
	=	0.9934	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.99 mg/L

RB 05/08/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

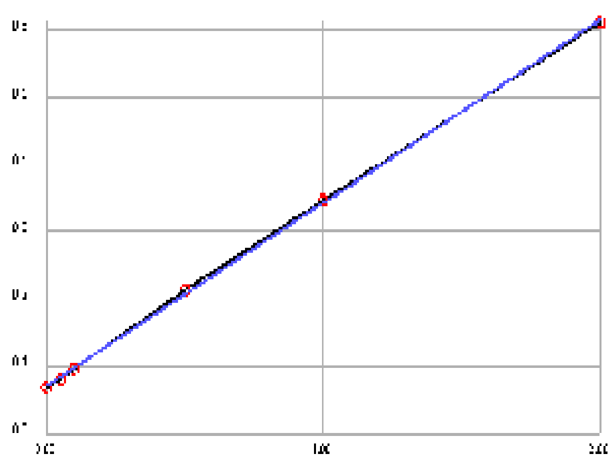
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2717x + 0.0711
Correlation	.999783

Calibrant	Energy	Set	Conc
1	0.0687	0.0000	-0.0090
2	0.0810	0.0500	0.0363
3	0.0972	0.1000	0.0959
4	0.2135	0.5000	0.5240
5	0.3473	1.0000	1.0165
6	0.6108	2.0000	1.9863



Notes:

RJB 05/08/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ICV** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.530	0.050	0.5000	0	106	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **CCV** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.491	0.050	0.5000	0	98.2	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **CCV** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016335**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.537	0.050	0.5000	0	107	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **CCV** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016343**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.488	0.050	0.5000	0	97.5	90	110				

Qualifiers:

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

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ICB** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016314**

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

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **CCB** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016325**

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

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **CCB** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016336**

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

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **CCB** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016344**

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

Qualifiers:

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

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 05-04-2018 15:33
Time end: 05-04-2018 18:22

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	17:42:52	-0.0071		0.0692
2	<BLANK>	17:43:51	0.0083		0.0734
3	<CAL1>	17:44:46	-0.0090	[0]	0.0687
4	<CAL2>	17:45:48	0.0363	[0.05]	0.0810
5	<CAL3>	17:46:43	0.0959	[0.1]	0.0972
6	<CAL4>	17:47:43	0.5240	[0.5]	0.2135
7	<CAL5>	17:48:39	1.0165	[1]	0.3473
8	<CAL6>	17:49:34	1.9863	[2]	0.6108
9	,BLANK,BLANK,1, NOT REPORTED	17:50:35	0.0495		0.0846
10	,ICV,ICV,1,	17:51:30	0.5295		0.2150
11	,ICB,ICB,1,	17:52:26	0.0109		0.0741
12	,MB-H2O,MBLK,1,	17:53:21	-0.0042		0.0700
13	,LCS-H2O,LCS,1,	17:54:21	0.5111		0.2100
14	,N029973-001C,SAMP,1,	17:55:17	0.0466		0.0838
15	,N029973-007C,SAMP,1,	17:56:12	-0.0024		0.0705
16	,N029973-009C,SAMP,1,	17:57:12	-0.0090		0.0687
17	,N029973-009CDUP,DUP,1,	17:58:08	0.0043		0.0723
18	,N029973-020C,SAMP,2,	17:59:09	0.4967		0.2061
19	,N029973-020CMS,MS,2,	18:00:05	1.1865		0.3935
20	,N029973-020CMSD,MSD,2,	18:00:59	1.1225		0.3761
21	,BLANK, NOT REPORTED	18:02:01	0.0168		0.0757
22	,CCV-1,CCV,1,	18:02:56	0.4909		0.2045
23	,CCB-1,CCB,1,	18:03:58	0.0091		0.0736
24	,N029973-011C,SAMP,1,	18:04:52	-0.0068		0.0693
25	,N029973-012C,SAMP,1,	18:05:47	-0.0053		0.0697
26	,N029973-014C,SAMP,1,	18:06:37	-0.0027		0.0704

05/08/2018

			EPA 353.2 NO3 as N ppm	Flags	OD
27	**,N029973-017C,SAMP,1,**	18:07:19	0.1327		0.1072
28	**,N029973-018C,SAMP,1,**	18:08:08	0.0021		0.0717
29	**,N030017-005C,SAMP,1,**	18:08:50	0.9664		0.3337
30	**,N030017-006C,SAMP,1,**	18:09:34	0.0580		0.0869
31	**,N030017-007C,SAMP,1,**	18:10:22	0.0576		0.0868
32	**,N030017-008C,SAMP,1,**	18:11:05	0.4960		0.2059
33	**,BLANK,** NOT REPORTED	18:11:55	0.0157		0.0754
34	**,CCV-2,CCV,1,**	18:12:37	0.5372		0.2171
35	**,CCB-2,CCB,1,**	18:13:20	-0.0071		0.0692
36	**,N030017-011C,SAMP,1,**	18:14:02	0.1452		0.1106
37	**,N030044-001C,SAMP,2,**	18:14:52	1.1232		0.3763
38	**,N030044-002C,SAMP,5,**	18:15:34	0.5380		0.2173
39	**,N030044-006C,SAMP,10,**	18:16:17	0.9362		0.3255
40	**,N030044-007C,SAMP,10,**	18:17:05	0.8656		0.3063
41	**,N030044-008C,SAMP,20,**	18:17:49	0.5667		0.2251
42	**,BLANK,** NOT REPORTED	18:18:32	-0.0101		0.0684
43	**,CCV-3,CCV,1,**	18:19:20	0.4875		0.2036
44	**,CCB-3,CCB,1,**	18:20:03	-0.0116		0.0680

RB 05/08/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 5/4/2018
Time Analyzed: 3:33 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180504F
Color reagent: R180425A
2% Copper Sulfate: R180504E
Ammonium Hydroxide: CINV-180423A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N029973-001C		8.47							
N029973-007C		7.64							
N029973-009C		7.73							
N029973-011C		7.20							
N029973-012C		6.37							
N029973-014C		7.71							
N029973-017C		7.19							
N029973-018C		7.66							
N029973-020C		7.40							
N030017-005C		8.63							
N030017-006C		7.72							
N030017-007C		7.80							
N030017-008C		8.04							
N030017-011C		7.82							
N030044-001C		7.43							
N030044-002C		8.17							
N030044-006C		7.49							
N030044-007C		8.02							
N030044-008C		7.72							

Advanced Technology Laboratories, Inc.
Book # 1

05/08/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name:	**Nitrate/Nitrite by Cadmium Reduction**	Matrix:	**Water**
Method Number:	SM4500NO3F	Unit:	mg/L
Analysis Date(s):	10/25,2017, 10/26/2017, 10/27/2017	Spike Conc:	0.05 mg/L
Analyst/Technician:	Quennie B. Manimtim		

Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Ave**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
ELAP Cert 2921

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
ELAP Cert 2676 | NV Cert NV00922 | ORELAP/NELAP 4046

EPA 6020
Dissolved

METALS ARCUS
REV 1.0
071116

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67848
ASSET #: N029973

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/11/2018

Method:

- [ ] EPA 6010B / 200.7
- [x] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			~~X~~	X	
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X		X	~~X~~
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X	x		~~X~~
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			~~X~~	|	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

MS/MSD failed for Cr however, LCS passed criteria.

with confirmation for samples N029973-007, -012, -014 and -018

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

1st Level Reviewer CEI Date: 5/14/18

2nd Level Reviewer 5/14/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

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

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N029973-001D**, the concentration in ug/L is calculated as follows:

Chromium , ug/L = 54.0405 * 1 * (25/25)

Chromium , ug/L = 54.0405

Reporting results in two significant figures,

Chromium , ug/L = 54

% RSD SUMMARY

PERCENT RSD SUMMARY: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.096	3.98	15	PASS	0.74	7.85	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	3.64	15	PASS	0.49	6.63	15	PASS
Std3-5/50 ppb	ICAL	1	5.17	1.39	15	PASS	5.05	1.6	15	PASS
Std4-10/100 ppb	ICAL	1	10.24	2.47	15	PASS	10.32	0.68	15	PASS
Std5-20/200 ppb	ICAL	1	19.91	1.079	15	PASS	19.76	1.27	15	PASS
Std6-40/400 ppb	ICAL	1	40.32	1.61	15	PASS	40.23	0.25	15	PASS
Std7-100/1000 ppb	ICAL	1	101.26	0.96	15	PASS	100.43	0.83	15	PASS
Std8-200/2000 ppb	ICAL	1	199.3	0.77	15	PASS	199.75	0.88	15	PASS
ICV	ICV	1	9.75	0.98	15	PASS	107.4	0.96	15	PASS
ICB	ICB	1	0.0042	38.12	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.051	3.18	20	PASS	0.58	9.72	20	PASS
ICSA1	ICSA	1	0.051	12.29	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.64	0.91	15	PASS	17.63	0.41	15	PASS
MB-67848	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-67848	LCS	1	9.83	0.97	15	PASS	106.59	0.79	15	PASS
N029973-001D	SAMP	1	54.041	0.39	15	PASS	5.098	2.33	15	PASS
N029973-001D	SAMP	5	12.1	1.53	15	PASS	1.11	1.035	15	PASS
N029973-001D	SAMP	25	2.5	1.015	15	PASS	0.2	19.74	15	<PQL
N029973-001D-PS	PS	1	62.24	0.61	15	PASS	96.69	0.8	15	PASS
N029973-001D-PS	PS	5	13.95	1.29	15	PASS	21.61	1.25	15	PASS
N029973-001D-MS	MS	1	60.45	1.076	15	PASS	95.78	1.79	15	PASS
N029973-001D-MS	MS	5	13.59	1.013	15	PASS	21.55	0.93	15	PASS
N029973-001D-MSD	MSD	1	60.098	0.77	15	PASS	94.63	1.048	15	PASS
CCV1	CCV	1	20.027	0.74	15	PASS	19.61	0.75	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N029973-001D-MSD	MSD	5	13.52	1.93	15	PASS	21.13	0.53	15	PASS
N029973-002C	SAMP	1	0.95	4.13	15	PASS	17.42	0.35	15	PASS
N029973-002C	SAMP	5	0.2	11.97	15	PASS	3.77	3.42	15	PASS
N029973-004C	SAMP	1	0.15	1.25	15	PASS	171.068	1.0074	15	PASS
N029973-004C	SAMP	5	0.015	26.25	15	<PQL	36.23	1.073	15	PASS
N029973-006C	SAMP	1	0.088	16.52	15	<PQL	82.88	1.0074	15	PASS
N029973-006C	SAMP	5	0.0055	171.77	15	<PQL	17.38	1.81	15	PASS
N029973-007D	SAMP	1	10.51	0.84	15	PASS	309.035	0.94	15	PASS
N029973-007D	SAMP	5	2.25	2.45	15	PASS	66.7	1.29	15	PASS
N029973-008C	SAMP	1	<0.000	N/A	15	<PQL	203.25	0.89	15	PASS
CCV2	CCV	1	19.69	0.95	15	PASS	19.73	1.69	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N029973-008C	SAMP	5	<0.000	N/A	15	<PQL	45.15	0.34	15	PASS
N029973-009D	SAMP	1	0.064	19.93	15	<PQL	82.69	0.15	15	PASS
N029973-009D	SAMP	5	0.013	15.43	15	<PQL	18.034	1.14	15	PASS

PERCENT RSD SUMMARY: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N029973-011D	SAMP	1	<0.000	N/A	15	<PQL	47.8	1.21	15	PASS
N029973-011D	SAMP	5	<0.000	N/A	15	<PQL	10.24	1.57	15	PASS
N029973-012D	SAMP	1	1.081	2.32	15	PASS	152.38	0.95	15	PASS
N029973-012D	SAMP	5	0.2	6.55	15	PASS	32.66	0.27	15	PASS
N029973-014D	SAMP	1	1.26	2.73	15	PASS	152.42	0.89	15	PASS
N029973-014D	SAMP	5	0.28	5.81	15	PASS	33.32	0.62	15	PASS
N029973-015C	SAMP	1	0.081	20.55	15	<PQL	154.63	1.35	15	PASS
CCV3	CCV	1	19.85	2.56	15	PASS	19.71	1.46	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N029973-015C	SAMP	5	0.0041	249.45	15	<PQL	34.15	1.18	15	PASS
N029973-017D	SAMP	1	9.53	1.65	15	PASS	9.71	1.45	15	PASS
N029973-017D	SAMP	5	2.14	1.63	15	PASS	2.19	0.66	15	PASS
N029973-018D	SAMP	1	3.08	2.02	15	PASS	165.72	1.24	15	PASS
N029973-018D	SAMP	5	0.65	5.6	15	PASS	36.093	0.36	15	PASS
N029973-020D	SAMP	1	3.77	2.42	15	PASS	3.027	1.61	15	PASS
N029973-020D	SAMP	5	0.83	3.56	15	PASS	0.66	7.46	15	PASS
CCV4	CCV	1	19.71	1.19	15	PASS	19.39	0.46	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.95	2.59	20	PASS	0.53	5.96	20	PASS
ICSA2	ICSA	1	0.047	56.48	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.84	0.13	15	PASS	16.87	0.59	15	PASS
CCV5	CCV	1	19.89	0.86	15	PASS	19.81	0.43	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV6	CCV	1	20.09	0.44	15	PASS	20.11	1.018	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV7	CCV	1	20.23	0.92	15	PASS	20.21	0.6	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV8	CCV	1	19.96	0.76	15	PASS	20.36	1.95	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1	3.2	20	PASS	0.53	6.32	20	PASS
ICSA3	ICSA	1	0.065	6.6	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.19	1.31	15	PASS	17.94	1.52	15	PASS

PERCENT RSD SUMMARY: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.091	12.66	15	PASS	0.17	31.36	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.54	15.33	15	NR!	0.48	10.98	15	PASS
Std3-5/50 ppb	ICAL	1	5.13	2.0097	15	PASS	5.038	7.91	15	PASS
Std4-10/100 ppb	ICAL	1	10.22	0.4	15	PASS	10.067	4.56	15	PASS
Std5-20/200 ppb	ICAL	1	20.35	1.035	15	PASS	19.9	3.55	15	PASS
Std6-40/400 ppb	ICAL	1	40.6	1.32	15	PASS	40.44	1.67	15	PASS
Std7-100/1000 ppb	ICAL	1	100.66	1.3	15	PASS	99.17	0.55	15	PASS
Std8-200/2000 ppb	ICAL	1	199.5	0.3	15	PASS	200.33	1.57	15	PASS
ICV	ICV	1	9.81	0.52	15	PASS	9.91	6.86	15	PASS
ICB	ICB	1	0.019	40.82	15	<PQL	0.039	113.61	15	<PQL
LLICV	CCV1	1	0.11	9.89	20	PASS	0.48	10.51	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.038	159.29	15	<PQL
ICSAB1	ICSAB	1	22.15	1.55	15	PASS	20.41	1.096	15	PASS
MB-67848	MBLK	1	0.0068	131.24	15	<PQL	0.0066	329.46	15	<PQL
LCS-67848	LCS	1	9.8	2.022	15	PASS	9.7	3.25	15	PASS
N029973-001D	SAMP	1	2.33	3.8	15	PASS	0.16	37.32	15	<PQL
N029973-001D	SAMP	5	0.48	4.039	15	PASS	0.023	43.45	15	<PQL
N029973-001D	SAMP	25	0.12	23.65	15	NR!	0.0049	382.059	15	<PQL
N029973-001D-PS	PS	1	13.23	1.21	15	PASS	10.82	6.94	15	PASS
N029973-001D-PS	PS	5	2.68	2.86	15	PASS	2.063	3.69	15	PASS
N029973-001D-MS	MS	1	13.36	1.11	15	PASS	10.2	2.75	15	PASS
N029973-001D-MS	MS	5	2.85	0.76	15	PASS	2.24	4.084	15	PASS
N029973-001D-MSD	MSD	1	12.75	0.72	15	PASS	9.96	10.73	15	PASS
CCV1	CCV	1	20.37	1.93	15	PASS	19.66	4.077	15	PASS
CCB1	CCB	1	0.011	77.7	15	<PQL	0.041	101.3	15	<PQL
N029973-001D-MSD	MSD	5	2.81	1.77	15	PASS	2.16	20.24	15	NR!
N029973-002C	SAMP	1	25.27	0.94	15	PASS	0.078	22.67	15	<PQL
N029973-002C	SAMP	5	5.39	1.91	15	PASS	0.022	220.96	15	<PQL
N029973-004C	SAMP	1	11.73	0.6	15	PASS	0.055	46.64	15	<PQL
N029973-004C	SAMP	5	2.48	6.62	15	PASS	0.032	78.7	15	<PQL
N029973-006C	SAMP	1	3.86	2.65	15	PASS	0.089	10.41	15	PASS
N029973-006C	SAMP	5	0.8	3.64	15	PASS	0.054	76.16	15	<PQL
N029973-007D	SAMP	1	4.27	3.041	15	PASS	0.067	48.27	15	<PQL
N029973-007D	SAMP	5	0.89	4.67	15	PASS	0.0048	389.89	15	<PQL
N029973-008C	SAMP	1	3.046	0.92	15	PASS	0.068	62.071	15	<PQL
CCV2	CCV	1	20.39	0.91	15	PASS	19.77	2.75	15	PASS
CCB2	CCB	1	0.0051	61.54	15	<PQL	<0.000	N/A	15	<PQL
N029973-008C	SAMP	5	0.67	6.31	15	PASS	0.00057	1993.17	15	<PQL
N029973-009D	SAMP	1	1.45	5.42	15	PASS	0.036	58.59	15	<PQL
N029973-009D	SAMP	5	0.3	10.46	15	PASS	0.011	1.49	15	PASS

PERCENT RSD SUMMARY: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N029973-011D	SAMP	1	1.46	6.59	15	PASS	0.04	102.83	15	<PQL
N029973-011D	SAMP	5	0.3	12.094	15	PASS	0.028	105.96	15	<PQL
N029973-012D	SAMP	1	1.48	5.25	15	PASS	0.035	117.0042	15	<PQL
N029973-012D	SAMP	5	0.3	18.29	15	NR!	<0.000	N/A	15	<PQL
N029973-014D	SAMP	1	1.43	4.84	15	PASS	0.047	24.44	15	<PQL
N029973-014D	SAMP	5	0.32	12.51	15	PASS	0.011	155.52	15	<PQL
N029973-015C	SAMP	1	3.13	4.56	15	PASS	0.052	86.88	15	<PQL
CCV3	CCV	1	20.38	3.26	15	PASS	19.61	4.63	15	PASS
CCB3	CCB	1	0.01	120.45	15	<PQL	0.0048	389.44	15	<PQL
N029973-015C	SAMP	5	0.65	6.56	15	PASS	<0.000	0	15	PASS
N029973-017D	SAMP	1	5.28	4.39	15	PASS	0.057	74.18	15	<PQL
N029973-017D	SAMP	5	1.19	9.02	15	PASS	0.028	60.72	15	<PQL
N029973-018D	SAMP	1	2.83	3.78	15	PASS	0.027	105.81	15	<PQL
N029973-018D	SAMP	5	0.6	2.1	15	PASS	<0.000	0	15	PASS
N029973-020D	SAMP	1	1.084	6.023	15	PASS	0.17	18.65	15	<PQL
N029973-020D	SAMP	5	0.21	8.68	15	PASS	0.057	17.91	15	<PQL
CCV4	CCV	1	20.39	0.89	15	PASS	19.79	1	15	PASS
CCB4	CCB	1	0.0068	77.88	15	<PQL	0.015	159.34	15	<PQL
LLCCV1	CCV2	1	0.1	10.81	20	PASS	0.43	18.79	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.023	44.16	15	<PQL
ICSAB2	ICSAB	1	21.36	1.81	15	PASS	19.4	0.36	15	PASS
CCV5	CCV	1	20.51	1.84	15	PASS	19.91	5.029	15	PASS
CCB5	CCB	1	0.011	59.056	15	<PQL	0.0048	194.005	15	<PQL
CCV6	CCV	1	20.13	1.07	15	PASS	19.89	3.68	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.016	119.69	15	<PQL
CCV7	CCV	1	20	1.71	15	PASS	19.89	1.72	15	PASS
CCB7	CCB	1	0.0016	311.9	15	<PQL	0.017	155.017	15	<PQL
CCV8	CCV	1	20.19	0.83	15	PASS	19.95	6.092	15	PASS
CCB8	CCB	1	0.0038	336.8	15	<PQL	0.0054	363.61	15	<PQL
LLCCV2	CCV2	1	0.098	24.56	20	<PQL	0.46	25.55	20	<PQL
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.018	57.35	15	<PQL
ICSAB3	ICSAB	1	21.04	1.43	15	PASS	19.54	0.32	15	PASS

PERCENT RSD SUMMARY: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.079	14.19	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.48	7.68	15	PASS
Std3-5/50 ppb	ICAL	1	5.0008	2.5	15	PASS
Std4-10/100 ppb	ICAL	1	10.12	1.7	15	PASS
Std5-20/200 ppb	ICAL	1	20.13	1.54	15	PASS
Std6-40/400 ppb	ICAL	1	40.32	1.34	15	PASS
Std7-100/1000 ppb	ICAL	1	99.046	0.87	15	PASS
Std8-200/2000 ppb	ICAL	1	200.39	0.76	15	PASS
ICV	ICV	1	10.39	1.27	15	PASS
ICB	ICB	1	0.2	17.42	15	<PQL
LLICV	CCV1	1	0.54	1.67	20	PASS
ICSA1	ICSA	1	0.099	5.66	15	PASS
ICSAB1	ICSAB	1	23.58	1.95	15	PASS
MB-67848	MBLK	1	0.052	4.78	15	PASS
LCS-67848	LCS	1	9.65	2.029	15	PASS
N029973-001D	SAMP	1	7.058	1.98	15	PASS
N029973-001D	SAMP	5	1.44	2.5	15	PASS
N029973-001D	SAMP	25	0.28	2.66	15	PASS
N029973-001D-PS	PS	1	19.033	1.098	15	PASS
N029973-001D-PS	PS	5	3.9	1.085	15	PASS
N029973-001D-MS	MS	1	18.87	0.77	15	PASS
N029973-001D-MS	MS	5	3.81	2.89	15	PASS
N029973-001D-MSD	MSD	1	18.9	0.53	15	PASS
CCV1	CCV	1	20.33	0.57	15	PASS
CCB1	CCB	1	0.065	10.78	15	PASS
N029973-001D-MSD	MSD	5	3.81	0.07	15	PASS
N029973-002C	SAMP	1	4.7	1.96	15	PASS
N029973-002C	SAMP	5	0.96	7.76	15	PASS
N029973-004C	SAMP	1	11.49	1.6	15	PASS
N029973-004C	SAMP	5	2.34	2.49	15	PASS
N029973-006C	SAMP	1	10.38	0.95	15	PASS
N029973-006C	SAMP	5	2.069	2.39	15	PASS
N029973-007D	SAMP	1	22.37	0.88	15	PASS
N029973-007D	SAMP	5	4.5	0.92	15	PASS
N029973-008C	SAMP	1	80.73	0.56	15	PASS
CCV2	CCV	1	20.53	0.22	15	PASS
CCB2	CCB	1	0.097	8.36	15	PASS
N029973-008C	SAMP	5	16.61	1.41	15	PASS
N029973-009D	SAMP	1	17.82	1.91	15	PASS
N029973-009D	SAMP	5	3.62	3.48	15	PASS

PERCENT RSD SUMMARY: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N029973-011D	SAMP	1	13.14	1.24	15	PASS
N029973-011D	SAMP	5	2.59	1.063	15	PASS
N029973-012D	SAMP	1	47.26	0.37	15	PASS
N029973-012D	SAMP	5	9.14	1.54	15	PASS
N029973-014D	SAMP	1	43.98	0.42	15	PASS
N029973-014D	SAMP	5	8.7	0.97	15	PASS
N029973-015C	SAMP	1	10.36	1.13	15	PASS
CCV3	CCV	1	20.62	2.59	15	PASS
CCB3	CCB	1	0.087	6.7	15	PASS
N029973-015C	SAMP	5	2.078	2.93	15	PASS
N029973-017D	SAMP	1	73.91	0.77	15	PASS
N029973-017D	SAMP	5	15.2	2.43	15	PASS
N029973-018D	SAMP	1	12.28	1.49	15	PASS
N029973-018D	SAMP	5	2.42	5.13	15	PASS
N029973-020D	SAMP	1	9.77	0.88	15	PASS
N029973-020D	SAMP	5	1.95	2.65	15	PASS
CCV4	CCV	1	20.27	1.13	15	PASS
CCB4	CCB	1	0.094	11.69	15	PASS
LLCCV1	CCV2	1	0.52	7.64	20	PASS
ICSA2	ICSA	1	0.061	14.98	15	PASS
ICSAB2	ICSAB	1	22.68	0.63	15	PASS
CCV5	CCV	1	20.33	0.32	15	PASS
CCB5	CCB	1	0.083	6.37	15	PASS
CCV6	CCV	1	20.42	0.89	15	PASS
CCB6	CCB	1	0.12	10.011	15	PASS
CCV7	CCV	1	20.12	0.5	15	PASS
CCB7	CCB	1	0.074	20.58	15	<PQL
CCV8	CCV	1	20.4	0.14	15	PASS
CCB8	CCB	1	0.12	11.63	15	PASS
LLCCV2	CCV2	1	0.5	6.95	20	PASS
ICSA3	ICSA	1	0.082	23.14	15	<PQL
ICSAB3	ICSAB	1	23.039	0.62	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180511B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0511001.D	RINSE	RINSE	1	05/11/18 4:55 PM
B0511002.D	Cal Blank	IBLK	1	05/11/18 5:01 PM
B0511003.D	Std1-0.1/1 ppb	ICAL	1	05/11/18 5:06 PM
B0511004.D	Std2-0.5/5 ppb	ICAL	1	05/11/18 5:12 PM
B0511005.D	Std3-5/50 ppb	ICAL	1	05/11/18 5:18 PM
B0511006.D	Std4-10/100 ppb	ICAL	1	05/11/18 5:23 PM
B0511007.D	Std5-20/200 ppb	ICAL	1	05/11/18 5:29 PM
B0511008.D	Std6-40/400 ppb	ICAL	1	05/11/18 5:34 PM
B0511009.D	Std7-100/1000 ppb	ICAL	1	05/11/18 5:40 PM
B0511010.D	Std8-200/2000 ppb	ICAL	1	05/11/18 5:45 PM
B0511011.D	ICV	ICV	1	05/11/18 5:51 PM
B0511012.D	ICB	ICB	1	05/11/18 5:57 PM
B0511013.D	LLICV	CCV1	1	05/11/18 6:03 PM
B0511014.D	ICSA1	ICSA	1	05/11/18 6:09 PM
B0511015.D	ICSAB1	ICSAB	1	05/11/18 6:14 PM
B0511016.D	MB-67848	MBLK	1	05/11/18 6:23 PM
B0511017.D	LCS-67848	LCS	1	05/11/18 6:28 PM
B0511018.D	N029973-001D	SAMP	1	05/11/18 6:36 PM
B0511019.D	N029973-001D	SAMP	5	05/11/18 6:41 PM
B0511020.D	N029973-001D	SAMP	25	05/11/18 6:47 PM
B0511021.D	N029973-001D-PS	PS	1	05/11/18 6:52 PM
B0511022.D	N029973-001D-PS	PS	5	05/11/18 6:58 PM
B0511023.D	N029973-001D-MS	MS	1	05/11/18 7:03 PM
B0511024.D	N029973-001D-MS	MS	5	05/11/18 7:09 PM
B0511025.D	N029973-001D-MSD	MSD	1	05/11/18 7:15 PM
B0511026.D	CCV1	CCV	1	05/11/18 7:20 PM
B0511027.D	CCB1	CCB	1	05/11/18 7:26 PM
B0511028.D	N029973-001D-MSD	MSD	5	05/11/18 7:31 PM
B0511029.D	N029973-002C	SAMP	1	05/11/18 7:37 PM
B0511030.D	N029973-002C	SAMP	5	05/11/18 7:42 PM
B0511031.D	N029973-004C	SAMP	1	05/11/18 7:48 PM
B0511032.D	N029973-004C	SAMP	5	05/11/18 7:53 PM
B0511033.D	N029973-006C	SAMP	1	05/11/18 7:59 PM
B0511034.D	N029973-006C	SAMP	5	05/11/18 8:05 PM
B0511035.D	N029973-007D	SAMP	1	05/11/18 8:10 PM
B0511036.D	N029973-007D	SAMP	5	05/11/18 8:16 PM
B0511037.D	N029973-008C	SAMP	1	05/11/18 8:21 PM
B0511038.D	CCV2	CCV	1	05/11/18 8:27 PM
B0511039.D	CCB2	CCB	1	05/11/18 8:32 PM
B0511040.D	N029973-008C	SAMP	5	05/11/18 8:38 PM
B0511041.D	N029973-009D	SAMP	1	05/11/18 8:43 PM
B0511042.D	N029973-009D	SAMP	5	05/11/18 8:49 PM

INJECTION LOG: 180511B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0511043.D	N029973-011D	SAMP	1	05/11/18 8:54 PM
B0511044.D	N029973-011D	SAMP	5	05/11/18 9:00 PM
B0511045.D	N029973-012D	SAMP	1	05/11/18 9:06 PM
B0511046.D	N029973-012D	SAMP	5	05/11/18 9:11 PM
B0511047.D	N029973-014D	SAMP	1	05/11/18 9:17 PM
B0511048.D	N029973-014D	SAMP	5	05/11/18 9:22 PM
B0511049.D	N029973-015C	SAMP	1	05/11/18 9:28 PM
B0511050.D	CCV3	CCV	1	05/11/18 9:33 PM
B0511051.D	CCB3	CCB	1	05/11/18 9:39 PM
B0511052.D	N029973-015C	SAMP	5	05/11/18 9:44 PM
B0511053.D	N029973-017D	SAMP	1	05/11/18 9:50 PM
B0511054.D	N029973-017D	SAMP	5	05/11/18 9:56 PM
B0511055.D	N029973-018D	SAMP	1	05/11/18 10:01 PM
B0511056.D	N029973-018D	SAMP	5	05/11/18 10:07 PM
B0511057.D	N029973-020D	SAMP	1	05/11/18 10:12 PM
B0511058.D	N029973-020D	SAMP	5	05/11/18 10:18 PM
B0511059.D	MB-67852	MBLK	1	05/11/18 10:24 PM
B0511060.D	LCS-67852	LCS	1	05/11/18 10:29 PM
B0511061.D	N030006-001D	SAMP	1	05/11/18 10:35 PM
B0511062.D	CCV4	CCV	1	05/11/18 10:40 PM
B0511063.D	CCB4	CCB	1	05/11/18 10:46 PM
B0511064.D	LLCCV1	CCV2	1	05/11/18 10:51 PM
B0511065.D	ICSA2	ICSA	1	05/11/18 10:57 PM
B0511066.D	ICSAB2	ICSAB	1	05/11/18 11:02 PM
B0511067.D	N030006-001D	SAMP	5	05/11/18 11:08 PM
B0511068.D	N030006-001D	SAMP	25	05/11/18 11:13 PM
B0511069.D	N030006-001D-PS	PS	1	05/11/18 11:19 PM
B0511070.D	N030006-001D-PS	PS	5	05/11/18 11:25 PM
B0511071.D	N030006-001D-MS	MS	1	05/11/18 11:30 PM
B0511072.D	N030006-001D-MS	MS	5	05/11/18 11:36 PM
B0511073.D	N030006-001D-MSD	MSD	1	05/11/18 11:41 PM
B0511074.D	N030006-001D-MSD	MSD	5	05/11/18 11:47 PM
B0511075.D	N030006-002D	SAMP	1	05/11/18 11:52 PM
B0511076.D	N030006-002D	SAMP	5	05/11/18 11:58 PM
B0511077.D	CCV5	CCV	1	05/12/18 12:03 AM
B0511078.D	CCB5	CCB	1	05/12/18 12:09 AM
B0511079.D	N030006-003D	SAMP	1	05/12/18 12:15 AM
B0511080.D	N030006-003D	SAMP	5	05/12/18 12:20 AM
B0511081.D	N030006-004D	SAMP	1	05/12/18 12:26 AM
B0511082.D	N030006-004D	SAMP	5	05/12/18 12:31 AM
B0511083.D	N030006-005D	SAMP	1	05/12/18 12:37 AM
B0511084.D	N030006-005D	SAMP	5	05/12/18 12:42 AM

INJECTION LOG: 180511B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0511085.D	N030006-006C	SAMP	1	05/12/18 12:48 AM
B0511086.D	N030006-006C	SAMP	5	05/12/18 12:53 AM
B0511087.D	N030006-007D	SAMP	1	05/12/18 12:59 AM
B0511088.D	N030006-007D	SAMP	5	05/12/18 1:04 AM
B0511089.D	CCV6	CCV	1	05/12/18 1:10 AM
B0511090.D	CCB6	CCB	1	05/12/18 1:16 AM
B0511091.D	N030006-008D	SAMP	1	05/12/18 1:21 AM
B0511092.D	N030006-008D	SAMP	5	05/12/18 1:27 AM
B0511093.D	N030006-009C	SAMP	1	05/12/18 1:32 AM
B0511094.D	N030006-009C	SAMP	5	05/12/18 1:38 AM
B0511095.D	N030006-011D	SAMP	1	05/12/18 1:43 AM
B0511096.D	N030006-011D	SAMP	5	05/12/18 1:49 AM
B0511097.D	N030006-013D	SAMP	1	05/12/18 1:54 AM
B0511098.D	N030006-013D	SAMP	5	05/12/18 2:00 AM
B0511099.D	N030006-014D	SAMP	1	05/12/18 2:05 AM
B0511100.D	N030006-014D	SAMP	5	05/12/18 2:11 AM
B0511101.D	CCV7	CCV	1	05/12/18 2:17 AM
B0511102.D	CCB7	CCB	1	05/12/18 2:22 AM
B0511103.D	N030006-016D	SAMP	1	05/12/18 2:28 AM
B0511104.D	N030006-016D	SAMP	5	05/12/18 2:33 AM
B0511105.D	N030006-018D	SAMP	1	05/12/18 2:39 AM
B0511106.D	N030006-018D	SAMP	5	05/12/18 2:44 AM
B0511107.D	CCV8	CCV	1	05/12/18 2:50 AM
B0511108.D	CCB8	CCB	1	05/12/18 2:55 AM
B0511109.D	LLCCV2	CCV2	1	05/12/18 3:01 AM
B0511110.D	ICSA3	ICSA	1	05/12/18 3:07 AM
B0511111.D	ICSAB3	ICSAB	1	05/12/18 3:12 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/26/2018 5:00:00**
Prep End Date: **4/26/2018 9:30:00**
Prep Batch **67848** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/14/2018
Initials/ Date: 5/14/2018
Technician **Claire Ignacio**

Prep Factor Units: **mL / mL** Temp. (°C): **94.5** Location: **02-43**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67848	Aqueous		25	☐	0	0	25	1.000		
MB-67848	Aqueous		25	☐	0	0	25	1.000		
N029973-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N029973-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N029973-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N029973-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N029973-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N029973-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N029973-007D	Groundwater	<2	25	☐	0	0	25	1.000		
N029973-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N029973-009D	Groundwater	<2	25	☐	0	0	25	1.000		
N029973-011D	Groundwater	<2	25	☐	0	0	25	1.000		
N029973-012D	Groundwater	<2	25	☐	0	0	25	1.000		
N029973-014D	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/26/2018 5:00:00**
Prep End Date: **4/26/2018 9:30:00**
Prep Batch **67848** Prep Code: **3010_W_MSDI**

Reviewed/ Date: Nancy 5/14/2018
Initials/ Date: 5/14/2018
Technician **Claire Ignacio**

Prep Factor Units: **mL / mL** Temp. (°C): **94.5** Location: **02-43**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N029973-015C	Groundwater	<2	25	☐	0	0	25	1.000		
N029973-017D	Groundwater	<2	25	☐	0	0	25	1.000		
N029973-018D	Groundwater	<2	25	☐	0	0	25	1.000		
N029973-020D	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25

INSTRUMENT TUNING CHECK

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

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

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 11 May 2018 08:03:29 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	8860.63	0.00	
24	Mg	351454.00	0.00	
25	Mg	45267.40	0.00	
26	Mg	51981.60	0.00	
59	Co	57302.50	0.00	
115	In	109234.00	0.00	
206	Pb	28163.60	0.00	
207	Pb	24761.60	0.00	
208	Pb	60795.60	0.00	

RSD (%)

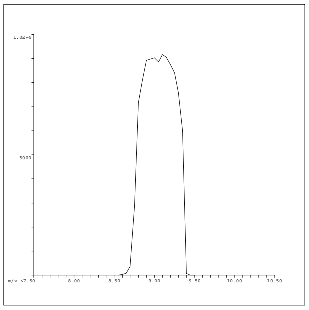
Element		Actual	Required	Flag
9	Be	2.97	5.00	
24	Mg	0.38	5.00	
25	Mg	1.23	5.00	
26	Mg	1.09	5.00	
59	Co	1.38	5.00	
115	In	1.48	5.00	
206	Pb	0.59	5.00	
207	Pb	1.10	5.00	
208	Pb	1.10	5.00	

Ion Ratio

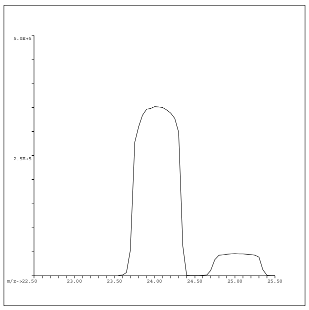
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

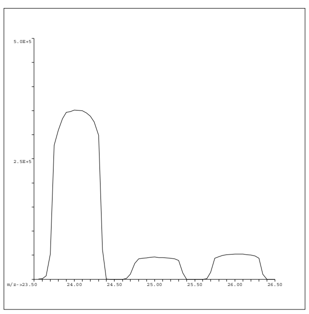
Element	Actual	Required	Flag



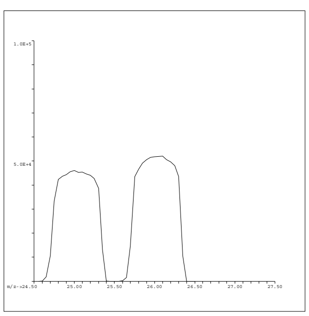
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



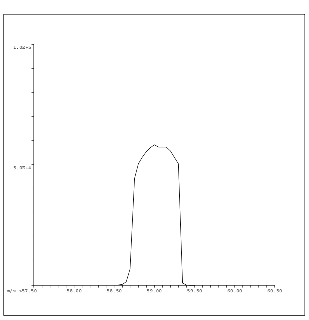
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



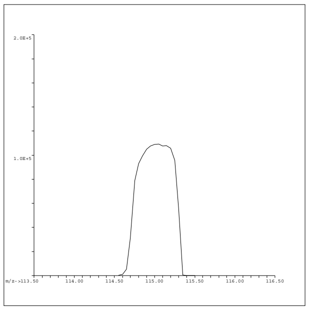
25 Mg
Mass Calib.
Actual: 25.05
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



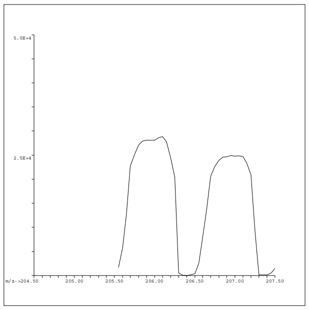
26 Mg
Mass Calib.
Actual: 26.05
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



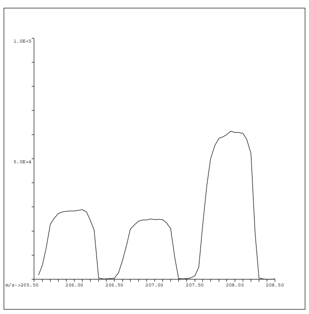
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



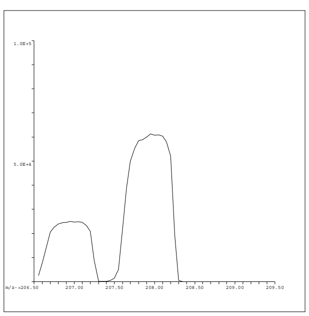
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180511B

Instrument ID: ICPMS-02

Analyte	Data File	B0511002.D	B0511003.D	B0511004.D	B0511005.D	B0511006.D	B0511007.D	B0511008.D	B0511009.D	B0511010.D	
	Acq. Date-Time	05/11/2018 05:01 PM	05/11/2018 05:06 PM	05/11/2018 05:12 PM	05/11/2018 05:18 PM	05/11/2018 05:23 PM	05/11/2018 05:29 PM	05/11/2018 05:34 PM	05/11/2018 05:40 PM	05/11/2018 05:45 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	58387.8		55881.1	55833.2	55547	56365	56163.3	54426.4	53823.2	
55 Mn [2]	CPS	171.3		1281.4	11689.2	23598.8	45692.9	92537.4	223637.7	439690.1	1.0000
52 Cr [2]	CPS	125.3		2569.1	24357.1	47901.7	94437	190397.8	463308.7	901651.6	1.0000
72 Ge (ISTD) [1]	CPS	52430.7		50766.5	51765.2	50971.3	50117.8	50242.7	50104.5	48498.3	
78 Se [1]	CPS	1.1		88.9	935.6	1841.3	3578.3	7287.5	17819.3	34840.4	1.0000
72 Ge (ISTD) [2]	CPS	46043.5	44988.3	44628.5	44791.3	44287.7	44225.2	44550.6	43747.4	42788	
75 As [2]	CPS	12.4	60.4	295.6	2712.7	5329.8	10588	21263.7	51752.6	100307.4	1.0000
103 Rh (ISTD) [2]	CPS	1547946.3		1532921	1532375.8	1515246.3	1510114.1	1512689.3	1495898.6	1459826.1	
95 Mo [2]	CPS	114.5		1779.1	17557.9	35039.2	69333.7	139000.1	337469.9	666201.3	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MWST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.807	0.10	10.00	0	98.1	90	110				
Manganese	107.403	0.50	100.0	0	107	90	110				
Molybdenum	10.390	0.50	10.00	0	104	90	110				
Selenium	9.910	0.50	10.00	0	99.1	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.110	0.10	0.1000	0	110	80	120				
Manganese	0.576	0.50	0.5000	0	115	80	120				
Molybdenum	0.543	0.50	0.5000	0	109	80	120				
Selenium	0.477	0.50	0.5000	0	95.5	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.374	0.10	20.00	0	102	90	110				
Manganese	19.606	0.50	20.00	0	98.0	90	110				
Molybdenum	20.327	0.50	20.00	0	102	90	110				
Selenium	19.664	0.50	20.00	0	98.3	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.389	0.10	20.00	0	102	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.726	0.50	20.00	0	98.6	90	110				
Molybdenum	20.534	0.50	20.00	0	103	90	110				
Selenium	19.774	0.50	20.00	0	98.9	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.383	0.10	20.00	0	102	90	110				
Manganese	19.714	0.50	20.00	0	98.6	90	110				
Molybdenum	20.617	0.50	20.00	0	103	90	110				
Selenium	19.612	0.50	20.00	0	98.1	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.390	0.10	20.00	0	102	90	110				
Manganese	19.392	0.50	20.00	0	97.0	90	110				
Molybdenum	20.275	0.50	20.00	0	101	90	110				
Selenium	19.786	0.50	20.00	0	98.9	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.103	0.10	0.1000	0	103	70	130				
Manganese	0.527	0.50	0.5000	0	105	70	130				
Molybdenum	0.516	0.50	0.5000	0	103	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.433	0.50	0.5000	0	86.6	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.512	0.10	20.00	0	103	90	110				
Manganese	19.814	0.50	20.00	0	99.1	90	110				
Molybdenum	20.330	0.50	20.00	0	102	90	110				
Selenium	19.908	0.50	20.00	0	99.5	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.127	0.10	20.00	0	101	90	110				
Manganese	20.113	0.50	20.00	0	101	90	110				
Molybdenum	20.418	0.50	20.00	0	102	90	110				
Selenium	19.886	0.50	20.00	0	99.4	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.997	0.10	20.00	0	100	90	110				
Manganese	20.206	0.50	20.00	0	101	90	110				
Molybdenum	20.119	0.50	20.00	0	101	90	110				
Selenium	19.886	0.50	20.00	0	99.4	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV8** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.189	0.10	20.00	0	101	90	110				
Manganese	20.356	0.50	20.00	0	102	90	110				
Molybdenum	20.397	0.50	20.00	0	102	90	110				
Selenium	19.952	0.50	20.00	0	99.8	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.098	0.10	0.1000	0	98.5	70	130				
Manganese	0.530	0.50	0.5000	0	106	70	130				
Molybdenum	0.503	0.50	0.5000	0	101	70	130				
Selenium	0.460	0.50	0.5000	0	92.0	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.745	1.0	10.00	0	97.5	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.051	1.0	1.000	0	105	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.027	1.0	20.00	0	100	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.686	1.0	20.00	0	98.4	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.847	1.0	20.00	0	99.2	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID CCV4	SampType: CCV	TestCode: 6020DIS_CrP	Units: µg/L	Prep Date:		RunNo: 124014				
Client ID: CCV	Batch ID: R124014	TestNo: EPA 6020		Analysis Date: 5/11/2018		SeqNo: 3024169				
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Chromium	19.708	1.0	20.00	0	98.5	90	110				

Sample ID LLCCV1	SampType: CCV2	TestCode: 6020DIS_CrP	Units: µg/L	Prep Date:		RunNo: 124014				
Client ID: ZZZZZZ	Batch ID: R124014	TestNo: EPA 6020		Analysis Date: 5/11/2018		SeqNo: 3024171				
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Chromium	0.945	1.0	1.000	0	94.5	70	130				

Sample ID CCV5	SampType: CCV	TestCode: 6020DIS_CrP	Units: µg/L	Prep Date:		RunNo: 124014				
Client ID: CCV	Batch ID: R124014	TestNo: EPA 6020		Analysis Date: 5/12/2018		SeqNo: 3024184				
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Chromium	19.889	1.0	20.00	0	99.4	90	110				

Sample ID CCV6	SampType: CCV	TestCode: 6020DIS_CrP	Units: µg/L	Prep Date:		RunNo: 124014				
Client ID: CCV	Batch ID: R124014	TestNo: EPA 6020		Analysis Date: 5/12/2018		SeqNo: 3024196				
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Chromium	20.090	1.0	20.00	0	100	90	110				

Sample ID CCV7	SampType: CCV	TestCode: 6020DIS_CrP	Units: µg/L	Prep Date:		RunNo: 124014				
Client ID: CCV	Batch ID: R124014	TestNo: EPA 6020		Analysis Date: 5/12/2018		SeqNo: 3024208				
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Chromium	20.228	1.0	20.00	0	101	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV8** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024214**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.965	1.0	20.00	0	99.8	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.995	1.0	1.000	0	99.5	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024220**

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

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024235**

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

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024247**

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

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024259**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **CCB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/11/2018**	SeqNo: **3024259**

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

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **CCB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/11/2018**	SeqNo: **3024271**

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

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **CCB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/12/2018**	SeqNo: **3024286**

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

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **CCB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/12/2018**	SeqNo: **3024298**

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

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California		
Work Order:	N029973		
Project:	PG&E Topock - GMP, RC000753.0801		

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024298**

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

Sample ID **CCB7** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024310**

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

Sample ID **CCB8** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024316**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **ICB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/11/2018**	SeqNo: **3024119**

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

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **CCB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/11/2018**	SeqNo: **3024134**

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

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **CCB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/11/2018**	SeqNo: **3024146**

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

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **CCB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/11/2018**	SeqNo: **3024158**

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

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **CCB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/11/2018**	SeqNo: **3024170**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024185**

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

Sample ID **CCB6** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024197**

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

Sample ID **CCB7** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024209**

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

Sample ID **CCB8** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024215**

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

Qualifiers:

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **ICSA**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/11/2018**	SeqNo: **3024222**

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

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **ICSAB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/11/2018**	SeqNo: **3024223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.152	0.10	20.00	0	111	80	120				
Manganese	17.628	0.50	20.00	0	88.1	80	120				
Molybdenum	23.578	0.50	20.00	0	118	80	120				
Selenium	20.414	0.50	20.00	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **ICSA**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/11/2018**	SeqNo: **3024273**

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

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **ICSAB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/11/2018**	SeqNo: **3024274**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.357	0.10	20.00	0	107	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICSAB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024274**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	16.874	0.50	20.00	0	84.4	80	120				
Molybdenum	22.680	0.50	20.00	0	113	80	120				
Selenium	19.405	0.50	20.00	0	97.0	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICSA** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024318**

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

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICSAB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.040	0.10	20.00	0	105	80	120				
Manganese	17.938	0.50	20.00	0	89.7	80	120				
Molybdenum	23.039	0.50	20.00	0	115	80	120				
Selenium	19.538	0.50	20.00	0	97.7	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **ICSA**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/11/2018**	SeqNo: **3024121**

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

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **ICSAB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/11/2018**	SeqNo: **3024122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.640	1.0	20.00	0	103	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **ICSA**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/11/2018**	SeqNo: **3024172**

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

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **ICSAB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/11/2018**	SeqNo: **3024173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.838	1.0	20.00	0	99.2	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **ICSA**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/12/2018**	SeqNo: **3024217**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP** Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **ICSAB**	Batch ID: **R124014**	TestNo: **EPA 6020**	Analysis Date: **5/12/2018**	SeqNo: **3024218**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.193	1.0	20.00	0	101	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	58387.8	58387.8	100	PASS	70-125	46043.5	46043.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	57059.5	58387.8	97.73	PASS	70-125	44988.3	46043.5	97.71	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	55881.1	58387.8	95.71	PASS	70-125	44628.5	46043.5	96.93	PASS	70-125
Std3-5/50 ppb	ICAL	1	55833.2	58387.8	95.62	PASS	70-125	44791.3	46043.5	97.28	PASS	70-125
Std4-10/100 ppb	ICAL	1	55547	58387.8	95.13	PASS	70-125	44287.7	46043.5	96.19	PASS	70-125
Std5-20/200 ppb	ICAL	1	56365	58387.8	96.54	PASS	70-125	44225.2	46043.5	96.051	PASS	70-125
Std6-40/400 ppb	ICAL	1	56163.3	58387.8	96.19	PASS	70-125	44550.6	46043.5	96.76	PASS	70-125
Std7-100/1000 ppb	ICAL	1	54426.4	58387.8	93.22	PASS	70-125	43747.4	46043.5	95.013	PASS	70-125
Std8-200/2000 ppb	ICAL	1	53823.2	58387.8	92.18	PASS	70-125	42788	46043.5	92.93	PASS	70-125
ICV	ICV	1	55923.7	58387.8	95.78	PASS	70-125	44661	46043.5	97	PASS	70-125
ICB	ICB	1	53641.8	58387.8	91.87	PASS	70-125	42785.7	46043.5	92.92	PASS	70-125
LLICV	CCV1	1	54643.8	58387.8	93.59	PASS	70-125	43459.8	46043.5	94.39	PASS	70-125
ICSA1	ICSA	1	58528.3	58387.8	100.24	PASS	70-125	43775.2	46043.5	95.074	PASS	70-125
ICSAB1	ICSAB	1	62966.4	58387.8	107.84	PASS	70-125	45906.4	46043.5	99.7	PASS	70-125
MB-67848	MBLK	1	58785.8	58387.8	100.68	PASS	70-125	45694.6	46043.5	99.24	PASS	70-125
LCS-67848	LCS	1	59819.3	58387.8	102.45	PASS	70-125	47182.3	46043.5	102.47	PASS	70-125
N029973-001D	SAMP	1	57725.2	58387.8	98.87	PASS	70-125	40171.4	46043.5	87.25	PASS	70-125
N029973-001D	SAMP	5	62973.1	58387.8	107.85	PASS	70-125	45028.6	46043.5	97.8	PASS	70-125
N029973-001D	SAMP	25	63617.6	58387.8	108.96	PASS	70-125	47720.9	46043.5	103.64	PASS	70-125
N029973-001D-PS	PS	1	58701.9	58387.8	100.54	PASS	70-125	40755.1	46043.5	88.51	PASS	70-125
N029973-001D-PS	PS	5	65531.7	58387.8	112.24	PASS	70-125	47505.5	46043.5	103.18	PASS	70-125
N029973-001D-MS	MS	1	60726.9	58387.8	104.01	PASS	70-125	41199.5	46043.5	89.48	PASS	70-125
N029973-001D-MS	MS	5	66518	58387.8	113.92	PASS	70-125	47922.3	46043.5	104.08	PASS	70-125
N029973-001D-MSD	MSD	1	60655.6	58387.8	103.88	PASS	70-125	40989	46043.5	89.022	PASS	70-125
CCV1	CCV	1	72736	58387.8	124.57	PASS	70-125	53786	46043.5	116.82	PASS	70-125
CCB1	CCB	1	68600.7	58387.8	117.49	PASS	70-125	50391.8	46043.5	109.44	PASS	70-125
N029973-001D-MSD	MSD	5	65124.5	58387.8	111.54	PASS	70-125	46545	46043.5	101.09	PASS	70-125
N029973-002C	SAMP	1	68941	58387.8	118.07	PASS	70-125	50301.6	46043.5	109.25	PASS	70-125
N029973-002C	SAMP	5	65336.6	58387.8	111.9	PASS	70-125	49749.9	46043.5	108.05	PASS	70-125
N029973-004C	SAMP	1	66274.6	58387.8	113.51	PASS	70-125	48141.9	46043.5	104.56	PASS	70-125
N029973-004C	SAMP	5	67178.2	58387.8	115.06	PASS	70-125	49496.8	46043.5	107.5	PASS	70-125
N029973-006C	SAMP	1	64596.9	58387.8	110.63	PASS	70-125	46237.4	46043.5	100.42	PASS	70-125
N029973-006C	SAMP	5	68491.2	58387.8	117.3	PASS	70-125	49946	46043.5	108.48	PASS	70-125
N029973-007D	SAMP	1	63990.1	58387.8	109.59	PASS	70-125	44431.4	46043.5	96.5	PASS	70-125
N029973-007D	SAMP	5	69980.8	58387.8	119.86	PASS	70-125	51008.2	46043.5	110.78	PASS	70-125
N029973-008C	SAMP	1	50821.8	58387.8	87.042	PASS	70-125	34467.1	46043.5	74.86	PASS	70-125
CCV2	CCV	1	72355.6	58387.8	123.92	PASS	70-125	53186.5	46043.5	115.51	PASS	70-125
CCB2	CCB	1	68510.6	58387.8	117.34	PASS	70-125	51155.2	46043.5	111.1	PASS	70-125
N029973-008C	SAMP	5	60577.5	58387.8	103.75	PASS	70-125	42846.1	46043.5	93.056	PASS	70-125
N029973-009D	SAMP	1	58326.3	58387.8	99.89	PASS	70-125	40754.1	46043.5	88.51	PASS	70-125
N029973-009D	SAMP	5	67406.9	58387.8	115.45	PASS	70-125	48510.7	46043.5	105.36	PASS	70-125

INTERNAL STANDARD: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N029973-011D	SAMP	1	61970.3	58387.8	106.14	PASS	70-125	43165.7	46043.5	93.75	PASS	70-125
N029973-011D	SAMP	5	68192.3	58387.8	116.79	PASS	70-125	49867	46043.5	108.3	PASS	70-125
N029973-012D	SAMP	1	58991.9	58387.8	101.04	PASS	70-125	41700.8	46043.5	90.57	PASS	70-125
N029973-012D	SAMP	5	67788.5	58387.8	116.1	PASS	70-125	48763.7	46043.5	105.91	PASS	70-125
N029973-014D	SAMP	1	59594.3	58387.8	102.07	PASS	70-125	41451.3	46043.5	90.026	PASS	70-125
N029973-014D	SAMP	5	67246.7	58387.8	115.17	PASS	70-125	49066.8	46043.5	106.57	PASS	70-125
N029973-015C	SAMP	1	71391.5	58387.8	122.27	PASS	70-125	52392.8	46043.5	113.79	PASS	70-125
CCV3	CCV	1	71058.7	58387.8	121.7	PASS	70-125	53451.8	46043.5	116.09	PASS	70-125
CCB3	CCB	1	67288.5	58387.8	115.24	PASS	70-125	50958.1	46043.5	110.67	PASS	70-125
N029973-015C	SAMP	5	64681.6	58387.8	110.78	PASS	70-125	48929.7	46043.5	106.27	PASS	70-125
N029973-017D	SAMP	1	57015	58387.8	97.65	PASS	70-125	41062.5	46043.5	89.18	PASS	70-125
N029973-017D	SAMP	5	65575.5	58387.8	112.31	PASS	70-125	48361.3	46043.5	105.03	PASS	70-125
N029973-018D	SAMP	1	68702.2	58387.8	117.67	PASS	70-125	50022	46043.5	108.64	PASS	70-125
N029973-018D	SAMP	5	66324.9	58387.8	113.59	PASS	70-125	49943.9	46043.5	108.47	PASS	70-125
N029973-020D	SAMP	1	58385.3	58387.8	100	PASS	70-125	41711.8	46043.5	90.59	PASS	70-125
N029973-020D	SAMP	5	65553.2	58387.8	112.27	PASS	70-125	48706.9	46043.5	105.78	PASS	70-125
CCV4	CCV	1	71203.7	58387.8	121.95	PASS	70-125	53525.4	46043.5	116.25	PASS	70-125
CCB4	CCB	1	67559.9	58387.8	115.71	PASS	70-125	52150.7	46043.5	113.26	PASS	70-125
LLCCV1	CCV2	1	67866.5	58387.8	116.23	PASS	70-125	51773.9	46043.5	112.45	PASS	70-125
ICSA2	ICSA	1	65055.4	58387.8	111.42	PASS	70-125	47498.7	46043.5	103.16	PASS	70-125
ICSAB2	ICSAB	1	65728	58387.8	112.57	PASS	70-125	47887.7	46043.5	104.01	PASS	70-125
CCV5	CCV	1	68418.8	58387.8	117.18	PASS	70-125	52514.1	46043.5	114.05	PASS	70-125
CCB5	CCB	1	65192.9	58387.8	111.66	PASS	70-125	50912.6	46043.5	110.57	PASS	70-125
CCV6	CCV	1	67962.5	58387.8	116.4	PASS	70-125	53100.8	46043.5	115.33	PASS	70-125
CCB6	CCB	1	64899.2	58387.8	111.15	PASS	70-125	50851.4	46043.5	110.44	PASS	70-125
CCV7	CCV	1	59579.6	58387.8	102.04	PASS	70-125	46850.2	46043.5	101.75	PASS	70-125
CCB7	CCB	1	58028.3	58387.8	99.38	PASS	70-125	46089.4	46043.5	100.1	PASS	70-125
CCV8	CCV	1	63387.8	58387.8	108.56	PASS	70-125	49324.4	46043.5	107.13	PASS	70-125
CCB8	CCB	1	60111.5	58387.8	102.95	PASS	70-125	46692	46043.5	101.41	PASS	70-125
LLCCV2	CCV2	1	58166.7	58387.8	99.62	PASS	70-125	46066	46043.5	100.05	PASS	70-125
ICSA3	ICSA	1	56628.1	58387.8	96.99	PASS	70-125	45234.7	46043.5	98.24	PASS	70-125
ICSAB3	ICSAB	1	57411.9	58387.8	98.33	PASS	70-125	44852.5	46043.5	97.41	PASS	70-125

INTERNAL STANDARD: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	52430.7	52430.7	100	PASS	70-125	1547946.3	1547946.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	52041.6	52430.7	99.26	PASS	70-125	1543262.9	1547946.3	99.7	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	50766.5	52430.7	96.83	PASS	70-125	1532921	1547946.3	99.029	PASS	70-125
Std3-5/50 ppb	ICAL	1	51765.2	52430.7	98.73	PASS	70-125	1532375.8	1547946.3	98.99	PASS	70-125
Std4-10/100 ppb	ICAL	1	50971.3	52430.7	97.22	PASS	70-125	1515246.3	1547946.3	97.89	PASS	70-125
Std5-20/200 ppb	ICAL	1	50117.8	52430.7	95.59	PASS	70-125	1510114.1	1547946.3	97.56	PASS	70-125
Std6-40/400 ppb	ICAL	1	50242.7	52430.7	95.83	PASS	70-125	1512689.3	1547946.3	97.72	PASS	70-125
Std7-100/1000 ppb	ICAL	1	50104.5	52430.7	95.56	PASS	70-125	1495898.6	1547946.3	96.64	PASS	70-125
Std8-200/2000 ppb	ICAL	1	48498.3	52430.7	92.5	PASS	70-125	1459826.1	1547946.3	94.31	PASS	70-125
ICV	ICV	1	50128.8	52430.7	95.61	PASS	70-125	1522707.7	1547946.3	98.37	PASS	70-125
ICB	ICB	1	48535.4	52430.7	92.57	PASS	70-125	1482664.5	1547946.3	95.78	PASS	70-125
LLICV	CCV1	1	47488.8	52430.7	90.57	PASS	70-125	1532430.7	1547946.3	99	PASS	70-125
ICSA1	ICSA	1	49562.8	52430.7	94.53	PASS	70-125	1349392.9	1547946.3	87.17	PASS	70-125
ICSAB1	ICSAB	1	53174.1	52430.7	101.42	PASS	70-125	1409965.1	1547946.3	91.086	PASS	70-125
MB-67848	MBLK	1	50496.8	52430.7	96.31	PASS	70-125	1542025.5	1547946.3	99.62	PASS	70-125
LCS-67848	LCS	1	53820.6	52430.7	102.65	PASS	70-125	1596883	1547946.3	103.16	PASS	70-125
N029973-001D	SAMP	1	45946.7	52430.7	87.63	PASS	70-125	1135869.3	1547946.3	73.38	PASS	70-125
N029973-001D	SAMP	5	53537.6	52430.7	102.11	PASS	70-125	1368454.5	1547946.3	88.4	PASS	70-125
N029973-001D	SAMP	25	56826.2	52430.7	108.38	PASS	70-125	1493647.1	1547946.3	96.49	PASS	70-125
N029973-001D-PS	PS	1	46463.6	52430.7	88.62	PASS	70-125	1167413.6	1547946.3	75.42	PASS	70-125
N029973-001D-PS	PS	5	54518.3	52430.7	103.98	PASS	70-125	1428293.1	1547946.3	92.27	PASS	70-125
N029973-001D-MS	MS	1	47663.7	52430.7	90.91	PASS	70-125	1184834.9	1547946.3	76.54	PASS	70-125
N029973-001D-MS	MS	5	55301	52430.7	105.47	PASS	70-125	1438420.5	1547946.3	92.92	PASS	70-125
N029973-001D-MSD	MSD	1	46128.1	52430.7	87.98	PASS	70-125	1164408.2	1547946.3	75.22	PASS	70-125
CCV1	CCV	1	61923.5	52430.7	118.11	PASS	70-125	1700818.4	1547946.3	109.88	PASS	70-125
CCB1	CCB	1	59676.6	52430.7	113.82	PASS	70-125	1624969.3	1547946.3	104.98	PASS	70-125
N029973-001D-MSD	MSD	5	53099.2	52430.7	101.28	PASS	70-125	1379531.3	1547946.3	89.12	PASS	70-125
N029973-002C	SAMP	1	58896.9	52430.7	112.33	PASS	70-125	1500786	1547946.3	96.95	PASS	70-125
N029973-002C	SAMP	5	56848.5	52430.7	108.43	PASS	70-125	1524999	1547946.3	98.52	PASS	70-125
N029973-004C	SAMP	1	55624.3	52430.7	106.09	PASS	70-125	1438132.5	1547946.3	92.91	PASS	70-125
N029973-004C	SAMP	5	57874.4	52430.7	110.38	PASS	70-125	1534357.7	1547946.3	99.12	PASS	70-125
N029973-006C	SAMP	1	52156.3	52430.7	99.48	PASS	70-125	1341046.8	1547946.3	86.63	PASS	70-125
N029973-006C	SAMP	5	56886.4	52430.7	108.5	PASS	70-125	1496995.2	1547946.3	96.71	PASS	70-125
N029973-007D	SAMP	1	50904.8	52430.7	97.09	PASS	70-125	1290048.1	1547946.3	83.34	PASS	70-125
N029973-007D	SAMP	5	57448.5	52430.7	109.57	PASS	70-125	1490140.9	1547946.3	96.27	PASS	70-125
N029973-008C	SAMP	1	37806.8	52430.7	72.11	PASS	70-125	977850	1547946.3	63.17	NR!	70-125
CCV2	CCV	1	60808.3	52430.7	115.98	PASS	70-125	1702656	1547946.3	109.99	PASS	70-125
CCB2	CCB	1	58881.6	52430.7	112.3	PASS	70-125	1633676.3	1547946.3	105.54	PASS	70-125
N029973-008C	SAMP	5	48024.8	52430.7	91.6	PASS	70-125	1271577.2	1547946.3	82.15	PASS	70-125
N029973-009D	SAMP	1	44445.8	52430.7	84.77	PASS	70-125	1158025.8	1547946.3	74.81	PASS	70-125
N029973-009D	SAMP	5	54372.3	52430.7	103.7	PASS	70-125	1431033.8	1547946.3	92.45	PASS	70-125

INTERNAL STANDARD: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N029973-011D	SAMP	1	47748.3	52430.7	91.069	PASS	70-125	1234714.2	1547946.3	79.76	PASS	70-125
N029973-011D	SAMP	5	55076.9	52430.7	105.05	PASS	70-125	1462165.3	1547946.3	94.46	PASS	70-125
N029973-012D	SAMP	1	45229.1	52430.7	86.26	PASS	70-125	1171977.1	1547946.3	75.71	PASS	70-125
N029973-012D	SAMP	5	54909	52430.7	104.73	PASS	70-125	1461743.4	1547946.3	94.43	PASS	70-125
N029973-014D	SAMP	1	46395.7	52430.7	88.49	PASS	70-125	1192308.5	1547946.3	77.025	PASS	70-125
N029973-014D	SAMP	5	55551.9	52430.7	105.95	PASS	70-125	1466979.7	1547946.3	94.77	PASS	70-125
N029973-015C	SAMP	1	58999.5	52430.7	112.53	PASS	70-125	1535857.4	1547946.3	99.22	PASS	70-125
CCV3	CCV	1	59827.1	52430.7	114.11	PASS	70-125	1680767.7	1547946.3	108.58	PASS	70-125
CCB3	CCB	1	58305.9	52430.7	111.21	PASS	70-125	1642296.6	1547946.3	106.1	PASS	70-125
N029973-015C	SAMP	5	54738.1	52430.7	104.4	PASS	70-125	1517874.8	1547946.3	98.057	PASS	70-125
N029973-017D	SAMP	1	44418	52430.7	84.72	PASS	70-125	1165340.5	1547946.3	75.28	PASS	70-125
N029973-017D	SAMP	5	54169.6	52430.7	103.32	PASS	70-125	1441950.2	1547946.3	93.15	PASS	70-125
N029973-018D	SAMP	1	56571.1	52430.7	107.9	PASS	70-125	1476645.7	1547946.3	95.39	PASS	70-125
N029973-018D	SAMP	5	56639	52430.7	108.03	PASS	70-125	1534794.3	1547946.3	99.15	PASS	70-125
N029973-020D	SAMP	1	45329.3	52430.7	86.46	PASS	70-125	1183988.5	1547946.3	76.49	PASS	70-125
N029973-020D	SAMP	5	54327.8	52430.7	103.62	PASS	70-125	1450359.9	1547946.3	93.7	PASS	70-125
CCV4	CCV	1	60711.6	52430.7	115.79	PASS	70-125	1712781.7	1547946.3	110.65	PASS	70-125
CCB4	CCB	1	58159.9	52430.7	110.93	PASS	70-125	1649279	1547946.3	106.55	PASS	70-125
LLCCV1	CCV2	1	58511.1	52430.7	111.6	PASS	70-125	1674828.3	1547946.3	108.2	PASS	70-125
ICSA2	ICSA	1	53735.1	52430.7	102.49	PASS	70-125	1464201.1	1547946.3	94.59	PASS	70-125
ICSAB2	ICSAB	1	54503	52430.7	103.95	PASS	70-125	1451163.6	1547946.3	93.75	PASS	70-125
CCV5	CCV	1	60186.1	52430.7	114.79	PASS	70-125	1687157.4	1547946.3	108.99	PASS	70-125
CCB5	CCB	1	57281.4	52430.7	109.25	PASS	70-125	1612256.2	1547946.3	104.15	PASS	70-125
CCV6	CCV	1	59906.3	52430.7	114.26	PASS	70-125	1658962.3	1547946.3	107.17	PASS	70-125
CCB6	CCB	1	57260.1	52430.7	109.21	PASS	70-125	1628880.1	1547946.3	105.23	PASS	70-125
CCV7	CCV	1	54264.3	52430.7	103.5	PASS	70-125	1535876	1547946.3	99.22	PASS	70-125
CCB7	CCB	1	53714.9	52430.7	102.45	PASS	70-125	1485618	1547946.3	95.97	PASS	70-125
CCV8	CCV	1	56728.3	52430.7	108.2	PASS	70-125	1567755.2	1547946.3	101.28	PASS	70-125
CCB8	CCB	1	54554.2	52430.7	104.05	PASS	70-125	1520048.1	1547946.3	98.2	PASS	70-125
LLCCV2	CCV2	1	53966.7	52430.7	102.93	PASS	70-125	1504931.1	1547946.3	97.22	PASS	70-125
ICSA3	ICSA	1	51015.1	52430.7	97.3	PASS	70-125	1338046.3	1547946.3	86.44	PASS	70-125
ICSAB3	ICSAB	1	50739.6	52430.7	96.77	PASS	70-125	1331626.5	1547946.3	86.025	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water **Dilution Test Summary**

Work Order No.: N029973
Test Method: EPA 6020
Analysis Date: 5/11/2018

Matrix: Groundwater
Batch No.: 67848

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Mn, Mo and Se. The calculated concentration is <25RL.
Dilution test failed for Cr. However, PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N029973-001 D DT 5X	Arsenic	ug/L	2.384346	NA	2.325376	2.54%	10
N029973-001D DT 5X	Chromium	ug/L	60.52285	FAIL	54.04054	12.00%	10
N029973-001D DT 5X	Manganese	ug/L	5.549866	NA	5.097733	8.87%	10
N029973-001D DT 5X	Molybdenum	ug/L	7.184712	NA	7.058416	1.79%	10
N029973-001D DT 5X	Selenium	ug/L	0	NA	0		10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N029973-001D-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67848** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024229**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.229	0.10	10.00	2.325	109	80	120				
Manganese	96.692	0.50	100.0	5.098	91.6	80	120				
Molybdenum	19.033	0.50	10.00	7.058	120	80	120				
Selenium	10.816	0.50	10.00	0	108	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N029973
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N029973-001D-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **ZZZZZZ**	Batch ID: **67848**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2018**	SeqNo: **3024128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	62.240	1.0	10.00	54.04	82.0	80	120				

Qualifiers:

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

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

May 16, 2018

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

TEL: (916) 786-3302
FAX:

Workorder No.: N030006

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

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 25, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.0801
Lab Order:	N030006

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N030006-005, -006, -007, -008 and -018 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (1.2 ug/L) and hexavalent chromium (0 ug/L) for sample N030006-018 (MW-33-040-Q218) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N030006-001, -002, -005, -007 and -008 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (1.2 ug/L) and hexavalent chromium (0 ug/L) for sample N030006-018 (MW-33-040-Q218) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.2 and 0.16 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) is outside recovery criteria for Molybdenum in QC sample N030006-001D-MS since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT:	ARCADIS U.S., Inc. - California	
Project:	PG&E Topock - GMP, RC000753.0801	**CASE NARRATIVE**
Lab Order:	N030006	

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N030006-001D-MS and N030006-001D-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *16-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N030006
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030006-001A	MW-40D-Q218	Groundwater	4/25/2018 1:03:00 PM	4/25/2018	5/16/2018
N030006-001B	MW-40D-Q218	Groundwater	4/25/2018 1:03:00 PM	4/25/2018	5/16/2018
N030006-001C	MW-40D-Q218	Groundwater	4/25/2018 1:03:00 PM	4/25/2018	5/16/2018
N030006-001D	MW-40D-Q218	Groundwater	4/25/2018 1:03:00 PM	4/25/2018	5/16/2018
N030006-002A	MW-40D-SMT-Q218	Groundwater	4/25/2018 12:05:00 PM	4/25/2018	5/16/2018
N030006-002B	MW-40D-SMT-Q218	Groundwater	4/25/2018 12:05:00 PM	4/25/2018	5/16/2018
N030006-002C	MW-40D-SMT-Q218	Groundwater	4/25/2018 12:05:00 PM	4/25/2018	5/16/2018
N030006-002D	MW-40D-SMT-Q218	Groundwater	4/25/2018 12:05:00 PM	4/25/2018	5/16/2018
N030006-003A	MW-40S-Q218	Groundwater	4/25/2018 11:25:00 AM	4/25/2018	5/16/2018
N030006-003B	MW-40S-Q218	Groundwater	4/25/2018 11:25:00 AM	4/25/2018	5/16/2018
N030006-003C	MW-40S-Q218	Groundwater	4/25/2018 11:25:00 AM	4/25/2018	5/16/2018
N030006-003D	MW-40S-Q218	Groundwater	4/25/2018 11:25:00 AM	4/25/2018	5/16/2018
N030006-004A	MW-40S-SMT-Q218	Groundwater	4/25/2018 10:45:00 AM	4/25/2018	5/16/2018
N030006-004B	MW-40S-SMT-Q218	Groundwater	4/25/2018 10:45:00 AM	4/25/2018	5/16/2018
N030006-004C	MW-40S-SMT-Q218	Groundwater	4/25/2018 10:45:00 AM	4/25/2018	5/16/2018
N030006-004D	MW-40S-SMT-Q218	Groundwater	4/25/2018 10:45:00 AM	4/25/2018	5/16/2018
N030006-005A	MW-46-175-Q218	Groundwater	4/25/2018 3:26:00 PM	4/25/2018	5/16/2018
N030006-005B	MW-46-175-Q218	Groundwater	4/25/2018 3:26:00 PM	4/25/2018	5/16/2018
N030006-005C	MW-46-175-Q218	Groundwater	4/25/2018 3:26:00 PM	4/25/2018	5/16/2018
N030006-005D	MW-46-175-Q218	Groundwater	4/25/2018 3:26:00 PM	4/25/2018	5/16/2018
N030006-006A	MW-46-205-Q218	Groundwater	4/25/2018 2:36:00 PM	4/25/2018	5/16/2018
N030006-006B	MW-46-205-Q218	Groundwater	4/25/2018 2:36:00 PM	4/25/2018	5/16/2018
N030006-006C	MW-46-205-Q218	Groundwater	4/25/2018 2:36:00 PM	4/25/2018	5/16/2018
N030006-007A	MW-33-150-Q218	Groundwater	4/25/2018 1:16:00 PM	4/25/2018	5/16/2018
N030006-007B	MW-33-150-Q218	Groundwater	4/25/2018 1:16:00 PM	4/25/2018	5/16/2018
N030006-007C	MW-33-150-Q218	Groundwater	4/25/2018 1:16:00 PM	4/25/2018	5/16/2018
N030006-007D	MW-33-150-Q218	Groundwater	4/25/2018 1:16:00 PM	4/25/2018	5/16/2018
N030006-008A	MW-33-210-Q218	Groundwater	4/25/2018 2:10:00 PM	4/25/2018	5/16/2018
N030006-008B	MW-33-210-Q218	Groundwater	4/25/2018 2:10:00 PM	4/25/2018	5/16/2018

CLIENT:	ARCADIS U.S., Inc. - California		
Project:	PG&E Topock - GMP, RC000753.0801		**Work Order Sample Summary**
Lab Order:	N030006		
Contract No:			

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030006-008C	MW-33-210-Q218	Groundwater	4/25/2018 2:10:00 PM	4/25/2018	5/16/2018
N030006-008D	MW-33-210-Q218	Groundwater	4/25/2018 2:10:00 PM	4/25/2018	5/16/2018
N030006-009A	MW-47-115-Q218	Groundwater	4/25/2018 3:40:00 PM	4/25/2018	5/16/2018
N030006-009B	MW-47-115-Q218	Groundwater	4/25/2018 3:40:00 PM	4/25/2018	5/16/2018
N030006-009C	MW-47-115-Q218	Groundwater	4/25/2018 3:40:00 PM	4/25/2018	5/16/2018
N030006-010A	MW-29-EB-Q218	Groundwater	4/25/2018 8:29:00 AM	4/25/2018	5/16/2018
N030006-011A	MW-29-Q218	Groundwater	4/25/2018 9:02:00 AM	4/25/2018	5/16/2018
N030006-011B	MW-29-Q218	Groundwater	4/25/2018 9:02:00 AM	4/25/2018	5/16/2018
N030006-011C	MW-29-Q218	Groundwater	4/25/2018 9:02:00 AM	4/25/2018	5/16/2018
N030006-011D	MW-29-Q218	Groundwater	4/25/2018 9:02:00 AM	4/25/2018	5/16/2018
N030006-012A	MW-28-025-EB-Q218	Groundwater	4/25/2018 10:22:00 AM	4/25/2018	5/16/2018
N030006-013A	MW-28-025-Q218	Groundwater	4/25/2018 10:45:00 AM	4/25/2018	5/16/2018
N030006-013B	MW-28-025-Q218	Groundwater	4/25/2018 10:45:00 AM	4/25/2018	5/16/2018
N030006-013C	MW-28-025-Q218	Groundwater	4/25/2018 10:45:00 AM	4/25/2018	5/16/2018
N030006-013D	MW-28-025-Q218	Groundwater	4/25/2018 10:45:00 AM	4/25/2018	5/16/2018
N030006-014A	MW-906-Q218	Groundwater	4/25/2018 10:55:00 AM	4/25/2018	5/16/2018
N030006-014B	MW-906-Q218	Groundwater	4/25/2018 10:55:00 AM	4/25/2018	5/16/2018
N030006-014C	MW-906-Q218	Groundwater	4/25/2018 10:55:00 AM	4/25/2018	5/16/2018
N030006-014D	MW-906-Q218	Groundwater	4/25/2018 10:55:00 AM	4/25/2018	5/16/2018
N030006-015A	MW-28-090-EB-Q218	Groundwater	4/25/2018 11:09:00 AM	4/25/2018	5/16/2018
N030006-016A	MW-28-090-Q218	Groundwater	4/25/2018 11:48:00 AM	4/25/2018	5/16/2018
N030006-016B	MW-28-090-Q218	Groundwater	4/25/2018 11:48:00 AM	4/25/2018	5/16/2018
N030006-016C	MW-28-090-Q218	Groundwater	4/25/2018 11:48:00 AM	4/25/2018	5/16/2018
N030006-016D	MW-28-090-Q218	Groundwater	4/25/2018 11:48:00 AM	4/25/2018	5/16/2018
N030006-017A	MW-33-040-EB-Q218	Groundwater	4/25/2018 9:05:00 AM	4/25/2018	5/16/2018
N030006-018A	MW-33-040-Q218	Groundwater	4/25/2018 9:41:00 AM	4/25/2018	5/16/2018
N030006-018B	MW-33-040-Q218	Groundwater	4/25/2018 9:41:00 AM	4/25/2018	5/16/2018
N030006-018C	MW-33-040-Q218	Groundwater	4/25/2018 9:41:00 AM	4/25/2018	5/16/2018
N030006-018D	MW-33-040-Q218	Groundwater	4/25/2018 9:41:00 AM	4/25/2018	5/16/2018
N030006-019A	MW-704-Q218	Groundwater	4/25/2018 4:00:00 PM	4/25/2018	5/16/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N030006
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030006-020A	MW-705-Q218	Groundwater	4/25/2018 4:20:00 PM	4/25/2018	5/16/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 1:03:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate							Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-SMT-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 12:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate Analyst: **LR**							
Specific Conductance	15000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40S-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180426C**	QC Batch: **R123662**			PrepDate			Analyst: **LR**
Specific Conductance	1700	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40S-SMT-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate							Analyst: **LR**
Specific Conductance	1600	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 3:26:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate							Analyst: **LR**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 2:36:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180426C**	QC Batch: **R123662**			PrepDate			Analyst: **LR**
Specific Conductance	22000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 1:16:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate							Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 2:10:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate Analyst: **LR**							
Specific Conductance	18000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-115-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate Analyst: **LR**							
Specific Conductance	13000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030006
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N030006-011

Client Sample ID: MW-29-Q218
Collection Date: 4/25/2018 9:02:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate Analyst: **LR**							
Specific Conductance	2900	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate Analyst: **LR**							
Specific Conductance	1000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:55:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate							Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate Analyst: **LR**							
Specific Conductance	6100	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:41:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate Analyst: **LR**							
Specific Conductance	8100	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030006-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123662**
Client ID: **ZZZZZZ** Batch ID: **R123662** TestNo: **EPA 120.1** Analysis Date: **4/26/2018** SeqNo: **3009437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	15610.000	0.10						15580	0.192	2	

Sample ID **N030006-018BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123662**
Client ID: **ZZZZZZ** Batch ID: **R123662** TestNo: **EPA 120.1** Analysis Date: **4/26/2018** SeqNo: **3009451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	8090.000	0.10						8070	0.248	2	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 1:03:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate							Analyst: **RAB**
Hexavalent Chromium	120	0.66	4.0		µg/L	20	4/26/2018 10:40 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67852** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	120	0.13	1.0		µg/L	1	5/11/2018 10:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-SMT-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 12:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180426A** QC Batch: **R123708**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	25	0.17	1.0		µg/L	5	4/26/2018 06:35 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67852**				PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	31	0.13	1.0		µg/L	1	5/11/2018 11:52 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40S-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180426A**	QC Batch: **R123708**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	20	0.17	1.0		µg/L	5	4/26/2018 03:33 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	20	0.13	1.0		µg/L	1	5/12/2018 12:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40S-SMT-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180426A** QC Batch: **R123708**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	18	0.17	1.0		µg/L	5	4/26/2018 06:54 PM
DISSOLVED METALS BY ICP-MS **EPA 3010A**			**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67852**				PrepDate **4/26/2018**			Analyst: **CEI**
Chromium	17	0.13	1.0		µg/L	1	5/12/2018 12:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 3:26:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate Analyst: **RAB**							
Hexavalent Chromium	7.4	0.17	1.0		µg/L	5	4/26/2018 07:13 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67852** PrepDate **4/26/2018** Analyst: **CEI**							
Chromium	8.3	0.13	1.0		µg/L	1	5/12/2018 12:37 AM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 2:36:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/26/2018 12:15 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67852** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/12/2018 12:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 1:16:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180426A** QC Batch: **R123708**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	5.2	0.17	1.0		µg/L	5	4/26/2018 12:34 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67852**				PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	5.0	0.13	1.0		µg/L	1	5/12/2018 12:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 2:10:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate Analyst: **RAB**							
Hexavalent Chromium	6.0	0.17	1.0		µg/L	5	4/26/2018 07:51 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67852** PrepDate **4/26/2018** Analyst: **CEI**							
Chromium	5.9	0.13	1.0		µg/L	1	5/12/2018 01:21 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-115-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180426A**	QC Batch: **R123708**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	23	0.17	1.0		µg/L	5	4/26/2018 01:11 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	23	0.13	1.0		µg/L	1	5/12/2018 01:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-EB-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 8:29:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:02:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 02:08 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67852** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/12/2018 01:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-EB-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:22:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180426A**	QC Batch: **R123708**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 02:27 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 02:46 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67852** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/12/2018 01:54 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:55:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 03:05 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67852** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/12/2018 02:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-EB-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:09:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 04:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180426A**	QC Batch: **R123708**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 05:01 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/12/2018 02:28 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-EB-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:05:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 05:20 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:41:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180426A**	QC Batch: **R123708**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/26/2018 04:23 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	1.2	0.13	1.0		µg/L	1	5/12/2018 02:39 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-704-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 05:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-705-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 4:20:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 06:17 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123708** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **PBW** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123708** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **LCSW** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.071	0.20	5.000	0	101	90	110				

Sample ID **N030006-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	232.334	4.0	100.0	123.5	109	90	110				

Sample ID **N030006-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.451	1.0	5.000	0.4390	100	90	110				

Sample ID **N030006-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.233	1.0	5.000	5.207	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030006-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	48.367	1.0	25.00	22.84	102	90	110				

Sample ID **N030006-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.047	0.20	1.000	0	105	90	110				

Sample ID **N030006-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0	104	90	110				

Sample ID **N030006-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.040	0.20	1.000	0	104	90	110				

Sample ID **N030006-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.996	0.20	1.000	0	99.6	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030006-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.016	0.20	1.000	0	102	90	110				

Sample ID **N030006-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	227.426	4.0	100.0	123.5	104	90	110	232.3	2.14	20	

Sample ID **N030006-003ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.965	1.0						19.50	2.79	20	

Sample ID **N030006-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.577	1.0	25.00	19.50	104	90	110				

Sample ID **N030006-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.995	1.0	5.000	0	99.9	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030006-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123708**
Client ID: **ZZZZZZ**	Batch ID: **R123708**	TestNo: **EPA 218.6**	Analysis Date: **4/26/2018**	SeqNo: **3011083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.005	0.20	1.000	0	100	90	110				

Sample ID **N030006-016AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123708**
Client ID: **ZZZZZZ**	Batch ID: **R123708**	TestNo: **EPA 218.6**	Analysis Date: **4/26/2018**	SeqNo: **3011085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.922	0.20	1.000	0	92.2	90	110				

Sample ID **N030006-017AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123708**
Client ID: **ZZZZZZ**	Batch ID: **R123708**	TestNo: **EPA 218.6**	Analysis Date: **4/26/2018**	SeqNo: **3011087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0	107	90	110				

Sample ID **N030006-019AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123708**
Client ID: **ZZZZZZ**	Batch ID: **R123708**	TestNo: **EPA 218.6**	Analysis Date: **4/26/2018**	SeqNo: **3011091**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.020	0.20	1.000	0	102	90	110				

Sample ID **N030006-020AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123708**
Client ID: **ZZZZZZ**	Batch ID: **R123708**	TestNo: **EPA 218.6**	Analysis Date: **4/26/2018**	SeqNo: **3011093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.030	0.20	1.000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030006
Project:	PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030006-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	49.143	1.0	25.00	24.68	97.9	90	110				

Sample ID **N030006-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	44.288	1.0	25.00	18.04	105	90	110				

Sample ID **N030006-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.220	1.0	5.000	7.444	95.5	90	110				

Sample ID **N030006-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.870	1.0	5.000	5.964	98.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-67852**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**		Prep Date: **4/26/2018**		RunNo: **124014**			
Client ID: **PBW**	Batch ID: **67852**	TestNo: **EPA 6020**	**EPA 3010A**		Analysis Date: **5/11/2018**		SeqNo: **3024166**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-67852**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**		Prep Date: **4/26/2018**		RunNo: **124014**				
Client ID: **LCSW**	Batch ID: **67852**	TestNo: **EPA 6020**	**EPA 3010A**		Analysis Date: **5/11/2018**		SeqNo: **3024167**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.385	1.0	10.00	0	93.8	85	115				

Sample ID **N030006-001D-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**		Prep Date: **4/26/2018**		RunNo: **124014**				
Client ID: **ZZZZZZ**	Batch ID: **67852**	TestNo: **EPA 6020**	**EPA 3010A**		Analysis Date: **5/11/2018**		SeqNo: **3024178**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	120.846	1.0	10.00	116.0	48.8	75	125				S

Sample ID **N030006-001D-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**		Prep Date: **4/26/2018**		RunNo: **124014**				
Client ID: **ZZZZZZ**	Batch ID: **67852**	TestNo: **EPA 6020**	**EPA 3010A**		Analysis Date: **5/11/2018**		SeqNo: **3024180**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	120.459	1.0	10.00	116.0	44.9	75	125	120.8	0.320	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 1:03:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180509B** QC Batch: **R123948** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	2.7	0.16	0.25		mg/L	5	5/9/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-SMT-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 12:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180509B** QC Batch: **R123948** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.55	0.032	0.050		mg/L	1	5/9/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40S-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	9.5	0.32	0.50		mg/L	10	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40S-SMT-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C** QC Batch: **R123927**			PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	14	0.32	0.50		mg/L	10	5/8/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
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ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 3:26:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	1.1	0.032	0.050		mg/L	1	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 1:16:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	1.3	0.032	0.050		mg/L	1	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 2:10:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C** QC Batch: **R123927**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	1.4	0.063	0.10		mg/L	2	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:02:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C** QC Batch: **R123927**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/8/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C**	QC Batch: **R123927**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.050	0.032	0.050		mg/L	1	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:55:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/8/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:41:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C**	QC Batch: **R123927**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R123927** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **PBW** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R123927** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **LCSW** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.489	0.050	0.5000	0	97.9	85	115				

Sample ID **N030006-004CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **ZZZZZZ** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	14.553	0.50						14.22	2.29	20	

Sample ID **N030006-003CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **ZZZZZZ** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	13.350	0.50	5.000	9.474	77.5	75	125				

Sample ID **N030006-003CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **ZZZZZZ** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	13.371	0.50	5.000	9.474	77.9	75	125	13.35	0.157	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R123948** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123948**
Client ID: **PBW** Batch ID: **R123948** TestNo: **SM4500-NO3** Analysis Date: **5/9/2018** SeqNo: **3021451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R123948** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123948**
Client ID: **LCSW** Batch ID: **R123948** TestNo: **SM4500-NO3** Analysis Date: **5/9/2018** SeqNo: **3021452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.505	0.050	0.5000	0	101	85	115				

Sample ID **N030006-001CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123948**
Client ID: **ZZZZZZ** Batch ID: **R123948** TestNo: **SM4500-NO3** Analysis Date: **5/9/2018** SeqNo: **3021454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	4.997	0.25	2.500	2.721	91.0	75	125				

Sample ID **N030006-001CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123948**
Client ID: **ZZZZZZ** Batch ID: **R123948** TestNo: **SM4500-NO3** Analysis Date: **5/9/2018** SeqNo: **3021455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.630	0.25	2.500	2.721	116	75	125	4.996	11.9	20	

Sample ID **N030006-002CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123948**
Client ID: **ZZZZZZ** Batch ID: **R123948** TestNo: **SM4500-NO3** Analysis Date: **5/9/2018** SeqNo: **3021457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.566	0.050						0.5478	3.32	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 1:03:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	4.4	0.081	0.10		µg/L	1	5/11/2018 10:35 PM
Manganese	5.1	0.26	0.50		µg/L	1	5/11/2018 10:35 PM
Molybdenum	50	1.1	2.5		µg/L	5	5/11/2018 11:08 PM
Selenium	1.8	0.36	0.50		µg/L	1	5/11/2018 10:35 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-SMT-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 12:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	4.3	0.41	0.50		µg/L	5	5/11/2018 11:58 PM
Manganese	33	0.26	0.50		µg/L	1	5/11/2018 11:52 PM
Molybdenum	45	1.1	2.5		µg/L	5	5/11/2018 11:58 PM
Selenium	ND	1.8	2.5		µg/L	5	5/11/2018 11:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40S-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-003		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180511C** QC Batch: **67852** PrepDate **4/26/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	3.9	0.081	0.10		µg/L	1	5/12/2018 12:15 AM
Manganese	0.50	0.26	0.50		µg/L	1	5/12/2018 12:15 AM
Molybdenum	27	0.21	0.50		µg/L	1	5/12/2018 12:15 AM
Selenium	6.1	0.36	0.50		µg/L	1	5/12/2018 12:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40S-SMT-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	4.0	0.081	0.10		µg/L	1	5/12/2018 12:26 AM
Manganese	ND	0.26	0.50		µg/L	1	5/12/2018 12:26 AM
Molybdenum	26	0.21	0.50		µg/L	1	5/12/2018 12:26 AM
Selenium	5.7	0.36	0.50		µg/L	1	5/12/2018 12:26 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 3:26:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate **4/26/2018**			Analyst: **CEI**
Molybdenum	170	1.1	2.5		µg/L	5	5/12/2018 12:42 AM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 12:42 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 1:16:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-007		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180511C** QC Batch: **67852** PrepDate **4/26/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.4	0.081	0.10		µg/L	1	5/12/2018 12:59 AM
Manganese	23	0.26	0.50		µg/L	1	5/12/2018 12:59 AM
Molybdenum	47	1.1	2.5		µg/L	5	5/12/2018 01:04 AM
Selenium	0.79	0.36	0.50		µg/L	1	5/12/2018 12:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 2:10:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180515A**	QC Batch: **67852**			PrepDate		**4/26/2018**	Analyst: **CEI**
Arsenic	1.2	0.41	0.50		µg/L	5	5/15/2018 01:01 PM
Manganese	7.2	0.26	0.50		µg/L	1	5/12/2018 01:21 AM
Molybdenum	20	1.1	2.5		µg/L	5	5/12/2018 01:27 AM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 01:27 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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3151 W. Post Rd., Las Vegas, NV 89118
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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:02:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	9.8	0.081	0.10		µg/L	1	5/12/2018 01:43 AM
Manganese	360	1.3	2.5		µg/L	5	5/12/2018 01:49 AM
Molybdenum	19	0.21	0.50		µg/L	1	5/12/2018 01:43 AM
Selenium	ND	0.36	0.50		µg/L	1	5/12/2018 01:43 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-013		

DISSOLVED METALS BY ICP-MS — EPA 3010A — EPA 6020

RunID: **NV00922-ICP7_180511C** QC Batch: **67852** PrepDate **4/26/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	0.88	0.081	0.10		µg/L	1	5/12/2018 01:54 AM
Manganese	28	0.26	0.50		µg/L	1	5/12/2018 01:54 AM
Molybdenum	4.2	0.21	0.50		µg/L	1	5/12/2018 01:54 AM
Selenium	ND	0.36	0.50		µg/L	1	5/12/2018 01:54 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:55:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate		**4/26/2018**	Analyst: **CEI**
Arsenic	0.86	0.081	0.10		µg/L	1	5/12/2018 02:05 AM
Manganese	28	0.26	0.50		µg/L	1	5/12/2018 02:05 AM
Molybdenum	4.2	0.21	0.50		µg/L	1	5/12/2018 02:05 AM
Selenium	ND	0.36	0.50		µg/L	1	5/12/2018 02:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	1.8	0.081	0.10		µg/L	1	5/12/2018 02:28 AM
Manganese	190	1.3	2.5		µg/L	5	5/12/2018 02:33 AM
Molybdenum	23	0.21	0.50		µg/L	1	5/12/2018 02:28 AM
Selenium	ND	0.36	0.50		µg/L	1	5/12/2018 02:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:41:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	11	0.081	0.10		µg/L	1	5/12/2018 02:39 AM
Manganese	18	0.26	0.50		µg/L	1	5/12/2018 02:39 AM
Molybdenum	130	0.21	0.50		µg/L	1	5/12/2018 02:39 AM
Selenium	ND	0.36	0.50		µg/L	1	5/12/2018 02:39 AM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-67852** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **PBW** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-67852** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **LCSW** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.976	0.10	10.00	0	99.8	85	115				
Manganese	104.294	0.50	100.0	0	104	85	115				
Molybdenum	9.888	0.50	10.00	0	98.9	85	115				
Selenium	9.594	0.50	10.00	0	95.9	85	115				

Sample ID **N030006-001D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.673	0.10	10.00	4.418	103	75	125				
Manganese	93.390	0.50	100.0	5.142	88.2	75	125				
Selenium	12.087	0.50	10.00	1.789	103	75	125				

Sample ID **N030006-001D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	64.266	2.5	10.00	50.14	141	75	125				S

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030006-001D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.746	0.10	10.00	4.418	103	75	125	14.67	0.497	20	
Manganese	92.826	0.50	100.0	5.142	87.7	75	125	93.39	0.606	20	
Selenium	12.414	0.50	10.00	1.789	106	75	125	12.09	2.68	20	

Sample ID **N030006-001D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024282**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	62.597	2.5	10.00	50.14	125	75	125	64.27	2.63	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client:	Arcadis
Address:	1410 Rocky Ridge Dr # 330
Address:	Roseville, CA 95661
Phone:	916-786-3302
Fax:	
Submitted By:	Gantt Jeffers
Title:	Geologist II
Signature:	[signature]
Date:	4/25/2018
Project Name:	PG&E Topock - GMP
Project Number:	RC000753.0801

I hereby authorize ASSET Labs to perform the tests indicated below.

Report to:	Dan Bush
Company:	Arcadis
Email:	dan.bush@arcadis.com daniel.moore@critigen.com
Address:	1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone:	916-786-3302
Fax:	
Sampled By:	Jason Mahn
Signature:	[signature]
Date:	4/25/2018

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Bill to:	Marty Bloes
Address:	
Address:	
Email to:	mbloes@pivox.com
P.O.#	
Phone:	949-727-1400, ext 200
Fax:	

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
Global ID:		Regulatory	
		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		
6. Method of Cooling:		

Sample Temp: 2.9°/3.5°/2.6°C

Courier:

Tracking No.:

Matrix: Ground | x | Sediment; Potable | Soil; NPDES | Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030006-01	MW-40D-Q218	4/25/2018	13:03		X			X			X	X				E	4	P	BNS	
2	-02	MW-40D-SMT-Q218	4/25/2018	12:05		X			X			X	X				E	4	P	BNS	
3	-03	MW-40S-Q218	4/25/2018	11:25		X			X			X	X				E	4	P	BNS	
4	-04	MW-40S-SMT-Q218	4/25/2018	10:45		X			X			X	X				E	4	P	BNS	
5	-05	MW-46-175-Q218	4/25/2018	15:26		X			X			X		X			E	4	P	BNS	
6	-06	MW-46-205-Q218	4/25/2018	14:36		X			X						X		E	3	P	BN	
7	-07	MW-33-150-Q218	4/25/2018	13:16		X			X			X	X				E	4	P	BNS	
8	-08	MW-33-210-Q218	4/25/2018	14:10		X			X			X	X				E	4	P	BNS	
9	-09	MW-47-115-Q218	4/25/2018	15:40		X			X						X		E	3	P	BN	
10	-10	MW-29-EB-Q218	4/25/2018	8:29		X											E	1	P	B	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
[signature]	4/25/18 1645	[signature]	4/25/18 1645
[signature]	4/25/18 1558	[signature]	4/25/18 1558
[signature]			

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy   Yellow=Customer's Copy

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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302
Fax:
Submitted By: Gantt Jeffers
Title: Geologist II
Signature: Date: 4/25/2018
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - GMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com
daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330
Roseville, CA 95661
Phone: 916-786-3302
Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
Signature: Date: 4/25/2018

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com
P.O.#
Phone: 949-727-1400, ext 200
Fax:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

EDD Requirement: Excel EDD | Geotracker | Labspec | Others ✓ | Specify: RWQCB | Global ID:

QA/QC: RTNE | RWQCB ✓ | CalTrans | LEVEL III | LEVEL IV | Regulatory | Specify State:

Sample Receipt Condition (Y N):
1. Chilled
2. Headspace
3. Container Intact
4. Seal Present
5. IR number
6. Method of Cooling:

Sample Temp: 2.0°C / 5.5°C / 2.6°C
Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030006-11	MW-29-Q218	4/25/2018	9:02			X		X			X	X					E	5	P	BNS	
2	-12	MW-28-025-EB-Q218	4/25/2018	10:22		X												E	1	P	B	
3	-13	MW-28-025-Q218	4/25/2018	10:45			X		X			X	X					E	5	P	BNS	
4	-14	MW-906-Q218	4/25/2018	10:55			X		X			X	X					E	5	P	BNS	
5	-15	MW-28-090-EB-Q218	4/25/2018	11:09		X												E	1	P	B	
6	-16	MW-28-090-Q218	4/25/2018	11:48			X		X			X	X					E	5	P	BNS	
7	-17	MW-33-040-EB-Q218	4/25/2018	9:05		X												E	1	P	B	
8	-18	MW-33-040-Q218	4/25/2018	9:41			X		X			X	X					E	5	P	BNS	
9	-19	MW-704-Q218	4/25/2018	16:00		X												E	1	P	B	
10	-20	MW-705-Q218	4/25/2018	16:20		X												E	1	P	B	

Reliquished by (Signature and Printed Name): Date/Time: 4/25/18 1645
Reliquished by (Signature and Printed Name): Date/Time: 4/25/18 1645
Reliquished by (Signature and Printed Name): Date/Time: 4/25/18 1852
Reliquished by (Signature and Printed Name): Date/Time: 4/25/18 1852
Reliquished by (Signature and Printed Name): Date/Time:
Reliquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)
A < 24 Hrs or Same Day TAT
B = Next Workday
C = 2 Workdays
D = 3 Workdays
X E = Routine 5-7 Workdays
TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:
H=HCL | N=HNO_3 | S=H_2SO_4 | C=4°C
Z=$Zn(AC)_2$ | O=NaOH | T=$Na_2S_2O_3$
Others/Specify: B (NH4)2SO4/NH4OH

Container Type:
T=Tube | V=VOA | P=Pint
J=Jar | B=Tedlar | G=Glass
M=Metal | M=Metal | C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 4/25/2018 — Workorder: N030006

Rep sample Temp (Deg C): 2.9/3.5/2.6 — IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA — Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

	Yes	No	Not Present / NA
1. Shipping container/cooler in good condition?	☑	☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	☐	☐	Not Present ☑
3. Custody seals intact on sample bottles?	☐	☐	Not Present ☑
4. Chain of custody present?	☑	☐	
5. Sampler's name present in COC?	☑	☐	
6. Chain of custody signed when relinquished and received?	☑	☐	
7. Chain of custody agrees with sample labels?	☑	☐	
8. Samples in proper container/bottle?	☑	☐	
9. Sample containers intact?	☑	☐	
10. Sufficient sample volume for indicated test?	☑	☐	
11. All samples received within holding time?	☑	☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	☑	☐	NA ☐
13. Water - VOA vials have zero headspace?	☐	☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	☑	☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	☑	☐	NA ☐
16. Were there Non-Conformance issues at login?	☐	☐	NA ☑
Was Client notified?	☐	☐	NA ☑

Comments:

Checklist Completed By: YR 4/30/2018

Reviewed By: 05/02/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/1/2018 6:08 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>, Kalib Sumter <Kalib.Sumter@critigen.com>, Dan Moore <Daniel.Moore@critigen.com>

Hi Yoandra,
Method 6020 is acceptable.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, April 30, 2018 8:48 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)

Hi Laura,

Please kindly check the attached COCs. Some samples are requested to be analyzed for As, Cr, Mn, Mo and Se by 6010.

Please kindly confirm if they can be analyzed by 6020 instead of 6010, as we have been doing before.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

ASSET Laboratories

WORK ORDER Summary

26-Apr-18

WorkOrder: N030006

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030006-001A	MW-40D-Q218	4/25/2018 1:03:00 PM	5/9/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-001B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-001C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-001D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-002A	MW-40D-SMT-Q218	4/25/2018 12:05:00 PM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-002B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-002C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-002D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-003A	MW-40S-Q218	4/25/2018 11:25:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-003B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-003C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-003D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-004A	MW-40S-SMT-Q218	4/25/2018 10:45:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-004B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-004C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-Apr-18

WorkOrder: N030006

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030006-004D	MW-40S-SMT-Q218	4/25/2018 10:45:00 AM	5/9/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-005A	MW-46-175-Q218	4/25/2018 3:26:00 PM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-005B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-005C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-005D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-006A	MW-46-205-Q218	4/25/2018 2:36:00 PM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-006B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-006C			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-007A	MW-33-150-Q218	4/25/2018 1:16:00 PM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-007B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-007C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-007D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-008A	MW-33-210-Q218	4/25/2018 2:10:00 PM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-008B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-Apr-18

WorkOrder: N030006

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030006-008C	MW-33-210-Q218	4/25/2018 2:10:00 PM	5/9/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-008D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-009A	MW-47-115-Q218	4/25/2018 3:40:00 PM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-009B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-009C			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-010A	MW-29-EB-Q218	4/25/2018 8:29:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-011A	MW-29-Q218	4/25/2018 9:02:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-011B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-011C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-011D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-012A	MW-28-025-EB-Q218	4/25/2018 10:22:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-013A	MW-28-025-Q218	4/25/2018 10:45:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-013B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-013C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-013D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-Apr-18

WorkOrder: N030006

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030006-013D	MW-28-025-Q218	4/25/2018 10:45:00 AM	5/9/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-014A	MW-906-Q218	4/25/2018 10:55:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-014B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-014C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-014D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-015A	MW-28-090-EB-Q218	4/25/2018 11:09:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-016A	MW-28-090-Q218	4/25/2018 11:48:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-016B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-016C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-016D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-017A	MW-33-040-EB-Q218	4/25/2018 9:05:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-018A	MW-33-040-Q218	4/25/2018 9:41:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-018B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-018C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-018D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-Apr-18

WorkOrder: N030006

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030006-019A	MW-704-Q218	4/25/2018 4:00:00 PM	5/9/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-020A	MW-705-Q218	4/25/2018 4:20:00 PM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-021A	FOLDER	5/9/2018	5/9/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/9/2018		Folder	Folder	☐	☐	☐	LAB
			5/9/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP
Project No.: RC000753.0801

ASSET Laboratories Work Order:
N030006

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N030006

May 16, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030006

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 25, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.0801
Lab Order:	N030006

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N030006-005, -006, -007, -008 and -018 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (1.2 ug/L) and hexavalent chromium (0 ug/L) for sample N030006-018 (MW-33-040-Q218) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N030006-001, -002, -005, -007 and -008 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (1.2 ug/L) and hexavalent chromium (0 ug/L) for sample N030006-018 (MW-33-040-Q218) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.2 and 0.16 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) is outside recovery criteria for Molybdenum in QC sample N030006-001D-MS since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT:	ARCADIS U.S., Inc. - California	
Project:	PG&E Topock - GMP, RC000753.0801	**CASE NARRATIVE**
Lab Order:	N030006	

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N030006-001D-MS and N030006-001D-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *16-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N030006
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030006-001A	MW-40D-Q218	Groundwater	4/25/2018 1:03:00 PM	4/25/2018	5/16/2018
N030006-001B	MW-40D-Q218	Groundwater	4/25/2018 1:03:00 PM	4/25/2018	5/16/2018
N030006-001C	MW-40D-Q218	Groundwater	4/25/2018 1:03:00 PM	4/25/2018	5/16/2018
N030006-001D	MW-40D-Q218	Groundwater	4/25/2018 1:03:00 PM	4/25/2018	5/16/2018
N030006-002A	MW-40D-SMT-Q218	Groundwater	4/25/2018 12:05:00 PM	4/25/2018	5/16/2018
N030006-002B	MW-40D-SMT-Q218	Groundwater	4/25/2018 12:05:00 PM	4/25/2018	5/16/2018
N030006-002C	MW-40D-SMT-Q218	Groundwater	4/25/2018 12:05:00 PM	4/25/2018	5/16/2018
N030006-002D	MW-40D-SMT-Q218	Groundwater	4/25/2018 12:05:00 PM	4/25/2018	5/16/2018
N030006-003A	MW-40S-Q218	Groundwater	4/25/2018 11:25:00 AM	4/25/2018	5/16/2018
N030006-003B	MW-40S-Q218	Groundwater	4/25/2018 11:25:00 AM	4/25/2018	5/16/2018
N030006-003C	MW-40S-Q218	Groundwater	4/25/2018 11:25:00 AM	4/25/2018	5/16/2018
N030006-003D	MW-40S-Q218	Groundwater	4/25/2018 11:25:00 AM	4/25/2018	5/16/2018
N030006-004A	MW-40S-SMT-Q218	Groundwater	4/25/2018 10:45:00 AM	4/25/2018	5/16/2018
N030006-004B	MW-40S-SMT-Q218	Groundwater	4/25/2018 10:45:00 AM	4/25/2018	5/16/2018
N030006-004C	MW-40S-SMT-Q218	Groundwater	4/25/2018 10:45:00 AM	4/25/2018	5/16/2018
N030006-004D	MW-40S-SMT-Q218	Groundwater	4/25/2018 10:45:00 AM	4/25/2018	5/16/2018
N030006-005A	MW-46-175-Q218	Groundwater	4/25/2018 3:26:00 PM	4/25/2018	5/16/2018
N030006-005B	MW-46-175-Q218	Groundwater	4/25/2018 3:26:00 PM	4/25/2018	5/16/2018
N030006-005C	MW-46-175-Q218	Groundwater	4/25/2018 3:26:00 PM	4/25/2018	5/16/2018
N030006-005D	MW-46-175-Q218	Groundwater	4/25/2018 3:26:00 PM	4/25/2018	5/16/2018
N030006-006A	MW-46-205-Q218	Groundwater	4/25/2018 2:36:00 PM	4/25/2018	5/16/2018
N030006-006B	MW-46-205-Q218	Groundwater	4/25/2018 2:36:00 PM	4/25/2018	5/16/2018
N030006-006C	MW-46-205-Q218	Groundwater	4/25/2018 2:36:00 PM	4/25/2018	5/16/2018
N030006-007A	MW-33-150-Q218	Groundwater	4/25/2018 1:16:00 PM	4/25/2018	5/16/2018
N030006-007B	MW-33-150-Q218	Groundwater	4/25/2018 1:16:00 PM	4/25/2018	5/16/2018
N030006-007C	MW-33-150-Q218	Groundwater	4/25/2018 1:16:00 PM	4/25/2018	5/16/2018
N030006-007D	MW-33-150-Q218	Groundwater	4/25/2018 1:16:00 PM	4/25/2018	5/16/2018
N030006-008A	MW-33-210-Q218	Groundwater	4/25/2018 2:10:00 PM	4/25/2018	5/16/2018
N030006-008B	MW-33-210-Q218	Groundwater	4/25/2018 2:10:00 PM	4/25/2018	5/16/2018

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.0801
Lab Order:	N030006
Contract No:	

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030006-008C	MW-33-210-Q218	Groundwater	4/25/2018 2:10:00 PM	4/25/2018	5/16/2018
N030006-008D	MW-33-210-Q218	Groundwater	4/25/2018 2:10:00 PM	4/25/2018	5/16/2018
N030006-009A	MW-47-115-Q218	Groundwater	4/25/2018 3:40:00 PM	4/25/2018	5/16/2018
N030006-009B	MW-47-115-Q218	Groundwater	4/25/2018 3:40:00 PM	4/25/2018	5/16/2018
N030006-009C	MW-47-115-Q218	Groundwater	4/25/2018 3:40:00 PM	4/25/2018	5/16/2018
N030006-010A	MW-29-EB-Q218	Groundwater	4/25/2018 8:29:00 AM	4/25/2018	5/16/2018
N030006-011A	MW-29-Q218	Groundwater	4/25/2018 9:02:00 AM	4/25/2018	5/16/2018
N030006-011B	MW-29-Q218	Groundwater	4/25/2018 9:02:00 AM	4/25/2018	5/16/2018
N030006-011C	MW-29-Q218	Groundwater	4/25/2018 9:02:00 AM	4/25/2018	5/16/2018
N030006-011D	MW-29-Q218	Groundwater	4/25/2018 9:02:00 AM	4/25/2018	5/16/2018
N030006-012A	MW-28-025-EB-Q218	Groundwater	4/25/2018 10:22:00 AM	4/25/2018	5/16/2018
N030006-013A	MW-28-025-Q218	Groundwater	4/25/2018 10:45:00 AM	4/25/2018	5/16/2018
N030006-013B	MW-28-025-Q218	Groundwater	4/25/2018 10:45:00 AM	4/25/2018	5/16/2018
N030006-013C	MW-28-025-Q218	Groundwater	4/25/2018 10:45:00 AM	4/25/2018	5/16/2018
N030006-013D	MW-28-025-Q218	Groundwater	4/25/2018 10:45:00 AM	4/25/2018	5/16/2018
N030006-014A	MW-906-Q218	Groundwater	4/25/2018 10:55:00 AM	4/25/2018	5/16/2018
N030006-014B	MW-906-Q218	Groundwater	4/25/2018 10:55:00 AM	4/25/2018	5/16/2018
N030006-014C	MW-906-Q218	Groundwater	4/25/2018 10:55:00 AM	4/25/2018	5/16/2018
N030006-014D	MW-906-Q218	Groundwater	4/25/2018 10:55:00 AM	4/25/2018	5/16/2018
N030006-015A	MW-28-090-EB-Q218	Groundwater	4/25/2018 11:09:00 AM	4/25/2018	5/16/2018
N030006-016A	MW-28-090-Q218	Groundwater	4/25/2018 11:48:00 AM	4/25/2018	5/16/2018
N030006-016B	MW-28-090-Q218	Groundwater	4/25/2018 11:48:00 AM	4/25/2018	5/16/2018
N030006-016C	MW-28-090-Q218	Groundwater	4/25/2018 11:48:00 AM	4/25/2018	5/16/2018
N030006-016D	MW-28-090-Q218	Groundwater	4/25/2018 11:48:00 AM	4/25/2018	5/16/2018
N030006-017A	MW-33-040-EB-Q218	Groundwater	4/25/2018 9:05:00 AM	4/25/2018	5/16/2018
N030006-018A	MW-33-040-Q218	Groundwater	4/25/2018 9:41:00 AM	4/25/2018	5/16/2018
N030006-018B	MW-33-040-Q218	Groundwater	4/25/2018 9:41:00 AM	4/25/2018	5/16/2018
N030006-018C	MW-33-040-Q218	Groundwater	4/25/2018 9:41:00 AM	4/25/2018	5/16/2018
N030006-018D	MW-33-040-Q218	Groundwater	4/25/2018 9:41:00 AM	4/25/2018	5/16/2018
N030006-019A	MW-704-Q218	Groundwater	4/25/2018 4:00:00 PM	4/25/2018	5/16/2018

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.0801
Lab Order:	N030006
Contract No:	

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030006-020A	MW-705-Q218	Groundwater	4/25/2018 4:20:00 PM	4/25/2018	5/16/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 1:03:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180426C**	QC Batch: **R123662**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-SMT-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 12:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate Analyst: **LR**							
Specific Conductance	15000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40S-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180426C**	QC Batch: **R123662**			PrepDate			Analyst: **LR**
Specific Conductance	1700	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40S-SMT-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate							Analyst: **LR**
Specific Conductance	1600	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 3:26:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180426C** QC Batch: **R123662**				PrepDate			Analyst: **LR**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 2:36:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180426C**	QC Batch: **R123662**			PrepDate			Analyst: **LR**
Specific Conductance	22000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 1:16:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180426C**	QC Batch: **R123662**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 2:10:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate							Analyst: **LR**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-115-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate							Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:02:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180426C**	QC Batch: **R123662**			PrepDate			Analyst: **LR**
Specific Conductance	2900	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate							Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:55:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180426C** QC Batch: **R123662**				PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180426C** QC Batch: **R123662** PrepDate							Analyst: **LR**
Specific Conductance	6100	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:41:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180426C**	QC Batch: **R123662**			PrepDate			Analyst: **LR**
Specific Conductance	8100	0.10	0.10		umhos/cm	1	4/26/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030006-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123662**
Client ID: **ZZZZZZ** Batch ID: **R123662** TestNo: **EPA 120.1** Analysis Date: **4/26/2018** SeqNo: **3009437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	15610.000	0.10						15580	0.192	2	

Sample ID **N030006-018BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123662**
Client ID: **ZZZZZZ** Batch ID: **R123662** TestNo: **EPA 120.1** Analysis Date: **4/26/2018** SeqNo: **3009451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	8090.000	0.10						8070	0.248	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 1:03:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180426A**	QC Batch: **R123708**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	120	0.66	4.0		µg/L	20	4/26/2018 10:40 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate		**4/26/2018**	Analyst: **CEI**
Chromium	120	0.13	1.0		µg/L	1	5/11/2018 10:35 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-SMT-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 12:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate							Analyst: **RAB**
Hexavalent Chromium	25	0.17	1.0		µg/L	5	4/26/2018 06:35 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67852** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	31	0.13	1.0		µg/L	1	5/11/2018 11:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40S-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180426A**	QC Batch: **R123708**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	20	0.17	1.0		µg/L	5	4/26/2018 03:33 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	20	0.13	1.0		µg/L	1	5/12/2018 12:15 AM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030006
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N030006-004

Client Sample ID: MW-40S-SMT-Q218
Collection Date: 4/25/2018 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180426A**	QC Batch: **R123708**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	18	0.17	1.0		µg/L	5	4/26/2018 06:54 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate		**4/26/2018**	Analyst: **CEI**
Chromium	17	0.13	1.0		µg/L	1	5/12/2018 12:26 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 3:26:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180426A** QC Batch: **R123708**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	7.4	0.17	1.0		µg/L	5	4/26/2018 07:13 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67852**				PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	8.3	0.13	1.0		µg/L	1	5/12/2018 12:37 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 2:36:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/26/2018 12:15 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67852** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/12/2018 12:48 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 1:16:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180426A**	QC Batch: **R123708**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	5.2	0.17	1.0		µg/L	5	4/26/2018 12:34 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate		**4/26/2018**	Analyst: **CEI**
Chromium	5.0	0.13	1.0		µg/L	1	5/12/2018 12:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 2:10:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate Analyst: **RAB**							
Hexavalent Chromium	6.0	0.17	1.0		µg/L	5	4/26/2018 07:51 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67852** PrepDate **4/26/2018** Analyst: **CEI**							
Chromium	5.9	0.13	1.0		µg/L	1	5/12/2018 01:21 AM

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-115-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180426A**	QC Batch: **R123708**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	23	0.17	1.0		µg/L	5	4/26/2018 01:11 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	23	0.13	1.0		µg/L	1	5/12/2018 01:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-EB-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 8:29:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:02:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 02:08 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67852** PrepDate **4/26/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/12/2018 01:43 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-EB-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:22:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180426A**	QC Batch: **R123708**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 02:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180426A** QC Batch: **R123708**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 02:46 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67852**				PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/12/2018 01:54 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:55:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180426A** QC Batch: **R123708**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 03:05 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67852**				PrepDate		**4/26/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/12/2018 02:05 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-EB-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:09:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 04:42 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180426A** QC Batch: **R123708**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 05:01 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67852**				PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/12/2018 02:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-EB-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:05:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 05:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:41:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180426A** QC Batch: **R123708**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/26/2018 04:23 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67852**				PrepDate	**4/26/2018**		Analyst: **CEI**
Chromium	1.2	0.13	1.0		µg/L	1	5/12/2018 02:39 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-704-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180426A**	QC Batch: **R123708**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 05:58 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-705-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 4:20:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180426A** QC Batch: **R123708** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/26/2018 06:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123708** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **PBW** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123708** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **LCSW** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.071	0.20	5.000	0	101	90	110				

Sample ID **N030006-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	232.334	4.0	100.0	123.5	109	90	110				

Sample ID **N030006-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.451	1.0	5.000	0.4390	100	90	110				

Sample ID **N030006-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.233	1.0	5.000	5.207	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030006-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	48.367	1.0	25.00	22.84	102	90	110				

Sample ID **N030006-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.047	0.20	1.000	0	105	90	110				

Sample ID **N030006-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0	104	90	110				

Sample ID **N030006-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.040	0.20	1.000	0	104	90	110				

Sample ID **N030006-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.996	0.20	1.000	0	99.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030006-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.016	0.20	1.000	0	102	90	110				

Sample ID **N030006-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	227.426	4.0	100.0	123.5	104	90	110	232.3	2.14	20	

Sample ID **N030006-003ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	18.965	1.0						19.50	2.79	20	

Sample ID **N030006-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	45.577	1.0	25.00	19.50	104	90	110				

Sample ID **N030006-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.995	1.0	5.000	0	99.9	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030006-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.005	0.20	1.000	0	100	90	110				

Sample ID **N030006-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.922	0.20	1.000	0	92.2	90	110				

Sample ID **N030006-017AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0	107	90	110				

Sample ID **N030006-019AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011091**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.020	0.20	1.000	0	102	90	110				

Sample ID **N030006-020AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.030	0.20	1.000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030006-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	49.143	1.0	25.00	24.68	97.9	90	110				

Sample ID **N030006-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	44.288	1.0	25.00	18.04	105	90	110				

Sample ID **N030006-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.220	1.0	5.000	7.444	95.5	90	110				

Sample ID **N030006-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.870	1.0	5.000	5.964	98.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-67852** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **PBW** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-67852** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **LCSW** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.385	1.0	10.00	0	93.8	85	115				

Sample ID **N030006-001D-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024178**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	120.846	1.0	10.00	116.0	48.8	75	125				S

Sample ID **N030006-001D-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	120.459	1.0	10.00	116.0	44.9	75	125	120.8	0.320	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 1:03:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180509B** QC Batch: **R123948** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	2.7	0.16	0.25		mg/L	5	5/9/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-SMT-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 12:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180509B** QC Batch: **R123948**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.55	0.032	0.050		mg/L	1	5/9/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40S-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C**	QC Batch: **R123927**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	9.5	0.32	0.50		mg/L	10	5/8/2018

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40S-SMT-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C** QC Batch: **R123927**			PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	14	0.32	0.50		mg/L	10	5/8/2018

Qualifiers:

- B — Analyte detected in the associated Method Blank
- H — Holding times for preparation or analysis exceeded
- S — Spike/Surrogate outside of limits due to matrix interference
- DO — Surrogate Diluted Out
- E — Value above quantitation range
- ND — Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 3:26:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C** QC Batch: **R123927**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	1.1	0.032	0.050		mg/L	1	5/8/2018

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 1:16:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C** QC Batch: **R123927**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	1.3	0.032	0.050		mg/L	1	5/8/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 2:10:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C** QC Batch: **R123927**			PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	1.4	0.063	0.10		mg/L	2	5/8/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:02:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C**	QC Batch: **R123927**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.050	0.032	0.050		mg/L	1	5/8/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:55:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C**	QC Batch: **R123927**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/8/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:41:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R123927** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **PBW** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R123927** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **LCSW** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.489	0.050	0.5000	0	97.9	85	115				

Sample ID **N030006-004CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **ZZZZZZ** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	14.553	0.50						14.22	2.29	20	

Sample ID **N030006-003CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **ZZZZZZ** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	13.350	0.50	5.000	9.474	77.5	75	125				

Sample ID **N030006-003CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **ZZZZZZ** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	13.371	0.50	5.000	9.474	77.9	75	125	13.35	0.157	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R123948** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123948**
Client ID: **PBW** Batch ID: **R123948** TestNo: **SM4500-NO3** Analysis Date: **5/9/2018** SeqNo: **3021451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R123948** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123948**
Client ID: **LCSW** Batch ID: **R123948** TestNo: **SM4500-NO3** Analysis Date: **5/9/2018** SeqNo: **3021452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.505	0.050	0.5000	0	101	85	115				

Sample ID **N030006-001CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123948**
Client ID: **ZZZZZZ** Batch ID: **R123948** TestNo: **SM4500-NO3** Analysis Date: **5/9/2018** SeqNo: **3021454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	4.997	0.25	2.500	2.721	91.0	75	125				

Sample ID **N030006-001CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123948**
Client ID: **ZZZZZZ** Batch ID: **R123948** TestNo: **SM4500-NO3** Analysis Date: **5/9/2018** SeqNo: **3021455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.630	0.25	2.500	2.721	116	75	125	4.996	11.9	20	

Sample ID **N030006-002CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123948**
Client ID: **ZZZZZZ** Batch ID: **R123948** TestNo: **SM4500-NO3** Analysis Date: **5/9/2018** SeqNo: **3021457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.566	0.050						0.5478	3.32	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 1:03:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67852**				PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	4.4	0.081	0.10		µg/L	1	5/11/2018 10:35 PM
Manganese	5.1	0.26	0.50		µg/L	1	5/11/2018 10:35 PM
Molybdenum	50	1.1	2.5		µg/L	5	5/11/2018 11:08 PM
Selenium	1.8	0.36	0.50		µg/L	1	5/11/2018 10:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40D-SMT-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 12:05:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67852**				PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	4.3	0.41	0.50		µg/L	5	5/11/2018 11:58 PM
Manganese	33	0.26	0.50		µg/L	1	5/11/2018 11:52 PM
Molybdenum	45	1.1	2.5		µg/L	5	5/11/2018 11:58 PM
Selenium	ND	1.8	2.5		µg/L	5	5/11/2018 11:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40S-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	3.9	0.081	0.10		µg/L	1	5/12/2018 12:15 AM
Manganese	0.50	0.26	0.50		µg/L	1	5/12/2018 12:15 AM
Molybdenum	27	0.21	0.50		µg/L	1	5/12/2018 12:15 AM
Selenium	6.1	0.36	0.50		µg/L	1	5/12/2018 12:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-40S-SMT-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67852**					PrepDate **4/26/2018**		Analyst: **CEI**
Arsenic	4.0	0.081	0.10		µg/L	1	5/12/2018 12:26 AM
Manganese	ND	0.26	0.50		µg/L	1	5/12/2018 12:26 AM
Molybdenum	26	0.21	0.50		µg/L	1	5/12/2018 12:26 AM
Selenium	5.7	0.36	0.50		µg/L	1	5/12/2018 12:26 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 3:26:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C** QC Batch: **67852**				PrepDate **4/26/2018**			Analyst: **CEI**
Molybdenum	170	1.1	2.5		µg/L	5	5/12/2018 12:42 AM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 12:42 AM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 1:16:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A				**EPA 6020**			
RunID: **NV00922-ICP7_180511C** QC Batch: **67852**				PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	1.4	0.081	0.10		µg/L	1	5/12/2018 12:59 AM
Manganese	23	0.26	0.50		µg/L	1	5/12/2018 12:59 AM
Molybdenum	47	1.1	2.5		µg/L	5	5/12/2018 01:04 AM
Selenium	0.79	0.36	0.50		µg/L	1	5/12/2018 12:59 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 2:10:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180515A**	QC Batch: **67852**			PrepDate		**4/26/2018**	Analyst: **CEI**
Arsenic	1.2	0.41	0.50		µg/L	5	5/15/2018 01:01 PM
Manganese	7.2	0.26	0.50		µg/L	1	5/12/2018 01:21 AM
Molybdenum	20	1.1	2.5		µg/L	5	5/12/2018 01:27 AM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 01:27 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:02:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**				PrepDate **4/26/2018**		Analyst: **CEI**
Arsenic	9.8	0.081	0.10		µg/L	1	5/12/2018 01:43 AM
Manganese	360	1.3	2.5		µg/L	5	5/12/2018 01:49 AM
Molybdenum	19	0.21	0.50		µg/L	1	5/12/2018 01:43 AM
Selenium	ND	0.36	0.50		µg/L	1	5/12/2018 01:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate **4/26/2018**			Analyst: **CEI**
Arsenic	0.88	0.081	0.10		µg/L	1	5/12/2018 01:54 AM
Manganese	28	0.26	0.50		µg/L	1	5/12/2018 01:54 AM
Molybdenum	4.2	0.21	0.50		µg/L	1	5/12/2018 01:54 AM
Selenium	ND	0.36	0.50		µg/L	1	5/12/2018 01:54 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 10:55:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A / **EPA 6020**							
RunID: **NV00922-ICP7_180511C** QC Batch: **67852** PrepDate **4/26/2018** Analyst: **CEI**							
Arsenic	0.86	0.081	0.10		µg/L	1	5/12/2018 02:05 AM
Manganese	28	0.26	0.50		µg/L	1	5/12/2018 02:05 AM
Molybdenum	4.2	0.21	0.50		µg/L	1	5/12/2018 02:05 AM
Selenium	ND	0.36	0.50		µg/L	1	5/12/2018 02:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 11:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180511C**	QC Batch: **67852**			PrepDate	**4/26/2018**		Analyst: **CEI**
Arsenic	1.8	0.081	0.10		µg/L	1	5/12/2018 02:28 AM
Manganese	190	1.3	2.5		µg/L	5	5/12/2018 02:33 AM
Molybdenum	23	0.21	0.50		µg/L	1	5/12/2018 02:28 AM
Selenium	ND	0.36	0.50		µg/L	1	5/12/2018 02:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q218
Lab Order:	N030006	**Collection Date:**	4/25/2018 9:41:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030006-018		

DISSOLVED METALS BY ICP-MS EPA 3010A EPA 6020

RunID: **NV00922-ICP7_180511C** QC Batch: **67852** PrepDate **4/26/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	11	0.081	0.10		µg/L	1	5/12/2018 02:39 AM
Manganese	18	0.26	0.50		µg/L	1	5/12/2018 02:39 AM
Molybdenum	130	0.21	0.50		µg/L	1	5/12/2018 02:39 AM
Selenium	ND	0.36	0.50		µg/L	1	5/12/2018 02:39 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-67852** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **PBW** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-67852** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **LCSW** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.976	0.10	10.00	0	99.8	85	115				
Manganese	104.294	0.50	100.0	0	104	85	115				
Molybdenum	9.888	0.50	10.00	0	98.9	85	115				
Selenium	9.594	0.50	10.00	0	95.9	85	115				

Sample ID **N030006-001D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.673	0.10	10.00	4.418	103	75	125				
Manganese	93.390	0.50	100.0	5.142	88.2	75	125				
Selenium	12.087	0.50	10.00	1.789	103	75	125				

Sample ID **N030006-001D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	64.266	2.5	10.00	50.14	141	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030006
Project:	PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030006-001D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.746	0.10	10.00	4.418	103	75	125	14.67	0.497	20	
Manganese	92.826	0.50	100.0	5.142	87.7	75	125	93.39	0.606	20	
Selenium	12.414	0.50	10.00	1.789	106	75	125	12.09	2.68	20	

Sample ID **N030006-001D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **4/26/2018** RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024282**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	62.597	2.5	10.00	50.14	125	75	125	64.27	2.63	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: Date: 4/25/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	
Project Name: PG&E Topock - GMP	Signature: Date: 4/25/2018	
Project Number: RC000753.0801		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		
6. Method of Cooling:		

Sample Temp: 2.9℃ / 3.5℃/2.6℃

Courier:

Tracking No.:

Matrix:

Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030006-01	MW-40D-Q218	4/25/2018	13:03		X			X			X	X				E	4	P	BNS	
2	-02	MW-40D-SMT-Q218	4/25/2018	12:05		X			X			X	X				E	4	P	BNS	
3	-03	MW-40S-Q218	4/25/2018	11:25		X			X			X	X				E	4	P	BNS	
4	-04	MW-40S-SMT-Q218	4/25/2018	10:45		X			X			X	X				E	4	P	BNS	
5	-05	MW-46-175-Q218	4/25/2018	15:26		X			X			X		X			E	4	P	BNS	
6	-06	MW-46-205-Q218	4/25/2018	14:36		X			X						X		E	3	P	BN	
7	-07	MW-33-150-Q218	4/25/2018	13:16		X			X			X	X				E	4	P	BNS	
8	-08	MW-33-210-Q218	4/25/2018	14:10		X			X			X	X				E	4	P	BNS	
9	-09	MW-47-115-Q218	4/25/2018	15:40		X			X						X		E	3	P	BN	
10	-10	MW-29-EB-Q218	4/25/2018	8:29		X											E	1	P	B	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	4/25/18 1645		4/25/18 1645
	4/25/18 1558		4/25/18 1558

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com, daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#:
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: [signature] Date: 4/25/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	
Project Name: PG&E Topock - GMP	Signature: [signature] Date: 4/25/2018	
Project Number: RC000753.0801		

Matrix

Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		
6. Method of Cooling:		

Sample Temp: 2.0℃ / 5.5℃ / 2.6℃

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly	Specific Conductance (EPA 120.1) — 1 liter poly	Total Dissolved Solids (SM92540) — 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 — 125 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030006-11	MW-29-Q218	4/25/2018	9:02			X		X			X	X					E	5	P	BNS	
2	-12	MW-28-025-EB-Q218	4/25/2018	10:22		X												E	1	P	B	
3	-13	MW-28-025-Q218	4/25/2018	10:45			X		X			X	X					E	5	P	BNS	
4	-14	MW-906-Q218	4/25/2018	10:55			X		X			X	X					E	5	P	BNS	
5	-15	MW-28-090-EB-Q218	4/25/2018	11:09		X												E	1	P	B	
6	-16	MW-28-090-Q218	4/25/2018	11:48			X		X			X	X					E	5	P	BNS	
7	-17	MW-33-040-EB-Q218	4/25/2018	9:05		X												E	1	P	B	
8	-18	MW-33-040-Q218	4/25/2018	9:41			X		X			X	X					E	5	P	BNS	
9	-19	MW-704-Q218	4/25/2018	16:00		X												E	1	P	B	
10	-20	MW-705-Q218	4/25/2018	16:20		X												E	1	P	B	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
[signature]	4/25/18 1645	[signature]	4/25/18 1645
[signature]	4/25/18 1858	[signature]	4/25/18 1858

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn$(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 4/25/2018 Workorder: N030006

Rep sample Temp (Deg C): 2.9/3.5/2.6 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR [signature] 4/30/2018

Reviewed By: [signature] 05/02/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/1/2018 6:08 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>, Kalib Sumter <Kalib.Sumter@critigen.com>, Dan Moore <Daniel.Moore@critigen.com>

Hi Yoandra,
Method 6020 is acceptable.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, April 30, 2018 8:48 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)

Hi Laura,

Please kindly check the attached COCs. Some samples are requested to be analyzed for As, Cr, Mn, Mo and Se by 6010.

Please kindly confirm if they can be analyzed by 6020 instead of 6010, as we have been doing before.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

ASSET Laboratories

WORK ORDER Summary

26-Apr-18

WorkOrder: N030006

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030006-001A	MW-40D-Q218	4/25/2018 1:03:00 PM	5/9/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-001B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-001C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-001D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-002A	MW-40D-SMT-Q218	4/25/2018 12:05:00 PM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-002B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-002C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-002D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-003A	MW-40S-Q218	4/25/2018 11:25:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-003B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-003C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-003D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-004A	MW-40S-SMT-Q218	4/25/2018 10:45:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-004B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-004C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-Apr-18

WorkOrder: N030006

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030006-004D	MW-40S-SMT-Q218	4/25/2018 10:45:00 AM	5/9/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-005A	MW-46-175-Q218	4/25/2018 3:26:00 PM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-005B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-005C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-005D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-006A	MW-46-205-Q218	4/25/2018 2:36:00 PM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-006B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-006C			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-007A	MW-33-150-Q218	4/25/2018 1:16:00 PM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-007B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-007C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-007D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-008A	MW-33-210-Q218	4/25/2018 2:10:00 PM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-008B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-Apr-18

WorkOrder: N030006

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030006-008C	MW-33-210-Q218	4/25/2018 2:10:00 PM	5/9/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-008D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-009A	MW-47-115-Q218	4/25/2018 3:40:00 PM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-009B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-009C			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-010A	MW-29-EB-Q218	4/25/2018 8:29:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-011A	MW-29-Q218	4/25/2018 9:02:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-011B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-011C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-011D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-012A	MW-28-025-EB-Q218	4/25/2018 10:22:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-013A	MW-28-025-Q218	4/25/2018 10:45:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-013B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-013C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-013D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-Apr-18

WorkOrder: N030006

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030006-013D	MW-28-025-Q218	4/25/2018 10:45:00 AM	5/9/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-014A	MW-906-Q218	4/25/2018 10:55:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-014B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-014C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-014D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-015A	MW-28-090-EB-Q218	4/25/2018 11:09:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-016A	MW-28-090-Q218	4/25/2018 11:48:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-016B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-016C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-016D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030006-017A	MW-33-040-EB-Q218	4/25/2018 9:05:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-018A	MW-33-040-Q218	4/25/2018 9:41:00 AM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-018B			5/9/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030006-018C			5/9/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030006-018D			5/9/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-Apr-18

WorkOrder: N030006

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030006-019A	MW-704-Q218	4/25/2018 4:00:00 PM	5/9/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-020A	MW-705-Q218	4/25/2018 4:20:00 PM	5/9/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030006-021A	FOLDER	5/9/2018	5/9/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/9/2018		Folder	Folder	☐	☐	☐	LAB
			5/9/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N030006

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123662 **Analyst:** LSR

ASSET #: N030006 **Date Analyzed:** 4/26/2018

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Lidia Ramit Date: 5/1/2018

2nd Level Reviewer Nancy 5/9/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 4/25/18 1000
Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 uS/cm	GNV-1801084	9.78 @ 25.2°C	% Rec: (90-110%)
1412	1804317	1423 @ 25.4°C	
9987	180108B	9930 25.4°C	
99601	1802018	99400 25.4°C	

	Sample ID	Matrix	Reading	Comments
1	N029973-015B	H2O	1773 @21.6°C	
2	17B		10160 @21.6°C	
3	17B DUP		10120 @21.2°C	
4	18B		2050 @22.2°C	
5	20B		8880 @22.4°C	
6				
7				
8				
9	1413 uS/cm	GNV-171121C	1436 @25.2°C	
10	10000	180108C	10060 @25.4°C	2%
Dup	99672	171215A	99600 @25.4°C	Accept: ~~10% water, 20% soil~~ 4/25/18 LSR
	Std Chk:			% Rec: (90-110%)

Date: 4/26/18 1420
Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 uS/cm	GNV-180108A	9.78 @25.2°C	% Rec: (90-110%)
1412	180131A	1422 @25.4°C	
9987	180108B	9930 @25.4°C	
99601	1802018	102200 @25.5°C	

	Sample ID	Matrix	Reading	Comments
1	N030006-001B	H2O	15550 @25.5°C	
2	1B DUP		15610 @25.7°C	STD CHK:
3	2B		15160 @25.3°C	1413 - GNV 171121C
4	3B		1694 @25.3°C	= 1447 @ 25.4°C
5	4B		1630 @25.2°C	10000 - GNV180108C
6	5B		18850 @25.2°C	= 10390 @ 25.5°C
7	6B		21600 @25.6°C	99672 - GNV 171215A
8	7B		14380 @25.2°C	= 100400 @ 25.5°C
9	8B		18460 @25.3°C	
10	9B		12800 @25.2°C	2%
Dup	11B		2930 @25.3°C	Accept: 10% water ~~20% soil~~ 4/26/18 LSR
	Std Chk:			% Rec: (90-110%)

Julia Ramit 5/1/2018

Logbook # 6

Conductivity Logbook

Date: 4/26/18 1420
Analyst: LSR

CONT'D

Standard	Std ID	Reading	Comments
9.65 us/cm	CINV-180108A	9.78 @ 25.2°C	% Rec: (90-110%)
1412	180131A	~~1423~~ @ 25.4°C	
9987	180108B	99~~80~~ @ 25.4°C	
99601	180201A	~~103200~~ 99400 @ 25.5°C	

	Sample ID	Matrix	Reading	Comments
1	N030006-013B	H_2O	1019 @ 25.5°C	
2	14B		1025 @ 25.5°C	
3	16B		6080 @ 25.4°C	
4	18B		8070 @ 25.5°C	
5	18B DUP		8090 @ 25.7°C	
6				
7				
8				
9	1413 us/cm	CINV-171121C	1453 @ 25.5°C	
10	10000	180108C	10380 @ 25.5°C	2%
Dup	99672	171215A	101900 @ 25.5°C	Accept: 10% water, ~~20% soil~~ 4/26/18 LSR
	Std Chk:			% Rec: (90-110%)

Julia Ramit 5/1/2018

Date: 4/27/18 1100
Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 us/cm	CINV-180108A	9.75 @ 24.5°C	% Rec: (90-110%)
1412	180131A	1408 @ 24.8°C	
9987	180108B	9960 @ 24.7°C	
99601	180201A	99130 @ 24.8°C	

	Sample ID	Matrix	Reading	Comments
1	N030017-001B	H_2O	14780 @ 22.3°C	
2	1B DUP		14830 @ 22.0°C	STD CHK:
3	2B		15160 @ 22.1°C	1413 - CINV 171121C
4	5B		5960 @ 21.8°C	= 1445 @ 24.0°C
5	6B		14790 @ 22.2°C	10000 - CINV 180108C
6	7B		14930 @ 21.6°C	= 10250 @ 24.2°C
7	8B		14880 @ 21.7°C	99672 - CINV 171215A
8	9B		19560 @ 21.4°C	= 101600 @ 24.2°C
9	10B		19890 @ 21.5°C	
10	11B		13820 @ 21.1°C	2% 4/27/18 LSR
Dup	12B		4220 @ 21.6°C	Accept: 10% water, ~~20% soil~~
	Std Chk:			% Rec: (90-110%)

Logbook # 6

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R123708
ASSET #: N030006

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 4/26/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ___________

Initial Calibration and Initial Calibration Verification	**Ist Level Review**			**2nd Level Review**		
	Y	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

~~and 018~~

Dilution was necessary in N030006-005A/006A/007A/008A due to matrix interference.

~~with confirmation for sample N030006-018~~

SECOND LEVEL REVIEW:

	Y	**N**	**N/A**
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 5/1/2018

2nd Level Reviewer: [signature] 5/9/2018 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}\text{ ,µg/L} = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N030006-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}\text{ ,µg/L} = 6.1726 * 20$$

$$Cr^{+6}\text{ ,µg/L} = 123.4520$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}\text{ ,µg/L} = 120}$$

rba 5/1/2018

ANALYSIS RUN LOG

INJECTION LOG: 180402B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	ICV	ICV	1	Hexavalent Chromium	04/02/18 1:50 PM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/02/18 2:01 PM	Reported
13	ICB	ICB	1	Hexavalent Chromium	04/02/18 2:18 PM	Reported
14	MB-R123054	MBLK	1	Hexavalent Chromium	04/02/18 2:30 PM	Reported
15	LCS-R123054	LCS	1	Hexavalent Chromium	04/02/18 2:39 PM	Reported
16	N029480-001A	SAMP	1	Hexavalent Chromium	04/02/18 2:49 PM	Not Reported
17	N029443-001G	SAMP	1	Hexavalent Chromium	04/02/18 2:58 PM	Reported
18	N029444-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:08 PM	Reported
19	N029445-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:17 PM	Reported
20	N029446-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:27 PM	Reported
21	N029480-001A	SAMP	5	Hexavalent Chromium	04/02/18 3:36 PM	Reported
22	N029480-002A	SAMP	5	Hexavalent Chromium	04/02/18 3:45 PM	Reported
23	N029480-001ADUP	DUP	5	Hexavalent Chromium	04/02/18 3:55 PM	Reported
24	CCV-1	CCV1	1	Hexavalent Chromium	04/02/18 4:04 PM	Reported
25	CCB-1	CCB	1	Hexavalent Chromium	04/02/18 4:14 PM	Reported
26	N029480-001AMS	MS	5	Hexavalent Chromium	04/02/18 4:23 PM	Reported
27	N029480-001AMSD	MSD	5	Hexavalent Chromium	04/02/18 4:33 PM	Reported
28	CCV-2	CCV	1	Hexavalent Chromium	04/02/18 4:42 PM	Reported
29	CCB-2	CCB	1	Hexavalent Chromium	04/02/18 4:52 PM	Reported

rba 4/3/2018

Injection Log Summary

Sequence Details

Name:	**IC-07_180402B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**02/Apr/18 17:22:28**
No. of Injections:	**32**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	ICV,ICV,1,	11	1000	Unknown		04/02/2018 13:50	Finished	ICV @5ppb, IWST-180129B
12	PQL@0.2ppb,CCV2,1	12	1000	Unknown		04/02/2018 14:01	Finished	PQL @ 0.2ppb
13	ICB,ICB,1,	13	1000	Unknown		04/02/2018 14:18	Finished	ICB R180329A
14	MB-H2O,MBLK,1,	14	1000	Unknown		04/02/2018 14:30	Finished	MB R180302A
15	LCS-H2O,LCS,1,	15	1000	Unknown		04/02/2018 14:39	Finished	LCS, IWST-180129B
16	N029480-001A,SAMF	16	1000	Unknown		04/02/2018 14:49	Finished	SAMP,10mL
17	N029443-001G,SAMF	17	1000	Unknown		04/02/2018 14:58	Finished	SAMP,10mL
18	N029444-001G,SAMF	18	1000	Unknown		04/02/2018 15:08	Finished	SAMP,10mL
19	N029445-001G,SAMF	19	1000	Unknown		04/02/2018 15:17	Finished	SAMP,10mL
20	N029446-001G,SAMF	20	1000	Unknown		04/02/2018 15:27	Finished	SAMP,10mL
21	N029480-001A,SAMF	21	1000	Unknown		04/02/2018 15:36	Finished	SAMP,2>10mL
22	N029480-002A,SAMF	22	1000	Unknown		04/02/2018 15:45	Finished	SAMP,2>10mL
23	N029480-001ADUP,D	23	1000	Unknown		04/02/2018 15:55	Finished	DUP,2>10mL
24	CCV-1,CCV1,1,	24	1000	Unknown		04/02/2018 16:04	Finished	CCV @10ppb, IWST-180129A
25	CCB-1,CCB,1,	25	1000	Unknown		04/02/2018 16:14	Finished	CCB R180302A
26	N029480-001AMS,MS	26	1000	Unknown		04/02/2018 16:23	Finished	SAMP,10mL
27	N029480-001AMSD,M	27	1000	Unknown		04/02/2018 16:33	Finished	MS (1ppb), IWST-180129B,1>1
28	CCV-2,CCV,1,	28	1000	Unknown		04/02/2018 16:42	Finished	CCV @5ppb, IWST-180129A
29	CCB-2,CCB,1,	29	1000	Unknown		04/02/2018 16:52	Finished	CCB R180302A
30	SHUTDOWN	30	1000	Unknown		04/02/2018 17:01	Finished	
31	Eluent: R180402B	31	1000	Unknown		n.a.	Finished	Eluent
32	PCR: R180402C	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 4/3/2018

INJECTION LOG: 180426A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	04/26/18 9:32 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	04/26/18 9:43 AM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	04/26/18 9:53 AM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/26/18 10:02 AM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	04/26/18 10:12 AM	Reported
16	MB-R123708	MBLK	1	Hexavalent Chromium	04/26/18 10:21 AM	Reported
17	LCS-R123708	LCS	1	Hexavalent Chromium	04/26/18 10:31 AM	Reported
18	N030006-001A	SAMP	20	Hexavalent Chromium	04/26/18 10:40 AM	Reported
19	N030006-001AMS	MS	20	Hexavalent Chromium	04/26/18 10:49 AM	Reported
20	N030006-002A	SAMP	20	Hexavalent Chromium	04/26/18 10:59 AM	Not Reported
21	N030006-002AMS	MS	20	Hexavalent Chromium	04/26/18 11:08 AM	Not Reported
22	N030006-003A	SAMP	1	Hexavalent Chromium	04/26/18 11:18 AM	Not Reported
23	N030006-004A	SAMP	1	Hexavalent Chromium	04/26/18 11:27 AM	Not Reported
24	N030006-005A	SAMP	2	Hexavalent Chromium	04/26/18 11:37 AM	Not Reported
25	N030006-005AMS	MS	2	Hexavalent Chromium	04/26/18 11:46 AM	Not Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	04/26/18 11:56 AM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	04/26/18 12:05 PM	Reported
28	N030006-006A	SAMP	5	Hexavalent Chromium	04/26/18 12:15 PM	Reported
29	N030006-006AMS	MS	5	Hexavalent Chromium	04/26/18 12:24 PM	Reported
30	N030006-007A	SAMP	5	Hexavalent Chromium	04/26/18 12:34 PM	Reported
31	N030006-007AMS	MS	5	Hexavalent Chromium	04/26/18 12:43 PM	Reported
32	N030006-008A	SAMP	2	Hexavalent Chromium	04/26/18 12:52 PM	Not Reported
33	N030006-008AMS	MS	2	Hexavalent Chromium	04/26/18 1:02 PM	Not Reported
34	N030006-009A	SAMP	5	Hexavalent Chromium	04/26/18 1:11 PM	Reported
35	N030006-009AMS	MS	5	Hexavalent Chromium	04/26/18 1:21 PM	Reported
36	N030006-010A	SAMP	1	Hexavalent Chromium	04/26/18 1:30 PM	Reported
37	N030006-010AMS	MS	1	Hexavalent Chromium	04/26/18 1:40 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	04/26/18 1:49 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	04/26/18 1:59 PM	Reported
40	N030006-011A	SAMP	1	Hexavalent Chromium	04/26/18 2:08 PM	Reported
41	N030006-011AMS	MS	1	Hexavalent Chromium	04/26/18 2:18 PM	Reported
42	N030006-012A	SAMP	1	Hexavalent Chromium	04/26/18 2:27 PM	Reported

INJECTION LOG: 180426A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030006-012AMS	MS	1	Hexavalent Chromium	04/26/18 2:37 PM	Reported
44	N030006-013A	SAMP	1	Hexavalent Chromium	04/26/18 2:46 PM	Reported
45	N030006-013AMS	MS	1	Hexavalent Chromium	04/26/18 2:56 PM	Reported
46	N030006-014A	SAMP	1	Hexavalent Chromium	04/26/18 3:05 PM	Reported
47	N030006-014AMS	MS	1	Hexavalent Chromium	04/26/18 3:14 PM	Reported
48	N030006-001AMSD	MSD	20	Hexavalent Chromium	04/26/18 3:24 PM	Reported
49	N030006-003A	SAMP	5	Hexavalent Chromium	04/26/18 3:33 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	04/26/18 3:44 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	04/26/18 3:55 PM	Reported
52	N030006-003ADUP	DUP	5	Hexavalent Chromium	04/26/18 4:04 PM	Reported
53	N030006-003AMS	MS	5	Hexavalent Chromium	04/26/18 4:14 PM	Reported
54	N030006-018A	SAMP	5	Hexavalent Chromium	04/26/18 4:23 PM	Reported
55	N030006-018AMS	MS	5	Hexavalent Chromium	04/26/18 4:32 PM	Reported
56	N030006-015A	SAMP	1	Hexavalent Chromium	04/26/18 4:42 PM	Reported
57	N030006-015AMS	MS	1	Hexavalent Chromium	04/26/18 4:51 PM	Reported
58	N030006-016A	SAMP	1	Hexavalent Chromium	04/26/18 5:01 PM	Reported
59	N030006-016AMS	MS	1	Hexavalent Chromium	04/26/18 5:10 PM	Reported
60	N030006-017A	SAMP	1	Hexavalent Chromium	04/26/18 5:20 PM	Reported
61	N030006-017AMS	MS	1	Hexavalent Chromium	04/26/18 5:29 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	04/26/18 5:39 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	04/26/18 5:48 PM	Reported
64	N030006-019A	SAMP	1	Hexavalent Chromium	04/26/18 5:58 PM	Reported
65	N030006-019AMS	MS	1	Hexavalent Chromium	04/26/18 6:07 PM	Reported
66	N030006-020A	SAMP	1	Hexavalent Chromium	04/26/18 6:17 PM	Reported
67	N030006-020AMS	MS	1	Hexavalent Chromium	04/26/18 6:26 PM	Reported
68	N030006-002A	SAMP	5	Hexavalent Chromium	04/26/18 6:35 PM	Reported
69	N030006-002AMS	MS	5	Hexavalent Chromium	04/26/18 6:45 PM	Reported
70	N030006-004A	SAMP	5	Hexavalent Chromium	04/26/18 6:54 PM	Reported
71	N030006-004AMS	MS	5	Hexavalent Chromium	04/26/18 7:04 PM	Reported
72	N030006-005A	SAMP	5	Hexavalent Chromium	04/26/18 7:13 PM	Reported
73	N030006-005AMS	MS	5	Hexavalent Chromium	04/26/18 7:23 PM	Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	04/26/18 7:32 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	04/26/18 7:42 PM	Reported
76	N030006-008A	SAMP	5	Hexavalent Chromium	04/26/18 7:51 PM	Reported
77	N030006-008AMS	MS	5	Hexavalent Chromium	04/26/18 8:01 PM	Reported
78	N030006-006A	SAMP	1	Hexavalent Chromium	04/26/18 8:10 PM	Not Reported
79	N030006-006AMS	MS	1	Hexavalent Chromium	04/26/18 8:19 PM	Not Reported
80	N030006-007A	SAMP	1	Hexavalent Chromium	04/26/18 8:29 PM	Not Reported
81	N030006-007AMS	MS	1	Hexavalent Chromium	04/26/18 8:38 PM	Not Reported
82	N029973-018A	SAMP	1	Hexavalent Chromium	04/26/18 8:48 PM	Not Reported
83	N029973-018AMS	MS	1	Hexavalent Chromium	04/26/18 8:57 PM	Not Reported
84	CCV-7	CCV	1	Hexavalent Chromium	04/26/18 9:07 PM	Reported

INJECTION LOG: 180426A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	04/26/18 9:16 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180426A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**26/Apr/18 21:47:05**
No. of Injections:	**88**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	BLANK	1	1000	Unknown		04/26/2018 09:32	Finished	BLANK
12	BLANK	2	1000	Unknown		04/26/2018 09:43	Finished	BLANK
13	CCV-1,CCV,1,	3	1000	Unknown		04/26/2018 09:53	Finished	CCV @5ppb, IWST-180129A
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		04/26/2018 10:02	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		04/26/2018 10:12	Finished	CCB R180418A
16	MB-H2O,MBLK,1,	6	1000	Unknown		04/26/2018 10:21	Finished	MB R180418A
17	LCS-H2O,LCS,1,	7	1000	Unknown		04/26/2018 10:31	Finished	LCS, IWST-180129B
18	N030006-001A,SAMP	8	1000	Unknown		04/26/2018 10:40	Finished	SAMP,0.5>10mL
19	N030006-001AMS,MS	9	1000	Unknown		04/26/2018 10:49	Finished	MS (5ppb), IWST-180129B,0.5
20	N030006-002A,SAMP	10	1000	Unknown		04/26/2018 10:59	Finished	SAMP,0.5>10mL
21	N030006-002AMS,MS	11	1000	Unknown		04/26/2018 11:08	Finished	MS (5ppb), IWST-180129B,0.5
22	N030006-003A,SAMP	12	1000	Unknown		04/26/2018 11:18	Finished	SAMP,10mL
23	N030006-004A,SAMP	13	1000	Unknown		04/26/2018 11:27	Finished	SAMP,10mL
24	N030006-005A,SAMP	14	1000	Unknown		04/26/2018 11:37	Finished	SAMP,5>10mL
25	N030006-005AMS,MS	15	1000	Unknown		04/26/2018 11:46	Finished	MS (5ppb), IWST-180129B,5>1
26	CCV-2,CCV1,1,	16	1000	Unknown		04/26/2018 11:56	Finished	CCV @10ppb, IWST-180129A
27	CCB-2,CCB,1,	17	1000	Unknown		04/26/2018 12:05	Finished	CCB R180418A
28	N030006-006A,SAMP	18	1000	Unknown		04/26/2018 12:15	Finished	SAMP,2>10mL
29	N030006-006AMS,MS	19	1000	Unknown		04/26/2018 12:24	Finished	MS (1ppb), IWST-180129B,2>1
30	N030006-007A,SAMP	20	1000	Unknown		04/26/2018 12:34	Finished	SAMP,2>10mL
31	N030006-007AMS,MS	21	1000	Unknown		04/26/2018 12:43	Finished	MS (1ppb), IWST-180129B,2>1
32	N030006-008A,SAMP	22	1000	Unknown		04/26/2018 12:52	Finished	SAMP,5>10mL
33	N030006-008AMS,MS	23	1000	Unknown		04/26/2018 13:02	Finished	MS (5ppb), IWST-180129B,5>1
34	N030006-009A,SAMP	24	1000	Unknown		04/26/2018 13:11	Finished	SAMP,2>10mL
35	N030006-009AMS,MS	25	1000	Unknown		04/26/2018 13:21	Finished	MS (5ppb), IWST-180129B,2>1
36	N030006-010A,SAMP	26	1000	Unknown		04/26/2018 13:30	Finished	SAMP,10mL
37	N030006-010AMS,MS	27	1000	Unknown		04/26/2018 13:40	Finished	MS (1ppb), IWST-180129B,10
38	CCV-3,CCV,1,	28	1000	Unknown		04/26/2018 13:49	Finished	CCV @5ppb, IWST-180129A
39	CCB-3,CCB,1,	29	1000	Unknown		04/26/2018 13:59	Finished	CCB R180418A
40	N030006-011A,SAMP	30	1000	Unknown		04/26/2018 14:08	Finished	SAMP,10mL
41	N030006-011AMS,MS	31	1000	Unknown		04/26/2018 14:18	Finished	MS (1ppb), IWST-180129B,10
42	N030006-012A,SAMP	32	1000	Unknown		04/26/2018 14:27	Finished	SAMP,10mL
43	N030006-012AMS,MS	33	1000	Unknown		04/26/2018 14:37	Finished	MS (1ppb), IWST-180129B,10
44	N030006-013A,SAMP	34	1000	Unknown		04/26/2018 14:46	Finished	SAMP,10mL
45	N030006-013AMS,MS	35	1000	Unknown		04/26/2018 14:56	Finished	MS (1ppb), IWST-180129B,10
46	N030006-014A,SAMP	36	1000	Unknown		04/26/2018 15:05	Finished	SAMP,10mL
47	N030006-014AMS,MS	37	1000	Unknown		04/26/2018 15:14	Finished	MS (1ppb), IWST-180129B,10
48	N030006-001AMSD,M	38	1000	Unknown		04/26/2018 15:24	Finished	MSD (5ppb), IWST-180129B,0.
49	N030006-003A,SAMP	39	1000	Unknown		04/26/2018 15:33	Finished	SAMP,2>10mL
50	CCV-4,CCV1,1,	1	1000	Unknown		04/26/2018 15:44	Finished	CCV @10ppb, IWST-180129A
51	CCB-4,CCB,1,	2	1000	Unknown		04/26/2018 15:55	Finished	CCB R180418A
52	N030006-003ADUP,D	3	1000	Unknown		04/26/2018 16:04	Finished	DUP,2>10mL
53	N030006-003AMS,MS	4	1000	Unknown		04/26/2018 16:14	Finished	MS (5ppb), IWST-180129B,2>1
54	N030006-018A,SAMP	5	1000	Unknown		04/26/2018 16:23	Finished	SAMP,2>10mL
55	N030006-018AMS,MS	6	1000	Unknown		04/26/2018 16:32	Finished	MS (1ppb), IWST-180129B,2>1
56	N030006-015A,SAMP	7	1000	Unknown		04/26/2018 16:42	Finished	SAMP,10mL
57	N030006-015AMS,MS	8	1000	Unknown		04/26/2018 16:51	Finished	MS (1ppb), IWST-180129B,10
58	N030006-016A,SAMP	9	1000	Unknown		04/26/2018 17:01	Finished	SAMP,10mL
59	N030006-016AMS,MS	10	1000	Unknown		04/26/2018 17:10	Finished	MS (1ppb), IWST-180129B,10
60	N030006-017A,SAMP	11	1000	Unknown		04/26/2018 17:20	Finished	SAMP,5>10mL

61	N030006-017AMS,MS	12	1000	Unknown		04/26/2018 17:29	Finished	MS (5ppb), IWST-180129B,5>1
62	CCV-5,CCV,1,	13	1000	Unknown		04/26/2018 17:39	Finished	CCV @5ppb, IWST-180129A
63	CCB-5,CCB,1,	14	1000	Unknown		04/26/2018 17:48	Finished	CCB R180418A
64	N030006-019A,SAMP	15	1000	Unknown		04/26/2018 17:58	Finished	SAMP,10mL
65	N030006-019AMS,MS	16	1000	Unknown		04/26/2018 18:07	Finished	MS (1ppb), IWST-180129B,10
66	N030006-020A,SAMP	17	1000	Unknown		04/26/2018 18:17	Finished	SAMP,10mL
67	N030006-020AMS,MS	18	1000	Unknown		04/26/2018 18:26	Finished	MS (1ppb), IWST-180129B,10
68	N030006-002A,SAMP	19	1000	Unknown		04/26/2018 18:35	Finished	SAMP,2>10mL
69	N030006-002AMS,MS	20	1000	Unknown		04/26/2018 18:45	Finished	MS (5ppb), IWST-180129B,2>1
70	N030006-004A,SAMP	21	1000	Unknown		04/26/2018 18:54	Finished	SAMP,2>10mL
71	N030006-004AMS,MS	22	1000	Unknown		04/26/2018 19:04	Finished	MS (5ppb), IWST-180129B,2>1
72	N030006-005A,SAMP	23	1000	Unknown		04/26/2018 19:13	Finished	SAMP,2>10mL
73	N030006-005AMS,MS	24	1000	Unknown		04/26/2018 19:23	Finished	MS (1ppb), IWST-180129B,2>1
74	CCV-6,CCV1,1,	25	1000	Unknown		04/26/2018 19:32	Finished	CCV @10ppb, IWST-180129A
75	CCB-6,CCB,1,	26	1000	Unknown		04/26/2018 19:42	Finished	CCB R180418A
76	N030006-008A,SAMP	27	1000	Unknown		04/26/2018 19:51	Finished	SAMP,2>10mL
77	N030006-008AMS,MS	28	1000	Unknown		04/26/2018 20:01	Finished	MS (1ppb), IWST-180129B,2>1
78	N030006-006A,SAMP	29	1000	Unknown		04/26/2018 20:10	Finished	SAMP,10mL
79	N030006-006AMS,MS	30	1000	Unknown		04/26/2018 20:19	Finished	MS (1ppb), IWST-180129B,10
80	N030006-007A,SAMP	31	1000	Unknown		04/26/2018 20:29	Finished	SAMP,10mL
81	N030006-007AMS,MS	32	1000	Unknown		04/26/2018 20:38	Finished	MS (1ppb), IWST-180129B,10
82	N029973-018A,SAMP	33	1000	Unknown		04/26/2018 20:48	Finished	SAMP,10mL
83	N029973-018AMS,MS	34	1000	Unknown		04/26/2018 20:57	Finished	MS (1ppb), IWST-180129B,10
84	CCV-7,CCV,1,	35	1000	Unknown		04/26/2018 21:07	Finished	CCV @5ppb, IWST-180129A
85	CCB-7,CCB,1,	36	1000	Unknown		04/26/2018 21:16	Finished	CCB R180418A
86	SHUTDOWN	37	1000	Unknown		04/26/2018 21:26	Finished	
87	Eluent: R180426A	38	1000	Unknown		n.a.	Finished	Eluent
88	PCR: R180426B	39	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 4/26/18
Time Prepared: 0937H
Prepared By: RBA

Slope: 98.87
pH 4: 4.03 @25.0°C
7: 7.01 @25.0°C
10: 9.99 @25.0°C
LCS: 7.02 @25.0°C

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: R180426A
NH4OH + NH4SO4 buffer: R180418A

6N NaOH: R171226A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030006-001A	9.41	–	~250ml	~250ml		
2)	2A	9.61	–				
3)	3A	9.51	–				
4)	4A	9.50	–				
5)	5A	9.42	–				
6)	6A	9.46	–				
7)	7A	9.41	–				
8)	8A	9.42	–				
9)	9A	9.45	–				
10)	10A	9.64	–				
11)	11A	9.05	9.40			+6 drops NaOH	1/2
12)	11A	9.12	9.43			+6 " "	2/2
13)	12A	9.55	–				
14)	13A	9.42	–				1/2
15)	13A	9.45	–				2/2
	14A	9.35	–				1/2

Sample Preparation

Date Prepared: 4/26/18
Time Prepared: 0937H
Prepared By: RBA

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: R180426A
NH4OH + NH4SO4 buffer: R180418A

6N NaOH: R171226A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030006-14A	9.36	–	~250ml	~250ml		2/2
2)	15A	9.57	–				
3)	16A	9.02	9.47			+7 drops NaOH	1/2
4)	16A	8.96	9.39			+7 " "	2/2
5)	17A	9.57	–				
6)	18A	9.41	–				1/2
7)	18A	9.38	–				2/2
8)	19A	9.60	–				
9)	20A	9.56	–				
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 14

rba 5/1/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/2/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0611	0.2744	1.2772	2.5376	3.7905	5.0743	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ICV** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **3011044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.068	0.20	5.000	0	101	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **3011045**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.240	0.20	0.2000	0	120	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **CCV** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.991	0.20	5.000	0	99.8	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.216	0.20	0.2000	0	108	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.038	0.20	10.00	0	100	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **CCV** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.957	0.20	5.000	0	99.1	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.098	0.20	10.00	0	101	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **CCV** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.041	0.20	5.000	0	101	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ZZZZZZ** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.170	0.20	10.00	0	102	95	105				

Sample ID **CCV-7** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **CCV** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.989	0.20	5.000	0	99.8	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **ICB** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **3011046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **CCB** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **CCB** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **CCB** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **CCB** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **CCB** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **CCB** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123708**
Client ID: **CCB** Batch ID: **R123708** TestNo: **EPA 218.6** Analysis Date: **4/26/2018** SeqNo: **3011105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/26/2018

Sample Name	Retention Time	Evaluation
ICV	4.140	
CCV-1	4.248	
CCV-2	4.248	
CCV-3	4.240	
CCV-4	4.248	
CCV-5	4.248	
CCV-6	4.248	
CCV-7	4.248	

Average	4.247	
Actual RT Window	4.167 -	4.327
Applied RT Window	4.047 -	4.447

MB-R123708	N.A.	N.A.
LCS-R123708	4.248	PASS
N030006-001A	4.231	PASS
N030006-001AMS	4.231	PASS
N030006-002A	4.231	PASS
N030006-002AMS	4.231	PASS
N030006-003A	4.215	PASS
N030006-004A	4.223	PASS
N030006-005A	4.040	FAIL
N030006-005AMS	4.048	PASS
N030006-006A	4.165	PASS
N030006-006AMS	4.165	PASS
N030006-007A	4.198	PASS
N030006-007AMS	4.190	PASS
N030006-008A	4.031	FAIL
N030006-008AMS	4.031	FAIL
N030006-009A	4.198	PASS
N030006-009AMS	4.206	PASS
N030006-010A	N.A.	N.A.
N030006-010AMS	4.248	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/26/2018

Sample Name	Retention Time		Evaluation
ICV	4.140		
CCV-1	4.248		
CCV-2	4.248		
CCV-3	4.240		
CCV-4	4.248		
CCV-5	4.248		
CCV-6	4.248		
CCV-7	4.248		
Average	4.247		
Actual RT Window	4.167 -	4.327	
Applied RT Window	4.047 -	4.447	
N030006-011A	N.A.		N.A.
N030006-011AMS	4.223		PASS
N030006-012A	N.A.		N.A.
N030006-012AMS	4.248		PASS
N030006-013A	N.A.		N.A.
N030006-013AMS	4.240		PASS
N030006-014A	N.A.		N.A.
N030006-014AMS	4.240		PASS
N030006-001AMSD	4.231		PASS
N030006-003A	4.240		PASS
N030006-003ADUP	4.240		PASS
N030006-003AMS	4.223		PASS
N030006-018A	N.A.		N.A.
N030006-018AMS	4.223		PASS
N030006-015A	N.A.		N.A.
N030006-015AMS	4.240		PASS
N030006-016A	N.A.		N.A.
N030006-016AMS	4.140		PASS
N030006-017A	N.A.		N.A.
N030006-017AMS	4.240		PASS
N030006-019A	N.A.		N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/26/2018

Sample Name	Retention Time		Evaluation
ICV	4.140		
CCV-1	4.248		
CCV-2	4.248		
CCV-3	4.240		
CCV-4	4.248		
CCV-5	4.248		
CCV-6	4.248		
CCV-7	4.248		
Average	4.247		
Actual RT Window	4.167 -	4.327	
Applied RT Window	4.047 -	4.447	
N030006-019AMS	4.240		PASS
N030006-020A	N.A.		N.A.
N030006-020AMS	4.248		PASS
N030006-002A	4.190		PASS
N030006-002AMS	4.190		PASS
N030006-004A	4.240		PASS
N030006-004AMS	4.240		PASS
N030006-005A	4.181		PASS
N030006-005AMS	4.173		PASS
N030006-008A	4.173		PASS
N030006-008AMS	4.173		PASS
N030006-006A	N.A.		N.A.
N030006-006AMS	N.A.		N.A.
N030006-007A	3.848		FAIL
N030006-007AMS	3.848		FAIL
N029973-018A	N.A.		N.A.
N029973-018AMS	4.098		PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2018 (1st Quarter)

Method Name:	**Hexavalent Chromium by IC**	Matrix:	**WATER**
Method Number:	EPA Method 218.6/7199	Unit:	µg/L
Analysis Date(s):	3/21/2018		
Analyst:	Ria Abes		

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.116

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.201	100

INITIAL CALIBRATION

INJECTION LOG: 180402B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	ICV	ICV	1	Hexavalent Chromium	04/02/18 1:50 PM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/02/18 2:01 PM	Reported
13	ICB	ICB	1	Hexavalent Chromium	04/02/18 2:18 PM	Reported
14	MB-R123054	MBLK	1	Hexavalent Chromium	04/02/18 2:30 PM	Reported
15	LCS-R123054	LCS	1	Hexavalent Chromium	04/02/18 2:39 PM	Reported
16	N029480-001A	SAMP	1	Hexavalent Chromium	04/02/18 2:49 PM	Not Reported
17	N029443-001G	SAMP	1	Hexavalent Chromium	04/02/18 2:58 PM	Reported
18	N029444-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:08 PM	Reported
19	N029445-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:17 PM	Reported
20	N029446-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:27 PM	Reported
21	N029480-001A	SAMP	5	Hexavalent Chromium	04/02/18 3:36 PM	Reported
22	N029480-002A	SAMP	5	Hexavalent Chromium	04/02/18 3:45 PM	Reported
23	N029480-001ADUP	DUP	5	Hexavalent Chromium	04/02/18 3:55 PM	Reported
24	CCV-1	CCV1	1	Hexavalent Chromium	04/02/18 4:04 PM	Reported
25	CCB-1	CCB	1	Hexavalent Chromium	04/02/18 4:14 PM	Reported
26	N029480-001AMS	MS	5	Hexavalent Chromium	04/02/18 4:23 PM	Reported
27	N029480-001AMSD	MSD	5	Hexavalent Chromium	04/02/18 4:33 PM	Reported
28	CCV-2	CCV	1	Hexavalent Chromium	04/02/18 4:42 PM	Reported
29	CCB-2	CCB	1	Hexavalent Chromium	04/02/18 4:52 PM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_180402B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**02/Apr/18 17:22:28**
No. of Injections:	**32**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	ICV,ICV,1,	11	1000	Unknown		04/02/2018 13:50	Finished	ICV @5ppb, IWST-180129B
12	PQL@0.2ppb,CCV2,1	12	1000	Unknown		04/02/2018 14:01	Finished	PQL @ 0.2ppb
13	ICB,ICB,1,	13	1000	Unknown		04/02/2018 14:18	Finished	ICB R180329A
14	MB-H2O,MBLK,1,	14	1000	Unknown		04/02/2018 14:30	Finished	MB R180302A
15	LCS-H2O,LCS,1,	15	1000	Unknown		04/02/2018 14:39	Finished	LCS, IWST-180129B
16	N029480-001A,SAMF	16	1000	Unknown		04/02/2018 14:49	Finished	SAMP,10mL
17	N029443-001G,SAMF	17	1000	Unknown		04/02/2018 14:58	Finished	SAMP,10mL
18	N029444-001G,SAMF	18	1000	Unknown		04/02/2018 15:08	Finished	SAMP,10mL
19	N029445-001G,SAMF	19	1000	Unknown		04/02/2018 15:17	Finished	SAMP,10mL
20	N029446-001G,SAMF	20	1000	Unknown		04/02/2018 15:27	Finished	SAMP,10mL
21	N029480-001A,SAMF	21	1000	Unknown		04/02/2018 15:36	Finished	SAMP,2>10mL
22	N029480-002A,SAMF	22	1000	Unknown		04/02/2018 15:45	Finished	SAMP,2>10mL
23	N029480-001ADUP,D	23	1000	Unknown		04/02/2018 15:55	Finished	DUP,2>10mL
24	CCV-1,CCV1,1,	24	1000	Unknown		04/02/2018 16:04	Finished	CCV @10ppb, IWST-180129A
25	CCB-1,CCB,1,	25	1000	Unknown		04/02/2018 16:14	Finished	CCB R180302A
26	N029480-001AMS,MS	26	1000	Unknown		04/02/2018 16:23	Finished	SAMP,10mL
27	N029480-001AMSD,M	27	1000	Unknown		04/02/2018 16:33	Finished	MS (1ppb), IWST-180129B,1>1
28	CCV-2,CCV,1,	28	1000	Unknown		04/02/2018 16:42	Finished	CCV @5ppb, IWST-180129A
29	CCB-2,CCB,1,	29	1000	Unknown		04/02/2018 16:52	Finished	CCB R180302A
30	SHUTDOWN	30	1000	Unknown		04/02/2018 17:01	Finished	
31	Eluent: R180402B	31	1000	Unknown		n.a.	Finished	Eluent
32	PCR: R180402C	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

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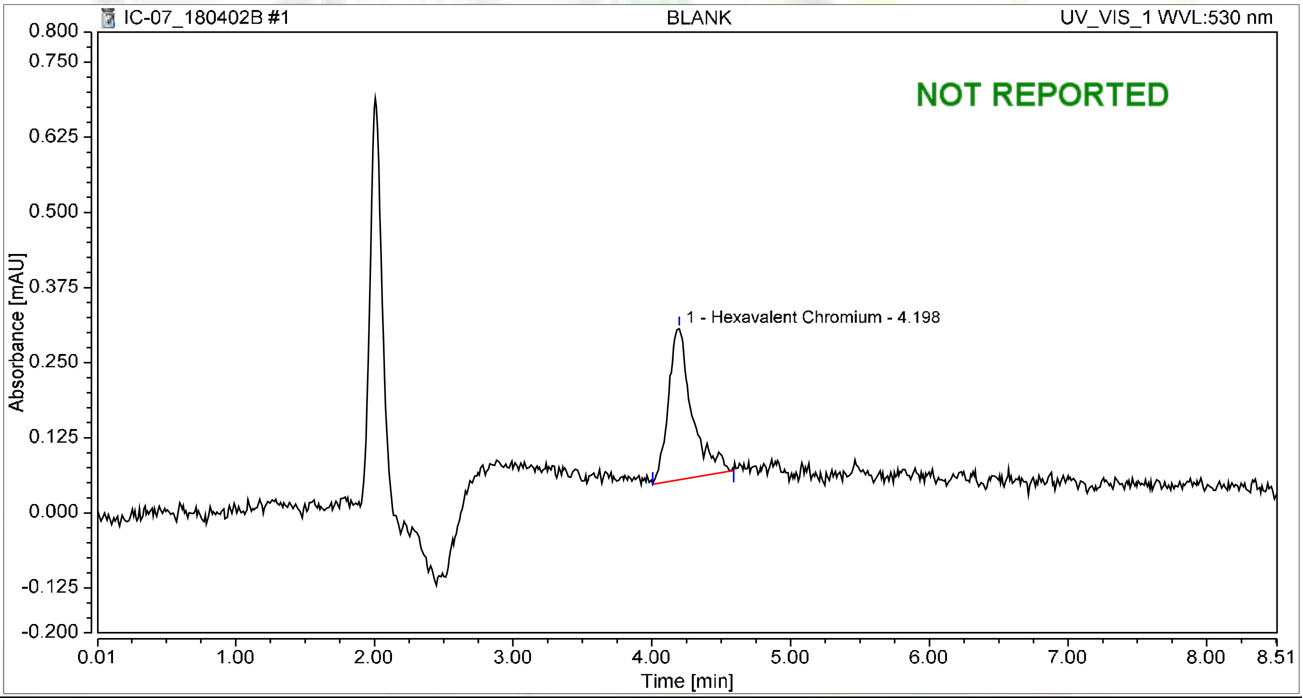
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 11:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

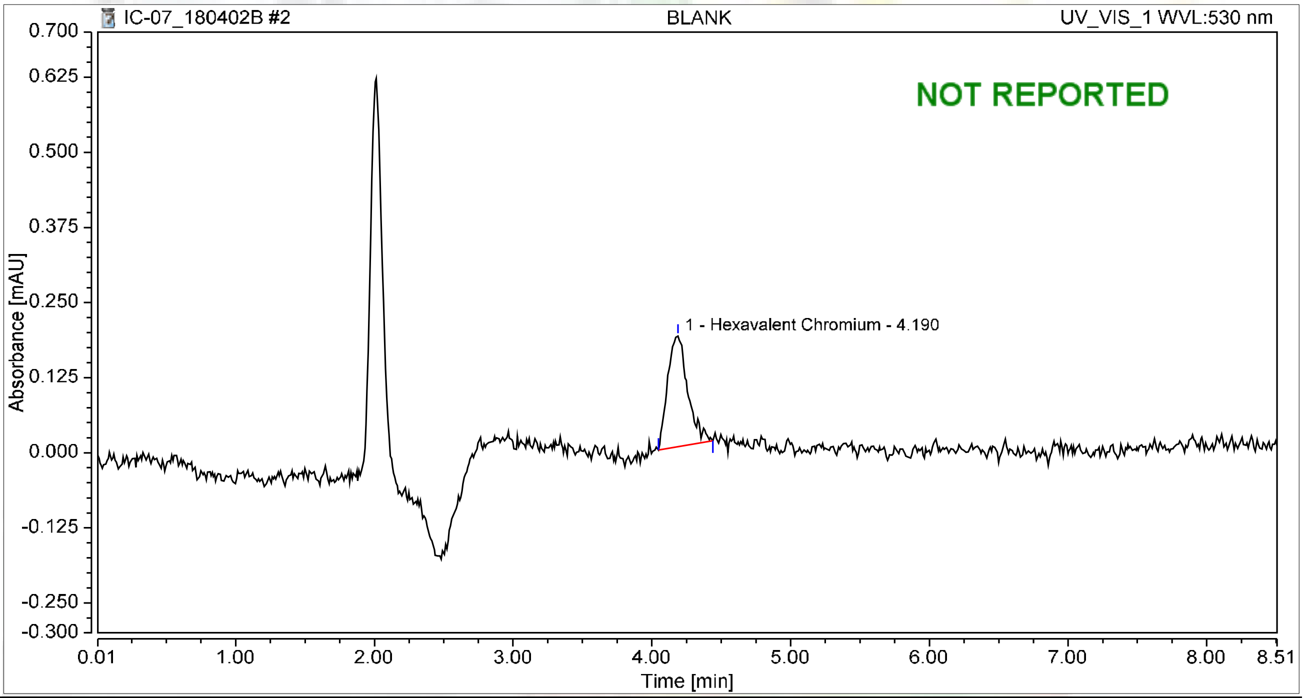
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.050	0.252	100.00	100.00	0.1965
Total:			**0.050**	**0.252**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 11:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

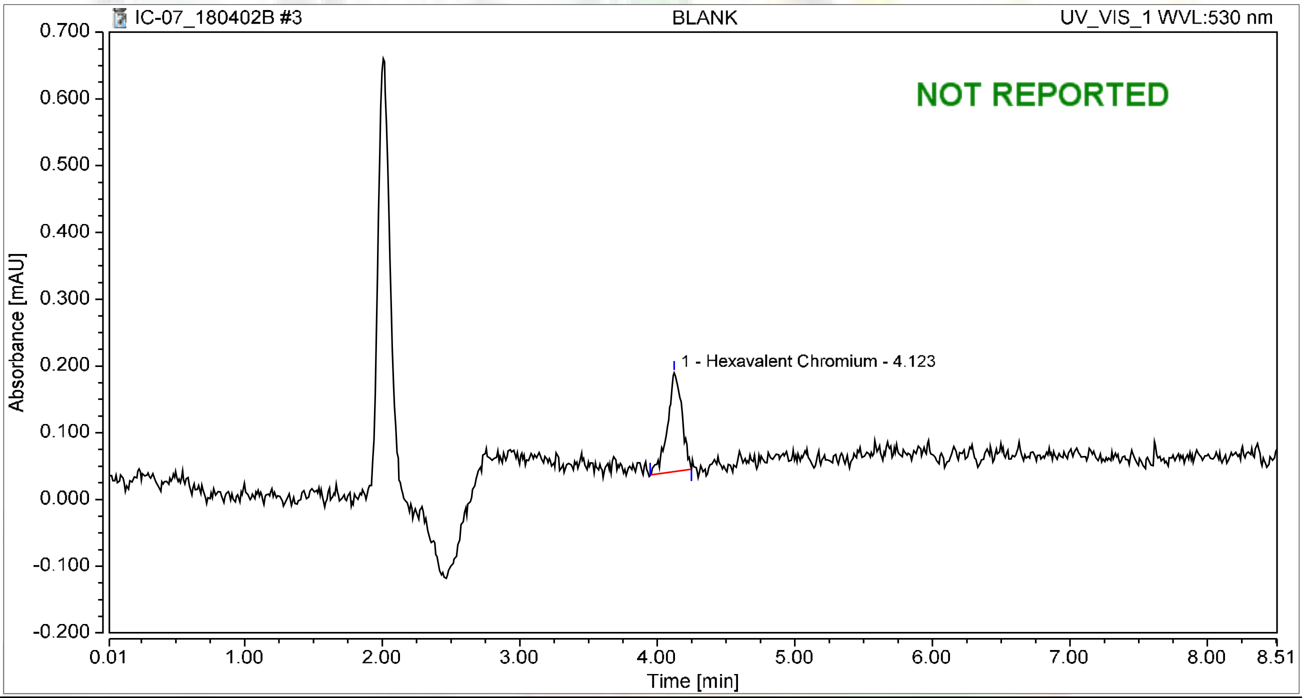
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.031	0.184	100.00	100.00	0.1224
Total:			**0.031**	**0.184**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 11:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

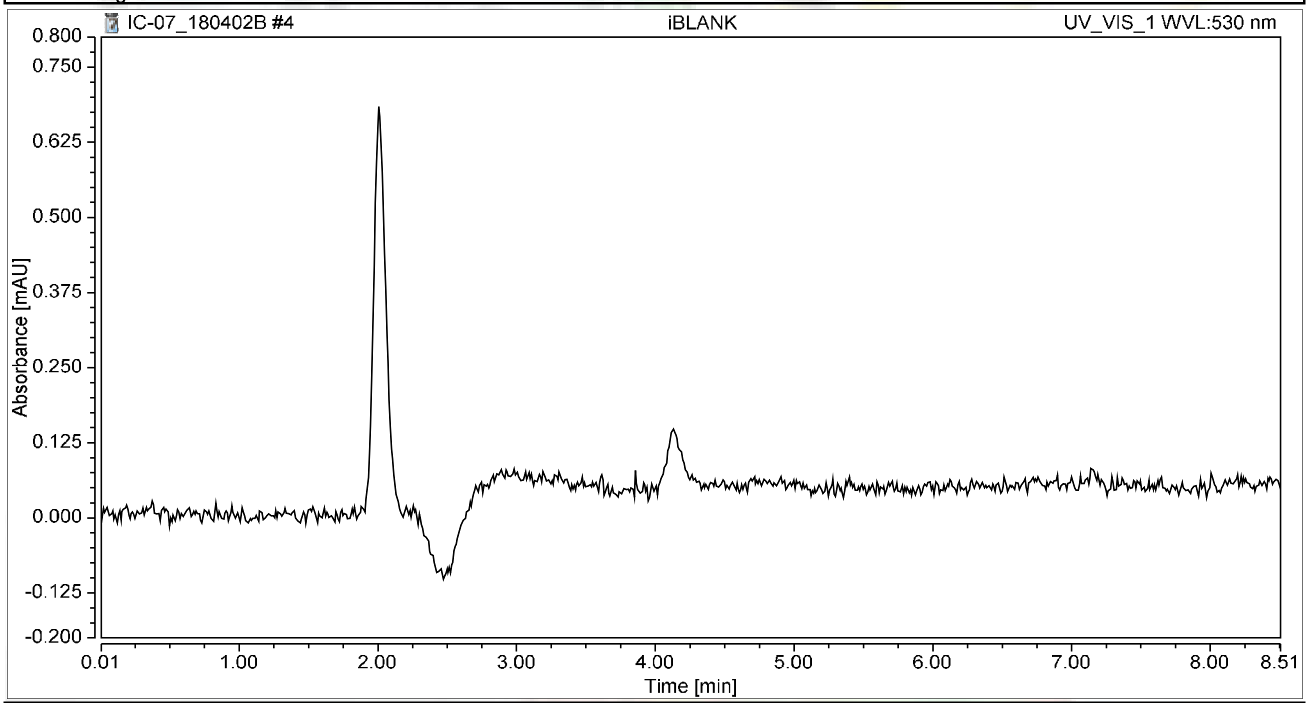
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.018	0.148	100.00	100.00	0.0704
Total:			**0.018**	**0.148**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

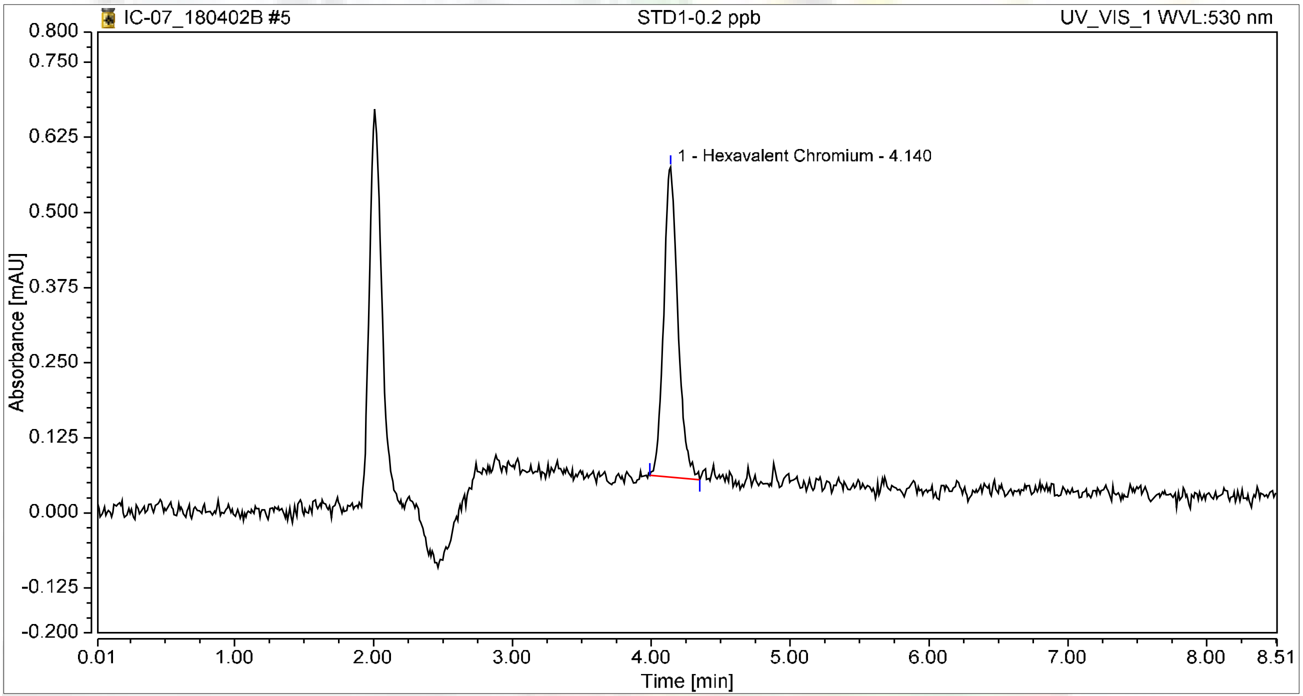
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

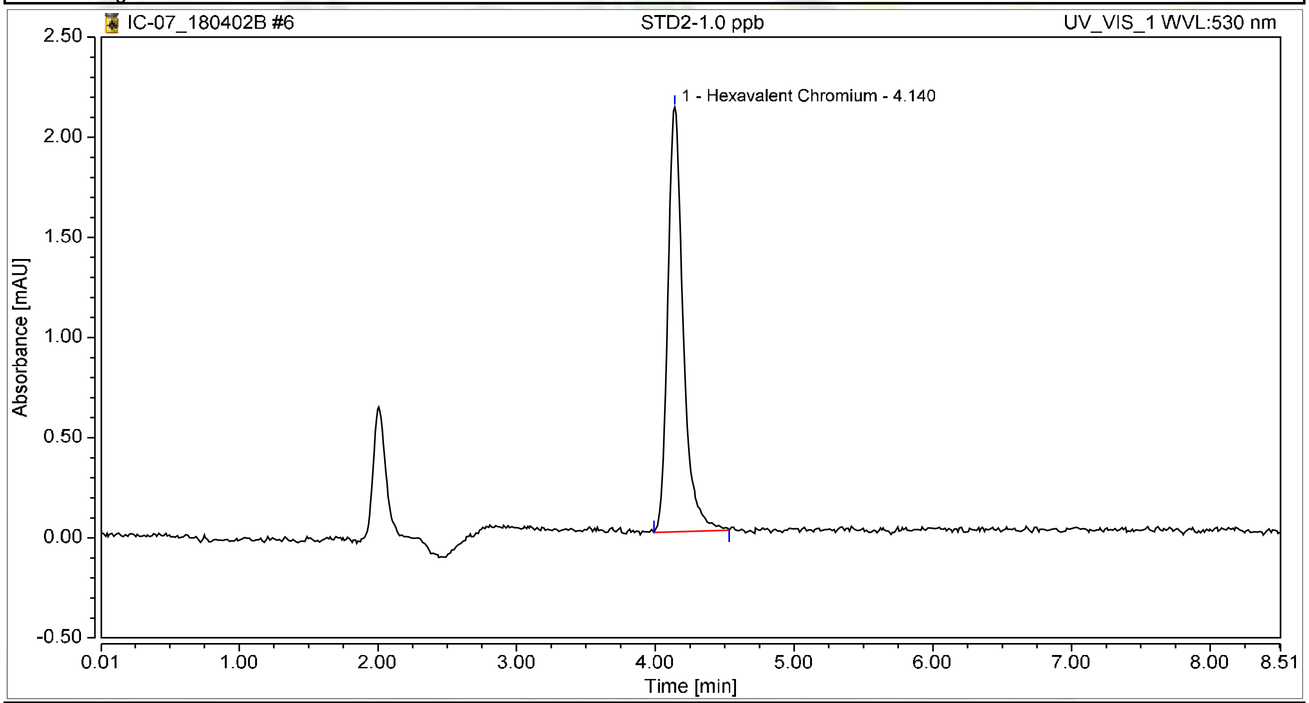
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.061	0.516	100.00	100.00	0.2409
Total:			**0.061**	**0.516**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 12:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

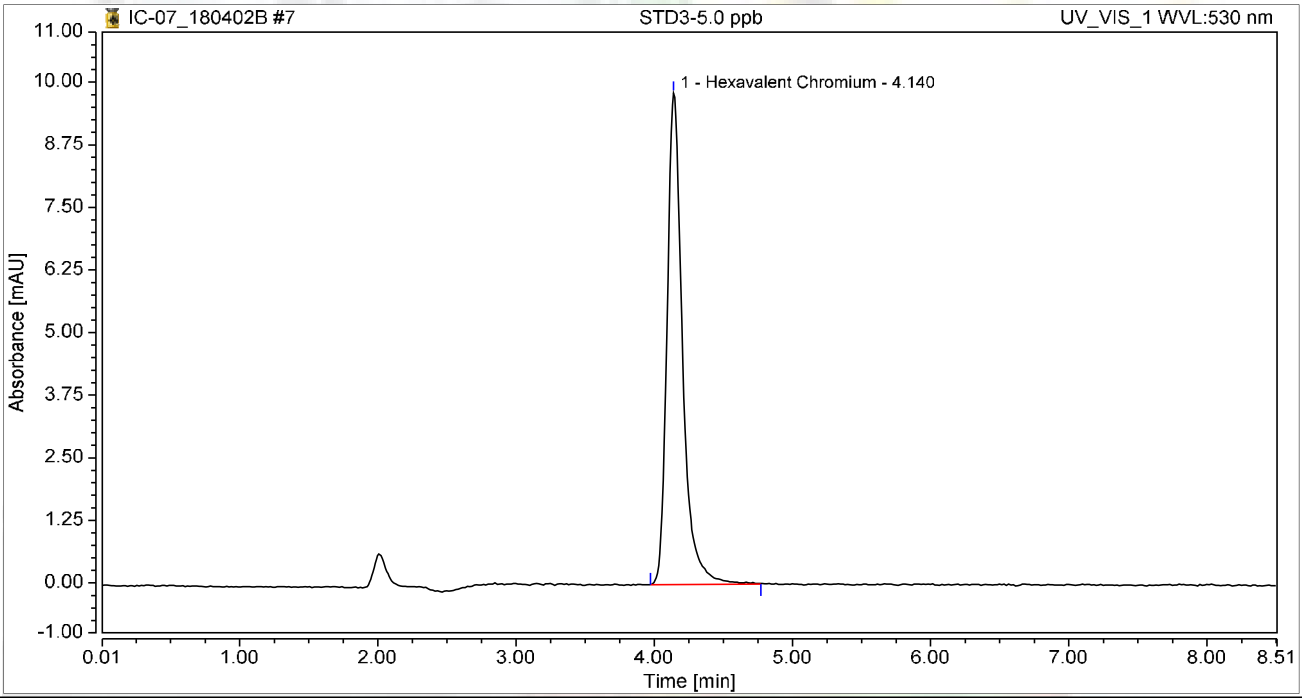
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.274	2.121	100.00	100.00	1.0825
Total:			**0.274**	**2.121**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

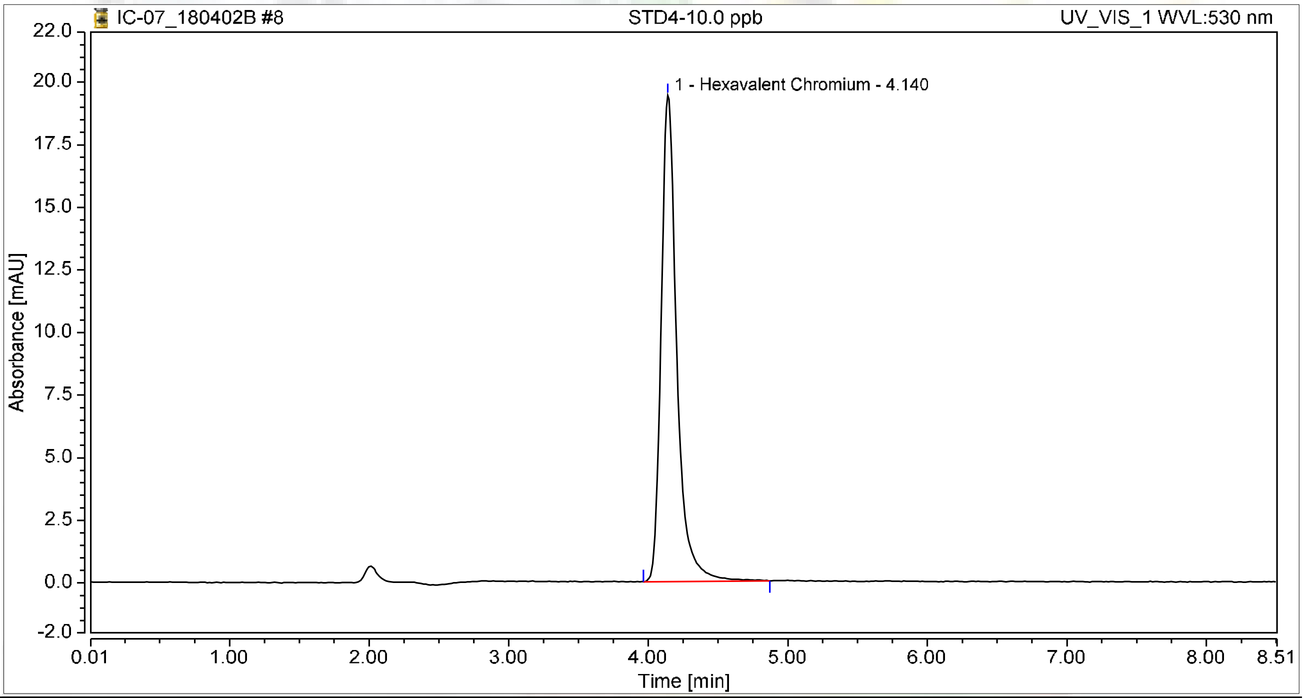
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.277	9.813	100.00	100.00	5.0383
Total:			**1.277**	**9.813**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

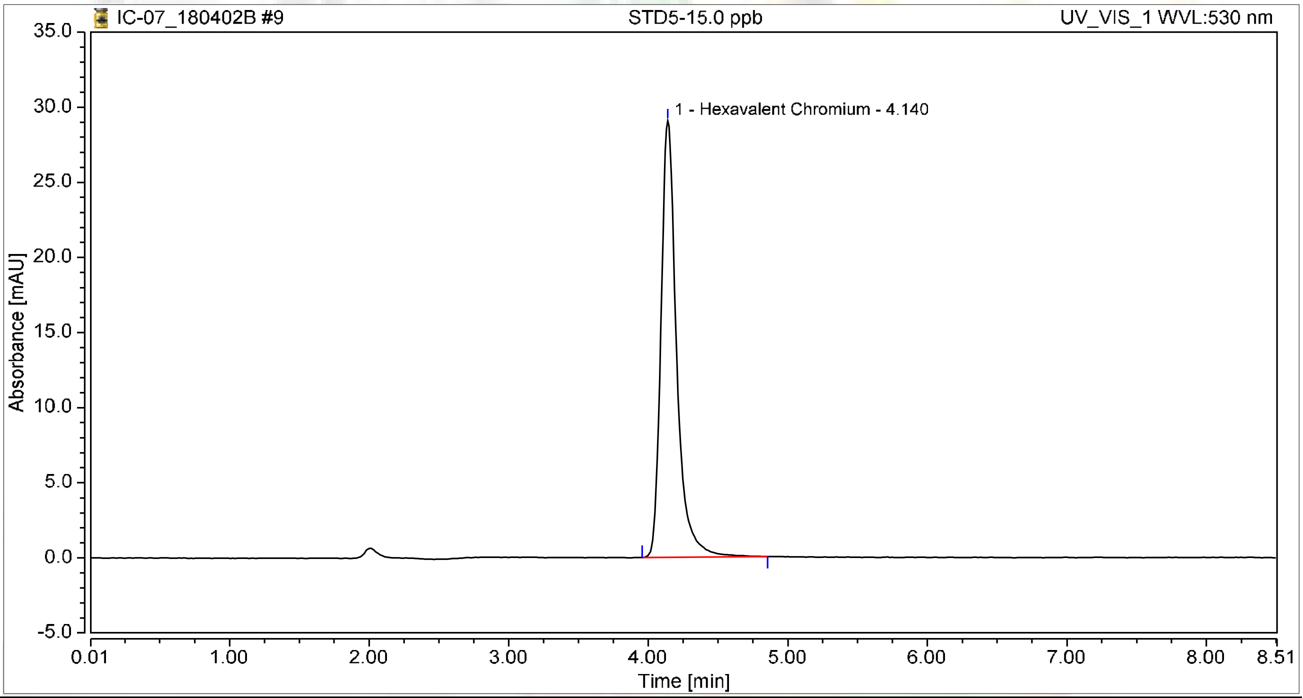
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.538	19.408	100.00	100.00	10.0099
Total:			**2.538**	**19.408**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

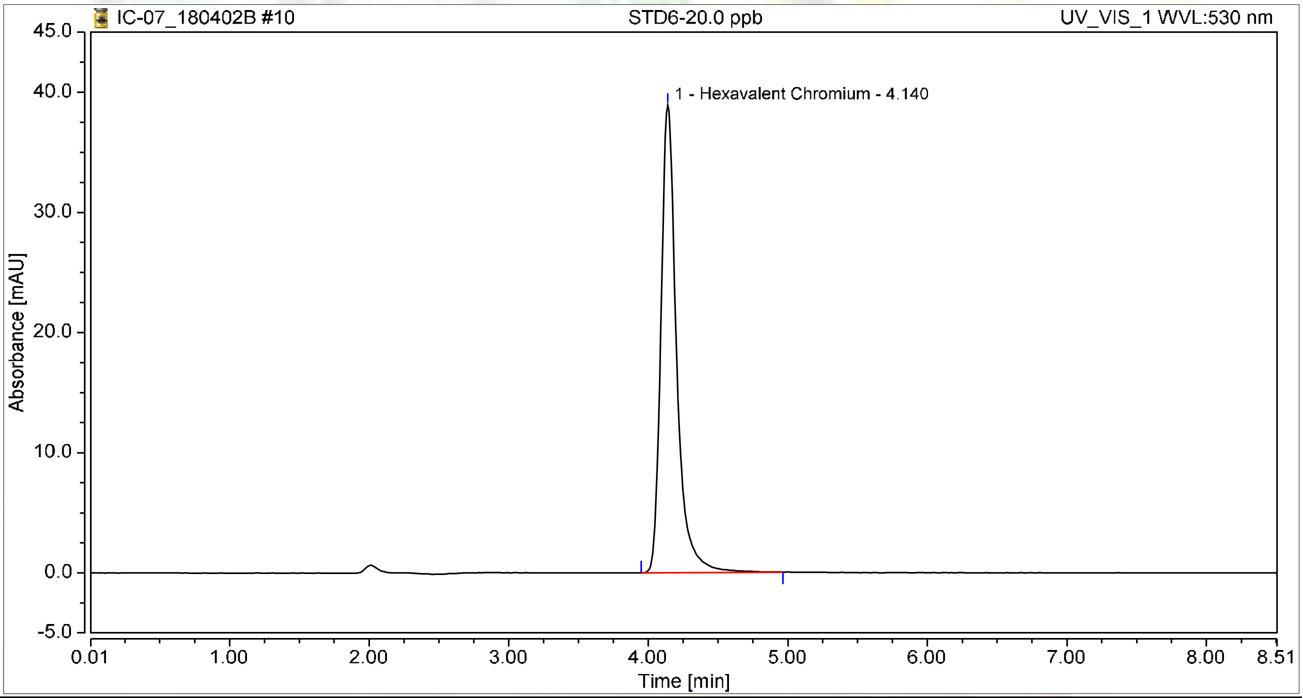
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.791	29.078	100.00	100.00	14.9525
Total:			**3.791**	**29.078**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:31**	*Sample Weight:*	**1.0000**

Chromatogram



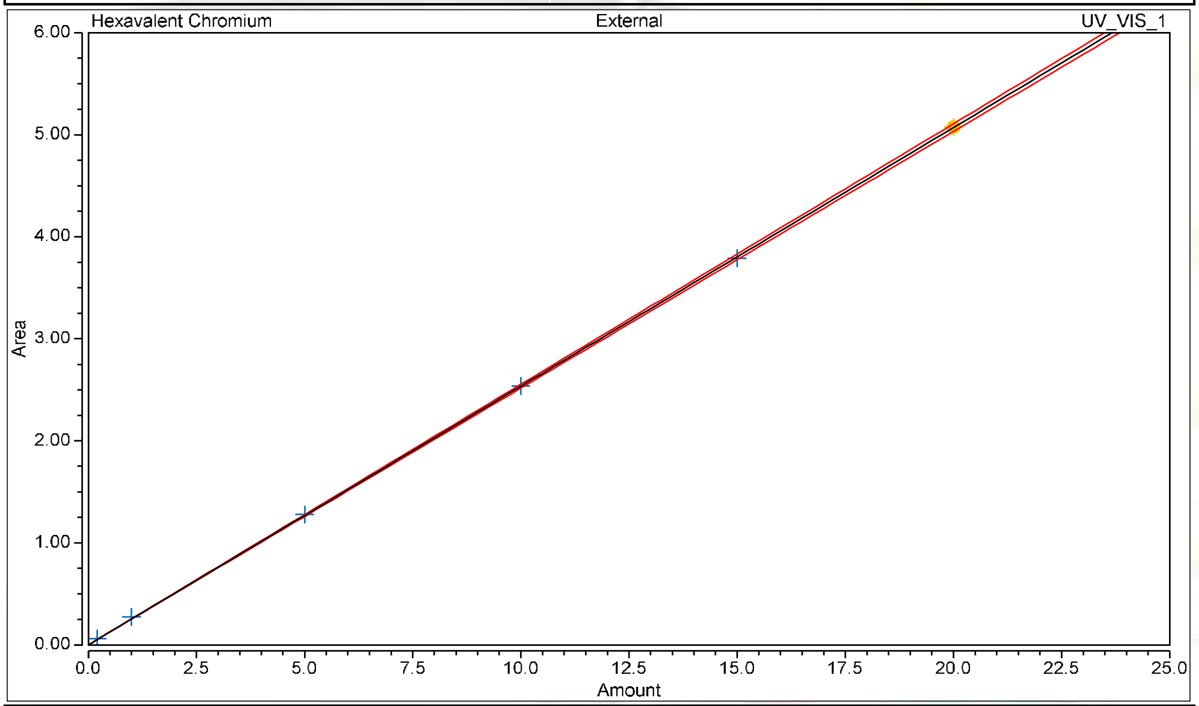
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	5.074	38.904	100.00	100.00	20.0166
Total:			**5.074**	**38.904**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2535
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

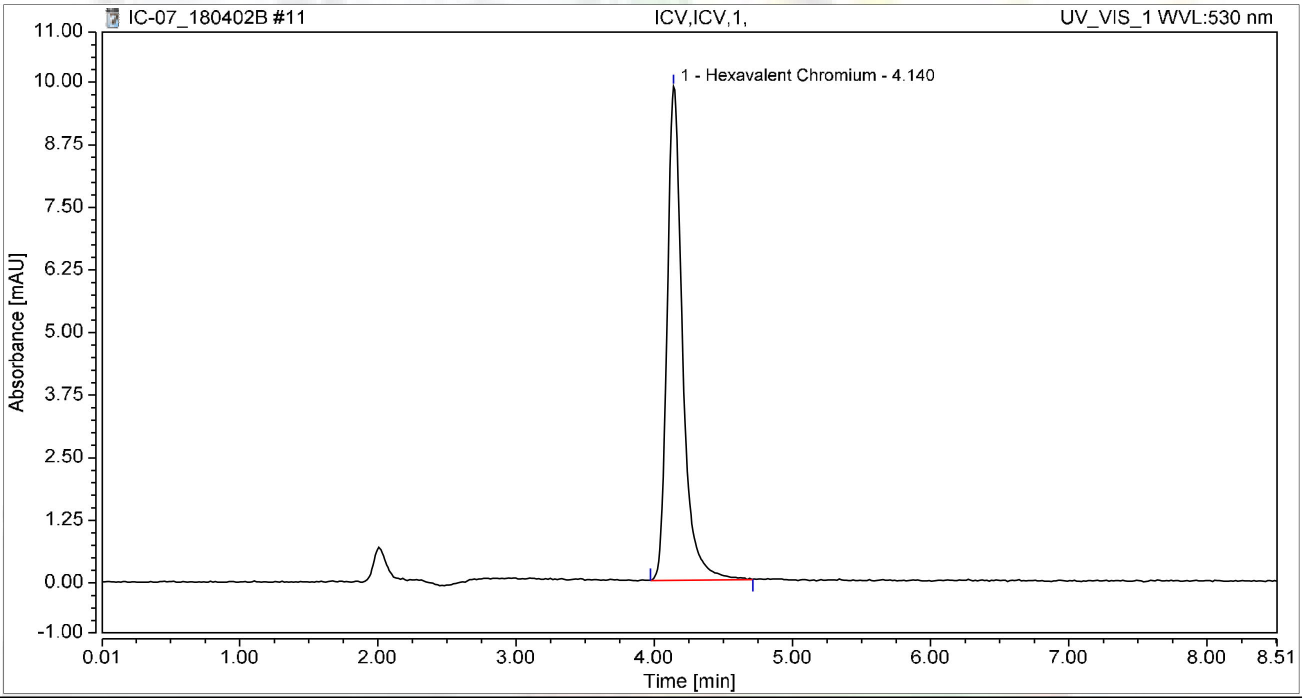
No.	**Injection Name**	**Calibration Level**	**X Value**	**Y Value**	**Area mAU*min**	**Height mAU**
5	STD1-0.2 ppb	01	0.2000	0.0611	0.061	0.516
6	STD2-1.0 ppb	02	1.0000	0.2744	0.274	2.121
7	STD3-5.0 ppb	03	5.0000	1.2772	1.277	9.813
8	STD4-10.0 ppb	04	10.0000	2.5376	2.538	19.408
9	STD5-15.0 ppb	05	15.0000	3.7905	3.791	29.078
10	STD6-20.0 ppb	06	20.0000	5.0743	5.074	38.904

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

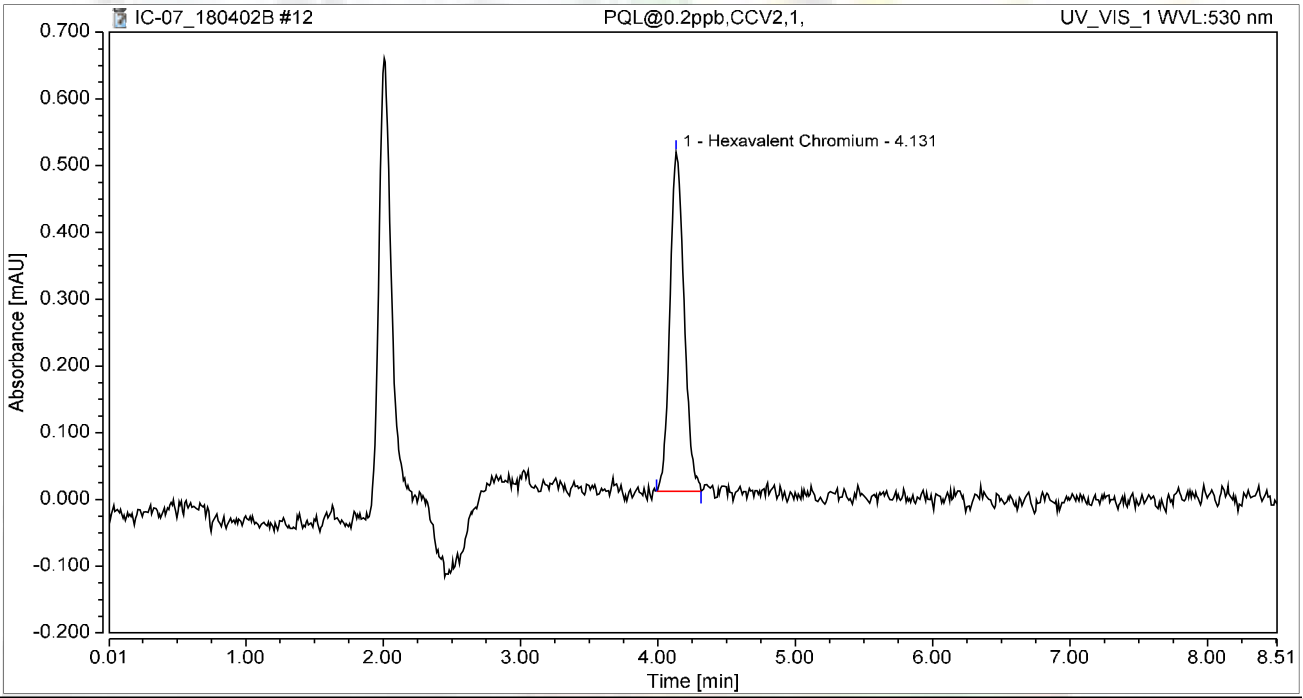
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.285	9.862	100.00	100.00	5.0684
Total:			**1.285**	**9.862**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

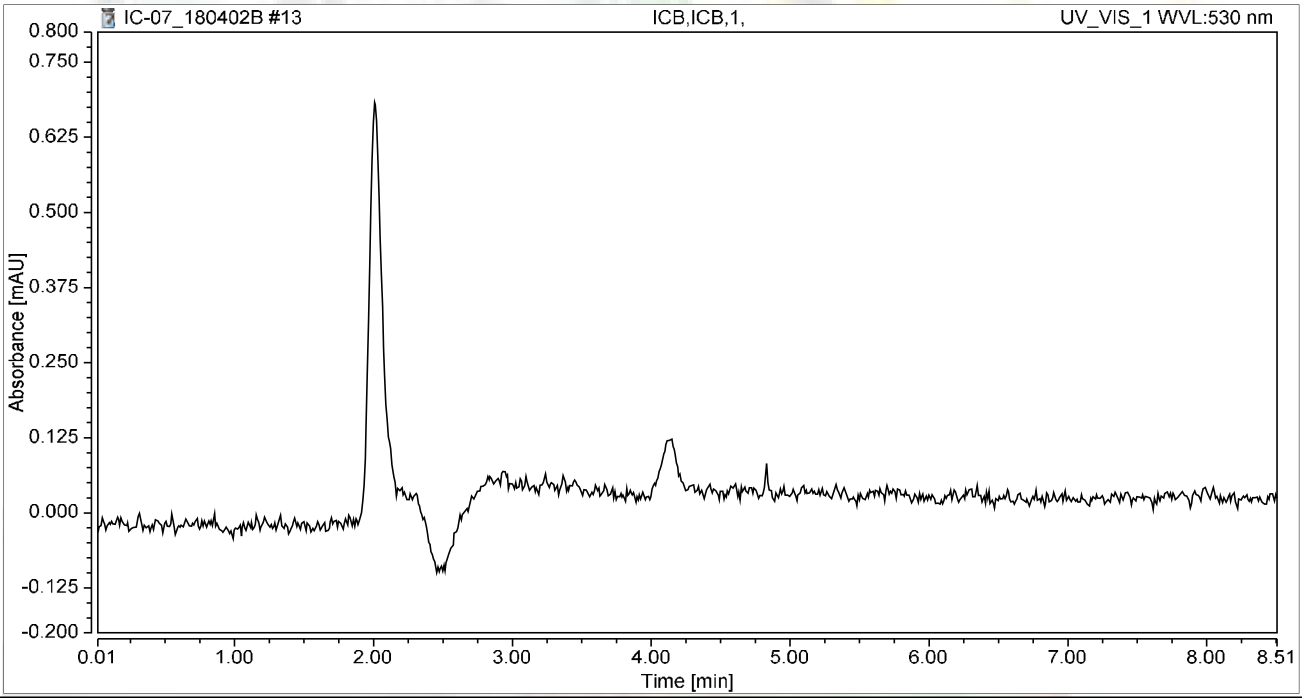
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.061	0.508	100.00	100.00	0.2395
Total:			**0.061**	**0.508**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 14:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180426A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	04/26/18 9:32 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	04/26/18 9:43 AM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	04/26/18 9:53 AM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/26/18 10:02 AM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	04/26/18 10:12 AM	Reported
16	MB-R123708	MBLK	1	Hexavalent Chromium	04/26/18 10:21 AM	Reported
17	LCS-R123708	LCS	1	Hexavalent Chromium	04/26/18 10:31 AM	Reported
18	N030006-001A	SAMP	20	Hexavalent Chromium	04/26/18 10:40 AM	Reported
19	N030006-001AMS	MS	20	Hexavalent Chromium	04/26/18 10:49 AM	Reported
20	N030006-002A	SAMP	20	Hexavalent Chromium	04/26/18 10:59 AM	Not Reported
21	N030006-002AMS	MS	20	Hexavalent Chromium	04/26/18 11:08 AM	Not Reported
22	N030006-003A	SAMP	1	Hexavalent Chromium	04/26/18 11:18 AM	Not Reported
23	N030006-004A	SAMP	1	Hexavalent Chromium	04/26/18 11:27 AM	Not Reported
24	N030006-005A	SAMP	2	Hexavalent Chromium	04/26/18 11:37 AM	Not Reported
25	N030006-005AMS	MS	2	Hexavalent Chromium	04/26/18 11:46 AM	Not Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	04/26/18 11:56 AM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	04/26/18 12:05 PM	Reported
28	N030006-006A	SAMP	5	Hexavalent Chromium	04/26/18 12:15 PM	Reported
29	N030006-006AMS	MS	5	Hexavalent Chromium	04/26/18 12:24 PM	Reported
30	N030006-007A	SAMP	5	Hexavalent Chromium	04/26/18 12:34 PM	Reported
31	N030006-007AMS	MS	5	Hexavalent Chromium	04/26/18 12:43 PM	Reported
32	N030006-008A	SAMP	2	Hexavalent Chromium	04/26/18 12:52 PM	Not Reported
33	N030006-008AMS	MS	2	Hexavalent Chromium	04/26/18 1:02 PM	Not Reported
34	N030006-009A	SAMP	5	Hexavalent Chromium	04/26/18 1:11 PM	Reported
35	N030006-009AMS	MS	5	Hexavalent Chromium	04/26/18 1:21 PM	Reported
36	N030006-010A	SAMP	1	Hexavalent Chromium	04/26/18 1:30 PM	Reported
37	N030006-010AMS	MS	1	Hexavalent Chromium	04/26/18 1:40 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	04/26/18 1:49 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	04/26/18 1:59 PM	Reported
40	N030006-011A	SAMP	1	Hexavalent Chromium	04/26/18 2:08 PM	Reported
41	N030006-011AMS	MS	1	Hexavalent Chromium	04/26/18 2:18 PM	Reported
42	N030006-012A	SAMP	1	Hexavalent Chromium	04/26/18 2:27 PM	Reported

Nancy 5/9/2018

IC7 RBA 4/30/2018 5:50 PM

rba 5/1/2018

INJECTION LOG: 180426A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030006-012AMS	MS	1	Hexavalent Chromium	04/26/18 2:37 PM	Reported
44	N030006-013A	SAMP	1	Hexavalent Chromium	04/26/18 2:46 PM	Reported
45	N030006-013AMS	MS	1	Hexavalent Chromium	04/26/18 2:56 PM	Reported
46	N030006-014A	SAMP	1	Hexavalent Chromium	04/26/18 3:05 PM	Reported
47	N030006-014AMS	MS	1	Hexavalent Chromium	04/26/18 3:14 PM	Reported
48	N030006-001AMSD	MSD	20	Hexavalent Chromium	04/26/18 3:24 PM	Reported
49	N030006-003A	SAMP	5	Hexavalent Chromium	04/26/18 3:33 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	04/26/18 3:44 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	04/26/18 3:55 PM	Reported
52	N030006-003ADUP	DUP	5	Hexavalent Chromium	04/26/18 4:04 PM	Reported
53	N030006-003AMS	MS	5	Hexavalent Chromium	04/26/18 4:14 PM	Reported
54	N030006-018A	SAMP	5	Hexavalent Chromium	04/26/18 4:23 PM	Reported
55	N030006-018AMS	MS	5	Hexavalent Chromium	04/26/18 4:32 PM	Reported
56	N030006-015A	SAMP	1	Hexavalent Chromium	04/26/18 4:42 PM	Reported
57	N030006-015AMS	MS	1	Hexavalent Chromium	04/26/18 4:51 PM	Reported
58	N030006-016A	SAMP	1	Hexavalent Chromium	04/26/18 5:01 PM	Reported
59	N030006-016AMS	MS	1	Hexavalent Chromium	04/26/18 5:10 PM	Reported
60	N030006-017A	SAMP	1	Hexavalent Chromium	04/26/18 5:20 PM	Reported
61	N030006-017AMS	MS	1	Hexavalent Chromium	04/26/18 5:29 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	04/26/18 5:39 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	04/26/18 5:48 PM	Reported
64	N030006-019A	SAMP	1	Hexavalent Chromium	04/26/18 5:58 PM	Reported
65	N030006-019AMS	MS	1	Hexavalent Chromium	04/26/18 6:07 PM	Reported
66	N030006-020A	SAMP	1	Hexavalent Chromium	04/26/18 6:17 PM	Reported
67	N030006-020AMS	MS	1	Hexavalent Chromium	04/26/18 6:26 PM	Reported
68	N030006-002A	SAMP	5	Hexavalent Chromium	04/26/18 6:35 PM	Reported
69	N030006-002AMS	MS	5	Hexavalent Chromium	04/26/18 6:45 PM	Reported
70	N030006-004A	SAMP	5	Hexavalent Chromium	04/26/18 6:54 PM	Reported
71	N030006-004AMS	MS	5	Hexavalent Chromium	04/26/18 7:04 PM	Reported
72	N030006-005A	SAMP	5	Hexavalent Chromium	04/26/18 7:13 PM	Reported
73	N030006-005AMS	MS	5	Hexavalent Chromium	04/26/18 7:23 PM	Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	04/26/18 7:32 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	04/26/18 7:42 PM	Reported
76	N030006-008A	SAMP	5	Hexavalent Chromium	04/26/18 7:51 PM	Reported
77	N030006-008AMS	MS	5	Hexavalent Chromium	04/26/18 8:01 PM	Reported
78	N030006-006A	SAMP	1	Hexavalent Chromium	04/26/18 8:10 PM	Not Reported
79	N030006-006AMS	MS	1	Hexavalent Chromium	04/26/18 8:19 PM	Not Reported
80	N030006-007A	SAMP	1	Hexavalent Chromium	04/26/18 8:29 PM	Not Reported
81	N030006-007AMS	MS	1	Hexavalent Chromium	04/26/18 8:38 PM	Not Reported
82	N029973-018A	SAMP	1	Hexavalent Chromium	04/26/18 8:48 PM	Not Reported
83	N029973-018AMS	MS	1	Hexavalent Chromium	04/26/18 8:57 PM	Not Reported
84	CCV-7	CCV	1	Hexavalent Chromium	04/26/18 9:07 PM	Reported

INJECTION LOG: 180426A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	04/26/18 9:16 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180426A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**26/Apr/18 21:47:05**
No. of Injections:	**88**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	BLANK	1	1000	Unknown		04/26/2018 09:32	Finished	BLANK
12	BLANK	2	1000	Unknown		04/26/2018 09:43	Finished	BLANK
13	CCV-1,CCV,1,	3	1000	Unknown		04/26/2018 09:53	Finished	CCV @5ppb, IWST-180129A
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		04/26/2018 10:02	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		04/26/2018 10:12	Finished	CCB R180418A
16	MB-H2O,MBLK,1,	6	1000	Unknown		04/26/2018 10:21	Finished	MB R180418A
17	LCS-H2O,LCS,1,	7	1000	Unknown		04/26/2018 10:31	Finished	LCS, IWST-180129B
18	N030006-001A,SAMF	8	1000	Unknown		04/26/2018 10:40	Finished	SAMP,0.5>10mL
19	N030006-001AMS,MS	9	1000	Unknown		04/26/2018 10:49	Finished	MS (5ppb), IWST-180129B,0.5
20	N030006-002A,SAMF	10	1000	Unknown		04/26/2018 10:59	Finished	SAMP,0.5>10mL
21	N030006-002AMS,MS	11	1000	Unknown		04/26/2018 11:08	Finished	MS (5ppb), IWST-180129B,0.5
22	N030006-003A,SAMF	12	1000	Unknown		04/26/2018 11:18	Finished	SAMP,10mL
23	N030006-004A,SAMF	13	1000	Unknown		04/26/2018 11:27	Finished	SAMP,10mL
24	N030006-005A,SAMF	14	1000	Unknown		04/26/2018 11:37	Finished	SAMP,5>10mL
25	N030006-005AMS,MS	15	1000	Unknown		04/26/2018 11:46	Finished	MS (5ppb), IWST-180129B,5>1
26	CCV-2,CCV1,1,	16	1000	Unknown		04/26/2018 11:56	Finished	CCV @10ppb, IWST-180129A
27	CCB-2,CCB,1,	17	1000	Unknown		04/26/2018 12:05	Finished	CCB R180418A
28	N030006-006A,SAMF	18	1000	Unknown		04/26/2018 12:15	Finished	SAMP,2>10mL
29	N030006-006AMS,MS	19	1000	Unknown		04/26/2018 12:24	Finished	MS (1ppb), IWST-180129B,2>1
30	N030006-007A,SAMF	20	1000	Unknown		04/26/2018 12:34	Finished	SAMP,2>10mL
31	N030006-007AMS,MS	21	1000	Unknown		04/26/2018 12:43	Finished	MS (1ppb), IWST-180129B,2>1
32	N030006-008A,SAMF	22	1000	Unknown		04/26/2018 12:52	Finished	SAMP,5>10mL
33	N030006-008AMS,MS	23	1000	Unknown		04/26/2018 13:02	Finished	MS (5ppb), IWST-180129B,5>1
34	N030006-009A,SAMF	24	1000	Unknown		04/26/2018 13:11	Finished	SAMP,2>10mL
35	N030006-009AMS,MS	25	1000	Unknown		04/26/2018 13:21	Finished	MS (5ppb), IWST-180129B,2>1
36	N030006-010A,SAMF	26	1000	Unknown		04/26/2018 13:30	Finished	SAMP,10mL
37	N030006-010AMS,MS	27	1000	Unknown		04/26/2018 13:40	Finished	MS (1ppb), IWST-180129B,10
38	CCV-3,CCV,1,	28	1000	Unknown		04/26/2018 13:49	Finished	CCV @5ppb, IWST-180129A
39	CCB-3,CCB,1,	29	1000	Unknown		04/26/2018 13:59	Finished	CCB R180418A
40	N030006-011A,SAMF	30	1000	Unknown		04/26/2018 14:08	Finished	SAMP,10mL
41	N030006-011AMS,MS	31	1000	Unknown		04/26/2018 14:18	Finished	MS (1ppb), IWST-180129B,10
42	N030006-012A,SAMF	32	1000	Unknown		04/26/2018 14:27	Finished	SAMP,10mL
43	N030006-012AMS,MS	33	1000	Unknown		04/26/2018 14:37	Finished	MS (1ppb), IWST-180129B,10
44	N030006-013A,SAMF	34	1000	Unknown		04/26/2018 14:46	Finished	SAMP,10mL
45	N030006-013AMS,MS	35	1000	Unknown		04/26/2018 14:56	Finished	MS (1ppb), IWST-180129B,10
46	N030006-014A,SAMF	36	1000	Unknown		04/26/2018 15:05	Finished	SAMP,10mL
47	N030006-014AMS,MS	37	1000	Unknown		04/26/2018 15:14	Finished	MS (1ppb), IWST-180129B,10
48	N030006-001AMSD,M	38	1000	Unknown		04/26/2018 15:24	Finished	MSD (5ppb), IWST-180129B,0.
49	N030006-003A,SAMF	39	1000	Unknown		04/26/2018 15:33	Finished	SAMP,2>10mL
50	CCV-4,CCV1,1,	1	1000	Unknown		04/26/2018 15:44	Finished	CCV @10ppb, IWST-180129A
51	CCB-4,CCB,1,	2	1000	Unknown		04/26/2018 15:55	Finished	CCB R180418A
52	N030006-003ADUP,D	3	1000	Unknown		04/26/2018 16:04	Finished	DUP,2>10mL
53	N030006-003AMS,MS	4	1000	Unknown		04/26/2018 16:14	Finished	MS (5ppb), IWST-180129B,2>1
54	N030006-018A,SAMF	5	1000	Unknown		04/26/2018 16:23	Finished	SAMP,2>10mL
55	N030006-018AMS,MS	6	1000	Unknown		04/26/2018 16:32	Finished	MS (1ppb), IWST-180129B,2>1
56	N030006-015A,SAMF	7	1000	Unknown		04/26/2018 16:42	Finished	SAMP,10mL
57	N030006-015AMS,MS	8	1000	Unknown		04/26/2018 16:51	Finished	MS (1ppb), IWST-180129B,10
58	N030006-016A,SAMF	9	1000	Unknown		04/26/2018 17:01	Finished	SAMP,10mL
59	N030006-016AMS,MS	10	1000	Unknown		04/26/2018 17:10	Finished	MS (1ppb), IWST-180129B,10
60	N030006-017A,SAMF	11	1000	Unknown		04/26/2018 17:20	Finished	SAMP,5>10mL

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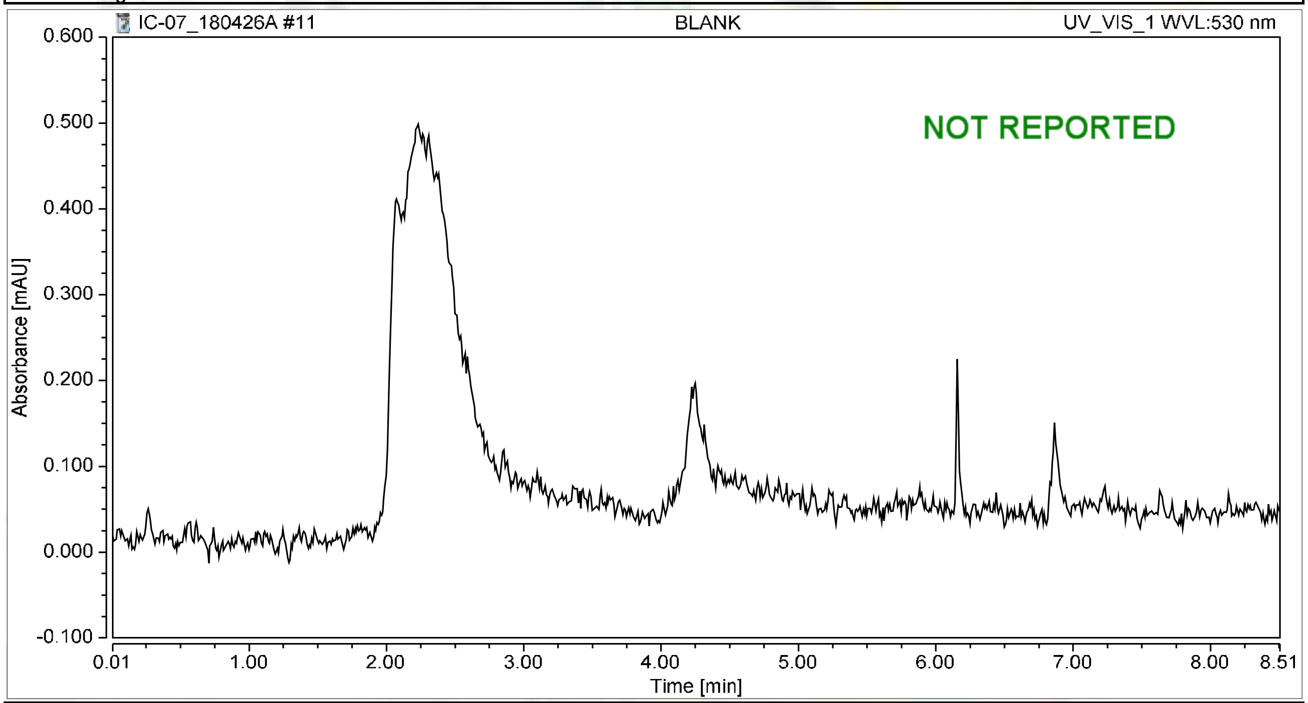
61	N030006-017AMS,MS	12	1000	Unknown		04/26/2018 17:29	Finished	MS (5ppb), IWST-180129B,5>1
62	CCV-5,CCV,1,	13	1000	Unknown		04/26/2018 17:39	Finished	CCV @5ppb, IWST-180129A
63	CCB-5,CCB,1,	14	1000	Unknown		04/26/2018 17:48	Finished	CCB R180418A
64	N030006-019A,SAMP	15	1000	Unknown		04/26/2018 17:58	Finished	SAMP,10mL
65	N030006-019AMS,MS	16	1000	Unknown		04/26/2018 18:07	Finished	MS (1ppb), IWST-180129B,10
66	N030006-020A,SAMP	17	1000	Unknown		04/26/2018 18:17	Finished	SAMP,10mL
67	N030006-020AMS,MS	18	1000	Unknown		04/26/2018 18:26	Finished	MS (1ppb), IWST-180129B,10
68	N030006-002A,SAMP	19	1000	Unknown		04/26/2018 18:35	Finished	SAMP,2>10mL
69	N030006-002AMS,MS	20	1000	Unknown		04/26/2018 18:45	Finished	MS (5ppb), IWST-180129B,2>1
70	N030006-004A,SAMP	21	1000	Unknown		04/26/2018 18:54	Finished	SAMP,2>10mL
71	N030006-004AMS,MS	22	1000	Unknown		04/26/2018 19:04	Finished	MS (5ppb), IWST-180129B,2>1
72	N030006-005A,SAMP	23	1000	Unknown		04/26/2018 19:13	Finished	SAMP,2>10mL
73	N030006-005AMS,MS	24	1000	Unknown		04/26/2018 19:23	Finished	MS (1ppb), IWST-180129B,2>1
74	CCV-6,CCV1,1,	25	1000	Unknown		04/26/2018 19:32	Finished	CCV @10ppb, IWST-180129A
75	CCB-6,CCB,1,	26	1000	Unknown		04/26/2018 19:42	Finished	CCB R180418A
76	N030006-008A,SAMP	27	1000	Unknown		04/26/2018 19:51	Finished	SAMP,2>10mL
77	N030006-008AMS,MS	28	1000	Unknown		04/26/2018 20:01	Finished	MS (1ppb), IWST-180129B,2>1
78	N030006-006A,SAMP	29	1000	Unknown		04/26/2018 20:10	Finished	SAMP,10mL
79	N030006-006AMS,MS	30	1000	Unknown		04/26/2018 20:19	Finished	MS (1ppb), IWST-180129B,10
80	N030006-007A,SAMP	31	1000	Unknown		04/26/2018 20:29	Finished	SAMP,10mL
81	N030006-007AMS,MS	32	1000	Unknown		04/26/2018 20:38	Finished	MS (1ppb), IWST-180129B,10
82	N029973-018A,SAMP	33	1000	Unknown		04/26/2018 20:48	Finished	SAMP,10mL
83	N029973-018AMS,MS	34	1000	Unknown		04/26/2018 20:57	Finished	MS (1ppb), IWST-180129B,10
84	CCV-7,CCV,1,	35	1000	Unknown		04/26/2018 21:07	Finished	CCV @5ppb, IWST-180129A
85	CCB-7,CCB,1,	36	1000	Unknown		04/26/2018 21:16	Finished	CCB R180418A
86	SHUTDOWN	37	1000	Unknown		04/26/2018 21:26	Finished	
87	Eluent: R180426A	38	1000	Unknown		n.a.	Finished	Eluent
88	PCR: R180426B	39	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 09:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

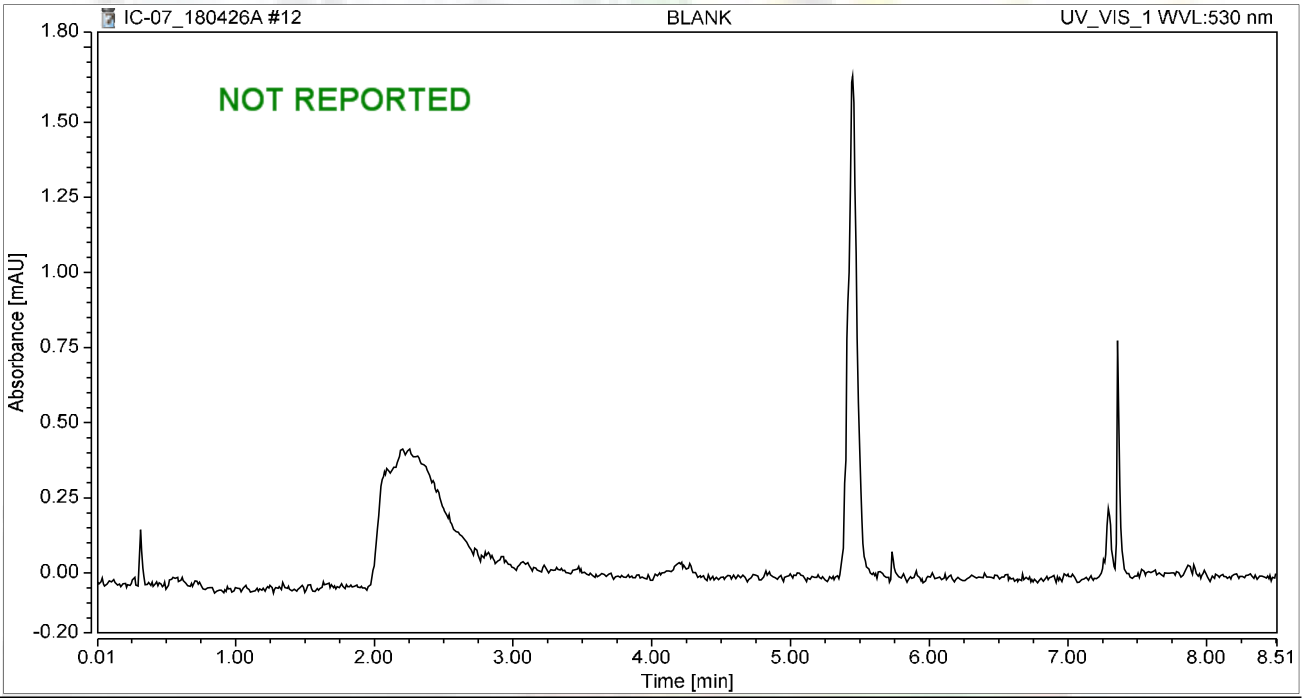
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 09:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

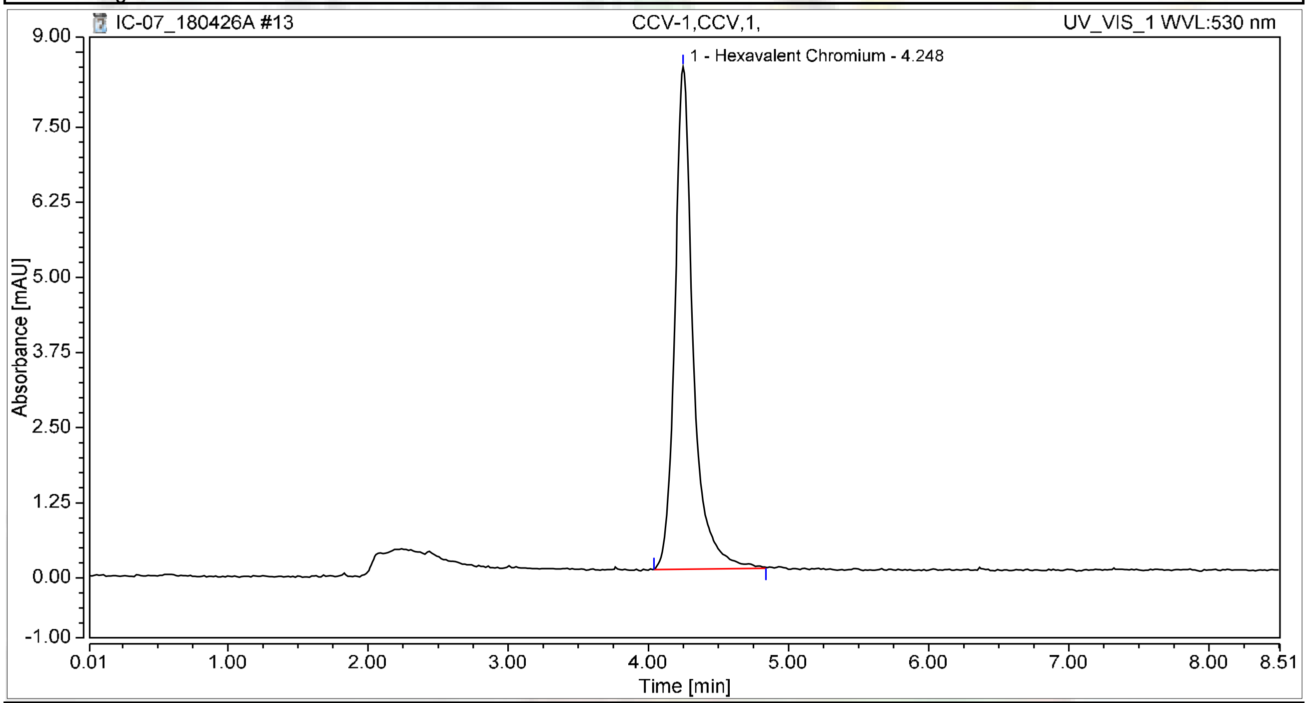
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 09:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

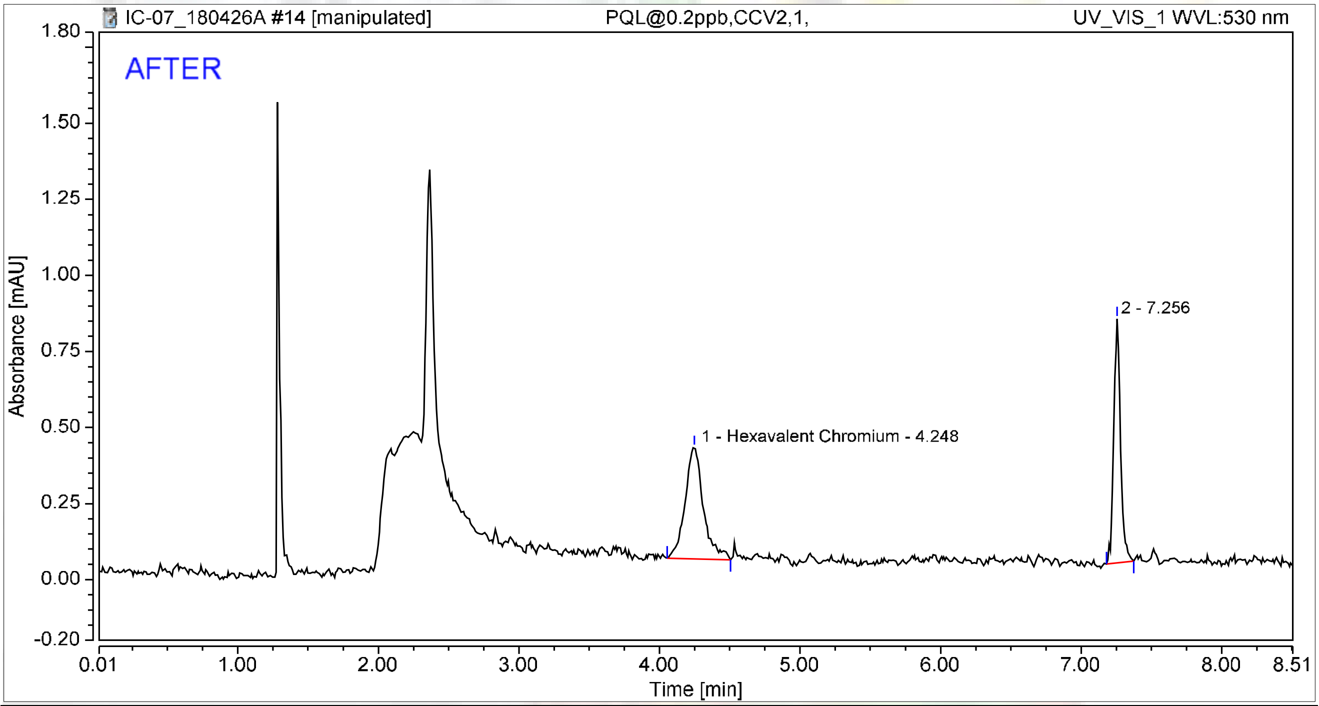
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.265	8.362	100.00	100.00	4.9908
Total:			**1.265**	**8.362**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 10:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.055	0.365	55.04	31.30	0.2161
2		7.256	0.045	0.802	44.96	68.70	n.a.
Total:			**0.100**	**1.167**	**100.00**	**100.00**	

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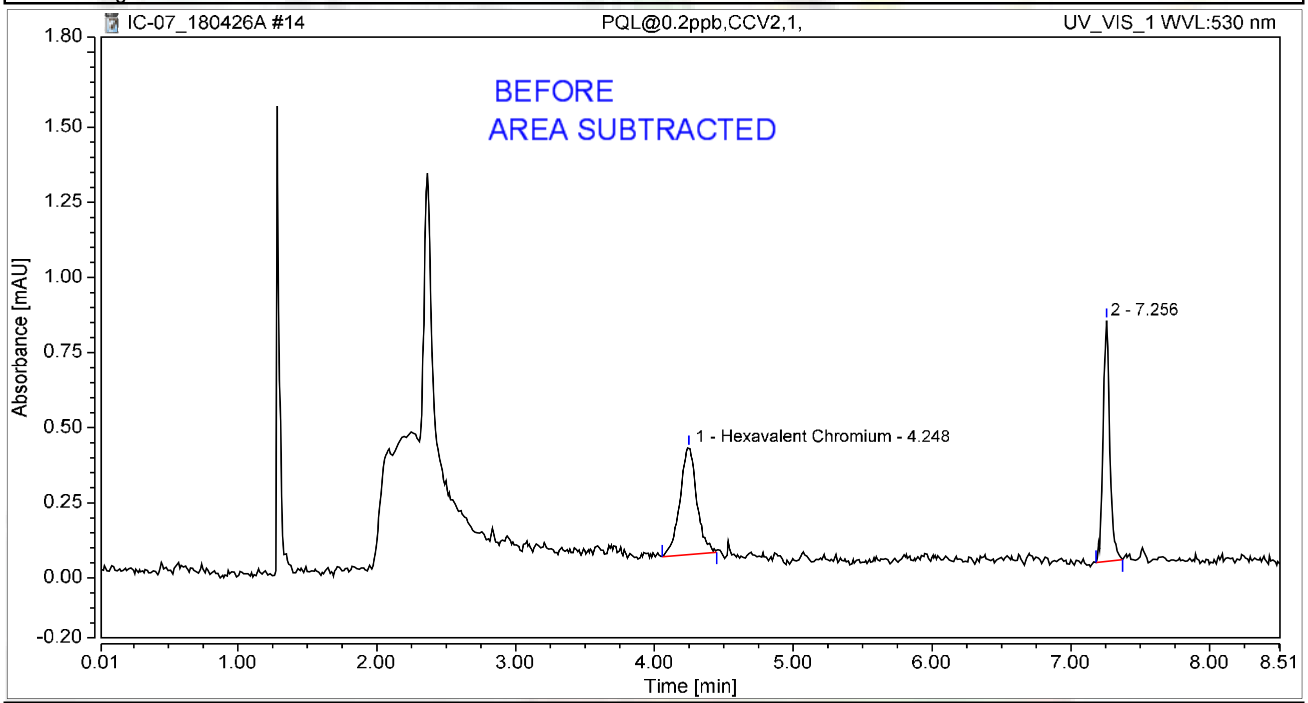
Reviewed by:
Nancy 5/9/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 10:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.050	0.356	52.69	30.73	0.1967
2		7.256	0.045	0.802	47.31	69.27	n.a.
Total:			**0.095**	**1.157**	**100.00**	**100.00**	

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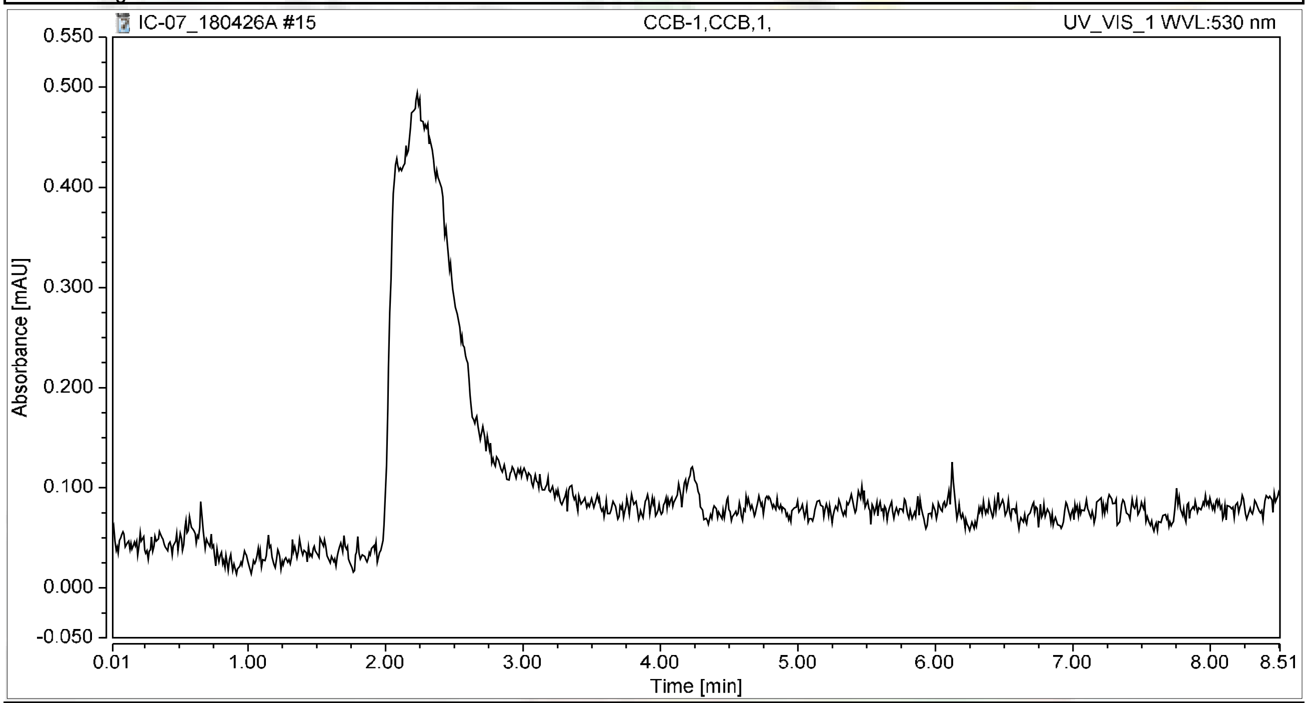
Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 10:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

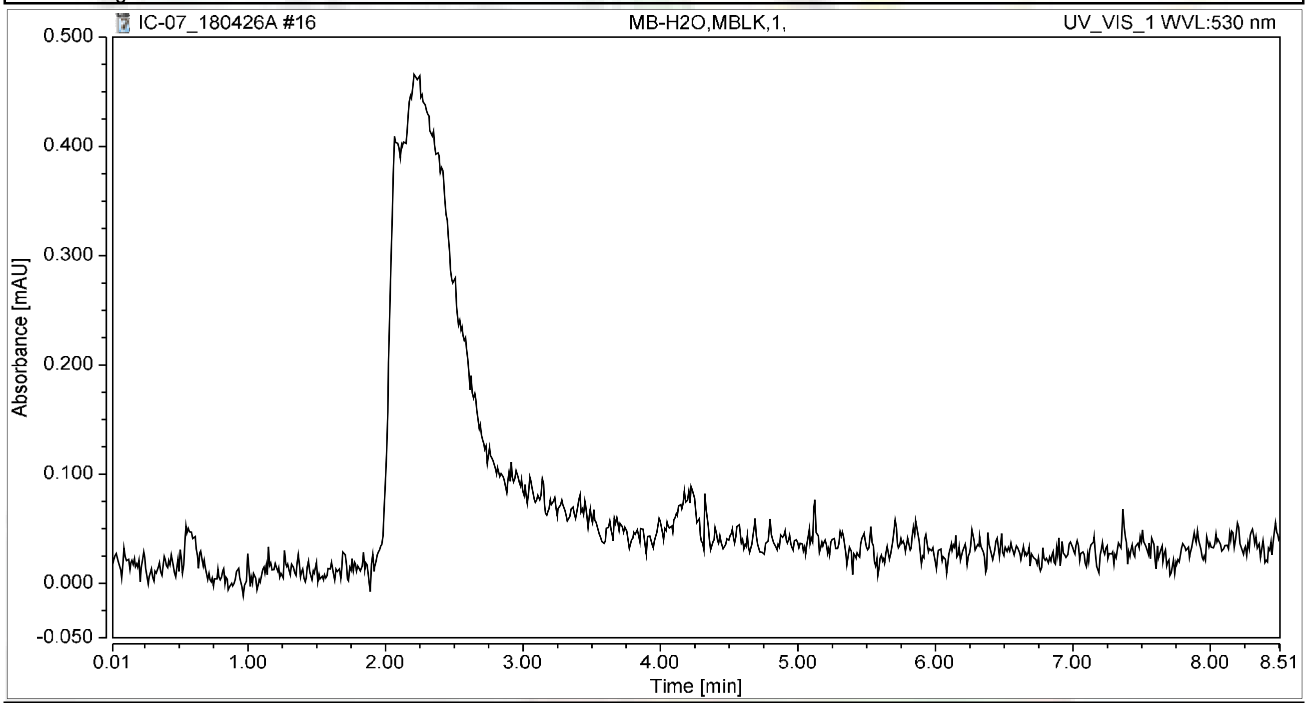
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 10:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

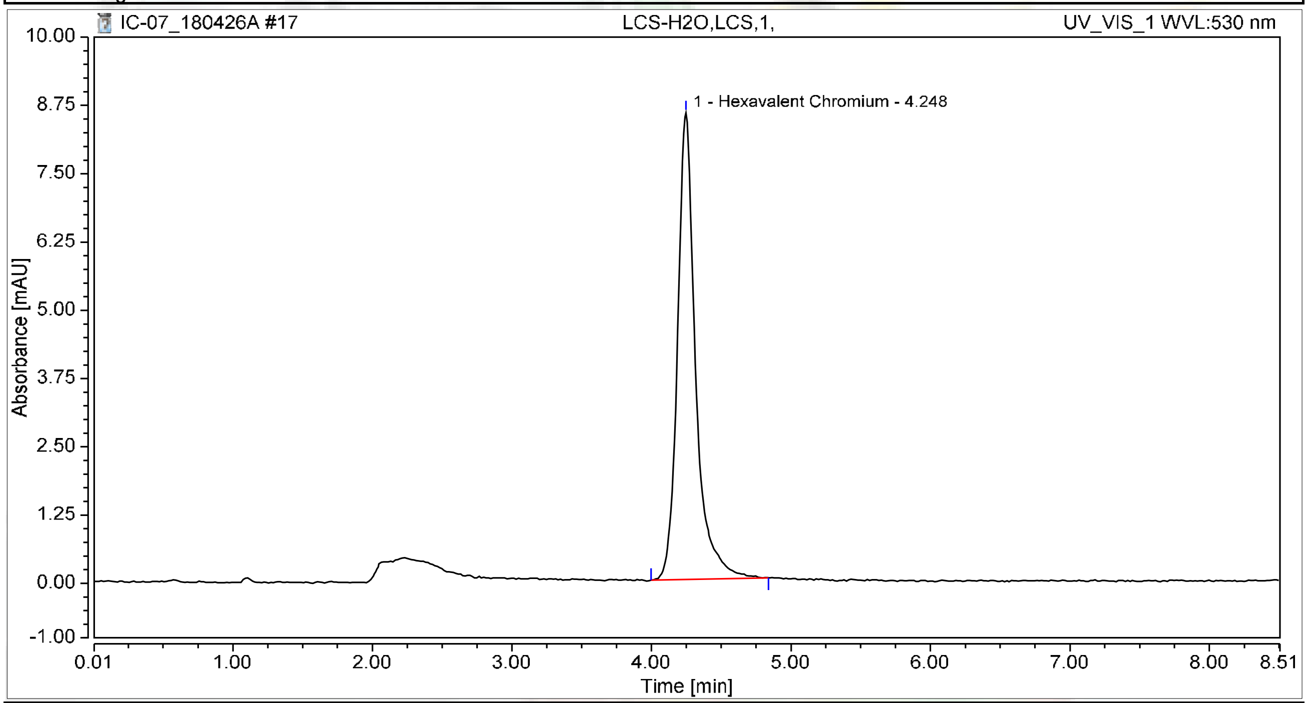
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 10:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

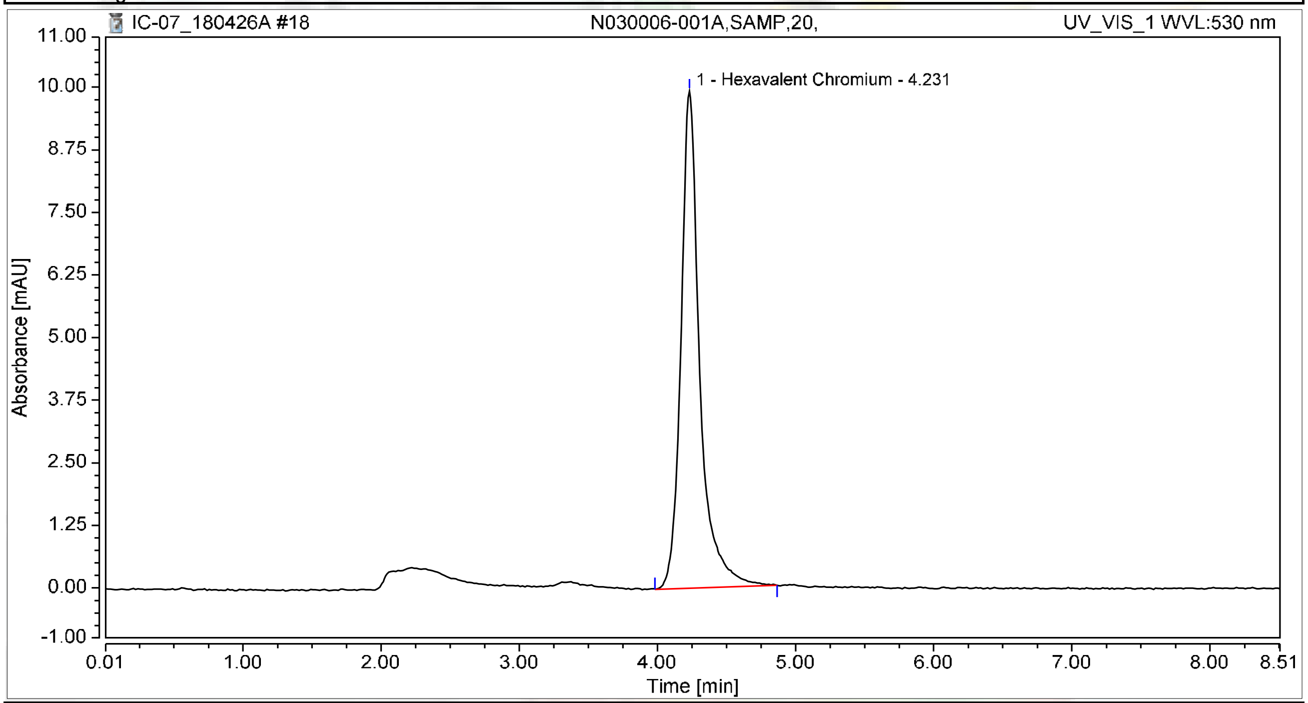
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.286	8.545	100.00	100.00	5.0712
Total:			**1.286**	**8.545**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-001A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 10:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

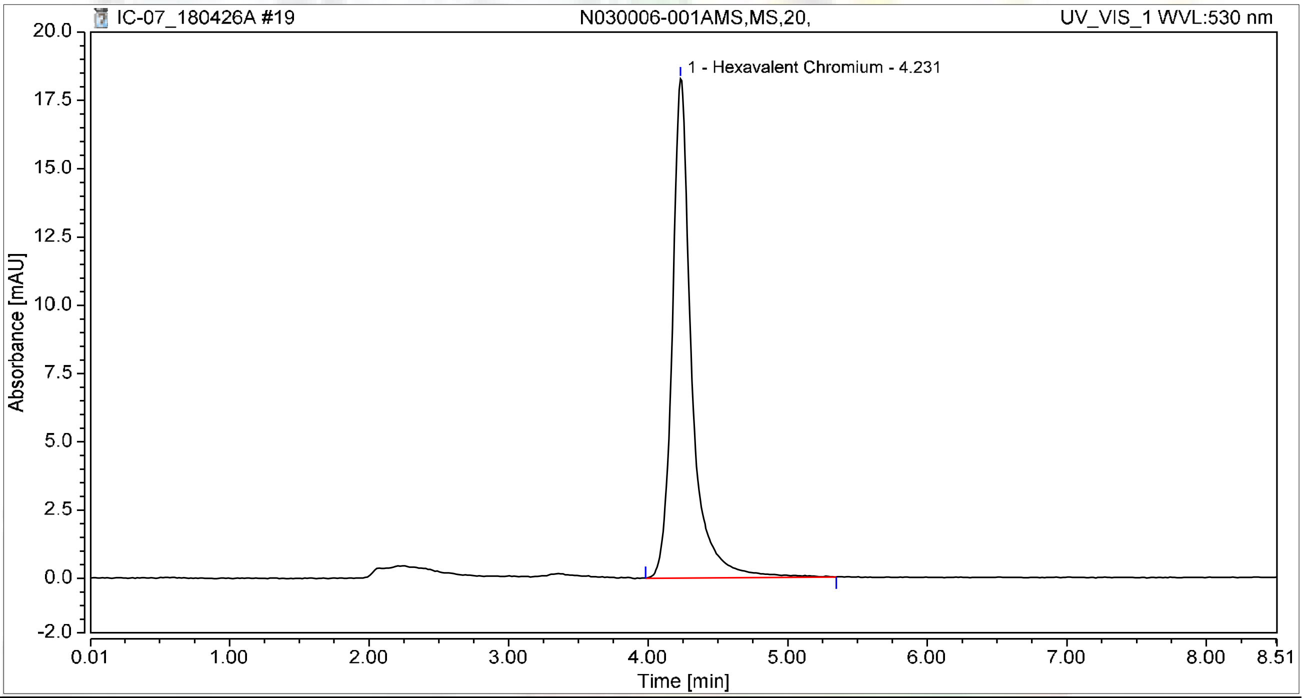
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.565	9.929	100.00	100.00	6.1726
Total:			**1.565**	**9.929**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-001AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

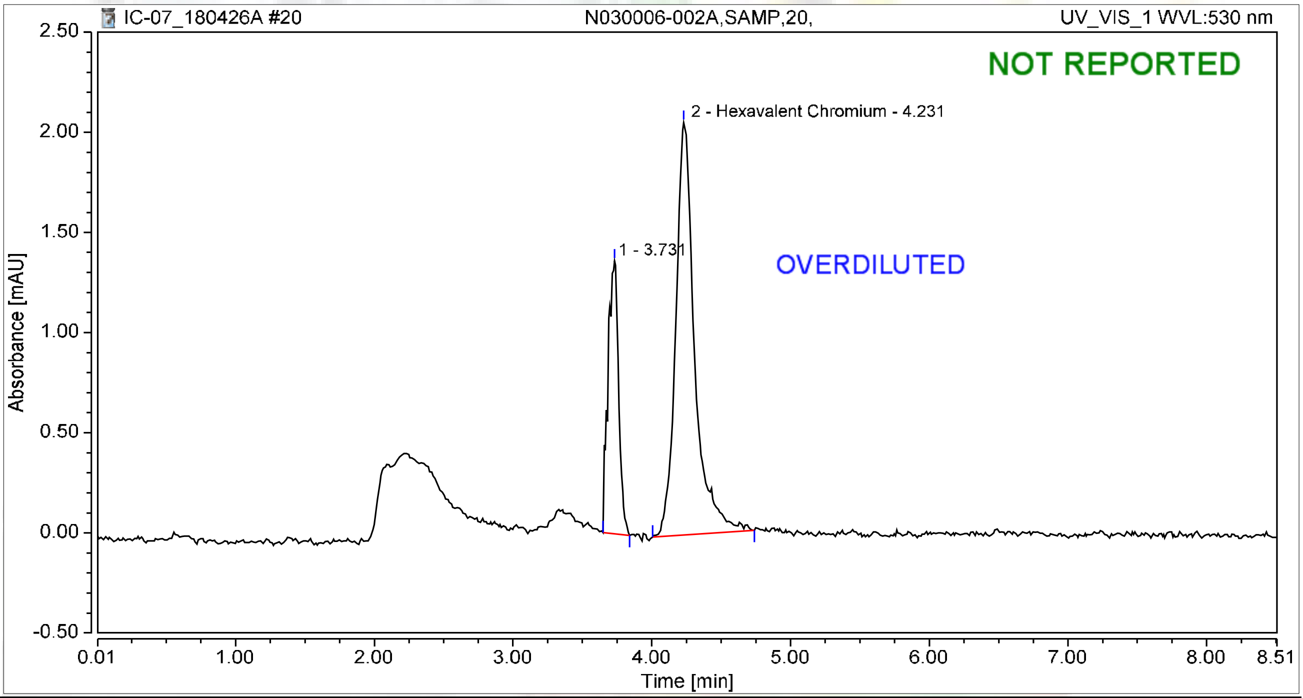
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.945	18.280	100.00	100.00	11.6167
Total:			**2.945**	**18.280**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-002A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

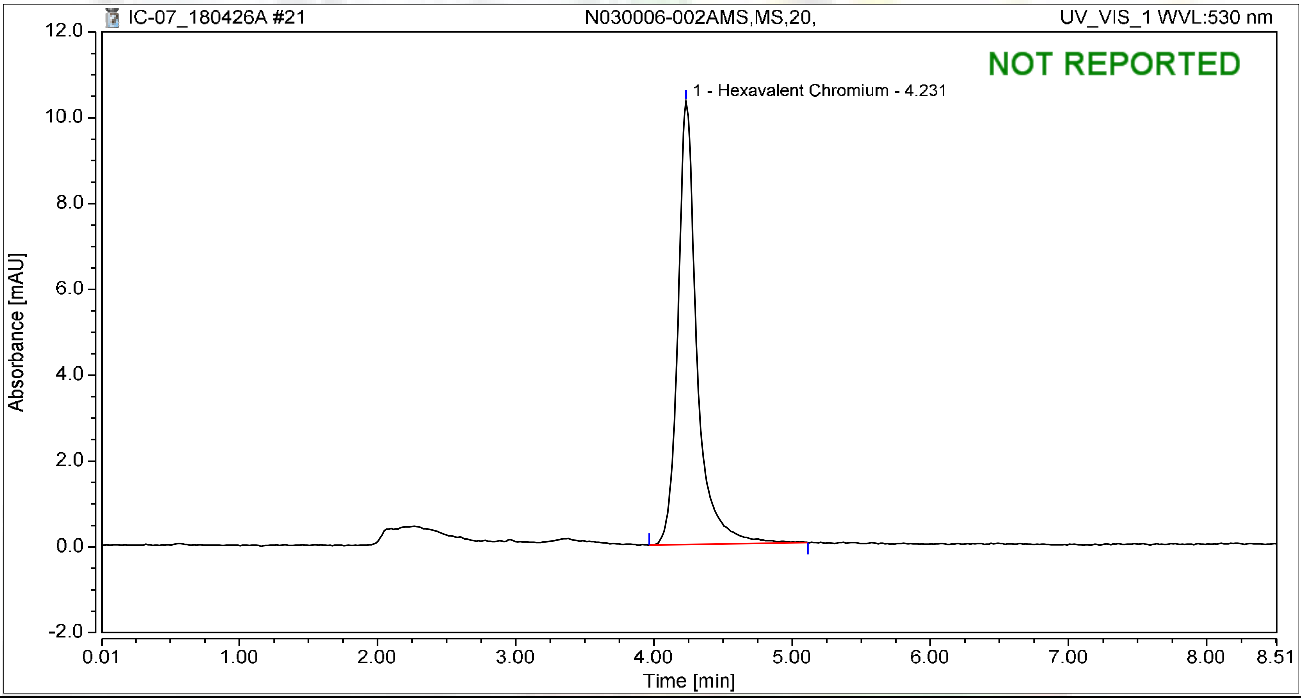
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.731	0.121	1.363	27.10	39.82	n.a.
2	Hexavalent Chromium	4.231	0.326	2.060	72.90	60.18	1.2843
Total:			**0.447**	**3.423**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-002AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

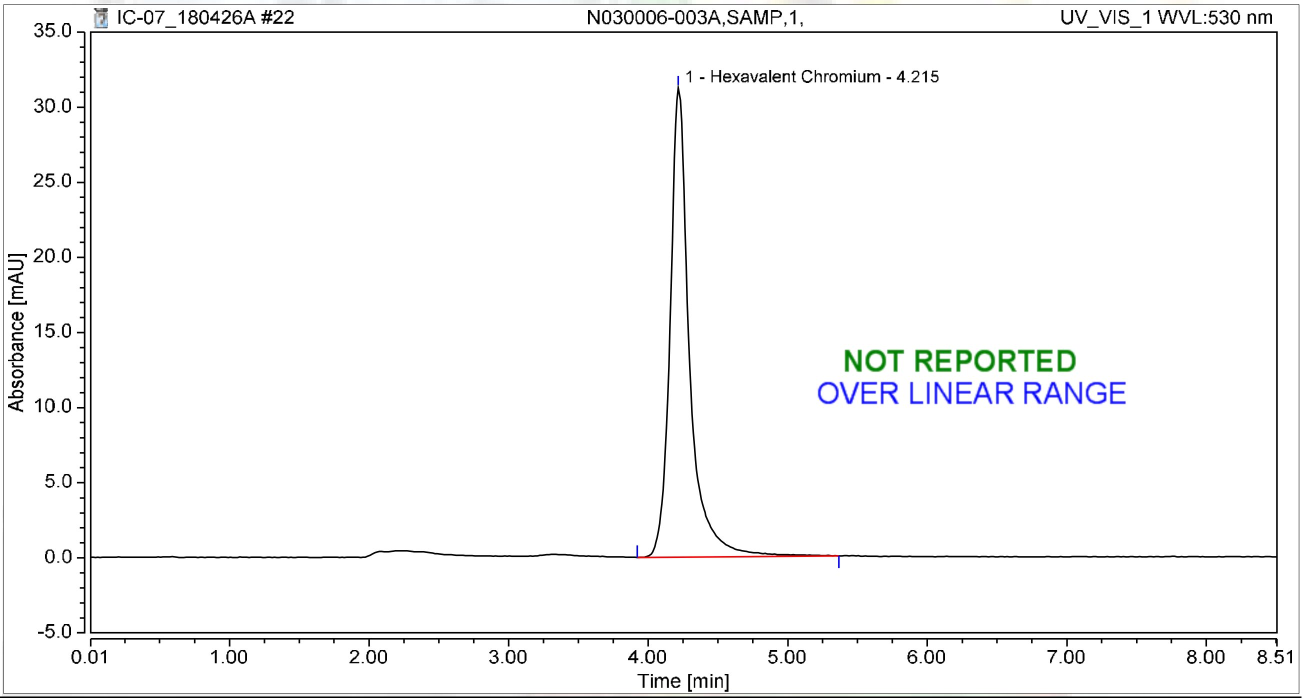
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.659	10.323	100.00	100.00	6.5446
Total:			**1.659**	**10.323**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 11:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

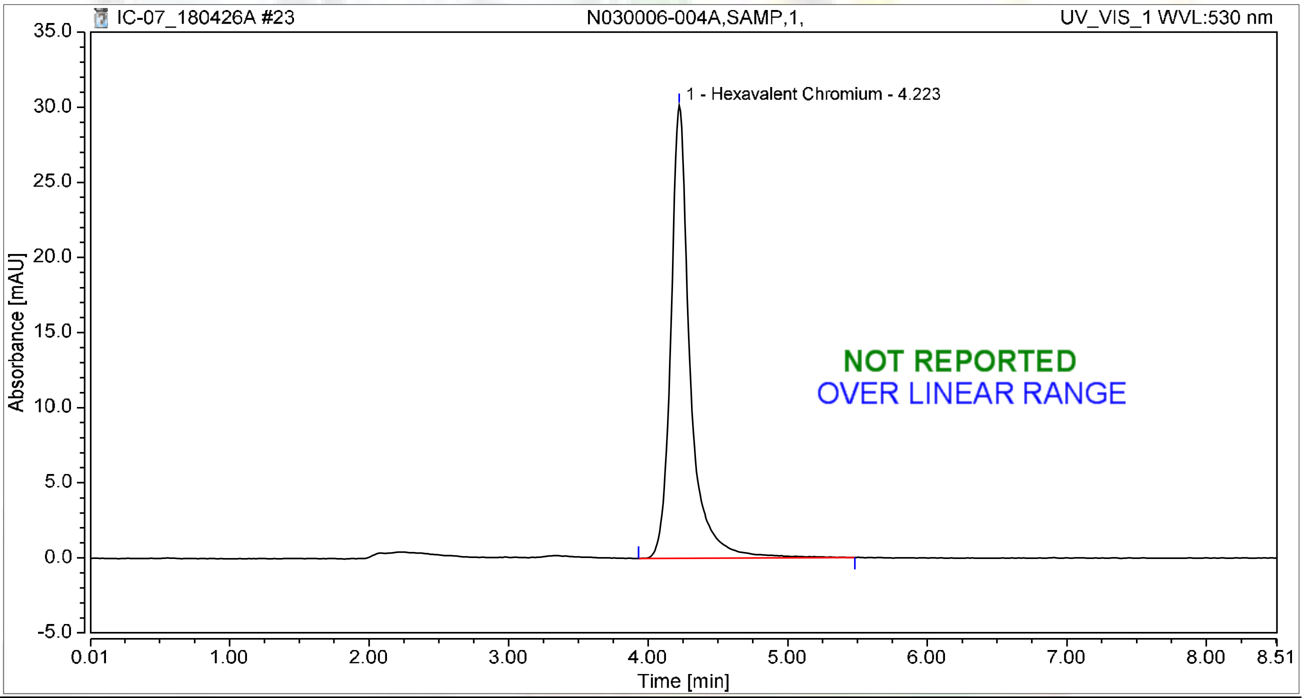
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	5.078	31.240	100.00	100.00	20.0305
Total:			**5.078**	**31.240**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 11:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

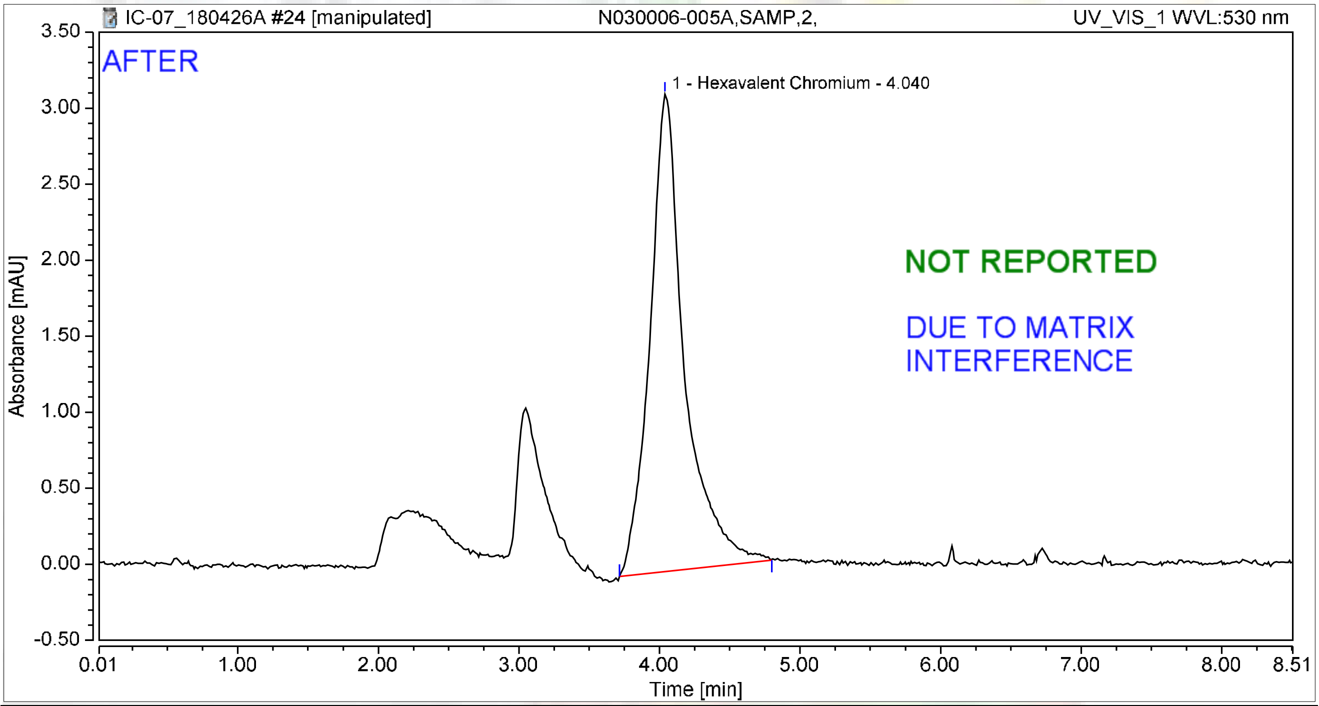
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	4.838	30.143	100.00	100.00	19.0831
Total:			**4.838**	**30.143**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-005A,SAMP,2,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 11:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.896	3.138	100.00	100.00	3.5351
Total:			**0.896**	**3.138**	**100.00**	**100.00**	

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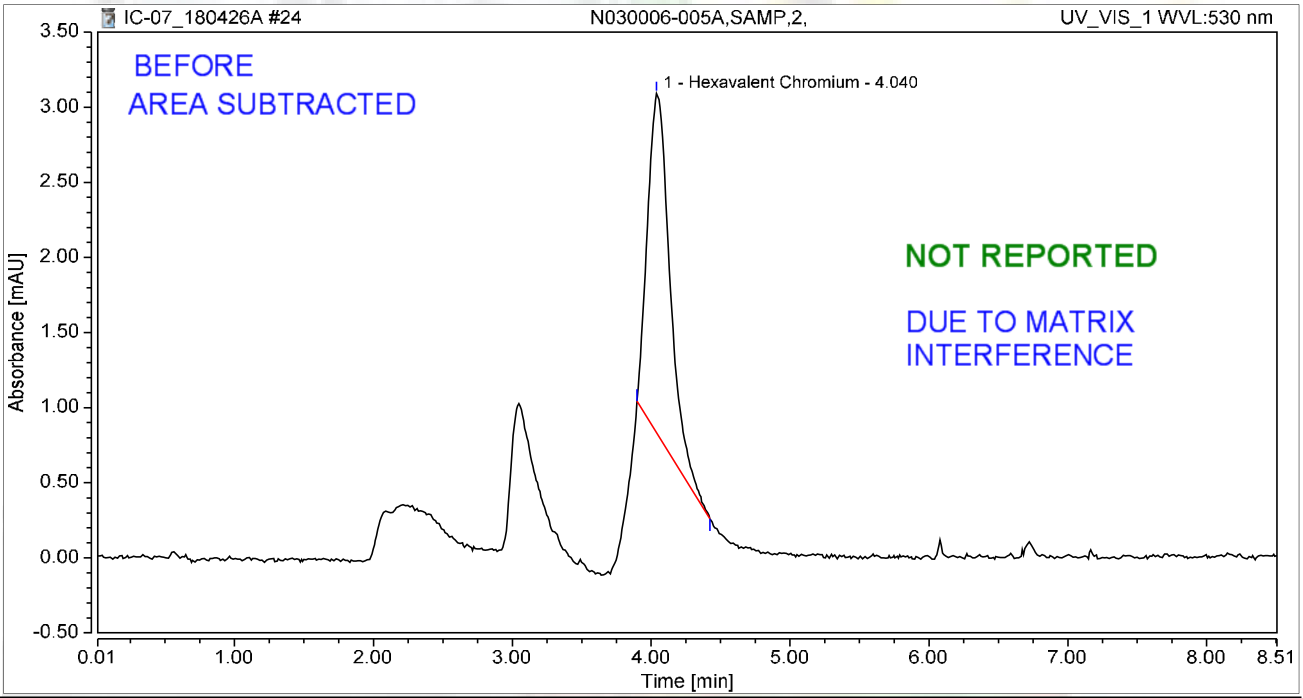
Chromatogram and Results

Injection Details

Injection Name:	**N030006-005A,SAMP,2,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 11:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.424	2.258	100.00	100.00	1.6713
Total:			**0.424**	**2.258**	**100.00**	**100.00**	

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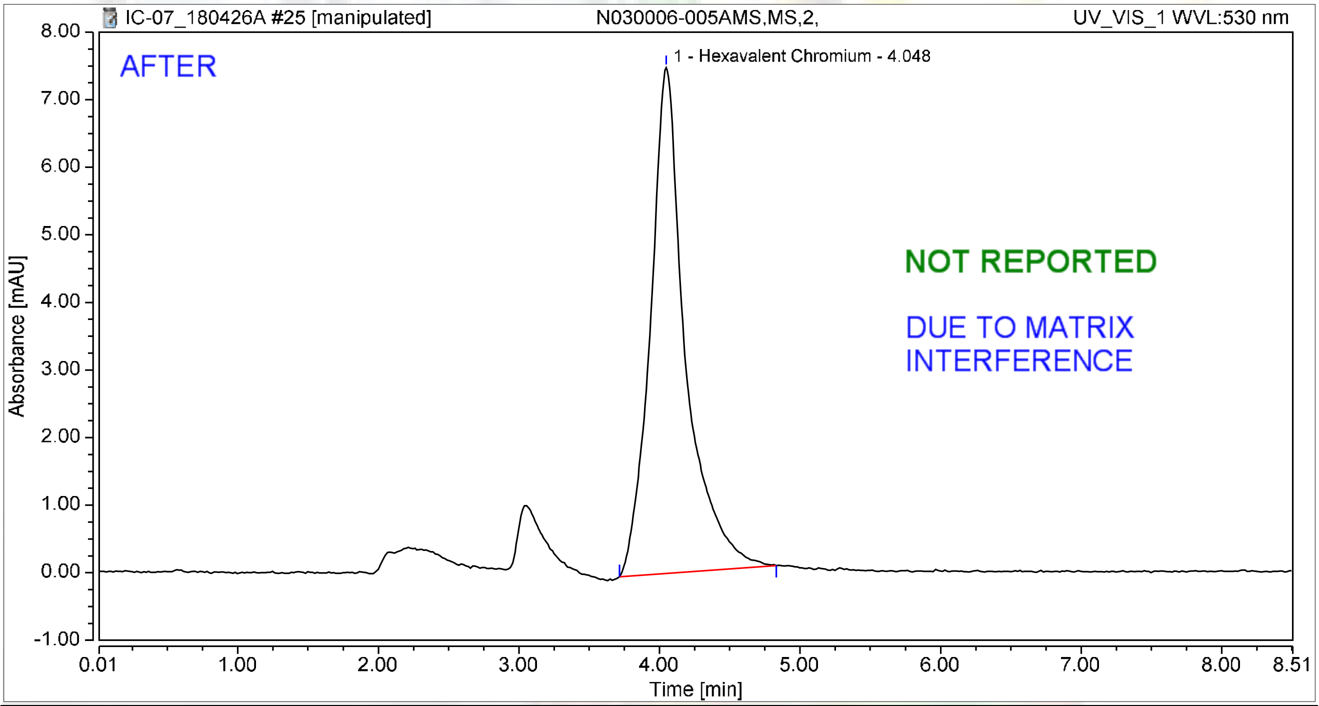
Chromatogram and Results

Injection Details

Injection Name:	**N030006-005AMS,MS,2,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 11:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	2.160	7.485	100.00	100.00	8.5209
Total:			**2.160**	**7.485**	**100.00**	**100.00**	

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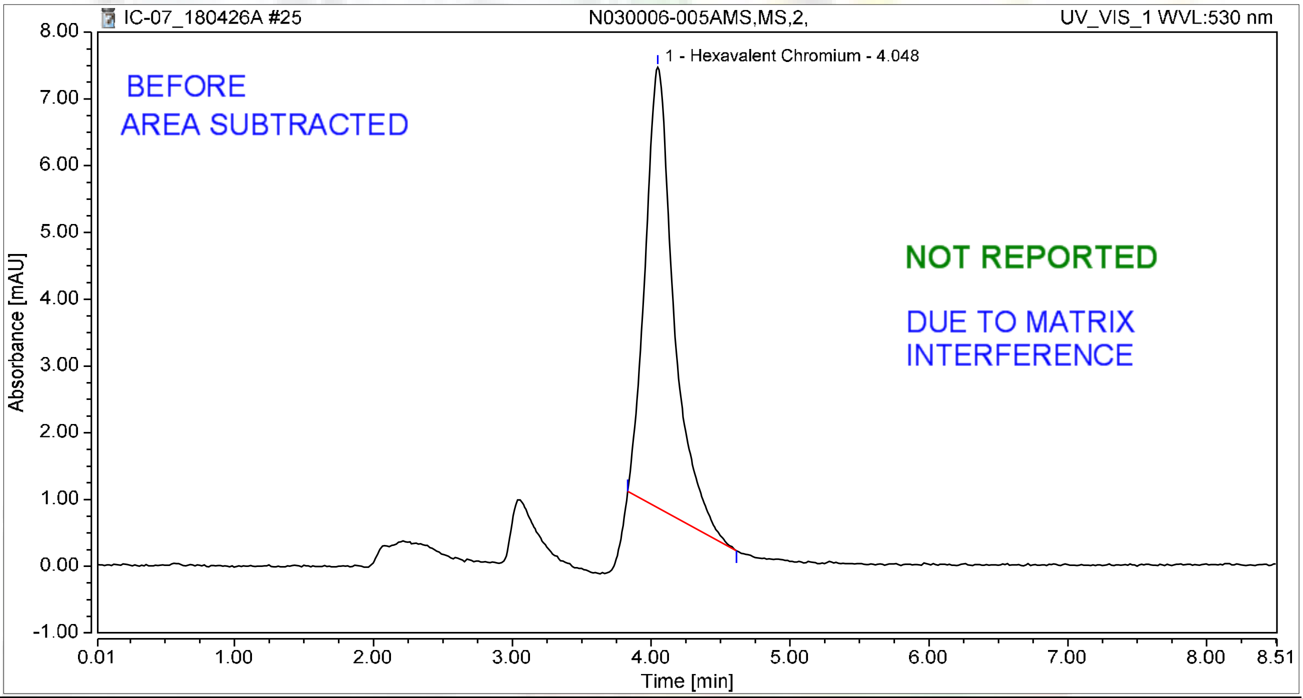
Chromatogram and Results

Injection Details

Injection Name:	**N030006-005AMS,MS,2,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 11:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.048	1.580	6.601	100.00	100.00	6.2308
Total:			**1.580**	**6.601**	**100.00**	**100.00**	

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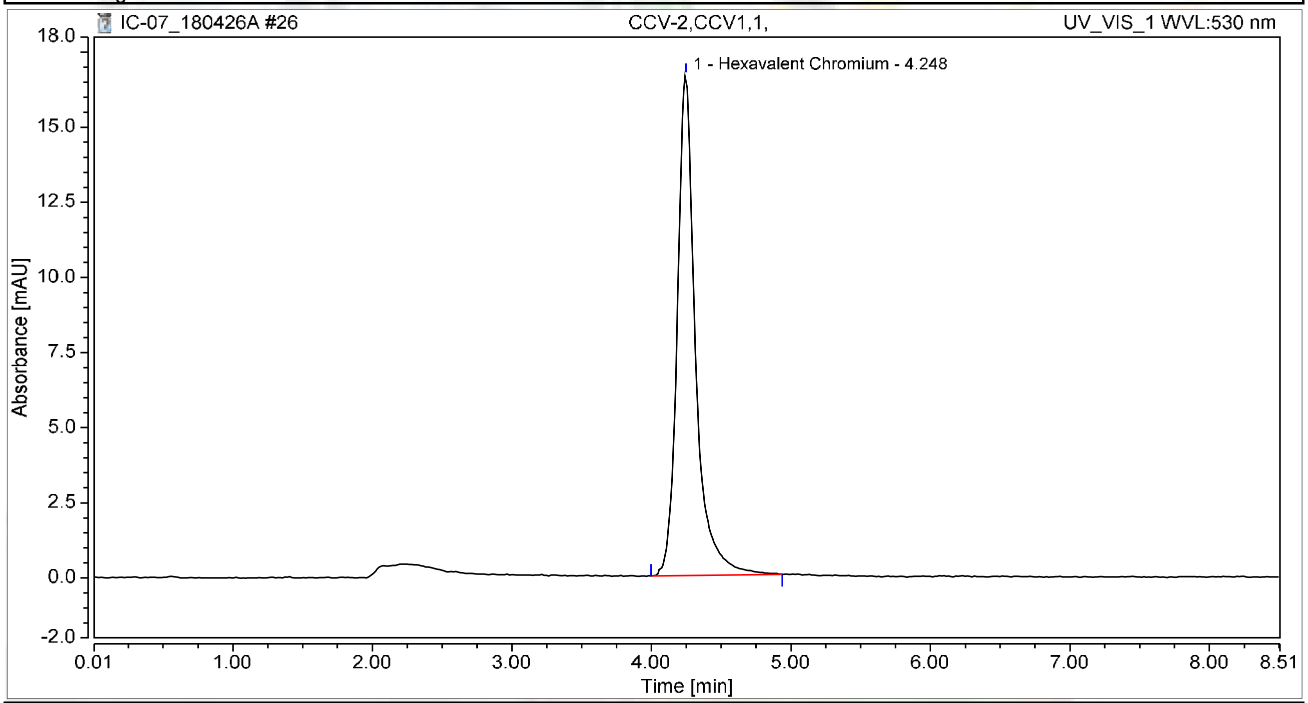
Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 11:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

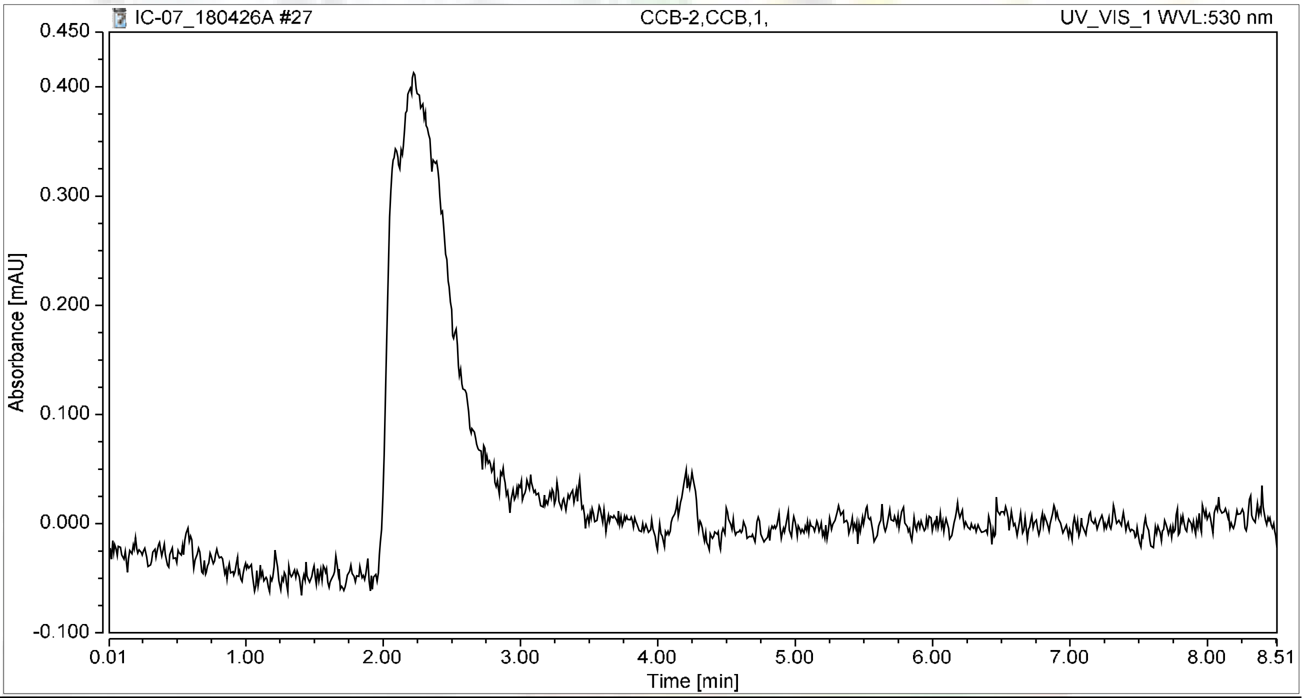
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.545	16.660	100.00	100.00	10.0376
Total:			**2.545**	**16.660**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 12:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

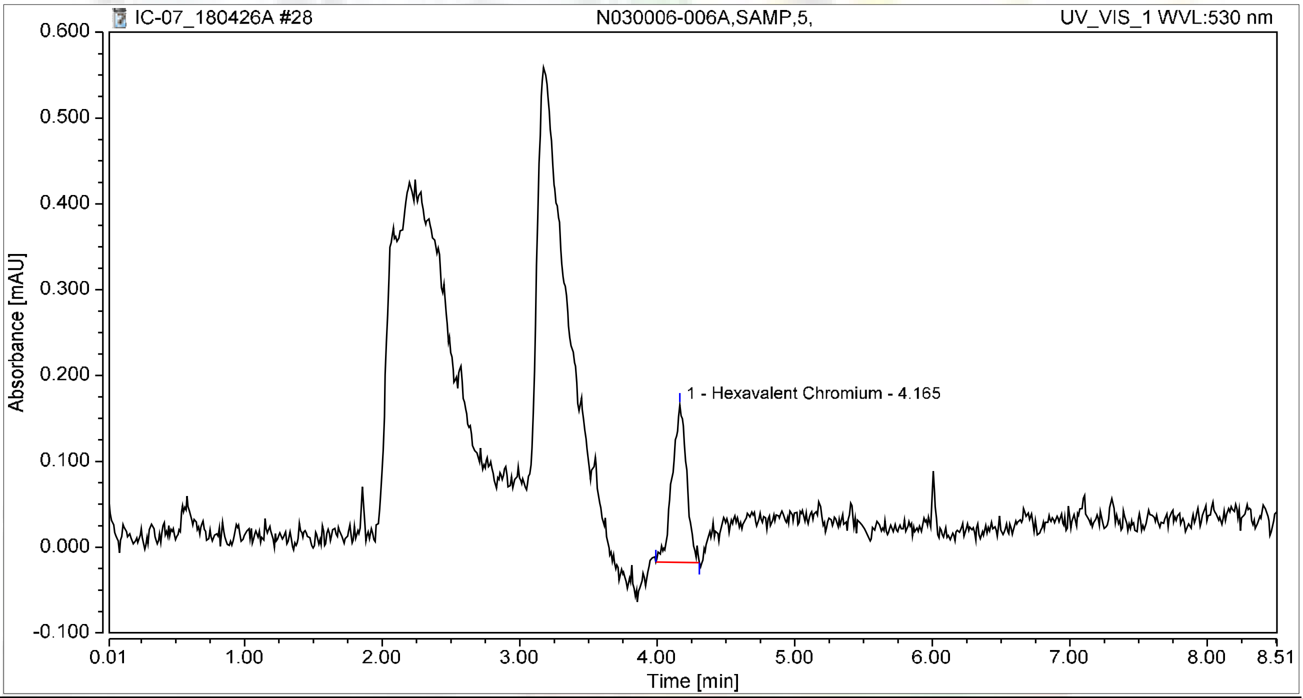
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-006A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 12:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

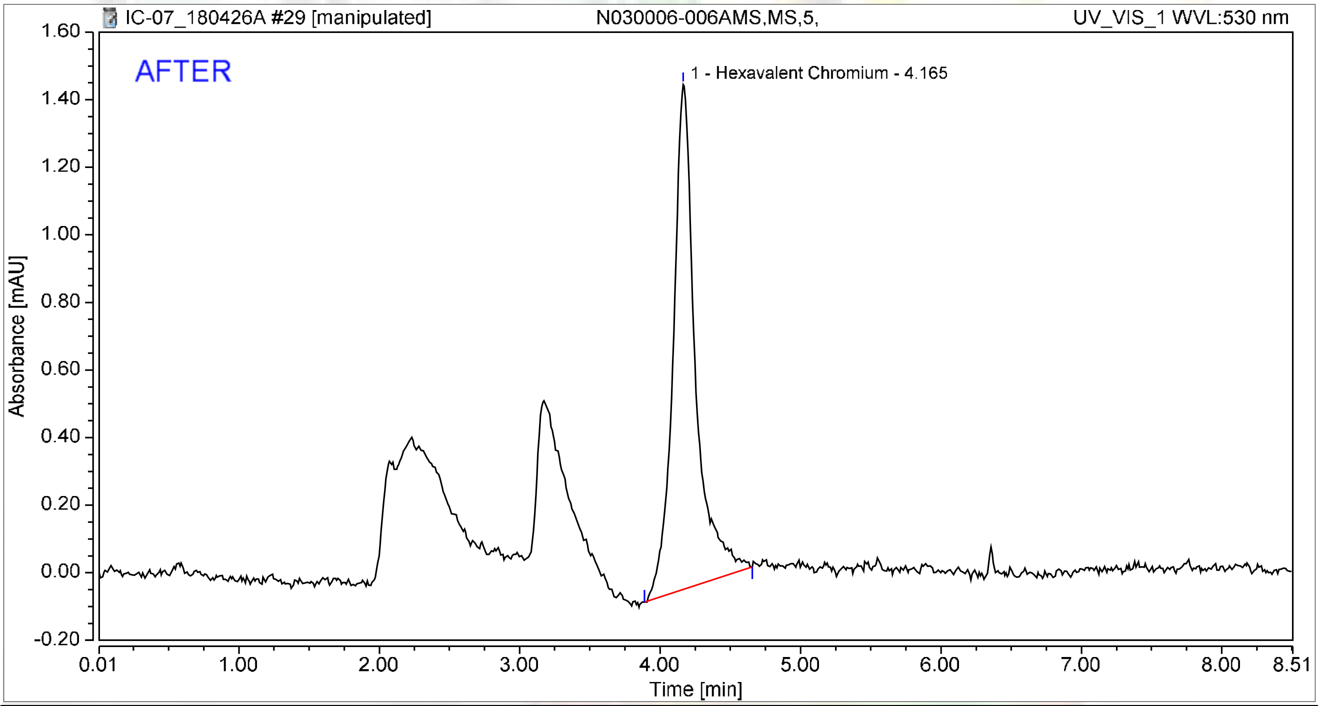
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.022	0.183	100.00	100.00	0.0878
Total:			**0.022**	**0.183**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-006AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 12:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.276	1.494	100.00	100.00	1.0901
Total:			**0.276**	**1.494**	**100.00**	**100.00**	

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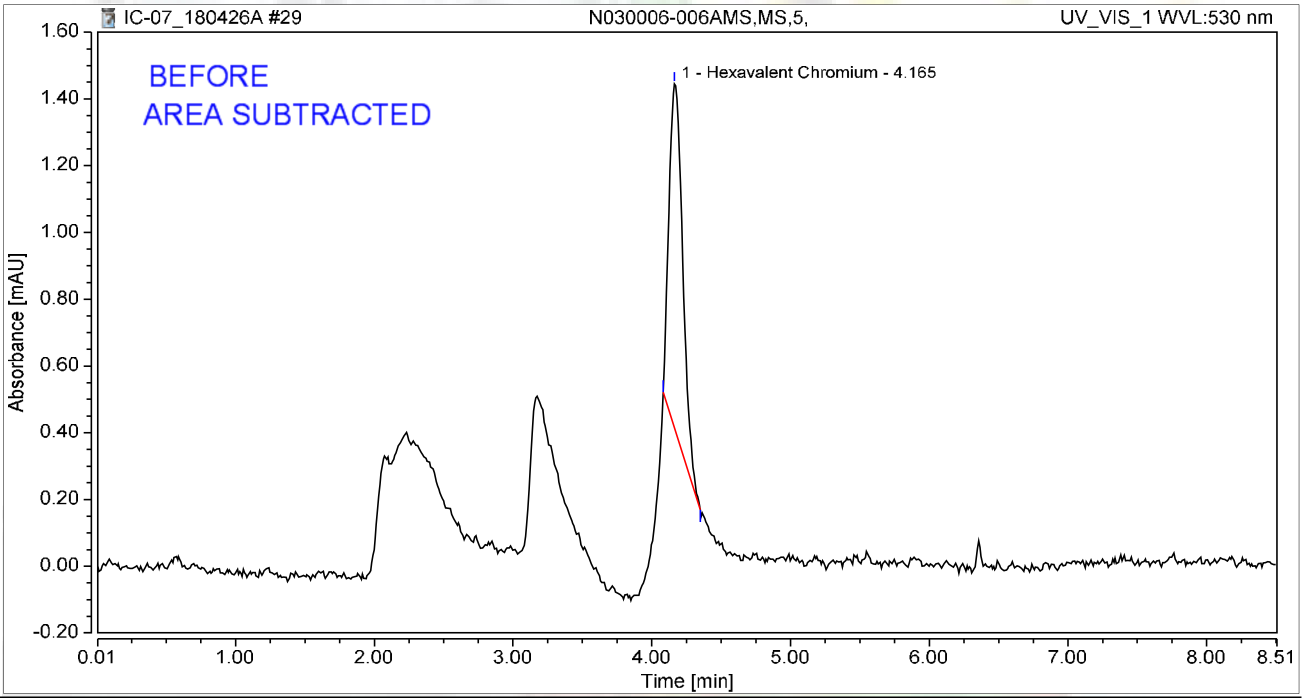
Chromatogram and Results

Injection Details

Injection Name:	**N030006-006AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 12:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.120	1.034	100.00	100.00	0.4714
Total:			**0.120**	**1.034**	**100.00**	**100.00**	

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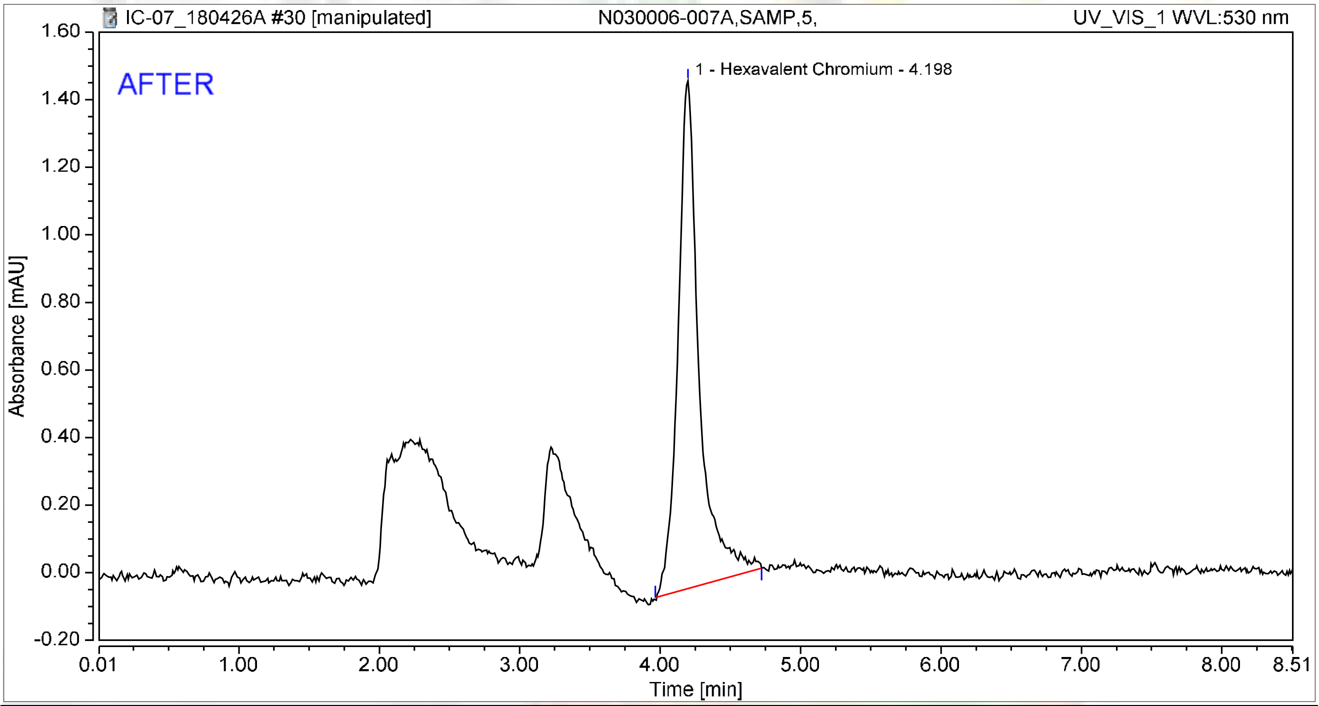
Chromatogram and Results

Injection Details

Injection Name:	**N030006-007A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 12:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.264	1.503	100.00	100.00	1.0414
Total:			**0.264**	**1.503**	**100.00**	**100.00**	

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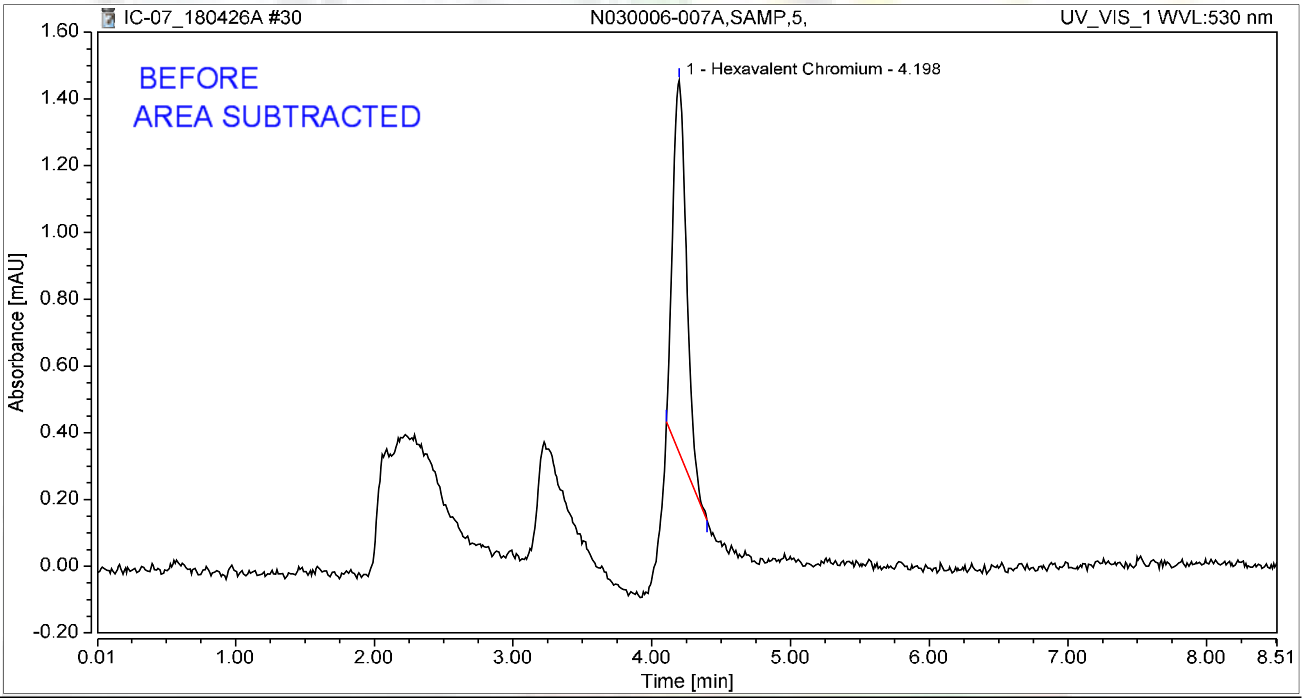
Chromatogram and Results

Injection Details

Injection Name:	**N030006-007A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 12:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.128	1.116	100.00	100.00	0.5031
Total:			**0.128**	**1.116**	**100.00**	**100.00**	

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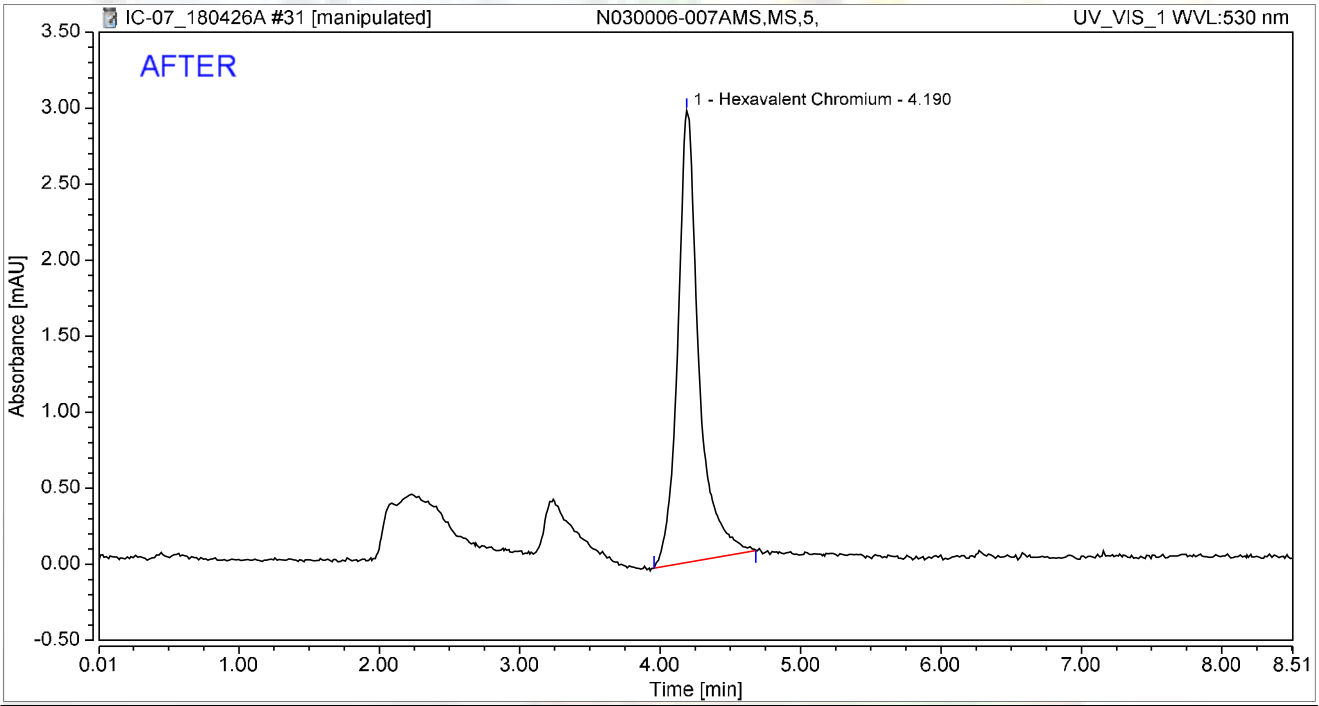
Chromatogram and Results

Injection Details

Injection Name:	**N030006-007AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.519	2.972	100.00	100.00	2.0465
Total:			**0.519**	**2.972**	**100.00**	**100.00**	

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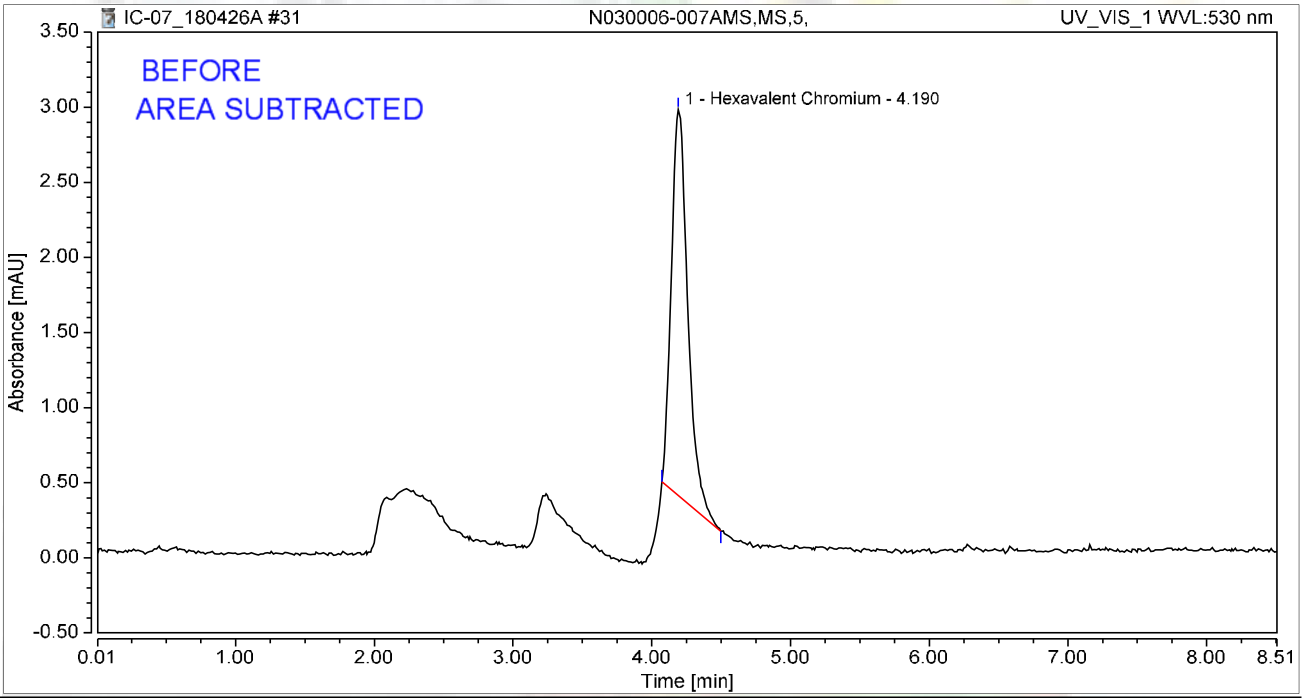
Chromatogram and Results

Injection Details

Injection Name:	**N030006-007AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.355	2.567	100.00	100.00	1.4009
Total:			**0.355**	**2.567**	**100.00**	**100.00**	

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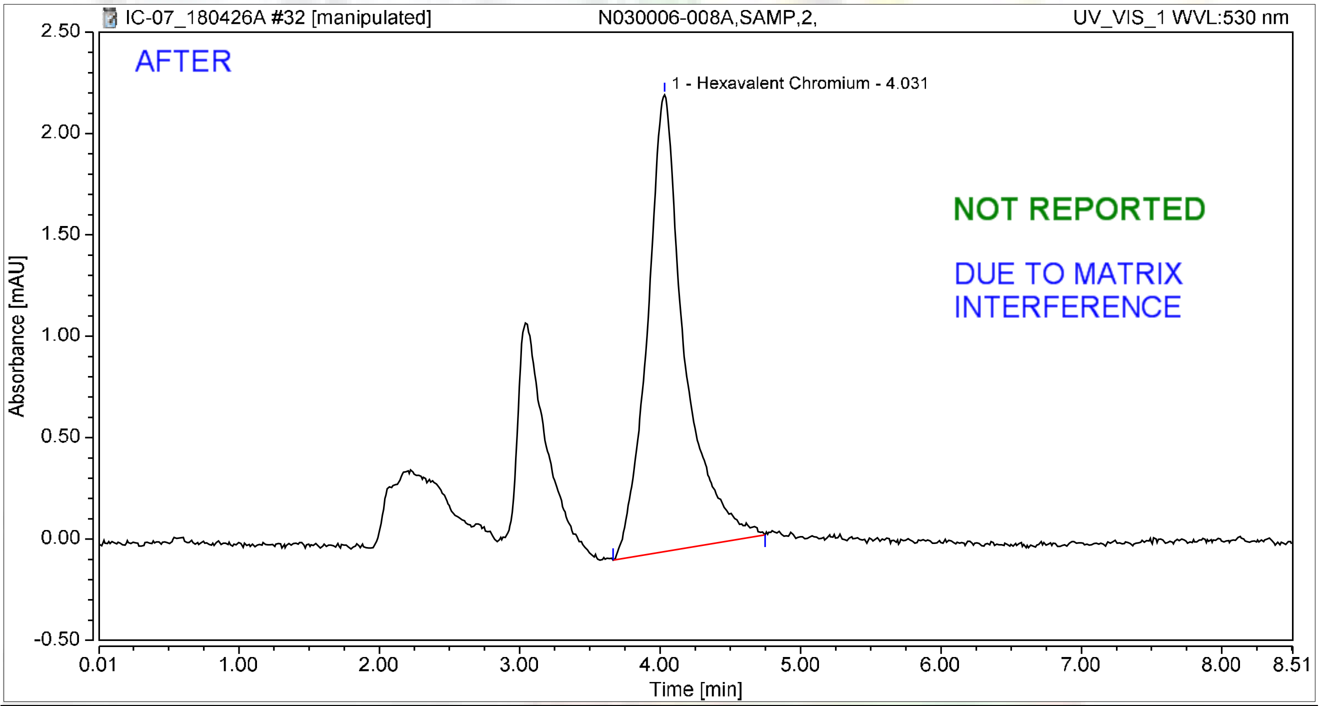
Chromatogram and Results

Injection Details

Injection Name:	**N030006-008A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 12:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	0.694	2.253	100.00	100.00	2.7378
Total:			**0.694**	**2.253**	**100.00**	**100.00**	

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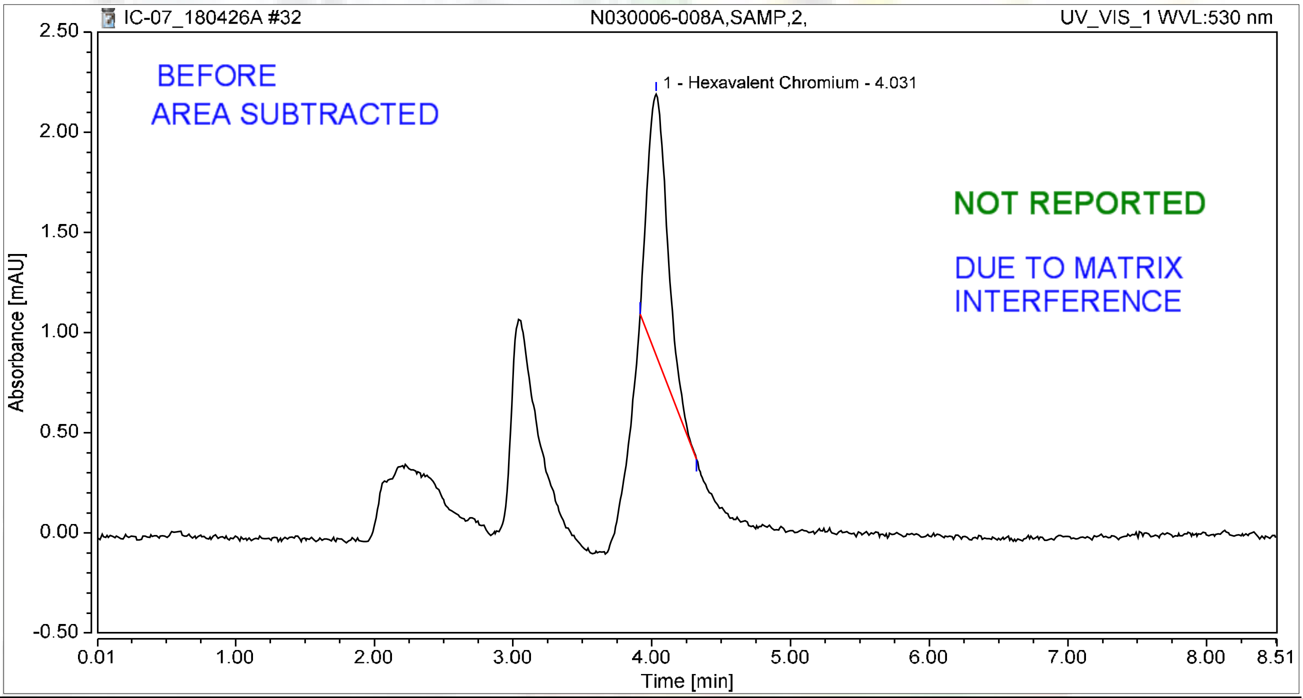
Chromatogram and Results

Injection Details

Injection Name:	**N030006-008A,SAMP,2,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 12:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	0.217	1.305	100.00	100.00	0.8578
Total:			**0.217**	**1.305**	**100.00**	**100.00**	

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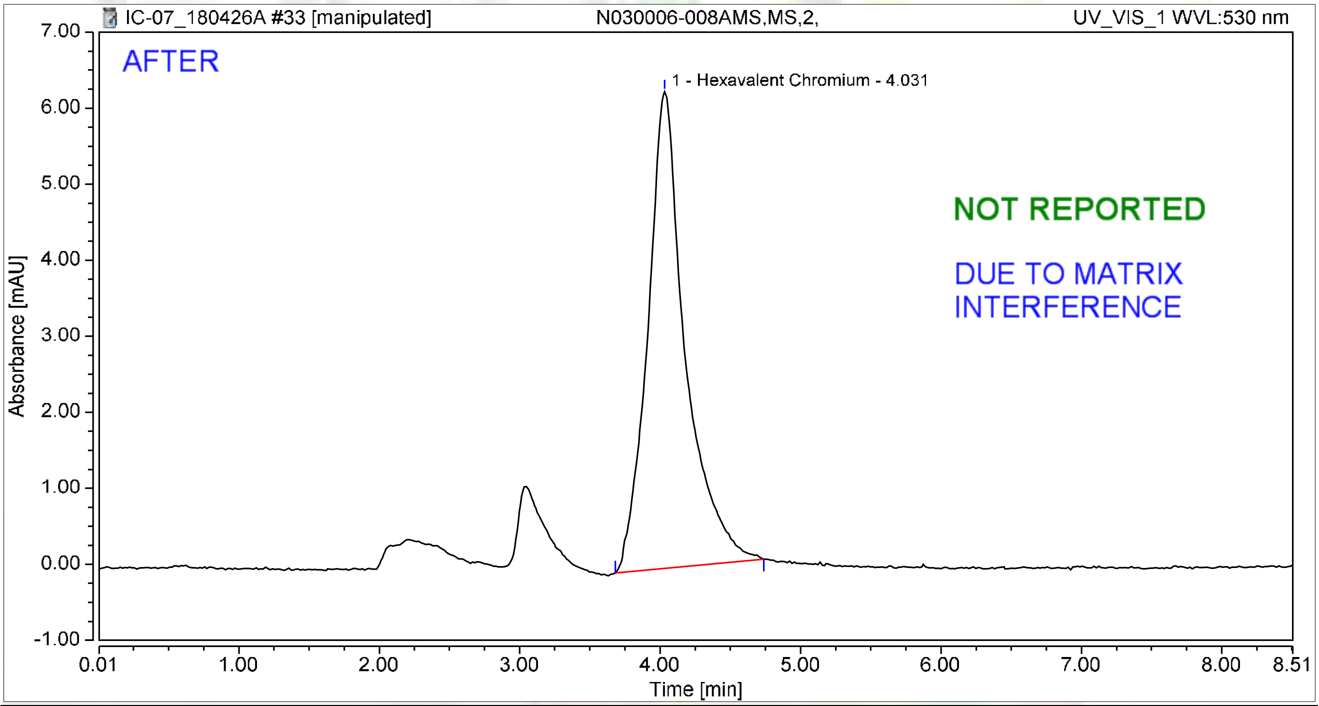
Chromatogram and Results

Injection Details

Injection Name:	**N030006-008AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 13:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	1.945	6.270	100.00	100.00	7.6725
Total:			**1.945**	**6.270**	**100.00**	**100.00**	

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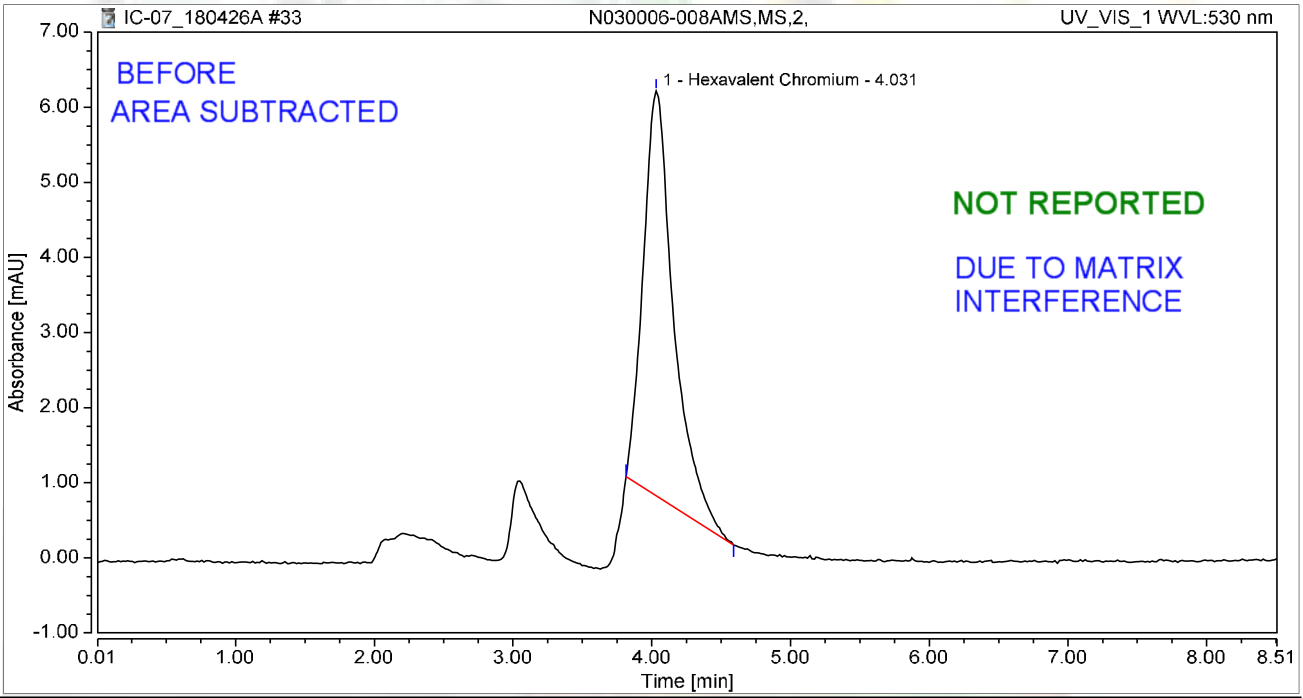
Chromatogram and Results

Injection Details

Injection Name:	**N030006-008AMS,MS,2,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 13:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	1.370	5.386	100.00	100.00	5.4049
Total:			**1.370**	**5.386**	**100.00**	**100.00**	

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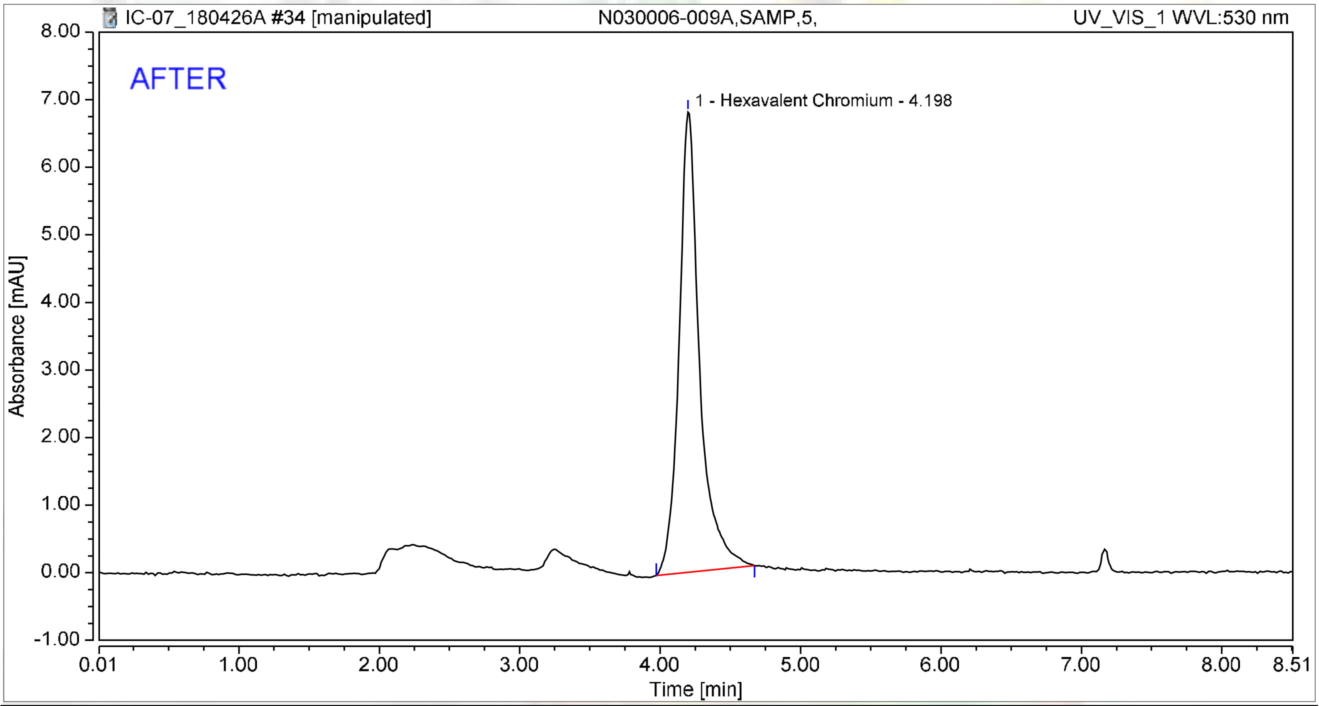
Chromatogram and Results

Injection Details

Injection Name:	**N030006-009A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 13:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.158	6.811	100.00	100.00	4.5689
Total:			**1.158**	**6.811**	**100.00**	**100.00**	

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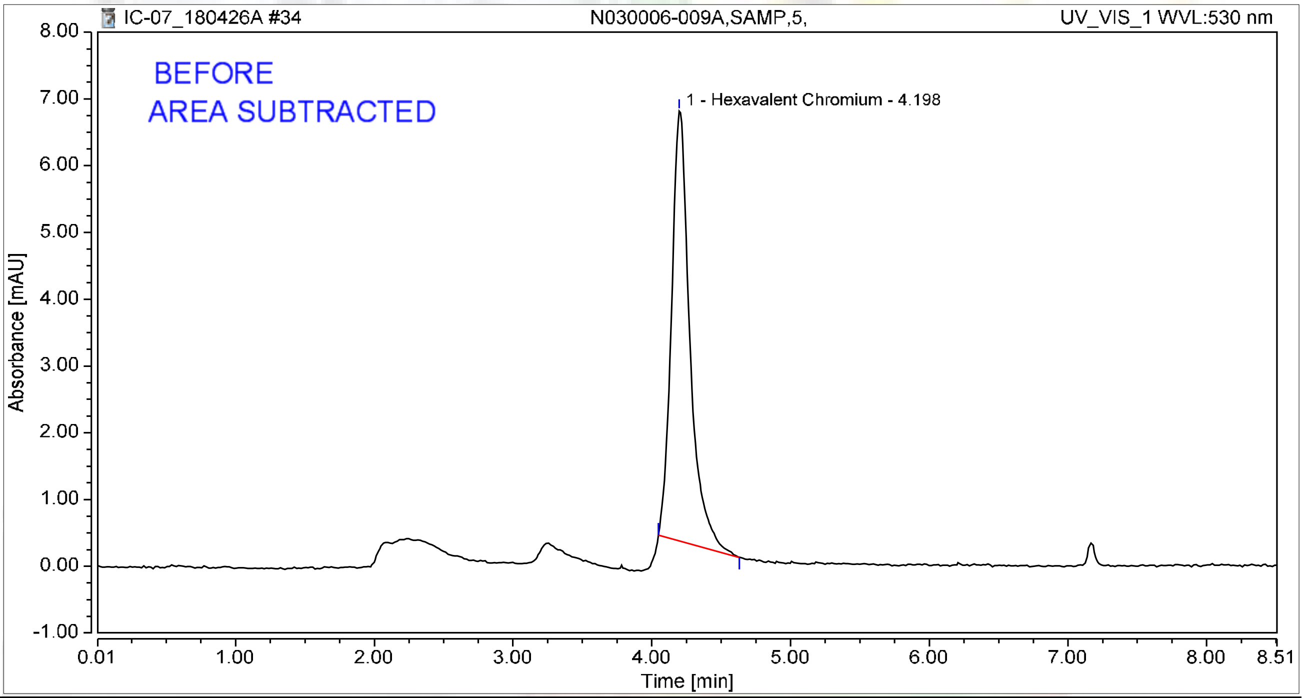
Nancy 5/9/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030006-009A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 13:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.990	6.436	100.00	100.00	3.9072
Total:			**0.990**	**6.436**	**100.00**	**100.00**	

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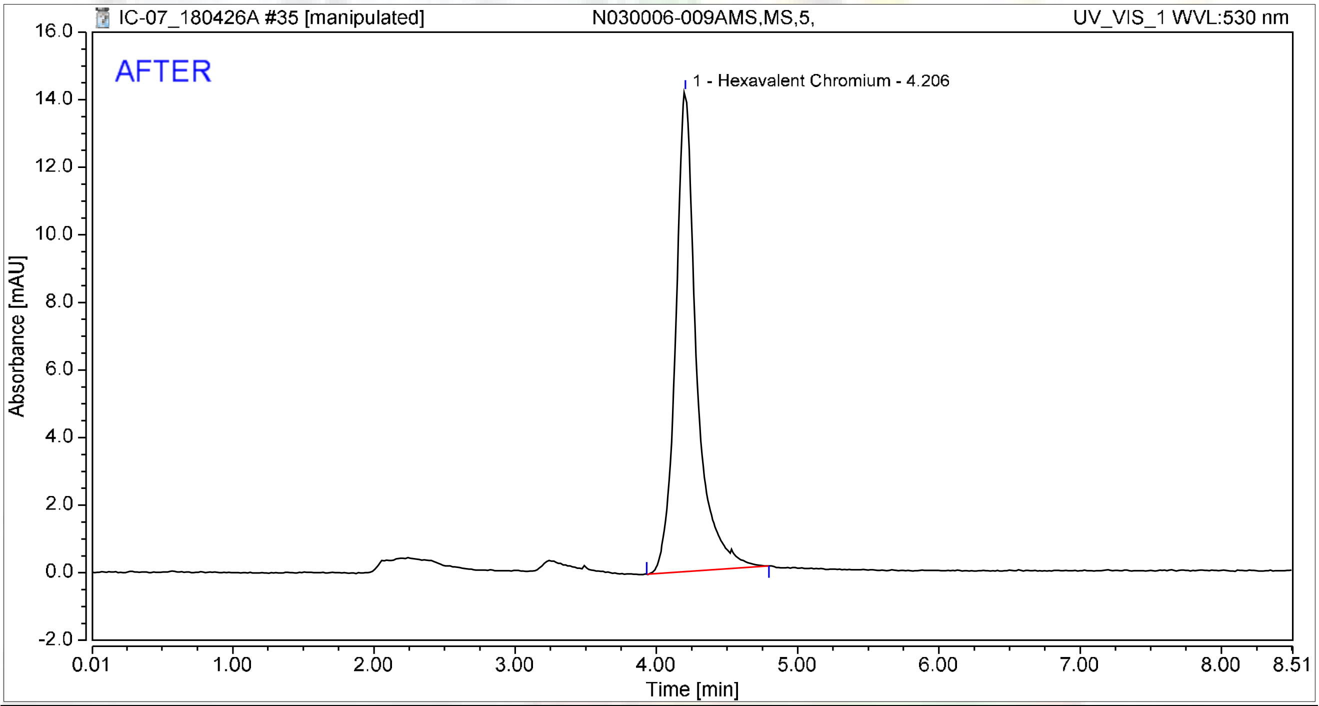
Chromatogram and Results

Injection Details

Injection Name:	**N030006-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 13:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.452	14.188	100.00	100.00	9.6733
Total:			**2.452**	**14.188**	**100.00**	**100.00**	

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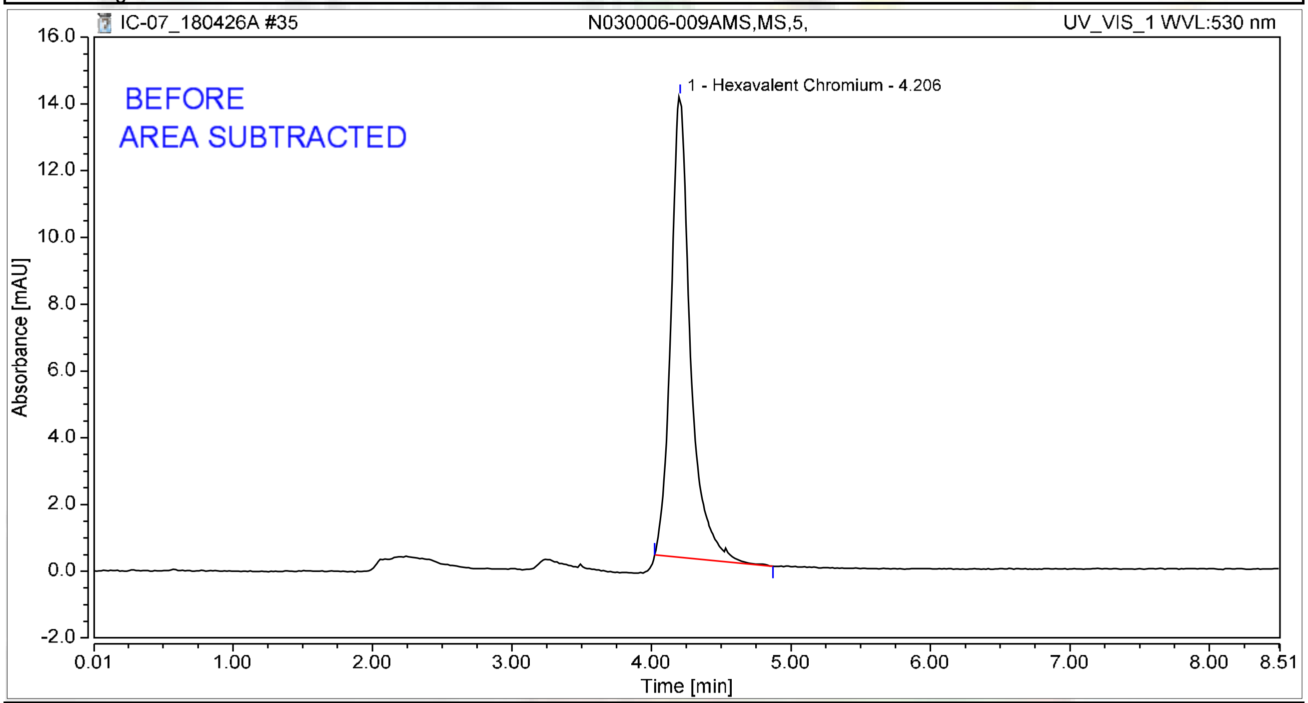
Chromatogram and Results

Injection Details

Injection Name:	**N030006-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 13:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.261	13.813	100.00	100.00	8.9208
Total:			**2.261**	**13.813**	**100.00**	**100.00**	

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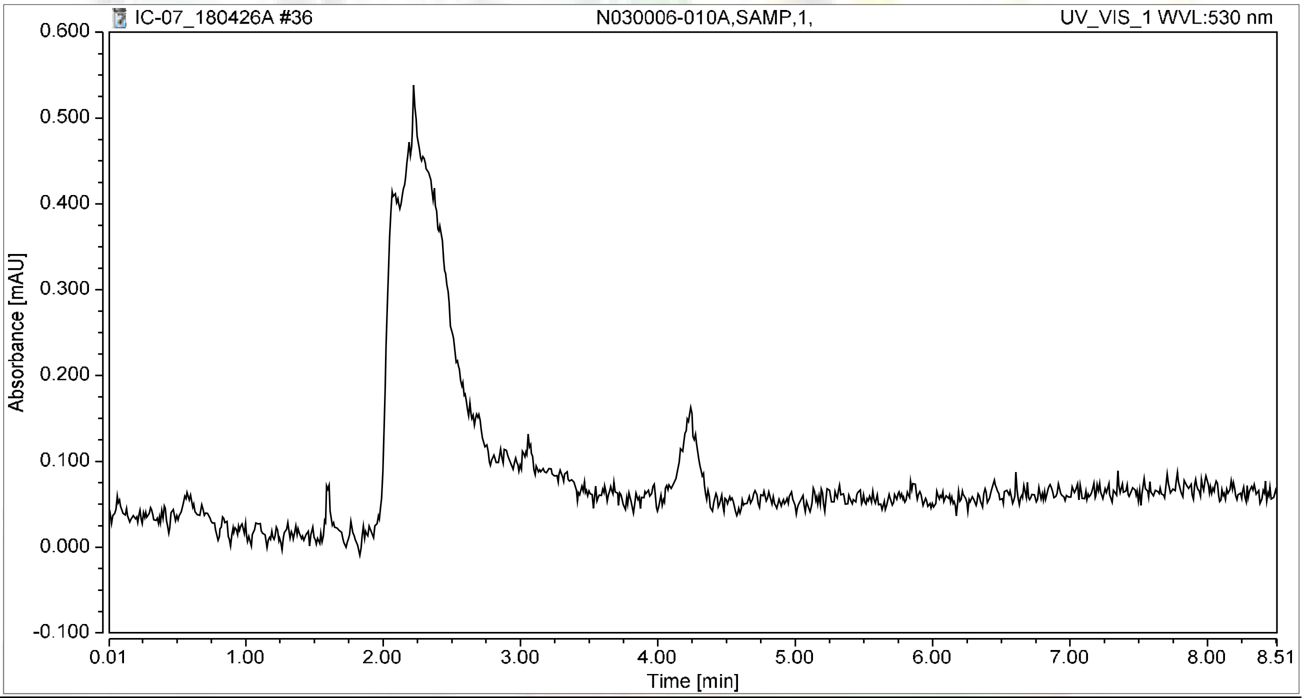
Chromatogram and Results

Injection Details

Injection Name:	**N030006-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 13:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

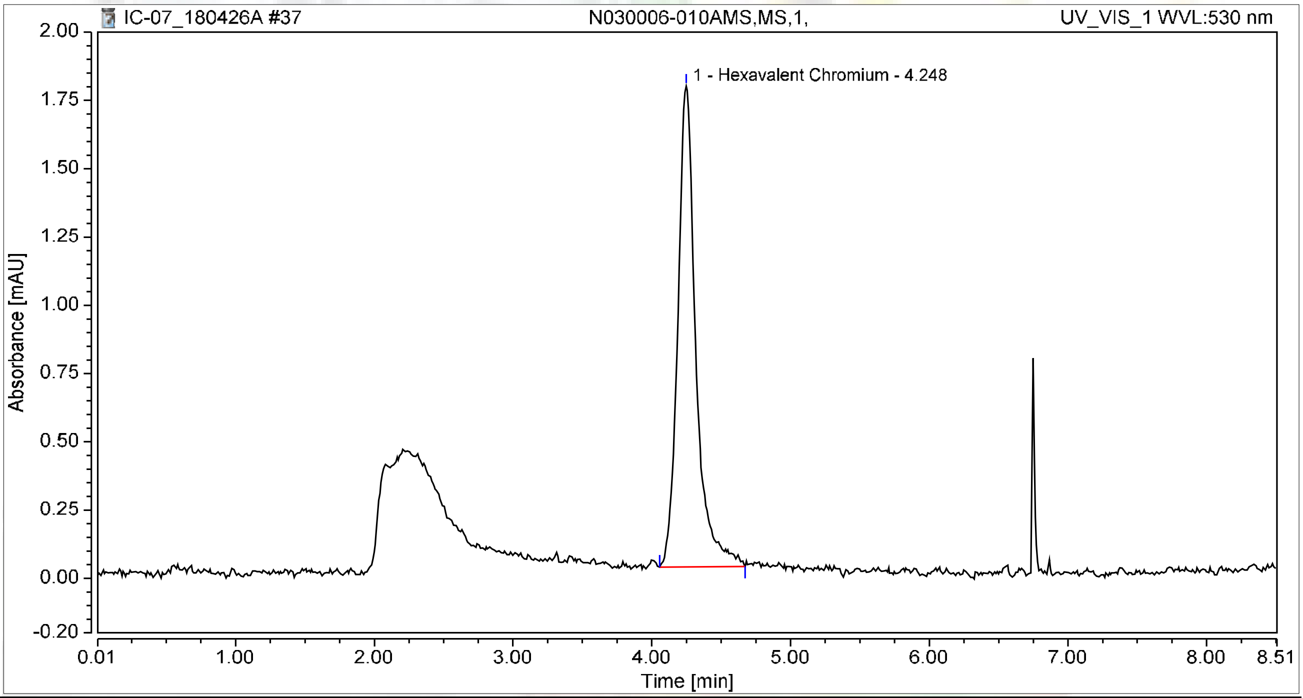
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 13:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

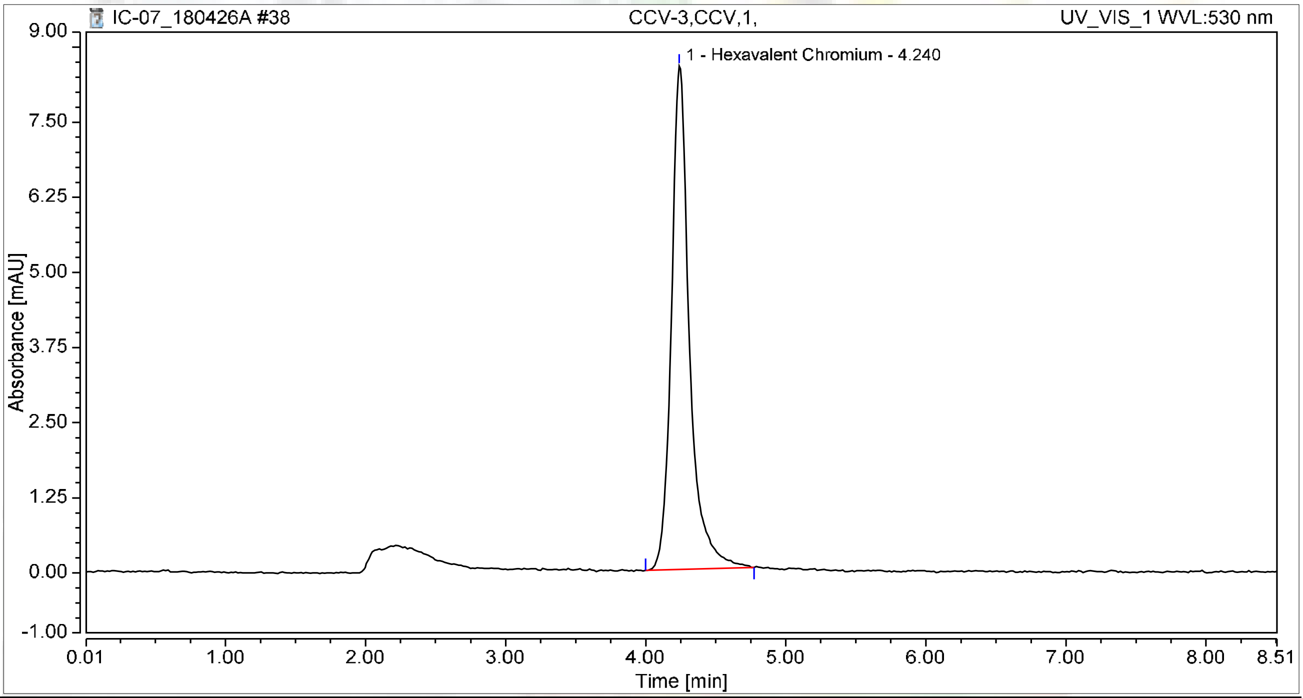
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.265	1.760	100.00	100.00	1.0465
Total:			**0.265**	**1.760**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 13:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

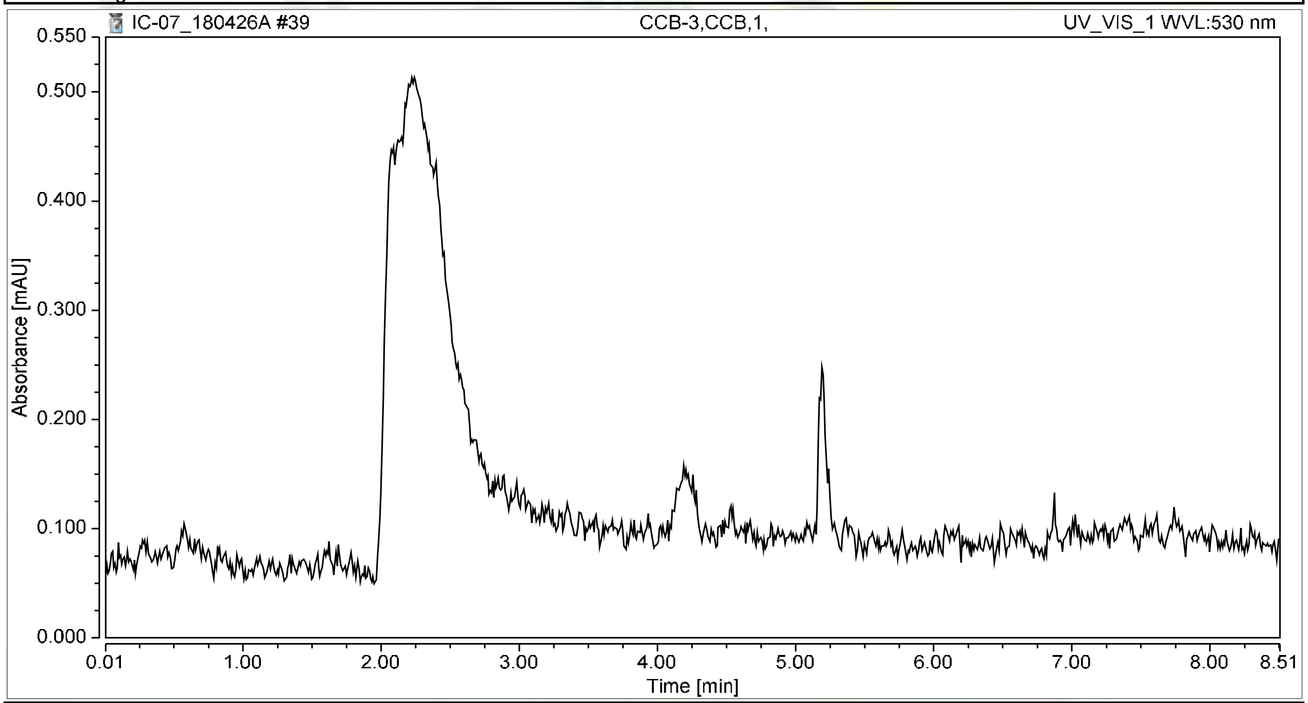
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	1.257	8.380	100.00	100.00	4.9567
Total:			**1.257**	**8.380**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 13:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

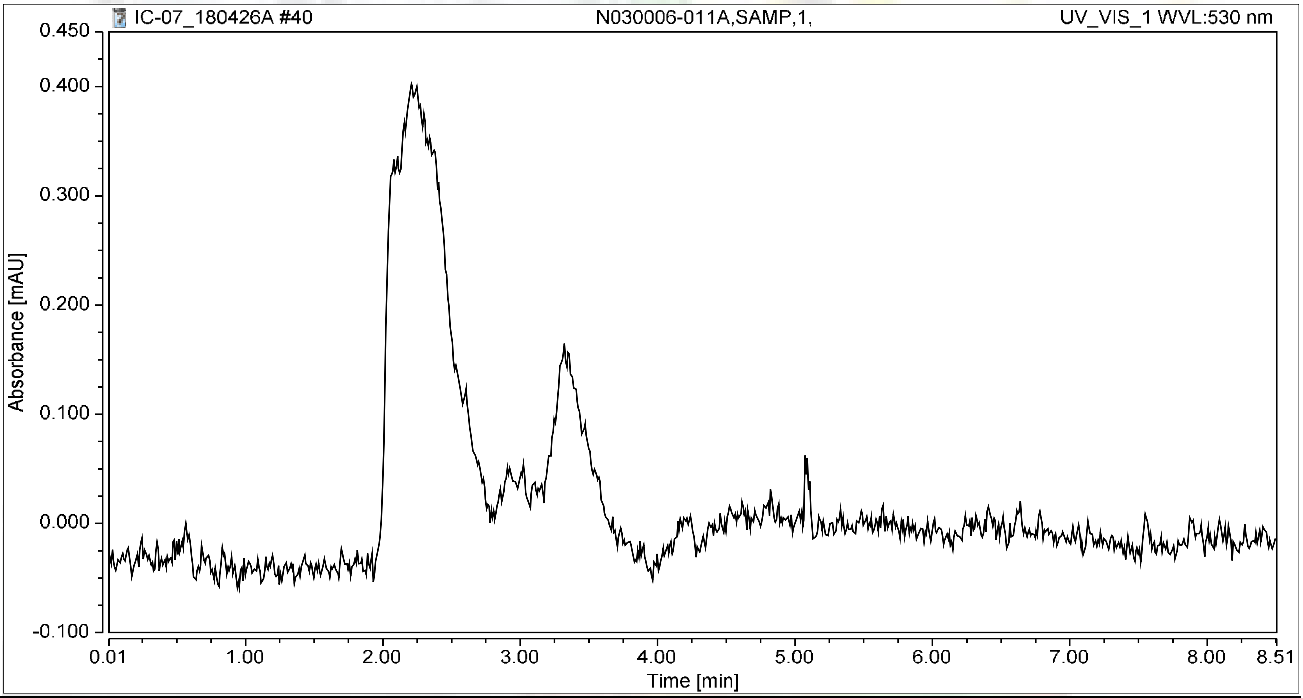
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 14:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

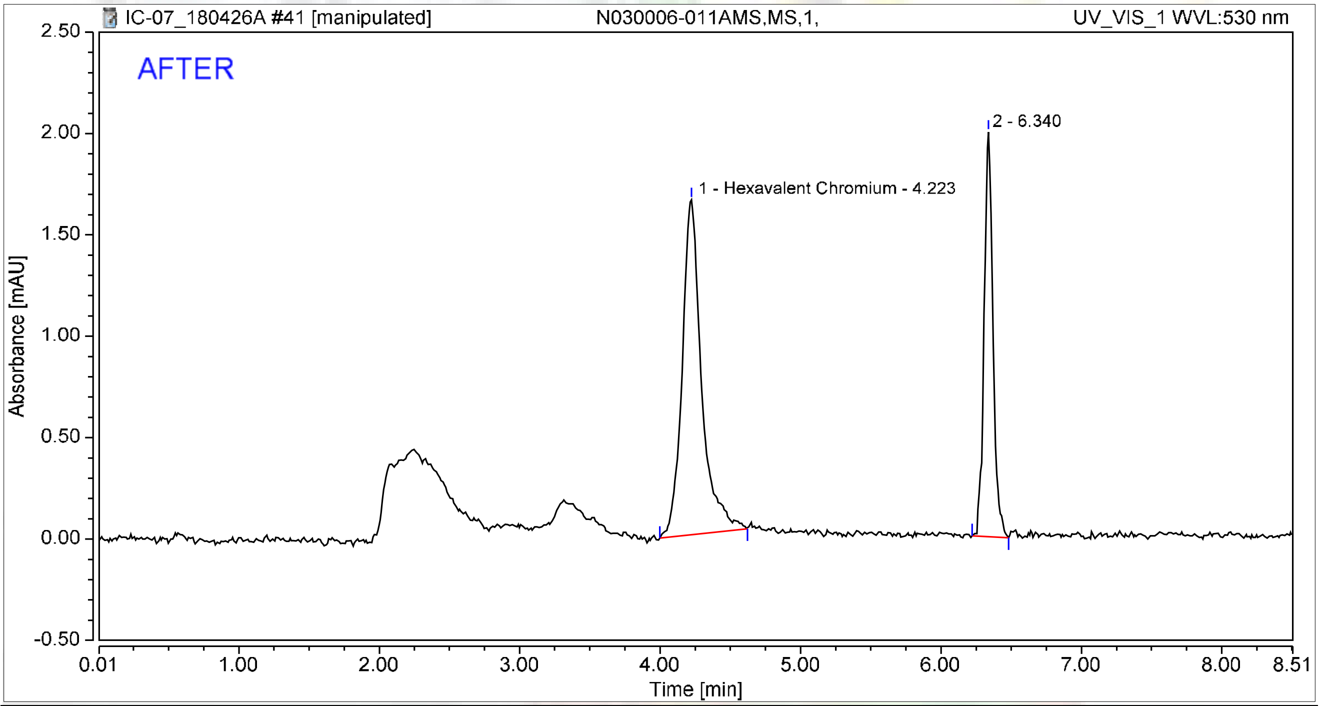
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 14:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.265	1.652	64.37	45.30	1.0442
2		6.340	0.146	1.995	35.63	54.70	n.a.
Total:			**0.411**	**3.647**	**100.00**	**100.00**	

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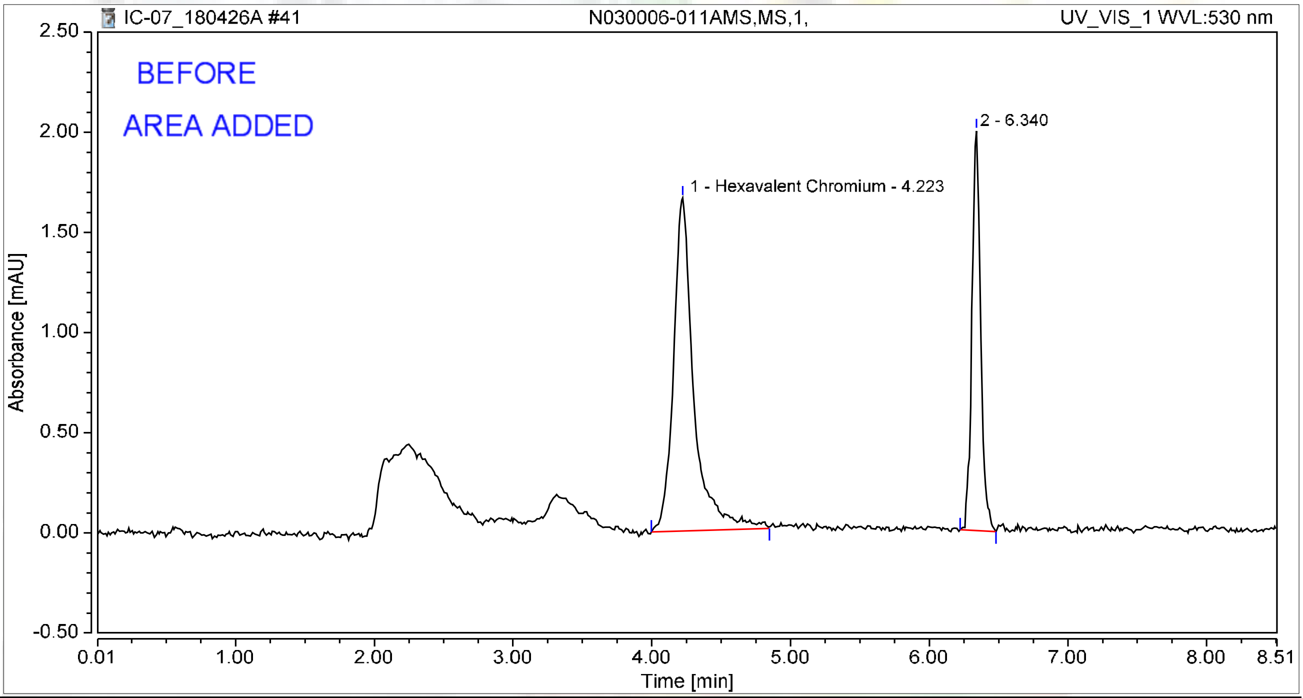
Reviewed by:
Nancy 5/9/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030006-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 14:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.282	1.664	65.82	45.47	1.1130
2		6.340	0.146	1.995	34.18	54.53	n.a.
Total:			**0.429**	**3.659**	**100.00**	**100.00**	

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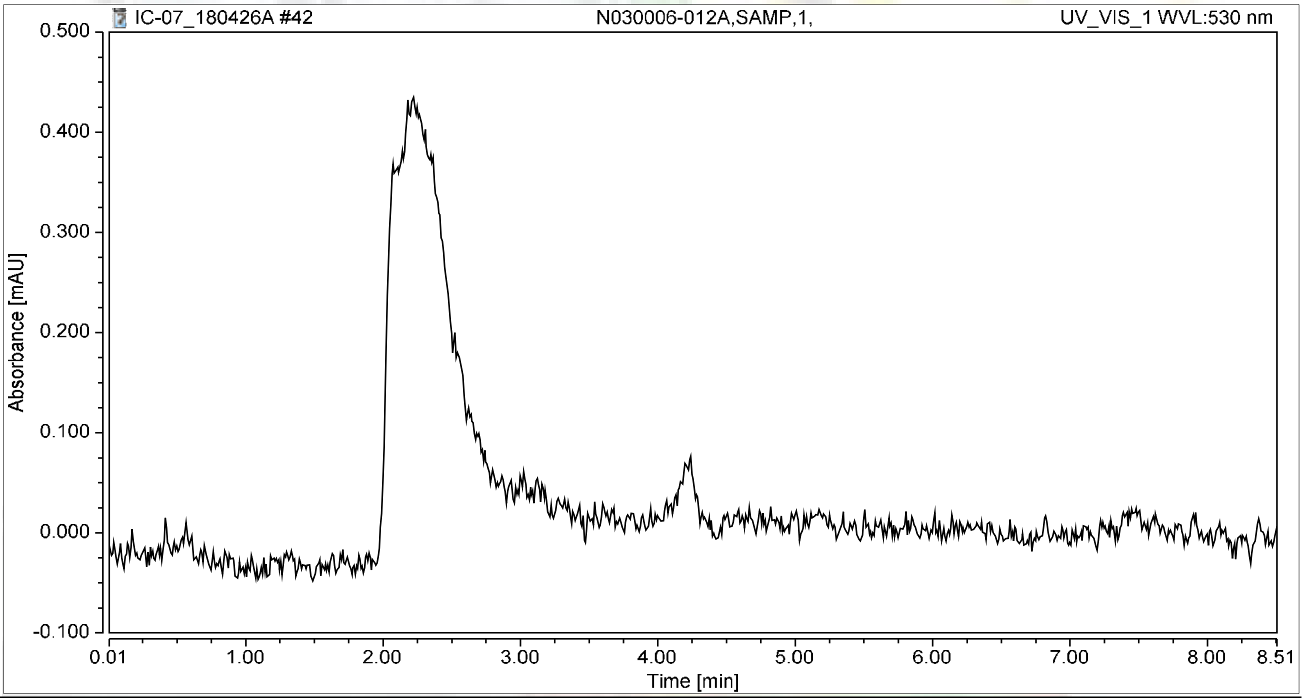
Chromatogram and Results

Injection Details

Injection Name:	**N030006-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 14:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

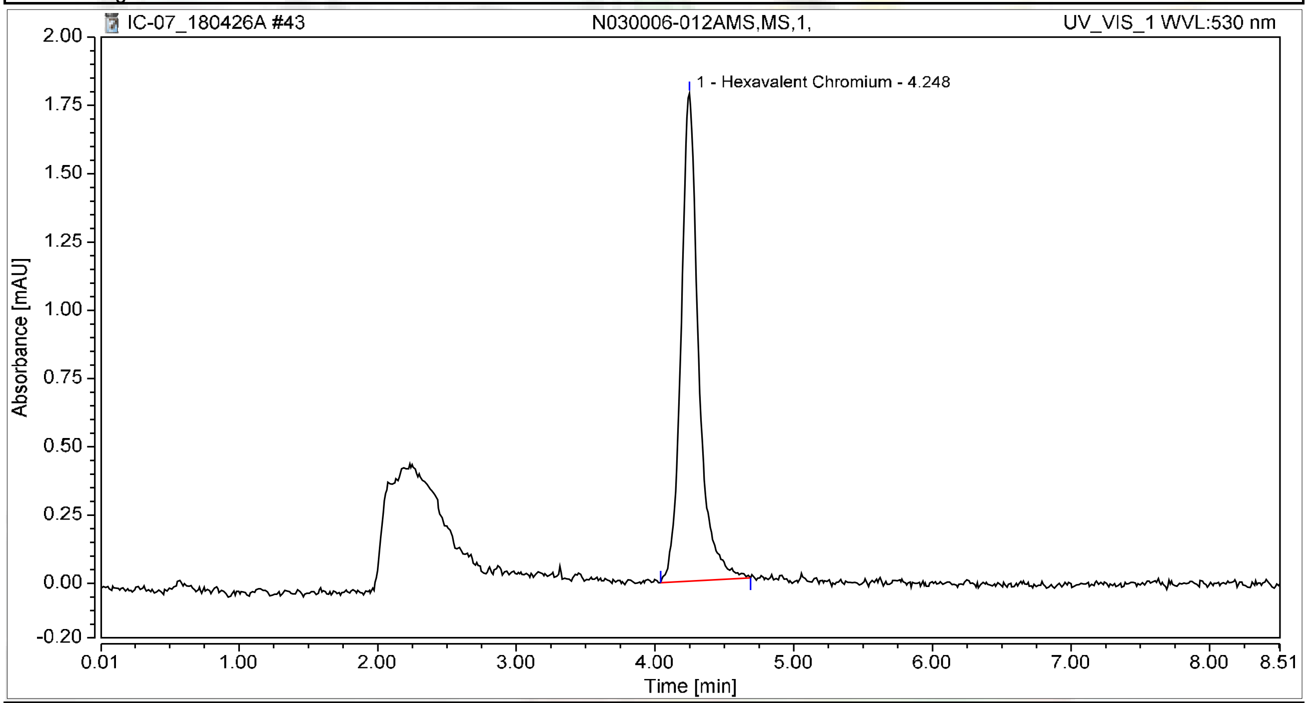
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 14:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

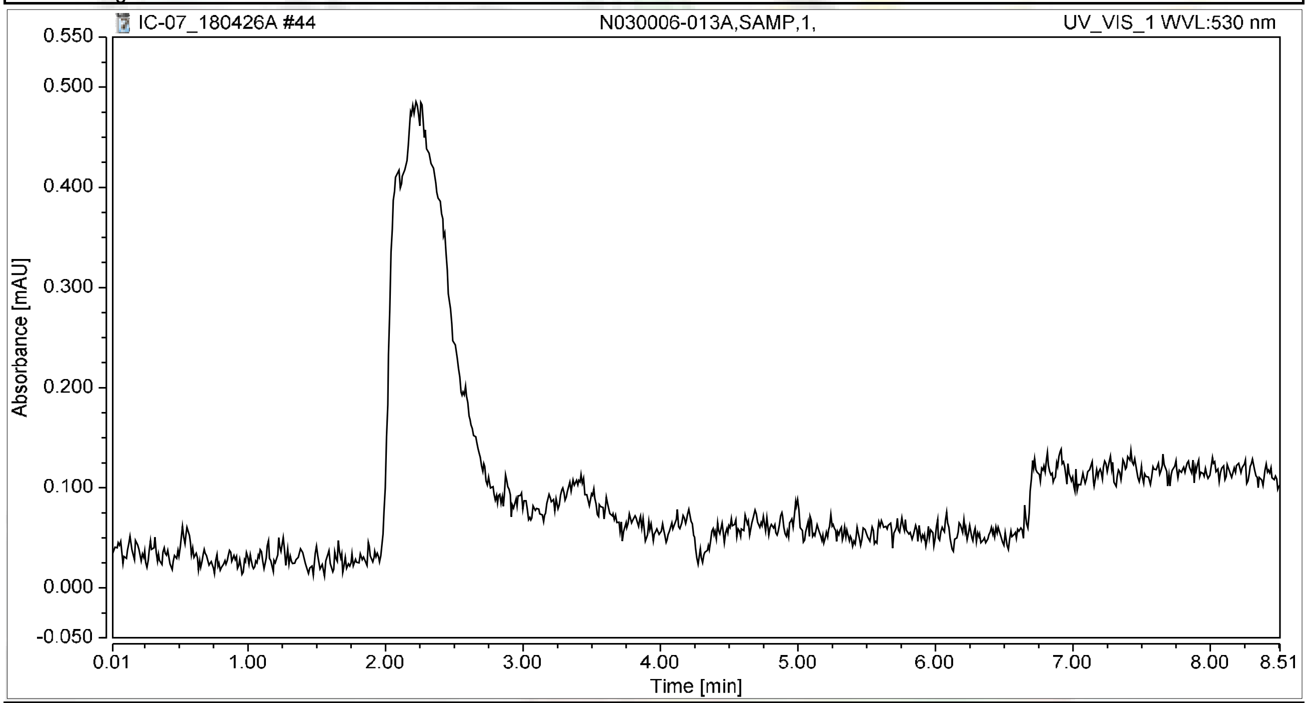
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.264	1.787	100.00	100.00	1.0397
Total:			**0.264**	**1.787**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-013A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 14:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

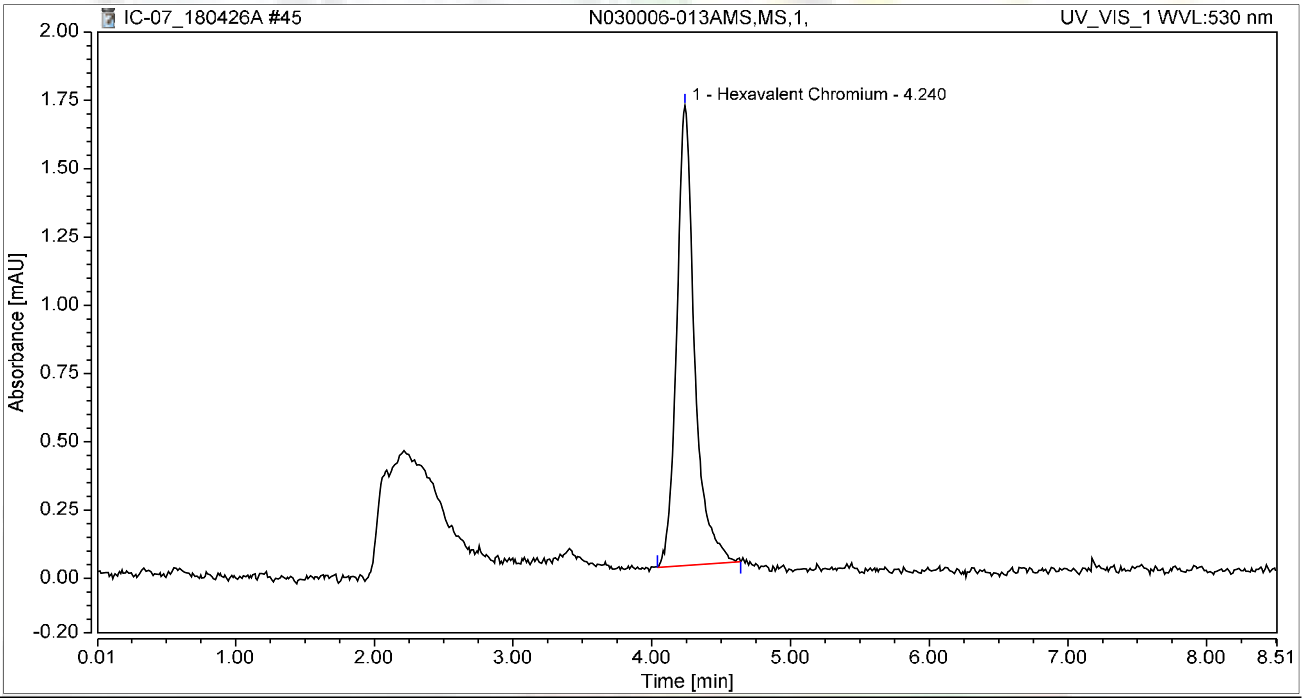
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 14:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

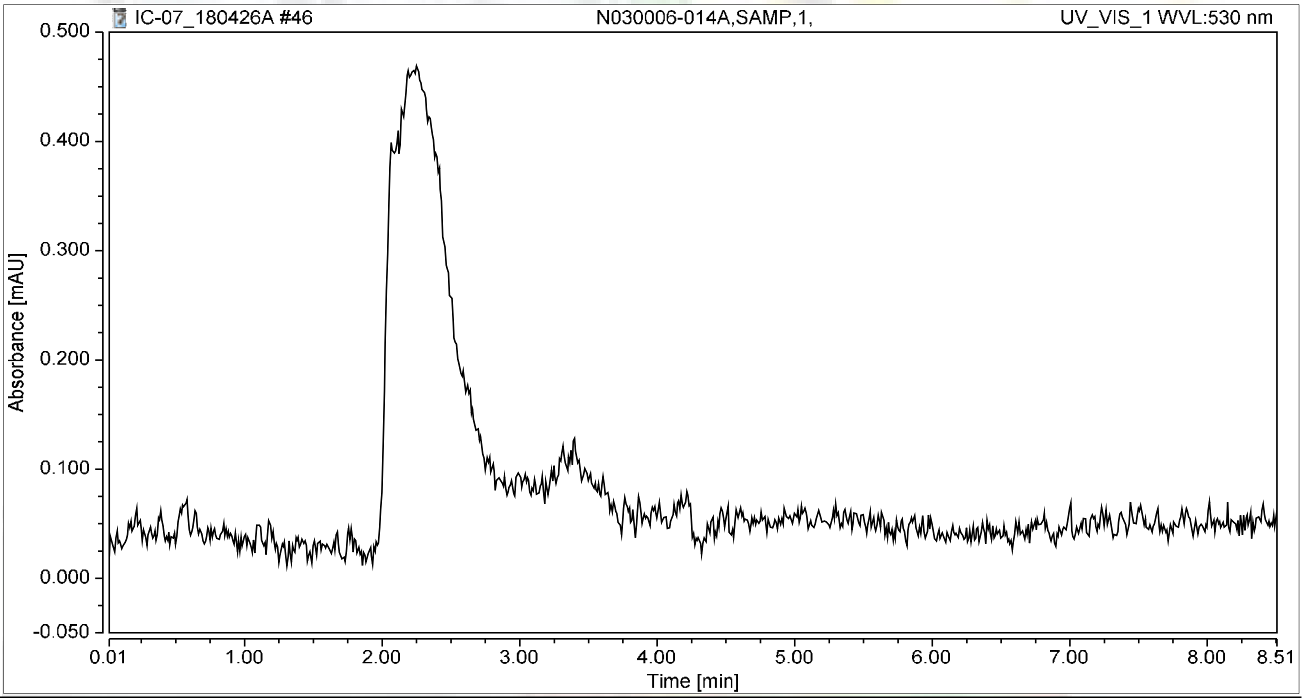
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.252	1.683	100.00	100.00	0.9959
Total:			**0.252**	**1.683**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-014A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 15:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

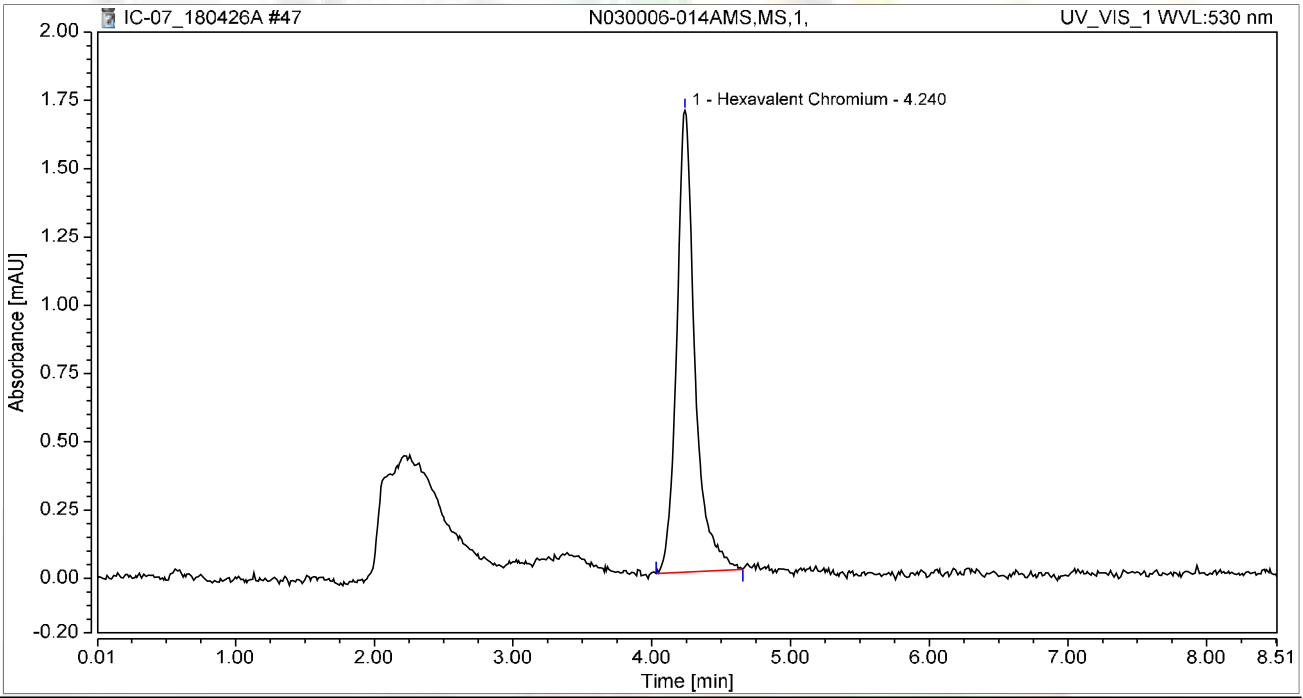
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 15:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

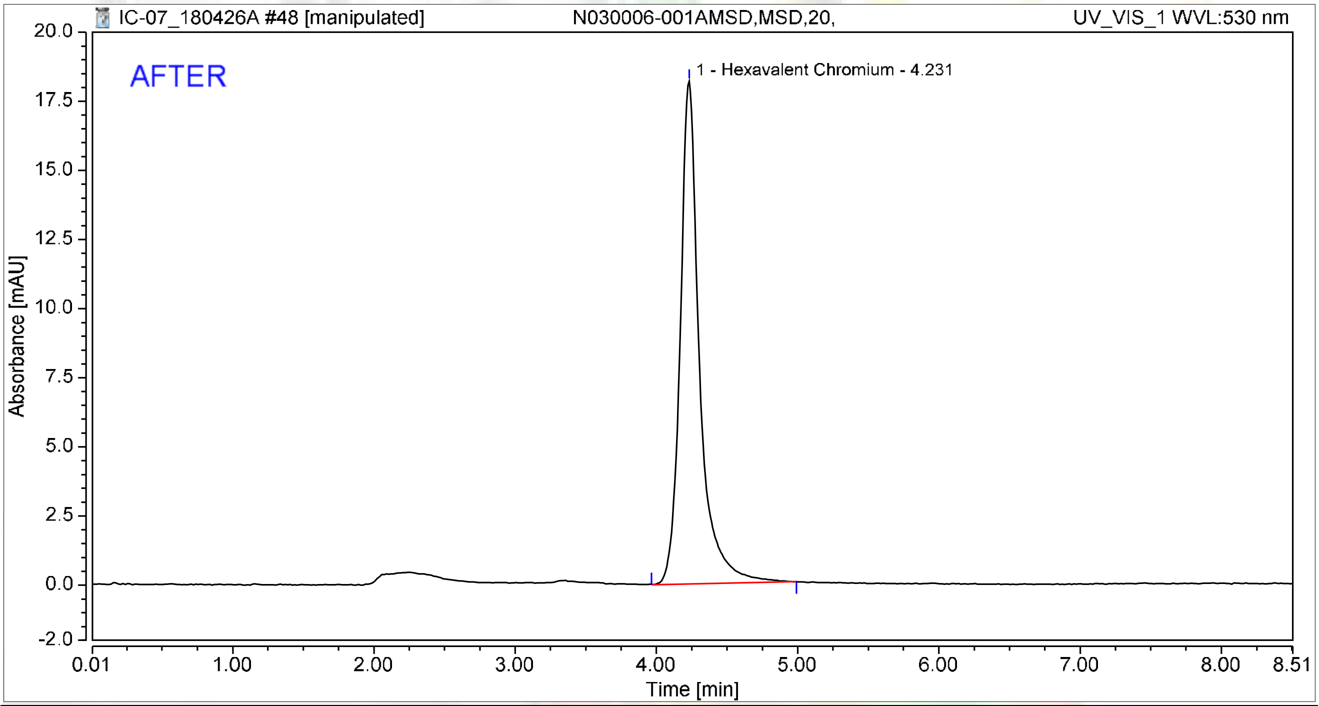
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.257	1.691	100.00	100.00	1.0156
Total:			**0.257**	**1.691**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-001AMSD,MSD,20,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 15:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.883	18.185	100.00	100.00	11.3713
Total:			**2.883**	**18.185**	**100.00**	**100.00**	

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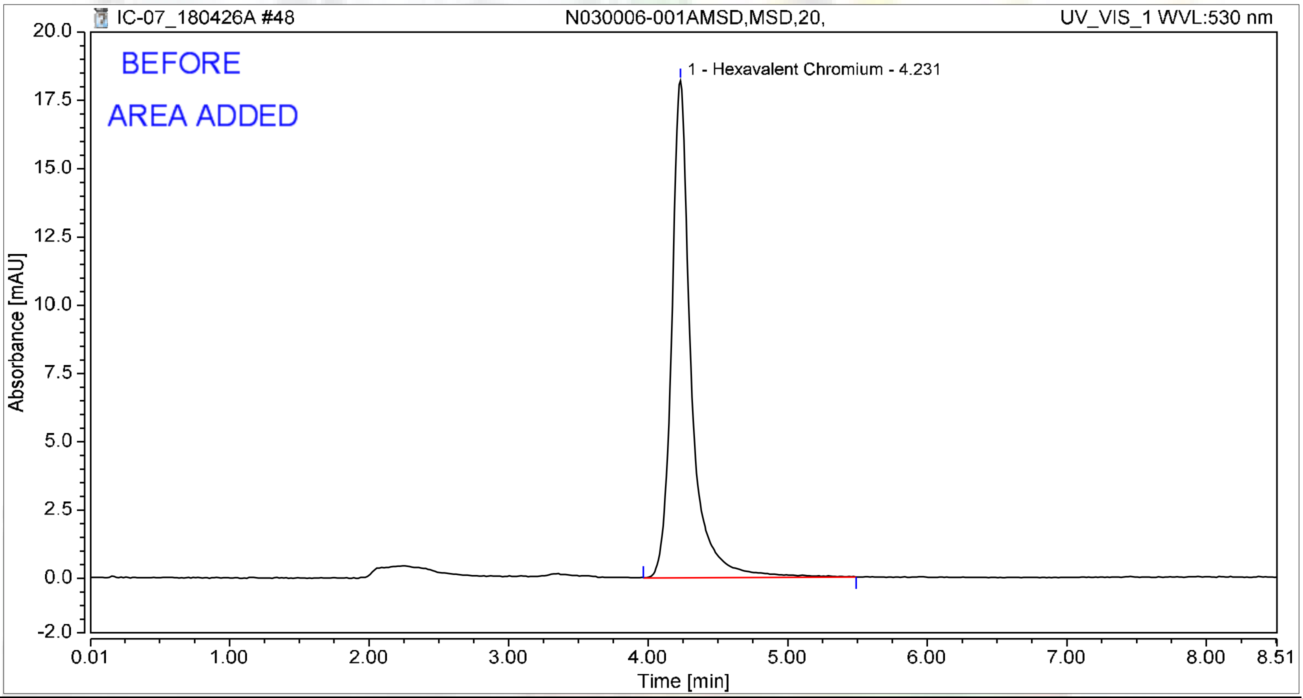
Reviewed by:
Nancy 5/9/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030006-001AMSD,MSD,20,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 15:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.945	18.207	100.00	100.00	11.6189
Total:			**2.945**	**18.207**	**100.00**	**100.00**	

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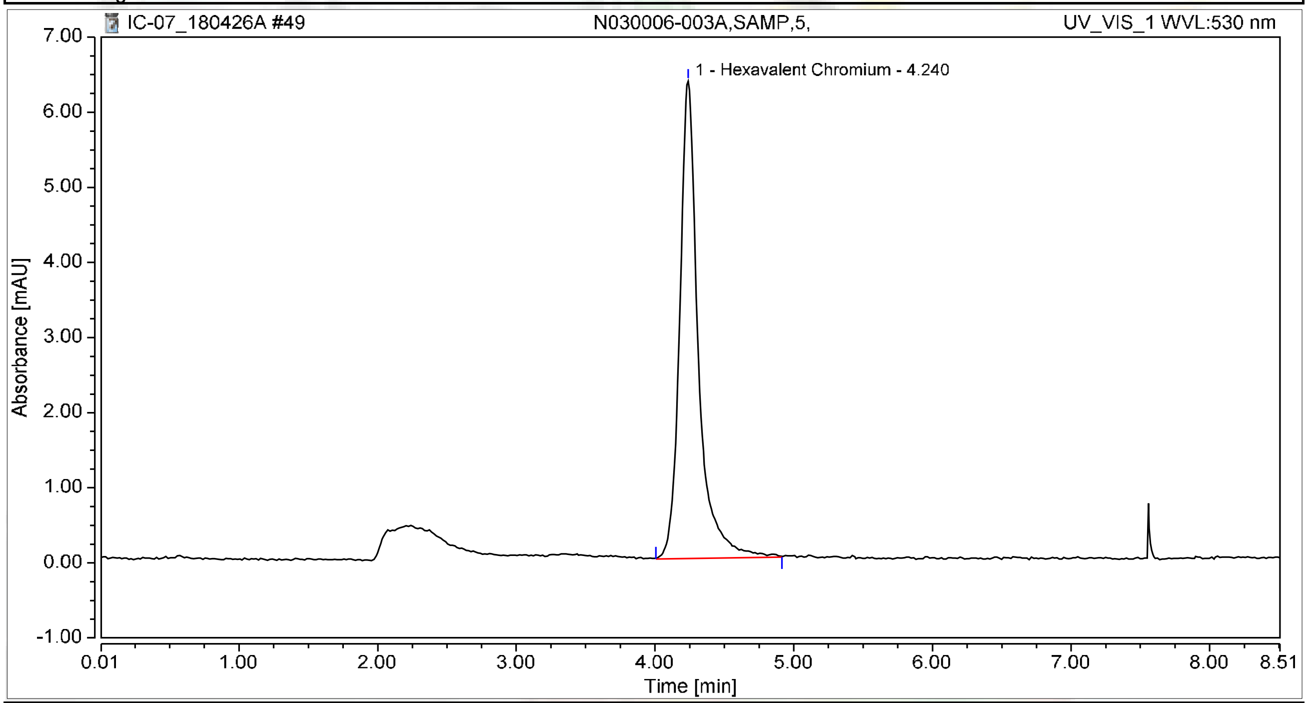
Chromatogram and Results

Injection Details

Injection Name:	**N030006-003A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 15:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

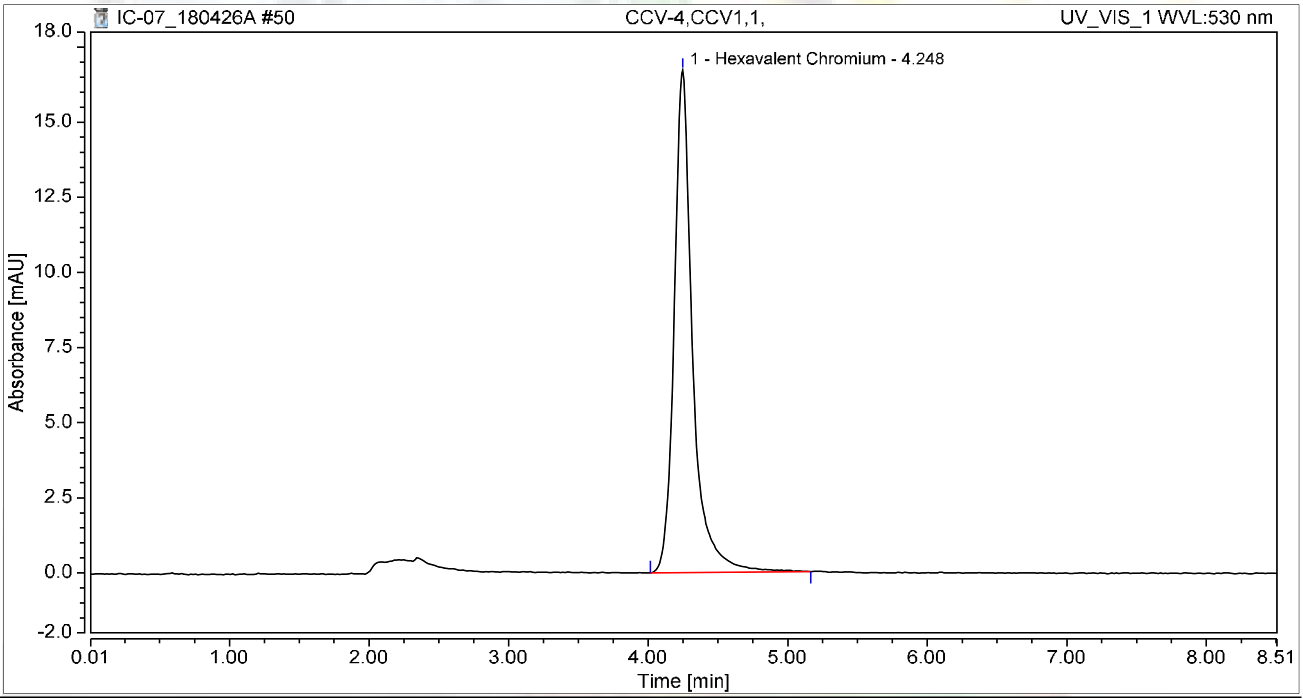
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.989	6.355	100.00	100.00	3.9001
Total:			**0.989**	**6.355**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 15:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

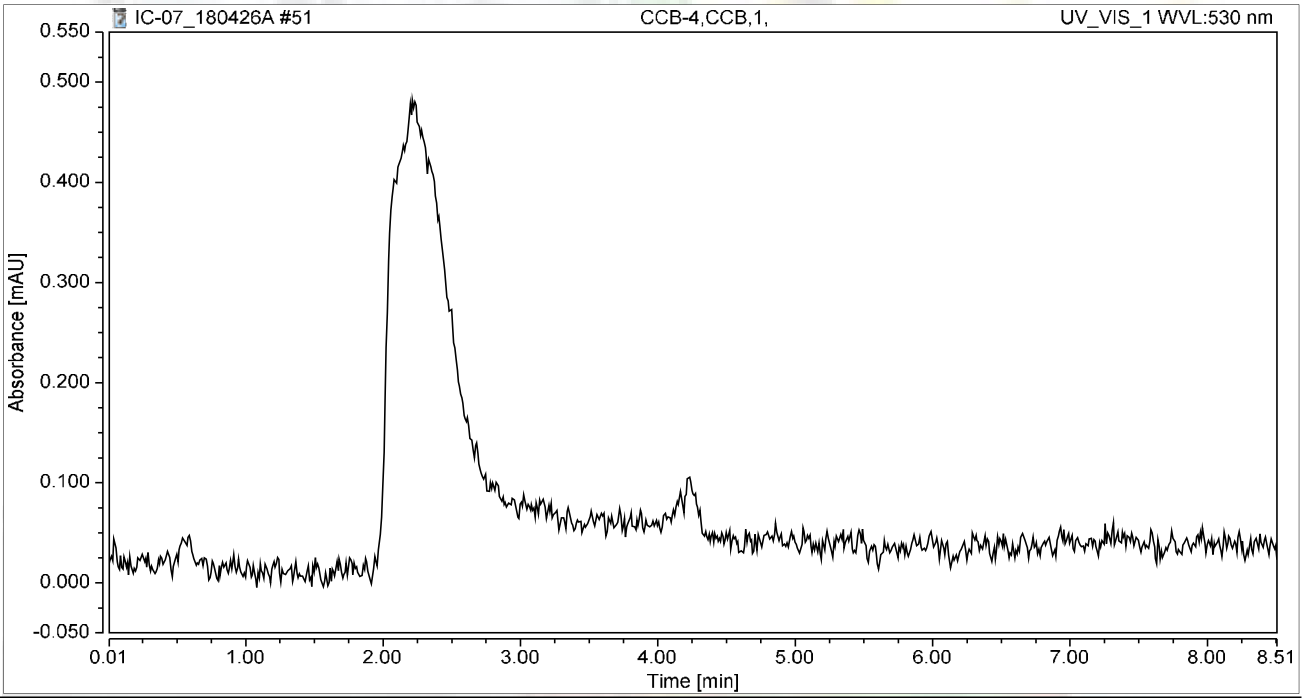
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.560	16.722	100.00	100.00	10.0978
Total:			**2.560**	**16.722**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 15:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

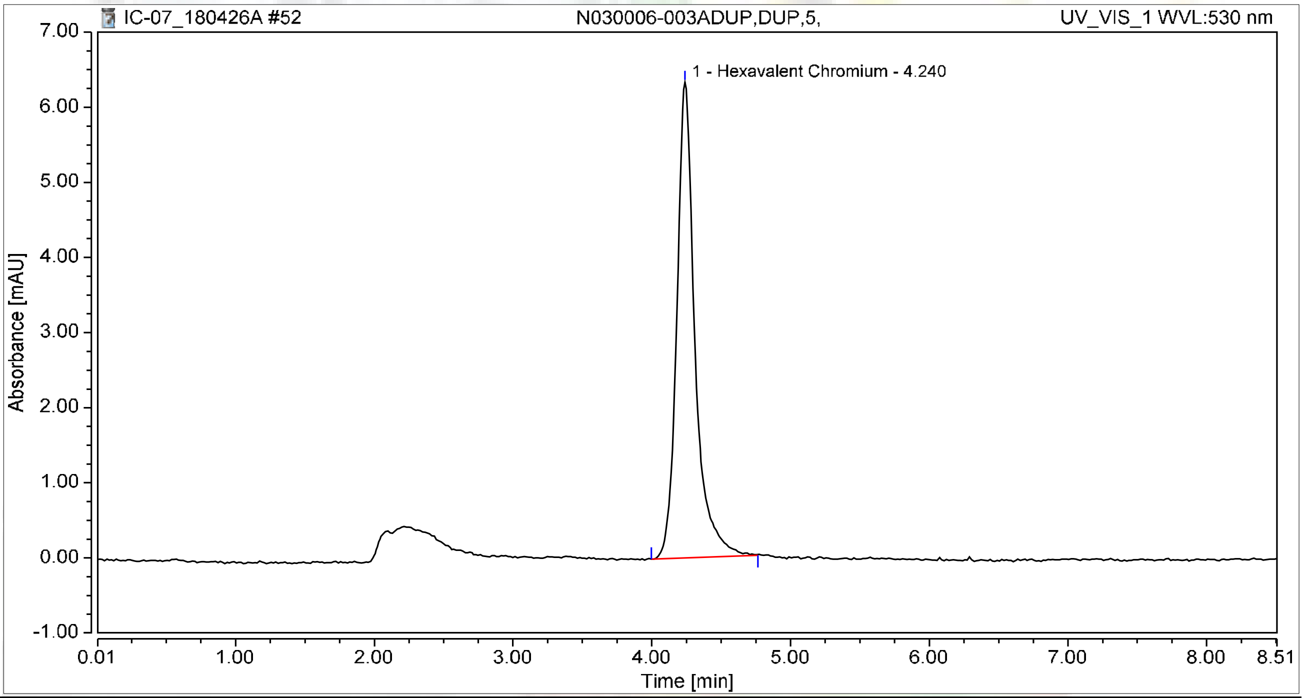
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-003ADUP,DUP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 16:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

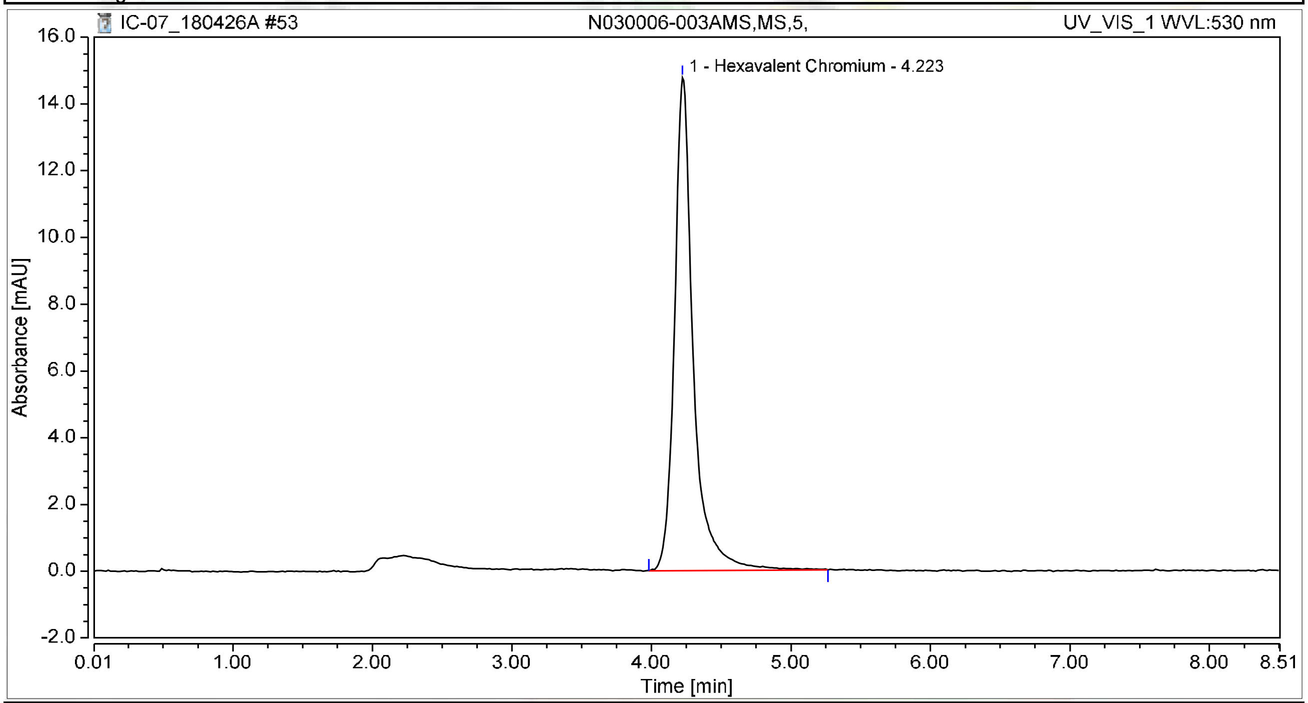
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.962	6.331	100.00	100.00	3.7929
Total:			**0.962**	**6.331**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 16:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

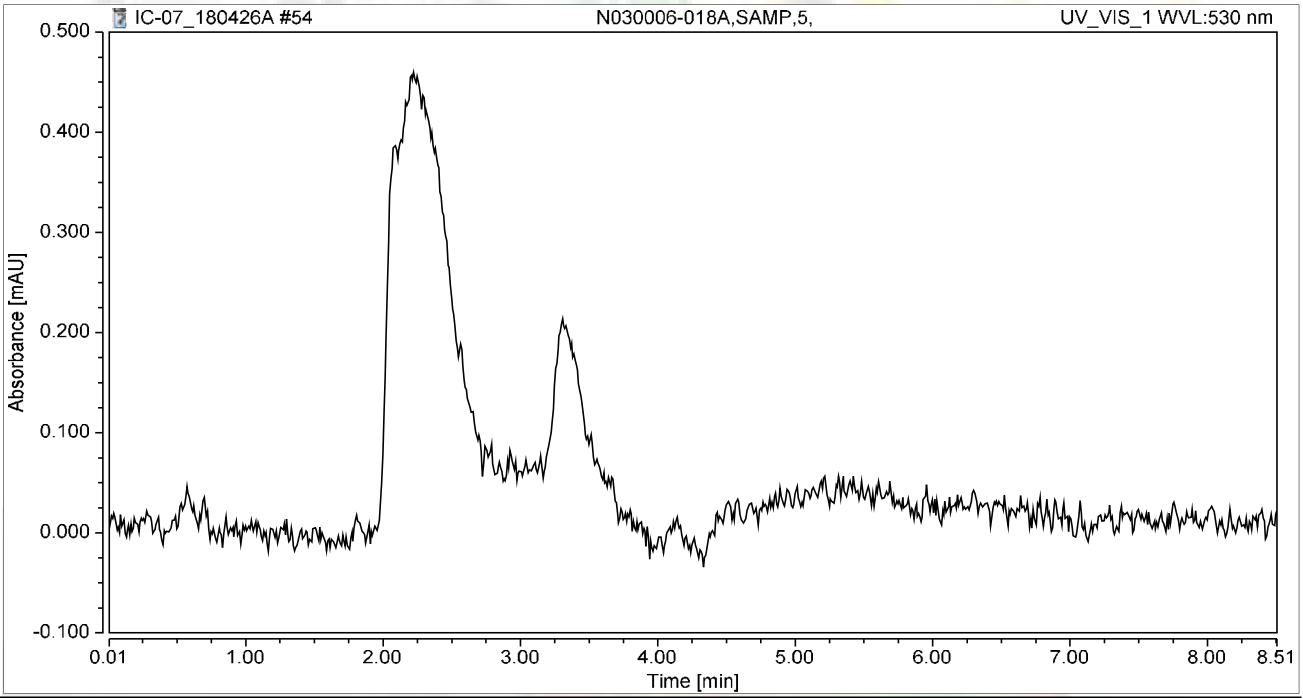
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	2.311	14.771	100.00	100.00	9.1154
Total:			**2.311**	**14.771**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-018A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 16:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

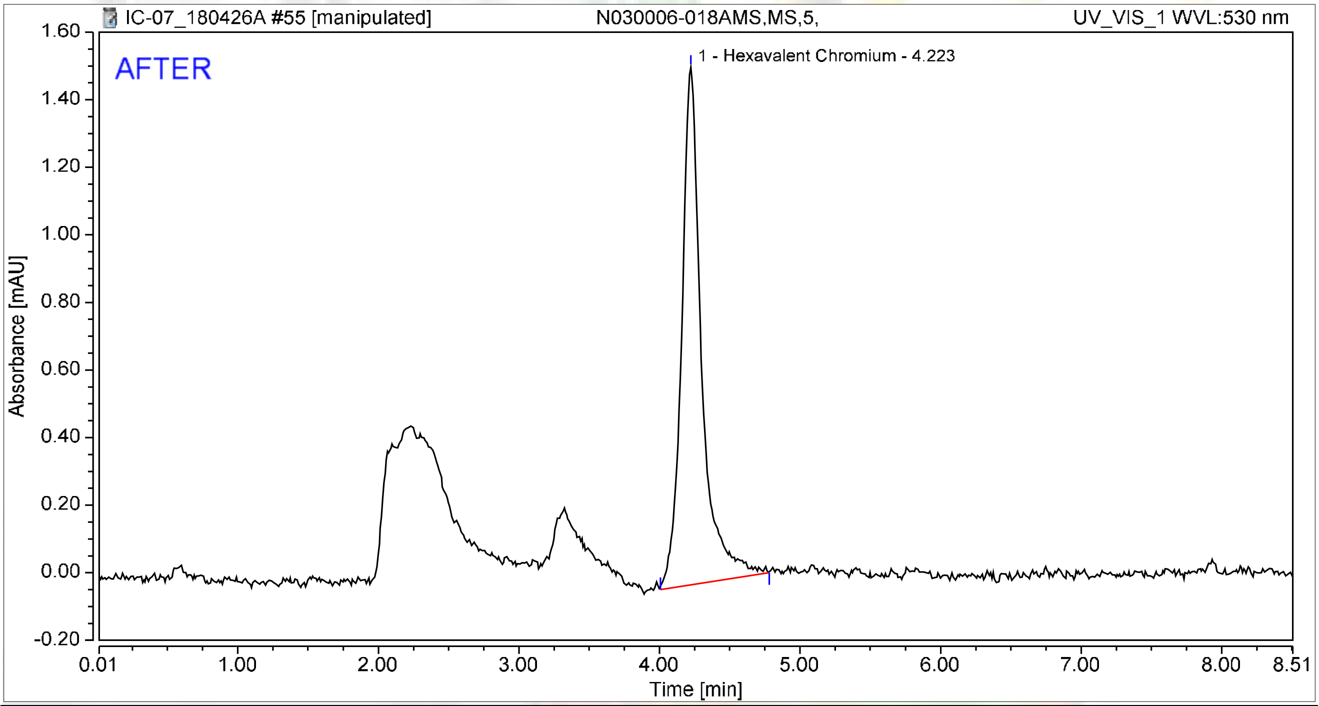
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-018AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 16:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.253	1.532	100.00	100.00	0.9989
Total:			**0.253**	**1.532**	**100.00**	**100.00**	

rba 5/1/2018

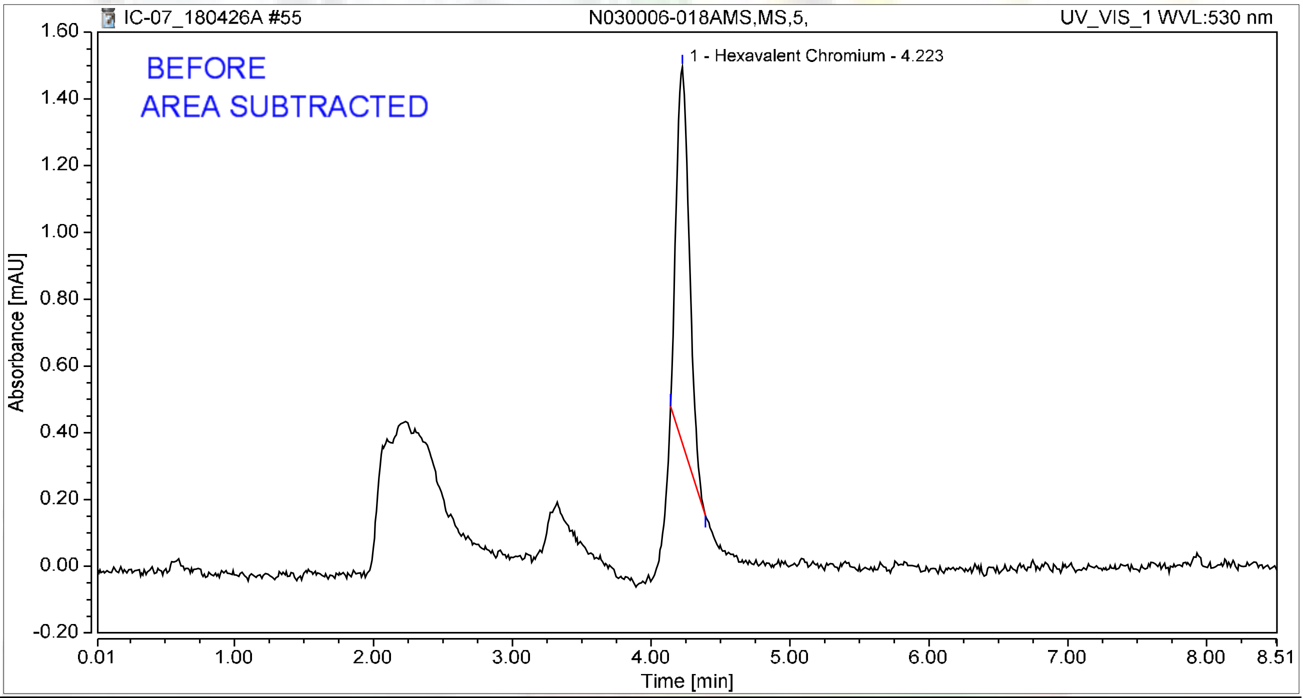
Reviewed by:
Nancy 5/9/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030006-018AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 16:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.123	1.126	100.00	100.00	0.4842
Total:			**0.123**	**1.126**	**100.00**	**100.00**	

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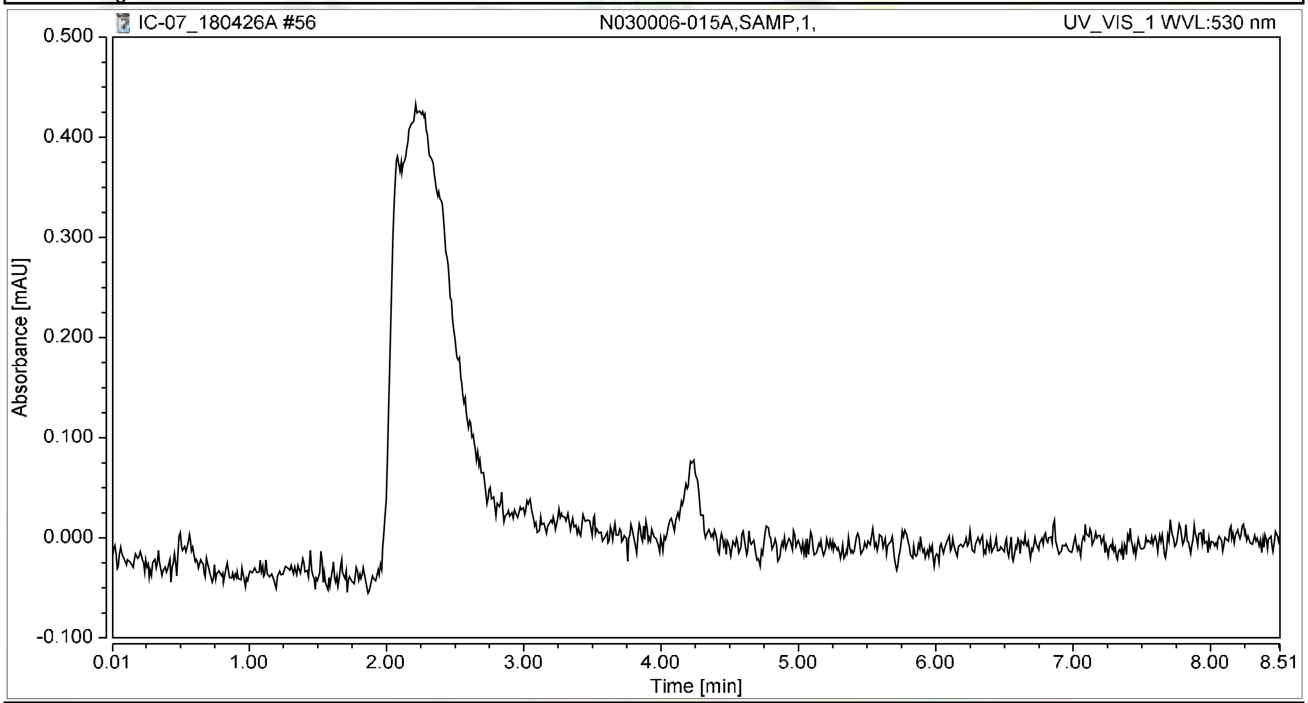
Chromatogram and Results

Injection Details

Injection Name:	**N030006-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 16:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

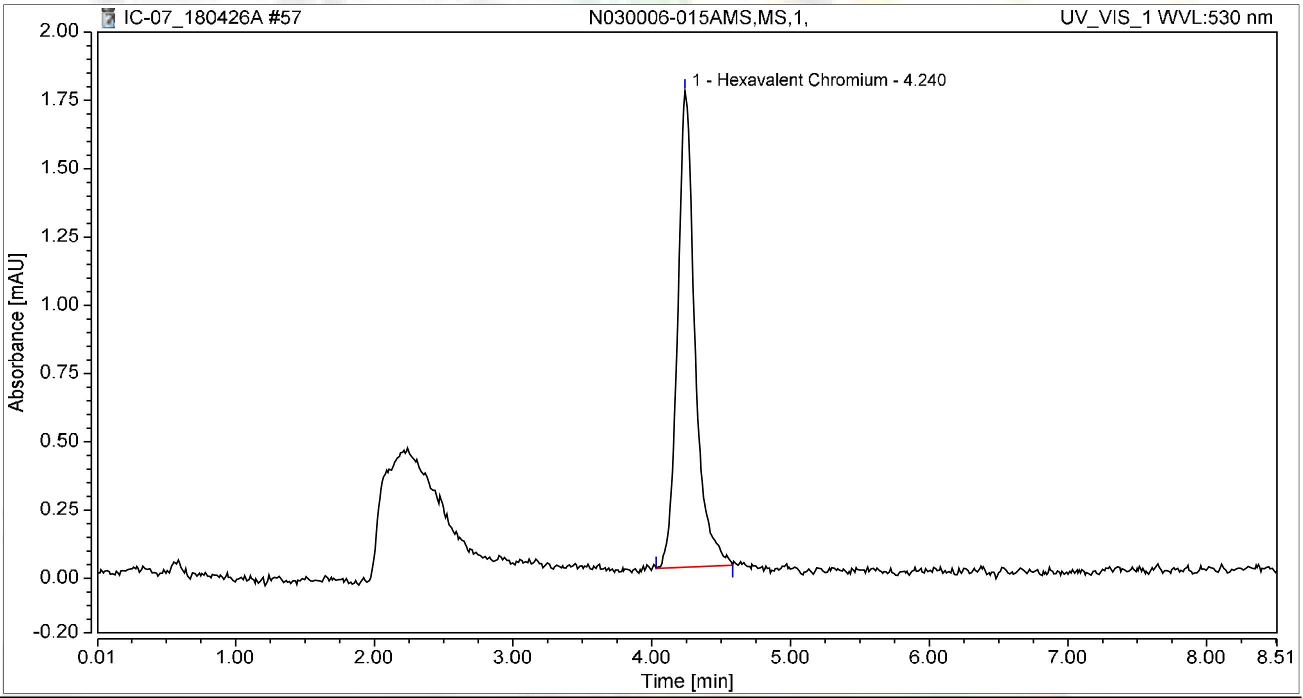
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 16:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

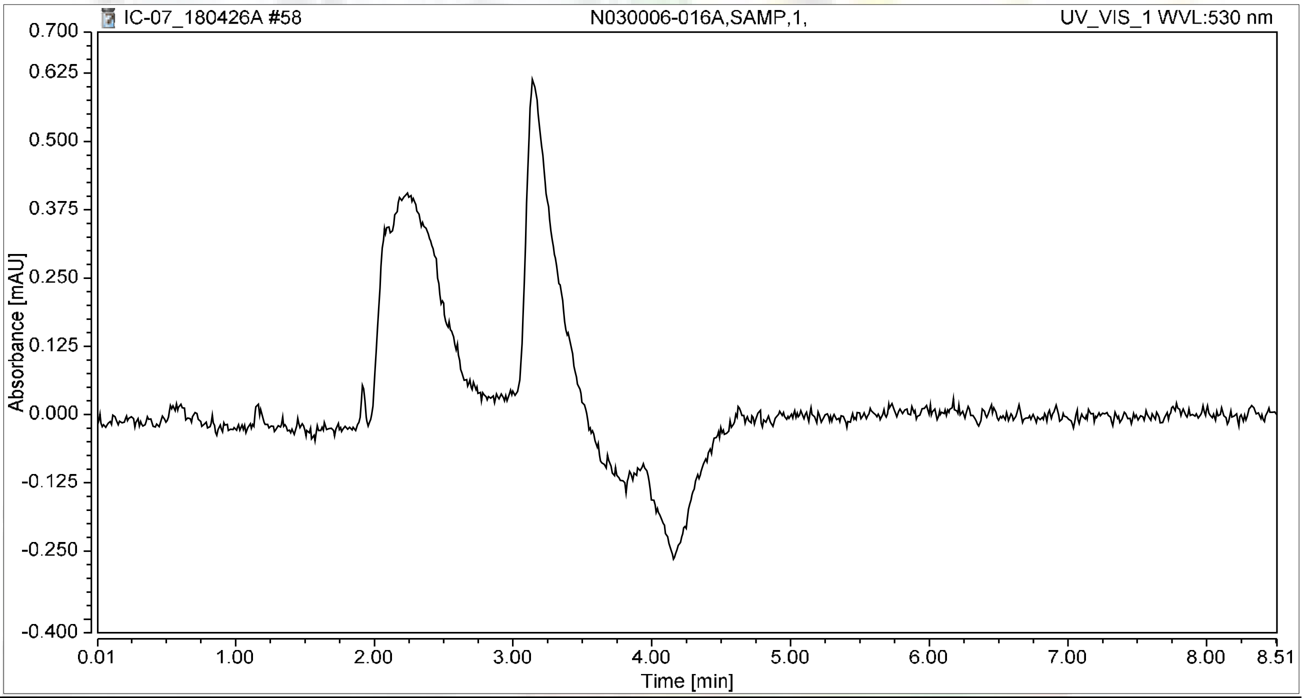
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.255	1.743	100.00	100.00	1.0049
Total:			**0.255**	**1.743**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-016A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 17:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

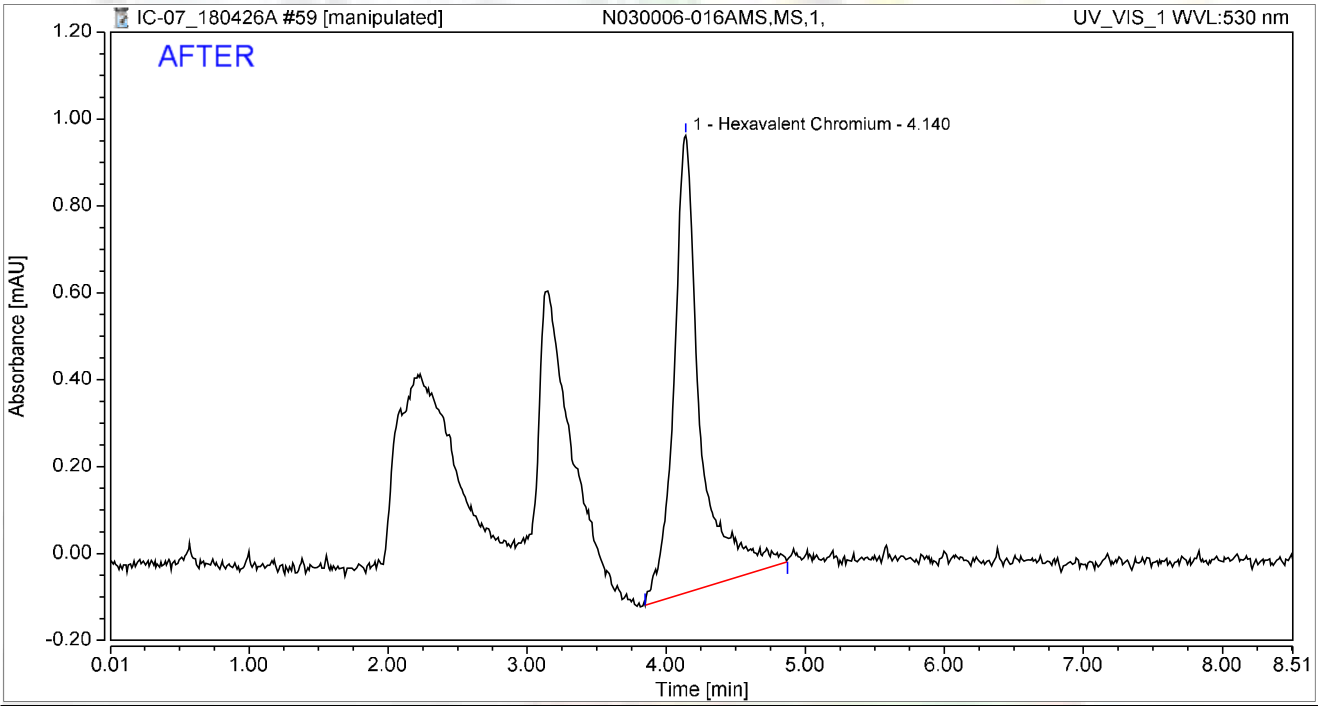
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-016AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 17:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.234	1.054	100.00	100.00	0.9218
Total:			**0.234**	**1.054**	**100.00**	**100.00**	

rba 5/1/2018

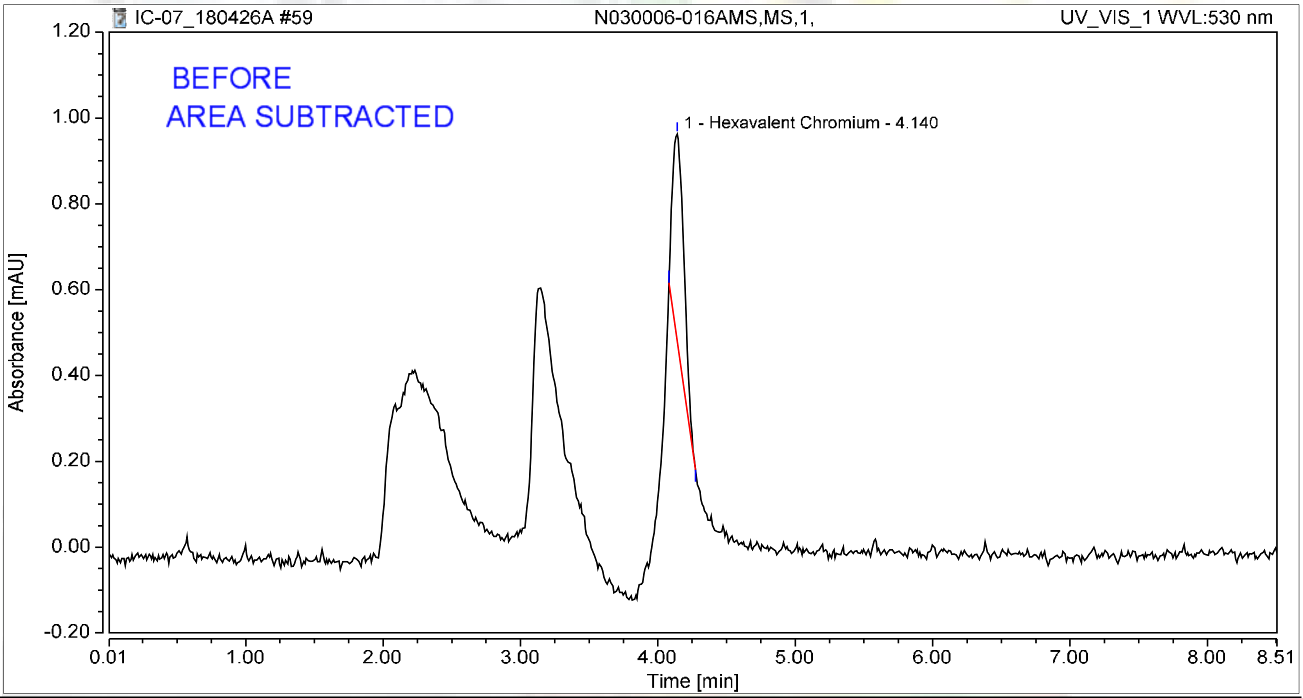
Reviewed by:
Nancy 5/9/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030006-016AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 17:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.047	0.479	100.00	100.00	0.1845
Total:			**0.047**	**0.479**	**100.00**	**100.00**	

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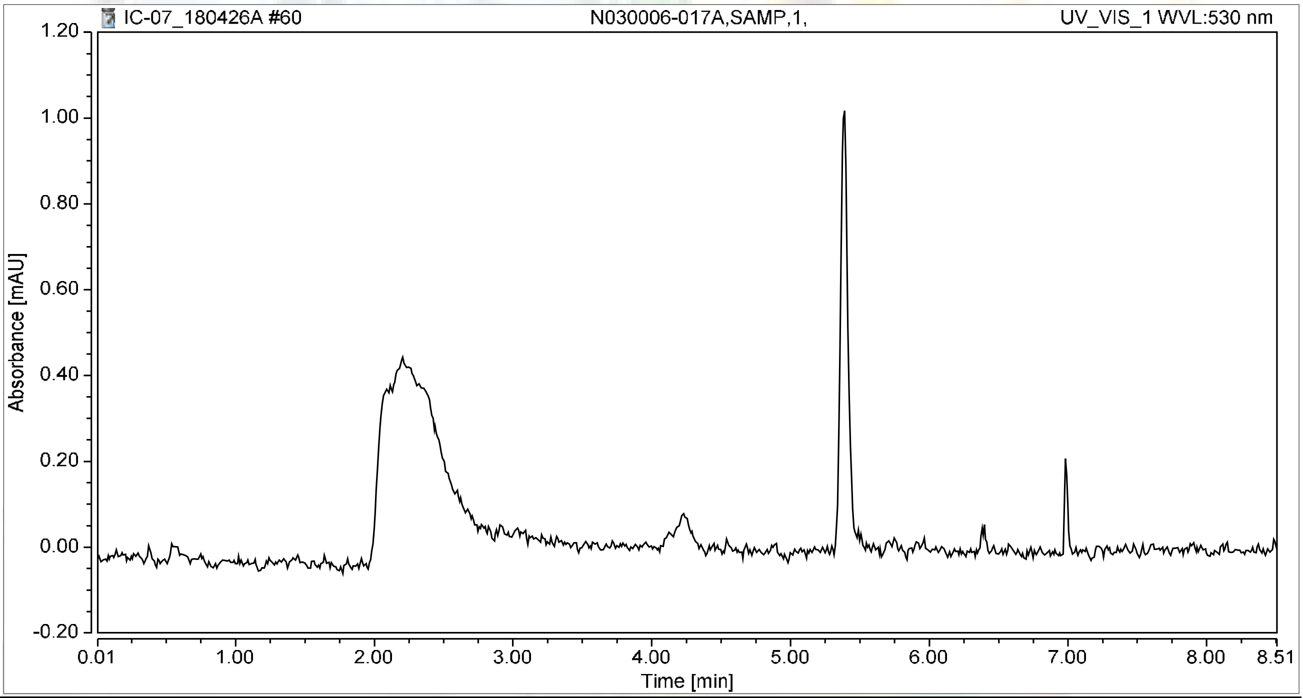
Chromatogram and Results

Injection Details

Injection Name:	**N030006-017A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 17:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

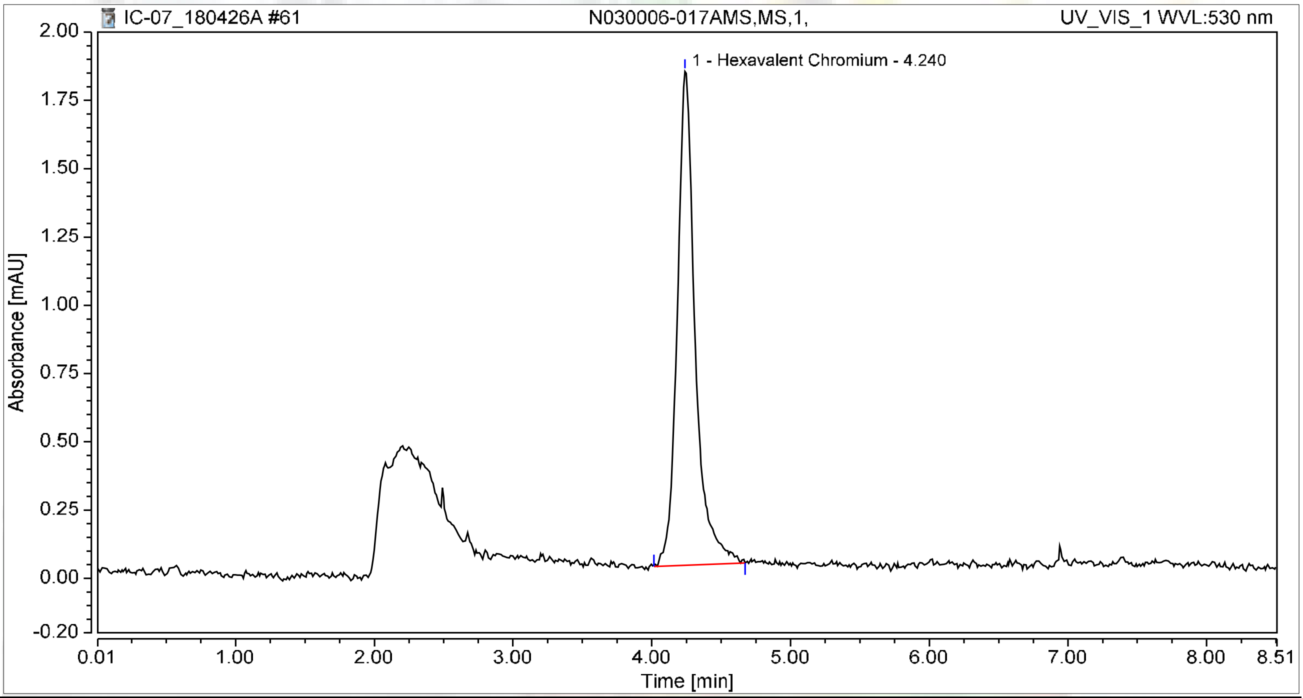
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-017AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 17:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

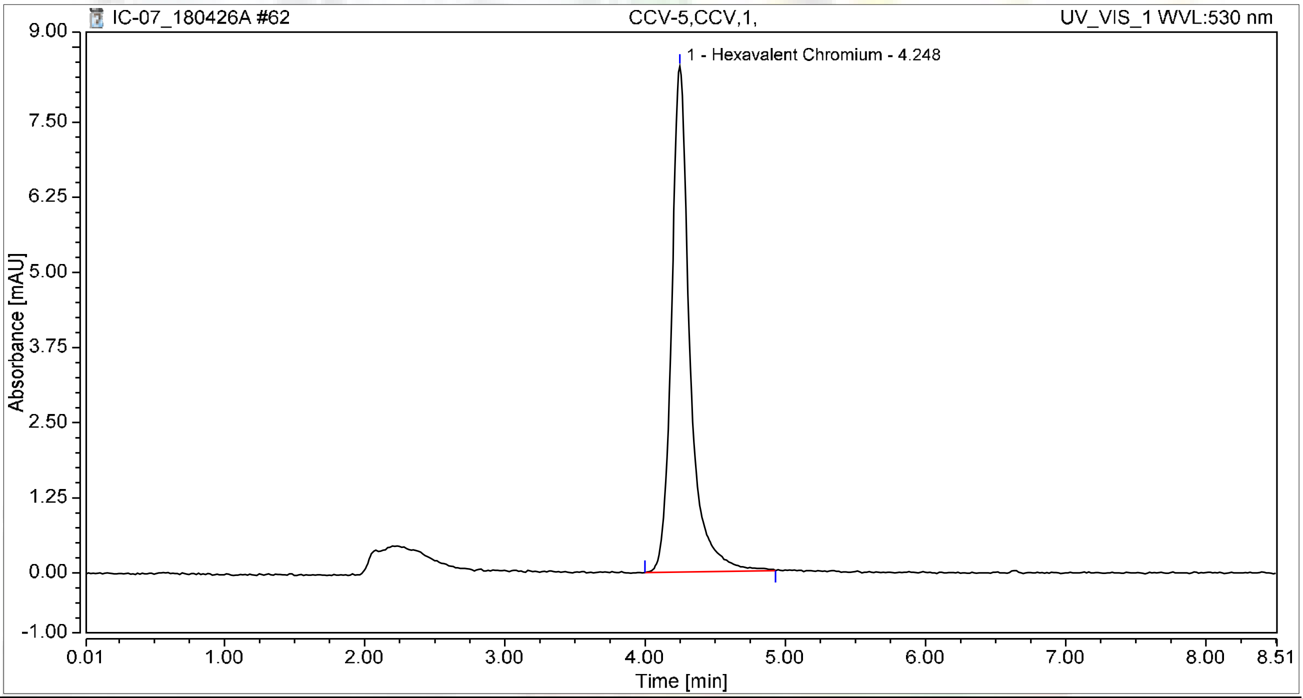
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.272	1.808	100.00	100.00	1.0713
Total:			**0.272**	**1.808**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 17:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

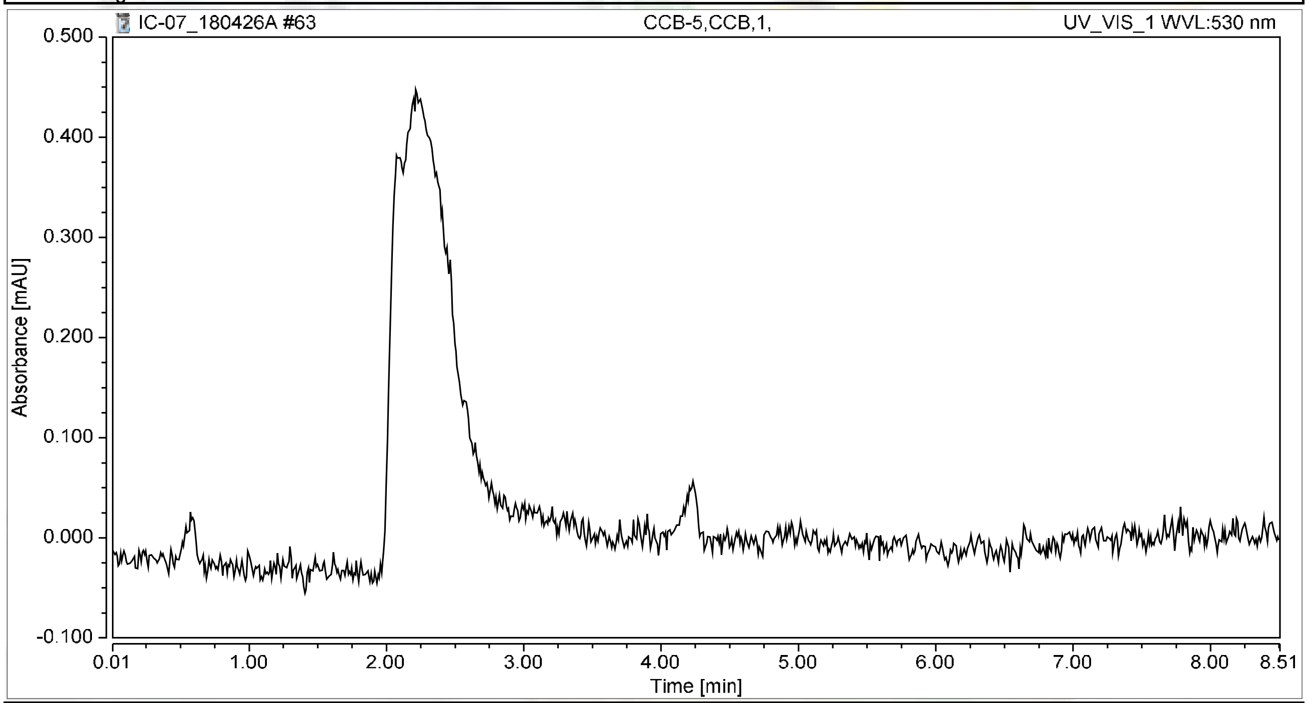
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.278	8.417	100.00	100.00	5.0408
Total:			**1.278**	**8.417**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 17:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

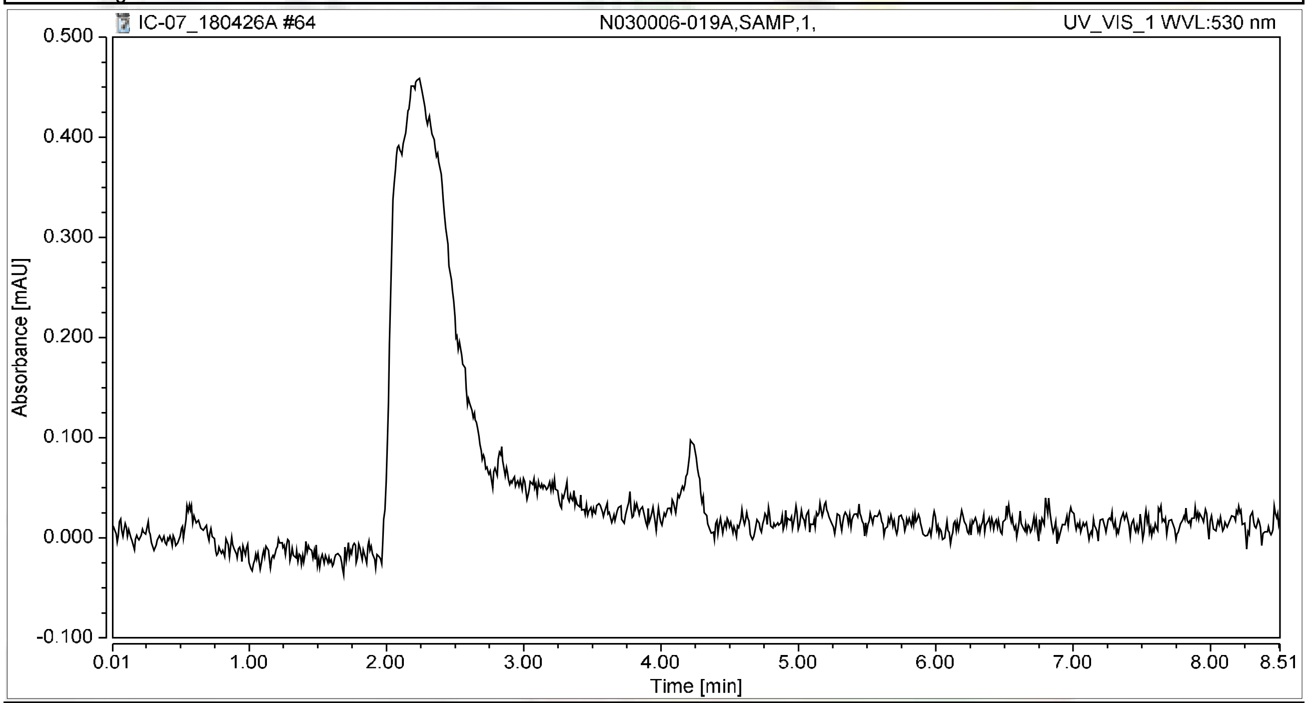
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-019A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 17:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

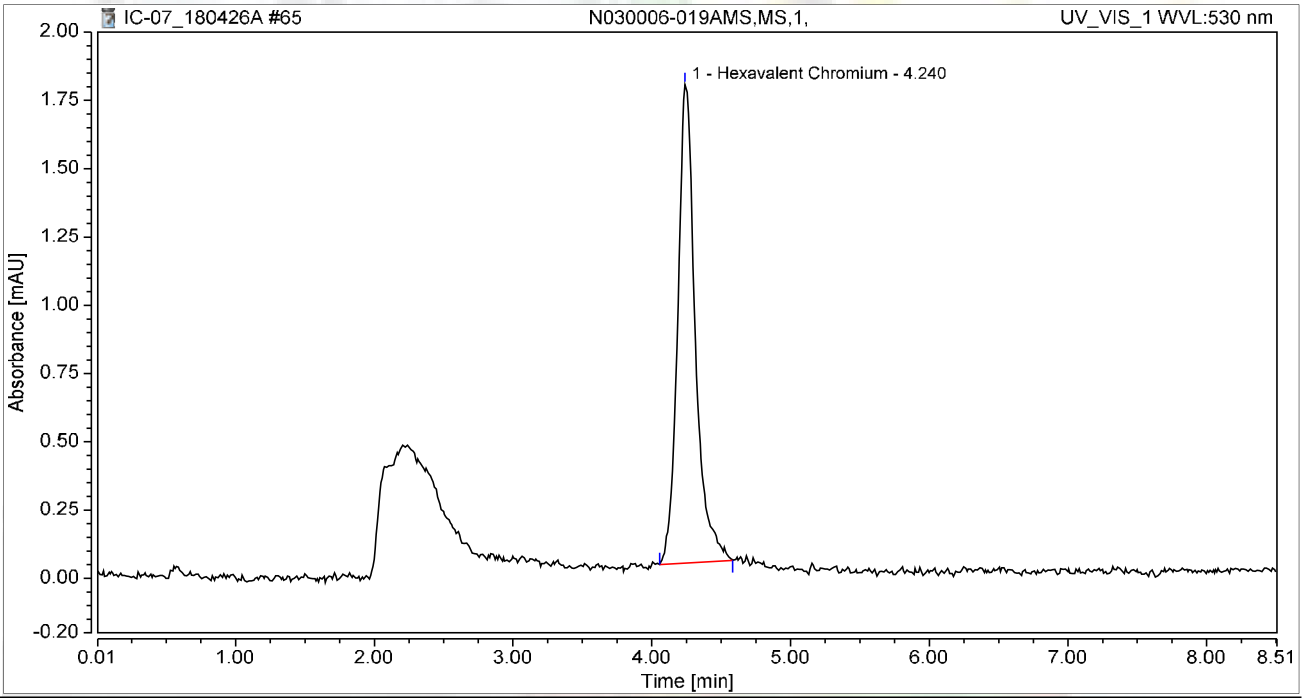
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-019AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 18:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

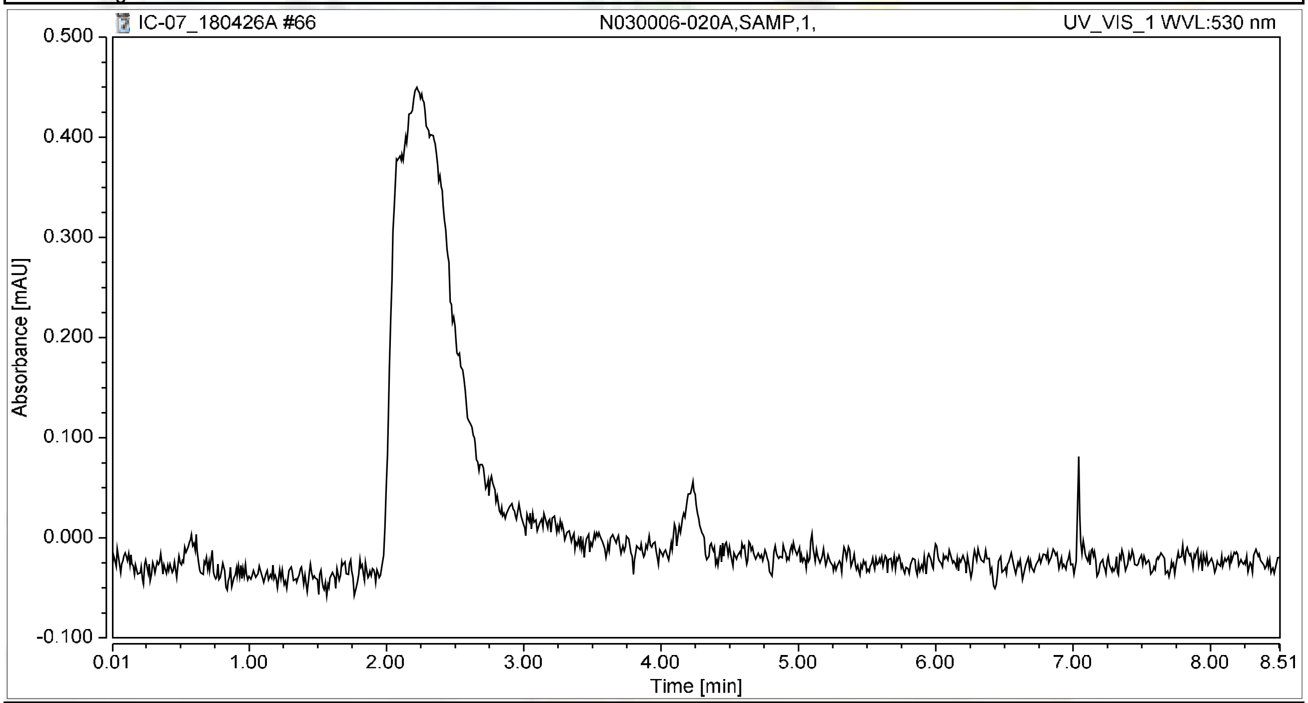
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.259	1.752	100.00	100.00	1.0197
Total:			**0.259**	**1.752**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-020A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 18:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

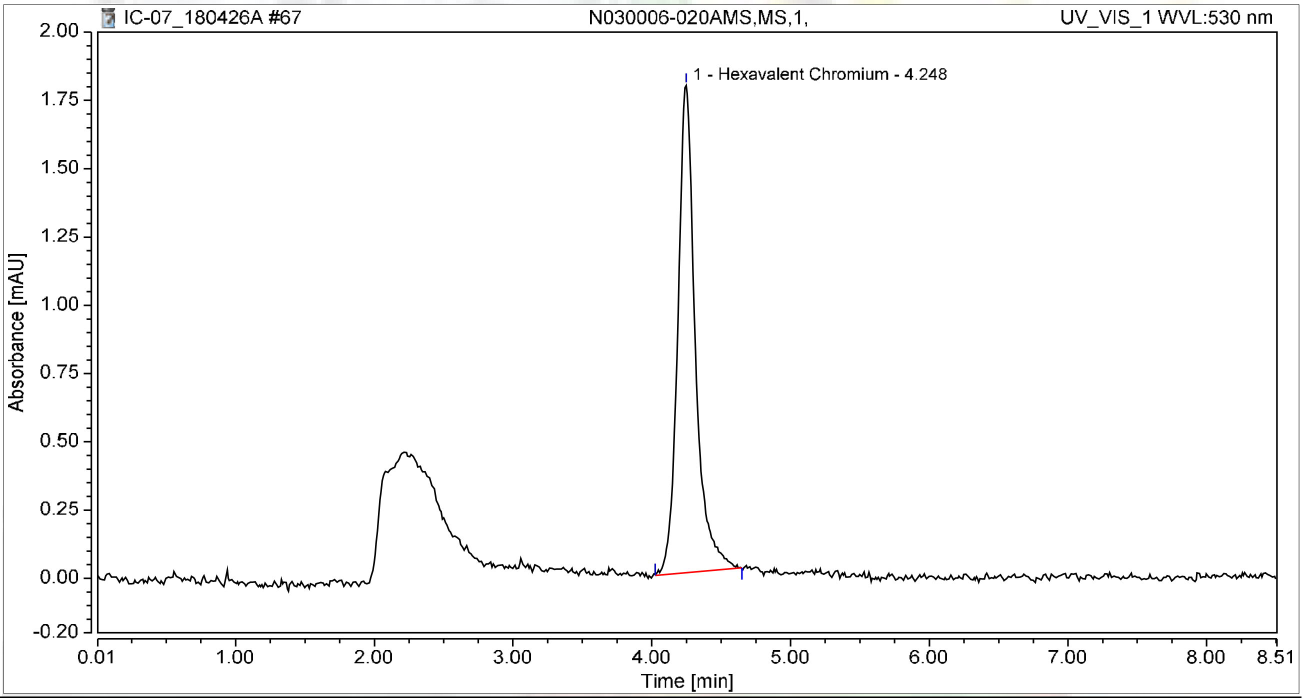
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-020AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 18:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

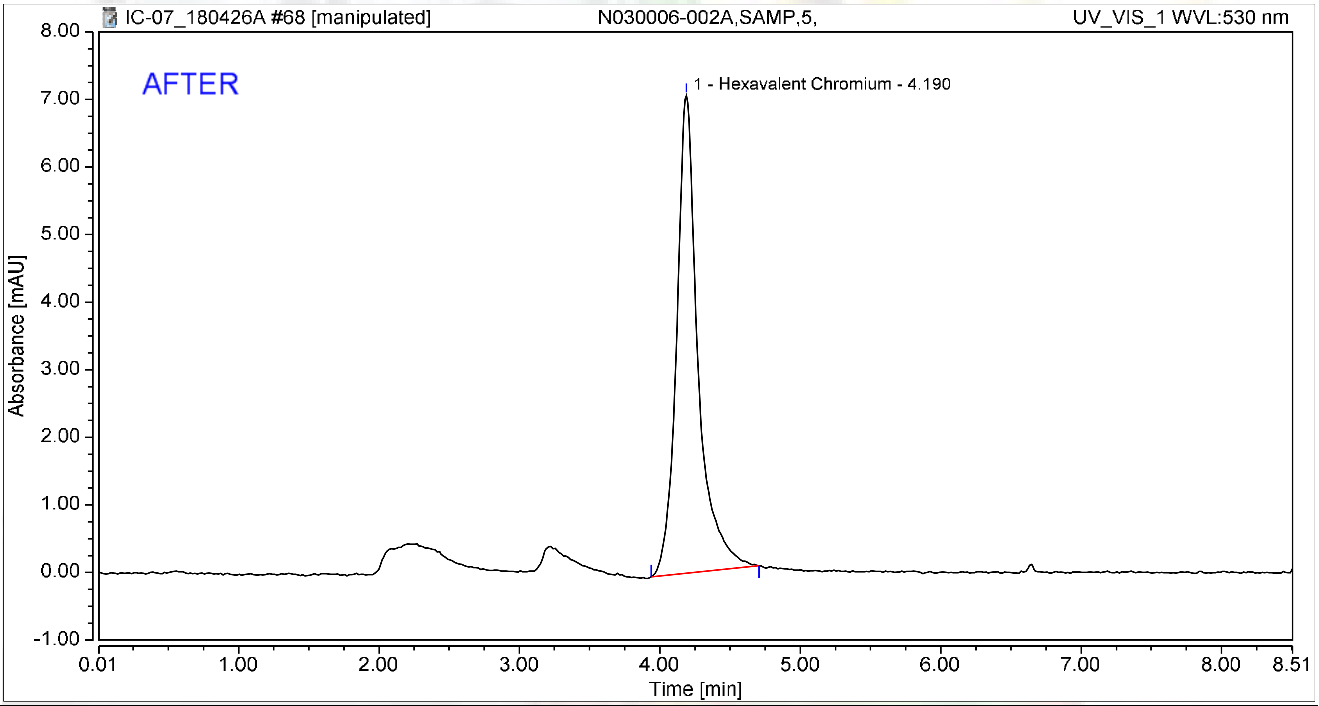
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.261	1.783	100.00	100.00	1.0299
Total:			**0.261**	**1.783**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 18:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.251	7.067	100.00	100.00	4.9354
Total:			**1.251**	**7.067**	**100.00**	**100.00**	

pba 5/1/2018

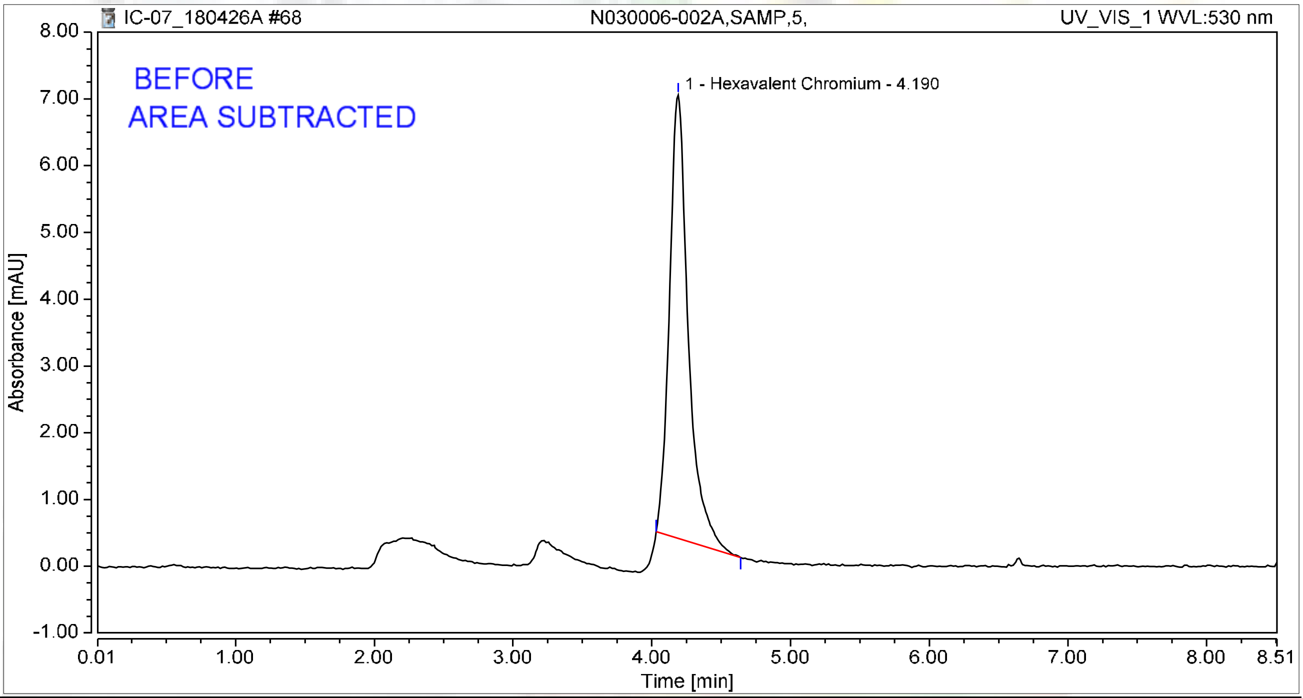
Reviewed by:
Harvey 5/9/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030006-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 18:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.050	6.642	100.00	100.00	4.1412
Total:			**1.050**	**6.642**	**100.00**	**100.00**	

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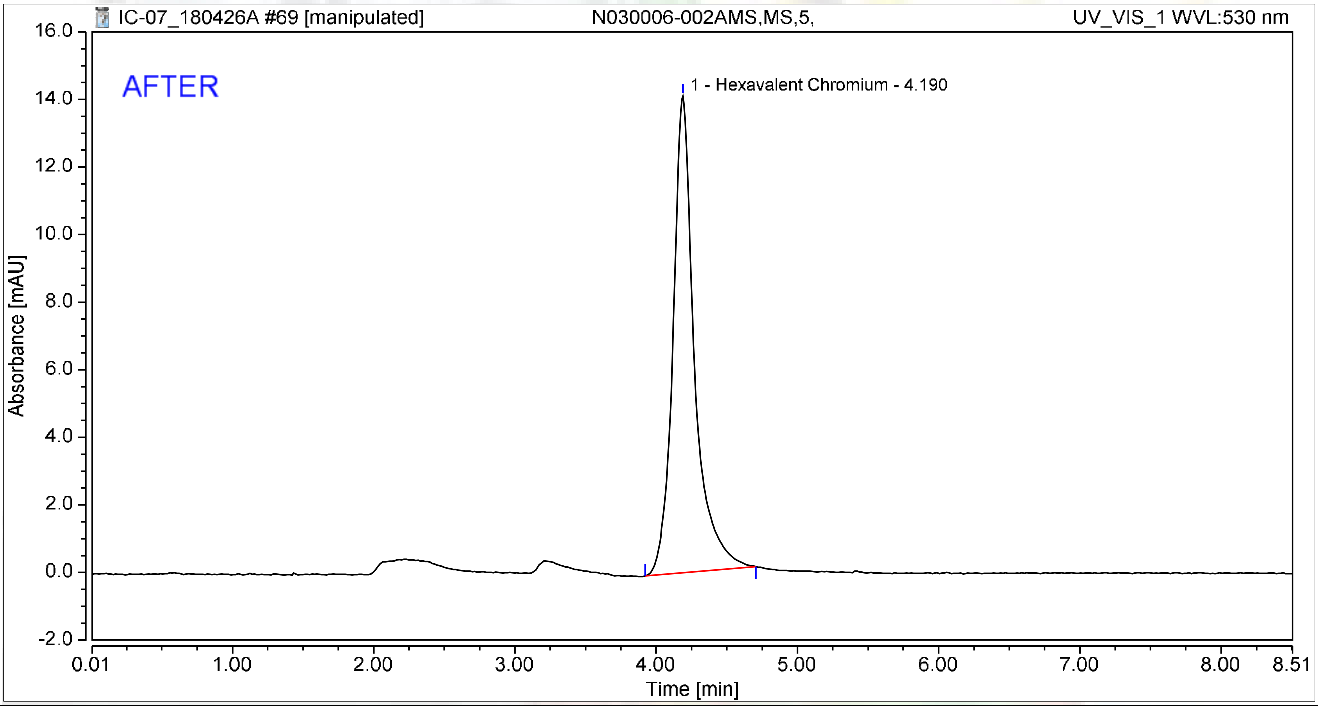
Chromatogram and Results

Injection Details

Injection Name:	**N030006-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 18:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.492	14.106	100.00	100.00	9.8285
Total:			**2.492**	**14.106**	**100.00**	**100.00**	

rba 5/1/2018

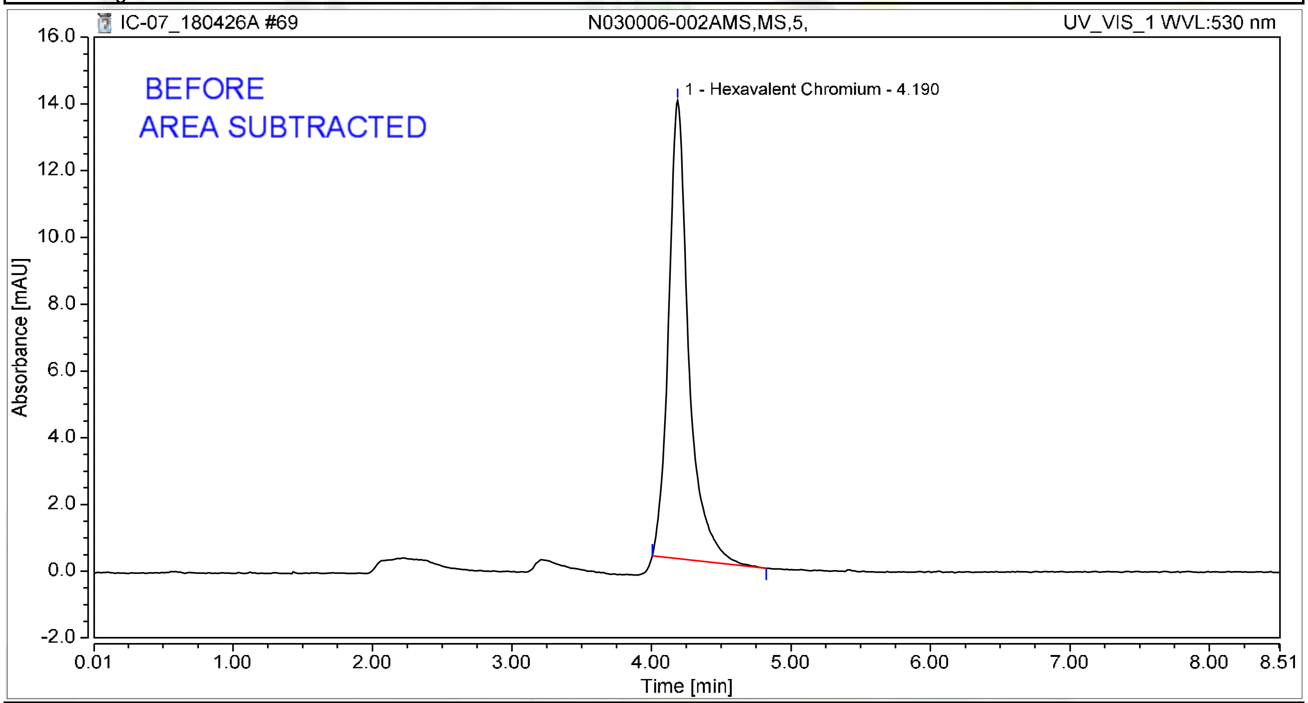
Reviewed by:
Nancy 5/9/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030006-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 18:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.305	13.721	100.00	100.00	9.0907
Total:			**2.305**	**13.721**	**100.00**	**100.00**	

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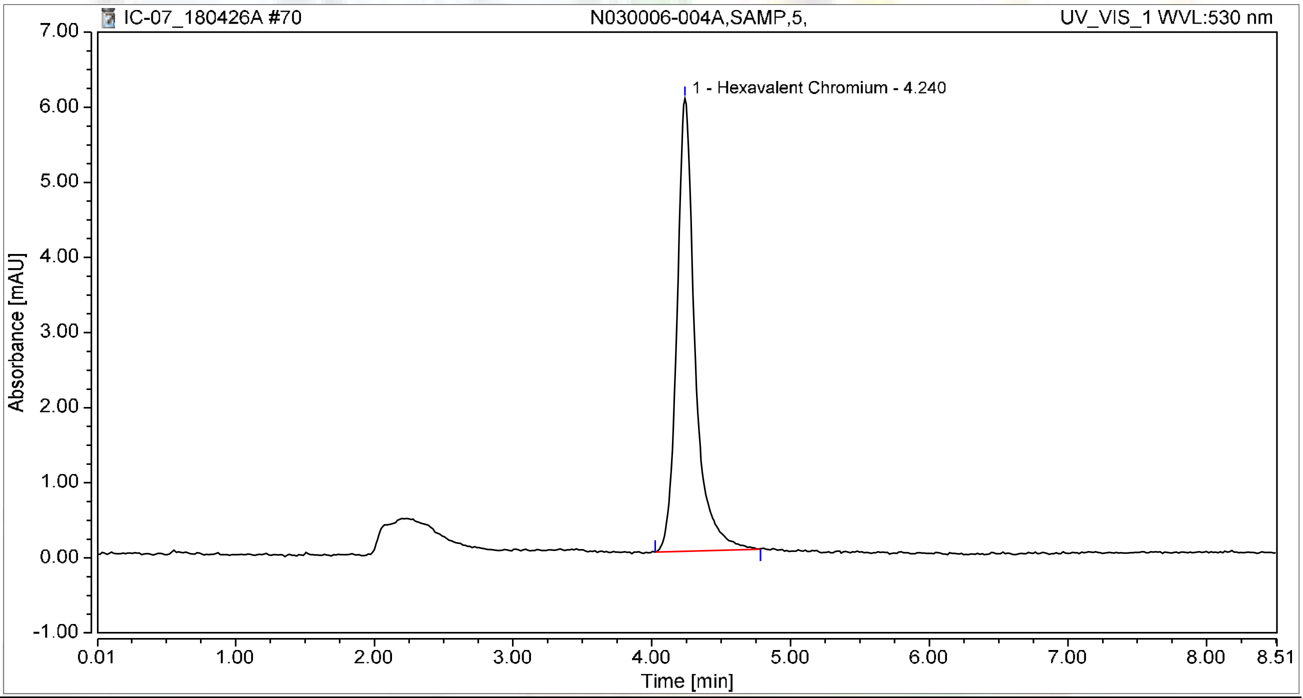
Chromatogram and Results

Injection Details

Injection Name:	**N030006-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 18:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

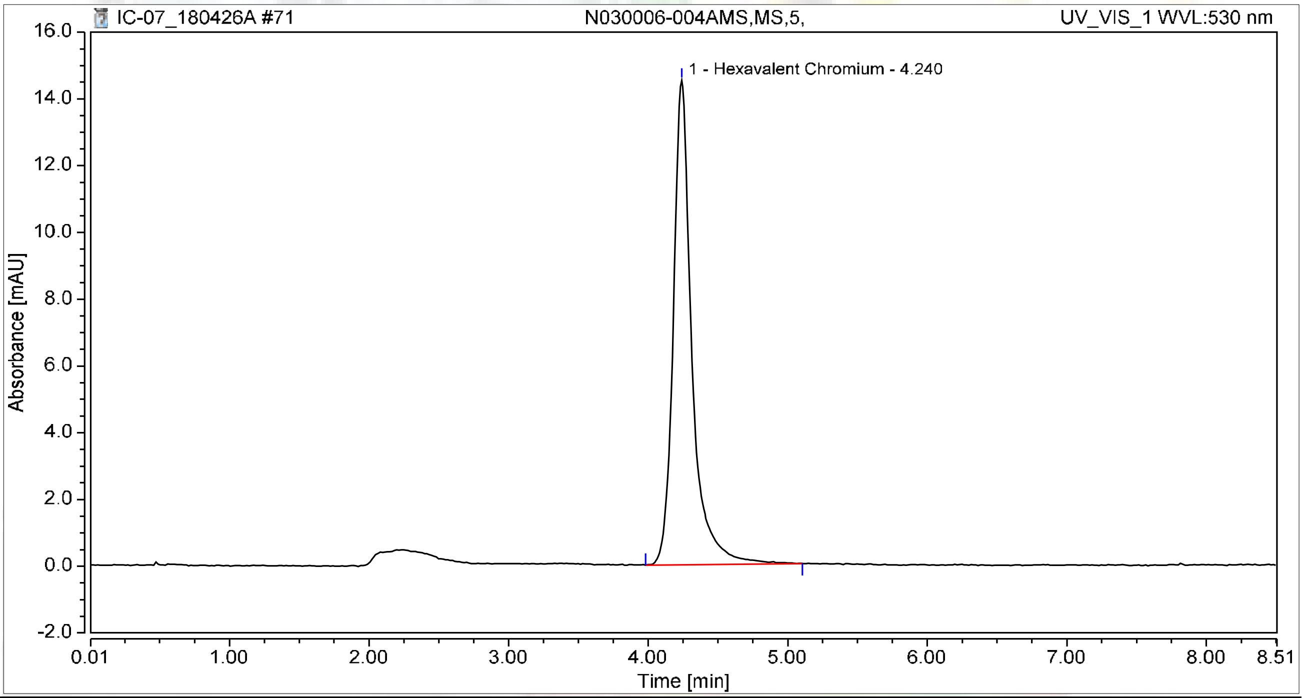
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.914	6.027	100.00	100.00	3.6073
Total:			**0.914**	**6.027**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 19:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

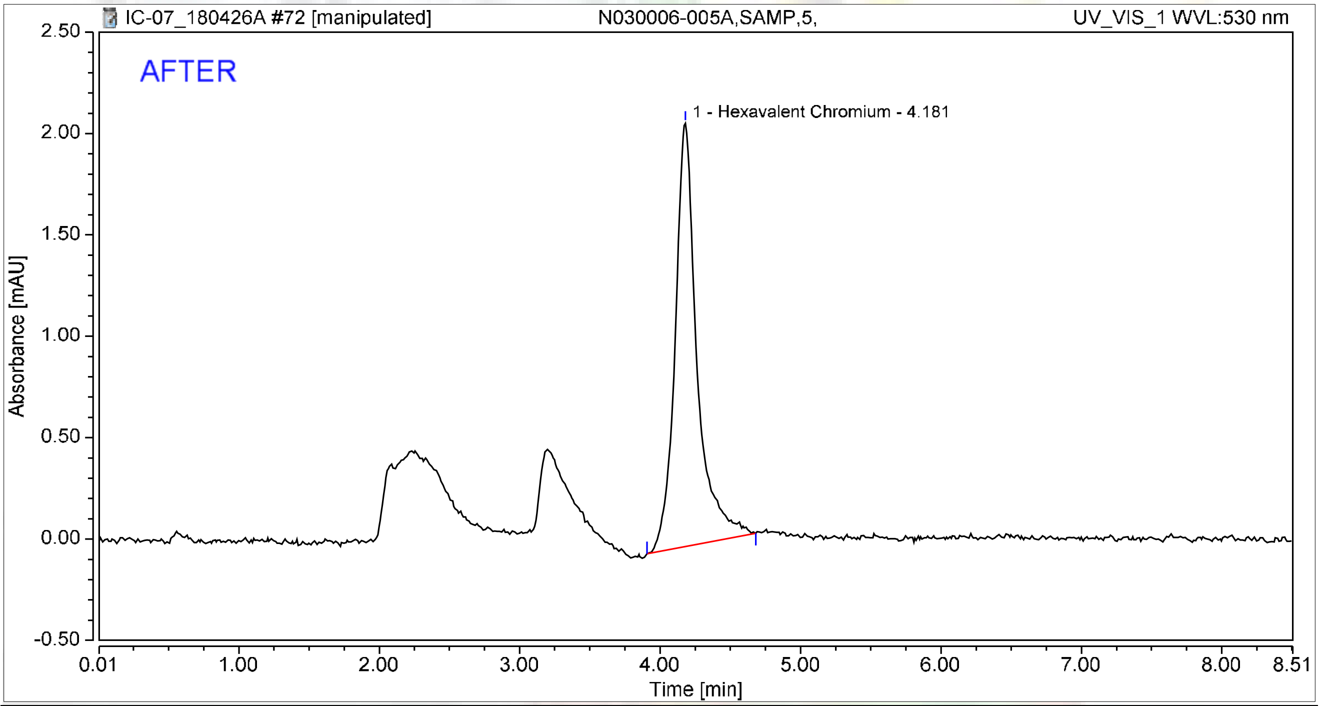
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	2.245	14.518	100.00	100.00	8.8575
Total:			**2.245**	**14.518**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 19:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.377	2.087	100.00	100.00	1.4889
Total:			**0.377**	**2.087**	**100.00**	**100.00**	

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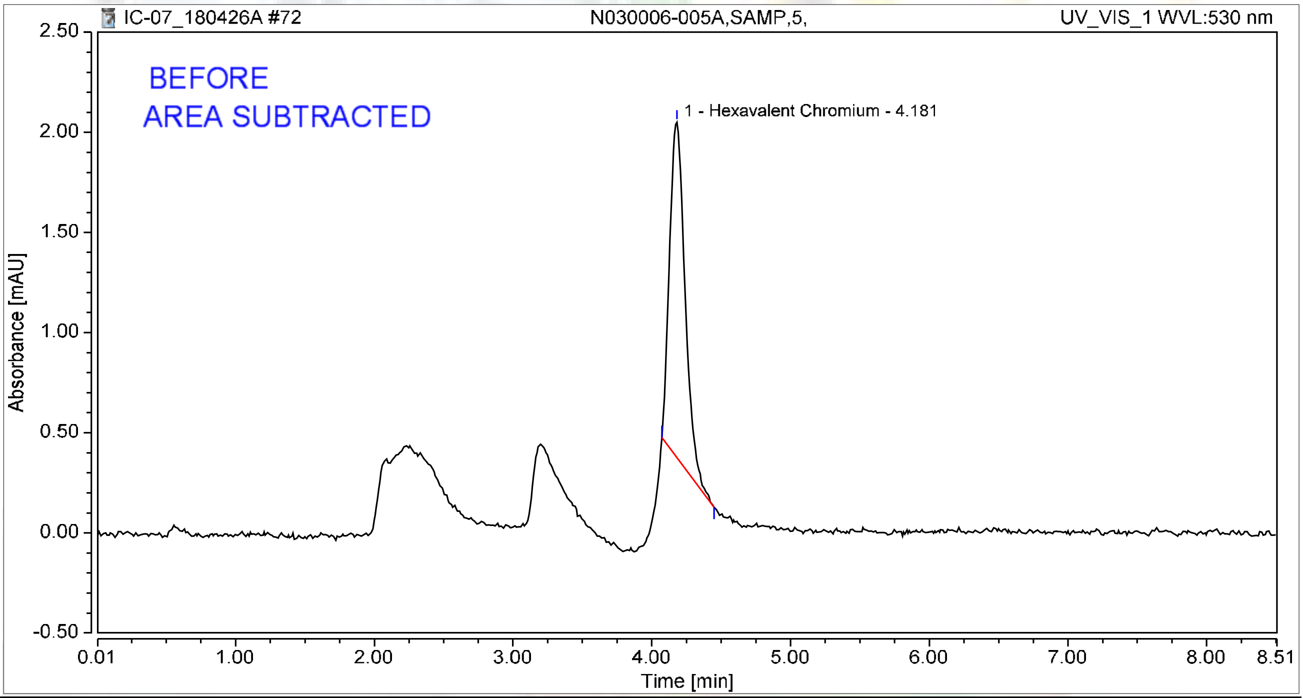
Chromatogram and Results

Injection Details

Injection Name:	**N030006-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 19:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.217	1.675	100.00	100.00	0.8577
Total:			**0.217**	**1.675**	**100.00**	**100.00**	

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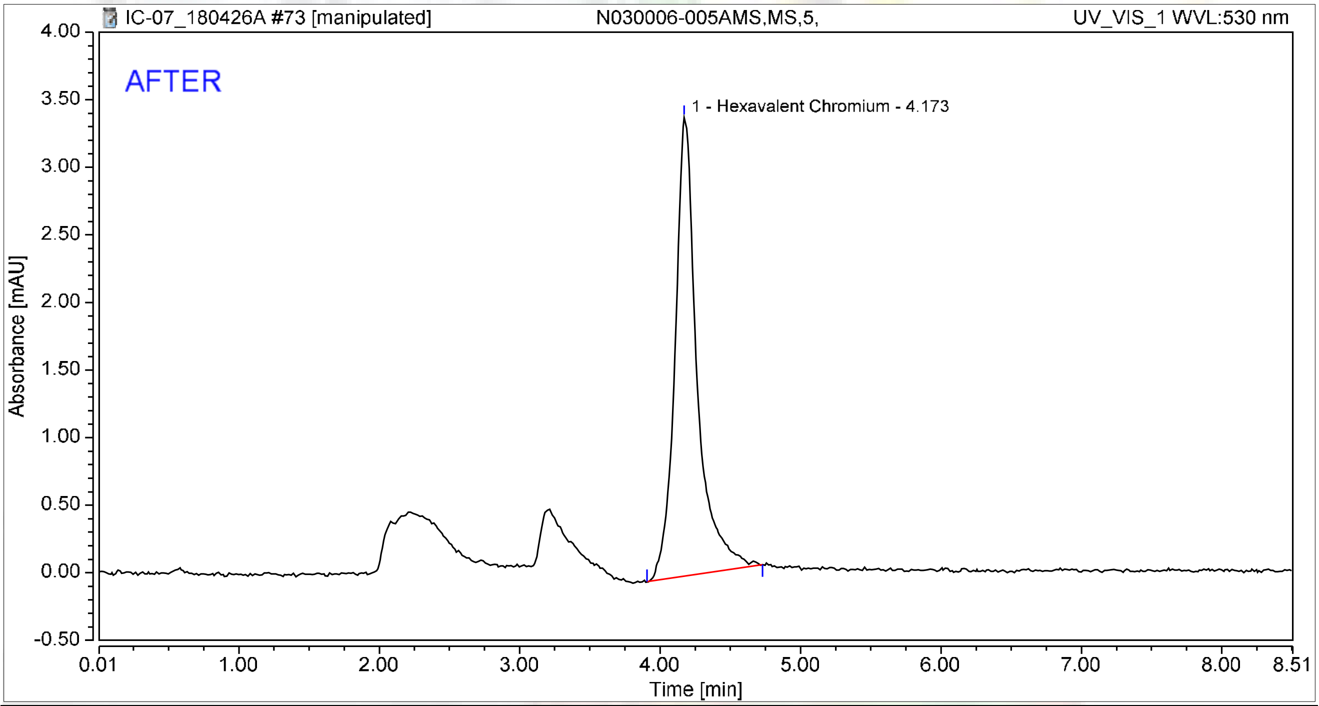
Chromatogram and Results

Injection Details

Injection Name:	**N030006-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 19:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.620	3.391	100.00	100.00	2.4439
Total:			**0.620**	**3.391**	**100.00**	**100.00**	

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Reviewed by:
Nancy 5/9/2018

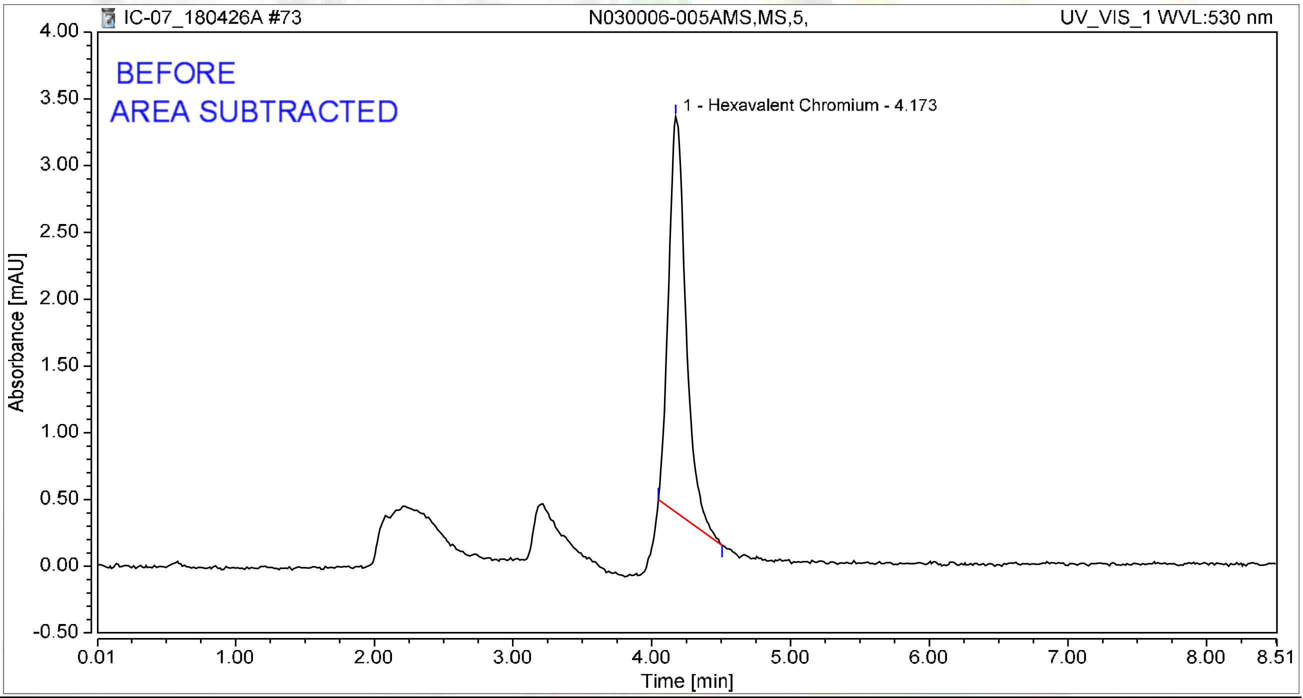
My first report/Integration

Chromatogram and Results

Injection Details

Injection Name:	**N030006-005AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 19:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.432	2.962	100.00	100.00	1.7048
Total:			**0.432**	**2.962**	**100.00**	**100.00**	

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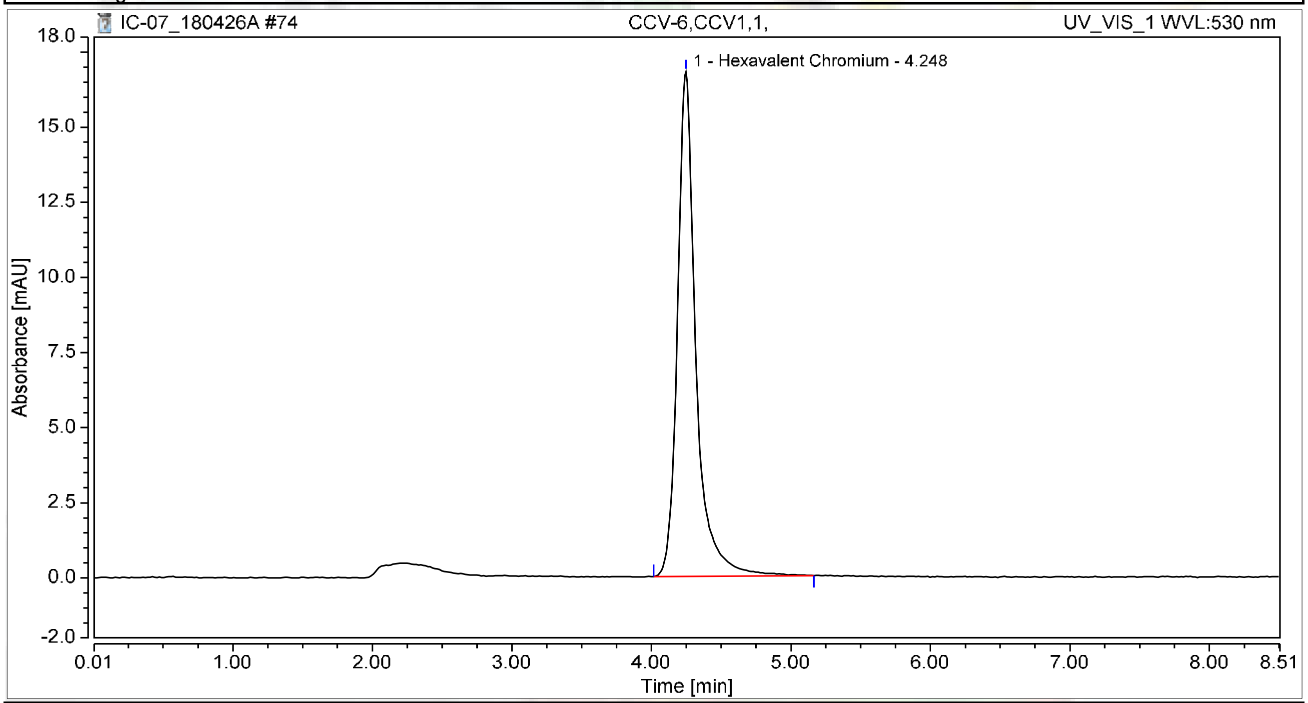
Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 19:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

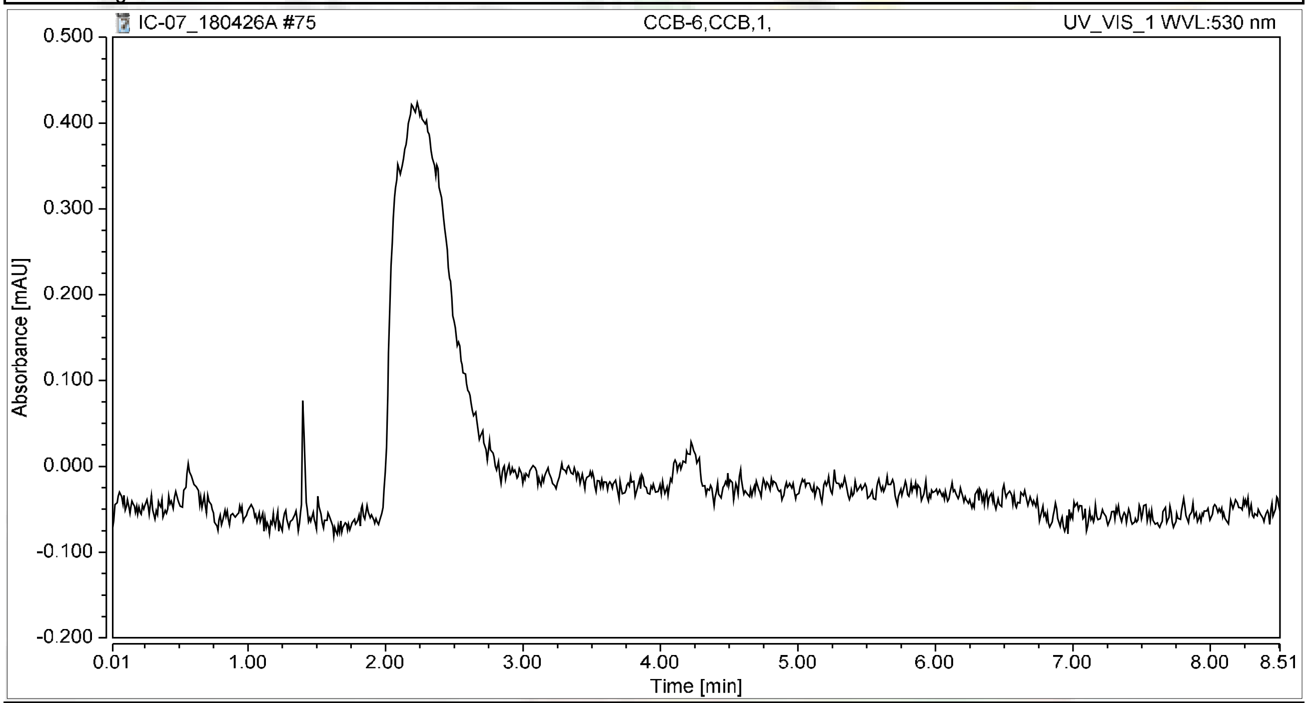
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.578	16.792	100.00	100.00	10.1704
Total:			**2.578**	**16.792**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 19:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

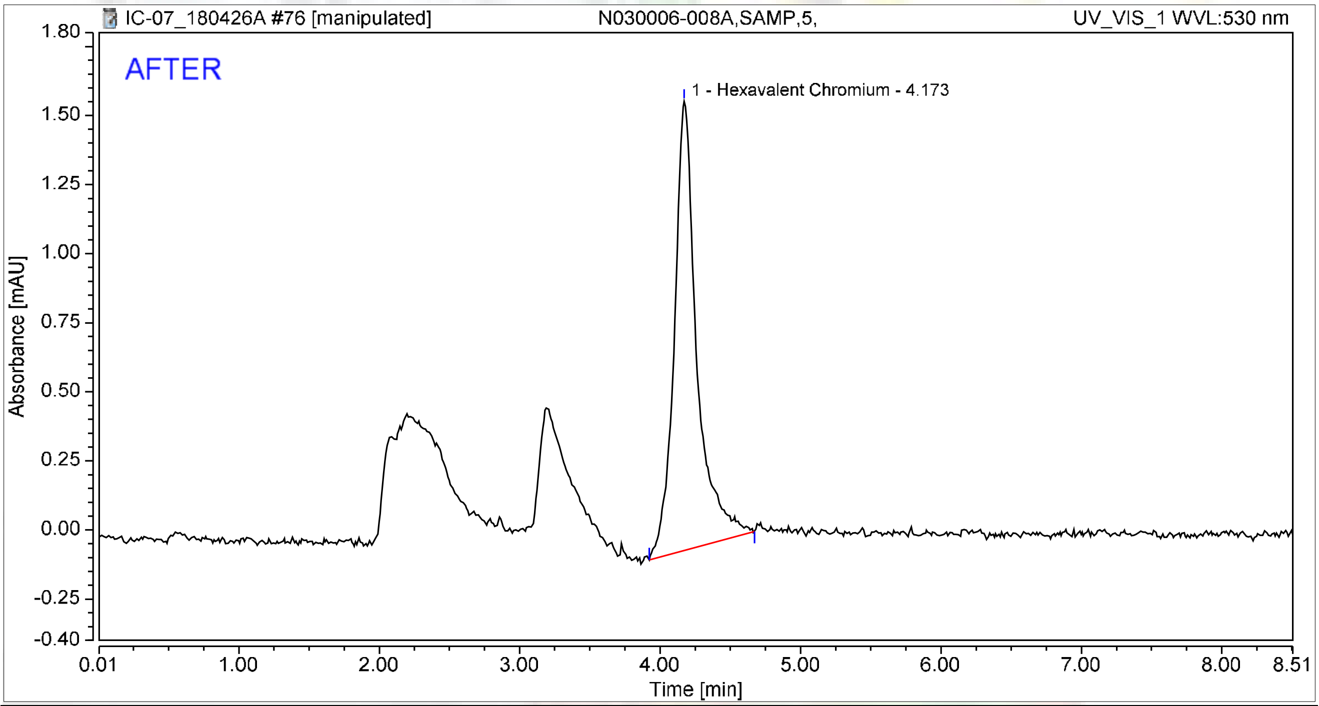
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-008A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 19:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.302	1.625	100.00	100.00	1.1929
Total:			**0.302**	**1.625**	**100.00**	**100.00**	

rba 5/1/2018

Reviewed by:
Nancy 5/9/2018

My first report/Integration

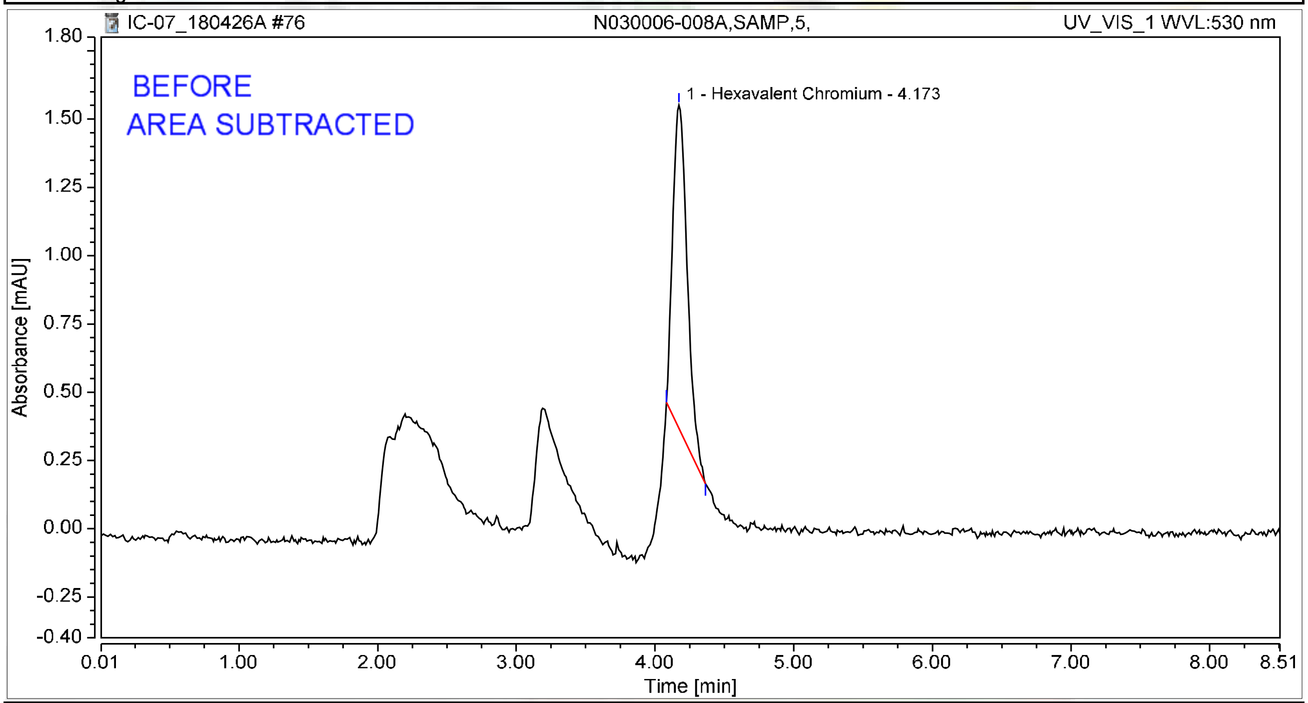
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N030006-008A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 19:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.143	1.185	100.00	100.00	0.5638
Total:			**0.143**	**1.185**	**100.00**	**100.00**	

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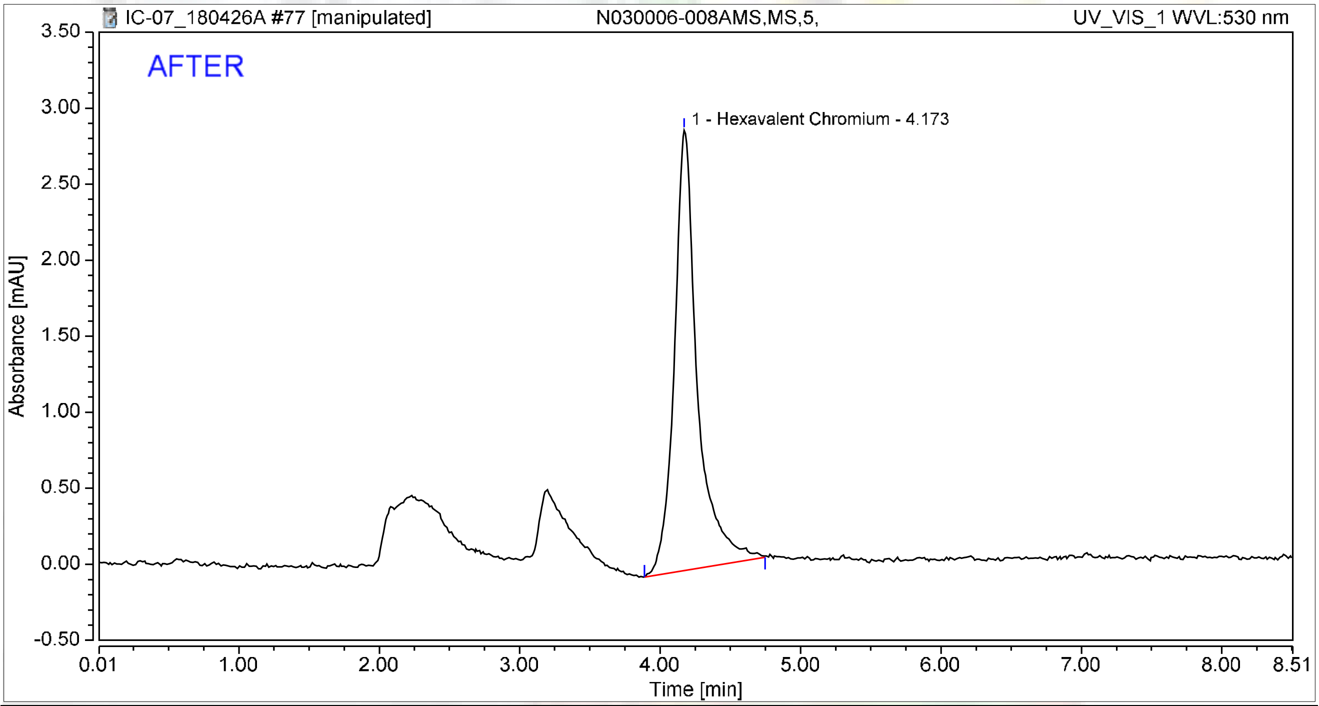
Chromatogram and Results

Injection Details

Injection Name:	**N030006-008AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 20:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.551	2.893	100.00	100.00	2.1739
Total:			**0.551**	**2.893**	**100.00**	**100.00**	

rba 5/1/2018

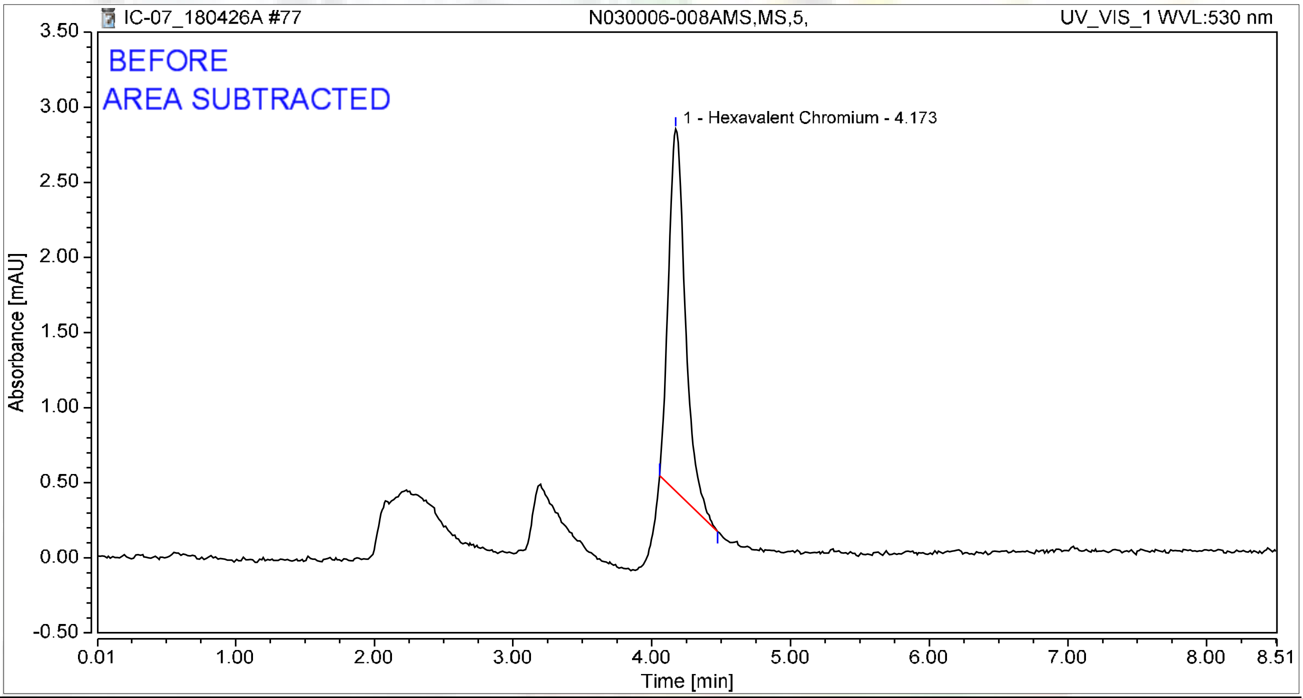
Reviewed by:
Nancy 5/9/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030006-008AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 20:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.342	2.410	100.00	100.00	1.3480
Total:			**0.342**	**2.410**	**100.00**	**100.00**	

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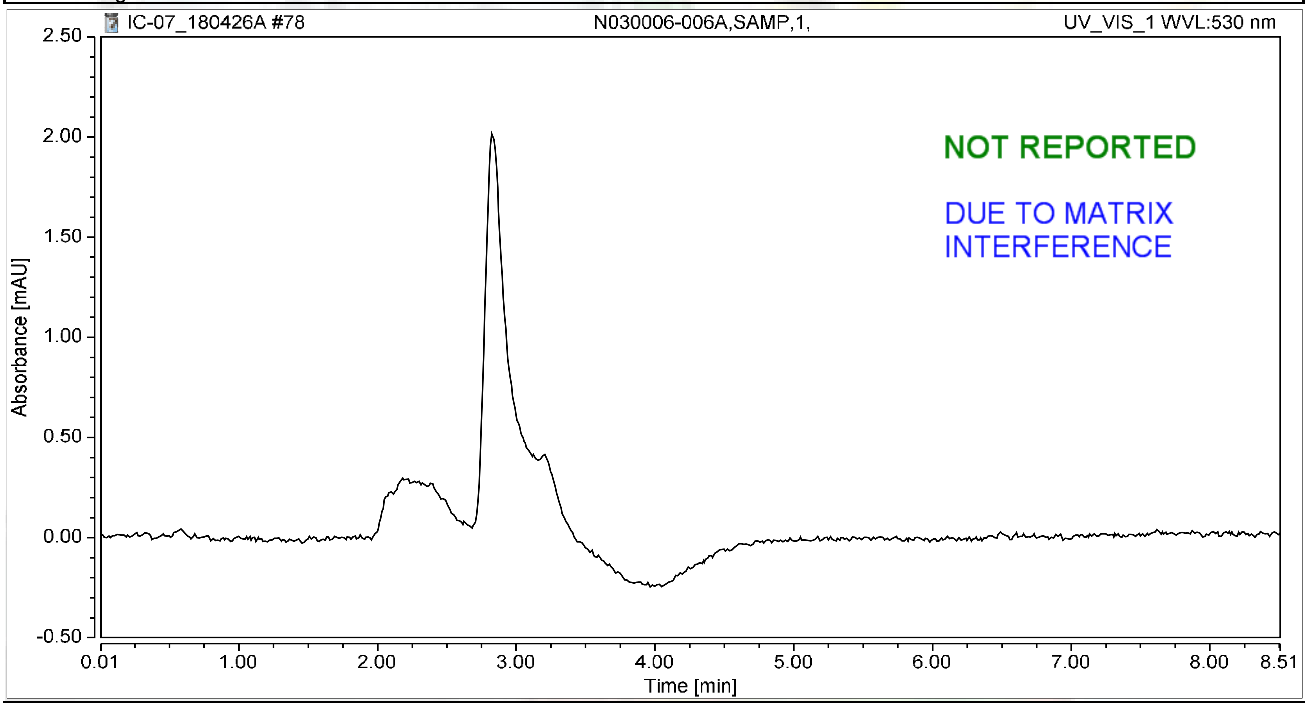
Chromatogram and Results

Injection Details

Injection Name:	**N030006-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 20:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

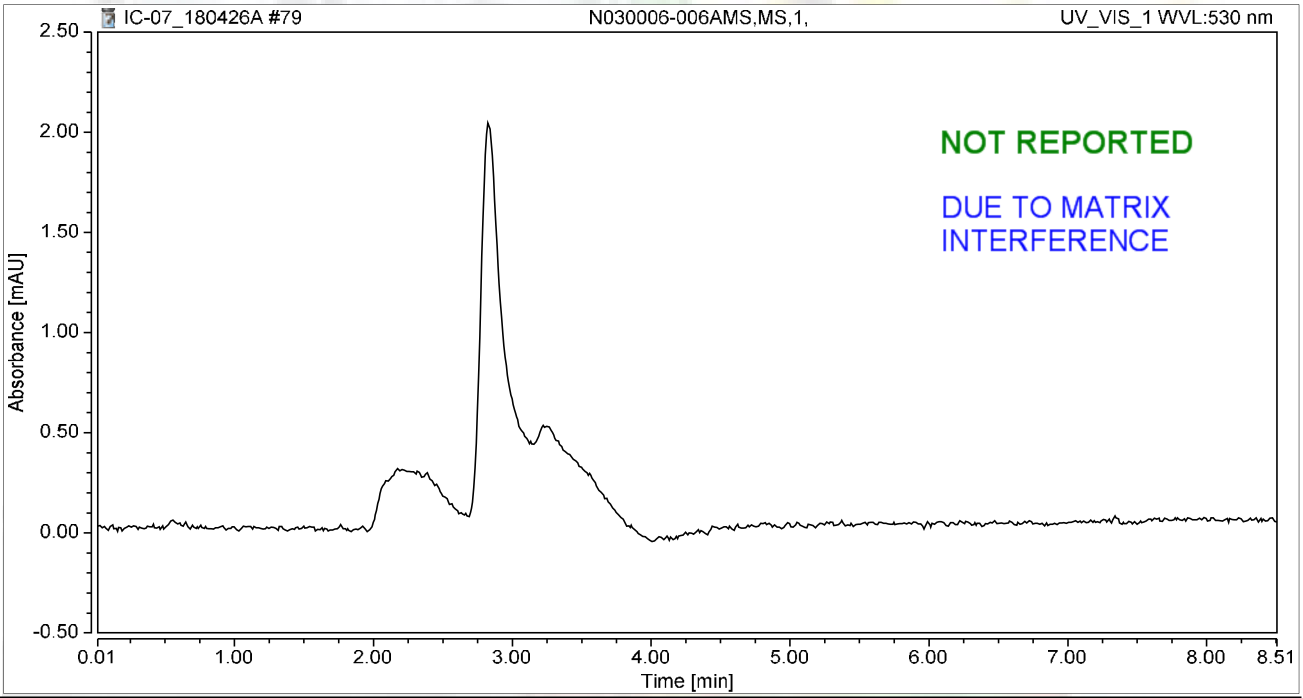
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-006AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 20:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

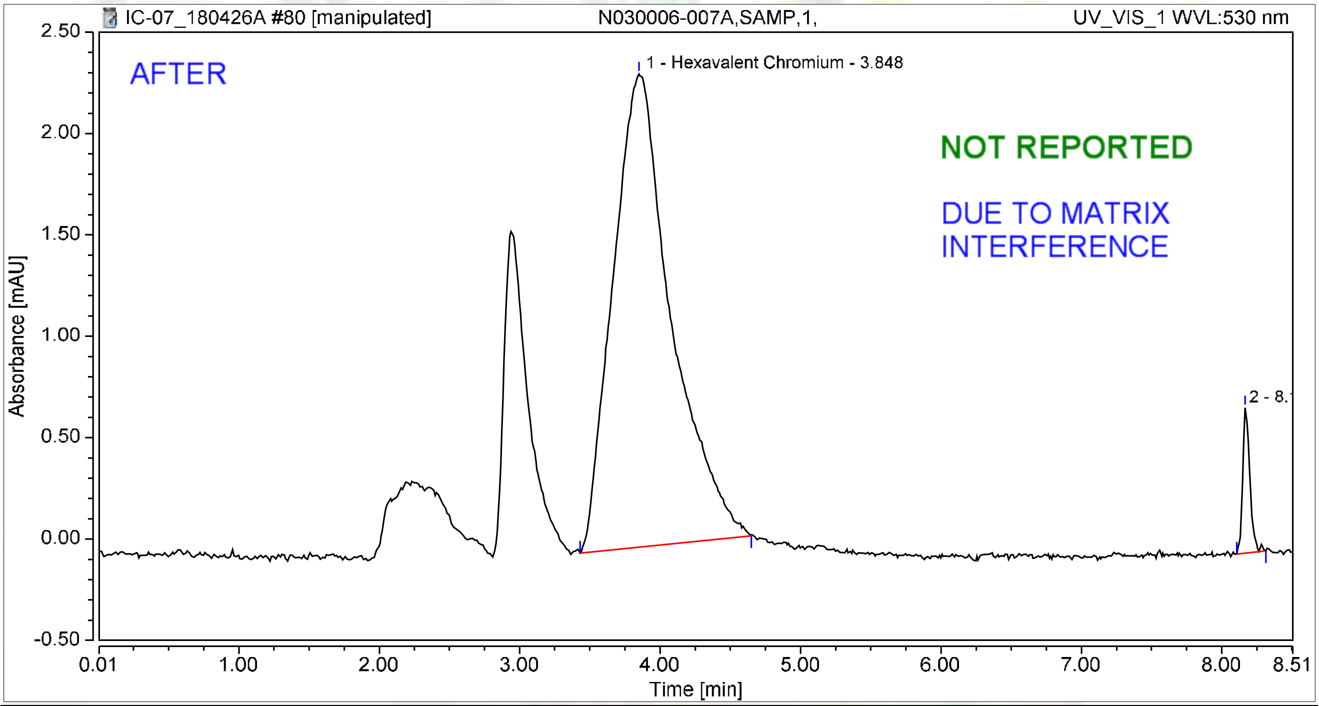
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 20:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.848	1.122	2.334	96.31	76.51	4.4267
2		8.165	0.043	0.717	3.69	23.49	n.a.
Total:			**1.165**	**3.051**	**100.00**	**100.00**	

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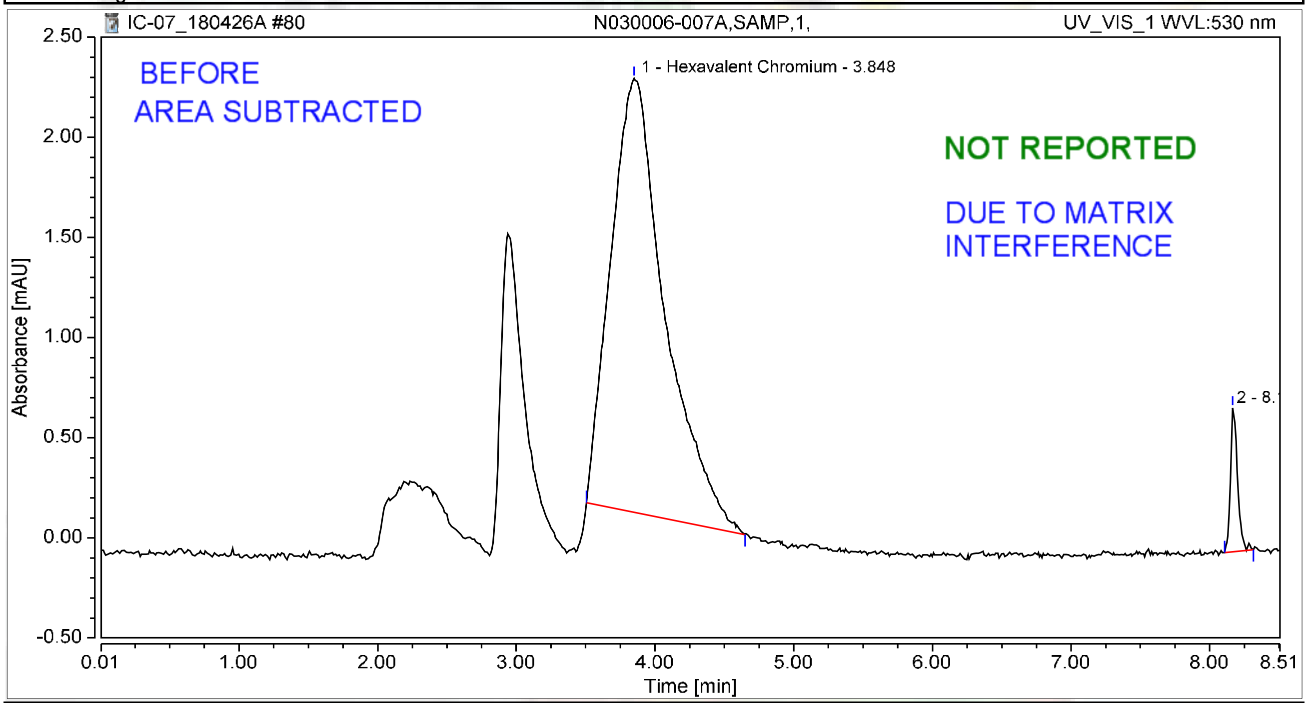
Chromatogram and Results

Injection Details

Injection Name:	**N030006-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 20:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.848	0.978	2.166	95.79	75.14	3.8591
2		8.165	0.043	0.717	4.21	24.86	n.a.
Total:			**1.021**	**2.882**	**100.00**	**100.00**	

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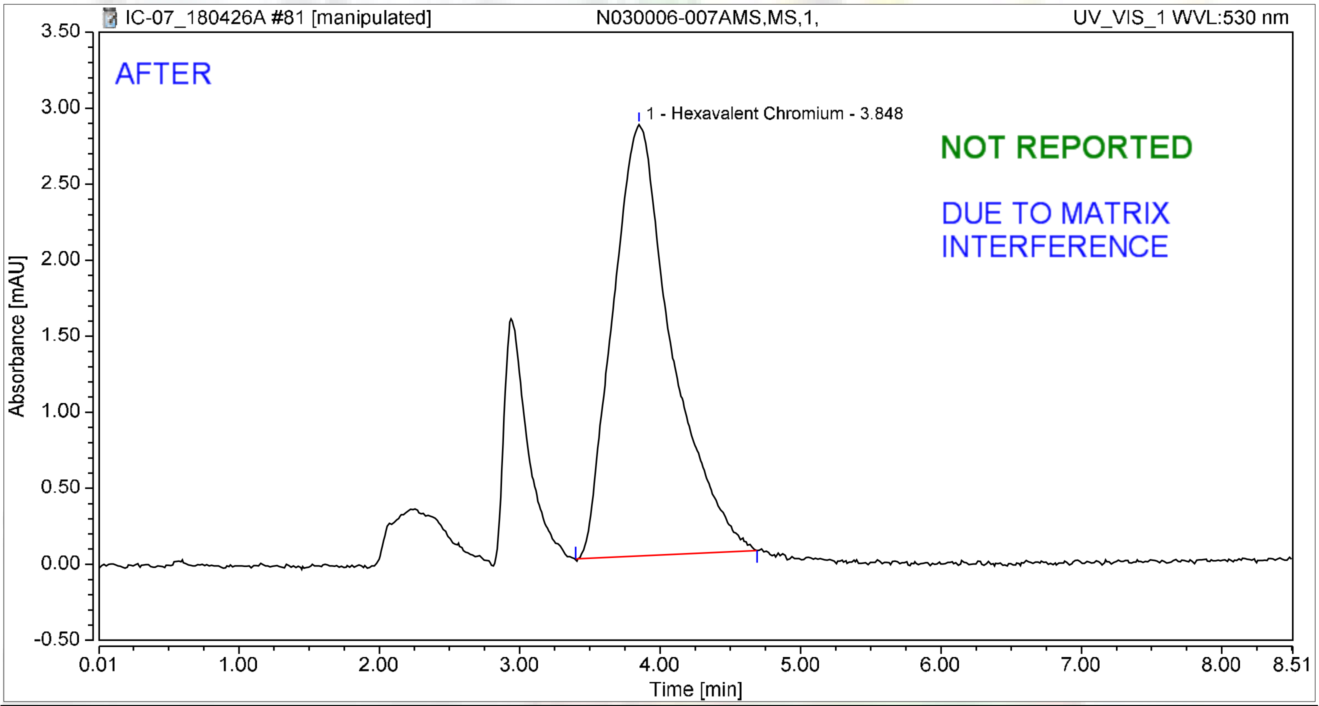
Chromatogram and Results

Injection Details			
Injection Name:	**N030006-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 20:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.848	1.380	2.836	100.00	100.00	5.4454
Total:			**1.380**	**2.836**	**100.00**	**100.00**	

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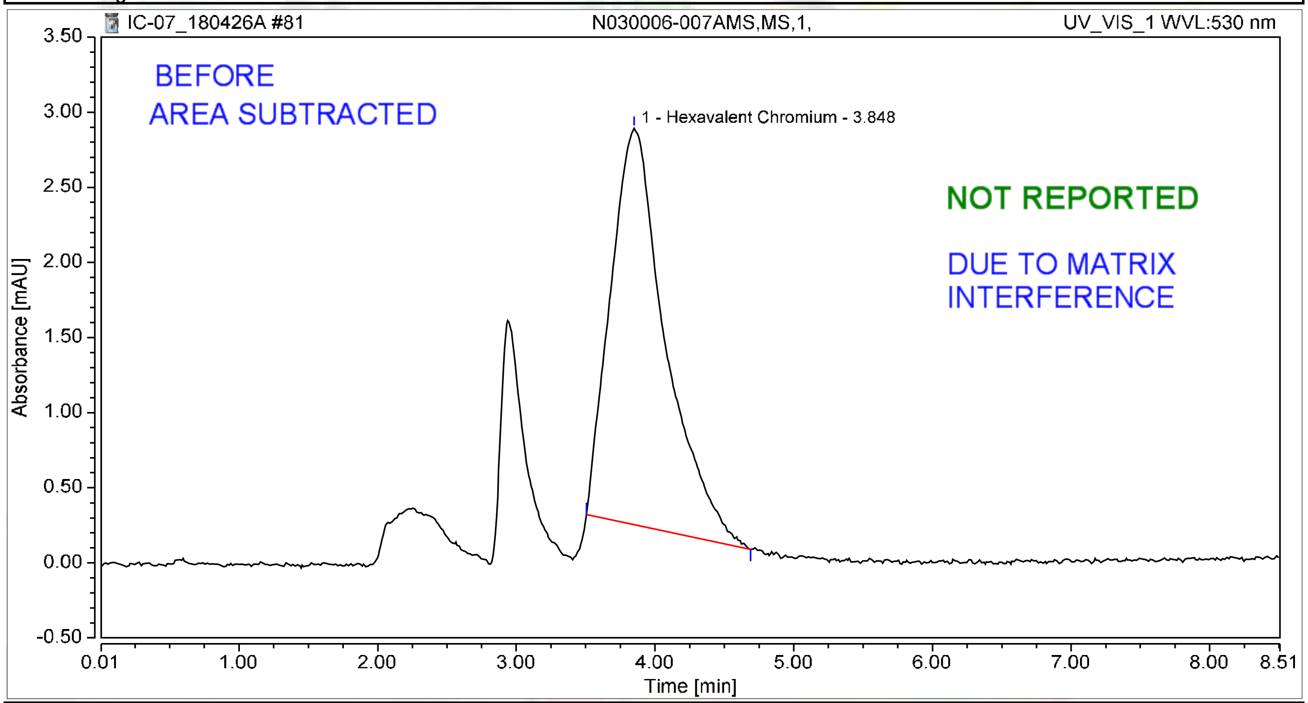
Chromatogram and Results

Injection Details

Injection Name:	**N030006-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 20:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.848	1.206	2.636	100.00	100.00	4.7585
Total:			**1.206**	**2.636**	**100.00**	**100.00**	

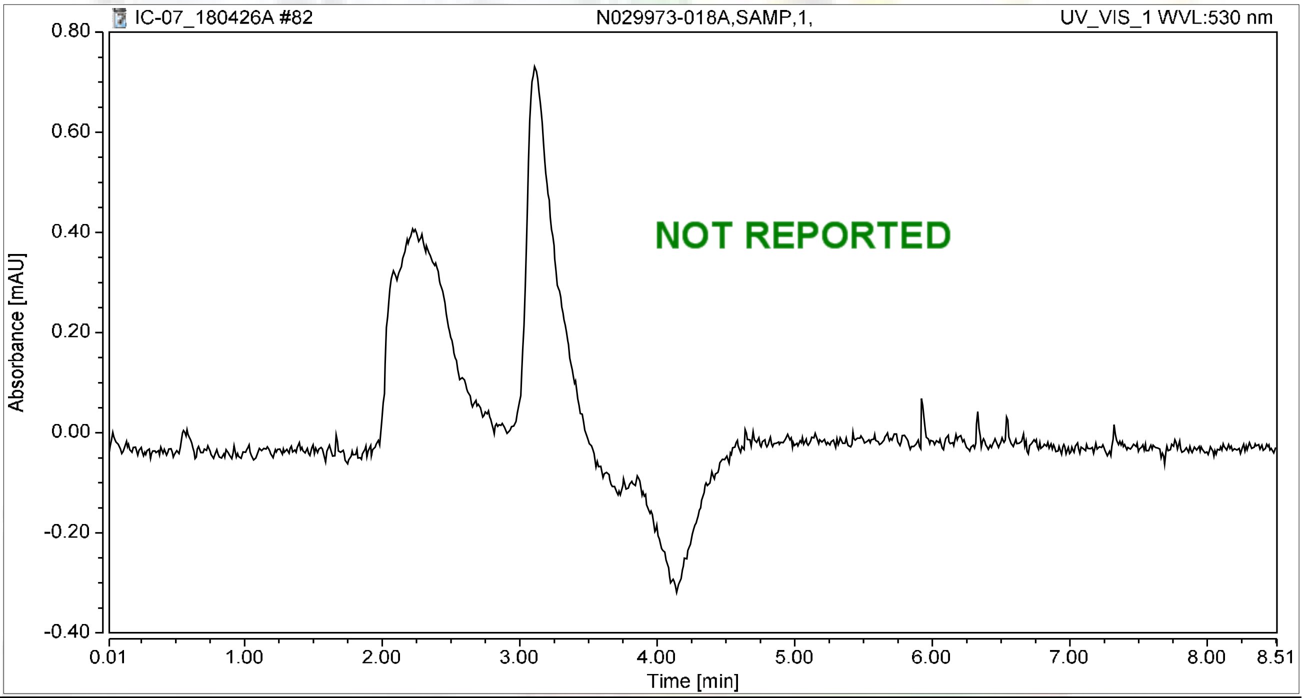
rba 5/1/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029973-018A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 20:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

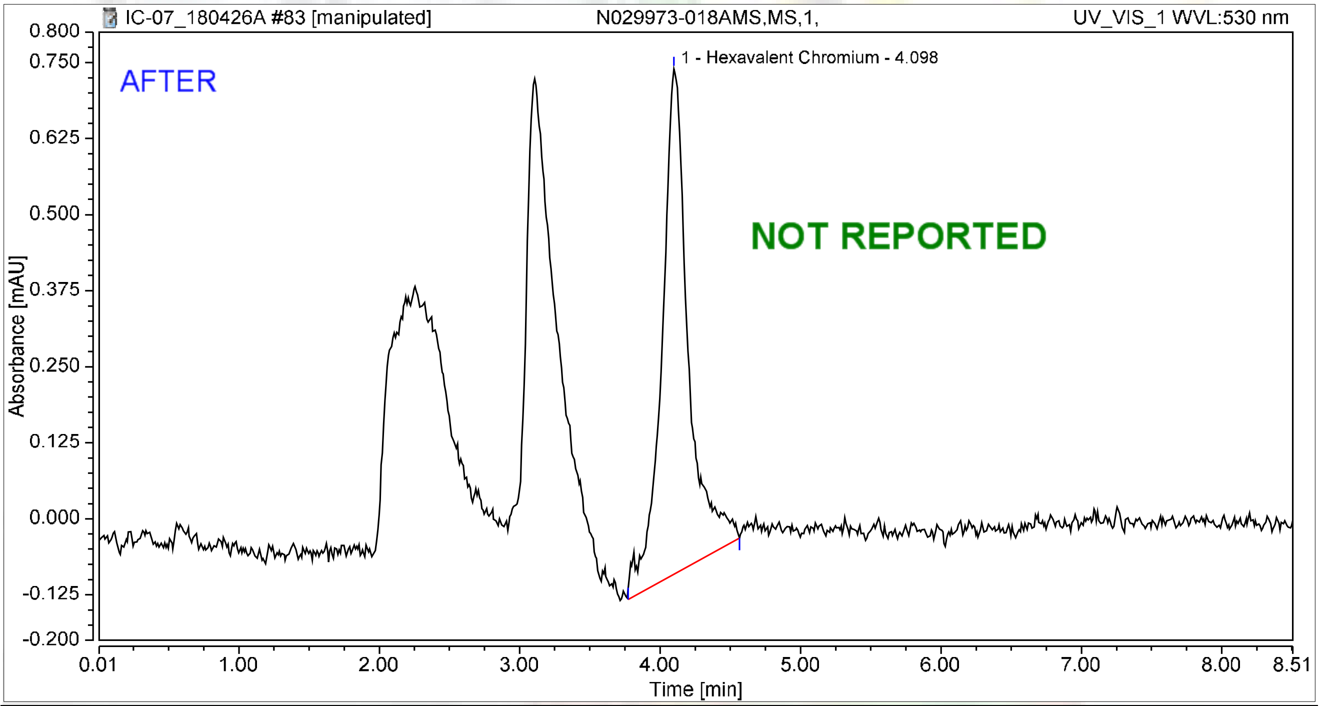
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-018AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 20:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.183	0.831	100.00	100.00	0.7207
Total:			**0.183**	**0.831**	**100.00**	**100.00**	

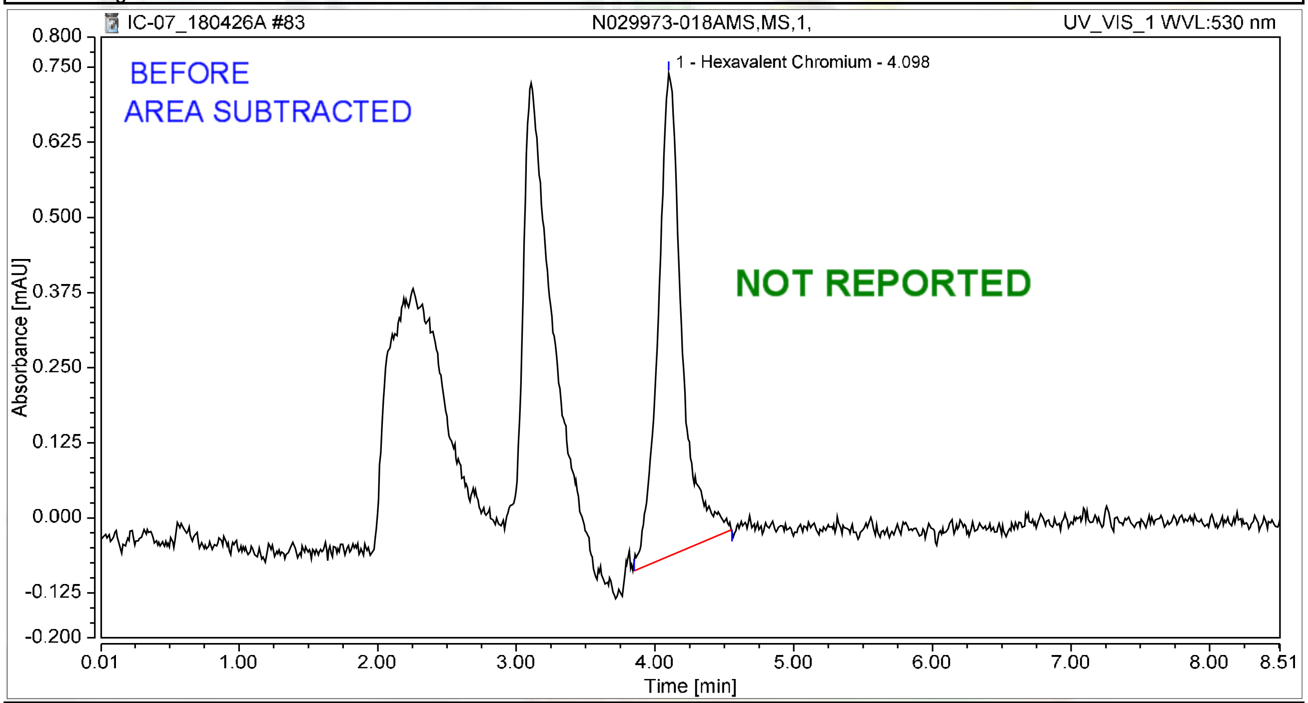
rba 5/1/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029973-018AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 20:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.162	0.804	100.00	100.00	0.6389
Total:			**0.162**	**0.804**	**100.00**	**100.00**	

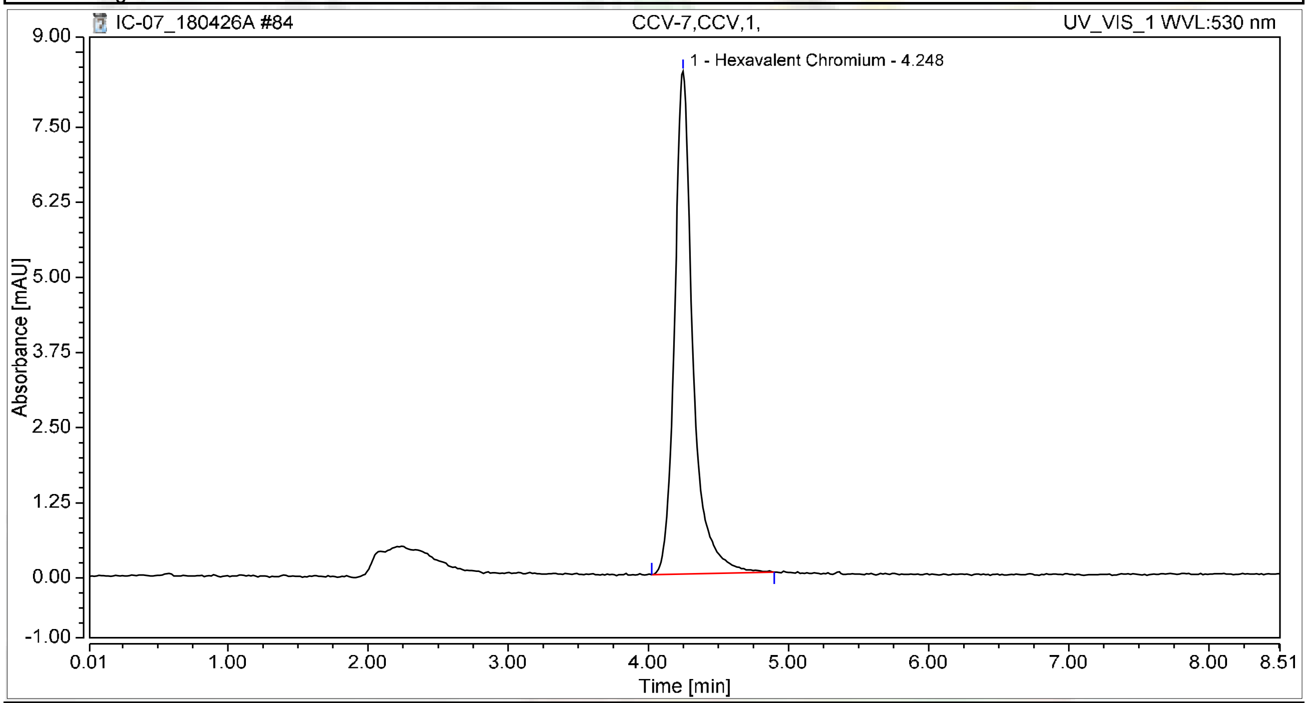
rba 5/1/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 21:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

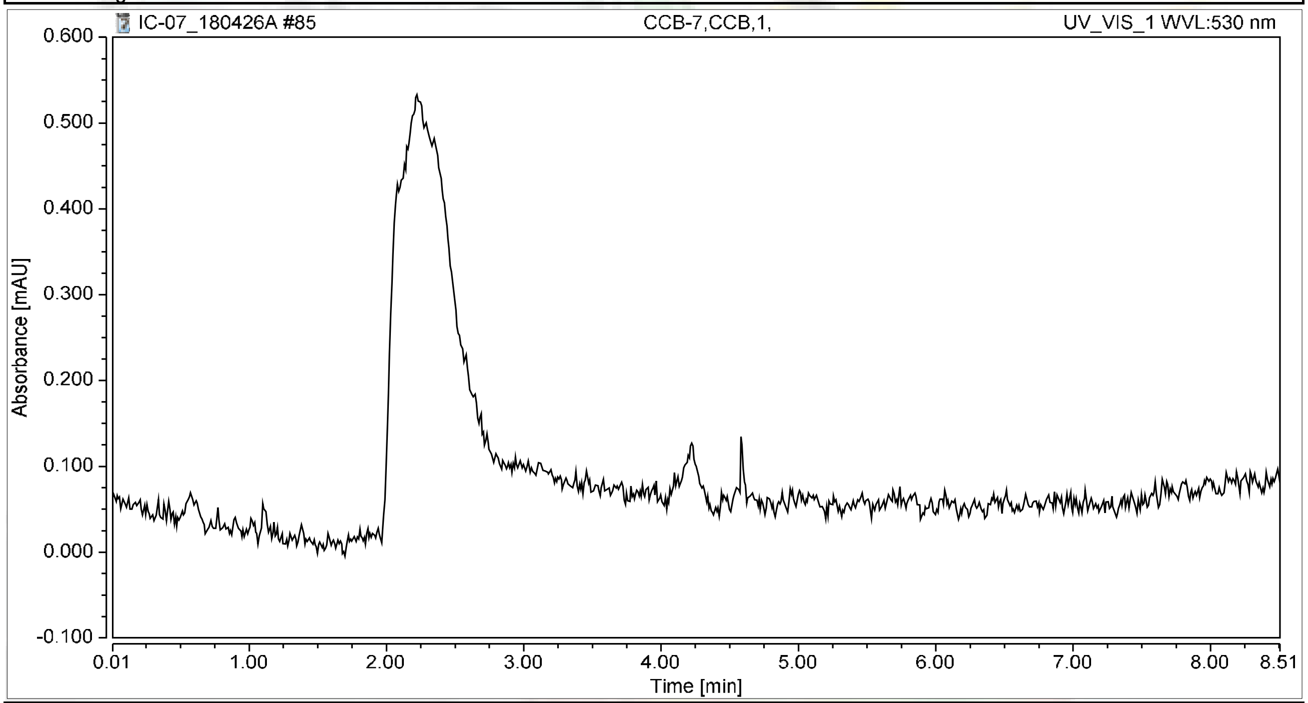
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.265	8.365	100.00	100.00	4.9893
Total:			**1.265**	**8.365**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/18 21:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

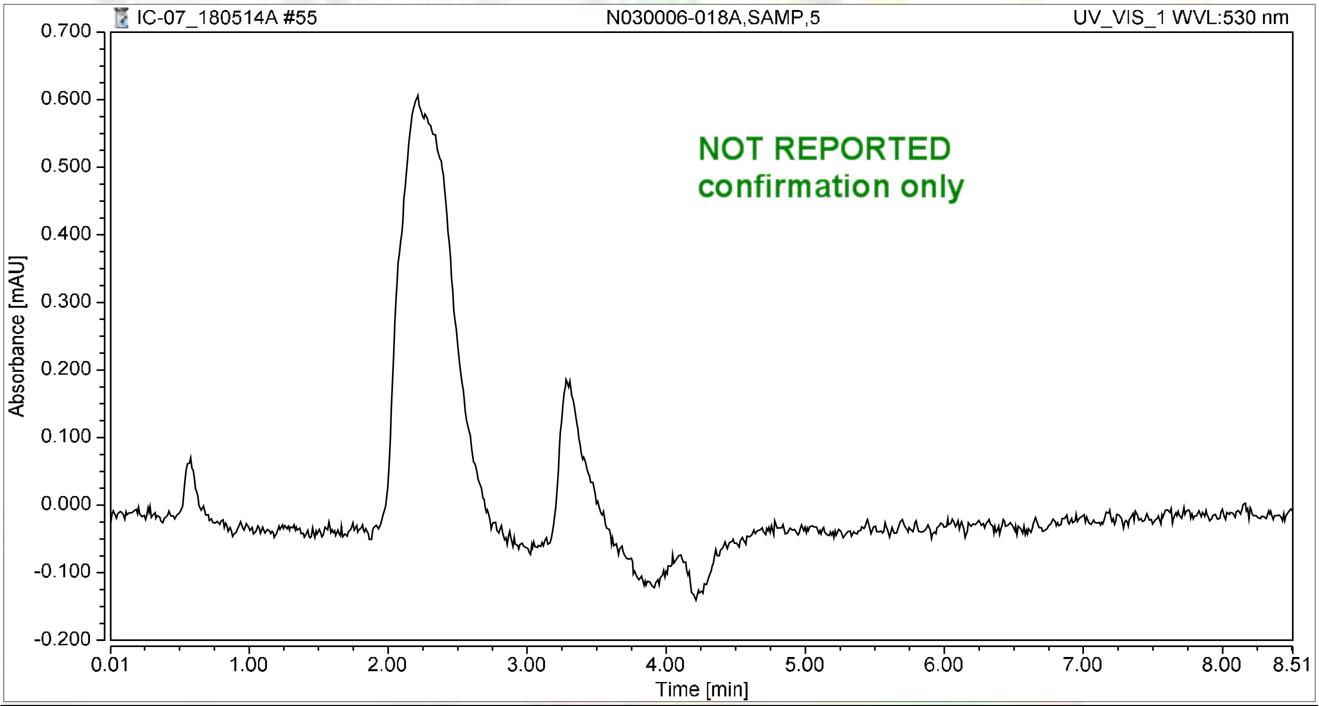
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-018A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 16:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

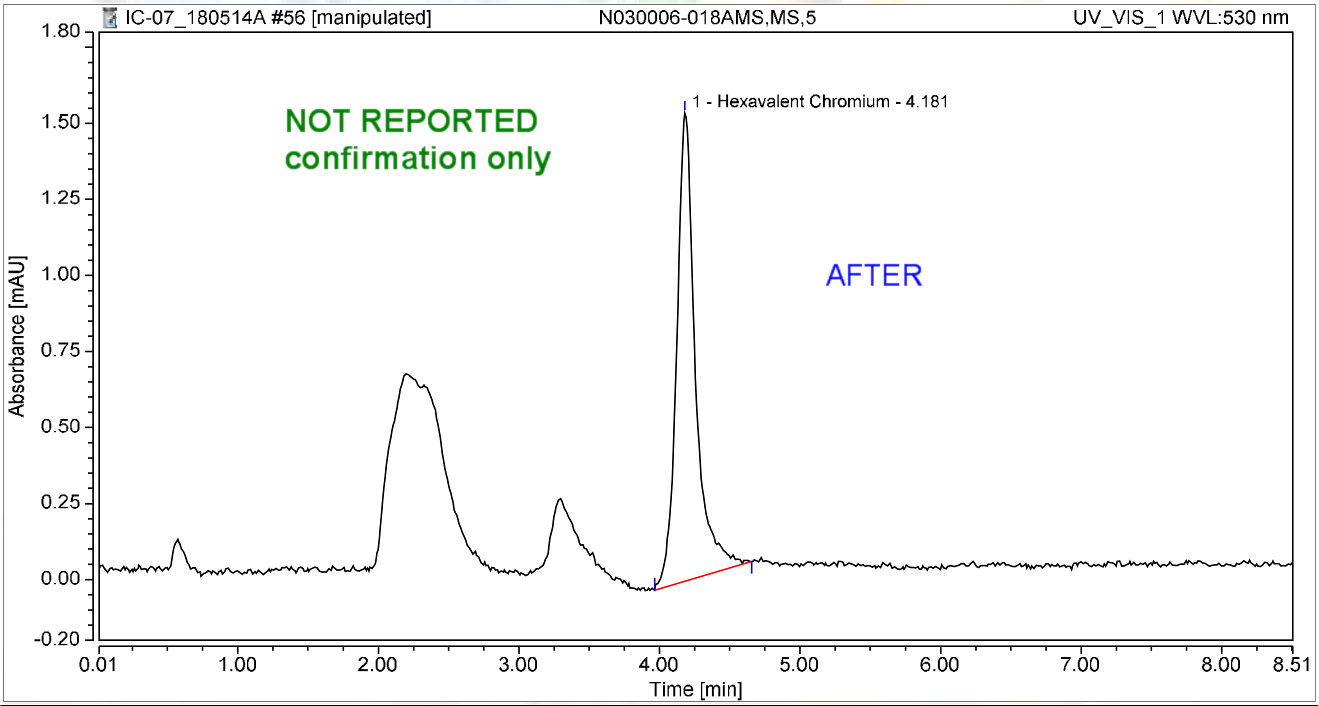
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030006-018AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.239	1.539	100.00	100.00	0.9314
Total:			**0.239**	**1.539**	**100.00**	**100.00**	

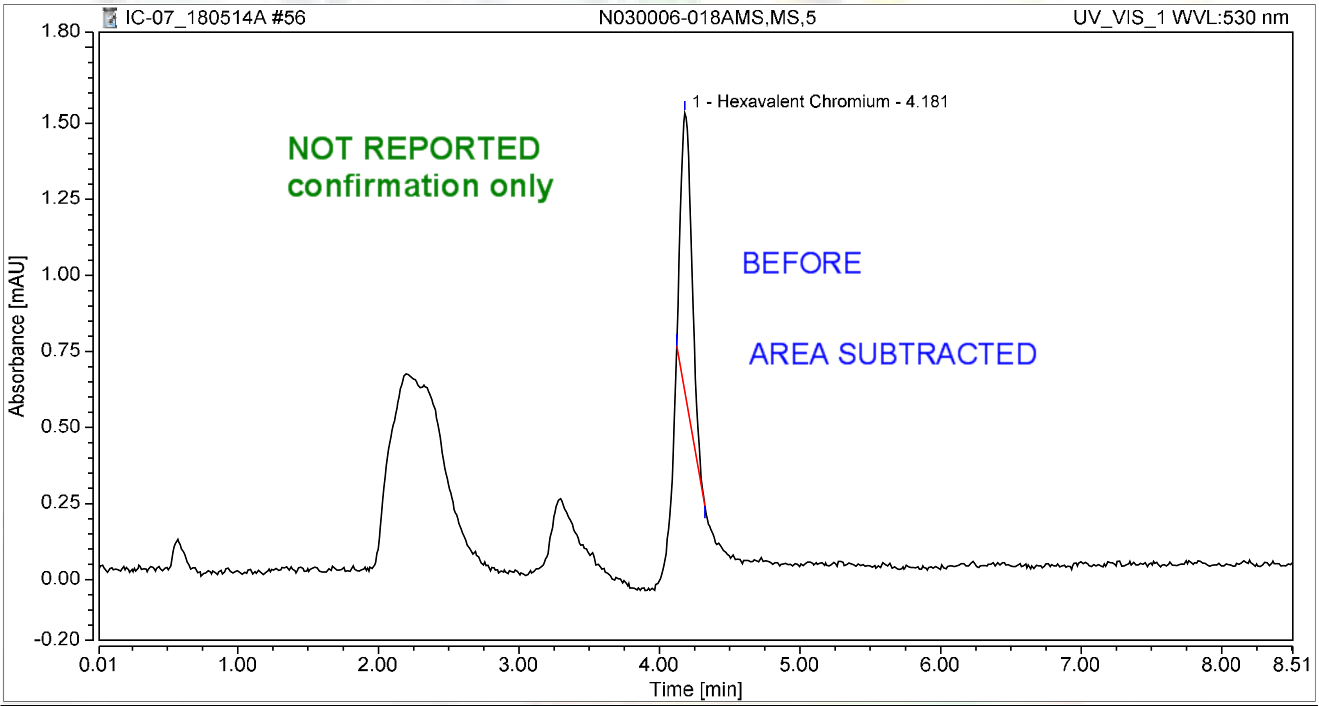
rba 5/16/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030006-018AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.086	0.919	100.00	100.00	0.3351
Total:			**0.086**	**0.919**	**100.00**	**100.00**	

rba 5/16/2018

SM 4500-NO3F

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123927 **Analyst:** QBM

ASSET #: N030006, N030075 **Date Analyzed:** 5/8/2018

Method: **4500_NO3**

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.		X				
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

Nitrate/Nitrite as N is OLR in N030006-001C @1x. Sample is for dilution.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 5/11/2018

2nd Level Reviewer RB 05/11/2018 Date:

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123948 **Analyst:** QBM

ASSET #: N030006 **Date Analyzed:** 5/9/2018

Method: **4500_NO3**

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 5/11/2018

2nd Level Reviewer RJB 05/11/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N030006-004C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	1.4223	*	10
	=	14.223	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 14 mg/L

RJB 05/11/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

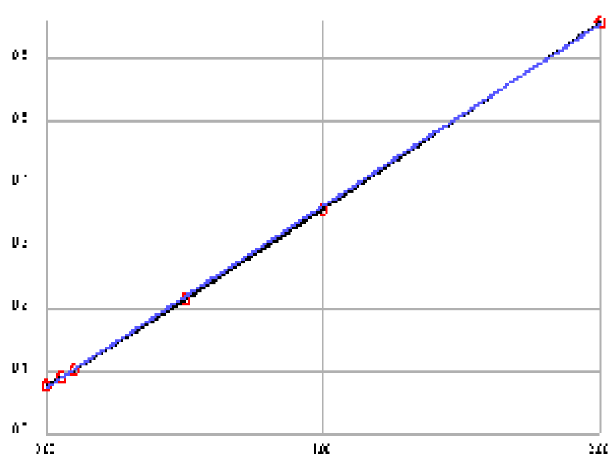
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.291x + 0.0738
Correlation	.999902

Calibrant	Energy	Set	Conc
1	0.0757	0.0000	0.0066
2	0.0914	0.0500	0.0605
3	0.1026	0.1000	0.0990
4	0.2159	0.5000	0.4884
5	0.3606	1.0000	0.9856
6	0.6587	2.0000	2.0099



Notes:

05/11/2018

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

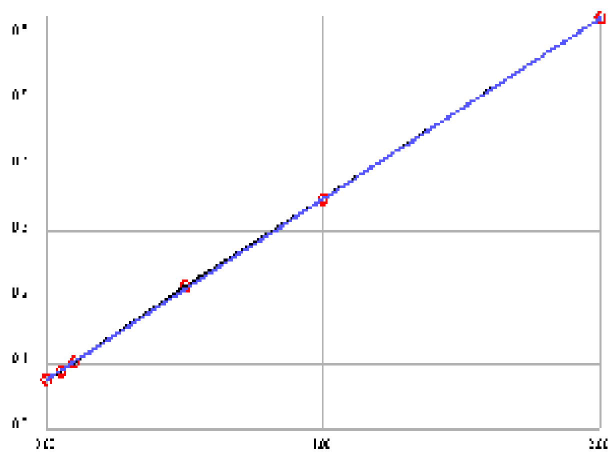
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2746x + 0.0756
Correlation	.999954

Calibrant	Energy	Set	Conc
1	0.0750	0.0000	-0.0021
2	0.0881	0.0500	0.0456
3	0.1018	0.1000	0.0955
4	0.2170	0.5000	0.5150
5	0.3499	1.0000	0.9990
6	0.6240	2.0000	1.9971



Notes:

RB 05/11/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **123927**						
Client ID: **ICV**	Batch ID: **R123927**	TestNo: **SM4500-NO3**		Analysis Date: **5/8/2018**		SeqNo: **3020553**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrate/Nitrite as N	0.534	0.050	0.5000	0	107	90	110					

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **123927**						
Client ID: **CCV**	Batch ID: **R123927**	TestNo: **SM4500-NO3**		Analysis Date: **5/8/2018**		SeqNo: **3020564**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrate/Nitrite as N	0.535	0.050	0.5000	0	107	90	110					

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **123927**						
Client ID: **CCV**	Batch ID: **R123927**	TestNo: **SM4500-NO3**		Analysis Date: **5/8/2018**		SeqNo: **3020575**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrate/Nitrite as N	0.451	0.050	0.5000	0	90.2	90	110					

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **123927**						
Client ID: **CCV**	Batch ID: **R123927**	TestNo: **SM4500-NO3**		Analysis Date: **5/8/2018**		SeqNo: **3020584**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrate/Nitrite as N	0.468	0.050	0.5000	0	93.6	90	110					

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123948**
Client ID: **ICV** Batch ID: **R123948** TestNo: **SM4500-NO3** Analysis Date: **5/9/2018** SeqNo: **3021442**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.507	0.050	0.5000	0	101	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123948**
Client ID: **CCV** Batch ID: **R123948** TestNo: **SM4500-NO3** Analysis Date: **5/9/2018** SeqNo: **3021458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.483	0.050	0.5000	0	96.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030006
Project:	PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **ICB** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **CCB** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.033	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **CCB** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **CCB** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030006
Project:	PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**		Prep Date:			RunNo: **123948**		
Client ID: **ICB**	Batch ID: **R123948**	TestNo: **SM4500-NO3**			Analysis Date: **5/9/2018**			SeqNo: **3021443**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**		Prep Date:			RunNo: **123948**			
Client ID: **CCB**	Batch ID: **R123948**	TestNo: **SM4500-NO3**			Analysis Date: **5/9/2018**			SeqNo: **3021459**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

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Time start: 05-08-2018 17:02
Time end: 05-08-2018 19:53

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	19:13:39	0.0104		0.0768
2	<BLANK>	19:14:32	0.0131		0.0776
3	<CAL1>	19:15:33	0.0066	[0]	0.0757
4	<CAL2>	19:16:29	0.0605	[0.05]	0.0914
5	<CAL3>	19:17:24	0.0990	[0.1]	0.1026
6	<CAL4>	19:18:24	0.4884	[0.5]	0.2159
7	<CAL5>	19:19:20	0.9856	[1]	0.3606
8	<CAL6>	19:20:16	2.0099	[2]	0.6587
9	,BLANK,BLANK,1, NOT REPORTED	19:21:16	0.0605		0.0914
10	,ICV,ICV,1,	19:22:11	0.5344		0.2293
11	,ICB,ICB,1,	19:23:07	0.0093		0.0765
12	,MB-H2O,MBLK,1,	19:24:08	0.0052		0.0753
13	,LCS-H2O,LCS,1,	19:25:02	0.4894		0.2162
14	,N030006-001C,SAMP,1, NOT REPORTED	19:25:58	2.7112		0.8628
15	,N030006-002C,SAMP,1, NOT REPORTED	19:27:00	0.6488		0.2626
16	,N030006-004C,SAMP,10,	19:27:54	1.4223		0.4877
17	,N030006-004CDUP,DUP,10,	19:28:49	1.4553		0.4973
18	,N030006-003C,SAMP,10,	19:29:51	0.9474		0.3495
19	,N030006-003CMS,MS,10,	19:30:47	1.3350		0.4623
20	,N030006-003CMSD,MSD,10,	19:31:41	1.3371		0.4629
21	,BLANK,	19:32:42	0.0592		0.0910
22	,CCV-1,CCV,1,	19:33:38	0.5354		0.2296
23	,CCB-1,CCB,1,	19:34:39	0.0331		0.0834
24	,N030006-011C,SAMP,1,	19:35:33	0.0475		0.0876
25	,N030006-013C,SAMP,1,	19:36:29	0.0502		0.0884
26	,N030006-014C,SAMP,1,	19:37:30	0.0296		0.0824

RJB 05/11/2018

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N030006-016C,SAMP,1,	19:38:12	0.0214		0.0800
28	,N030006-018C,SAMP,1,	19:39:02	0.0348		0.0839
29	,N030006-005C,SAMP,1,	19:39:44	1.1241		0.4009
30	,N030006-007C,SAMP,1,	19:40:33	1.3388		0.4634
31	,N030006-008C,SAMP,2,	19:41:17	0.7138		0.2815
32	,N030075-001C,SAMP,2,	19:41:59	0.9395		0.3472
33	,BLANK,	19:42:48	0.0217		0.0801
34	,CCV-2,CCV,1,	19:43:30	0.4509		0.2050
35	,CCB-2,CCB,1,	19:44:14	0.0093		0.0765
36	,N030075-002C,SAMP,20,	19:45:02	0.5698		0.2396
37	,N030075-003C,SAMP,100,	19:45:45	0.7701		0.2979
38	,N030075-004C,SAMP,50,	19:46:27	0.5358		0.2297
39	,N030075-005C,SAMP,1,	19:47:17	0.4602		0.2077
40	,N030075-006C,SAMP,20,	19:48:00	1.2185		0.4284
41	,N030075-007C,SAMP,20,	19:48:42	1.0928		0.3918
42	,N030075-008C,SAMP,20,	19:49:32	1.1732		0.4152
43	,BLANK,	19:50:14	0.0296		0.0824
44	,CCV-3,CCV,1,	19:50:57	0.4681		0.2100
45	,CCB-3,CCB,1,	19:51:45	0.0038		0.0749

RB 05/11/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 5/8/2018
Time Analyzed: 5:02 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180504F
Color reagent: R180425A
2% Copper Sulfate: R180504E
Ammonium Hydroxide: CINV-180423A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N030006-001C		8.48							
N030006-002C		7.55							
N030006-003C		7.79							
N030006-004C		7.90							
N030006-005C		7.52							
N030006-007C		8.15							
N030006-008C		7.87							
N030006-011C		7.34							
N030006-013C		7.41							
N030006-014C		7.8							
N030006-016C		7.83							
N030006-018C		8.05							
N030075-001C		7.88							
N030075-002C		6.84							
N030075-003C		8.82							
N030075-004C		8.81							
N030075-005C		8.37							
N030075-006C		7.1							
N030075-007C		7.74							
N030075-008C		8.08							

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Book # 1

RB 05/11/2018

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Time start: 05-09-2018 13:55
Time end: 05-09-2018 15:23

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	15:06:11	-0.0072		0.0736
2	<BLANK>	15:07:06	-0.0036		0.0746
3	<CAL1>	15:07:54	-0.0021	[0]	0.0750
4	<CAL2>	15:08:37	0.0456	[0.05]	0.0881
5	<CAL3>	15:09:26	0.0955	[0.1]	0.1018
6	<CAL4>	15:10:08	0.5150	[0.5]	0.2170
7	<CAL5>	15:10:58	0.9990	[1]	0.3499
8	<CAL6>	15:11:40	1.9971	[2]	0.6240
9	,BLANK,BLANK,1, NOT REPORTED	15:12:23	0.0569		0.0912
10	,ICV,ICV,1,	15:13:11	0.5073		0.2149
11	,ICB,ICB,1,	15:13:54	-0.0021		0.0750
12	,MB-H2O,MBLK,1,	15:14:43	-0.0032		0.0747
13	,LCS-H2O,LCS,1,	15:15:25	0.5048		0.2142
14	,N030006-002C,SAMP,1,	15:16:09	0.5478		0.2260
15	,N030006-002CDUP,DUP,1,	15:16:57	0.5663		0.2311
16	,N030006-001C,SAMP,5,	15:17:40	0.5441		0.2250
17	,N030006-001CMS,MS,5,	15:18:22	0.9993		0.3500
18	,N030006-001CMSD,MSD,5,	15:19:11	1.1260		0.3848
19	,BLANK, NOT REPORTED	15:19:53	0.0041		0.0767
20	,CCV-1,CCV,1,	15:20:37	0.4826		0.2081
21	,CCB-1,CCB,1,	15:21:26	0.0052		0.0770

RLB 05/11/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Reagent ID #
Ammonium Chloride reagent/Buffer: R180504F
Color reagent: R180425A
2% Copper Sulfate: R180504E
Ammonium Hydroxide: CINV-180423A

Date Analyzed: 5/9/2018
Time Analyzed: 1:55 PM
Analyzed By: QBM

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N030006-001C		8.23							
N030006-002C		7.74							

Advanced Technology Laboratories, Inc.
Book # 1

05/11/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05

Method Blank

Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6020
Dissolved

METALS ARCUS
REV 1.0
071116

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67852
ASSET #: N030006

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/11/2018

Method:

- [ ] EPA 6010B / 200.7
- [X] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other ________________

	Ist Level Review			2nd Level Review		
Initial Calibration and Initial Calibration Verification	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			~~X~~	X	
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X	X		~~X~~
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

RSD of As for N030006-008 failed ; for re-run
~~with confirmation for sample N030006-018~~

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 5/16/18

2nd Level Reviewer [illegible] 5/16/2018 Date: ________

METALS ARCUS
REV 1.0
071116

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67852 **Instrument ID:** ICPMS-02
ASSET #: N030006 **Analyst:** CEI
Method: **Date Analyzed:** 5/15/2018

- [ ] EPA 6010B / 200.7
- [x] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			~~X~~		X
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			~~X~~		X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits			X			X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For As rerun only.

RSD of As for LLICV & LLCCV1 failed however, recovery passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 5/16/18

2nd Level Reviewer [signature] 5/16/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N030006-001D** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 115.968 * 1 * (25/25)

Chromium , ug/L = 115.968

Reporting results in two significant figures,

Chromium , ug/L = 120

% RSD SUMMARY

PERCENT RSD SUMMARY: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.096	3.98	15	PASS	0.74	7.85	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	3.64	15	PASS	0.49	6.63	15	PASS
Std3-5/50 ppb	ICAL	1	5.17	1.39	15	PASS	5.05	1.6	15	PASS
Std4-10/100 ppb	ICAL	1	10.24	2.47	15	PASS	10.32	0.68	15	PASS
Std5-20/200 ppb	ICAL	1	19.91	1.079	15	PASS	19.76	1.27	15	PASS
Std6-40/400 ppb	ICAL	1	40.32	1.61	15	PASS	40.23	0.25	15	PASS
Std7-100/1000 ppb	ICAL	1	101.26	0.96	15	PASS	100.43	0.83	15	PASS
Std8-200/2000 ppb	ICAL	1	199.3	0.77	15	PASS	199.75	0.88	15	PASS
ICV	ICV	1	9.75	0.98	15	PASS	107.4	0.96	15	PASS
ICB	ICB	1	0.0042	38.12	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.051	3.18	20	PASS	0.58	9.72	20	PASS
ICSA1	ICSA	1	0.051	12.29	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.64	0.91	15	PASS	17.63	0.41	15	PASS
CCV1	CCV	1	20.027	0.74	15	PASS	19.61	0.75	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.69	0.95	15	PASS	19.73	1.69	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.85	2.56	15	PASS	19.71	1.46	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
MB-67852	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-67852	LCS	1	9.38	0.41	15	PASS	104.29	0.39	15	PASS
N030006-001D	SAMP	1	115.97	1.03	15	PASS	5.14	0.25	15	PASS
CCV4	CCV	1	19.71	1.19	15	PASS	19.39	0.46	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.95	2.59	20	PASS	0.53	5.96	20	PASS
ICSA2	ICSA	1	0.047	56.48	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.84	0.13	15	PASS	16.87	0.59	15	PASS
N030006-001D	SAMP	5	25.32	1.43	15	PASS	1.087	0.21	15	PASS
N030006-001D	SAMP	25	5.18	1.025	15	PASS	0.21	7.96	15	PASS
N030006-001D-PS	PS	1	121.53	1.94	15	PASS	92.69	1.29	15	PASS
N030006-001D-PS	PS	5	28.48	0.46	15	PASS	21.81	0.74	15	PASS
N030006-001D-MS	MS	1	120.85	0.83	15	PASS	93.39	0.82	15	PASS
N030006-001D-MS	MS	5	26.71	0.64	15	PASS	20.55	1.51	15	PASS
N030006-001D-MSD	MSD	1	120.46	1.12	15	PASS	92.83	0.63	15	PASS
N030006-001D-MSD	MSD	5	26.28	0.87	15	PASS	20.09	1.3	15	PASS
N030006-002D	SAMP	1	30.59	1.54	15	PASS	33.39	1.61	15	PASS
N030006-002D	SAMP	5	6.071	1.4	15	PASS	6.72	2.5	15	PASS
CCV5	CCV	1	19.89	0.86	15	PASS	19.81	0.43	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N030006-003D	SAMP	1	19.86	1.16	15	PASS	0.5	5.34	15	PASS

PERCENT RSD SUMMARY: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030006-003D	SAMP	5	4.17	2.48	15	PASS	0.085	7.73	15	PASS
N030006-004D	SAMP	1	17.44	0.48	15	PASS	0.37	11.73	15	PASS
N030006-004D	SAMP	5	3.66	2.25	15	PASS	0.027	47.81	15	<PQL
N030006-005D	SAMP	1	8.31	3.77	15	PASS	16.3	2.71	15	PASS
N030006-005D	SAMP	5	1.76	5.59	15	PASS	3.3	1.64	15	PASS
N030006-006C	SAMP	1	0.46	11.16	15	PASS	37.53	0.46	15	PASS
N030006-006C	SAMP	5	0.093	11.2	15	PASS	7.82	1.11	15	PASS
N030006-007D	SAMP	1	4.99	2	15	PASS	23.47	1.35	15	PASS
N030006-007D	SAMP	5	1.097	4.61	15	PASS	5.0028	3.83	15	PASS
CCV6	CCV	1	20.09	0.44	15	PASS	20.11	1.018	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N030006-008D	SAMP	1	5.94	2.91	15	PASS	7.17	4.49	15	PASS
N030006-008D	SAMP	5	1.3	1.82	15	PASS	1.53	5.65	15	PASS
N030006-009C	SAMP	1	23.46	1.28	15	PASS	6.52	1.47	15	PASS
N030006-009C	SAMP	5	4.85	0.76	15	PASS	1.3	5.087	15	PASS
N030006-011D	SAMP	1	0.29	2.94	15	PASS	327.93	1.62	15	PASS
N030006-011D	SAMP	5	0.056	30.28	15	<PQL	71.36	0.46	15	PASS
N030006-013D	SAMP	1	0.0083	113.4	15	<PQL	28.1	1.31	15	PASS
N030006-013D	SAMP	5	0.13	28.32	15	<PQL	6.13	1.93	15	PASS
N030006-014D	SAMP	1	<0.000	N/A	15	<PQL	27.91	0.94	15	PASS
N030006-014D	SAMP	5	<0.000	N/A	15	<PQL	5.71	1.23	15	PASS
CCV7	CCV	1	20.23	0.92	15	PASS	20.21	0.6	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N030006-016D	SAMP	1	<0.000	N/A	15	<PQL	184.54	1.32	15	PASS
N030006-016D	SAMP	5	<0.000	N/A	15	<PQL	38.71	0.94	15	PASS
N030006-018D	SAMP	1	1.18	1.66	15	PASS	18.13	1.54	15	PASS
N030006-018D	SAMP	5	0.23	8.31	15	PASS	3.76	1.37	15	PASS
CCV8	CCV	1	19.96	0.76	15	PASS	20.36	1.95	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1	3.2	20	PASS	0.53	6.32	20	PASS
ICSA3	ICSA	1	0.065	6.6	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.19	1.31	15	PASS	17.94	1.52	15	PASS

PERCENT RSD SUMMARY: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.091	12.66	15	PASS	0.17	31.36	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.54	15.33	15	NR!	0.48	10.98	15	PASS
Std3-5/50 ppb	ICAL	1	5.13	2.0097	15	PASS	5.038	7.91	15	PASS
Std4-10/100 ppb	ICAL	1	10.22	0.4	15	PASS	10.067	4.56	15	PASS
Std5-20/200 ppb	ICAL	1	20.35	1.035	15	PASS	19.9	3.55	15	PASS
Std6-40/400 ppb	ICAL	1	40.6	1.32	15	PASS	40.44	1.67	15	PASS
Std7-100/1000 ppb	ICAL	1	100.66	1.3	15	PASS	99.17	0.55	15	PASS
Std8-200/2000 ppb	ICAL	1	199.5	0.3	15	PASS	200.33	1.57	15	PASS
ICV	ICV	1	9.81	0.52	15	PASS	9.91	6.86	15	PASS
ICB	ICB	1	0.019	40.82	15	<PQL	0.039	113.61	15	<PQL
LLICV	CCV1	1	0.11	9.89	20	PASS	0.48	10.51	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.038	159.29	15	<PQL
ICSAB1	ICSAB	1	22.15	1.55	15	PASS	20.41	1.096	15	PASS
CCV1	CCV	1	20.37	1.93	15	PASS	19.66	4.077	15	PASS
CCB1	CCB	1	0.011	77.7	15	<PQL	0.041	101.3	15	<PQL
CCV2	CCV	1	20.39	0.91	15	PASS	19.77	2.75	15	PASS
CCB2	CCB	1	0.0051	61.54	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.38	3.26	15	PASS	19.61	4.63	15	PASS
CCB3	CCB	1	0.01	120.45	15	<PQL	0.0048	389.44	15	<PQL
MB-67852	MBLK	1	<0.000	N/A	15	<PQL	0.0047	394.65	15	<PQL
LCS-67852	LCS	1	9.98	1.92	15	PASS	9.59	1.77	15	PASS
N030006-001D	SAMP	1	4.42	2.41	15	PASS	1.79	8.42	15	PASS
CCV4	CCV	1	20.39	0.89	15	PASS	19.79	1	15	PASS
CCB4	CCB	1	0.0068	77.88	15	<PQL	0.015	159.34	15	<PQL
LLCCV1	CCV2	1	0.1	10.81	20	PASS	0.43	18.79	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.023	44.16	15	<PQL
ICSAB2	ICSAB	1	21.36	1.81	15	PASS	19.4	0.36	15	PASS
N030006-001D	SAMP	5	1	5.36	15	PASS	0.49	14.92	15	PASS
N030006-001D	SAMP	25	0.19	9.73	15	PASS	0.086	81.27	15	<PQL
N030006-001D-PS	PS	1	14.9	0.85	15	PASS	11.47	5.42	15	PASS
N030006-001D-PS	PS	5	3.34	3.55	15	PASS	2.44	12.7	15	PASS
N030006-001D-MS	MS	1	14.67	1.13	15	PASS	12.087	3.23	15	PASS
N030006-001D-MS	MS	5	3.1	3.14	15	PASS	2.37	9.53	15	PASS
N030006-001D-MSD	MSD	1	14.75	1.8	15	PASS	12.41	2.26	15	PASS
N030006-001D-MSD	MSD	5	3.19	7.33	15	PASS	2.31	4.68	15	PASS
N030006-002D	SAMP	1	4.072	5.23	15	PASS	0.55	16.32	15	NR!
N030006-002D	SAMP	5	0.86	5.14	15	PASS	0.11	34.019	15	<PQL
CCV5	CCV	1	20.51	1.84	15	PASS	19.91	5.029	15	PASS
CCB5	CCB	1	0.011	59.056	15	<PQL	0.0048	194.005	15	<PQL
N030006-003D	SAMP	1	3.86	1.33	15	PASS	6.15	10.33	15	PASS

PERCENT RSD SUMMARY: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030006-003D	SAMP	5	0.76	16.44	15	NR!	1.15	4.91	15	PASS
N030006-004D	SAMP	1	4.0045	1.056	15	PASS	5.72	2.28	15	PASS
N030006-004D	SAMP	5	0.78	5.56	15	PASS	1.14	16.52	15	NR!
N030006-005D	SAMP	1	1.94	3.77	15	PASS	0.53	14.18	15	PASS
N030006-005D	SAMP	5	0.35	3.3	15	PASS	0.071	71.38	15	<PQL
N030006-006C	SAMP	1	2.59	3.72	15	PASS	0.8	1.14	15	PASS
N030006-006C	SAMP	5	0.52	3.99	15	PASS	0.18	37.19	15	<PQL
N030006-007D	SAMP	1	1.43	3.62	15	PASS	0.79	7.67	15	PASS
N030006-007D	SAMP	5	0.3	4.53	15	PASS	0.13	9.89	15	PASS
CCV6	CCV	1	20.13	1.07	15	PASS	19.89	3.68	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.016	119.69	15	<PQL
N030006-008D	SAMP	1	1.081	6.69	15	PASS	0.45	12.85	15	PASS
N030006-008D	SAMP	5	0.24	16.74	15	NR!	0.045	23.96	15	<PQL
N030006-009C	SAMP	1	1.91	5.36	15	PASS	1.42	28.9	15	NR!
N030006-009C	SAMP	5	0.42	11.081	15	PASS	0.15	18.15	15	<PQL
N030006-011D	SAMP	1	9.79	3.36	15	PASS	0.36	11.04	15	PASS
N030006-011D	SAMP	5	1.88	3.34	15	PASS	0.051	18.2	15	<PQL
N030006-013D	SAMP	1	0.88	4.11	15	PASS	0.18	15.22	15	<PQL
N030006-013D	SAMP	5	0.16	6.2	15	PASS	0.011	0.61	15	PASS
N030006-014D	SAMP	1	0.86	2.53	15	PASS	0.17	81.14	15	<PQL
N030006-014D	SAMP	5	0.16	18.19	15	NR!	0.023	115.0065	15	<PQL
CCV7	CCV	1	20	1.71	15	PASS	19.89	1.72	15	PASS
CCB7	CCB	1	0.0016	311.9	15	<PQL	0.017	155.017	15	<PQL
N030006-016D	SAMP	1	1.81	7.26	15	PASS	0.0084	296.51	15	<PQL
N030006-016D	SAMP	5	0.38	13.66	15	PASS	0.012	147.73	15	<PQL
N030006-018D	SAMP	1	11.16	2.56	15	PASS	0.23	15.7	15	<PQL
N030006-018D	SAMP	5	2.26	5	15	PASS	0.0061	170.67	15	<PQL
CCV8	CCV	1	20.19	0.83	15	PASS	19.95	6.092	15	PASS
CCB8	CCB	1	0.0038	336.8	15	<PQL	0.0054	363.61	15	<PQL
LLCCV2	CCV2	1	0.098	24.56	20	<PQL	0.46	25.55	20	<PQL
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.018	57.35	15	<PQL
ICSAB3	ICSAB	1	21.04	1.43	15	PASS	19.54	0.32	15	PASS

PERCENT RSD SUMMARY: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.079	14.19	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.48	7.68	15	PASS
Std3-5/50 ppb	ICAL	1	5.0008	2.5	15	PASS
Std4-10/100 ppb	ICAL	1	10.12	1.7	15	PASS
Std5-20/200 ppb	ICAL	1	20.13	1.54	15	PASS
Std6-40/400 ppb	ICAL	1	40.32	1.34	15	PASS
Std7-100/1000 ppb	ICAL	1	99.046	0.87	15	PASS
Std8-200/2000 ppb	ICAL	1	200.39	0.76	15	PASS
ICV	ICV	1	10.39	1.27	15	PASS
ICB	ICB	1	0.2	17.42	15	<PQL
LLICV	CCV1	1	0.54	1.67	20	PASS
ICSA1	ICSA	1	0.099	5.66	15	PASS
ICSAB1	ICSAB	1	23.58	1.95	15	PASS
CCV1	CCV	1	20.33	0.57	15	PASS
CCB1	CCB	1	0.065	10.78	15	PASS
CCV2	CCV	1	20.53	0.22	15	PASS
CCB2	CCB	1	0.097	8.36	15	PASS
CCV3	CCV	1	20.62	2.59	15	PASS
CCB3	CCB	1	0.087	6.7	15	PASS
MB-67852	MBLK	1	0.0077	83.47	15	<PQL
LCS-67852	LCS	1	9.89	1.39	15	PASS
N030006-001D	SAMP	1	51.83	0.77	15	PASS
CCV4	CCV	1	20.27	1.13	15	PASS
CCB4	CCB	1	0.094	11.69	15	PASS
LLCCV1	CCV2	1	0.52	7.64	20	PASS
ICSA2	ICSA	1	0.061	14.98	15	PASS
ICSAB2	ICSAB	1	22.68	0.63	15	PASS
N030006-001D	SAMP	5	10.027	1.95	15	PASS
N030006-001D	SAMP	25	1.9	2.69	15	PASS
N030006-001D-PS	PS	1	61.73	0.84	15	PASS
N030006-001D-PS	PS	5	13.098	0.79	15	PASS
N030006-001D-MS	MS	1	62.089	0.78	15	PASS
N030006-001D-MS	MS	5	12.85	0.98	15	PASS
N030006-001D-MSD	MSD	1	61.95	1.53	15	PASS
N030006-001D-MSD	MSD	5	12.52	0.82	15	PASS
N030006-002D	SAMP	1	46.2	0.86	15	PASS
N030006-002D	SAMP	5	9.085	0.65	15	PASS
CCV5	CCV	1	20.33	0.32	15	PASS
CCB5	CCB	1	0.083	6.37	15	PASS
N030006-003D	SAMP	1	27.34	0.81	15	PASS

PERCENT RSD SUMMARY: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N030006-003D	SAMP	5	5.43	1.063	15	PASS
N030006-004D	SAMP	1	26.42	1.65	15	PASS
N030006-004D	SAMP	5	5.064	2.059	15	PASS
N030006-005D	SAMP	1	175.75	0.58	15	PASS
N030006-005D	SAMP	5	34.76	0.99	15	PASS
N030006-006C	SAMP	1	361.73	0.42	15	PASS
N030006-006C	SAMP	5	72.25	0.21	15	PASS
N030006-007D	SAMP	1	48.12	0.51	15	PASS
N030006-007D	SAMP	5	9.49	1.21	15	PASS
CCV6	CCV	1	20.42	0.89	15	PASS
CCB6	CCB	1	0.12	10.011	15	PASS
N030006-008D	SAMP	1	19.99	1.71	15	PASS
N030006-008D	SAMP	5	3.97	4.069	15	PASS
N030006-009C	SAMP	1	21.65	0.84	15	PASS
N030006-009C	SAMP	5	4.33	0.95	15	PASS
N030006-011D	SAMP	1	19.48	0.47	15	PASS
N030006-011D	SAMP	5	3.76	1.59	15	PASS
N030006-013D	SAMP	1	4.21	3.92	15	PASS
N030006-013D	SAMP	5	0.85	4.6	15	PASS
N030006-014D	SAMP	1	4.16	1.7	15	PASS
N030006-014D	SAMP	5	0.8	4.62	15	PASS
CCV7	CCV	1	20.12	0.5	15	PASS
CCB7	CCB	1	0.074	20.58	15	<PQL
N030006-016D	SAMP	1	23.23	1.22	15	PASS
N030006-016D	SAMP	5	4.51	0.52	15	PASS
N030006-018D	SAMP	1	129.084	0.25	15	PASS
N030006-018D	SAMP	5	25.67	0.82	15	PASS
CCV8	CCV	1	20.4	0.14	15	PASS
CCB8	CCB	1	0.12	11.63	15	PASS
LLCCV2	CCV2	1	0.5	6.95	20	PASS
ICSA3	ICSA	1	0.082	23.14	15	<PQL
ICSAB3	ICSAB	1	23.039	0.62	15	PASS

PERCENT RSD SUMMARY: 180515A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	13.73	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	12.21	15	PASS
Std3-5/50 ppb	ICAL	1	5.068	2.28	15	PASS
Std4-10/100 ppb	ICAL	1	10.13	2.49	15	PASS
Std5-20/200 ppb	ICAL	1	20.29	2.73	15	PASS
Std6-40/400 ppb	ICAL	1	40.17	0.45	15	PASS
Std7-100/1000 ppb	ICAL	1	99.55	0.73	15	PASS
Std8-200/2000 ppb	ICAL	1	200.16	0.64	15	PASS
ICV	ICV	1	9.77	1.23	15	PASS
ICB	ICB	1	0.0046	154.47	15	<PQL
LLICV	CCV1	1	0.093	42.47	20	<PQL
ICSA1	ICSA	1	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	21.71	1.9	15	PASS
LLICV	CCV1	1	0.095	29.66	20	<PQL
N030006-008D	SAMP	5	0.23	4.55	15	PASS
CCV1	CCV	1	19.81	2.19	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.96	2.24	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.12	1.47	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.077	52.11	20	<PQL
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	21.27	2.7	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180511B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0511001.D	RINSE	RINSE	1	05/11/18 4:55 PM
B0511002.D	Cal Blank	IBLK	1	05/11/18 5:01 PM
B0511003.D	Std1-0.1/1 ppb	ICAL	1	05/11/18 5:06 PM
B0511004.D	Std2-0.5/5 ppb	ICAL	1	05/11/18 5:12 PM
B0511005.D	Std3-5/50 ppb	ICAL	1	05/11/18 5:18 PM
B0511006.D	Std4-10/100 ppb	ICAL	1	05/11/18 5:23 PM
B0511007.D	Std5-20/200 ppb	ICAL	1	05/11/18 5:29 PM
B0511008.D	Std6-40/400 ppb	ICAL	1	05/11/18 5:34 PM
B0511009.D	Std7-100/1000 ppb	ICAL	1	05/11/18 5:40 PM
B0511010.D	Std8-200/2000 ppb	ICAL	1	05/11/18 5:45 PM
B0511011.D	ICV	ICV	1	05/11/18 5:51 PM
B0511012.D	ICB	ICB	1	05/11/18 5:57 PM
B0511013.D	LLICV	CCV1	1	05/11/18 6:03 PM
B0511014.D	ICSA1	ICSA	1	05/11/18 6:09 PM
B0511015.D	ICSAB1	ICSAB	1	05/11/18 6:14 PM
B0511016.D	MB-67848	MBLK	1	05/11/18 6:23 PM
B0511017.D	LCS-67848	LCS	1	05/11/18 6:28 PM
B0511018.D	N029973-001D	SAMP	1	05/11/18 6:36 PM
B0511019.D	N029973-001D	SAMP	5	05/11/18 6:41 PM
B0511020.D	N029973-001D	SAMP	25	05/11/18 6:47 PM
B0511021.D	N029973-001D-PS	PS	1	05/11/18 6:52 PM
B0511022.D	N029973-001D-PS	PS	5	05/11/18 6:58 PM
B0511023.D	N029973-001D-MS	MS	1	05/11/18 7:03 PM
B0511024.D	N029973-001D-MS	MS	5	05/11/18 7:09 PM
B0511025.D	N029973-001D-MSD	MSD	1	05/11/18 7:15 PM
B0511026.D	CCV1	CCV	1	05/11/18 7:20 PM
B0511027.D	CCB1	CCB	1	05/11/18 7:26 PM
B0511028.D	N029973-001D-MSD	MSD	5	05/11/18 7:31 PM
B0511029.D	N029973-002C	SAMP	1	05/11/18 7:37 PM
B0511030.D	N029973-002C	SAMP	5	05/11/18 7:42 PM
B0511031.D	N029973-004C	SAMP	1	05/11/18 7:48 PM
B0511032.D	N029973-004C	SAMP	5	05/11/18 7:53 PM
B0511033.D	N029973-006C	SAMP	1	05/11/18 7:59 PM
B0511034.D	N029973-006C	SAMP	5	05/11/18 8:05 PM
B0511035.D	N029973-007D	SAMP	1	05/11/18 8:10 PM
B0511036.D	N029973-007D	SAMP	5	05/11/18 8:16 PM
B0511037.D	N029973-008C	SAMP	1	05/11/18 8:21 PM
B0511038.D	CCV2	CCV	1	05/11/18 8:27 PM
B0511039.D	CCB2	CCB	1	05/11/18 8:32 PM
B0511040.D	N029973-008C	SAMP	5	05/11/18 8:38 PM
B0511041.D	N029973-009D	SAMP	1	05/11/18 8:43 PM
B0511042.D	N029973-009D	SAMP	5	05/11/18 8:49 PM

INJECTION LOG: 180511B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0511043.D	N029973-011D	SAMP	1	05/11/18 8:54 PM
B0511044.D	N029973-011D	SAMP	5	05/11/18 9:00 PM
B0511045.D	N029973-012D	SAMP	1	05/11/18 9:06 PM
B0511046.D	N029973-012D	SAMP	5	05/11/18 9:11 PM
B0511047.D	N029973-014D	SAMP	1	05/11/18 9:17 PM
B0511048.D	N029973-014D	SAMP	5	05/11/18 9:22 PM
B0511049.D	N029973-015C	SAMP	1	05/11/18 9:28 PM
B0511050.D	CCV3	CCV	1	05/11/18 9:33 PM
B0511051.D	CCB3	CCB	1	05/11/18 9:39 PM
B0511052.D	N029973-015C	SAMP	5	05/11/18 9:44 PM
B0511053.D	N029973-017D	SAMP	1	05/11/18 9:50 PM
B0511054.D	N029973-017D	SAMP	5	05/11/18 9:56 PM
B0511055.D	N029973-018D	SAMP	1	05/11/18 10:01 PM
B0511056.D	N029973-018D	SAMP	5	05/11/18 10:07 PM
B0511057.D	N029973-020D	SAMP	1	05/11/18 10:12 PM
B0511058.D	N029973-020D	SAMP	5	05/11/18 10:18 PM
B0511059.D	MB-67852	MBLK	1	05/11/18 10:24 PM
B0511060.D	LCS-67852	LCS	1	05/11/18 10:29 PM
B0511061.D	N030006-001D	SAMP	1	05/11/18 10:35 PM
B0511062.D	CCV4	CCV	1	05/11/18 10:40 PM
B0511063.D	CCB4	CCB	1	05/11/18 10:46 PM
B0511064.D	LLCCV1	CCV2	1	05/11/18 10:51 PM
B0511065.D	ICSA2	ICSA	1	05/11/18 10:57 PM
B0511066.D	ICSAB2	ICSAB	1	05/11/18 11:02 PM
B0511067.D	N030006-001D	SAMP	5	05/11/18 11:08 PM
B0511068.D	N030006-001D	SAMP	25	05/11/18 11:13 PM
B0511069.D	N030006-001D-PS	PS	1	05/11/18 11:19 PM
B0511070.D	N030006-001D-PS	PS	5	05/11/18 11:25 PM
B0511071.D	N030006-001D-MS	MS	1	05/11/18 11:30 PM
B0511072.D	N030006-001D-MS	MS	5	05/11/18 11:36 PM
B0511073.D	N030006-001D-MSD	MSD	1	05/11/18 11:41 PM
B0511074.D	N030006-001D-MSD	MSD	5	05/11/18 11:47 PM
B0511075.D	N030006-002D	SAMP	1	05/11/18 11:52 PM
B0511076.D	N030006-002D	SAMP	5	05/11/18 11:58 PM
B0511077.D	CCV5	CCV	1	05/12/18 12:03 AM
B0511078.D	CCB5	CCB	1	05/12/18 12:09 AM
B0511079.D	N030006-003D	SAMP	1	05/12/18 12:15 AM
B0511080.D	N030006-003D	SAMP	5	05/12/18 12:20 AM
B0511081.D	N030006-004D	SAMP	1	05/12/18 12:26 AM
B0511082.D	N030006-004D	SAMP	5	05/12/18 12:31 AM
B0511083.D	N030006-005D	SAMP	1	05/12/18 12:37 AM
B0511084.D	N030006-005D	SAMP	5	05/12/18 12:42 AM

INJECTION LOG: 180511B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0511085.D	N030006-006C	SAMP	1	05/12/18 12:48 AM
B0511086.D	N030006-006C	SAMP	5	05/12/18 12:53 AM
B0511087.D	N030006-007D	SAMP	1	05/12/18 12:59 AM
B0511088.D	N030006-007D	SAMP	5	05/12/18 1:04 AM
B0511089.D	CCV6	CCV	1	05/12/18 1:10 AM
B0511090.D	CCB6	CCB	1	05/12/18 1:16 AM
B0511091.D	N030006-008D	SAMP	1	05/12/18 1:21 AM
B0511092.D	N030006-008D	SAMP	5	05/12/18 1:27 AM
B0511093.D	N030006-009C	SAMP	1	05/12/18 1:32 AM
B0511094.D	N030006-009C	SAMP	5	05/12/18 1:38 AM
B0511095.D	N030006-011D	SAMP	1	05/12/18 1:43 AM
B0511096.D	N030006-011D	SAMP	5	05/12/18 1:49 AM
B0511097.D	N030006-013D	SAMP	1	05/12/18 1:54 AM
B0511098.D	N030006-013D	SAMP	5	05/12/18 2:00 AM
B0511099.D	N030006-014D	SAMP	1	05/12/18 2:05 AM
B0511100.D	N030006-014D	SAMP	5	05/12/18 2:11 AM
B0511101.D	CCV7	CCV	1	05/12/18 2:17 AM
B0511102.D	CCB7	CCB	1	05/12/18 2:22 AM
B0511103.D	N030006-016D	SAMP	1	05/12/18 2:28 AM
B0511104.D	N030006-016D	SAMP	5	05/12/18 2:33 AM
B0511105.D	N030006-018D	SAMP	1	05/12/18 2:39 AM
B0511106.D	N030006-018D	SAMP	5	05/12/18 2:44 AM
B0511107.D	CCV8	CCV	1	05/12/18 2:50 AM
B0511108.D	CCB8	CCB	1	05/12/18 2:55 AM
B0511109.D	LLCCV2	CCV2	1	05/12/18 3:01 AM
B0511110.D	ICSA3	ICSA	1	05/12/18 3:07 AM
B0511111.D	ICSAB3	ICSAB	1	05/12/18 3:12 AM

INJECTION LOG: 180515A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0515001.D	RINSE	RINSE	1	05/15/18 11:19 AM
A0515002.D	Cal Blank	IBLK	1	05/15/18 11:24 AM
A0515003.D	Std1-0.1/1 ppb	ICAL	1	05/15/18 11:31 AM
A0515004.D	Std2-0.5/5 ppb	ICAL	1	05/15/18 11:37 AM
A0515005.D	Std3-5/50 ppb	ICAL	1	05/15/18 11:42 AM
A0515006.D	Std4-10/100 ppb	ICAL	1	05/15/18 11:48 AM
A0515007.D	Std5-20/200 ppb	ICAL	1	05/15/18 11:53 AM
A0515008.D	Std6-40/400 ppb	ICAL	1	05/15/18 12:00 PM
A0515009.D	Std7-100/1000 ppb	ICAL	1	05/15/18 12:04 PM
A0515010.D	Std8-200/2000 ppb	ICAL	1	05/15/18 12:10 PM
A0515011.D	ICV	ICV	1	05/15/18 12:16 PM
A0515012.D	ICB	ICB	1	05/15/18 12:21 PM
A0515013.D	LLICV	CCV1	1	05/15/18 12:27 PM
A0515014.D	ICSA1	ICSA	1	05/15/18 12:32 PM
A0515015.D	ICSAB1	ICSAB	1	05/15/18 12:38 PM
A0515016.D	LLICV	CCV1	1	05/15/18 12:44 PM
A0515017.D	N030148-001B	SAMP	1	05/15/18 12:49 PM
A0515018.D	N030148-001B	SAMP	5	05/15/18 12:55 PM
A0515019.D	N030006-008D	SAMP	5	05/15/18 1:01 PM
A0515020.D	N030017-005D	SAMP	1	05/15/18 1:07 PM
A0515021.D	N030091-001B	SAMP	125	05/15/18 1:13 PM
A0515022.D	N030091-001B-PS	PS	25	05/15/18 1:18 PM
A0515023.D	N030091-001B-MS	MS	25	05/15/18 1:24 PM
A0515024.D	N030091-001B-MSD	MSD	25	05/15/18 1:30 PM
A0515025.D	N030091-021B	SAMP	10	05/15/18 1:35 PM
A0515026.D	N030096-001D	SAMP	5	05/15/18 1:41 PM
A0515027.D	CCV1	CCV	1	05/15/18 1:46 PM
A0515028.D	CCB1	CCB	1	05/15/18 1:52 PM
A0515029.D	N030096-001D-MS	MS	1	05/15/18 1:58 PM
A0515030.D	N030096-001D-MSD	MSD	1	05/15/18 2:03 PM
A0515031.D	N030096-002D	SAMP	50	05/15/18 2:09 PM
A0515032.D	N030096-003D	SAMP	5	05/15/18 2:15 PM
A0515033.D	N030096-003D	SAMP	25	05/15/18 2:20 PM
A0515034.D	N030096-010D	SAMP	25	05/15/18 2:26 PM
A0515035.D	N030096-011D	SAMP	25	05/15/18 2:31 PM
A0515036.D	N030096-012D	SAMP	25	05/15/18 2:37 PM
A0515037.D	N030096-015D	SAMP	25	05/15/18 2:43 PM
A0515038.D	N030096-003D	SAMP	1	05/15/18 2:56 PM
A0515039.D	CCV2	CCV	1	05/15/18 3:01 PM
A0515040.D	CCB2	CCB	1	05/15/18 3:07 PM
A0515041.D	N030096-003D	SAMP	5	05/15/18 3:13 PM
A0515042.D	N030096-008C	SAMP	1	05/15/18 3:18 PM

INJECTION LOG: 180515A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0515043.D	MB-68076	MBLK	1	05/15/18 3:24 PM
A0515044.D	LCS-68076	LCS	1	05/15/18 3:30 PM
A0515045.D	N030345-001A	SAMP	1	05/15/18 3:35 PM
A0515046.D	N030345-001A	SAMP	5	05/15/18 3:41 PM
A0515047.D	N030345-001A-PS	PS	1	05/15/18 3:47 PM
A0515048.D	N030345-001A-MS	MS	1	05/15/18 3:52 PM
A0515049.D	N030345-001A-MSD	MSD	1	05/15/18 3:58 PM
A0515050.D	N030239-001A	SAMP	1	05/15/18 4:04 PM
A0515051.D	CCV3	CCV	1	05/15/18 4:10 PM
A0515052.D	CCB3	CCB	1	05/15/18 4:16 PM
A0515053.D	LLCCV1	CCV2	1	05/15/18 4:21 PM
A0515054.D	ICSA2	ICSA	1	05/15/18 4:27 PM
A0515055.D	ICSAB2	ICSAB	1	05/15/18 4:33 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/26/2018 5:00:00 P**
Prep End Date: **4/26/2018 9:00:00 P**
Prep Batch **67852** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/16/2018
Initials/ Date: 5/16/2018
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-44**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67852	Aqueous		25	☐	0	0	25	1.000		
MB-67852	Aqueous		25	☐	0	0	25	1.000		
N030006-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N030006-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030006-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030006-002D	Groundwater	<2	25	☐	0	0	25	1.000		
N030006-003D	Groundwater	<2	25	☐	0	0	25	1.000		
N030006-004D	Groundwater	<2	25	☐	0	0	25	1.000		
N030006-005D	Groundwater	<2	25	☐	0	0	25	1.000		
N030006-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N030006-007D	Groundwater	<2	25	☐	0	0	25	1.000		
N030006-008D	Groundwater	<2	25	☐	0	0	25	1.000		
N030006-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N030006-011D	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/26/2018 5:00:00 P**
Prep End Date: **4/26/2018 9:00:00 P**
Prep Batch **67852** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/16/2018
Initials/ Date: 5/16/2018
Technician: **Claire Ignacio**

Prep Factor Units: **mL / mL**
Temp. (°C): **94.5**
Location: **02-44**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N030006-013D	Groundwater	<2	25	☐	0	0	25	1.000		
N030006-014D	Groundwater	<2	25	☐	0	0	25	1.000		
N030006-016D	Groundwater	<2	25	☐	0	0	25	1.000		
N030006-018D	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 11 May 2018 08:03:29 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	8860.63	0.00	
24	Mg	351454.00	0.00	
25	Mg	45267.40	0.00	
26	Mg	51981.60	0.00	
59	Co	57302.50	0.00	
115	In	109234.00	0.00	
206	Pb	28163.60	0.00	
207	Pb	24761.60	0.00	
208	Pb	60795.60	0.00	

RSD (%)

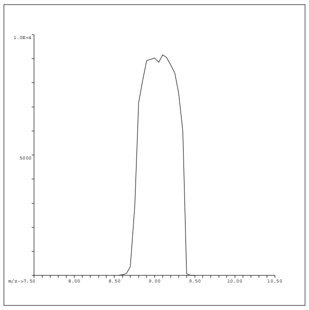
Element		Actual	Required	Flag
9	Be	2.97	5.00	
24	Mg	0.38	5.00	
25	Mg	1.23	5.00	
26	Mg	1.09	5.00	
59	Co	1.38	5.00	
115	In	1.48	5.00	
206	Pb	0.59	5.00	
207	Pb	1.10	5.00	
208	Pb	1.10	5.00	

Ion Ratio

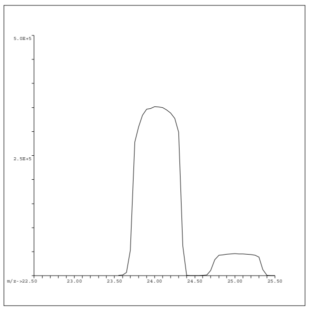
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

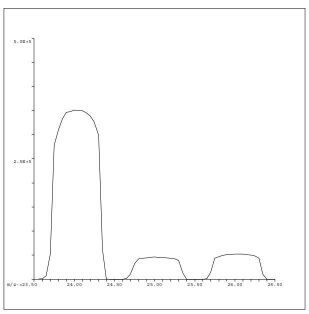
Element	Actual	Required	Flag



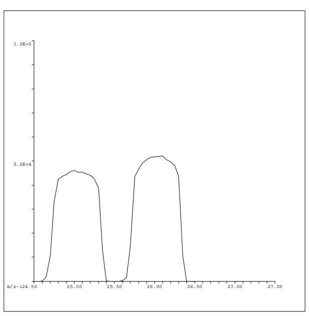
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



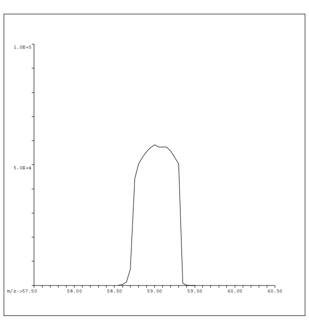
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



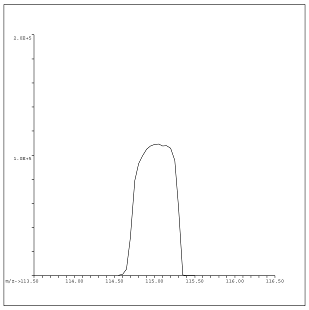
25 Mg
Mass Calib.
Actual: 25.05
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



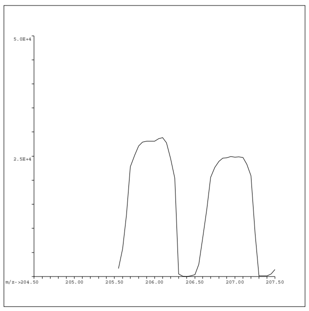
26 Mg
Mass Calib.
Actual: 26.05
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



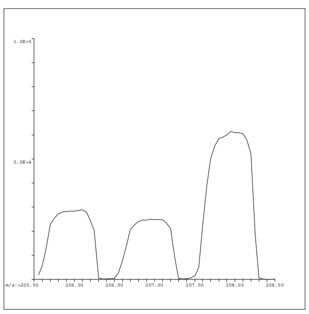
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



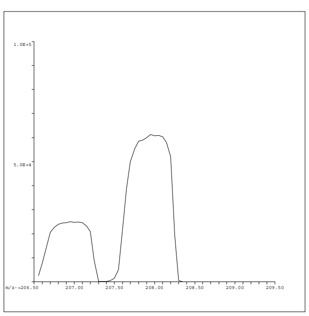
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 15 May 2018 10:38:32 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	72491.20	0.00	
24	Mg	56079300.00	0.00	
25	Mg	7514940.00	0.00	
26	Mg	8787920.00	0.00	
59	Co	366882.00	0.00	
115	In	729395.00	0.00	
206	Pb	202820.00	0.00	
207	Pb	176844.00	0.00	
208	Pb	430573.00	0.00	

RSD (%)

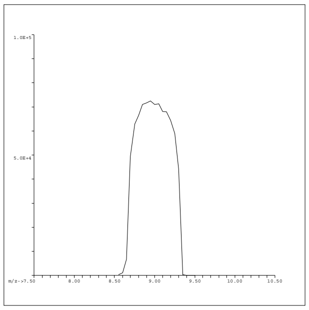
Element		Actual	Required	Flag
9	Be	1.87	5.00	
24	Mg	0.73	5.00	
25	Mg	0.68	5.00	
26	Mg	0.94	5.00	
59	Co	0.86	5.00	
115	In	0.55	5.00	
206	Pb	0.48	5.00	
207	Pb	0.91	5.00	
208	Pb	0.57	5.00	

Ion Ratio

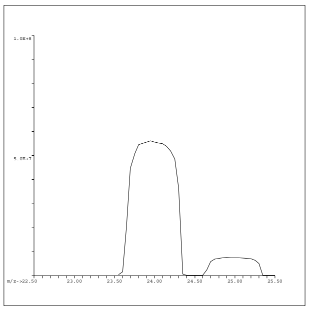
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

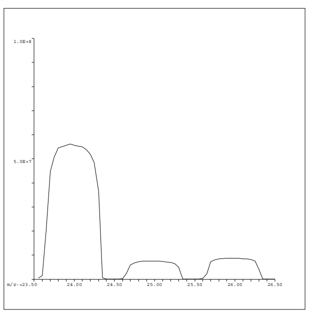
Element	Actual	Required	Flag



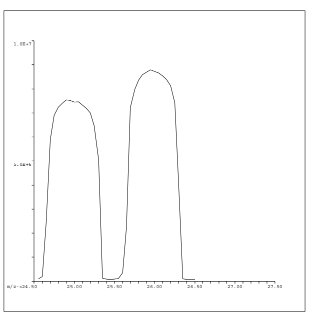
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



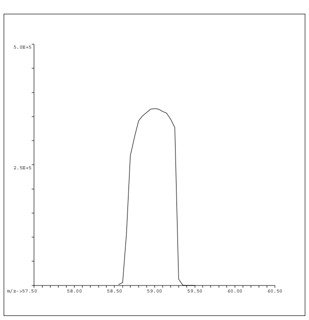
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



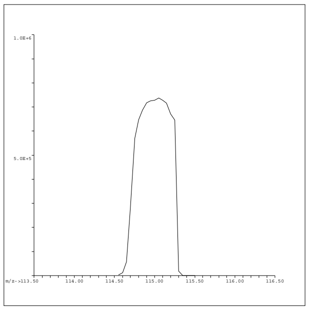
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



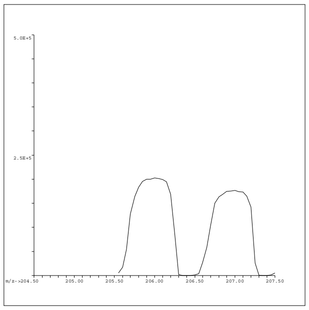
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



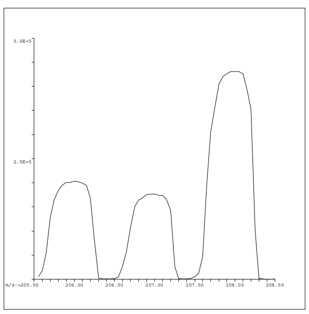
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



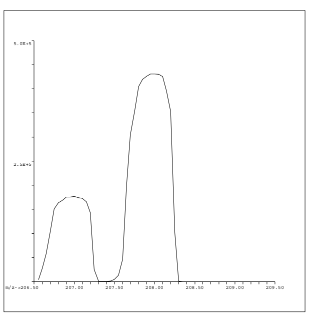
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180511B

Instrument ID: ICPMS-02

Analyte	Data File	B0511002.D	B0511003.D	B0511004.D	B0511005.D	B0511006.D	B0511007.D	B0511008.D	B0511009.D	B0511010.D	
	Acq. Date-Time	05/11/2018 05:01 PM	05/11/2018 05:06 PM	05/11/2018 05:12 PM	05/11/2018 05:18 PM	05/11/2018 05:23 PM	05/11/2018 05:29 PM	05/11/2018 05:34 PM	05/11/2018 05:40 PM	05/11/2018 05:45 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	58387.8		55881.1	55833.2	55547	56365	56163.3	54426.4	53823.2	
55 Mn [2]	CPS	171.3		1281.4	11689.2	23598.8	45692.9	92537.4	223637.7	439690.1	1.0000
52 Cr [2]	CPS	125.3		2569.1	24357.1	47901.7	94437	190397.8	463308.7	901651.6	1.0000
72 Ge (ISTD) [1]	CPS	52430.7		50766.5	51765.2	50971.3	50117.8	50242.7	50104.5	48498.3	
78 Se [1]	CPS	1.1		88.9	935.6	1841.3	3578.3	7287.5	17819.3	34840.4	1.0000
72 Ge (ISTD) [2]	CPS	46043.5	44988.3	44628.5	44791.3	44287.7	44225.2	44550.6	43747.4	42788	
75 As [2]	CPS	12.4	60.4	295.6	2712.7	5329.8	10588	21263.7	51752.6	100307.4	1.0000
103 Rh (ISTD) [2]	CPS	1547946.3		1532921	1532375.8	1515246.3	1510114.1	1512689.3	1495898.6	1459826.1	
95 Mo [2]	CPS	114.5		1779.1	17557.9	35039.2	69333.7	139000.1	337469.9	666201.3	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MWST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180515A

Instrument ID: ICPMS-02

Analyte	Data File	A0515002.D	A0515003.D	A0515004.D	A0515005.D	A0515006.D	A0515007.D	A0515008.D	A0515009.D	A0515010.D	
	Acq. Date-Time	05/15/2018 11:24 AM	05/15/2018 11:31 AM	05/15/2018 11:37 AM	05/15/2018 11:42 AM	05/15/2018 11:48 AM	05/15/2018 11:53 AM	05/15/2018 12:00 PM	05/15/2018 12:04 PM	05/15/2018 12:10 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [2]	CPS	35679.9	38198.7	36572.8	36059.5	36318.9	35556.2	35092.8	35300.2	35150.7	
75 As [2]	CPS	20.9	66.7	227.6	2127.3	4259.3	8332.4	16264.2	40514.9	81104.4	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MWST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.807	0.10	10.00	0	98.1	90	110				
Manganese	107.403	0.50	100.0	0	107	90	110				
Molybdenum	10.390	0.50	10.00	0	104	90	110				
Selenium	9.910	0.50	10.00	0	99.1	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.110	0.10	0.1000	0	110	80	120				
Manganese	0.576	0.50	0.5000	0	115	80	120				
Molybdenum	0.543	0.50	0.5000	0	109	80	120				
Selenium	0.477	0.50	0.5000	0	95.5	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.374	0.10	20.00	0	102	90	110				
Manganese	19.606	0.50	20.00	0	98.0	90	110				
Molybdenum	20.327	0.50	20.00	0	102	90	110				
Selenium	19.664	0.50	20.00	0	98.3	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.389	0.10	20.00	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.726	0.50	20.00	0	98.6	90	110				
Molybdenum	20.534	0.50	20.00	0	103	90	110				
Selenium	19.774	0.50	20.00	0	98.9	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.383	0.10	20.00	0	102	90	110				
Manganese	19.714	0.50	20.00	0	98.6	90	110				
Molybdenum	20.617	0.50	20.00	0	103	90	110				
Selenium	19.612	0.50	20.00	0	98.1	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.390	0.10	20.00	0	102	90	110				
Manganese	19.392	0.50	20.00	0	97.0	90	110				
Molybdenum	20.275	0.50	20.00	0	101	90	110				
Selenium	19.786	0.50	20.00	0	98.9	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.103	0.10	0.1000	0	103	70	130				
Manganese	0.527	0.50	0.5000	0	105	70	130				
Molybdenum	0.516	0.50	0.5000	0	103	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.433	0.50	0.5000	0	86.6	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.512	0.10	20.00	0	103	90	110				
Manganese	19.814	0.50	20.00	0	99.1	90	110				
Molybdenum	20.330	0.50	20.00	0	102	90	110				
Selenium	19.908	0.50	20.00	0	99.5	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.127	0.10	20.00	0	101	90	110				
Manganese	20.113	0.50	20.00	0	101	90	110				
Molybdenum	20.418	0.50	20.00	0	102	90	110				
Selenium	19.886	0.50	20.00	0	99.4	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.997	0.10	20.00	0	100	90	110				
Manganese	20.206	0.50	20.00	0	101	90	110				
Molybdenum	20.119	0.50	20.00	0	101	90	110				
Selenium	19.886	0.50	20.00	0	99.4	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV8** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.189	0.10	20.00	0	101	90	110				
Manganese	20.356	0.50	20.00	0	102	90	110				
Molybdenum	20.397	0.50	20.00	0	102	90	110				
Selenium	19.952	0.50	20.00	0	99.8	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.098	0.10	0.1000	0	98.5	70	130				
Manganese	0.530	0.50	0.5000	0	106	70	130				
Molybdenum	0.503	0.50	0.5000	0	101	70	130				
Selenium	0.460	0.50	0.5000	0	92.0	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ICV** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.766	0.10	10.00	0	97.7	90	110				
Manganese	108.664	0.50	100.0	0	109	90	110				
Selenium	10.485	0.50	10.00	0	105	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ZZZZZZ** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026649**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.095	0.10	0.1000	0	95.1	80	120				
Manganese	0.467	0.50	0.5000	0	93.4	80	120				
Selenium	0.541	0.50	0.5000	0	108	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **CCV** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.811	0.10	20.00	0	99.1	90	110				
Manganese	19.971	0.50	20.00	0	99.9	90	110				
Selenium	20.000	0.50	20.00	0	100	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **CCV** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.956	0.10	20.00	0	99.8	90	110				
Manganese	20.297	0.50	20.00	0	101	90	110				
Selenium	20.959	0.50	20.00	0	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Reported As only in this run.

Nancy 5/16/18

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **CCV** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.125	0.10	20.00	0	101	90	110				
Manganese	20.561	0.50	20.00	0	103	90	110				
Selenium	19.898	0.50	20.00	0	99.5	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ZZZZZZ** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.07736 ~~ND~~	0.10	0.1000	0	77.4% ~~0~~	70	130				S
Manganese	0.514	0.50	0.5000	0	103	70	130				
Selenium	0.383	0.50	0.5000	0	76.6	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 5/16/2018

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030006
Project:	PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.745	1.0	10.00	0	97.5	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.051	1.0	1.000	0	105	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.027	1.0	20.00	0	100	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.686	1.0	20.00	0	98.4	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.847	1.0	20.00	0	99.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.708	1.0	20.00	0	98.5	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.945	1.0	1.000	0	94.5	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.889	1.0	20.00	0	99.4	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.090	1.0	20.00	0	100	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCV** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.228	1.0	20.00	0	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:		RunNo: **124014**					
Client ID: **CCV**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/12/2018**		SeqNo: **3024214**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.965	1.0	20.00	0	99.8	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:		RunNo: **124014**					
Client ID: **ZZZZZZ**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/12/2018**		SeqNo: **3024216**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.995	1.0	1.000	0	99.5	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024271**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024298**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024298**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB7** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB8** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ICB** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **CCB** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **CCB** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **CCB** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Reported As only in this run.

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Nancy 5/16/2018

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **CCB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **CCB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/12/2018**	SeqNo: **3024185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **CCB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/12/2018**	SeqNo: **3024197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **CCB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/12/2018**	SeqNo: **3024209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124014**
Client ID: **CCB**	Batch ID: **R124014**	TestNo: **EPA 6020**		Analysis Date: **5/12/2018**	SeqNo: **3024215**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICSA** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024222**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICSAB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.152	0.10	20.00	0	111	80	120				
Manganese	17.628	0.50	20.00	0	88.1	80	120				
Molybdenum	23.578	0.50	20.00	0	118	80	120				
Selenium	20.414	0.50	20.00	0	102	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICSA** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICSAB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024274**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.357	0.10	20.00	0	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICSAB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024274**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	16.874	0.50	20.00	0	84.4	80	120				
Molybdenum	22.680	0.50	20.00	0	113	80	120				
Selenium	19.405	0.50	20.00	0	97.0	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICSA** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICSAB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.040	0.10	20.00	0	105	80	120				
Manganese	17.938	0.50	20.00	0	89.7	80	120				
Molybdenum	23.039	0.50	20.00	0	115	80	120				
Selenium	19.538	0.50	20.00	0	97.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ICSA** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ICSAB** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.712	0.10	20.00	0	109	80	120				
Manganese	17.338	0.50	20.00	0	86.7	80	120				
Selenium	20.028	0.50	20.00	0	100	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ICSA** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ICSAB** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.273	0.10	20.00	0	106	80	120				
Manganese	17.690	0.50	20.00	0	88.5	80	120				
Selenium	19.562	0.50	20.00	0	97.8	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Reported As only in this run.

Nancy 5/16/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICSA** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICSAB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.640	1.0	20.00	0	103	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICSA** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICSAB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/11/2018** SeqNo: **3024173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.838	1.0	20.00	0	99.2	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICSA** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024217**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ICSAB** Batch ID: **R124014** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024218**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.193	1.0	20.00	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	58387.8	58387.8	100	PASS	70-125	46043.5	46043.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	57059.5	58387.8	97.73	PASS	70-125	44988.3	46043.5	97.71	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	55881.1	58387.8	95.71	PASS	70-125	44628.5	46043.5	96.93	PASS	70-125
Std3-5/50 ppb	ICAL	1	55833.2	58387.8	95.62	PASS	70-125	44791.3	46043.5	97.28	PASS	70-125
Std4-10/100 ppb	ICAL	1	55547	58387.8	95.13	PASS	70-125	44287.7	46043.5	96.19	PASS	70-125
Std5-20/200 ppb	ICAL	1	56365	58387.8	96.54	PASS	70-125	44225.2	46043.5	96.051	PASS	70-125
Std6-40/400 ppb	ICAL	1	56163.3	58387.8	96.19	PASS	70-125	44550.6	46043.5	96.76	PASS	70-125
Std7-100/1000 ppb	ICAL	1	54426.4	58387.8	93.22	PASS	70-125	43747.4	46043.5	95.013	PASS	70-125
Std8-200/2000 ppb	ICAL	1	53823.2	58387.8	92.18	PASS	70-125	42788	46043.5	92.93	PASS	70-125
ICV	ICV	1	55923.7	58387.8	95.78	PASS	70-125	44661	46043.5	97	PASS	70-125
ICB	ICB	1	53641.8	58387.8	91.87	PASS	70-125	42785.7	46043.5	92.92	PASS	70-125
LLICV	CCV1	1	54643.8	58387.8	93.59	PASS	70-125	43459.8	46043.5	94.39	PASS	70-125
ICSA1	ICSA	1	58528.3	58387.8	100.24	PASS	70-125	43775.2	46043.5	95.074	PASS	70-125
ICSAB1	ICSAB	1	62966.4	58387.8	107.84	PASS	70-125	45906.4	46043.5	99.7	PASS	70-125
CCV1	CCV	1	72736	58387.8	124.57	PASS	70-125	53786	46043.5	116.82	PASS	70-125
CCB1	CCB	1	68600.7	58387.8	117.49	PASS	70-125	50391.8	46043.5	109.44	PASS	70-125
CCV2	CCV	1	72355.6	58387.8	123.92	PASS	70-125	53186.5	46043.5	115.51	PASS	70-125
CCB2	CCB	1	68510.6	58387.8	117.34	PASS	70-125	51155.2	46043.5	111.1	PASS	70-125
CCV3	CCV	1	71058.7	58387.8	121.7	PASS	70-125	53451.8	46043.5	116.09	PASS	70-125
CCB3	CCB	1	67288.5	58387.8	115.24	PASS	70-125	50958.1	46043.5	110.67	PASS	70-125
MB-67852	MBLK	1	67700.3	58387.8	115.95	PASS	70-125	52235.4	46043.5	113.45	PASS	70-125
LCS-67852	LCS	1	69392.8	58387.8	118.85	PASS	70-125	53158.4	46043.5	115.45	PASS	70-125
N030006-001D	SAMP	1	49906.6	58387.8	85.47	PASS	70-125	34379.1	46043.5	74.67	PASS	70-125
CCV4	CCV	1	71203.7	58387.8	121.95	PASS	70-125	53525.4	46043.5	116.25	PASS	70-125
CCB4	CCB	1	67559.9	58387.8	115.71	PASS	70-125	52150.7	46043.5	113.26	PASS	70-125
LLCCV1	CCV2	1	67866.5	58387.8	116.23	PASS	70-125	51773.9	46043.5	112.45	PASS	70-125
ICSA2	ICSA	1	65055.4	58387.8	111.42	PASS	70-125	47498.7	46043.5	103.16	PASS	70-125
ICSAB2	ICSAB	1	65728	58387.8	112.57	PASS	70-125	47887.7	46043.5	104.01	PASS	70-125
N030006-001D	SAMP	5	58739.8	58387.8	100.6	PASS	70-125	43095.6	46043.5	93.6	PASS	70-125
N030006-001D	SAMP	25	62551.7	58387.8	107.13	PASS	70-125	47679.4	46043.5	103.55	PASS	70-125
N030006-001D-PS	PS	1	51054.6	58387.8	87.44	PASS	70-125	36060.7	46043.5	78.32	PASS	70-125
N030006-001D-PS	PS	5	61642.6	58387.8	105.57	PASS	70-125	44942.7	46043.5	97.61	PASS	70-125
N030006-001D-MS	MS	1	52383.1	58387.8	89.72	PASS	70-125	37801.4	46043.5	82.099	PASS	70-125
N030006-001D-MS	MS	5	63166	58387.8	108.18	PASS	70-125	46276.5	46043.5	100.51	PASS	70-125
N030006-001D-MSD	MSD	1	51827.1	58387.8	88.76	PASS	70-125	36682.1	46043.5	79.67	PASS	70-125
N030006-001D-MSD	MSD	5	62936.3	58387.8	107.79	PASS	70-125	45971.2	46043.5	99.84	PASS	70-125
N030006-002D	SAMP	1	42206.6	58387.8	72.29	PASS	70-125	30558.2	46043.5	66.37	NR!	70-125
N030006-002D	SAMP	5	62045	58387.8	106.26	PASS	70-125	45854.2	46043.5	99.59	PASS	70-125
CCV5	CCV	1	68418.8	58387.8	117.18	PASS	70-125	52514.1	46043.5	114.05	PASS	70-125
CCB5	CCB	1	65192.9	58387.8	111.66	PASS	70-125	50912.6	46043.5	110.57	PASS	70-125
N030006-003D	SAMP	1	61883.6	58387.8	105.99	PASS	70-125	47486.6	46043.5	103.13	PASS	70-125

INTERNAL STANDARD: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030006-003D	SAMP	5	60188.4	58387.8	103.08	PASS	70-125	46929.4	46043.5	101.92	PASS	70-125
N030006-004D	SAMP	1	58344.1	58387.8	99.93	PASS	70-125	45001.8	46043.5	97.74	PASS	70-125
N030006-004D	SAMP	5	58634.1	58387.8	100.42	PASS	70-125	46614.1	46043.5	101.24	PASS	70-125
N030006-005D	SAMP	1	43866.4	58387.8	75.13	PASS	70-125	33182.4	46043.5	72.068	PASS	70-125
N030006-005D	SAMP	5	58099.6	58387.8	99.51	PASS	70-125	43968.8	46043.5	95.49	PASS	70-125
N030006-006C	SAMP	1	42769.1	58387.8	73.25	PASS	70-125	31582.4	46043.5	68.59	NR!	70-125
N030006-006C	SAMP	5	56981.5	58387.8	97.59	PASS	70-125	42947.4	46043.5	93.28	PASS	70-125
N030006-007D	SAMP	1	47961	58387.8	82.14	PASS	70-125	35108.5	46043.5	76.25	PASS	70-125
N030006-007D	SAMP	5	60852	58387.8	104.22	PASS	70-125	45455.4	46043.5	98.72	PASS	70-125
CCV6	CCV	1	67962.5	58387.8	116.4	PASS	70-125	53100.8	46043.5	115.33	PASS	70-125
CCB6	CCB	1	64899.2	58387.8	111.15	PASS	70-125	50851.4	46043.5	110.44	PASS	70-125
N030006-008D	SAMP	1	43201.4	58387.8	73.99	PASS	70-125	32024.5	46043.5	69.55	NR!	70-125
N030006-008D	SAMP	5	57613.7	58387.8	98.67	PASS	70-125	43708.3	46043.5	94.93	PASS	70-125
N030006-009C	SAMP	1	44790.1	58387.8	76.71	PASS	70-125	31682.5	46043.5	68.81	NR!	70-125
N030006-009C	SAMP	5	61615.8	58387.8	105.53	PASS	70-125	46112.6	46043.5	100.15	PASS	70-125
N030006-011D	SAMP	1	63409.1	58387.8	108.6	PASS	70-125	46915.9	46043.5	101.89	PASS	70-125
N030006-011D	SAMP	5	62203.5	58387.8	106.54	PASS	70-125	47875.6	46043.5	103.98	PASS	70-125
N030006-013D	SAMP	1	61757.4	58387.8	105.77	PASS	70-125	48321.2	46043.5	104.95	PASS	70-125
N030006-013D	SAMP	5	60339.1	58387.8	103.34	PASS	70-125	47935.4	46043.5	104.11	PASS	70-125
N030006-014D	SAMP	1	58213.6	58387.8	99.7	PASS	70-125	45965.4	46043.5	99.83	PASS	70-125
N030006-014D	SAMP	5	58133.2	58387.8	99.56	PASS	70-125	45809.5	46043.5	99.49	PASS	70-125
CCV7	CCV	1	59579.6	58387.8	102.04	PASS	70-125	46850.2	46043.5	101.75	PASS	70-125
CCB7	CCB	1	58028.3	58387.8	99.38	PASS	70-125	46089.4	46043.5	100.1	PASS	70-125
N030006-016D	SAMP	1	50751.5	58387.8	86.92	PASS	70-125	39357.2	46043.5	85.48	PASS	70-125
N030006-016D	SAMP	5	58076.2	58387.8	99.47	PASS	70-125	44209.6	46043.5	96.017	PASS	70-125
N030006-018D	SAMP	1	52638.5	58387.8	90.15	PASS	70-125	39245.9	46043.5	85.24	PASS	70-125
N030006-018D	SAMP	5	58965.1	58387.8	100.99	PASS	70-125	44991.7	46043.5	97.72	PASS	70-125
CCV8	CCV	1	63387.8	58387.8	108.56	PASS	70-125	49324.4	46043.5	107.13	PASS	70-125
CCB8	CCB	1	60111.5	58387.8	102.95	PASS	70-125	46692	46043.5	101.41	PASS	70-125
LLCCV2	CCV2	1	58166.7	58387.8	99.62	PASS	70-125	46066	46043.5	100.05	PASS	70-125
ICSA3	ICSA	1	56628.1	58387.8	96.99	PASS	70-125	45234.7	46043.5	98.24	PASS	70-125
ICSAB3	ICSAB	1	57411.9	58387.8	98.33	PASS	70-125	44852.5	46043.5	97.41	PASS	70-125

INTERNAL STANDARD: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	52430.7	52430.7	100	PASS	70-125	1547946.3	1547946.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	52041.6	52430.7	99.26	PASS	70-125	1543262.9	1547946.3	99.7	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	50766.5	52430.7	96.83	PASS	70-125	1532921	1547946.3	99.029	PASS	70-125
Std3-5/50 ppb	ICAL	1	51765.2	52430.7	98.73	PASS	70-125	1532375.8	1547946.3	98.99	PASS	70-125
Std4-10/100 ppb	ICAL	1	50971.3	52430.7	97.22	PASS	70-125	1515246.3	1547946.3	97.89	PASS	70-125
Std5-20/200 ppb	ICAL	1	50117.8	52430.7	95.59	PASS	70-125	1510114.1	1547946.3	97.56	PASS	70-125
Std6-40/400 ppb	ICAL	1	50242.7	52430.7	95.83	PASS	70-125	1512689.3	1547946.3	97.72	PASS	70-125
Std7-100/1000 ppb	ICAL	1	50104.5	52430.7	95.56	PASS	70-125	1495898.6	1547946.3	96.64	PASS	70-125
Std8-200/2000 ppb	ICAL	1	48498.3	52430.7	92.5	PASS	70-125	1459826.1	1547946.3	94.31	PASS	70-125
ICV	ICV	1	50128.8	52430.7	95.61	PASS	70-125	1522707.7	1547946.3	98.37	PASS	70-125
ICB	ICB	1	48535.4	52430.7	92.57	PASS	70-125	1482664.5	1547946.3	95.78	PASS	70-125
LLICV	CCV1	1	47488.8	52430.7	90.57	PASS	70-125	1532430.7	1547946.3	99	PASS	70-125
ICSA1	ICSA	1	49562.8	52430.7	94.53	PASS	70-125	1349392.9	1547946.3	87.17	PASS	70-125
ICSAB1	ICSAB	1	53174.1	52430.7	101.42	PASS	70-125	1409965.1	1547946.3	91.086	PASS	70-125
CCV1	CCV	1	61923.5	52430.7	118.11	PASS	70-125	1700818.4	1547946.3	109.88	PASS	70-125
CCB1	CCB	1	59676.6	52430.7	113.82	PASS	70-125	1624969.3	1547946.3	104.98	PASS	70-125
CCV2	CCV	1	60808.3	52430.7	115.98	PASS	70-125	1702656	1547946.3	109.99	PASS	70-125
CCB2	CCB	1	58881.6	52430.7	112.3	PASS	70-125	1633676.3	1547946.3	105.54	PASS	70-125
CCV3	CCV	1	59827.1	52430.7	114.11	PASS	70-125	1680767.7	1547946.3	108.58	PASS	70-125
CCB3	CCB	1	58305.9	52430.7	111.21	PASS	70-125	1642296.6	1547946.3	106.1	PASS	70-125
MB-67852	MBLK	1	58909.3	52430.7	112.36	PASS	70-125	1654521.7	1547946.3	106.88	PASS	70-125
LCS-67852	LCS	1	60263.8	52430.7	114.94	PASS	70-125	1701719.2	1547946.3	109.93	PASS	70-125
N030006-001D	SAMP	1	38000.6	52430.7	72.48	PASS	70-125	999579.4	1547946.3	64.57	NR!	70-125
CCV4	CCV	1	60711.6	52430.7	115.79	PASS	70-125	1712781.7	1547946.3	110.65	PASS	70-125
CCB4	CCB	1	58159.9	52430.7	110.93	PASS	70-125	1649279	1547946.3	106.55	PASS	70-125
LLCCV1	CCV2	1	58511.1	52430.7	111.6	PASS	70-125	1674828.3	1547946.3	108.2	PASS	70-125
ICSA2	ICSA	1	53735.1	52430.7	102.49	PASS	70-125	1464201.1	1547946.3	94.59	PASS	70-125
ICSAB2	ICSAB	1	54503	52430.7	103.95	PASS	70-125	1451163.6	1547946.3	93.75	PASS	70-125
N030006-001D	SAMP	5	48539.8	52430.7	92.58	PASS	70-125	1295257.7	1547946.3	83.68	PASS	70-125
N030006-001D	SAMP	25	53923.1	52430.7	102.85	PASS	70-125	1476039.9	1547946.3	95.35	PASS	70-125
N030006-001D-PS	PS	1	38439.6	52430.7	73.32	PASS	70-125	1028391.4	1547946.3	66.44	NR!	70-125
N030006-001D-PS	PS	5	51066.3	52430.7	97.4	PASS	70-125	1346198.5	1547946.3	86.97	PASS	70-125
N030006-001D-MS	MS	1	40202.4	52430.7	76.68	PASS	70-125	1054454.7	1547946.3	68.12	NR!	70-125
N030006-001D-MS	MS	5	51419.6	52430.7	98.072	PASS	70-125	1355341.5	1547946.3	87.56	PASS	70-125
N030006-001D-MSD	MSD	1	39843.8	52430.7	75.99	PASS	70-125	1040238.8	1547946.3	67.2	NR!	70-125
N030006-001D-MSD	MSD	5	50694.2	52430.7	96.69	PASS	70-125	1357174.4	1547946.3	87.68	PASS	70-125
N030006-002D	SAMP	1	30268.9	52430.7	57.73	NR!	70-125	866589.3	1547946.3	55.98	NR!	70-125
N030006-002D	SAMP	5	50415.3	52430.7	96.16	PASS	70-125	1346740.3	1547946.3	87.002	PASS	70-125
CCV5	CCV	1	60186.1	52430.7	114.79	PASS	70-125	1687157.4	1547946.3	108.99	PASS	70-125
CCB5	CCB	1	57281.4	52430.7	109.25	PASS	70-125	1612256.2	1547946.3	104.15	PASS	70-125
N030006-003D	SAMP	1	52521	52430.7	100.17	PASS	70-125	1414607.4	1547946.3	91.39	PASS	70-125

INTERNAL STANDARD: 180511B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030006-003D	SAMP	5	53196.4	52430.7	101.46	PASS	70-125	1463669.7	1547946.3	94.56	PASS	70-125
N030006-004D	SAMP	1	51119.7	52430.7	97.5	PASS	70-125	1342642.8	1547946.3	86.74	PASS	70-125
N030006-004D	SAMP	5	51808.7	52430.7	98.81	PASS	70-125	1417451	1547946.3	91.57	PASS	70-125
N030006-005D	SAMP	1	35541.7	52430.7	67.79	NR!	70-125	920852.8	1547946.3	59.49	NR!	70-125
N030006-005D	SAMP	5	48210.8	52430.7	91.95	PASS	70-125	1269842.8	1547946.3	82.034	PASS	70-125
N030006-006C	SAMP	1	33234.7	52430.7	63.39	NR!	70-125	864830.5	1547946.3	55.87	NR!	70-125
N030006-006C	SAMP	5	47395.3	52430.7	90.4	PASS	70-125	1231287.6	1547946.3	79.54	PASS	70-125
N030006-007D	SAMP	1	37337.9	52430.7	71.21	PASS	70-125	996051.6	1547946.3	64.35	NR!	70-125
N030006-007D	SAMP	5	49647.5	52430.7	94.69	PASS	70-125	1323683.1	1547946.3	85.51	PASS	70-125
CCV6	CCV	1	59906.3	52430.7	114.26	PASS	70-125	1658962.3	1547946.3	107.17	PASS	70-125
CCB6	CCB	1	57260.1	52430.7	109.21	PASS	70-125	1628880.1	1547946.3	105.23	PASS	70-125
N030006-008D	SAMP	1	34106.4	52430.7	65.05	NR!	70-125	896101	1547946.3	57.89	NR!	70-125
N030006-008D	SAMP	5	48336.7	52430.7	92.19	PASS	70-125	1278850.1	1547946.3	82.62	PASS	70-125
N030006-009C	SAMP	1	32062.3	52430.7	61.15	NR!	70-125	903739.5	1547946.3	58.38	NR!	70-125
N030006-009C	SAMP	5	50806.7	52430.7	96.9	PASS	70-125	1330659.9	1547946.3	85.96	PASS	70-125
N030006-011D	SAMP	1	52120.7	52430.7	99.41	PASS	70-125	1374443.9	1547946.3	88.79	PASS	70-125
N030006-011D	SAMP	5	54009	52430.7	103.01	PASS	70-125	1448127.8	1547946.3	93.55	PASS	70-125
N030006-013D	SAMP	1	53731.5	52430.7	102.48	PASS	70-125	1419829.8	1547946.3	91.72	PASS	70-125
N030006-013D	SAMP	5	53874.2	52430.7	102.75	PASS	70-125	1459123.3	1547946.3	94.26	PASS	70-125
N030006-014D	SAMP	1	50806.8	52430.7	96.9	PASS	70-125	1335673.2	1547946.3	86.29	PASS	70-125
N030006-014D	SAMP	5	52642.5	52430.7	100.4	PASS	70-125	1407034.4	1547946.3	90.9	PASS	70-125
CCV7	CCV	1	54264.3	52430.7	103.5	PASS	70-125	1535876	1547946.3	99.22	PASS	70-125
CCB7	CCB	1	53714.9	52430.7	102.45	PASS	70-125	1485618	1547946.3	95.97	PASS	70-125
N030006-016D	SAMP	1	42917.2	52430.7	81.86	PASS	70-125	1138497.9	1547946.3	73.55	PASS	70-125
N030006-016D	SAMP	5	50651.6	52430.7	96.61	PASS	70-125	1331187.5	1547946.3	86	PASS	70-125
N030006-018D	SAMP	1	43612.4	52430.7	83.18	PASS	70-125	1115909.8	1547946.3	72.09	PASS	70-125
N030006-018D	SAMP	5	51446.2	52430.7	98.12	PASS	70-125	1324338.4	1547946.3	85.55	PASS	70-125
CCV8	CCV	1	56728.3	52430.7	108.2	PASS	70-125	1567755.2	1547946.3	101.28	PASS	70-125
CCB8	CCB	1	54554.2	52430.7	104.05	PASS	70-125	1520048.1	1547946.3	98.2	PASS	70-125
LLCCV2	CCV2	1	53966.7	52430.7	102.93	PASS	70-125	1504931.1	1547946.3	97.22	PASS	70-125
ICSA3	ICSA	1	51015.1	52430.7	97.3	PASS	70-125	1338046.3	1547946.3	86.44	PASS	70-125
ICSAB3	ICSAB	1	50739.6	52430.7	96.77	PASS	70-125	1331626.5	1547946.3	86.025	PASS	70-125

INTERNAL STANDARD: 180515A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	35679.9	35679.9	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	38198.7	35679.9	107.06	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	36572.8	35679.9	102.5	PASS	70-125
Std3-5/50 ppb	ICAL	1	36059.5	35679.9	101.06	PASS	70-125
Std4-10/100 ppb	ICAL	1	36318.9	35679.9	101.79	PASS	70-125
Std5-20/200 ppb	ICAL	1	35556.2	35679.9	99.65	PASS	70-125
Std6-40/400 ppb	ICAL	1	35092.8	35679.9	98.35	PASS	70-125
Std7-100/1000 ppb	ICAL	1	35300.2	35679.9	98.94	PASS	70-125
Std8-200/2000 ppb	ICAL	1	35150.7	35679.9	98.52	PASS	70-125
ICV	ICV	1	30089.6	35679.9	84.33	PASS	70-125
ICB	ICB	1	34283.6	35679.9	96.087	PASS	70-125
LLICV	CCV1	1	34999.3	35679.9	98.092	PASS	70-125
ICSA1	ICSA	1	38459.4	35679.9	107.79	PASS	70-125
ICSAB1	ICSAB	1	34861.4	35679.9	97.71	PASS	70-125
LLICV	CCV1	1	36550.6	35679.9	102.44	PASS	70-125
N030006-008D	SAMP	5	28495.6	35679.9	79.86	PASS	70-125
CCV1	CCV	1	35549.6	35679.9	99.63	PASS	70-125
CCB1	CCB	1	33974.1	35679.9	95.22	PASS	70-125
CCV2	CCV	1	36735.4	35679.9	102.96	PASS	70-125
CCB2	CCB	1	36747.6	35679.9	102.99	PASS	70-125
CCV3	CCV	1	36813.4	35679.9	103.18	PASS	70-125
CCB3	CCB	1	34443.7	35679.9	96.54	PASS	70-125
LLCCV1	CCV2	1	35078.5	35679.9	98.31	PASS	70-125
ICSA2	ICSA	1	39257	35679.9	110.03	PASS	70-125
ICSAB2	ICSAB	1	34426	35679.9	96.49	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water **Dilution Test Summary**

Work Order No.: N030006
Test Method: EPA 6020
Analysis Date: 5/11/2018

Matrix: Groundwater
Batch No.: 67852

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to ~~Man~~ Mn and Se. The calculated concentration is <25RL.
Dilution test failed for As. However, PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030006-001D 5X	Arsenic	ug/L	4.983297	FAIL	4.418232	12.79%	10
N030006-001D 5X	Chromium	ug/L	126.6012	PASS	115.9683	9.17%	10
N030006-001D 5X	Manganese	ug/L	5.435194	NA	5.142302	5.70%	10
N030006-001D 25X	Molybdenum	ug/L	47.4659	PASS	50.13537	5.32%	10
N030006-001D 5X	Selenium	ug/L	2.428063	NA	1.788581	35.75%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030006-001D-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.903	0.10	10.00	4.418	105	80	120				
Manganese	92.689	0.50	100.0	5.142	87.5	80	120				
Selenium	11.470	0.50	10.00	1.789	96.8	80	120				

Sample ID **N030006-001D-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	65.490	2.5	10.00	50.14	154	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030006
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N030006-001D-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124014**
Client ID: **ZZZZZZ** Batch ID: **67852** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/11/2018** SeqNo: **3024176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	121.533	1.0	10.00	116.0	55.6	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

May 16, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030017

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 26, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.0801
Lab Order:	N030017

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N030017-002, -006, -007, -009, -010, and -011 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (1.5 ug/L) and hexavalent chromium (0 ug/L) for sample N030017-002 (MW-23-080-Q218) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (2.0 ug/L) and hexavalent chromium (0 ug/L) for sample N030017-007 (MW-72BR-200-LF_S-Q218) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N030017-006, -007, -008, -009, -010 and -011 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N030017-001C-MS and N030017-001C-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Because the results for total dissolved chromium (1.5 ug/L) and hexavalent chromium (0 ug/L) for sample N030017-002 (MW-23-080-Q218) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.4 and 1.0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (2.0 ug/L) and hexavalent chromium (0 ug/L) for sample N030017-007 (MW-72BR-200-LF_S-Q218) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 2.1 and 2.0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Analytical Comments for SM 4500-NO3F:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N029973-020CMS and N029973-020CMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *16-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N030017
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030017-001A	MW-23-060-Q218	Groundwater	4/26/2018 1:51:00 PM	4/26/2018	5/16/2018
N030017-001B	MW-23-060-Q218	Groundwater	4/26/2018 1:51:00 PM	4/26/2018	5/16/2018
N030017-001C	MW-23-060-Q218	Groundwater	4/26/2018 1:51:00 PM	4/26/2018	5/16/2018
N030017-002A	MW-23-080-Q218	Groundwater	4/26/2018 2:46:00 PM	4/26/2018	5/16/2018
N030017-002B	MW-23-080-Q218	Groundwater	4/26/2018 2:46:00 PM	4/26/2018	5/16/2018
N030017-002C	MW-23-080-Q218	Groundwater	4/26/2018 2:46:00 PM	4/26/2018	5/16/2018
N030017-003A	MW-706-Q218	Groundwater	4/26/2018 3:40:00 PM	4/26/2018	5/16/2018
N030017-004A	MW-707-Q218	Groundwater	4/26/2018 4:00:00 PM	4/26/2018	5/16/2018
N030017-005A	MW-63-065-Q218	Groundwater	4/26/2018 10:57:00 AM	4/26/2018	5/16/2018
N030017-005B	MW-63-065-Q218	Groundwater	4/26/2018 10:57:00 AM	4/26/2018	5/16/2018
N030017-005C	MW-63-065-Q218	Groundwater	4/26/2018 10:57:00 AM	4/26/2018	5/16/2018
N030017-005D	MW-63-065-Q218	Groundwater	4/26/2018 10:57:00 AM	4/26/2018	5/16/2018
N030017-006A	MW-72BR-200-LF_D-Q218	Groundwater	4/26/2018 12:51:00 PM	4/26/2018	5/16/2018
N030017-006B	MW-72BR-200-LF_D-Q218	Groundwater	4/26/2018 12:51:00 PM	4/26/2018	5/16/2018
N030017-006C	MW-72BR-200-LF_D-Q218	Groundwater	4/26/2018 12:51:00 PM	4/26/2018	5/16/2018
N030017-006D	MW-72BR-200-LF_D-Q218	Groundwater	4/26/2018 12:51:00 PM	4/26/2018	5/16/2018
N030017-007A	MW-72BR-200-LF_S-Q218	Groundwater	4/26/2018 12:02:00 PM	4/26/2018	5/16/2018
N030017-007B	MW-72BR-200-LF_S-Q218	Groundwater	4/26/2018 12:02:00 PM	4/26/2018	5/16/2018
N030017-007C	MW-72BR-200-LF_S-Q218	Groundwater	4/26/2018 12:02:00 PM	4/26/2018	5/16/2018
N030017-007D	MW-72BR-200-LF_S-Q218	Groundwater	4/26/2018 12:02:00 PM	4/26/2018	5/16/2018
N030017-008A	MW-72-080-Q218	Groundwater	4/26/2018 3:48:00 PM	4/26/2018	5/16/2018
N030017-008B	MW-72-080-Q218	Groundwater	4/26/2018 3:48:00 PM	4/26/2018	5/16/2018
N030017-008C	MW-72-080-Q218	Groundwater	4/26/2018 3:48:00 PM	4/26/2018	5/16/2018
N030017-008D	MW-72-080-Q218	Groundwater	4/26/2018 3:48:00 PM	4/26/2018	5/16/2018
N030017-009A	TW-04-3V-Q218	Groundwater	4/26/2018 11:38:00 AM	4/26/2018	5/16/2018
N030017-009B	TW-04-3V-Q218	Groundwater	4/26/2018 11:38:00 AM	4/26/2018	5/16/2018
N030017-009C	TW-04-3V-Q218	Groundwater	4/26/2018 11:38:00 AM	4/26/2018	5/16/2018
N030017-010A	TW-04-LF-Q218	Groundwater	4/26/2018 9:20:00 AM	4/26/2018	5/16/2018
N030017-010B	TW-04-LF-Q218	Groundwater	4/26/2018 9:20:00 AM	4/26/2018	5/16/2018

CLIENT:	ARCADIS U.S., Inc. - California	
Project:	PG&E Topock - GMP, RC000753.0801	**Work Order Sample Summary**
Lab Order:	N030017	
Contract No:		

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030017-010C	TW-04-LF-Q218	Groundwater	4/26/2018 9:20:00 AM	4/26/2018	5/16/2018
N030017-011A	MW-72BR-200-3V-Q218	Groundwater	4/26/2018 3:31:00 PM	4/26/2018	5/16/2018
N030017-011B	MW-72BR-200-3V-Q218	Groundwater	4/26/2018 3:31:00 PM	4/26/2018	5/16/2018
N030017-011C	MW-72BR-200-3V-Q218	Groundwater	4/26/2018 3:31:00 PM	4/26/2018	5/16/2018
N030017-011D	MW-72BR-200-3V-Q218	Groundwater	4/26/2018 3:31:00 PM	4/26/2018	5/16/2018
N030017-012A	MW-47-055-Q218	Groundwater	4/26/2018 9:38:00 AM	4/26/2018	5/16/2018
N030017-012B	MW-47-055-Q218	Groundwater	4/26/2018 9:38:00 AM	4/26/2018	5/16/2018
N030017-012C	MW-47-055-Q218	Groundwater	4/26/2018 9:38:00 AM	4/26/2018	5/16/2018
N030017-013A	MW-908-Q218	Groundwater	4/26/2018 9:48:00 AM	4/26/2018	5/16/2018
N030017-013B	MW-908-Q218	Groundwater	4/26/2018 9:48:00 AM	4/26/2018	5/16/2018
N030017-013C	MW-908-Q218	Groundwater	4/26/2018 9:48:00 AM	4/26/2018	5/16/2018

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-060-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 1:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180427A** QC Batch: **R123692** PrepDate							Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-080-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 2:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427A**	QC Batch: **R123692**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 10:57:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180427A**	QC Batch: **R123692**			PrepDate			Analyst: **LR**
Specific Conductance	6000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427A**	QC Batch: **R123692**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030017
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N030017-007

Client Sample ID: MW-72BR-200-LF_S-Q218
Collection Date: 4/26/2018 12:02:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427A**	QC Batch: **R123692**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:48:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427A**	QC Batch: **R123692**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-3V-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 11:38:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427A**	QC Batch: **R123692**			PrepDate			Analyst: **LR**
Specific Conductance	20000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Client Sample ID: TW-04-LF-Q218
Lab Order: N030017
Collection Date: 4/26/2018 9:20:00 AM
Project: PG&E Topock - GMP, RC000753.0801
Matrix: GROUNDWATER
Lab ID: N030017-010

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180427A** QC Batch: **R123692**				PrepDate			Analyst: **LR**
Specific Conductance	20000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427A**	QC Batch: **R123692**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-055-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:38:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180427A**	QC Batch: **R123692**			PrepDate			Analyst: **LR**
Specific Conductance	4200	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-908-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180427A**	QC Batch: **R123692**			PrepDate			Analyst: **LR**
Specific Conductance	4300	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030017-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123692**
Client ID: **ZZZZZZ** Batch ID: **R123692** TestNo: **EPA 120.1** Analysis Date: **4/27/2018** SeqNo: **3010721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	14830.000	0.10						14780	0.338	2	

Sample ID **N030017-013BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123692**
Client ID: **ZZZZZZ** Batch ID: **R123692** TestNo: **EPA 120.1** Analysis Date: **4/27/2018** SeqNo: **3010733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	4240.000	0.10						4260	0.471	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-060-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 1:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180427A** QC Batch: **R123709** PrepDate							Analyst: **RAB**
Hexavalent Chromium	39	0.17	1.0		µg/L	5	4/27/2018 12:03 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018**							Analyst: **CEI**
Chromium	37	0.13	1.0		µg/L	1	5/12/2018 11:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-080-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 2:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180427A** QC Batch: **R123709** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/27/2018 12:22 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018**							Analyst: **CEI**
Chromium	1.5	0.13	1.0		µg/L	1	5/12/2018 12:58 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-706-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180427A**	QC Batch: **R123709**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/27/2018 04:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-707-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180427A** QC Batch: **R123709** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/27/2018 04:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 10:57:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180427A** QC Batch: **R123709**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	0.85	0.033	0.20		µg/L	1	4/27/2018 12:41 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180512A** QC Batch: **67911**				PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	1.3	0.13	1.0		µg/L	1	5/12/2018 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180427A**	QC Batch: **R123709**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/27/2018 01:00 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/12/2018 01:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 12:02:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180427A**	QC Batch: **R123709**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/27/2018 01:56 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	2.0	0.13	1.0		µg/L	1	5/12/2018 01:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:48:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180427A** QC Batch: **R123709** PrepDate							Analyst: **RAB**
Hexavalent Chromium	68	0.66	4.0		µg/L	20	4/27/2018 01:37 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**							
RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018**							Analyst: **CEI**
Chromium	62	0.13	1.0		µg/L	1	5/12/2018 01:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-3V-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 11:38:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180427A** QC Batch: **R123709**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	8.9	0.17	1.0		µg/L	5	4/27/2018 02:15 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180512A** QC Batch: **67911**				PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	9.4	0.65	5.0		µg/L	5	5/12/2018 02:10 PM

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-LF-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:20:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180427A** QC Batch: **R123709** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/27/2018 02:34 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**							
RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018** Analyst: **CEI**							
Chromium	ND	0.65	5.0		µg/L	5	5/12/2018 02:21 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ORELAP/NELAP Cert 4046

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180427A** QC Batch: **R123709** PrepDate							Analyst: **RAB**
Hexavalent Chromium	3.3	0.17	1.0		µg/L	5	4/27/2018 02:53 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018**							Analyst: **CEI**
Chromium	2.6	0.13	1.0		µg/L	1	5/12/2018 02:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-055-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:38:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180427A** QC Batch: **R123709**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	15	0.17	1.0		µg/L	5	4/27/2018 03:59 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A** QC Batch: **67911**				PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	15	0.13	1.0		µg/L	1	5/12/2018 02:38 PM

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-908-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180427A** QC Batch: **R123709** PrepDate							Analyst: **RAB**
Hexavalent Chromium	14	0.17	1.0		µg/L	5	4/27/2018 04:19 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018**							Analyst: **CEI**
Chromium	14	0.13	1.0		µg/L	1	5/12/2018 02:49 PM

CLIENT: ARCADIS U.S., Inc. - California

Work Order: N030017

Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123709** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **PBW** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123709** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **LCSW** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.167	0.20	5.000	0	103	90	110				

Sample ID **N029973-021AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0	106	90	110				

Sample ID **N029973-022AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Sample ID **N030017-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	64.091	1.0	25.00	38.52	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030017-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.606	1.0	5.000	0.6215	99.7	90	110				

Sample ID **N030017-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.878	0.20	1.000	0.8526	103	90	110				

Sample ID **N030017-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.831	1.0	5.000	0	96.6	90	110				

Sample ID **N030017-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	167.618	4.0	100.0	67.94	99.7	90	110				

Sample ID **N030017-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.779	1.0	5.000	0.8265	99.0	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030017-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.807	1.0	5.000	8.878	98.6	90	110				

Sample ID **N030017-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.667	1.0	5.000	0	93.3	90	110				

Sample ID **N030017-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.241	1.0	5.000	3.263	99.6	90	110				

Sample ID **N030017-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	64.571	1.0	25.00	38.52	104	90	110	64.09	0.745	20	

Sample ID **N030017-005ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.887	0.20						0.8526	3.99	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030017-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.628	1.0	25.00	14.52	100	90	110				

Sample ID **N030017-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	40.401	1.0	25.00	14.42	104	90	110				

Sample ID **N030017-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011177**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID **N030017-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.028	0.20	1.000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-67911** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **PBW** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-67911** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **LCSW** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.197	1.0	10.00	0	102	85	115				

Sample ID **N030017-001C-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	43.552	1.0	10.00	36.84	67.1	75	125				S

Sample ID **N030017-001C-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	43.882	1.0	10.00	36.84	70.4	75	125	43.55	0.754	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 10:57:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.97	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180504D**	QC Batch: **R123845**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.058	0.032	0.050		mg/L	1	5/4/2018

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 12:02:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180504D** QC Batch: **R123845**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.058	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:48:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-008		

NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Nitrate/Nitrite as N	0.50	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.15	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R123845** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **PBW** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R123845** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **LCSW** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	85	115				

Sample ID **N029973-009CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ZZZZZZ** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID **N029973-020CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ZZZZZZ** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.373	0.10	1.000	0.9934	138	75	125				S

Sample ID **N029973-020CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ZZZZZZ** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.245	0.10	1.000	0.9934	125	75	125	2.373	5.54	20	S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-060-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 1:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate **5/2/2018**			Analyst: **CEI**
Arsenic	3.9	0.081	0.10		µg/L	1	5/12/2018 11:56 AM
Manganese	4.2	0.26	0.50		µg/L	1	5/12/2018 11:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-080-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 2:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate	**5/2/2018**		Analyst: **CEI**
Arsenic	5.5	0.081	0.10		µg/L	1	5/12/2018 12:58 PM
Manganese	5.2	0.26	0.50		µg/L	1	5/12/2018 12:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
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ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 10:57:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate	**5/2/2018**		Analyst: **CEI**
Arsenic	1.5	0.081	0.10		µg/L	1	5/12/2018 01:09 PM
Manganese	14	0.26	0.50		µg/L	1	5/12/2018 01:09 PM
Molybdenum	18	0.21	0.50		µg/L	1	5/12/2018 01:09 PM
Selenium	0.78	0.36	0.50		µg/L	1	5/15/2018 01:07 PM

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-006		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	13	0.081	0.10		µg/L	1	5/12/2018 01:20 PM
Manganese	110	0.26	0.50		µg/L	1	5/12/2018 01:20 PM
Molybdenum	75	1.1	2.5		µg/L	5	5/12/2018 01:25 PM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 01:25 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 12:02:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-007		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	14	0.081	0.10		µg/L	1	5/12/2018 01:31 PM
Manganese	34	0.26	0.50		µg/L	1	5/12/2018 01:31 PM
Molybdenum	73	1.1	2.5		µg/L	5	5/12/2018 01:37 PM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 01:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:48:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Arsenic	11	0.081	0.10		µg/L	1	5/12/2018 01:42 PM
Manganese	69	0.26	0.50		µg/L	1	5/12/2018 01:42 PM
Molybdenum	75	1.1	2.5		µg/L	5	5/12/2018 01:59 PM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 01:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-3V-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 11:38:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Manganese	45	1.3	2.5		µg/L	5	5/12/2018 02:10 PM
Molybdenum	59	1.1	2.5		µg/L	5	5/12/2018 02:10 PM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 02:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-LF-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:20:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-010		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Manganese	160	1.3	2.5		µg/L	5	5/12/2018 02:21 PM
Molybdenum	68	1.1	2.5		µg/L	5	5/12/2018 02:21 PM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 02:21 PM

ANALYTICAL RESULTS

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Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A / **EPA 6020**							
RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018** Analyst: **CEI**							
Arsenic	14	0.081	0.10		µg/L	1	5/12/2018 02:27 PM
Manganese	57	0.26	0.50		µg/L	1	5/12/2018 02:27 PM
Molybdenum	67	1.1	2.5		µg/L	5	5/12/2018 02:33 PM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 02:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-055-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:38:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate **5/2/2018**			Analyst: **CEI**
Arsenic	1.0	0.081	0.10		µg/L	1	5/12/2018 02:38 PM
Manganese	ND	0.26	0.50		µg/L	1	5/12/2018 02:38 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
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ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-908-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Arsenic	0.98	0.081	0.10		µg/L	1	5/12/2018 02:49 PM
Manganese	ND	0.26	0.50		µg/L	1	5/12/2018 02:49 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-67911** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **PBW** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-67911** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **LCSW** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.387	0.10	10.00	0	104	85	115				
Manganese	103.929	0.50	100.0	0	104	85	115				
Molybdenum	9.983	0.50	10.00	0	99.8	85	115				
Selenium	10.203	0.50	10.00	0	102	85	115				

Sample ID **N030017-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.135	0.10	10.00	3.941	102	75	125				
Manganese	95.296	0.50	100.0	4.203	91.1	75	125				

Sample ID **N030017-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	32.217	2.5	10.00	21.11	111	75	125				
Selenium	15.916	2.5	10.00	5.156	108	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030017-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.014	0.10	10.00	3.941	101	75	125	14.14	0.860	20	
Manganese	95.369	0.50	100.0	4.203	91.2	75	125	95.30	0.0765	20	

Sample ID **N030017-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	32.602	2.5	10.00	21.11	115	75	125	32.22	1.19	20	
Selenium	14.161	2.5	10.00	5.156	90.0	75	125	15.92	11.7	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Gantt Jeffers
Title: Geologist II
Signature: [signature] Date: 4/26/2018
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - GMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
Signature: [signature] Date: 4/26/2018

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		
6. Method of Cooling: ice		

Sample Temp: 2.9°/3.5°C
Courier:
Tracking No.:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030017-01	MW-23-060-Q218	4/26/2018	13:51		X			X							X		E	3	P	BN	
2	-02	MW-23-080-Q218	4/26/2018	14:46		X			X							X		E	3	P	BN	
3	-03	MW-706-Q218	4/26/2018	15:40		X												E	1	P	B	
4	-04	MW-707-Q218	4/26/2018	16:00		X												E	1	P	B	
5	-05	MW-63-065-Q218	4/26/2018	10:57		X			X			X	X					E	4	P	BNS	
6	-06	MW-72BR-200-LF_D-Q218	4/26/2018	12:51		X			X			X	X					E	4	P	BNS	
7	-07	MW-72BR-200-LF_S-Q218	4/26/2018	12:02		X			X			X	X					E	4	P	BNS	
8	-08	MW-72-080-Q218	4/26/2018	15:48		X			X			X	X					E	4	P	BNS	
9	-09	TW-04-3V-Q218	4/26/2018	11:38			X		X								X	E	4	P	BN	
10	-10	TW-04-LF-Q218	4/26/2018	9:20			X		X								X	E	4	P	BN	

Reliquished by (Signature and Printed Name)	Date/Time	Reliquished by (Signature and Printed Name)	Date/Time
[signature]	4/26/18 1700	[signature]	4/26/18 1700
[signature]	4/26/18 1855	[signature]	4/26/18 1855
[signature]		[signature]	

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

White=Laboratory Copy Yellow=Customer's Copy

ASSET LABORATORIES
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CHAIN OF CUSTODY RECORD

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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302
Fax:
Submitted By: Gantt Jeffers
Title: Geologist II
Signature: Date: 4/26/2018
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - GMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com
daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330
Roseville, CA 95661
Phone: 916-786-3302
Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
Signature: Date: 4/26/2018

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com
P.O.#
Phone: 949-727-1400, ext 200
Fax:

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling:	1	

Ice
Sample Temp: 2.9°C / 3.5°C

Courier:
Tracking No.:

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly	Specific Conductance (EPA 120.1) — 1 liter poly	Total Dissolved Solids (SM92540) — 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 — 125 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030017-11	MW-72BR-200-3V-Q218	4/26/2018	15:31		X			X			X	X					E	4	P	BNS	
2	-12	MW-47-055-Q218	4/26/2018	9:38		X			X							X		E	3	P	BN	
3	-13	MW-908-Q218	4/26/2018	9:48		X			X							X		E	3	P	BN	
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	4/26/18 1700		4/26/18 1700
	4/26/18 1855		4/26/18 1855

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- A < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
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TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
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Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 4/26/2018 Workorder: N030017

Rep sample Temp (Deg C): 2.9/3.5 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR YR 5/1/2018

Reviewed By: HA 05/02/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/1/2018 6:08 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>, Kalib Sumter <Kalib.Sumter@critigen.com>, Dan Moore <Daniel.Moore@critigen.com>

Hi Yoandra,
Method 6020 is acceptable.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, April 30, 2018 8:48 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)

Hi Laura,

Please kindly check the attached COCs. Some samples are requested to be analyzed for As, Cr, Mn, Mo and Se by 6010.

Please kindly confirm if they can be analyzed by 6020 instead of 6010, as we have been doing before.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

ASSET Laboratories

WORK ORDER Summary

27-Apr-18

WorkOrder: N030017

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030017-001A	MW-23-060-Q218	4/26/2018 1:51:00 PM	5/10/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-001B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-001C			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-002A	MW-23-080-Q218	4/26/2018 2:46:00 PM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-002B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-002C			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-003A	MW-706-Q218	4/26/2018 3:40:00 PM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-004A	MW-707-Q218	4/26/2018 4:00:00 PM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-005A	MW-63-065-Q218	4/26/2018 10:57:00 AM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-005B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-005C			5/10/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030017-005D			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-006A	MW-72BR-200-LF_D-Q218	4/26/2018 12:51:00 PM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-006B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-006C			5/10/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-18

WorkOrder: N030017

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030017-006D	MW-72BR-200-LF_D-Q218	4/26/2018 12:51:00 PM	5/10/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-007A	MW-72BR-200-LF_S-Q218	4/26/2018 12:02:00 PM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-007B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-007C			5/10/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030017-007D			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-008A	MW-72-080-Q218	4/26/2018 3:48:00 PM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-008B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-008C			5/10/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030017-008D			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-009A	TW-04-3V-Q218	4/26/2018 11:38:00 AM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-009B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-009C			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-010A	TW-04-LF-Q218	4/26/2018 9:20:00 AM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-18

WorkOrder: N030017

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030017-010B	TW-04-LF-Q218	4/26/2018 9:20:00 AM	5/10/2018	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-010C			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-011A	MW-72BR-200-3V-Q218	4/26/2018 3:31:00 PM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-011B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-011C			5/10/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030017-011D			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-012A	MW-47-055-Q218	4/26/2018 9:38:00 AM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-012B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-012C			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-013A	MW-908-Q218	4/26/2018 9:48:00 AM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-013B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-013C			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-014A	FOLDER	5/10/2018	5/10/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/10/2018		Folder	Folder	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

27-Apr-18

WorkOrder: N030017

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030017-014A	FOLDER	5/10/2018	5/10/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.0801

ASSET Laboratories Work Order:

N030017

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N030017

May 16, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030017

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 26, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California	
Project:	PG&E Topock - GMP, RC000753.0801	**CASE NARRATIVE**
Lab Order:	N030017	

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N030017-002, -006, -007, -009, -010, and -011 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (1.5 ug/L) and hexavalent chromium (0 ug/L) for sample N030017-002 (MW-23-080-Q218) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Because the results for total dissolved chromium (2.0 ug/L) and hexavalent chromium (0 ug/L) for sample N030017-007 (MW-72BR-200-LF_S-Q218) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N030017-006, -007, -008, -009, -010 and -011 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N030017-001C-MS and N030017-001C-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Because the results for total dissolved chromium (1.5 ug/L) and hexavalent chromium (0 ug/L) for sample N030017-002 (MW-23-080-Q218) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.4 and 1.0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Because the results for total dissolved chromium (2.0 ug/L) and hexavalent chromium (0 ug/L) for sample N030017-007 (MW-72BR-200-LF_S-Q218) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 2.1 and 2.0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Analytical Comments for SM 4500-NO3F:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N029973-020CMS and N029973-020CMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N030017
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030017-001A	MW-23-060-Q218	Groundwater	4/26/2018 1:51:00 PM	4/26/2018	5/16/2018
N030017-001B	MW-23-060-Q218	Groundwater	4/26/2018 1:51:00 PM	4/26/2018	5/16/2018
N030017-001C	MW-23-060-Q218	Groundwater	4/26/2018 1:51:00 PM	4/26/2018	5/16/2018
N030017-002A	MW-23-080-Q218	Groundwater	4/26/2018 2:46:00 PM	4/26/2018	5/16/2018
N030017-002B	MW-23-080-Q218	Groundwater	4/26/2018 2:46:00 PM	4/26/2018	5/16/2018
N030017-002C	MW-23-080-Q218	Groundwater	4/26/2018 2:46:00 PM	4/26/2018	5/16/2018
N030017-003A	MW-706-Q218	Groundwater	4/26/2018 3:40:00 PM	4/26/2018	5/16/2018
N030017-004A	MW-707-Q218	Groundwater	4/26/2018 4:00:00 PM	4/26/2018	5/16/2018
N030017-005A	MW-63-065-Q218	Groundwater	4/26/2018 10:57:00 AM	4/26/2018	5/16/2018
N030017-005B	MW-63-065-Q218	Groundwater	4/26/2018 10:57:00 AM	4/26/2018	5/16/2018
N030017-005C	MW-63-065-Q218	Groundwater	4/26/2018 10:57:00 AM	4/26/2018	5/16/2018
N030017-005D	MW-63-065-Q218	Groundwater	4/26/2018 10:57:00 AM	4/26/2018	5/16/2018
N030017-006A	MW-72BR-200-LF_D-Q218	Groundwater	4/26/2018 12:51:00 PM	4/26/2018	5/16/2018
N030017-006B	MW-72BR-200-LF_D-Q218	Groundwater	4/26/2018 12:51:00 PM	4/26/2018	5/16/2018
N030017-006C	MW-72BR-200-LF_D-Q218	Groundwater	4/26/2018 12:51:00 PM	4/26/2018	5/16/2018
N030017-006D	MW-72BR-200-LF_D-Q218	Groundwater	4/26/2018 12:51:00 PM	4/26/2018	5/16/2018
N030017-007A	MW-72BR-200-LF_S-Q218	Groundwater	4/26/2018 12:02:00 PM	4/26/2018	5/16/2018
N030017-007B	MW-72BR-200-LF_S-Q218	Groundwater	4/26/2018 12:02:00 PM	4/26/2018	5/16/2018
N030017-007C	MW-72BR-200-LF_S-Q218	Groundwater	4/26/2018 12:02:00 PM	4/26/2018	5/16/2018
N030017-007D	MW-72BR-200-LF_S-Q218	Groundwater	4/26/2018 12:02:00 PM	4/26/2018	5/16/2018
N030017-008A	MW-72-080-Q218	Groundwater	4/26/2018 3:48:00 PM	4/26/2018	5/16/2018
N030017-008B	MW-72-080-Q218	Groundwater	4/26/2018 3:48:00 PM	4/26/2018	5/16/2018
N030017-008C	MW-72-080-Q218	Groundwater	4/26/2018 3:48:00 PM	4/26/2018	5/16/2018
N030017-008D	MW-72-080-Q218	Groundwater	4/26/2018 3:48:00 PM	4/26/2018	5/16/2018
N030017-009A	TW-04-3V-Q218	Groundwater	4/26/2018 11:38:00 AM	4/26/2018	5/16/2018
N030017-009B	TW-04-3V-Q218	Groundwater	4/26/2018 11:38:00 AM	4/26/2018	5/16/2018
N030017-009C	TW-04-3V-Q218	Groundwater	4/26/2018 11:38:00 AM	4/26/2018	5/16/2018
N030017-010A	TW-04-LF-Q218	Groundwater	4/26/2018 9:20:00 AM	4/26/2018	5/16/2018
N030017-010B	TW-04-LF-Q218	Groundwater	4/26/2018 9:20:00 AM	4/26/2018	5/16/2018

CLIENT:	ARCADIS U.S., Inc. - California		
Project:	PG&E Topock - GMP, RC000753.0801		**Work Order Sample Summary**
Lab Order:	N030017		
Contract No:			

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030017-010C	TW-04-LF-Q218	Groundwater	4/26/2018 9:20:00 AM	4/26/2018	5/16/2018
N030017-011A	MW-72BR-200-3V-Q218	Groundwater	4/26/2018 3:31:00 PM	4/26/2018	5/16/2018
N030017-011B	MW-72BR-200-3V-Q218	Groundwater	4/26/2018 3:31:00 PM	4/26/2018	5/16/2018
N030017-011C	MW-72BR-200-3V-Q218	Groundwater	4/26/2018 3:31:00 PM	4/26/2018	5/16/2018
N030017-011D	MW-72BR-200-3V-Q218	Groundwater	4/26/2018 3:31:00 PM	4/26/2018	5/16/2018
N030017-012A	MW-47-055-Q218	Groundwater	4/26/2018 9:38:00 AM	4/26/2018	5/16/2018
N030017-012B	MW-47-055-Q218	Groundwater	4/26/2018 9:38:00 AM	4/26/2018	5/16/2018
N030017-012C	MW-47-055-Q218	Groundwater	4/26/2018 9:38:00 AM	4/26/2018	5/16/2018
N030017-013A	MW-908-Q218	Groundwater	4/26/2018 9:48:00 AM	4/26/2018	5/16/2018
N030017-013B	MW-908-Q218	Groundwater	4/26/2018 9:48:00 AM	4/26/2018	5/16/2018
N030017-013C	MW-908-Q218	Groundwater	4/26/2018 9:48:00 AM	4/26/2018	5/16/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-060-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 1:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427A**	QC Batch: **R123692**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-080-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 2:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427A**	QC Batch: **R123692**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 10:57:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180427A** QC Batch: **R123692**				PrepDate			Analyst: **LR**
Specific Conductance	6000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180427A** QC Batch: **R123692** PrepDate Analyst: **LR**							
Specific Conductance	15000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 12:02:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180427A** QC Batch: **R123692** PrepDate							Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:48:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180427A** QC Batch: **R123692** PrepDate							Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-3V-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 11:38:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427A** QC Batch: **R123692**				PrepDate			Analyst: **LR**
Specific Conductance	20000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-LF-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:20:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427A**	QC Batch: **R123692**			PrepDate			Analyst: **LR**
Specific Conductance	20000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427A**	QC Batch: **R123692**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-055-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:38:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427A**	QC Batch: **R123692**			PrepDate			Analyst: **LR**
Specific Conductance	4200	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-908-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427A**	QC Batch: **R123692**			PrepDate			Analyst: **LR**
Specific Conductance	4300	0.10	0.10		umhos/cm	1	4/27/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030017-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123692**
Client ID: **ZZZZZZ** Batch ID: **R123692** TestNo: **EPA 120.1** Analysis Date: **4/27/2018** SeqNo: **3010721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	14830.000	0.10						14780	0.338	2	

Sample ID **N030017-013BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123692**
Client ID: **ZZZZZZ** Batch ID: **R123692** TestNo: **EPA 120.1** Analysis Date: **4/27/2018** SeqNo: **3010733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	4240.000	0.10						4260	0.471	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-060-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 1:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180427A** QC Batch: **R123709**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	39	0.17	1.0		µg/L	5	4/27/2018 12:03 PM
DISSOLVED METALS BY ICP-MS **EPA 3010A**			**EPA 6020**				
RunID: **NV00922-ICP7_180512A** QC Batch: **67911**				PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	37	0.13	1.0		µg/L	1	5/12/2018 11:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-080-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 2:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180427A** QC Batch: **R123709** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/27/2018 12:22 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018**							Analyst: **CEI**
Chromium	1.5	0.13	1.0		µg/L	1	5/12/2018 12:58 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-706-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180427A**	QC Batch: **R123709**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/27/2018 04:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-707-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180427A** QC Batch: **R123709** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/27/2018 04:57 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 10:57:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180427A**	QC Batch: **R123709**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	0.85	0.033	0.20		µg/L	1	4/27/2018 12:41 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	1.3	0.13	1.0		µg/L	1	5/12/2018 01:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180427A**	QC Batch: **R123709**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/27/2018 01:00 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/12/2018 01:20 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 12:02:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180427A** QC Batch: **R123709** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/27/2018 01:56 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018** Analyst: **CEI**							
Chromium	2.0	0.13	1.0		µg/L	1	5/12/2018 01:31 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:48:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180427A**	QC Batch: **R123709**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	68	0.66	4.0		µg/L	20	4/27/2018 01:37 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	62	0.13	1.0		µg/L	1	5/12/2018 01:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-3V-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 11:38:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180427A** QC Batch: **R123709**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	8.9	0.17	1.0		µg/L	5	4/27/2018 02:15 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180512A** QC Batch: **67911**				PrepDate	**5/2/2018**		Analyst: **CEI**
Chromium	9.4	0.65	5.0		µg/L	5	5/12/2018 02:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-LF-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:20:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180427A** QC Batch: **R123709** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	4/27/2018 02:34 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**							
RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018**							Analyst: **CEI**
Chromium	ND	0.65	5.0		µg/L	5	5/12/2018 02:21 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180427A** QC Batch: **R123709**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	3.3	0.17	1.0		µg/L	5	4/27/2018 02:53 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180512A** QC Batch: **67911**				PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	2.6	0.13	1.0		µg/L	1	5/12/2018 02:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-055-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:38:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180427A** QC Batch: **R123709**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	15	0.17	1.0		µg/L	5	4/27/2018 03:59 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180512A** QC Batch: **67911**				PrepDate	**5/2/2018**		Analyst: **CEI**
Chromium	15	0.13	1.0		µg/L	1	5/12/2018 02:38 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-908-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180427A** QC Batch: **R123709**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	14	0.17	1.0		µg/L	5	4/27/2018 04:19 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180512A** QC Batch: **67911**				PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	14	0.13	1.0		µg/L	1	5/12/2018 02:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123709** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **PBW** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123709** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **LCSW** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.167	0.20	5.000	0	103	90	110				

Sample ID **N029973-021AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0	106	90	110				

Sample ID **N029973-022AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Sample ID **N030017-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	64.091	1.0	25.00	38.52	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030017-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.606	1.0	5.000	0.6215	99.7	90	110				

Sample ID **N030017-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.878	0.20	1.000	0.8526	103	90	110				

Sample ID **N030017-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.831	1.0	5.000	0	96.6	90	110				

Sample ID **N030017-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	167.618	4.0	100.0	67.94	99.7	90	110				

Sample ID **N030017-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.779	1.0	5.000	0.8265	99.0	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030017-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.807	1.0	5.000	8.878	98.6	90	110				

Sample ID **N030017-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.667	1.0	5.000	0	93.3	90	110				

Sample ID **N030017-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	8.241	1.0	5.000	3.263	99.6	90	110				

Sample ID **N030017-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	64.571	1.0	25.00	38.52	104	90	110	64.09	0.745	20	

Sample ID **N030017-005ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.887	0.20						0.8526	3.99	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030017-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**			Prep Date:			RunNo: **123709**		
Client ID: **ZZZZZZ**	Batch ID: **R123709**	TestNo: **EPA 218.6**			Analysis Date: **4/27/2018**			SeqNo: **3011173**		
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Hexavalent Chromium	39.628	1.0	25.00	14.52	100	90	110				

Sample ID **N030017-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**			Prep Date:			RunNo: **123709**			
Client ID: **ZZZZZZ**	Batch ID: **R123709**	TestNo: **EPA 218.6**			Analysis Date: **4/27/2018**			SeqNo: **3011175**			
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Hexavalent Chromium	40.401	1.0	25.00	14.42	104	90	110				

Sample ID **N030017-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**			Prep Date:			RunNo: **123709**			
Client ID: **ZZZZZZ**	Batch ID: **R123709**	TestNo: **EPA 218.6**			Analysis Date: **4/27/2018**			SeqNo: **3011177**			
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID **N030017-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**			Prep Date:			RunNo: **123709**			
Client ID: **ZZZZZZ**	Batch ID: **R123709**	TestNo: **EPA 218.6**			Analysis Date: **4/27/2018**			SeqNo: **3011183**			
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Hexavalent Chromium	1.028	0.20	1.000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-67911** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **PBW** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-67911** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **LCSW** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.197	1.0	10.00	0	102	85	115				

Sample ID **N030017-001C-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	43.552	1.0	10.00	36.84	67.1	75	125				S

Sample ID **N030017-001C-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	43.882	1.0	10.00	36.84	70.4	75	125	43.55	0.754	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 10:57:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180504D**	QC Batch: **R123845**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.97	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.058	0.032	0.050		mg/L	1	5/4/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 12:02:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180504D** QC Batch: **R123845**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.058	0.032	0.050		mg/L	1	5/4/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:48:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.50	0.032	0.050		mg/L	1	5/4/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.15	0.032	0.050		mg/L	1	5/4/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R123845** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **PBW** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R123845** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **LCSW** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	85	115				

Sample ID **N029973-009CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ZZZZZZ** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID **N029973-020CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ZZZZZZ** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.373	0.10	1.000	0.9934	138	75	125				S

Sample ID **N029973-020CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ZZZZZZ** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.245	0.10	1.000	0.9934	125	75	125	2.373	5.54	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-060-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 1:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate **5/2/2018**			Analyst: **CEI**
Arsenic	3.9	0.081	0.10		µg/L	1	5/12/2018 11:56 AM
Manganese	4.2	0.26	0.50		µg/L	1	5/12/2018 11:56 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-080-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 2:46:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Arsenic	5.5	0.081	0.10		µg/L	1	5/12/2018 12:58 PM
Manganese	5.2	0.26	0.50		µg/L	1	5/12/2018 12:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 10:57:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate	**5/2/2018**		Analyst: **CEI**
Arsenic	1.5	0.081	0.10		µg/L	1	5/12/2018 01:09 PM
Manganese	14	0.26	0.50		µg/L	1	5/12/2018 01:09 PM
Molybdenum	18	0.21	0.50		µg/L	1	5/12/2018 01:09 PM
Selenium	0.78	0.36	0.50		µg/L	1	5/15/2018 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_D-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 12:51:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-006		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	13	0.081	0.10		µg/L	1	5/12/2018 01:20 PM
Manganese	110	0.26	0.50		µg/L	1	5/12/2018 01:20 PM
Molybdenum	75	1.1	2.5		µg/L	5	5/12/2018 01:25 PM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 01:25 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-LF_S-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 12:02:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-007		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	14	0.081	0.10		µg/L	1	5/12/2018 01:31 PM
Manganese	34	0.26	0.50		µg/L	1	5/12/2018 01:31 PM
Molybdenum	73	1.1	2.5		µg/L	5	5/12/2018 01:37 PM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 01:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:48:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate	**5/2/2018**		Analyst: **CEI**
Arsenic	11	0.081	0.10		µg/L	1	5/12/2018 01:42 PM
Manganese	69	0.26	0.50		µg/L	1	5/12/2018 01:42 PM
Molybdenum	75	1.1	2.5		µg/L	5	5/12/2018 01:59 PM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 01:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-3V-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 11:38:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Manganese	45	1.3	2.5		µg/L	5	5/12/2018 02:10 PM
Molybdenum	59	1.1	2.5		µg/L	5	5/12/2018 02:10 PM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 02:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-04-LF-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:20:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A** QC Batch: **67911**				PrepDate **5/2/2018**			Analyst: **CEI**
Manganese	160	1.3	2.5		µg/L	5	5/12/2018 02:21 PM
Molybdenum	68	1.1	2.5		µg/L	5	5/12/2018 02:21 PM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 02:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-3V-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 3:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**				PrepDate **5/2/2018**		Analyst: **CEI**
Arsenic	14	0.081	0.10		µg/L	1	5/12/2018 02:27 PM
Manganese	57	0.26	0.50		µg/L	1	5/12/2018 02:27 PM
Molybdenum	67	1.1	2.5		µg/L	5	5/12/2018 02:33 PM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 02:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-055-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:38:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Arsenic	1.0	0.081	0.10		µg/L	1	5/12/2018 02:38 PM
Manganese	ND	0.26	0.50		µg/L	1	5/12/2018 02:38 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *16-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-908-Q218
Lab Order:	N030017	**Collection Date:**	4/26/2018 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030017-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate	**5/2/2018**		Analyst: **CEI**
Arsenic	0.98	0.081	0.10		µg/L	1	5/12/2018 02:49 PM
Manganese	ND	0.26	0.50		µg/L	1	5/12/2018 02:49 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-67911** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **PBW** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-67911** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **LCSW** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.387	0.10	10.00	0	104	85	115				
Manganese	103.929	0.50	100.0	0	104	85	115				
Molybdenum	9.983	0.50	10.00	0	99.8	85	115				
Selenium	10.203	0.50	10.00	0	102	85	115				

Sample ID **N030017-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.135	0.10	10.00	3.941	102	75	125				
Manganese	95.296	0.50	100.0	4.203	91.1	75	125				

Sample ID **N030017-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	32.217	2.5	10.00	21.11	111	75	125				
Selenium	15.916	2.5	10.00	5.156	108	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030017-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.014	0.10	10.00	3.941	101	75	125	14.14	0.860	20	
Manganese	95.369	0.50	100.0	4.203	91.2	75	125	95.30	0.0765	20	

Sample ID **N030017-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	32.602	2.5	10.00	21.11	115	75	125	32.22	1.19	20	
Selenium	14.161	2.5	10.00	5.156	90.0	75	125	15.92	11.7	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 2

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: [signature] Date: 4/26/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	
Project Name: PG&E Topock - GMP	Signature: [signature] Date: 4/26/2018	
Project Number: RC000753.0801		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		✓
6. Method of Cooling: Ice		
Sample Temp: 2.9°/3.5°C		
Courier:		
Tracking No.:		

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Analyses / containers:
1. Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly
2. Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly
3. Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly
4. Specific Conductance (EPA 120.1) — 1 liter poly
5. Total Dissolved Solids (SM92540) — 1 liter poly
6. Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly
7. Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 — 125 mL poly
8. Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 — 500 mL poly
9. Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 — 500 mL poly
10. Dissolved metals (SW6010B FF) (Cr); HNO3 — 500 mL poly
11. Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 — 500 mL poly
12. Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 — 500 mL poly

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	1	2	3	4	5	6	7	8	9	10	11	12	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030017-01	MW-23-060-Q218	4/26/2018	13:51		X			X							X		E	3	P	BN	
2	-02	MW-23-080-Q218	4/26/2018	14:46		X			X							X		E	3	P	BN	
3	-03	MW-706-Q218	4/26/2018	15:40		X												E	1	P	B	
4	-04	MW-707-Q218	4/26/2018	16:00		X												E	1	P	B	
5	-05	MW-63-065-Q218	4/26/2018	10:57		X			X			X	X					E	4	P	BNS	
6	-06	MW-72BR-200-LF_D-Q218	4/26/2018	12:51		X			X			X	X					E	4	P	BNS	
7	-07	MW-72BR-200-LF_S-Q218	4/26/2018	12:02		X			X			X	X					E	4	P	BNS	
8	-08	MW-72-080-Q218	4/26/2018	15:48		X			X			X	X					E	4	P	BNS	
9	-09	TW-04-3V-Q218	4/26/2018	11:38			X		X								X	E	4	P	BN	
10	-10	TW-04-LF-Q218	4/26/2018	9:20			X		X								X	E	4	P	BN	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
[signature]	4/26/18 1700	[signature]	4/26/18 1700
[signature]	4/26/18 1855	[signature]	4/26/18 1855

Turn Around Time (TAT)
- A < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn$(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client:	Arcadis
Address:	1410 Rocky Ridge Dr # 330
Address:	Roseville, CA 95661
Phone:	916-786-3302
Fax:	
Submitted By:	Gantt Jeffers
Title:	Geologist II
Signature:	[signature]
Date:	4/26/2018
Project Name:	PG&E Topock - GMP
Project Number:	RC000753.0801

I hereby authorize ASSET Labs to perform the tests indicated below.

Report to:	Dan Bush
Company:	Arcadis
Email:	dan.bush@arcadis.com daniel.moore@critigen.com
Address:	1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone:	916-786-3302
Fax:	
Sampled By:	Jason Mahn
Signature:	[signature]
Date:	4/26/2018

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Bill to:	Marty Bloes
Address:	
Address:	
Email to:	mbloes@pivox.com
P.O.#	
Phone:	949-727-1400, ext 200
Fax:	

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling:	1	

Ice

Sample Temp: 2.9°C / 3.5°C

Courier:

Tracking No.:

Matrix:

Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate: H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030017-11	MW-72BR-200-3V-Q218	4/26/2018	15:31		X			X			X	X					E	4	P	BNS	
2	-12	MW-47-055-Q218	4/26/2018	9:38		X			X							X		E	3	P	BN	
3	-13	MW-908-Q218	4/26/2018	9:48		X			X							X		E	3	P	BN	
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
[signature]	4/26/18 1700	[signature]	4/26/18 1700
[signature]	4/26/18 1855	[signature]	4/26/18 1855

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
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9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 4/26/2018 — Workorder: N030017

Rep sample Temp (Deg C): 2.9/3.5 — IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA — Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

	Yes	No	Not Present / NA
1. Shipping container/cooler in good condition?	☑	☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	☐	☐	Not Present ☑
3. Custody seals intact on sample bottles?	☐	☐	Not Present ☑
4. Chain of custody present?	☑	☐	
5. Sampler's name present in COC?	☑	☐	
6. Chain of custody signed when relinquished and received?	☑	☐	
7. Chain of custody agrees with sample labels?	☑	☐	
8. Samples in proper container/bottle?	☑	☐	
9. Sample containers intact?	☑	☐	
10. Sufficient sample volume for indicated test?	☑	☐	
11. All samples received within holding time?	☑	☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	☑	☐	NA ☐
13. Water - VOA vials have zero headspace?	☐	☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	☑	☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	☑	☐	NA ☐
16. Were there Non-Conformance issues at login?	☐	☐	NA ☑
Was Client notified?	☐	☐	NA ☑

Comments:

Checklist Completed By: YR YR 5/1/2018

Reviewed By: HL 05/02/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/1/2018 6:08 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>, Kalib Sumter <Kalib.Sumter@critigen.com>, Dan Moore <Daniel.Moore@critigen.com>

Hi Yoandra,
Method 6020 is acceptable.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, April 30, 2018 8:48 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)

Hi Laura,

Please kindly check the attached COCs. Some samples are requested to be analyzed for As, Cr, Mn, Mo and Se by 6010.

Please kindly confirm if they can be analyzed by 6020 instead of 6010, as we have been doing before.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

ASSET Laboratories

WORK ORDER Summary

27-Apr-18

WorkOrder: N030017

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030017-001A	MW-23-060-Q218	4/26/2018 1:51:00 PM	5/10/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-001B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-001C			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-002A	MW-23-080-Q218	4/26/2018 2:46:00 PM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-002B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-002C			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-003A	MW-706-Q218	4/26/2018 3:40:00 PM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-004A	MW-707-Q218	4/26/2018 4:00:00 PM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-005A	MW-63-065-Q218	4/26/2018 10:57:00 AM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-005B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-005C			5/10/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030017-005D			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-006A	MW-72BR-200-LF_D-Q218	4/26/2018 12:51:00 PM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-006B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-006C			5/10/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-18

WorkOrder: N030017

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030017-006D	MW-72BR-200-LF_D-Q218	4/26/2018 12:51:00 PM	5/10/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-007A	MW-72BR-200-LF_S-Q218	4/26/2018 12:02:00 PM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-007B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-007C			5/10/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030017-007D			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-008A	MW-72-080-Q218	4/26/2018 3:48:00 PM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-008B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-008C			5/10/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030017-008D			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-009A	TW-04-3V-Q218	4/26/2018 11:38:00 AM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-009B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-009C			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-010A	TW-04-LF-Q218	4/26/2018 9:20:00 AM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-18

WorkOrder: N030017

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030017-010B	TW-04-LF-Q218	4/26/2018 9:20:00 AM	5/10/2018	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-010C			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-011A	MW-72BR-200-3V-Q218	4/26/2018 3:31:00 PM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-011B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-011C			5/10/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030017-011D			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-012A	MW-47-055-Q218	4/26/2018 9:38:00 AM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-012B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-012C			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-013A	MW-908-Q218	4/26/2018 9:48:00 AM	5/10/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030017-013B			5/10/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030017-013C			5/10/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030017-014A	FOLDER	5/10/2018	5/10/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/10/2018		Folder	Folder	☐	☐	☐	LAB

WORK ORDER Summary

27-Apr-18

WorkOrder: N030017

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/26/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030017-014A	FOLDER	5/10/2018	5/10/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N030017

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)
ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123692 **Analyst:** LSR

ASSET #: N030017 **Date Analyzed:** 4/27/2018

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 5/1/2018

2nd Level Reviewer [illegible] 5/9/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 4/26/18 1420

Analyst: LSR

CONT'D

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV-180108A	9.78 @ 25.2°C	% Rec: (90-110%)
1412	180131A	1423 @ 25.4°C	
9987	180108B	9980 @ 25.4°C	
99601	180201A	~~103300~~ 99400 @ 25.5°C LSR	

	Sample ID	Matrix	Reading	Comments
1	N030006-013B	H_2O	1019 @25.5°C	
2	14B		1025 @25.5°C	
3	16B		6080 @25.4°C	
4	18B		8070 @25.5°C	
5	18B DUP		8090 @25.7°C	
6				
7				
8				
9	1413 uS/cm	CINV-171121C	1453 @25.5°C	
10	10000	180108C	10380 @25.5°C	2%
Dup	99672	171215A	101900 @25.5°C	Accept: 10% water, ~~20% soil~~ 4/26/18 LSR
	Std Chk:			% Rec: (90-110%)

Date: 4/27/18 1100

Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV-180108A	9.75 @24.5°C	% Rec: (90-110%)
1412	180131A	1408 @24.8°C	
9987	180108B	9960 @24.7°C	
99601	180201A	99300 @24.8°C	

	Sample ID	Matrix	Reading	Comments
1	N030017-001B	H_2O	14780 @22.3°C	
2	1B DUP		14830 @22.0°C	STD CHK:
3	2B		15160 @22.1°C	1413 - CINV 171121C
4	5B		5960 @21.8°C	= 1445 @24.0°C
5	6B		14790 @22.2°C	10000 - CINV 180108C
6	7B		14930 @21.6°C	= 10250 @24.2°C
7	8B		14880 @21.7°C	99672 - CINV 171215A
8	9B		19560 @21.4°C	= 101600 @24.2°C
9	10B		19890 @21.5°C	
10	11B		13820 @21.1°C	2% 4/27/18 LSR
Dup	12B		4220 @21.6°C	Accept: 10% water, ~~20% soil~~
	Std Chk:			% Rec: (90-110%)

Julia Ramit 5/1/2018

Logbook # 6

Conductivity Logbook

Date: 4/27/18 1100
Analyst: LR

CONT'D

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV-180108A	9.75 @24.5°C	% Rec: (90-110%)
1412	180131A	1408 @24.8°C	
9987	180108B	9960 @24.7°C	
99601	180201A	99300 @24.8°C	

	Sample ID	Matrix	Reading	Comments
1	N030017-013B	H_2O	4260 @22.2°C	
2	13BDUP		4240 @21.8°C	
3				
4				
5				
6			Julia Ramit	5/1/2018
7				
8				
9	1413 uS/cm	CINV-171212C	1451 @24.2°C	2% 4/27/18 LR
10	10000	180108C	10240 @24.7°C	Accept: ~~10% water, 20% soil~~
Dup	99672	171215A	101900 @24.8°C	% Rec: (90-110%)
Std Chk:				

Date: 4/27/18 1600
Analyst: LR

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV-180108A	9.75 @24.5°C	% Rec: (90-110%)
1412	180131A	1408 @24.8°C	
9987	180108B	9960 @24.7°C	
99601	180201A	99300 @24.8°C	

	Sample ID	Matrix	Reading	Comments
1	N030043-001J	H_2O	6130 @24.1°C	
2	1JB		6140 @24.0°C	
3	N030044-001B		5870 @24.4°C	STD CHK:
4	2B		10130 @23.7°C	1413 - CINV171212C
5	3B		5020 @23.1°C	= 1441 @26.4°C
6	4B		19560 @22.8°C	10000 - CINV180108C
7	4B DUP		19530 @22.5°C	= 10310 @25.4°C
8	5B		2050 @22.5°C	99672 - CINV171215A
9	6B		1764 @22.4°C	= 98700 @25.7°C
10	7B		2070 @21.8°C	2% 4/27/18 LR
Dup	8B		10900 @21.9°C	Accept: 10% ~~water, 20% soil~~
NR ~~Std Chk:~~	9B		3220 @22.5°C	% Rec: (90-110%)

EPA 218.6

IC ARCUS
REV 2.0
011416

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R123709
ASSET #: N030017

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 4/27/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ___________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

Dilution was necessary in N030017-002A/006A/007A/009A/010A/011A due to matrix interference.

with confirmation for samples N030017-002, -007 and -010

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 5/6/2018

2nd Level Reviewer Nancy 5/7/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6} ,µg/L = A * DF

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N030017-001A** , the concentration in µg/L is calculated as follows:

Cr^{+6} ,µg/L = 7.7048 * 5

Cr^{+6} ,µg/L = 38.5240

Reporting results in two significant figures,

Cr^{+6} ,µg/L = 39

rba 5/6/2018

ANALYSIS RUN LOG

INJECTION LOG: 180402B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	ICV	ICV	1	Hexavalent Chromium	04/02/18 1:50 PM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/02/18 2:01 PM	Reported
13	ICB	ICB	1	Hexavalent Chromium	04/02/18 2:18 PM	Reported
14	MB-R123054	MBLK	1	Hexavalent Chromium	04/02/18 2:30 PM	Reported
15	LCS-R123054	LCS	1	Hexavalent Chromium	04/02/18 2:39 PM	Reported
16	N029480-001A	SAMP	1	Hexavalent Chromium	04/02/18 2:49 PM	Not Reported
17	N029443-001G	SAMP	1	Hexavalent Chromium	04/02/18 2:58 PM	Reported
18	N029444-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:08 PM	Reported
19	N029445-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:17 PM	Reported
20	N029446-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:27 PM	Reported
21	N029480-001A	SAMP	5	Hexavalent Chromium	04/02/18 3:36 PM	Reported
22	N029480-002A	SAMP	5	Hexavalent Chromium	04/02/18 3:45 PM	Reported
23	N029480-001ADUP	DUP	5	Hexavalent Chromium	04/02/18 3:55 PM	Reported
24	CCV-1	CCV1	1	Hexavalent Chromium	04/02/18 4:04 PM	Reported
25	CCB-1	CCB	1	Hexavalent Chromium	04/02/18 4:14 PM	Reported
26	N029480-001AMS	MS	5	Hexavalent Chromium	04/02/18 4:23 PM	Reported
27	N029480-001AMSD	MSD	5	Hexavalent Chromium	04/02/18 4:33 PM	Reported
28	CCV-2	CCV	1	Hexavalent Chromium	04/02/18 4:42 PM	Reported
29	CCB-2	CCB	1	Hexavalent Chromium	04/02/18 4:52 PM	Reported

rba 4/3/2018

Injection Log Summary

Sequence Details

Name:	**IC-07_180402B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**02/Apr/18 17:22:28**
No. of Injections:	**32**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	ICV,ICV,1,	11	1000	Unknown		04/02/2018 13:50	Finished	ICV @5ppb, IWST-180129B
12	PQL@0.2ppb,CCV2,1	12	1000	Unknown		04/02/2018 14:01	Finished	PQL @ 0.2ppb
13	ICB,ICB,1,	13	1000	Unknown		04/02/2018 14:18	Finished	ICB R180329A
14	MB-H2O,MBLK,1,	14	1000	Unknown		04/02/2018 14:30	Finished	MB R180302A
15	LCS-H2O,LCS,1,	15	1000	Unknown		04/02/2018 14:39	Finished	LCS, IWST-180129B
16	N029480-001A,SAMF	16	1000	Unknown		04/02/2018 14:49	Finished	SAMP,10mL
17	N029443-001G,SAMF	17	1000	Unknown		04/02/2018 14:58	Finished	SAMP,10mL
18	N029444-001G,SAMF	18	1000	Unknown		04/02/2018 15:08	Finished	SAMP,10mL
19	N029445-001G,SAMF	19	1000	Unknown		04/02/2018 15:17	Finished	SAMP,10mL
20	N029446-001G,SAMF	20	1000	Unknown		04/02/2018 15:27	Finished	SAMP,10mL
21	N029480-001A,SAMF	21	1000	Unknown		04/02/2018 15:36	Finished	SAMP,2>10mL
22	N029480-002A,SAMF	22	1000	Unknown		04/02/2018 15:45	Finished	SAMP,2>10mL
23	N029480-001ADUP,D	23	1000	Unknown		04/02/2018 15:55	Finished	DUP,2>10mL
24	CCV-1,CCV1,1,	24	1000	Unknown		04/02/2018 16:04	Finished	CCV @10ppb, IWST-180129A
25	CCB-1,CCB,1,	25	1000	Unknown		04/02/2018 16:14	Finished	CCB R180302A
26	N029480-001AMS,MS	26	1000	Unknown		04/02/2018 16:23	Finished	SAMP,10mL
27	N029480-001AMSD,M	27	1000	Unknown		04/02/2018 16:33	Finished	MS (1ppb), IWST-180129B,1>1
28	CCV-2,CCV,1,	28	1000	Unknown		04/02/2018 16:42	Finished	CCV @5ppb, IWST-180129A
29	CCB-2,CCB,1,	29	1000	Unknown		04/02/2018 16:52	Finished	CCB R180302A
30	SHUTDOWN	30	1000	Unknown		04/02/2018 17:01	Finished	
31	Eluent: R180402B	31	1000	Unknown		n.a.	Finished	Eluent
32	PCR: R180402C	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 4/3/2018

INJECTION LOG: 180427A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	04/27/18 8:33 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	04/27/18 8:43 AM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	04/27/18 8:53 AM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/27/18 9:02 AM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	04/27/18 9:12 AM	Reported
16	MB-R123709	MBLK	1	Hexavalent Chromium	04/27/18 9:21 AM	Reported
17	LCS-R123709	LCS	1	Hexavalent Chromium	04/27/18 9:31 AM	Reported
18	N029973-021A	SAMP	1	Hexavalent Chromium	04/27/18 9:40 AM	Reported
19	N029973-021AMS	MS	1	Hexavalent Chromium	04/27/18 9:50 AM	Reported
20	N029973-022A	SAMP	1	Hexavalent Chromium	04/27/18 9:59 AM	Reported
21	N029973-022AMS	MS	1	Hexavalent Chromium	04/27/18 10:38 AM	Reported
22	N029819-003A	SAMP	1	Hexavalent Chromium	04/27/18 10:47 AM	Not Reported
23	N029819-003AMS	MS	1	Hexavalent Chromium	04/27/18 10:57 AM	Not Reported
24	N029820-001A	SAMP	1	Hexavalent Chromium	04/27/18 11:06 AM	Not Reported
25	N029820-001AMS	MS	1	Hexavalent Chromium	04/27/18 11:15 AM	Not Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	04/27/18 11:25 AM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	04/27/18 11:34 AM	Reported
28	N029820-002A	SAMP	1	Hexavalent Chromium	04/27/18 11:44 AM	Not Reported
29	N029820-002AMS	MS	1	Hexavalent Chromium	04/27/18 11:53 AM	Not Reported
30	N030017-001A	SAMP	5	Hexavalent Chromium	04/27/18 12:03 PM	Reported
31	N030017-001AMS	MS	5	Hexavalent Chromium	04/27/18 12:12 PM	Reported
32	N030017-002A	SAMP	5	Hexavalent Chromium	04/27/18 12:22 PM	Reported
33	N030017-002AMS	MS	5	Hexavalent Chromium	04/27/18 12:31 PM	Reported
34	N030017-005A	SAMP	1	Hexavalent Chromium	04/27/18 12:41 PM	Reported
35	N030017-005AMS	MS	1	Hexavalent Chromium	04/27/18 12:50 PM	Reported
36	N030017-006A	SAMP	5	Hexavalent Chromium	04/27/18 1:00 PM	Reported
37	N030017-006AMS	MS	5	Hexavalent Chromium	04/27/18 1:09 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	04/27/18 1:18 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	04/27/18 1:28 PM	Reported
40	N030017-008A	SAMP	20	Hexavalent Chromium	04/27/18 1:37 PM	Reported
41	N030017-008AMS	MS	20	Hexavalent Chromium	04/27/18 1:47 PM	Reported
42	N030017-007A	SAMP	5	Hexavalent Chromium	04/27/18 1:56 PM	Reported

INJECTION LOG: 180427A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030017-007AMS	MS	5	Hexavalent Chromium	04/27/18 2:06 PM	Reported
44	N030017-009A	SAMP	5	Hexavalent Chromium	04/27/18 2:15 PM	Reported
45	N030017-009AMS	MS	5	Hexavalent Chromium	04/27/18 2:25 PM	Reported
46	N030017-010A	SAMP	5	Hexavalent Chromium	04/27/18 2:34 PM	Reported
47	N030017-010AMS	MS	5	Hexavalent Chromium	04/27/18 2:44 PM	Reported
48	N030017-011A	SAMP	5	Hexavalent Chromium	04/27/18 2:53 PM	Reported
49	N030017-011AMS	MS	5	Hexavalent Chromium	04/27/18 3:03 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	04/27/18 3:12 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	04/27/18 3:21 PM	Reported
52	N030017-001AMSD	MSD	5	Hexavalent Chromium	04/27/18 3:31 PM	Reported
53	N030017-005ADUP	DUP	1	Hexavalent Chromium	04/27/18 3:40 PM	Reported
54	N030017-012A	SAMP	5	Hexavalent Chromium	04/27/18 3:59 PM	Reported
55	N030017-012AMS	MS	5	Hexavalent Chromium	04/27/18 4:10 PM	Reported
56	N030017-013A	SAMP	5	Hexavalent Chromium	04/27/18 4:19 PM	Reported
57	N030017-013AMS	MS	5	Hexavalent Chromium	04/27/18 4:29 PM	Reported
58	N030017-003A	SAMP	1	Hexavalent Chromium	04/27/18 4:38 PM	Reported
59	N030017-003AMS	MS	1	Hexavalent Chromium	04/27/18 4:48 PM	Reported
60	N030017-004A	SAMP	1	Hexavalent Chromium	04/27/18 4:57 PM	Reported
61	N030017-004AMS	MS	1	Hexavalent Chromium	04/27/18 5:07 PM	Not Reported
62	CCV-5	CCV	1	Hexavalent Chromium	04/27/18 5:16 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	04/27/18 5:26 PM	Reported
64	N030017-002A	SAMP	1	Hexavalent Chromium	04/27/18 5:35 PM	Not Reported
65	N030017-002AMS	MS	1	Hexavalent Chromium	04/27/18 5:45 PM	Not Reported
66	N030017-006A	SAMP	1	Hexavalent Chromium	04/27/18 5:54 PM	Not Reported
67	N030017-006AMS	MS	1	Hexavalent Chromium	04/27/18 6:04 PM	Not Reported
68	N030017-007A	SAMP	1	Hexavalent Chromium	04/27/18 6:13 PM	Not Reported
69	N030017-007AMS	MS	1	Hexavalent Chromium	04/27/18 6:23 PM	Not Reported
70	N030017-009A	SAMP	1	Hexavalent Chromium	04/27/18 6:32 PM	Not Reported
71	N030017-009AMS	MS	1	Hexavalent Chromium	04/27/18 6:41 PM	Not Reported
72	N030017-010A	SAMP	1	Hexavalent Chromium	04/27/18 6:51 PM	Not Reported
73	N030017-010AMS	MS	1	Hexavalent Chromium	04/27/18 7:00 PM	Not Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	04/27/18 7:10 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	04/27/18 7:19 PM	Reported
76	N030017-011A	SAMP	1	Hexavalent Chromium	04/27/18 7:29 PM	Not Reported
77	N030017-011AMS	MS	1	Hexavalent Chromium	04/27/18 7:38 PM	Not Reported
78	N029858-001A	SAMP	1	Hexavalent Chromium	04/27/18 7:48 PM	Not Reported
79	N029858-001AMS	MS	1	Hexavalent Chromium	04/27/18 7:57 PM	Not Reported
80	N030017-004AMS	MS	1	Hexavalent Chromium	04/27/18 8:07 PM	Reported
81	CCV-7	CCV	1	Hexavalent Chromium	04/27/18 8:16 PM	Reported
82	CCB-7	CCB	1	Hexavalent Chromium	04/27/18 8:26 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180427A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**27/Apr/18 20:56:21**
No. of Injections:	**85**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	BLANK	1	1000	Unknown		04/27/2018 08:33	Finished	BLANK
12	BLANK	2	1000	Unknown		04/27/2018 08:43	Finished	BLANK
13	CCV-1,CCV,1,	3	1000	Unknown		04/27/2018 08:53	Finished	CCV @5ppb, IWST-180129A
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		04/27/2018 09:02	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		04/27/2018 09:12	Finished	CCB R180418A
16	MB-H2O,MBLK,1,	6	1000	Unknown		04/27/2018 09:21	Finished	MB R180418A
17	LCS-H2O,LCS,1,	7	1000	Unknown		04/27/2018 09:31	Finished	LCS, IWST-180129B
18	N029973-021A,SAMP	8	1000	Unknown		04/27/2018 09:40	Finished	SAMP,10mL
19	N029973-021AMS,MS	9	1000	Unknown		04/27/2018 09:50	Finished	MS (1ppb), IWST-180129B,10
20	N029973-022A,SAMP	10	1000	Unknown		04/27/2018 09:59	Finished	SAMP,10mL
21	N029973-022AMS,MS	11	1000	Unknown		04/27/2018 10:38	Finished	MS (1ppb), IWST-180129B,10
22	N029819-003A,SAMP	12	1000	Unknown		04/27/2018 10:47	Finished	SAMP,10mL
23	N029819-003AMS,MS	13	1000	Unknown		04/27/2018 10:57	Finished	MS (1ppb), IWST-180129B,10
24	N029820-001A,SAMP	14	1000	Unknown		04/27/2018 11:06	Finished	SAMP,10mL
25	N029820-001AMS,MS	15	1000	Unknown		04/27/2018 11:15	Finished	MS (1ppb), IWST-180129B,10
26	CCV-2,CCV1,1,	16	1000	Unknown		04/27/2018 11:25	Finished	CCV @10ppb, IWST-180129A
27	CCB-2,CCB,1,	17	1000	Unknown		04/27/2018 11:34	Finished	CCB R180418A
28	N029820-002A,SAMP	18	1000	Unknown		04/27/2018 11:44	Finished	SAMP,10mL
29	N029820-002AMS,MS	19	1000	Unknown		04/27/2018 11:53	Finished	MS (1ppb), IWST-180129B,10
30	N030017-001A,SAMP	20	1000	Unknown		04/27/2018 12:03	Finished	SAMP,2>10mL
31	N030017-001AMS,MS	21	1000	Unknown		04/27/2018 12:12	Finished	MS (5ppb), IWST-180129B,2>1
32	N030017-002A,SAMP	22	1000	Unknown		04/27/2018 12:22	Finished	SAMP,2>10mL
33	N030017-002AMS,MS	23	1000	Unknown		04/27/2018 12:31	Finished	MS (1ppb), IWST-180129B,2>1
34	N030017-005A,SAMP	24	1000	Unknown		04/27/2018 12:41	Finished	SAMP,10mL
35	N030017-005AMS,MS	25	1000	Unknown		04/27/2018 12:50	Finished	MS (1ppb), IWST-180129B,10
36	N030017-006A,SAMP	26	1000	Unknown		04/27/2018 13:00	Finished	SAMP,2>10mL
37	N030017-006AMS,MS	27	1000	Unknown		04/27/2018 13:09	Finished	MS (1ppb), IWST-180129B,2>1
38	CCV-3,CCV,1,	28	1000	Unknown		04/27/2018 13:18	Finished	CCV @5ppb, IWST-180129A
39	CCB-3,CCB,1,	29	1000	Unknown		04/27/2018 13:28	Finished	CCB R180418A
40	N030017-008A,SAMP	30	1000	Unknown		04/27/2018 13:37	Finished	SAMP,0.5>10mL
41	N030017-008AMS,MS	31	1000	Unknown		04/27/2018 13:47	Finished	MS (5ppb), IWST-180129B,0.5
42	N030017-007A,SAMP	32	1000	Unknown		04/27/2018 13:56	Finished	SAMP,2>10mL
43	N030017-007AMS,MS	33	1000	Unknown		04/27/2018 14:06	Finished	MS (1ppb), IWST-180129B,2>1
44	N030017-009A,SAMP	34	1000	Unknown		04/27/2018 14:15	Finished	SAMP,2>10mL
45	N030017-009AMS,MS	35	1000	Unknown		04/27/2018 14:25	Finished	MS (1ppb), IWST-180129B,2>1
46	N030017-010A,SAMP	36	1000	Unknown		04/27/2018 14:34	Finished	SAMP,2>10mL
47	N030017-010AMS,MS	37	1000	Unknown		04/27/2018 14:44	Finished	MS (1ppb), IWST-180129B,2>1
48	N030017-011A,SAMP	38	1000	Unknown		04/27/2018 14:53	Finished	SAMP,2>10mL
49	N030017-011AMS,MS	39	1000	Unknown		04/27/2018 15:03	Finished	MS (1ppb), IWST-180129B,2>1
50	CCV-4,CCV1,1,	40	1000	Unknown		04/27/2018 15:12	Finished	CCV @10ppb, IWST-180129A
51	CCB-4,CCB,1,	41	1000	Unknown		04/27/2018 15:21	Finished	CCB R180418A
52	N030017-001AMSD,M	42	1000	Unknown		04/27/2018 15:31	Finished	MSD (5ppb), IWST-180129B,2
53	N030017-005ADUP,D	43	1000	Unknown		04/27/2018 15:40	Finished	DUP,10mL
54	N030017-012A,SAMP	1	1000	Unknown		04/27/2018 15:59	Finished	SAMP,2>10mL
55	N030017-012AMS,MS	2	1000	Unknown		04/27/2018 16:10	Finished	MS (5ppb), IWST-180129B,2>1
56	N030017-013A,SAMP	3	1000	Unknown		04/27/2018 16:19	Finished	SAMP,10mL
57	N030017-013AMS,MS	4	1000	Unknown		04/27/2018 16:29	Finished	MS (5ppb), IWST-180129B,10
58	N030017-003A,SAMP	5	1000	Unknown		04/27/2018 16:38	Finished	SAMP,10mL
59	N030017-003AMS,MS	6	1000	Unknown		04/27/2018 16:48	Finished	MS (1ppb), IWST-180129B,10
60	N030017-004A,SAMP	7	1000	Unknown		04/27/2018 16:57	Finished	SAMP,10mL

61	N030017-004AMS,MS	8	1000	Unknown		04/27/2018 17:07	Finished	MS (1ppb), IWST-180129B,10
62	CCV-5,CCV,1,	9	1000	Unknown		04/27/2018 17:16	Finished	CCV @5ppb, IWST-180129A
63	CCB-5,CCB,1,	10	1000	Unknown		04/27/2018 17:26	Finished	CCB R180418A
64	N030017-002A,SAMP	11	1000	Unknown		04/27/2018 17:35	Finished	SAMP,10mL
65	N030017-002AMS,MS	12	1000	Unknown		04/27/2018 17:45	Finished	MS (1ppb), IWST-180129B,10
66	N030017-006A,SAMP	13	1000	Unknown		04/27/2018 17:54	Finished	SAMP,10mL
67	N030017-006AMS,MS	14	1000	Unknown		04/27/2018 18:04	Finished	MS (1ppb), IWST-180129B,10
68	N030017-007A,SAMP	15	1000	Unknown		04/27/2018 18:13	Finished	SAMP,10mL
69	N030017-007AMS,MS	16	1000	Unknown		04/27/2018 18:23	Finished	MS (1ppb), IWST-180129B,10
70	N030017-009A,SAMP	17	1000	Unknown		04/27/2018 18:32	Finished	SAMP,10mL
71	N030017-009AMS,MS	18	1000	Unknown		04/27/2018 18:41	Finished	MS (1ppb), IWST-180129B,10
72	N030017-010A,SAMP	19	1000	Unknown		04/27/2018 18:51	Finished	SAMP,10mL
73	N030017-010AMS,MS	20	1000	Unknown		04/27/2018 19:00	Finished	MS (1ppb), IWST-180129B,10
74	CCV-6,CCV1,1,	21	1000	Unknown		04/27/2018 19:10	Finished	CCV @10ppb, IWST-180129A
75	CCB-6,CCB,1,	22	1000	Unknown		04/27/2018 19:19	Finished	CCB R180418A
76	N030017-011A,SAMP	23	1000	Unknown		04/27/2018 19:29	Finished	SAMP,10mL
77	N030017-011AMS,MS	24	1000	Unknown		04/27/2018 19:38	Finished	MS (1ppb), IWST-180129B,10
78	N029858-001A,SAMP	25	1000	Unknown		04/27/2018 19:48	Finished	SAMP,10mL
79	N029858-001AMS,MS	26	1000	Unknown		04/27/2018 19:57	Finished	MS (1ppb), IWST-180129B,10
80	N030017-004AMS,MS	27	1000	Unknown		04/27/2018 20:07	Finished	MS (1ppb), IWST-180129B,10
81	CCV-7,CCV,1,	28	1000	Unknown		04/27/2018 20:16	Finished	CCV @5ppb, IWST-180129A
82	CCB-7,CCB,1,	29	1000	Unknown		04/27/2018 20:26	Finished	CCB R180418A
83	SHUTDOWN	30	1000	Unknown		04/27/2018 20:35	Finished	
84	Eluent: R180426A	31	1000	Unknown		n.a.	Finished	Eluent
85	PCR: R180426B	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 4/27/18
Time Prepared: 0902H
Prepared By: NBA

Slope: 97.47
pH 4: 4.02 @ 25.0°C
7: 7.01 @ 25.0°C
10: 10.00 @ 25.0°C
LCS: 7.02 @ 25.0°C

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: N1804 26A
NH4OH + NH4SO4 buffer: N1804 18A

6N NaOH: N171229A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030017-001A	9.62	-	~250 ml	~250 ml		
2)	2A	9.66	-				
3)	3A	9.64	-				
4)	4A	9.56	-				
5)	5A	9.23	9.32			+2 drops NaOH	
6)	6A	9.56	-				
7)	7A	9.53	-				
8)	8A	9.56	-				
9)	9A	9.56	-				1/2
10)	9A	9.53	-				2/2
11)	10A	9.58	-				1/2
12)	10A	9.56	-				2/2
13)	11A	9.57	-				
14)	12A	9.54	-				
15)	13A	9.54	-				

Sample Preparation

Date Prepared: 4/30/18
Time Prepared: 1045H
Prepared By: NBA

Slope: 97.82
pH 4: 4.03 @ 25.0°C
7: 7.01 @ 25.0°C
10: 10.02 @ 25.0°C
LCS: 7.01 @ 25.0°C

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: N1804 30A
NH4OH + NH4SO4 buffer: N1804 18A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030044-001A	9.31	-	~250 ml	~250 ml		
2)	2A	9.34	-				
3)	3A	9.43	-				
4)	4A	9.44	-				
5)	5A	9.38	-				
6)	6A	9.41	-				
7)	7A	9.30	-				
8)	8A	9.31	-				
9)	9A	9.41	-				
10)	10A	9.60	-				
11)	11A	9.63	-				
12)							
13)							
14)							
15)							

Logbook No. 14

nba 5/6/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/2/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0611	0.2744	1.2772	2.5376	3.7905	5.0743	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ICV** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **3011134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.068	0.20	5.000	0	101	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **3011135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.240	0.20	0.2000	0	120	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCV** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.231	0.20	5.000	0	105	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.214	0.20	0.2000	0	107	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ZZZZZZ** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.465	0.20	10.00	0	105	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123709**
Client ID: **CCV**	Batch ID: **R123709**	TestNo: **EPA 218.6**	Analysis Date: **4/27/2018**	SeqNo: **3011156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.028	0.20	5.000	0	101	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123709**
Client ID: **ZZZZZZ**	Batch ID: **R123709**	TestNo: **EPA 218.6**	Analysis Date: **4/27/2018**	SeqNo: **3011168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.060	0.20	10.00	0	101	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123709**
Client ID: **CCV**	Batch ID: **R123709**	TestNo: **EPA 218.6**	Analysis Date: **4/27/2018**	SeqNo: **3011179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.954	0.20	5.000	0	99.1	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123709**
Client ID: **ZZZZZZ**	Batch ID: **R123709**	TestNo: **EPA 218.6**	Analysis Date: **4/27/2018**	SeqNo: **3011181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.027	0.20	10.00	0	100	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123709**
Client ID: **CCV**	Batch ID: **R123709**	TestNo: **EPA 218.6**	Analysis Date: **4/27/2018**	SeqNo: **3011184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.962	0.20	5.000	0	99.2	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **ICB** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/2/2018** SeqNo: **3011136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCB** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCB** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCB** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCB** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCB** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCB** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123709**
Client ID: **CCB** Batch ID: **R123709** TestNo: **EPA 218.6** Analysis Date: **4/27/2018** SeqNo: **3011185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/27/2018

Sample Name	Retention Time		Evaluation
ICV	4.140		
CCV-1	4.248		
CCV-2	4.256		
CCV-3	4.256		
CCV-4	4.256		
CCV-5	4.256		
CCV-6	4.256		
CCV-7	4.248		
Average	4.254		
Actual RT Window	4.174 -	4.334	
Applied RT Window	4.054 -	4.454	
MB-R123709	N.A.		N.A.
LCS-R123709	4.248		PASS
N029973-021A	N.A.		N.A.
N029973-021AMS	4.248		PASS
N029973-022A	N.A.		N.A.
N029973-022AMS	4.256		PASS
N029819-003A	4.231		PASS
N029819-003AMS	4.231		PASS
N029820-001A	4.173		PASS
N029820-001AMS	4.173		PASS
N029820-002A	4.181		PASS
N029820-002AMS	4.190		PASS
N030017-001A	4.190		PASS
N030017-001AMS	4.190		PASS
N030017-002A	4.181		PASS
N030017-002AMS	4.190		PASS
N030017-005A	4.148		PASS
N030017-005AMS	4.140		PASS
N030017-006A	N.A.		N.A.
N030017-006AMS	4.198		PASS

rba 5/6/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/27/2018

Sample Name	Retention Time		Evaluation
ICV	4.140		
CCV-1	4.248		
CCV-2	4.256		
CCV-3	4.256		
CCV-4	4.256		
CCV-5	4.256		
CCV-6	4.256		
CCV-7	4.248		
Average	4.254		
Actual RT Window	4.174 -	4.334	
Applied RT Window	4.054 -	4.454	
N030017-008A	4.248		PASS
N030017-008AMS	4.240		PASS
N030017-007A	4.181		PASS
N030017-007AMS	4.198		PASS
N030017-009A	4.173		PASS
N030017-009AMS	4.173		PASS
N030017-010A	N.A.		N.A.
N030017-010AMS	4.173		PASS
N030017-011A	4.198		PASS
N030017-011AMS	4.206		PASS
N030017-001AMSD	4.190		PASS
N030017-005ADUP	4.148		PASS
N030017-012A	4.240		PASS
N030017-012AMS	4.240		PASS
N030017-013A	4.240		PASS
N030017-013AMS	4.240		PASS
N030017-003A	N.A.		N.A.
N030017-003AMS	4.256		PASS
N030017-004A	N.A.		N.A.
N030017-004AMS	4.256		PASS
N030017-002A	N.A.		N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/27/2018

Sample Name	Retention Time		Evaluation
ICV	4.140		
CCV-1	4.248		
CCV-2	4.256		
CCV-3	4.256		
CCV-4	4.256		
CCV-5	4.256		
CCV-6	4.256		
CCV-7	4.248		
Average	4.254		
Actual RT Window	4.174 -	4.334	
Applied RT Window	4.054 -	4.454	
N030017-002AMS	N.A.		N.A.
N030017-006A	N.A.		N.A.
N030017-006AMS	N.A.		N.A.
N030017-007A	N.A.		N.A.
N030017-007AMS	3.815		FAIL
N030017-009A	N.A.		N.A.
N030017-009AMS	N.A.		N.A.
N030017-010A	N.A.		N.A.
N030017-010AMS	N.A.		N.A.
N030017-011A	3.865		FAIL
N030017-011AMS	3.848		FAIL
N029858-001A	N.A.		N.A.
N029858-001AMS	4.248		PASS
N030017-004AMS	4.256		PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2018 (1st Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 3/21/2018
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	**MDL**	**LOD Spike Conc., µg/L**	**LOD actual Conc., µg/L**
Hexavalent Chromium	0.0331	0.100	0.116

Compound	**PQL**	**PQL Spike Conc., µg/L**	**PQL actual Conc., µg/L**	**% Recovery**
Hexavalent Chromium	0.200	0.200	0.201	**100**

RAW DATA

INITIAL CALIBRATION

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

INJECTION LOG: 180402B

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	ICV	ICV	1	Hexavalent Chromium	04/02/18 1:50 PM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/02/18 2:01 PM	Reported
13	ICB	ICB	1	Hexavalent Chromium	04/02/18 2:18 PM	Reported
14	MB-R123054	MBLK	1	Hexavalent Chromium	04/02/18 2:30 PM	Reported
15	LCS-R123054	LCS	1	Hexavalent Chromium	04/02/18 2:39 PM	Reported
16	N029480-001A	SAMP	1	Hexavalent Chromium	04/02/18 2:49 PM	Not Reported
17	N029443-001G	SAMP	1	Hexavalent Chromium	04/02/18 2:58 PM	Reported
18	N029444-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:08 PM	Reported
19	N029445-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:17 PM	Reported
20	N029446-001G	SAMP	1	Hexavalent Chromium	04/02/18 3:27 PM	Reported
21	N029480-001A	SAMP	5	Hexavalent Chromium	04/02/18 3:36 PM	Reported
22	N029480-002A	SAMP	5	Hexavalent Chromium	04/02/18 3:45 PM	Reported
23	N029480-001ADUP	DUP	5	Hexavalent Chromium	04/02/18 3:55 PM	Reported
24	CCV-1	CCV1	1	Hexavalent Chromium	04/02/18 4:04 PM	Reported
25	CCB-1	CCB	1	Hexavalent Chromium	04/02/18 4:14 PM	Reported
26	N029480-001AMS	MS	5	Hexavalent Chromium	04/02/18 4:23 PM	Reported
27	N029480-001AMSD	MSD	5	Hexavalent Chromium	04/02/18 4:33 PM	Reported
28	CCV-2	CCV	1	Hexavalent Chromium	04/02/18 4:42 PM	Reported
29	CCB-2	CCB	1	Hexavalent Chromium	04/02/18 4:52 PM	Reported

rba 4/3/2018

Injection Log Summary

Sequence Details

Name:	**IC-07_180402B**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**02/Apr/18 17:22:28**
No. of Injections:	**32**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	ICV,ICV,1,	11	1000	Unknown		04/02/2018 13:50	Finished	ICV @5ppb, IWST-180129B
12	PQL@0.2ppb,CCV2,1	12	1000	Unknown		04/02/2018 14:01	Finished	PQL @ 0.2ppb
13	ICB,ICB,1,	13	1000	Unknown		04/02/2018 14:18	Finished	ICB R180329A
14	MB-H2O,MBLK,1,	14	1000	Unknown		04/02/2018 14:30	Finished	MB R180302A
15	LCS-H2O,LCS,1,	15	1000	Unknown		04/02/2018 14:39	Finished	LCS, IWST-180129B
16	N029480-001A,SAMF	16	1000	Unknown		04/02/2018 14:49	Finished	SAMP,10mL
17	N029443-001G,SAMF	17	1000	Unknown		04/02/2018 14:58	Finished	SAMP,10mL
18	N029444-001G,SAMF	18	1000	Unknown		04/02/2018 15:08	Finished	SAMP,10mL
19	N029445-001G,SAMF	19	1000	Unknown		04/02/2018 15:17	Finished	SAMP,10mL
20	N029446-001G,SAMF	20	1000	Unknown		04/02/2018 15:27	Finished	SAMP,10mL
21	N029480-001A,SAMF	21	1000	Unknown		04/02/2018 15:36	Finished	SAMP,2>10mL
22	N029480-002A,SAMF	22	1000	Unknown		04/02/2018 15:45	Finished	SAMP,2>10mL
23	N029480-001ADUP,D	23	1000	Unknown		04/02/2018 15:55	Finished	DUP,2>10mL
24	CCV-1,CCV1,1,	24	1000	Unknown		04/02/2018 16:04	Finished	CCV @10ppb, IWST-180129A
25	CCB-1,CCB,1,	25	1000	Unknown		04/02/2018 16:14	Finished	CCB R180302A
26	N029480-001AMS,MS	26	1000	Unknown		04/02/2018 16:23	Finished	SAMP,10mL
27	N029480-001AMSD,M	27	1000	Unknown		04/02/2018 16:33	Finished	MS (1ppb), IWST-180129B,1>1
28	CCV-2,CCV,1,	28	1000	Unknown		04/02/2018 16:42	Finished	CCV @5ppb, IWST-180129A
29	CCB-2,CCB,1,	29	1000	Unknown		04/02/2018 16:52	Finished	CCB R180302A
30	SHUTDOWN	30	1000	Unknown		04/02/2018 17:01	Finished	
31	Eluent: R180402B	31	1000	Unknown		n.a.	Finished	Eluent
32	PCR: R180402C	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

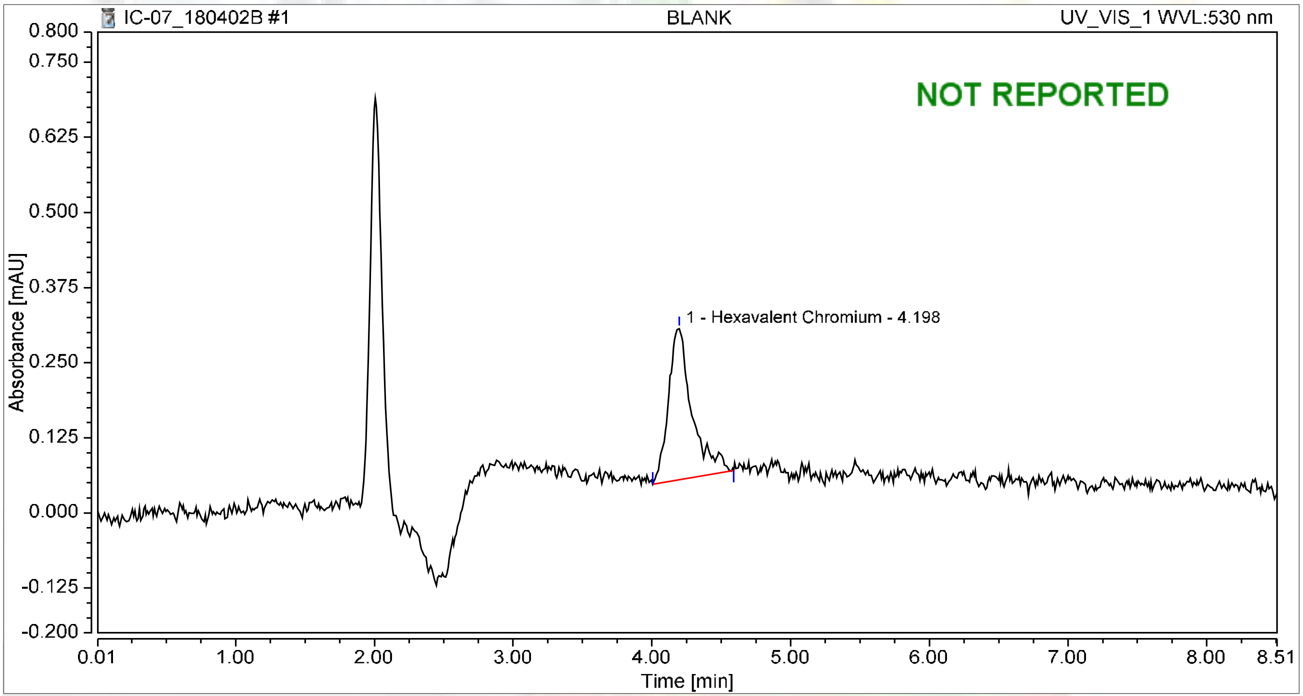
rba 4/3/2018

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 11:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

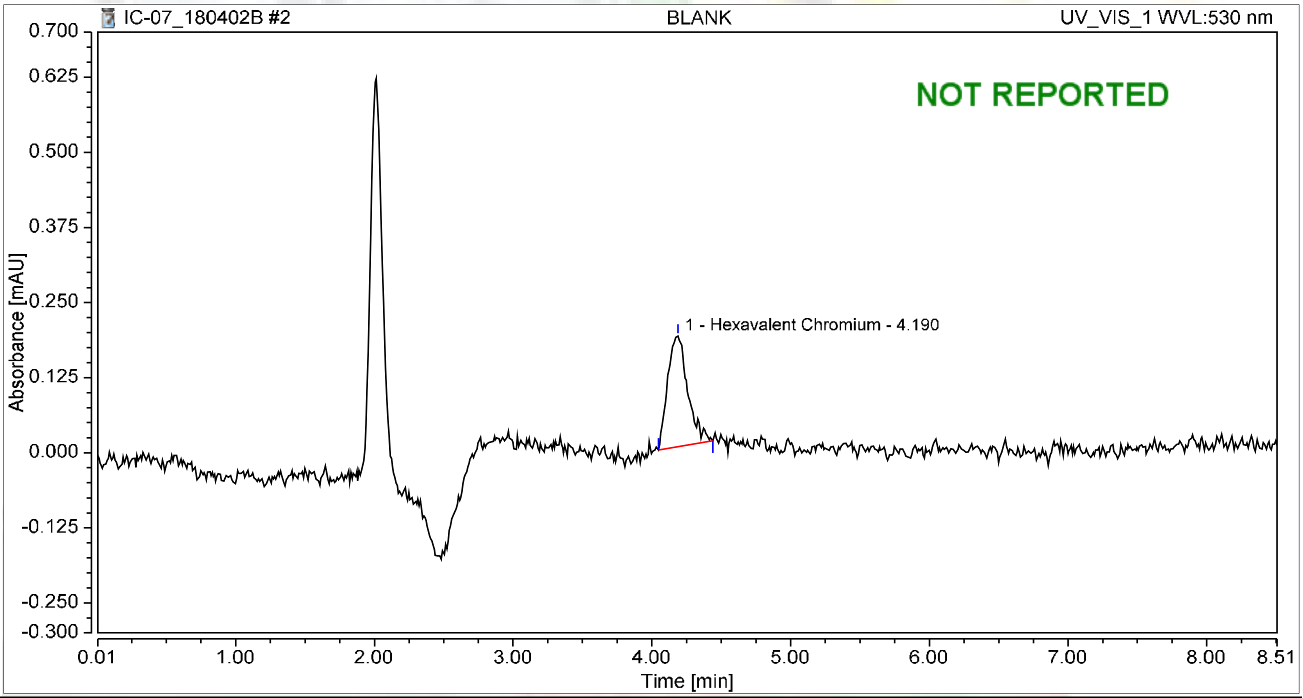
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.050	0.252	100.00	100.00	0.1965
Total:			**0.050**	**0.252**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 11:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

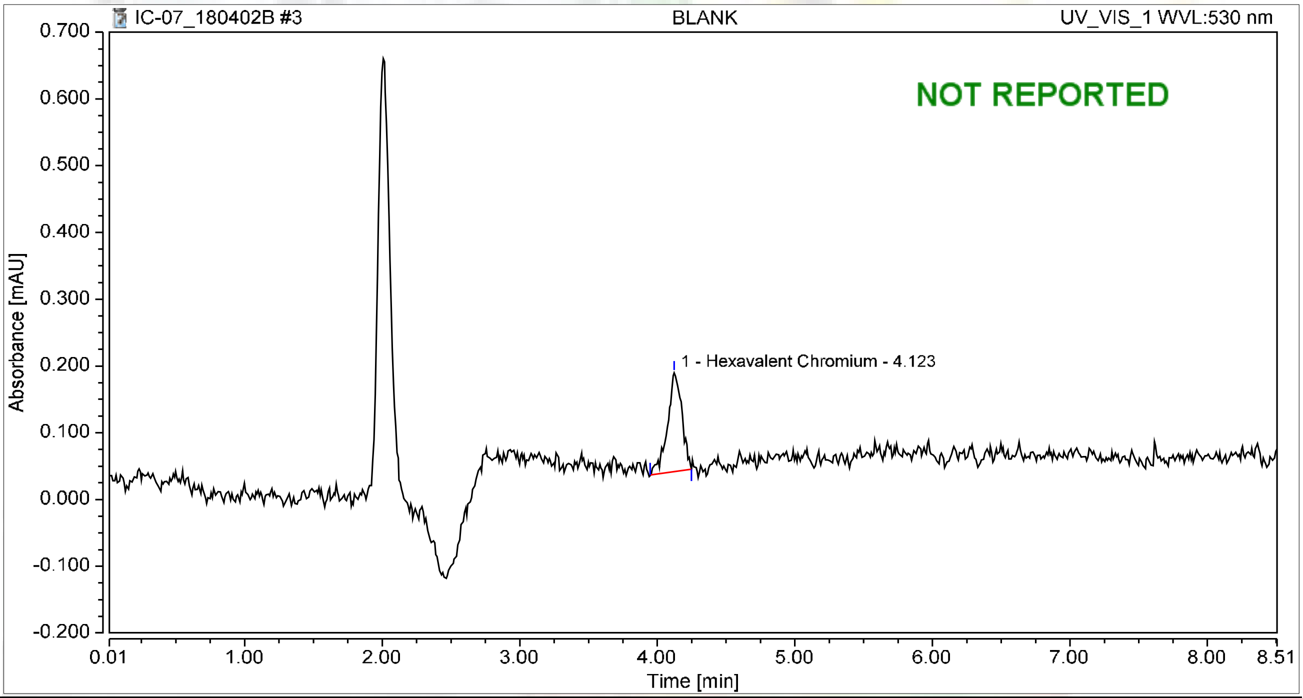
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.031	0.184	100.00	100.00	0.1224
Total:			**0.031**	**0.184**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 11:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

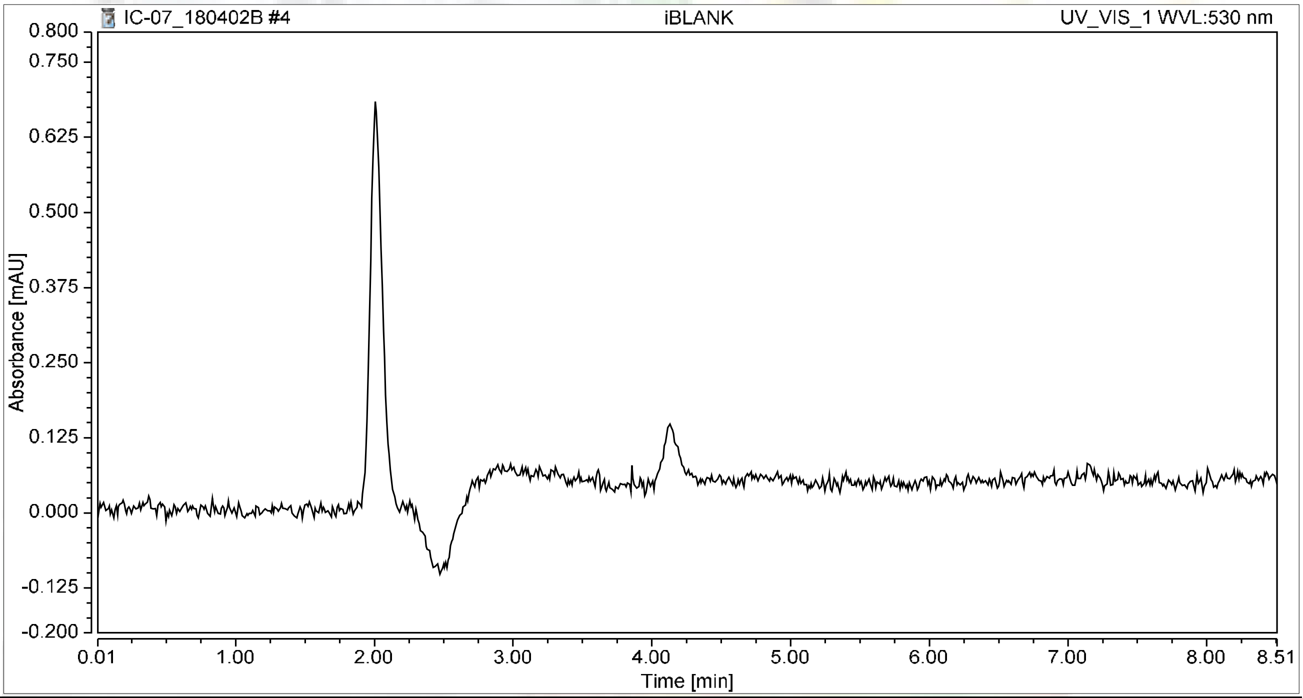
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.018	0.148	100.00	100.00	0.0704
Total:			**0.018**	**0.148**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

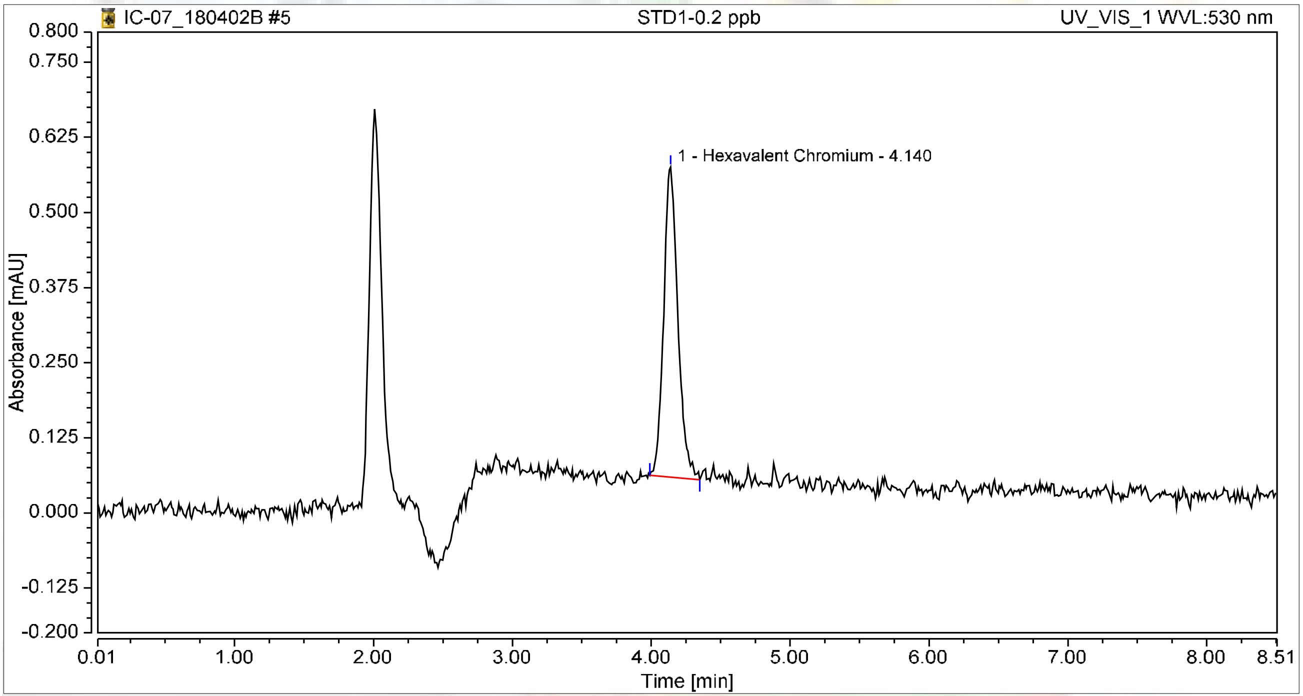
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 12:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

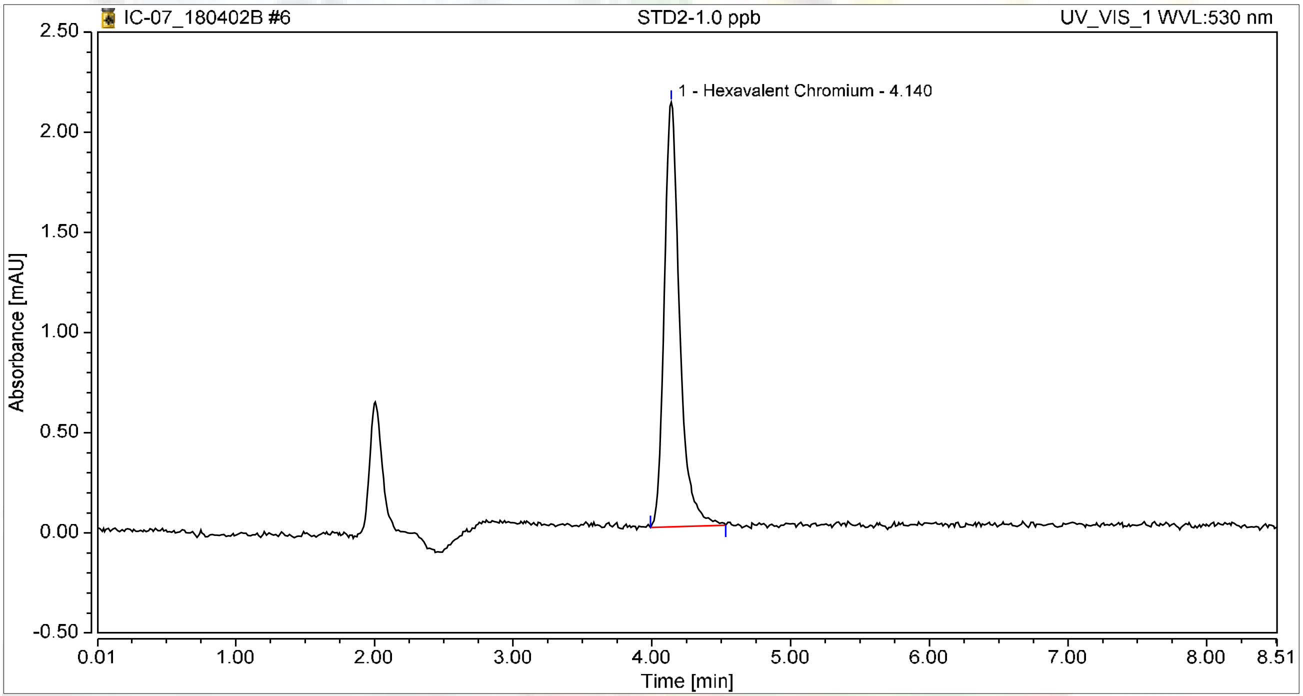
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.061	0.516	100.00	100.00	0.2409
Total:			**0.061**	**0.516**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 12:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

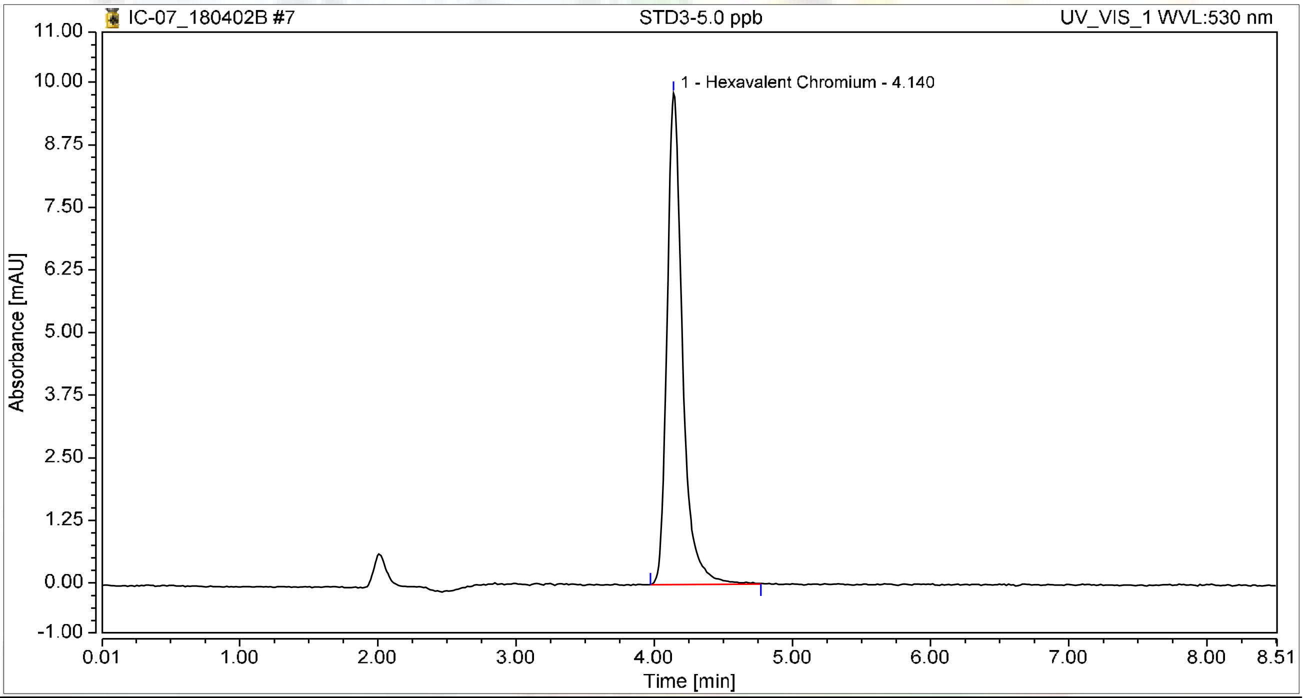
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.274	2.121	100.00	100.00	1.0825
Total:			**0.274**	**2.121**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

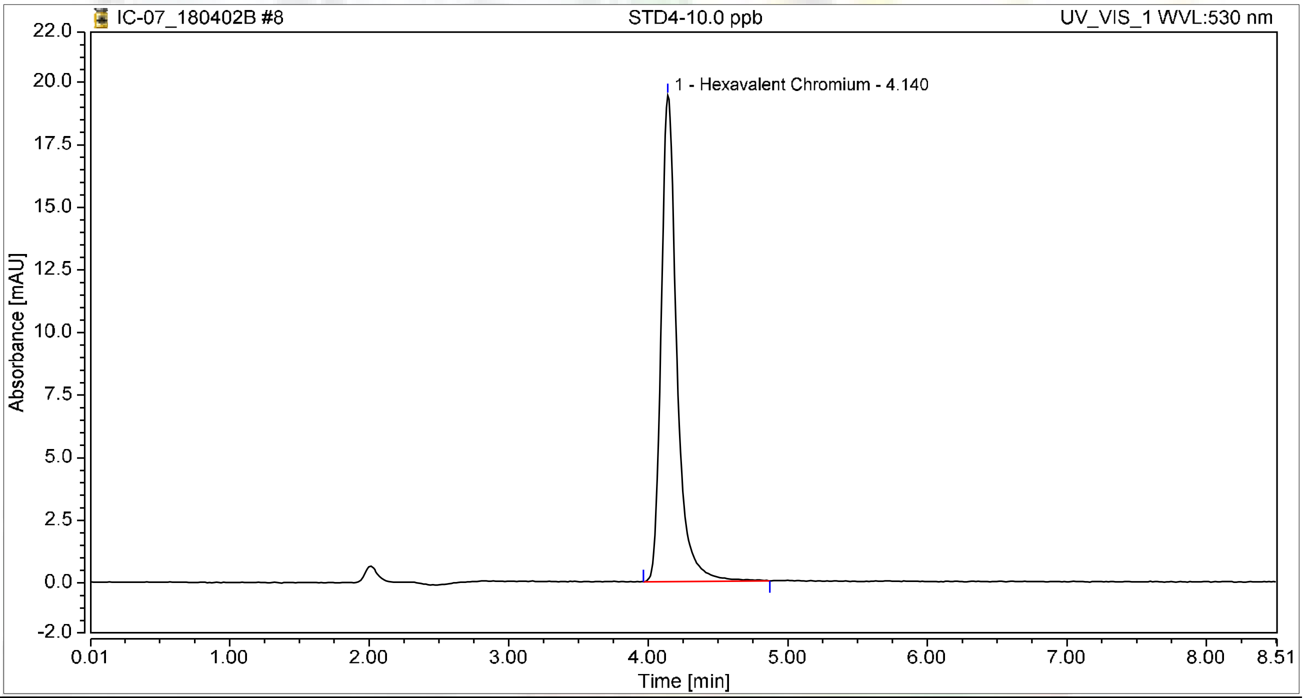
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.277	9.813	100.00	100.00	5.0383
Total:			**1.277**	**9.813**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

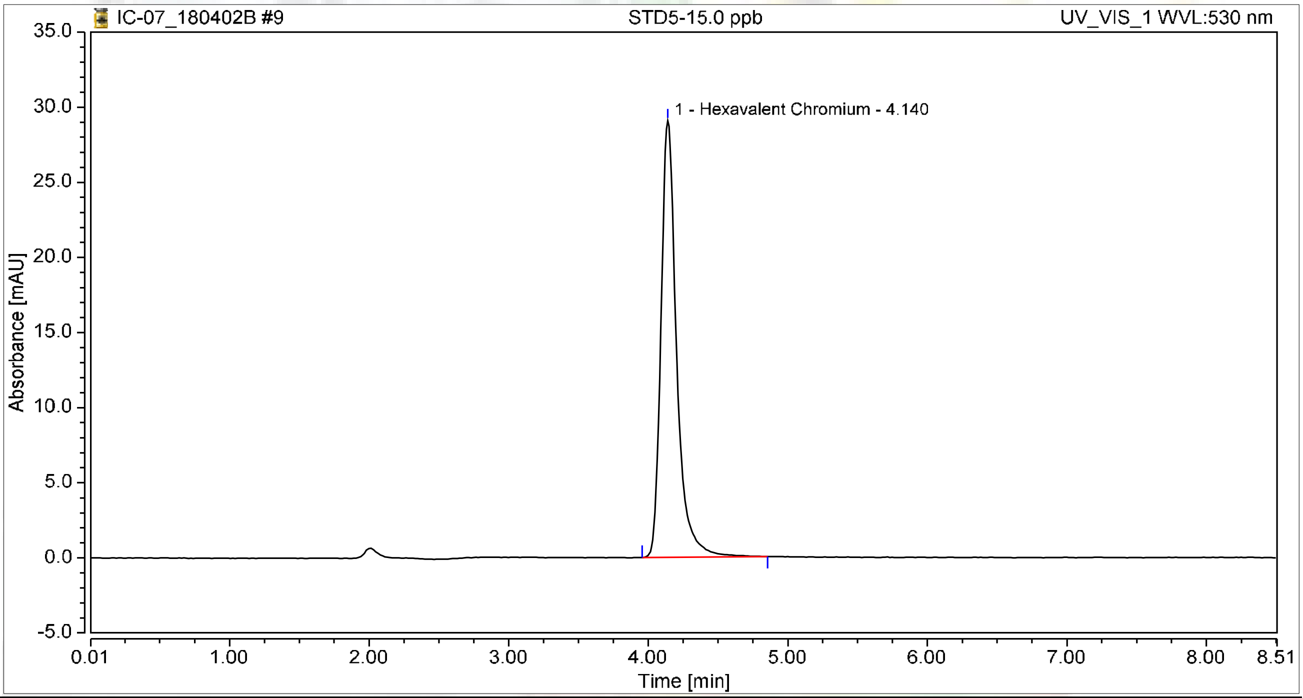
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.538	19.408	100.00	100.00	10.0099
Total:			**2.538**	**19.408**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

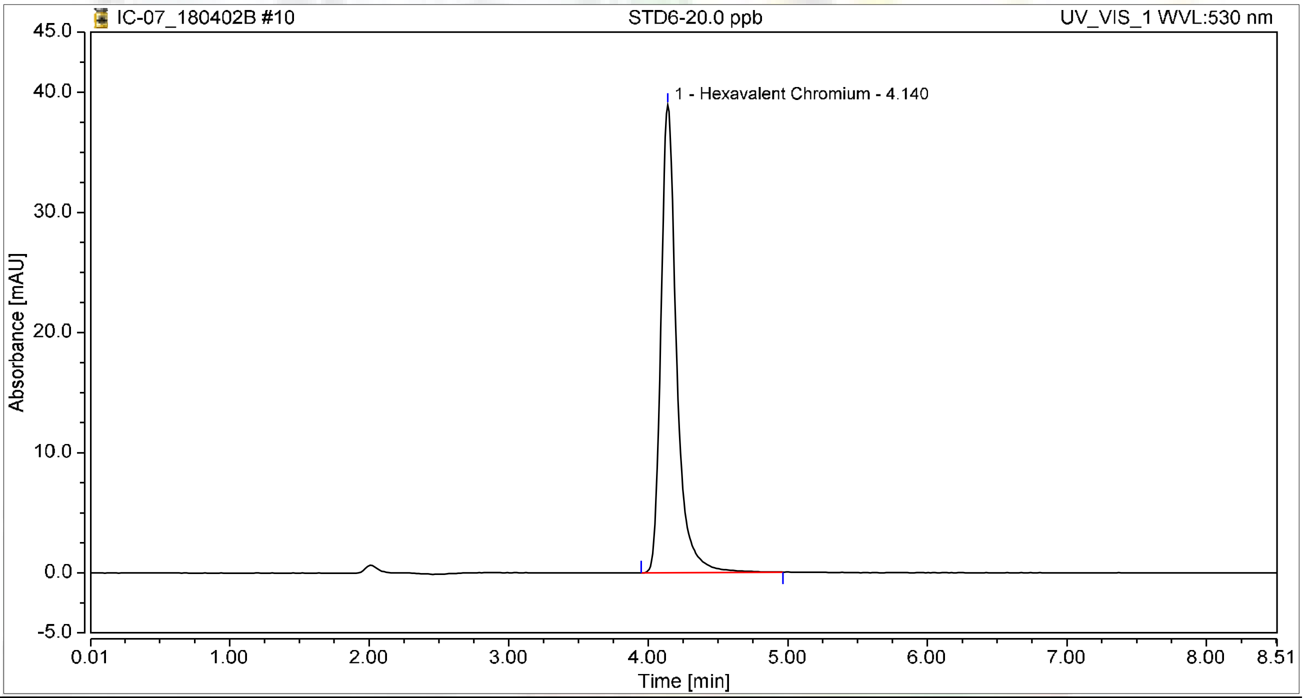
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.791	29.078	100.00	100.00	14.9525
Total:			**3.791**	**29.078**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:31**	*Sample Weight:*	**1.0000**

Chromatogram



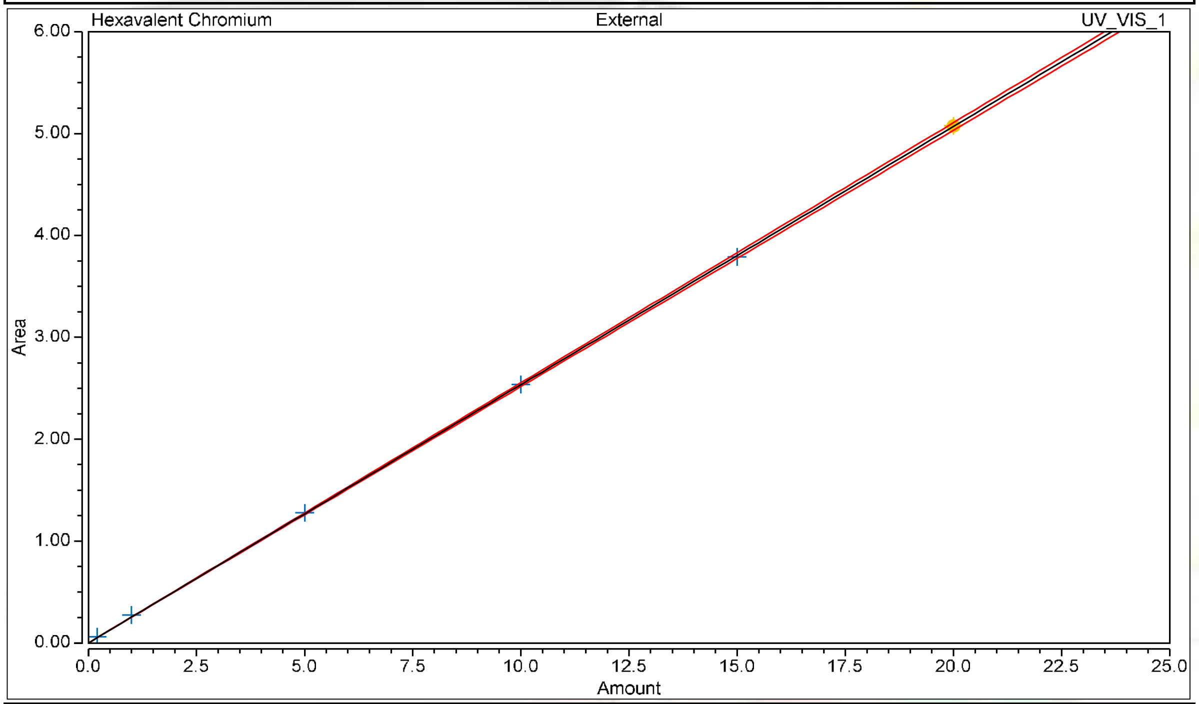
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	5.074	38.904	100.00	100.00	20.0166
Total:			**5.074**	**38.904**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2535
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99996

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

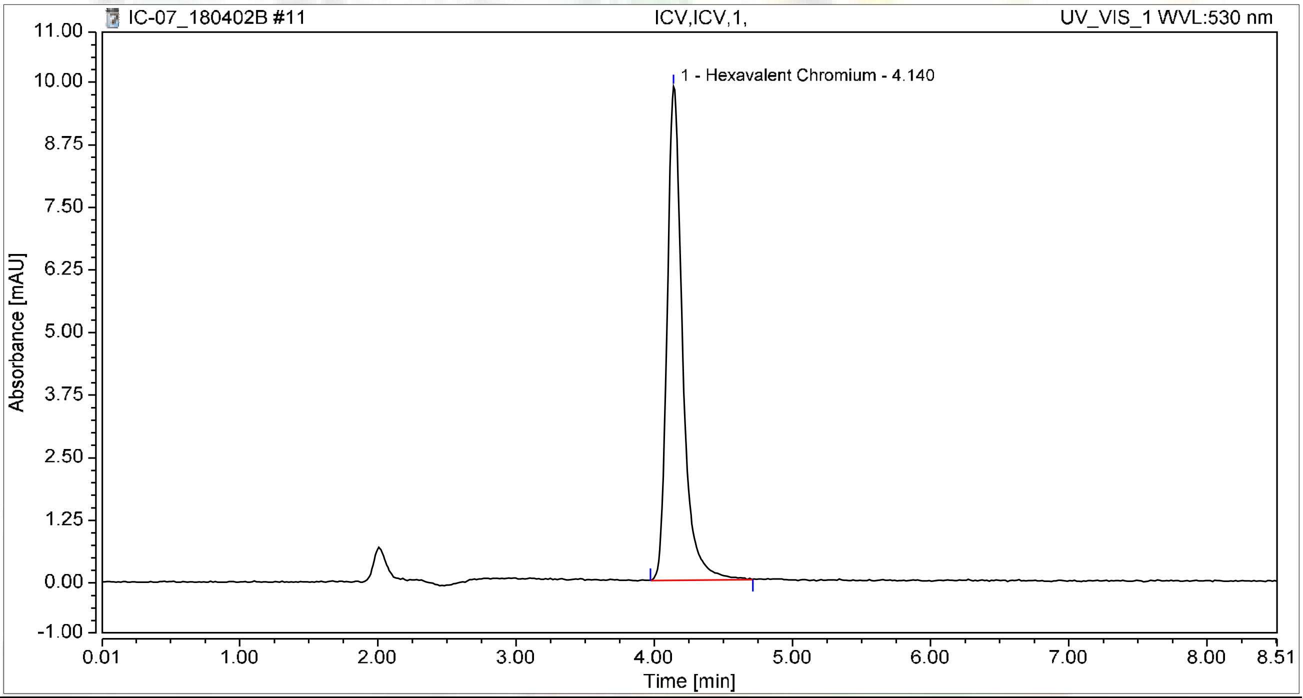
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
5	STD1-0.2 ppb	01	0.2000	0.0611	0.061	0.516
6	STD2-1.0 ppb	02	1.0000	0.2744	0.274	2.121
7	STD3-5.0 ppb	03	5.0000	1.2772	1.277	9.813
8	STD4-10.0 ppb	04	10.0000	2.5376	2.538	19.408
9	STD5-15.0 ppb	05	15.0000	3.7905	3.791	29.078
10	STD6-20.0 ppb	06	20.0000	5.0743	5.074	38.904

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 13:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

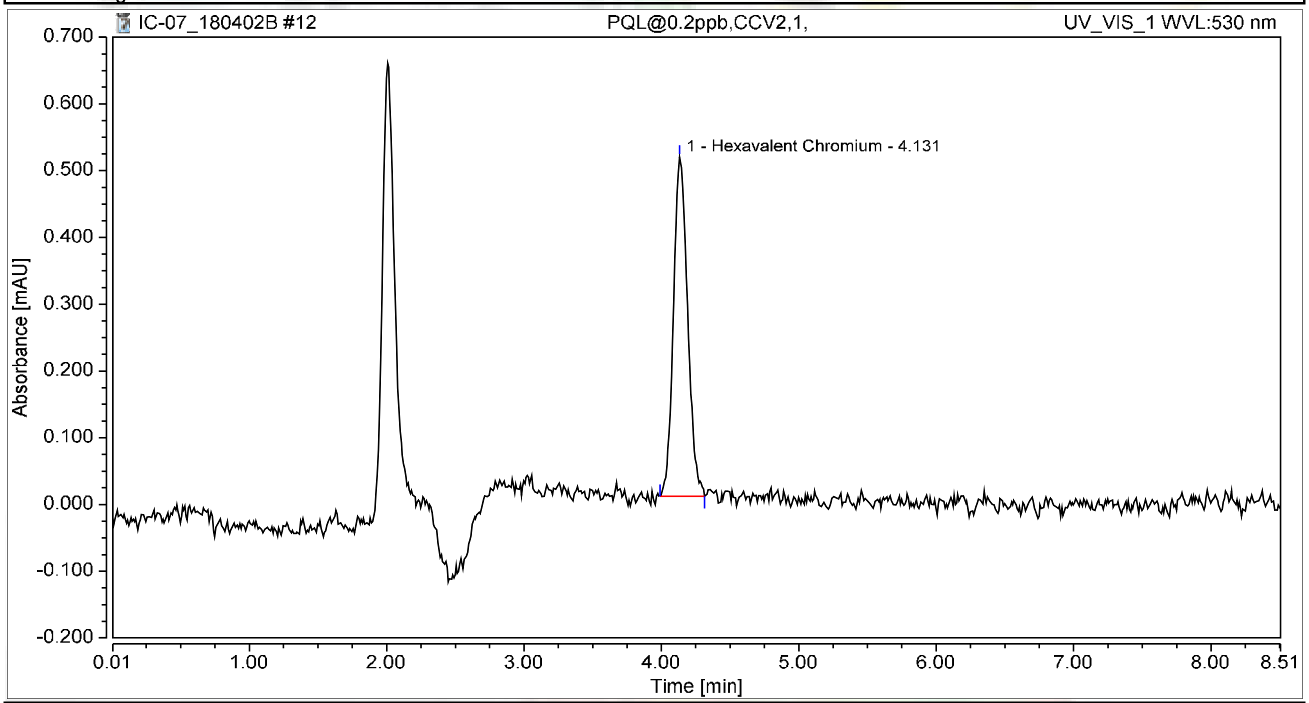
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.285	9.862	100.00	100.00	5.0684
Total:			**1.285**	**9.862**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

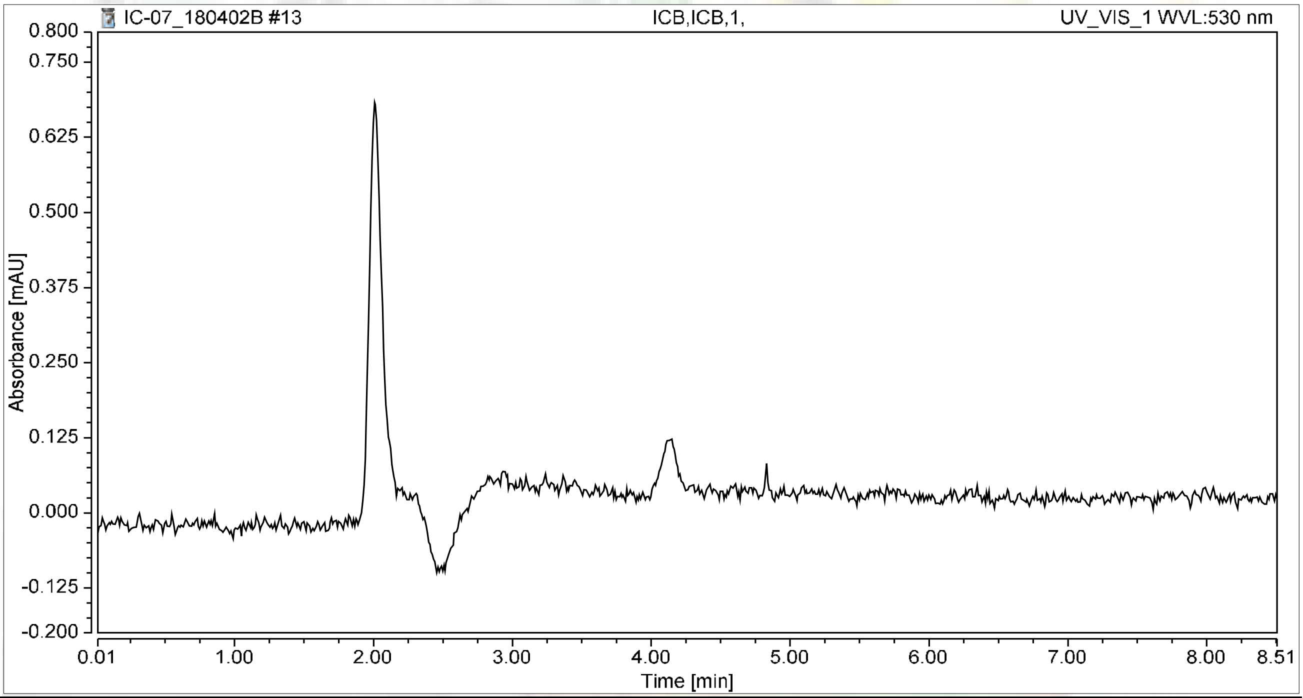
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.061	0.508	100.00	100.00	0.2395
Total:			**0.061**	**0.508**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**02/Apr/18 14:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

INJECTION LOG: 180427A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:28 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:38 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/02/18 11:48 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/02/18 12:13 PM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:42 PM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 12:53 PM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:03 PM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:12 PM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:22 PM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/02/18 1:31 PM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	04/27/18 8:33 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	04/27/18 8:43 AM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	04/27/18 8:53 AM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/27/18 9:02 AM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	04/27/18 9:12 AM	Reported
16	MB-R123709	MBLK	1	Hexavalent Chromium	04/27/18 9:21 AM	Reported
17	LCS-R123709	LCS	1	Hexavalent Chromium	04/27/18 9:31 AM	Reported
18	N029973-021A	SAMP	1	Hexavalent Chromium	04/27/18 9:40 AM	Reported
19	N029973-021AMS	MS	1	Hexavalent Chromium	04/27/18 9:50 AM	Reported
20	N029973-022A	SAMP	1	Hexavalent Chromium	04/27/18 9:59 AM	Reported
21	N029973-022AMS	MS	1	Hexavalent Chromium	04/27/18 10:38 AM	Reported
22	N029819-003A	SAMP	1	Hexavalent Chromium	04/27/18 10:47 AM	Not Reported
23	N029819-003AMS	MS	1	Hexavalent Chromium	04/27/18 10:57 AM	Not Reported
24	N029820-001A	SAMP	1	Hexavalent Chromium	04/27/18 11:06 AM	Not Reported
25	N029820-001AMS	MS	1	Hexavalent Chromium	04/27/18 11:15 AM	Not Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	04/27/18 11:25 AM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	04/27/18 11:34 AM	Reported
28	N029820-002A	SAMP	1	Hexavalent Chromium	04/27/18 11:44 AM	Not Reported
29	N029820-002AMS	MS	1	Hexavalent Chromium	04/27/18 11:53 AM	Not Reported
30	N030017-001A	SAMP	5	Hexavalent Chromium	04/27/18 12:03 PM	Reported
31	N030017-001AMS	MS	5	Hexavalent Chromium	04/27/18 12:12 PM	Reported
32	N030017-002A	SAMP	5	Hexavalent Chromium	04/27/18 12:22 PM	Reported
33	N030017-002AMS	MS	5	Hexavalent Chromium	04/27/18 12:31 PM	Reported
34	N030017-005A	SAMP	1	Hexavalent Chromium	04/27/18 12:41 PM	Reported
35	N030017-005AMS	MS	1	Hexavalent Chromium	04/27/18 12:50 PM	Reported
36	N030017-006A	SAMP	5	Hexavalent Chromium	04/27/18 1:00 PM	Reported
37	N030017-006AMS	MS	5	Hexavalent Chromium	04/27/18 1:09 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	04/27/18 1:18 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	04/27/18 1:28 PM	Reported
40	N030017-008A	SAMP	20	Hexavalent Chromium	04/27/18 1:37 PM	Reported
41	N030017-008AMS	MS	20	Hexavalent Chromium	04/27/18 1:47 PM	Reported
42	N030017-007A	SAMP	5	Hexavalent Chromium	04/27/18 1:56 PM	Reported

Nancy 5/7/2018

rba 5/6/2018

INJECTION LOG: 180427A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030017-007AMS	MS	5	Hexavalent Chromium	04/27/18 2:06 PM	Reported
44	N030017-009A	SAMP	5	Hexavalent Chromium	04/27/18 2:15 PM	Reported
45	N030017-009AMS	MS	5	Hexavalent Chromium	04/27/18 2:25 PM	Reported
46	N030017-010A	SAMP	5	Hexavalent Chromium	04/27/18 2:34 PM	Reported
47	N030017-010AMS	MS	5	Hexavalent Chromium	04/27/18 2:44 PM	Reported
48	N030017-011A	SAMP	5	Hexavalent Chromium	04/27/18 2:53 PM	Reported
49	N030017-011AMS	MS	5	Hexavalent Chromium	04/27/18 3:03 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	04/27/18 3:12 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	04/27/18 3:21 PM	Reported
52	N030017-001AMSD	MSD	5	Hexavalent Chromium	04/27/18 3:31 PM	Reported
53	N030017-005ADUP	DUP	1	Hexavalent Chromium	04/27/18 3:40 PM	Reported
54	N030017-012A	SAMP	5	Hexavalent Chromium	04/27/18 3:59 PM	Reported
55	N030017-012AMS	MS	5	Hexavalent Chromium	04/27/18 4:10 PM	Reported
56	N030017-013A	SAMP	5	Hexavalent Chromium	04/27/18 4:19 PM	Reported
57	N030017-013AMS	MS	5	Hexavalent Chromium	04/27/18 4:29 PM	Reported
58	N030017-003A	SAMP	1	Hexavalent Chromium	04/27/18 4:38 PM	Reported
59	N030017-003AMS	MS	1	Hexavalent Chromium	04/27/18 4:48 PM	Reported
60	N030017-004A	SAMP	1	Hexavalent Chromium	04/27/18 4:57 PM	Reported
61	N030017-004AMS	MS	1	Hexavalent Chromium	04/27/18 5:07 PM	Not Reported
62	CCV-5	CCV	1	Hexavalent Chromium	04/27/18 5:16 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	04/27/18 5:26 PM	Reported
64	N030017-002A	SAMP	1	Hexavalent Chromium	04/27/18 5:35 PM	Not Reported
65	N030017-002AMS	MS	1	Hexavalent Chromium	04/27/18 5:45 PM	Not Reported
66	N030017-006A	SAMP	1	Hexavalent Chromium	04/27/18 5:54 PM	Not Reported
67	N030017-006AMS	MS	1	Hexavalent Chromium	04/27/18 6:04 PM	Not Reported
68	N030017-007A	SAMP	1	Hexavalent Chromium	04/27/18 6:13 PM	Not Reported
69	N030017-007AMS	MS	1	Hexavalent Chromium	04/27/18 6:23 PM	Not Reported
70	N030017-009A	SAMP	1	Hexavalent Chromium	04/27/18 6:32 PM	Not Reported
71	N030017-009AMS	MS	1	Hexavalent Chromium	04/27/18 6:41 PM	Not Reported
72	N030017-010A	SAMP	1	Hexavalent Chromium	04/27/18 6:51 PM	Not Reported
73	N030017-010AMS	MS	1	Hexavalent Chromium	04/27/18 7:00 PM	Not Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	04/27/18 7:10 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	04/27/18 7:19 PM	Reported
76	N030017-011A	SAMP	1	Hexavalent Chromium	04/27/18 7:29 PM	Not Reported
77	N030017-011AMS	MS	1	Hexavalent Chromium	04/27/18 7:38 PM	Not Reported
78	N029858-001A	SAMP	1	Hexavalent Chromium	04/27/18 7:48 PM	Not Reported
79	N029858-001AMS	MS	1	Hexavalent Chromium	04/27/18 7:57 PM	Not Reported
80	N030017-004AMS	MS	1	Hexavalent Chromium	04/27/18 8:07 PM	Reported
81	CCV-7	CCV	1	Hexavalent Chromium	04/27/18 8:16 PM	Reported
82	CCB-7	CCB	1	Hexavalent Chromium	04/27/18 8:26 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180427A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**27/Apr/18 20:56:21**
No. of Injections:	**85**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/02/2018 11:28	Finished	BLANK
2	BLANK	2	1000	Unknown		04/02/2018 11:38	Finished	BLANK
3	BLANK	3	1000	Unknown		04/02/2018 11:48	Finished	BLANK
4	iBLANK	1	1000	Unknown		04/02/2018 12:13	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/02/2018 12:42	Finished	0.2 ppb, IWST-180129A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/02/2018 12:53	Finished	1.0 ppb, IWST-180129A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/02/2018 13:03	Finished	5.0 ppb, IWST-180129A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/02/2018 13:12	Finished	10 ppb, IWST-180129A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/02/2018 13:22	Finished	15 ppb, IWST-180129A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/02/2018 13:31	Finished	20 ppb, IWST-180129A
11	BLANK	1	1000	Unknown		04/27/2018 08:33	Finished	BLANK
12	BLANK	2	1000	Unknown		04/27/2018 08:43	Finished	BLANK
13	CCV-1,CCV,1,	3	1000	Unknown		04/27/2018 08:53	Finished	CCV @5ppb, IWST-180129A
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		04/27/2018 09:02	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		04/27/2018 09:12	Finished	CCB R180418A
16	MB-H2O,MBLK,1,	6	1000	Unknown		04/27/2018 09:21	Finished	MB R180418A
17	LCS-H2O,LCS,1,	7	1000	Unknown		04/27/2018 09:31	Finished	LCS, IWST-180129B
18	N029973-021A,SAMP	8	1000	Unknown		04/27/2018 09:40	Finished	SAMP,10mL
19	N029973-021AMS,MS	9	1000	Unknown		04/27/2018 09:50	Finished	MS (1ppb), IWST-180129B,10
20	N029973-022A,SAMP	10	1000	Unknown		04/27/2018 09:59	Finished	SAMP,10mL
21	N029973-022AMS,MS	11	1000	Unknown		04/27/2018 10:38	Finished	MS (1ppb), IWST-180129B,10
22	N029819-003A,SAMP	12	1000	Unknown		04/27/2018 10:47	Finished	SAMP,10mL
23	N029819-003AMS,MS	13	1000	Unknown		04/27/2018 10:57	Finished	MS (1ppb), IWST-180129B,10
24	N029820-001A,SAMP	14	1000	Unknown		04/27/2018 11:06	Finished	SAMP,10mL
25	N029820-001AMS,MS	15	1000	Unknown		04/27/2018 11:15	Finished	MS (1ppb), IWST-180129B,10
26	CCV-2,CCV1,1,	16	1000	Unknown		04/27/2018 11:25	Finished	CCV @10ppb, IWST-180129A
27	CCB-2,CCB,1,	17	1000	Unknown		04/27/2018 11:34	Finished	CCB R180418A
28	N029820-002A,SAMP	18	1000	Unknown		04/27/2018 11:44	Finished	SAMP,10mL
29	N029820-002AMS,MS	19	1000	Unknown		04/27/2018 11:53	Finished	MS (1ppb), IWST-180129B,10
30	N030017-001A,SAMP	20	1000	Unknown		04/27/2018 12:03	Finished	SAMP,2>10mL
31	N030017-001AMS,MS	21	1000	Unknown		04/27/2018 12:12	Finished	MS (5ppb), IWST-180129B,2>1
32	N030017-002A,SAMP	22	1000	Unknown		04/27/2018 12:22	Finished	SAMP,2>10mL
33	N030017-002AMS,MS	23	1000	Unknown		04/27/2018 12:31	Finished	MS (1ppb), IWST-180129B,2>1
34	N030017-005A,SAMP	24	1000	Unknown		04/27/2018 12:41	Finished	SAMP,10mL
35	N030017-005AMS,MS	25	1000	Unknown		04/27/2018 12:50	Finished	MS (1ppb), IWST-180129B,10
36	N030017-006A,SAMP	26	1000	Unknown		04/27/2018 13:00	Finished	SAMP,2>10mL
37	N030017-006AMS,MS	27	1000	Unknown		04/27/2018 13:09	Finished	MS (1ppb), IWST-180129B,2>1
38	CCV-3,CCV,1,	28	1000	Unknown		04/27/2018 13:18	Finished	CCV @5ppb, IWST-180129A
39	CCB-3,CCB,1,	29	1000	Unknown		04/27/2018 13:28	Finished	CCB R180418A
40	N030017-008A,SAMP	30	1000	Unknown		04/27/2018 13:37	Finished	SAMP,0.5>10mL
41	N030017-008AMS,MS	31	1000	Unknown		04/27/2018 13:47	Finished	MS (5ppb), IWST-180129B,0.5
42	N030017-007A,SAMP	32	1000	Unknown		04/27/2018 13:56	Finished	SAMP,2>10mL
43	N030017-007AMS,MS	33	1000	Unknown		04/27/2018 14:06	Finished	MS (1ppb), IWST-180129B,2>1
44	N030017-009A,SAMP	34	1000	Unknown		04/27/2018 14:15	Finished	SAMP,2>10mL
45	N030017-009AMS,MS	35	1000	Unknown		04/27/2018 14:25	Finished	MS (1ppb), IWST-180129B,2>1
46	N030017-010A,SAMP	36	1000	Unknown		04/27/2018 14:34	Finished	SAMP,2>10mL
47	N030017-010AMS,MS	37	1000	Unknown		04/27/2018 14:44	Finished	MS (1ppb), IWST-180129B,2>1
48	N030017-011A,SAMP	38	1000	Unknown		04/27/2018 14:53	Finished	SAMP,2>10mL
49	N030017-011AMS,MS	39	1000	Unknown		04/27/2018 15:03	Finished	MS (1ppb), IWST-180129B,2>1
50	CCV-4,CCV1,1,	40	1000	Unknown		04/27/2018 15:12	Finished	CCV @10ppb, IWST-180129A
51	CCB-4,CCB,1,	41	1000	Unknown		04/27/2018 15:21	Finished	CCB R180418A
52	N030017-001AMSD,M	42	1000	Unknown		04/27/2018 15:31	Finished	MSD (5ppb), IWST-180129B,2
53	N030017-005ADUP,D	43	1000	Unknown		04/27/2018 15:40	Finished	DUP,10mL
54	N030017-012A,SAMP	1	1000	Unknown		04/27/2018 15:59	Finished	SAMP,2>10mL
55	N030017-012AMS,MS	2	1000	Unknown		04/27/2018 16:10	Finished	MS (5ppb), IWST-180129B,2>1
56	N030017-013A,SAMP	3	1000	Unknown		04/27/2018 16:19	Finished	SAMP,10mL
57	N030017-013AMS,MS	4	1000	Unknown		04/27/2018 16:29	Finished	MS (5ppb), IWST-180129B,10
58	N030017-003A,SAMP	5	1000	Unknown		04/27/2018 16:38	Finished	SAMP,10mL
59	N030017-003AMS,MS	6	1000	Unknown		04/27/2018 16:48	Finished	MS (1ppb), IWST-180129B,10
60	N030017-004A,SAMP	7	1000	Unknown		04/27/2018 16:57	Finished	SAMP,10mL

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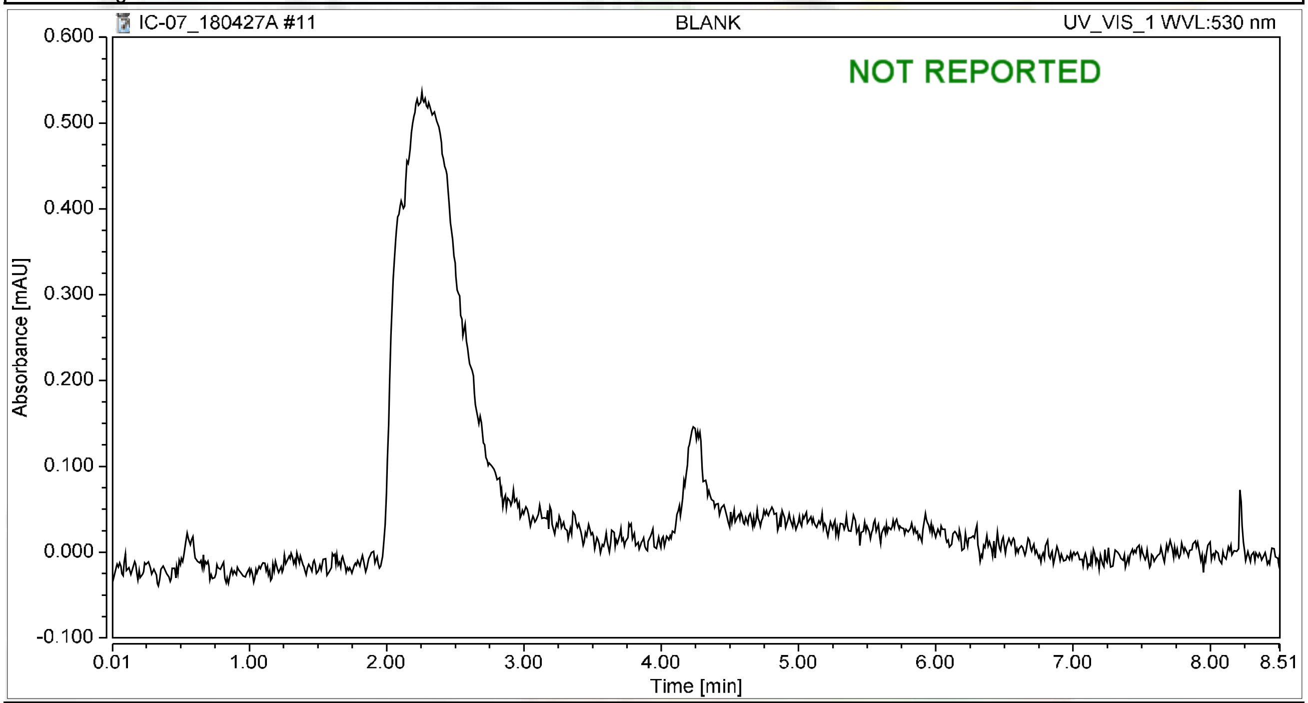
61	N030017-004AMS,MS	8	1000	Unknown		04/27/2018 17:07	Finished	MS (1ppb), IWST-180129B,10
62	CCV-5,CCV,1,	9	1000	Unknown		04/27/2018 17:16	Finished	CCV @5ppb, IWST-180129A
63	CCB-5,CCB,1,	10	1000	Unknown		04/27/2018 17:26	Finished	CCB R180418A
64	N030017-002A,SAMP	11	1000	Unknown		04/27/2018 17:35	Finished	SAMP,10mL
65	N030017-002AMS,MS	12	1000	Unknown		04/27/2018 17:45	Finished	MS (1ppb), IWST-180129B,10
66	N030017-006A,SAMP	13	1000	Unknown		04/27/2018 17:54	Finished	SAMP,10mL
67	N030017-006AMS,MS	14	1000	Unknown		04/27/2018 18:04	Finished	MS (1ppb), IWST-180129B,10
68	N030017-007A,SAMP	15	1000	Unknown		04/27/2018 18:13	Finished	SAMP,10mL
69	N030017-007AMS,MS	16	1000	Unknown		04/27/2018 18:23	Finished	MS (1ppb), IWST-180129B,10
70	N030017-009A,SAMP	17	1000	Unknown		04/27/2018 18:32	Finished	SAMP,10mL
71	N030017-009AMS,MS	18	1000	Unknown		04/27/2018 18:41	Finished	MS (1ppb), IWST-180129B,10
72	N030017-010A,SAMP	19	1000	Unknown		04/27/2018 18:51	Finished	SAMP,10mL
73	N030017-010AMS,MS	20	1000	Unknown		04/27/2018 19:00	Finished	MS (1ppb), IWST-180129B,10
74	CCV-6,CCV1,1,	21	1000	Unknown		04/27/2018 19:10	Finished	CCV @10ppb, IWST-180129A
75	CCB-6,CCB,1,	22	1000	Unknown		04/27/2018 19:19	Finished	CCB R180418A
76	N030017-011A,SAMP	23	1000	Unknown		04/27/2018 19:29	Finished	SAMP,10mL
77	N030017-011AMS,MS	24	1000	Unknown		04/27/2018 19:38	Finished	MS (1ppb), IWST-180129B,10
78	N029858-001A,SAMP	25	1000	Unknown		04/27/2018 19:48	Finished	SAMP,10mL
79	N029858-001AMS,MS	26	1000	Unknown		04/27/2018 19:57	Finished	MS (1ppb), IWST-180129B,10
80	N030017-004AMS,MS	27	1000	Unknown		04/27/2018 20:07	Finished	MS (1ppb), IWST-180129B,10
81	CCV-7,CCV,1,	28	1000	Unknown		04/27/2018 20:16	Finished	CCV @5ppb, IWST-180129A
82	CCB-7,CCB,1,	29	1000	Unknown		04/27/2018 20:26	Finished	CCB R180418A
83	SHUTDOWN	30	1000	Unknown		04/27/2018 20:35	Finished	
84	Eluent: R180426A	31	1000	Unknown		n.a.	Finished	Eluent
85	PCR: R180426B	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 08:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

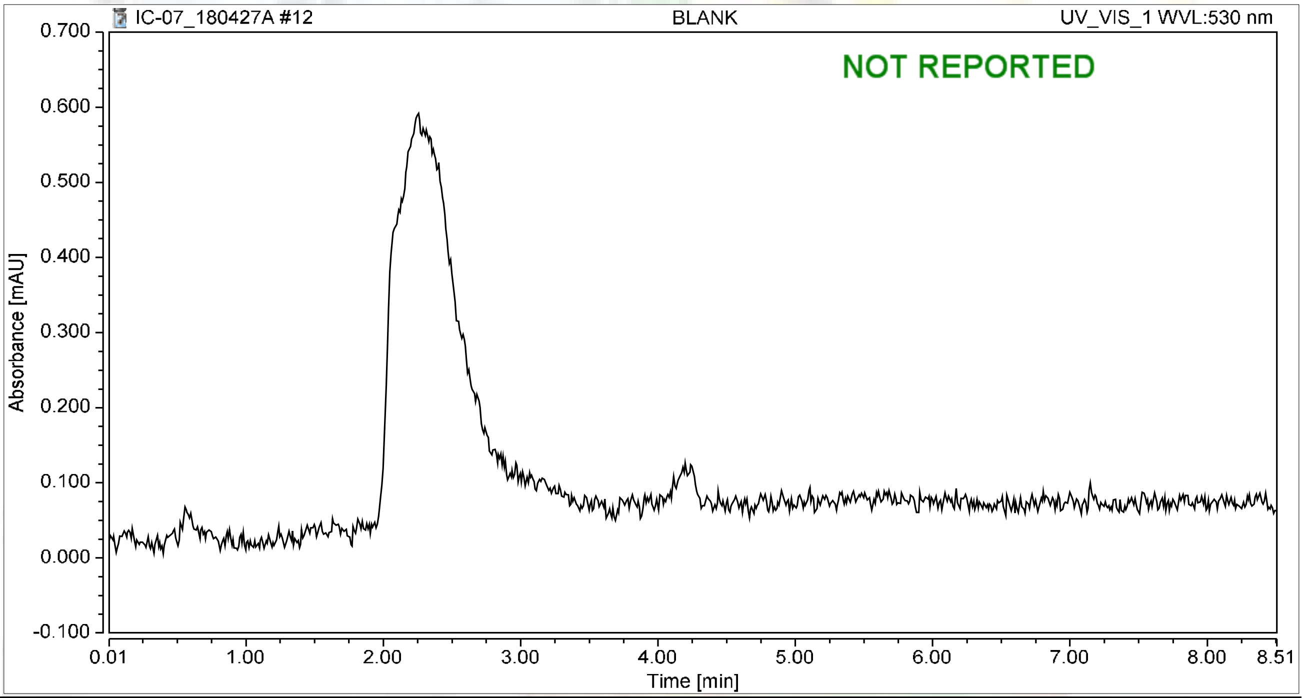
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 08:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

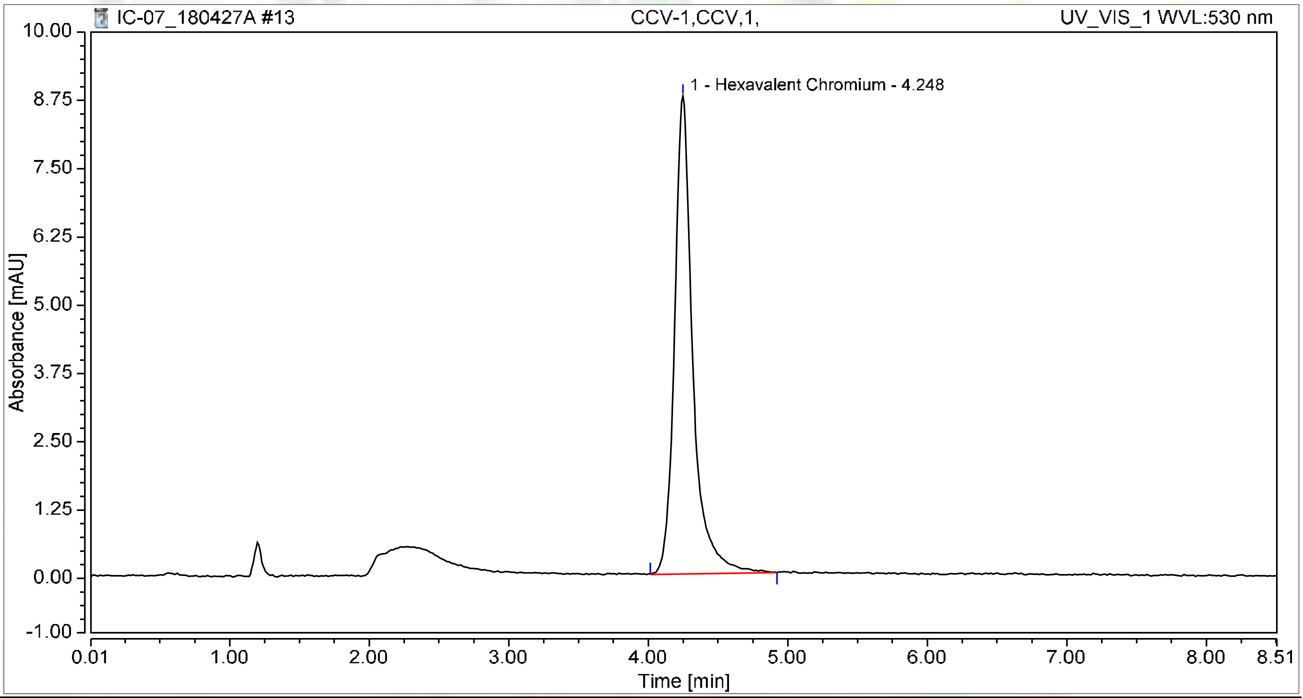
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 08:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

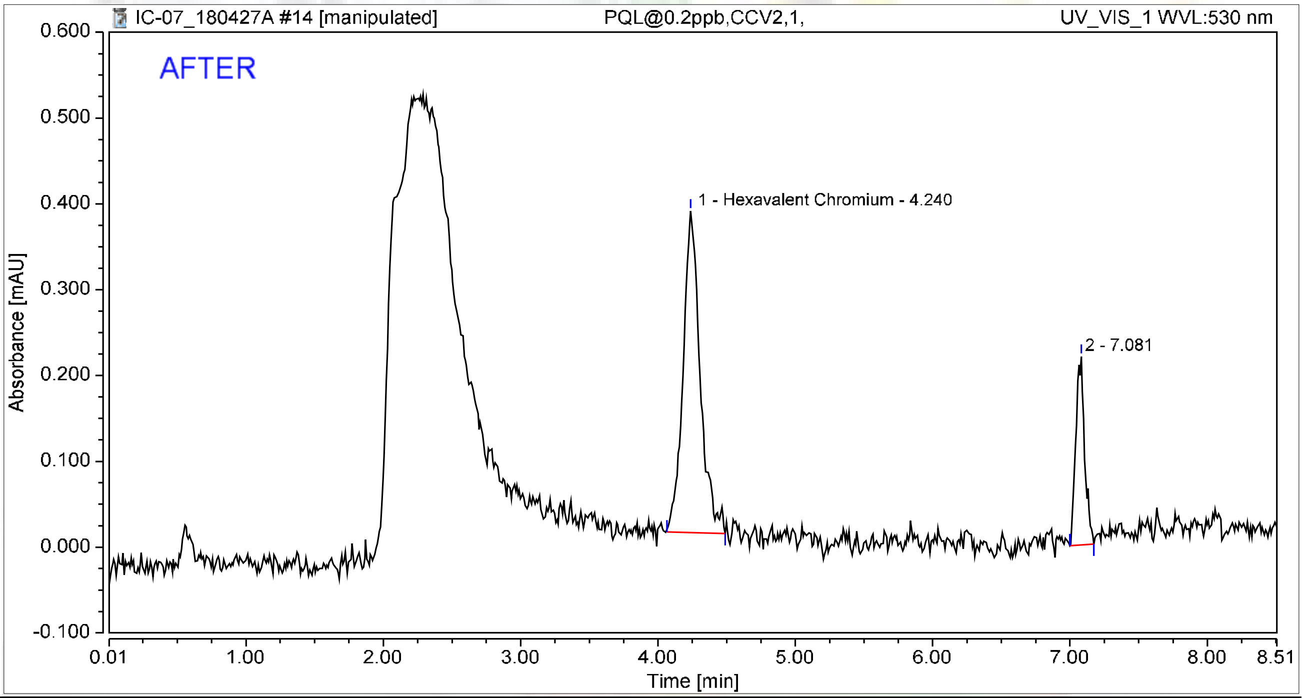
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.326	8.748	100.00	100.00	5.2308
Total:			**1.326**	**8.748**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 09:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.054	0.374	77.25	63.02	0.2135
2		7.081	0.016	0.220	22.75	36.98	n.a.
Total:			**0.070**	**0.594**	**100.00**	**100.00**	

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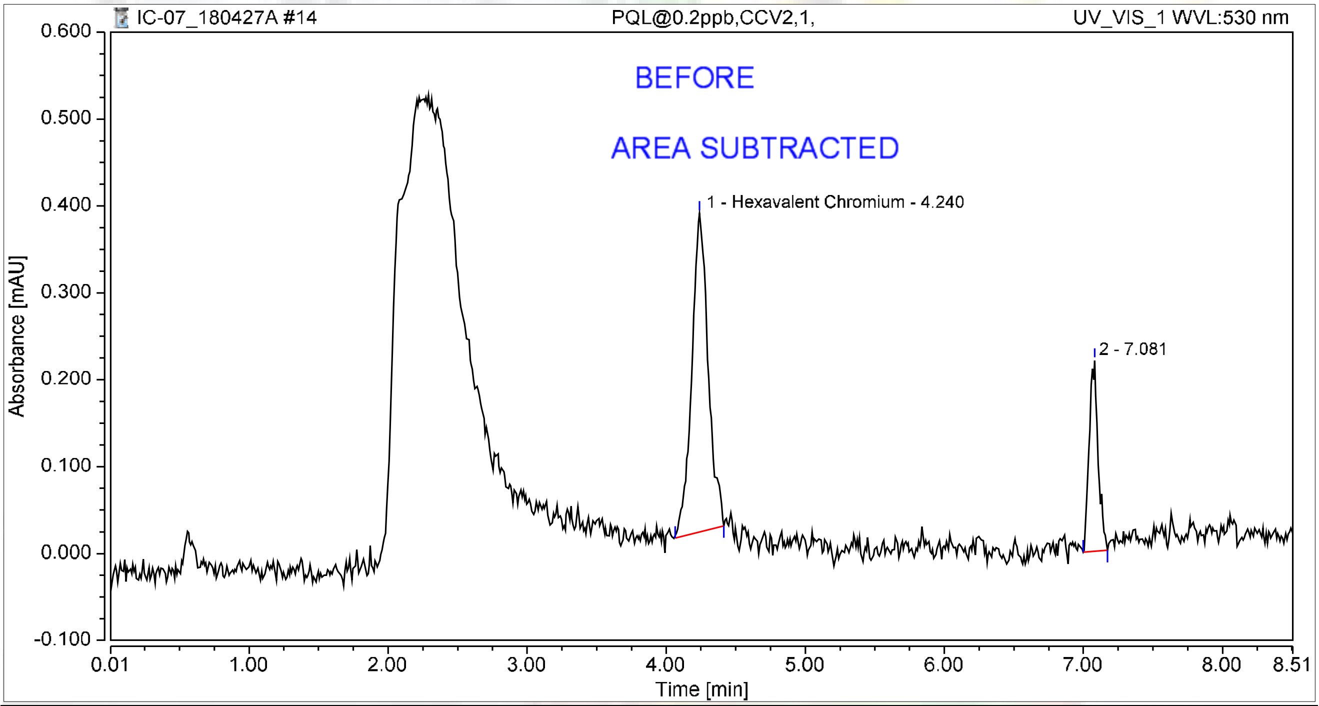
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 09:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.050	0.367	75.83	62.53	0.1972
2		7.081	0.016	0.220	24.17	37.47	n.a.
Total:			**0.066**	**0.586**	**100.00**	**100.00**	

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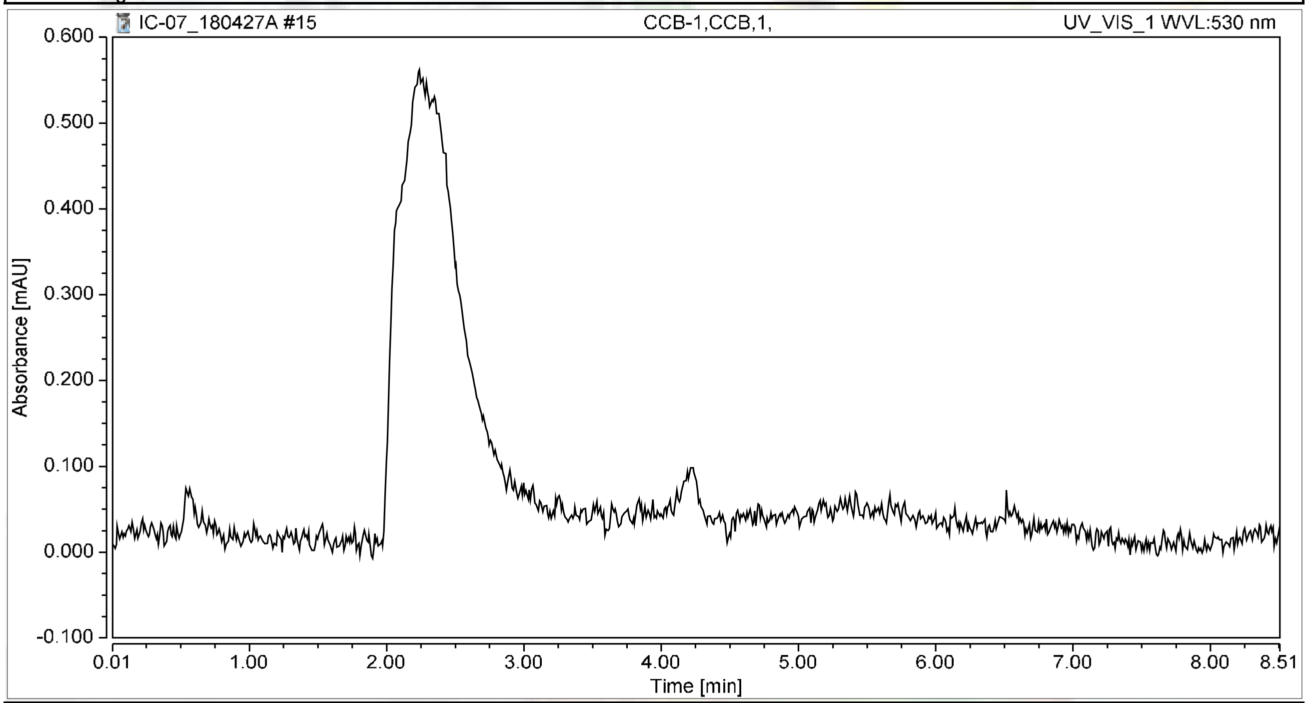
Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 09:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

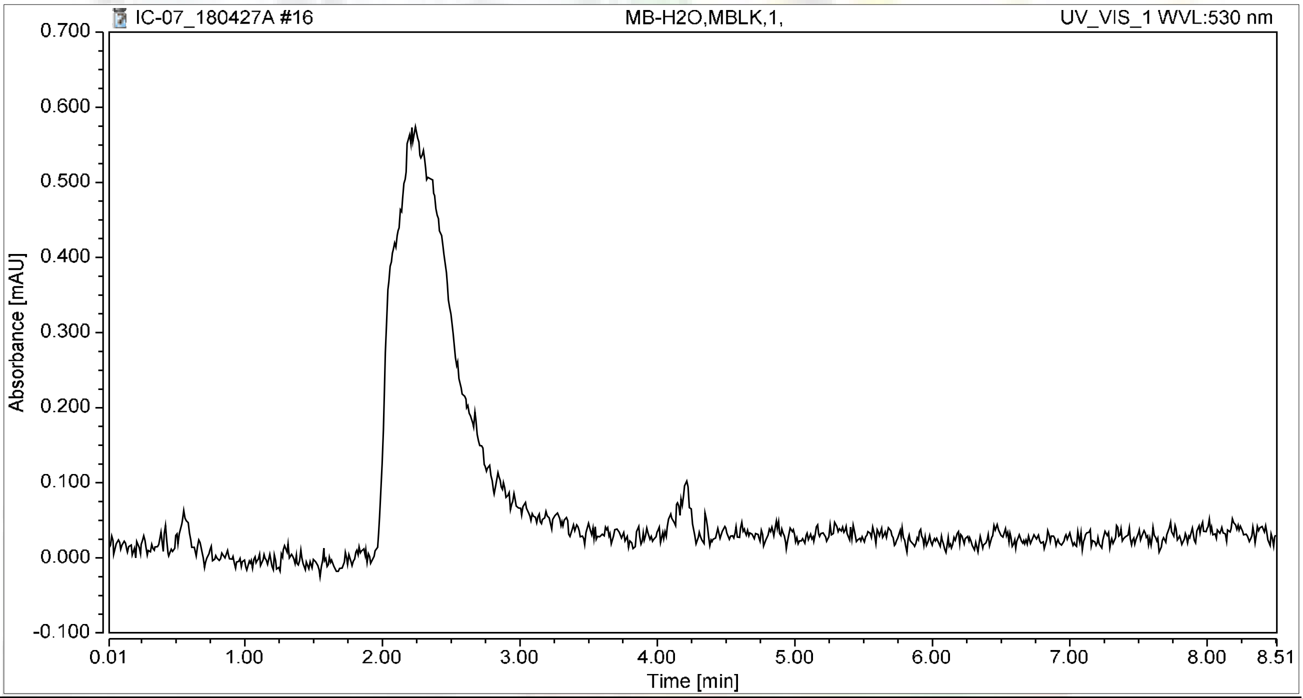
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 09:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

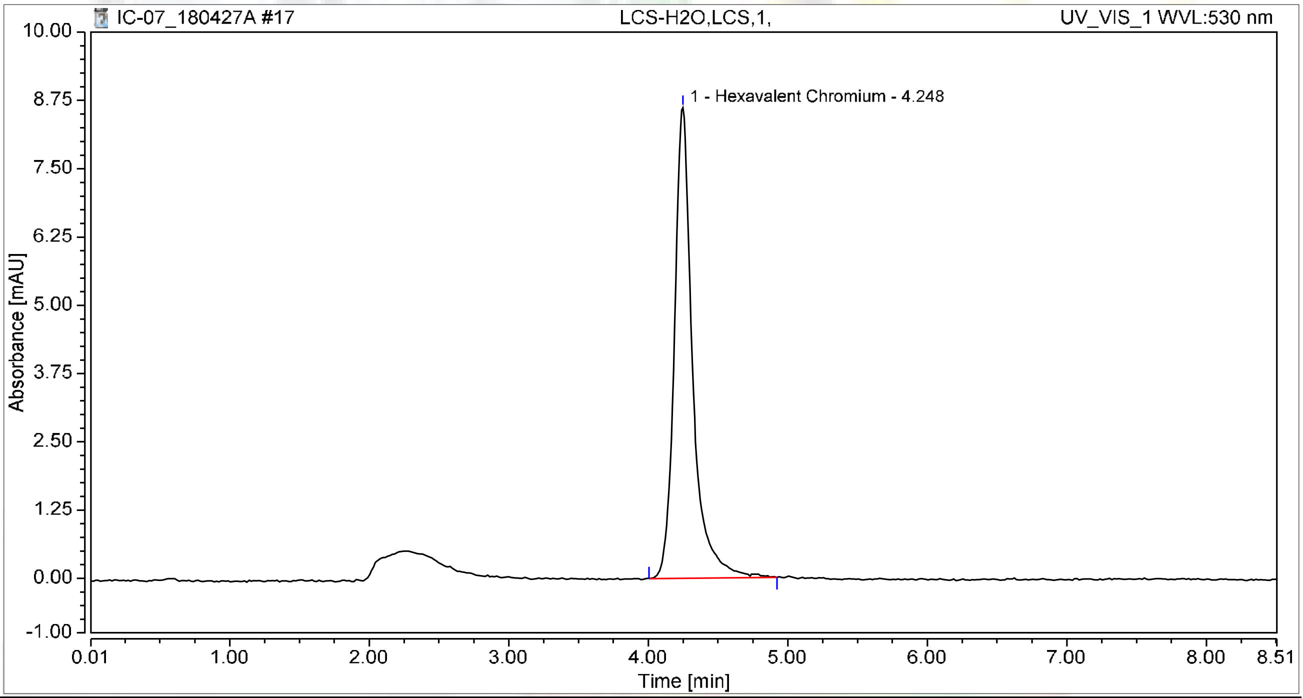
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 09:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

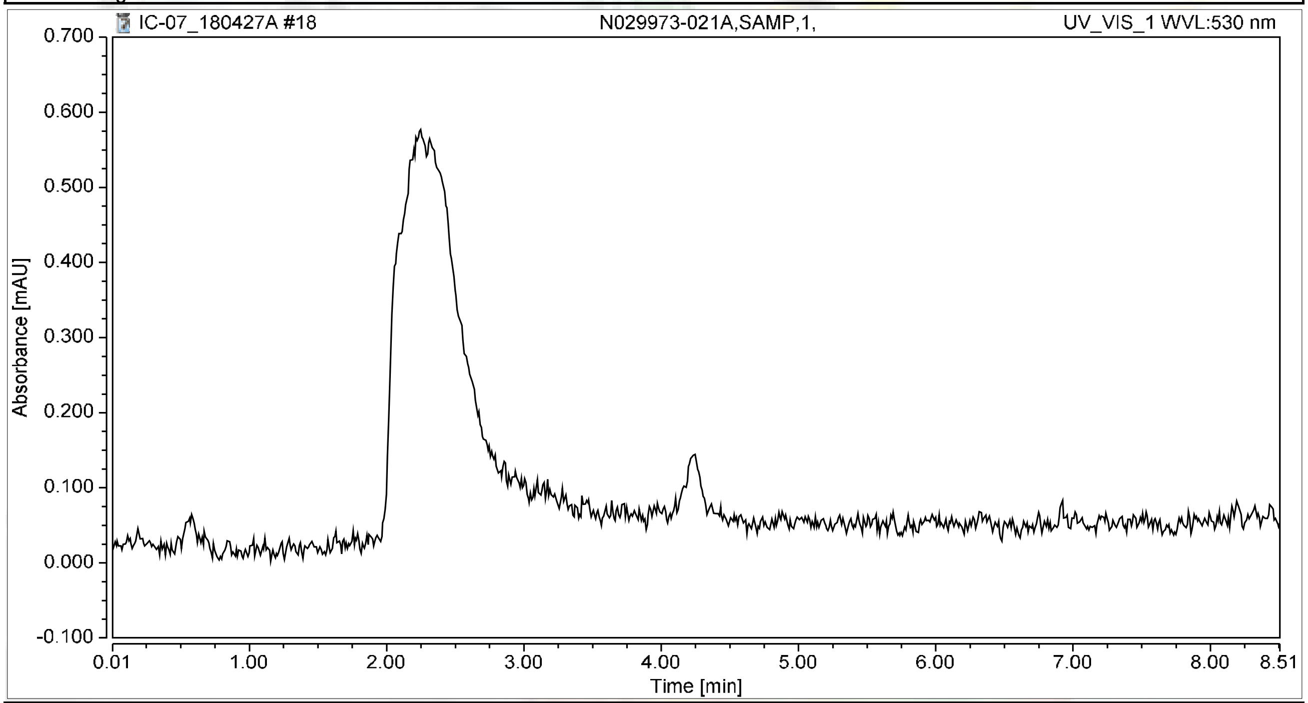
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.310	8.622	100.00	100.00	5.1669
Total:			**1.310**	**8.622**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-021A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 09:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

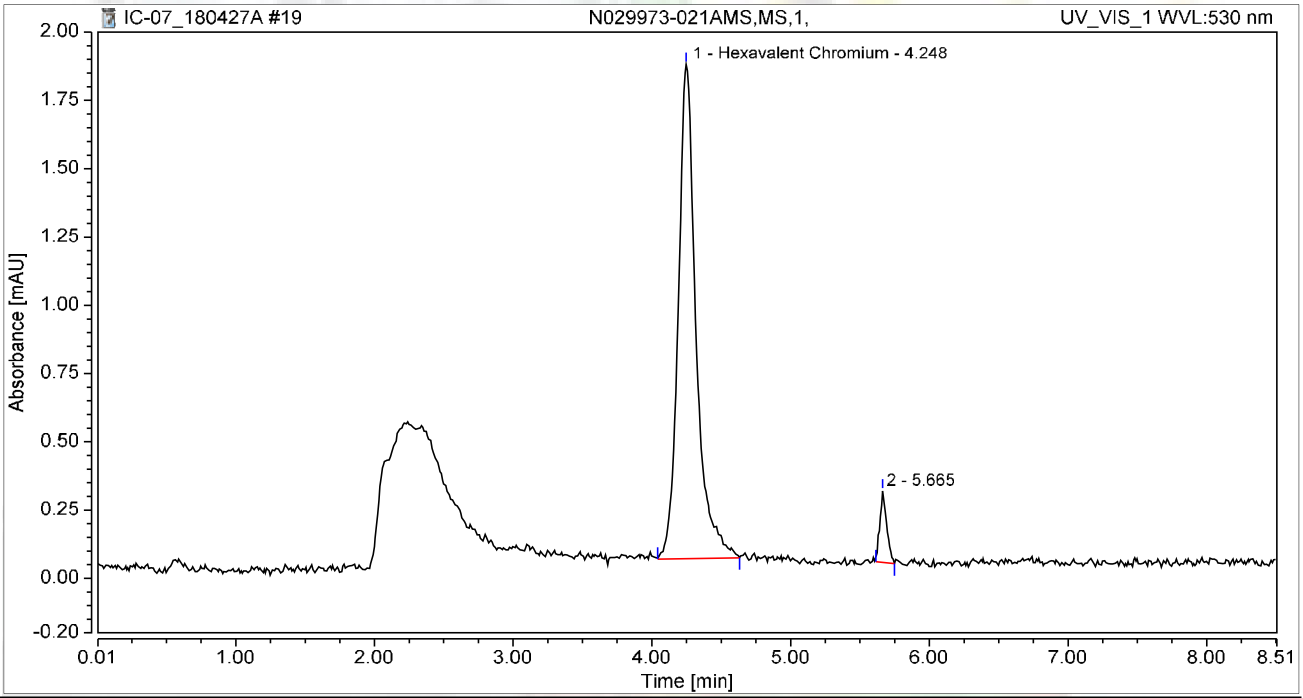
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-021AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 09:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

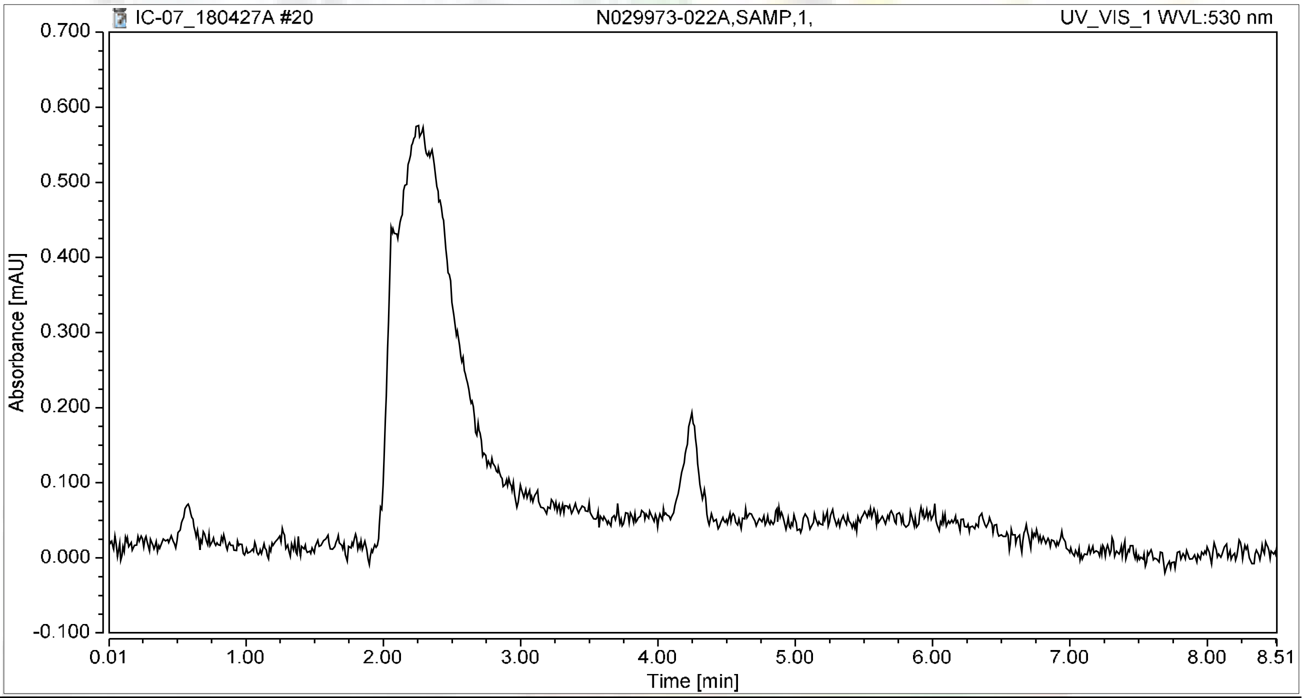
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.269	1.810	94.78	87.40	1.0615
2		5.665	0.015	0.261	5.22	12.60	n.a.
Total:			**0.284**	**2.071**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-022A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 09:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

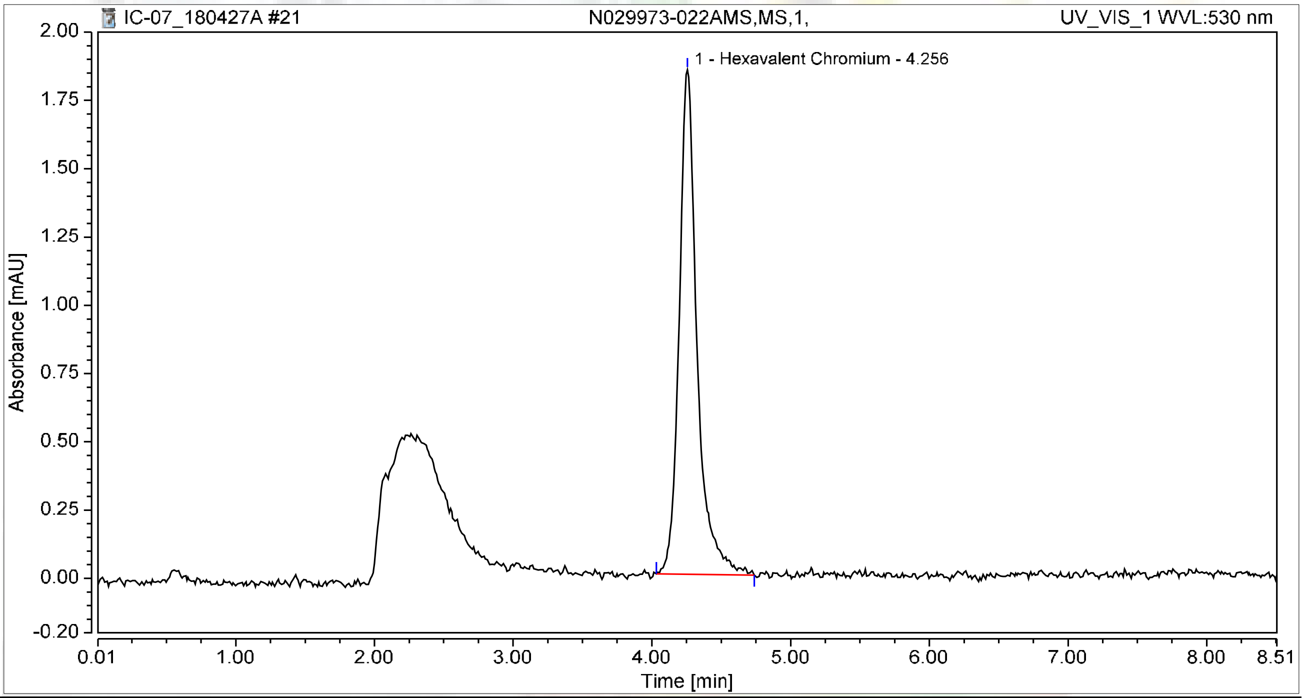
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029973-022AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 10:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

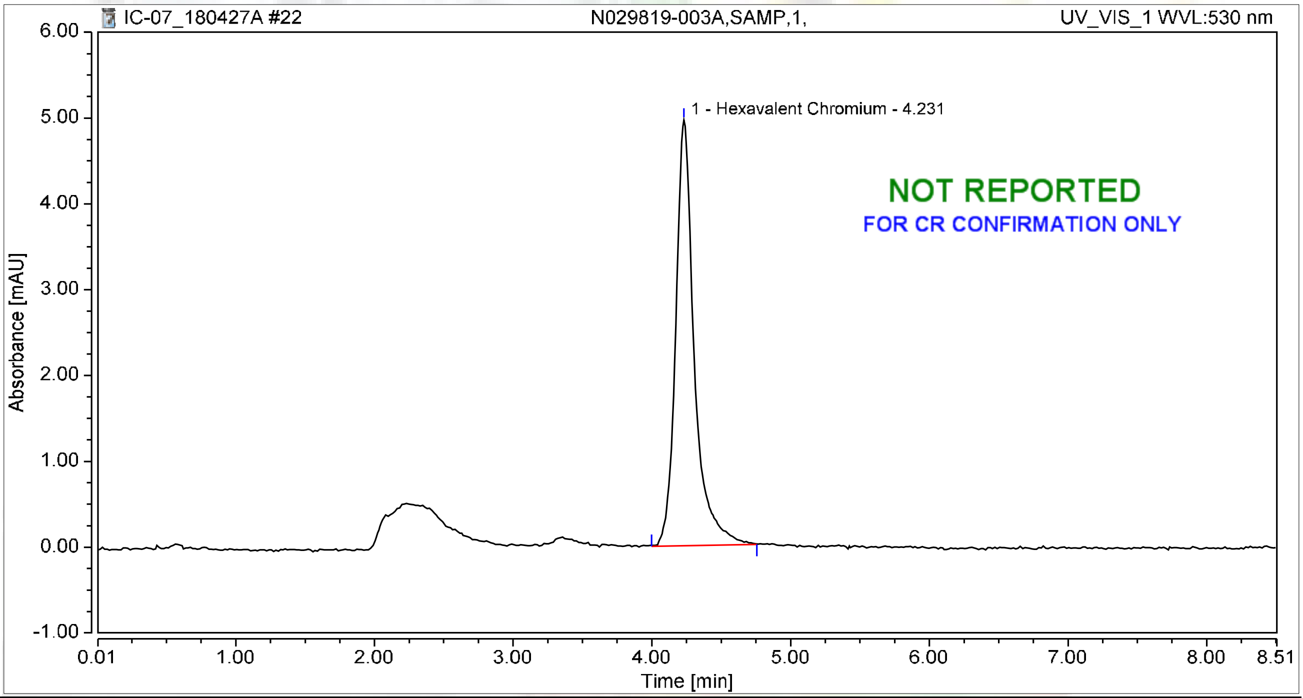
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.276	1.846	100.00	100.00	1.0893
Total:			**0.276**	**1.846**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029819-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 10:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

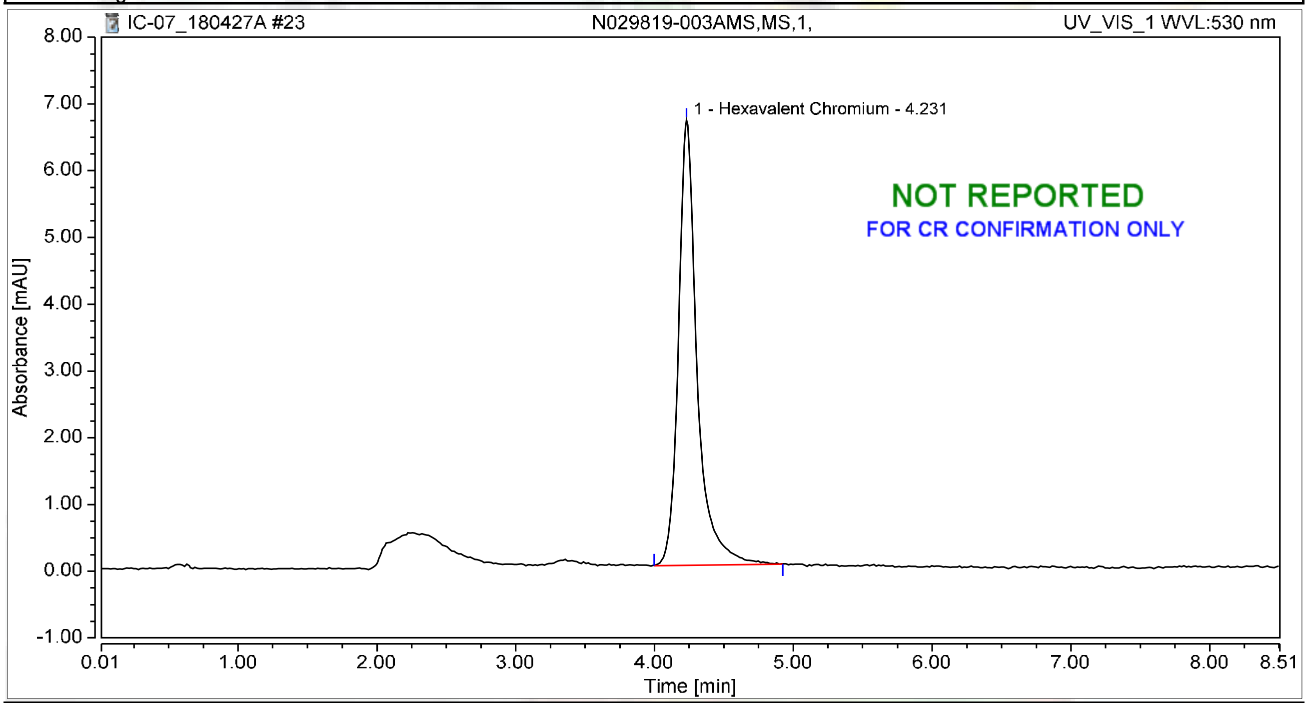
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.769	4.961	100.00	100.00	3.0318
Total:			**0.769**	**4.961**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029819-003AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

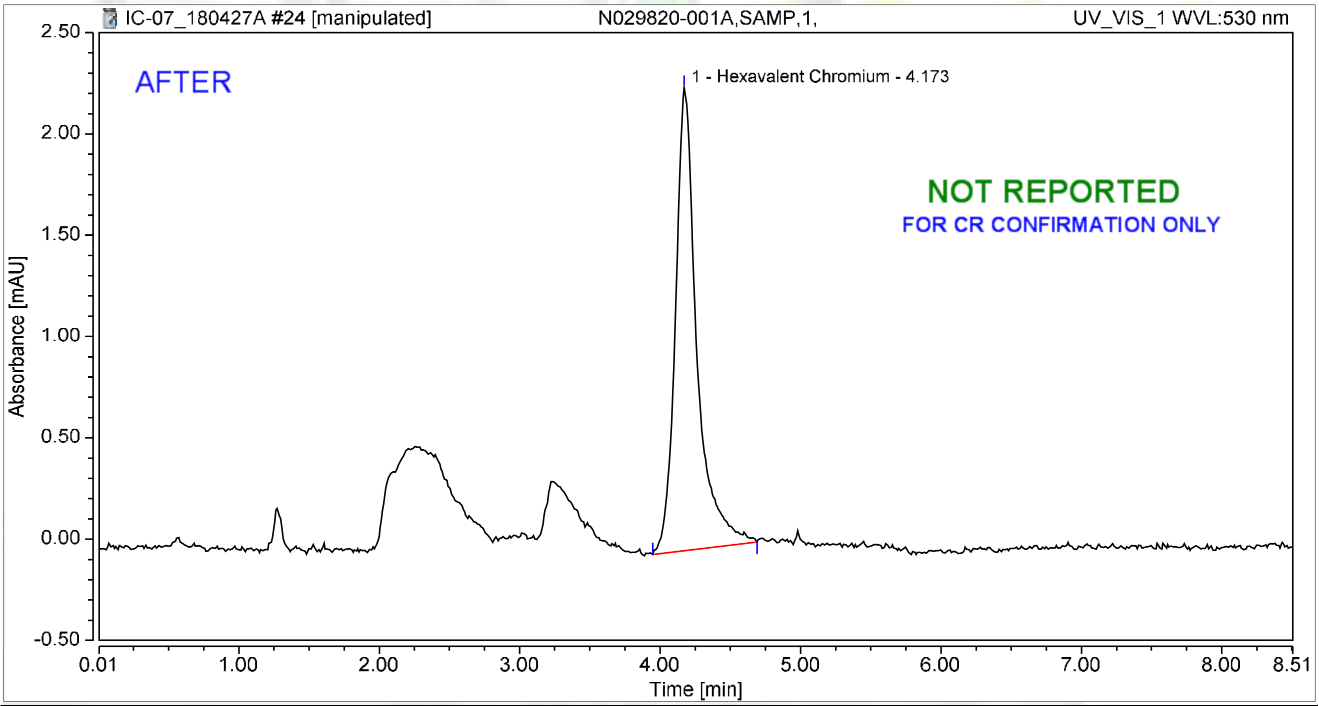
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.043	6.671	100.00	100.00	4.1153
Total:			**1.043**	**6.671**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029820-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.405	2.285	100.00	100.00	1.5970
Total:			**0.405**	**2.285**	**100.00**	**100.00**	

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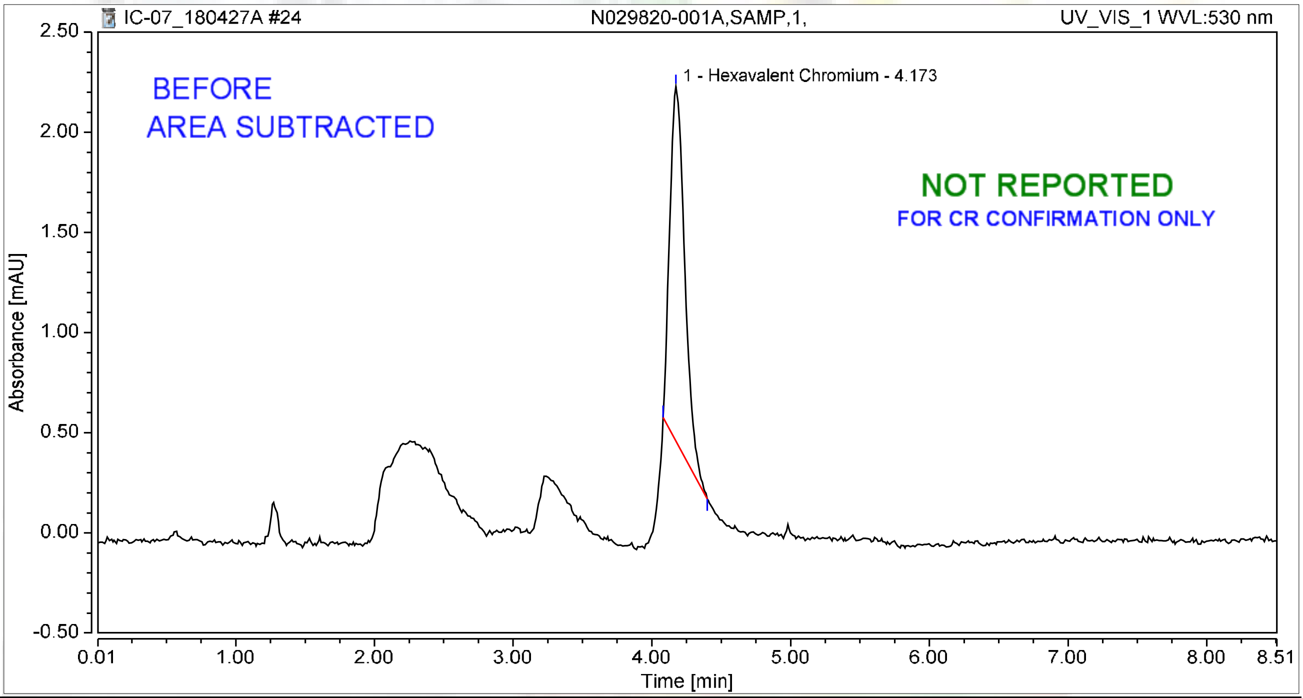
Chromatogram and Results

Injection Details

Injection Name:	**N029820-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.222	1.769	100.00	100.00	0.8772
Total:			**0.222**	**1.769**	**100.00**	**100.00**	

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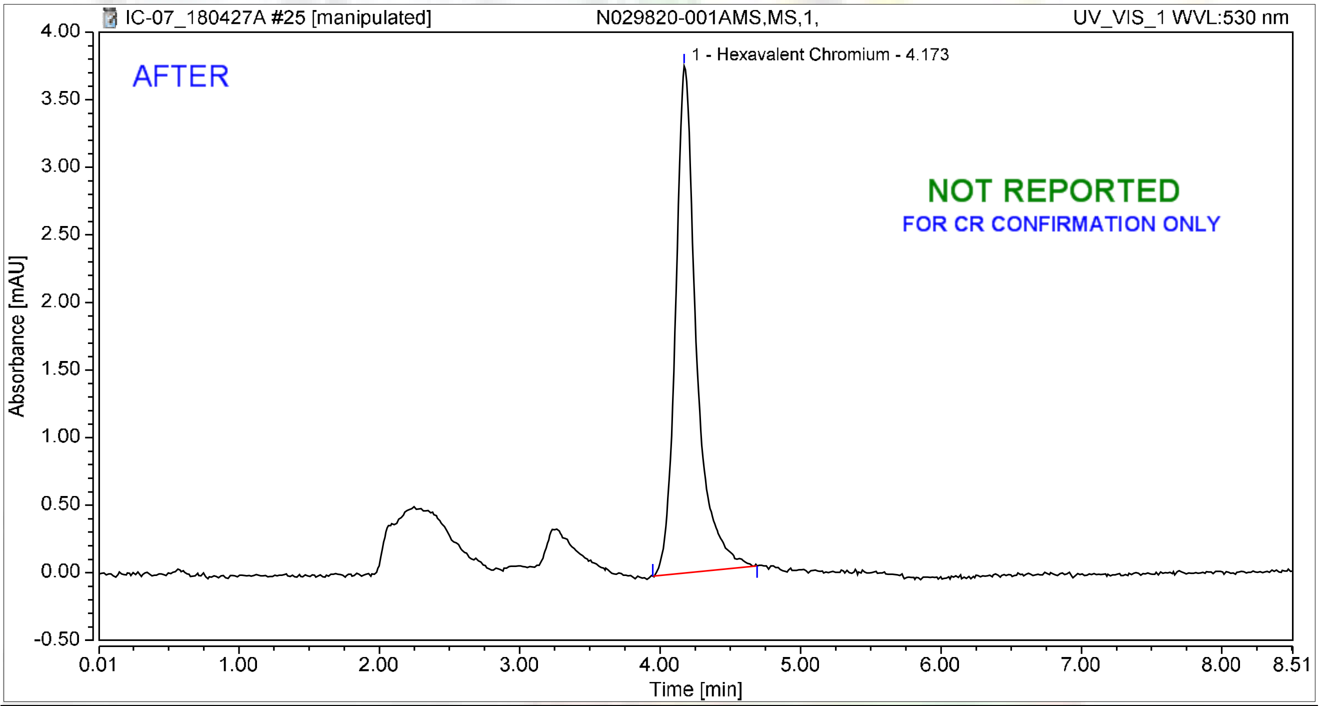
Chromatogram and Results

Injection Details

Injection Name:	**N029820-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.646	3.750	100.00	100.00	2.5478
Total:			**0.646**	**3.750**	**100.00**	**100.00**	

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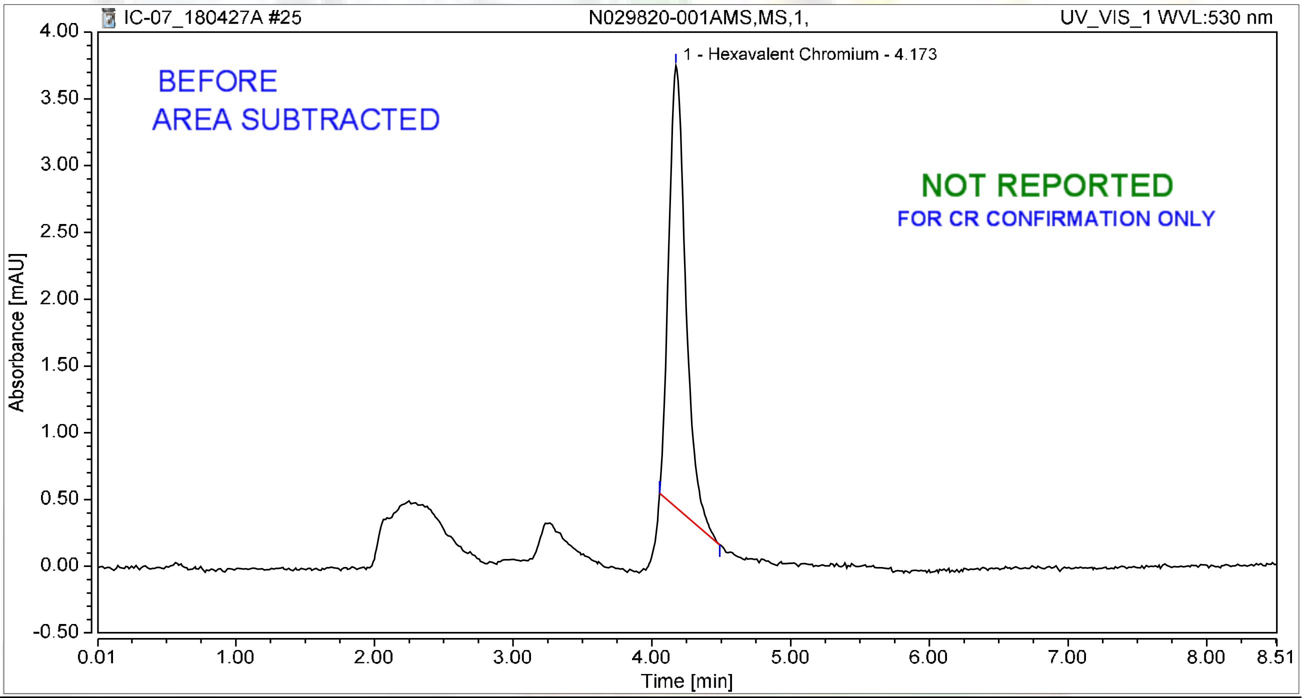
Chromatogram and Results

Injection Details

Injection Name:	**N029820-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.470	3.306	100.00	100.00	1.8523
Total:			**0.470**	**3.306**	**100.00**	**100.00**	

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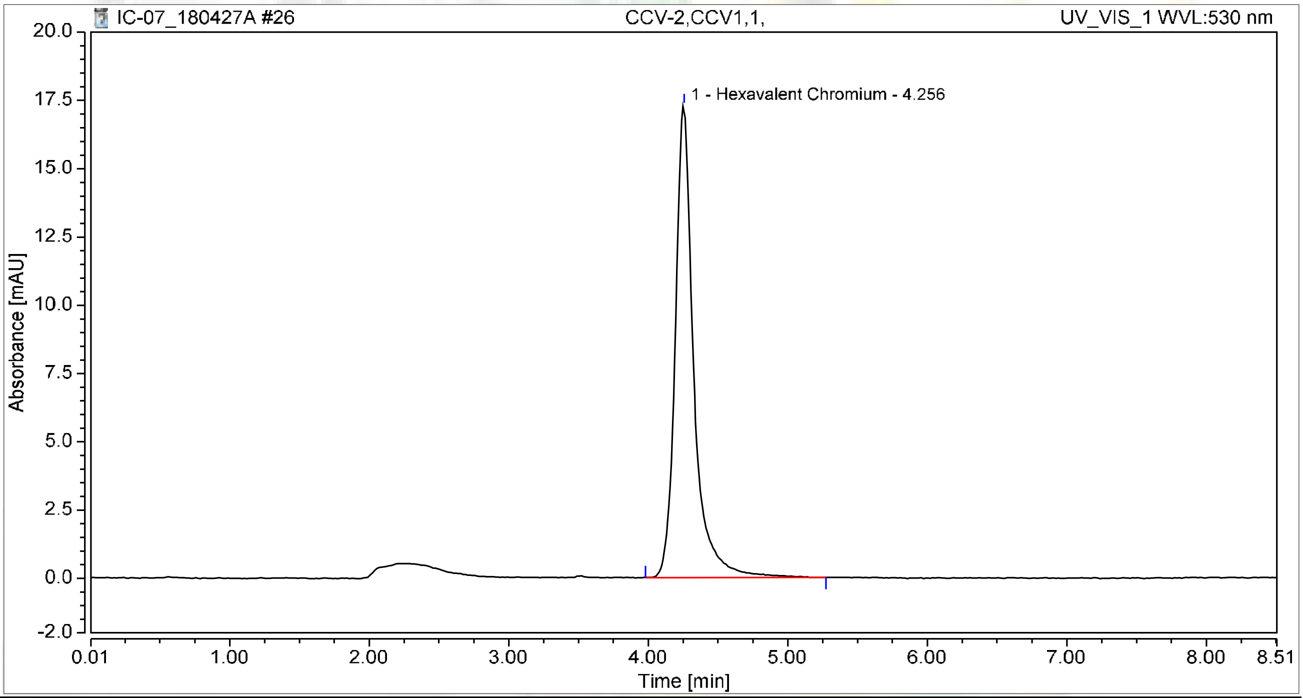
Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

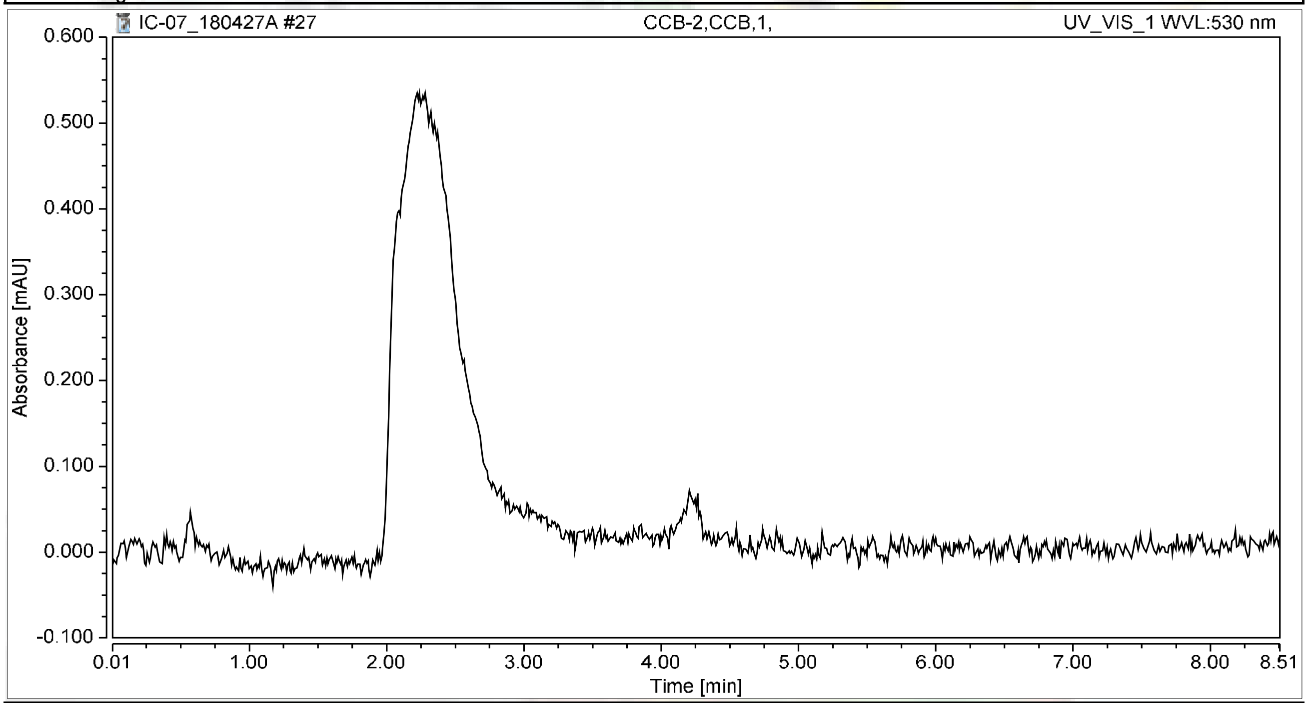
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.653	17.277	100.00	100.00	10.4646
Total:			**2.653**	**17.277**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

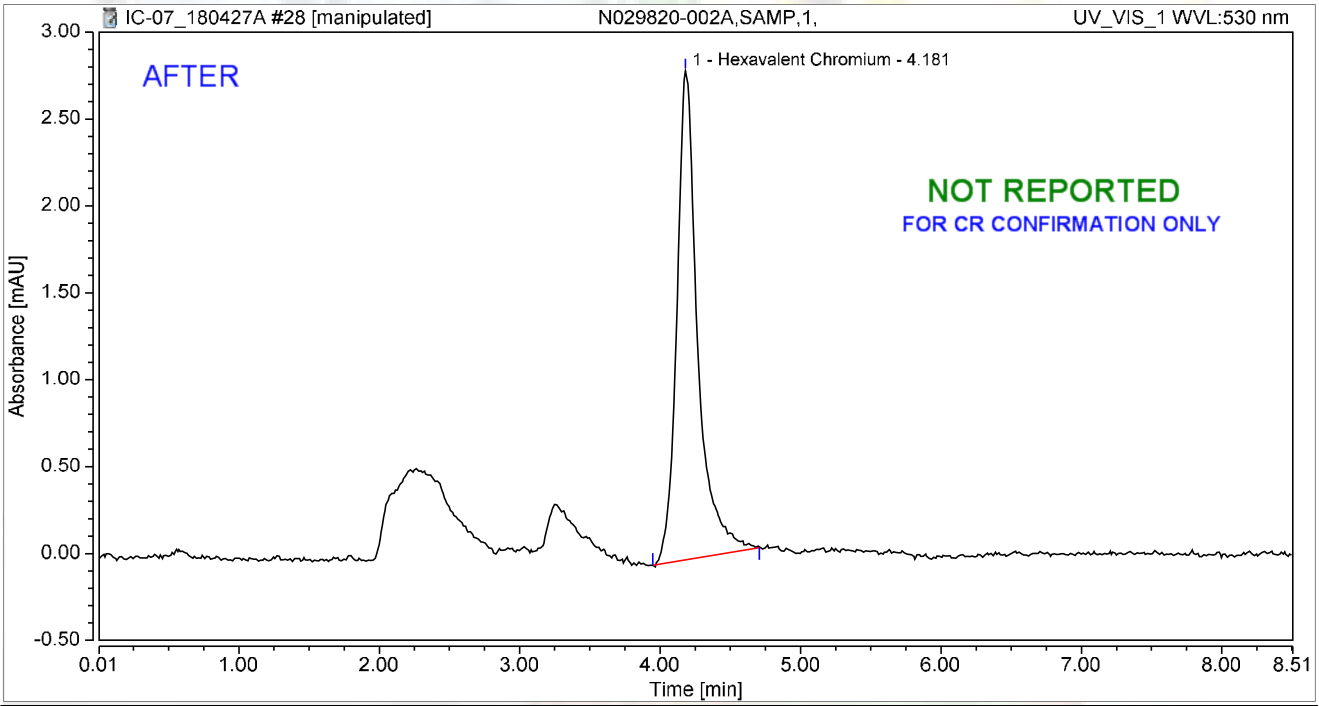
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029820-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.483	2.812	100.00	100.00	1.9066
Total:			**0.483**	**2.812**	**100.00**	**100.00**	

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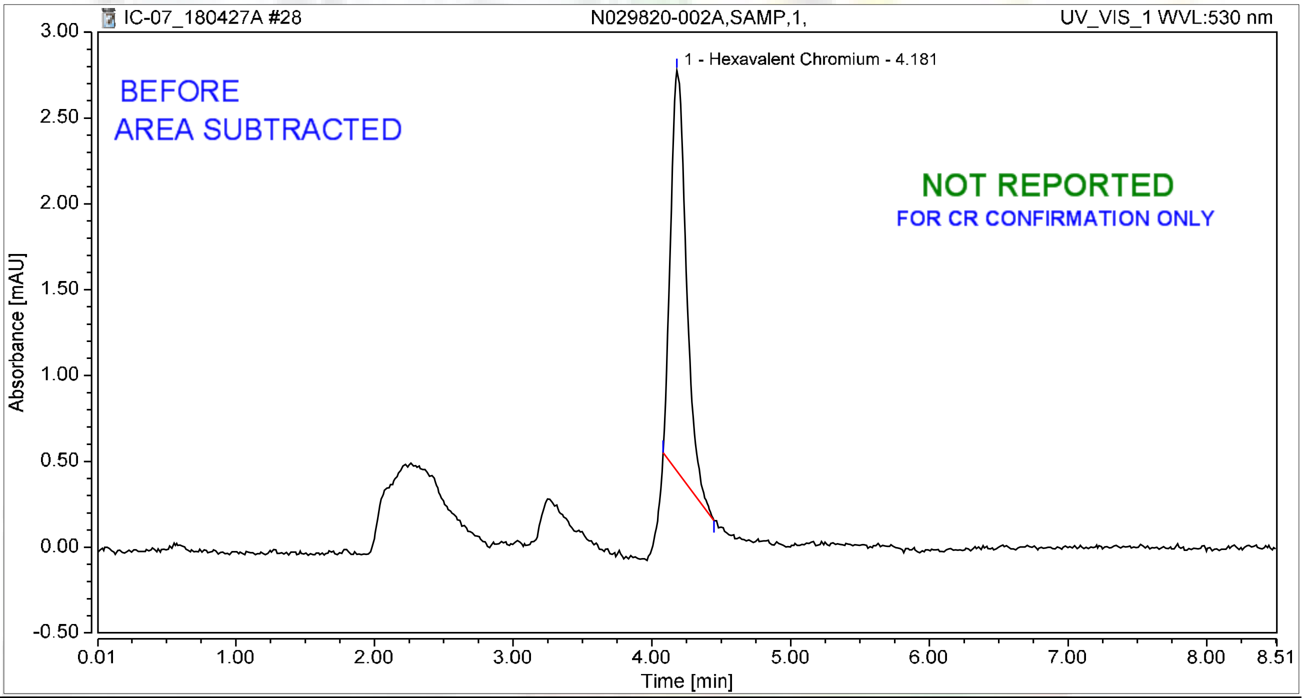
Chromatogram and Results

Injection Details

Injection Name:	**N029820-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.308	2.333	100.00	100.00	1.2164
Total:			**0.308**	**2.333**	**100.00**	**100.00**	

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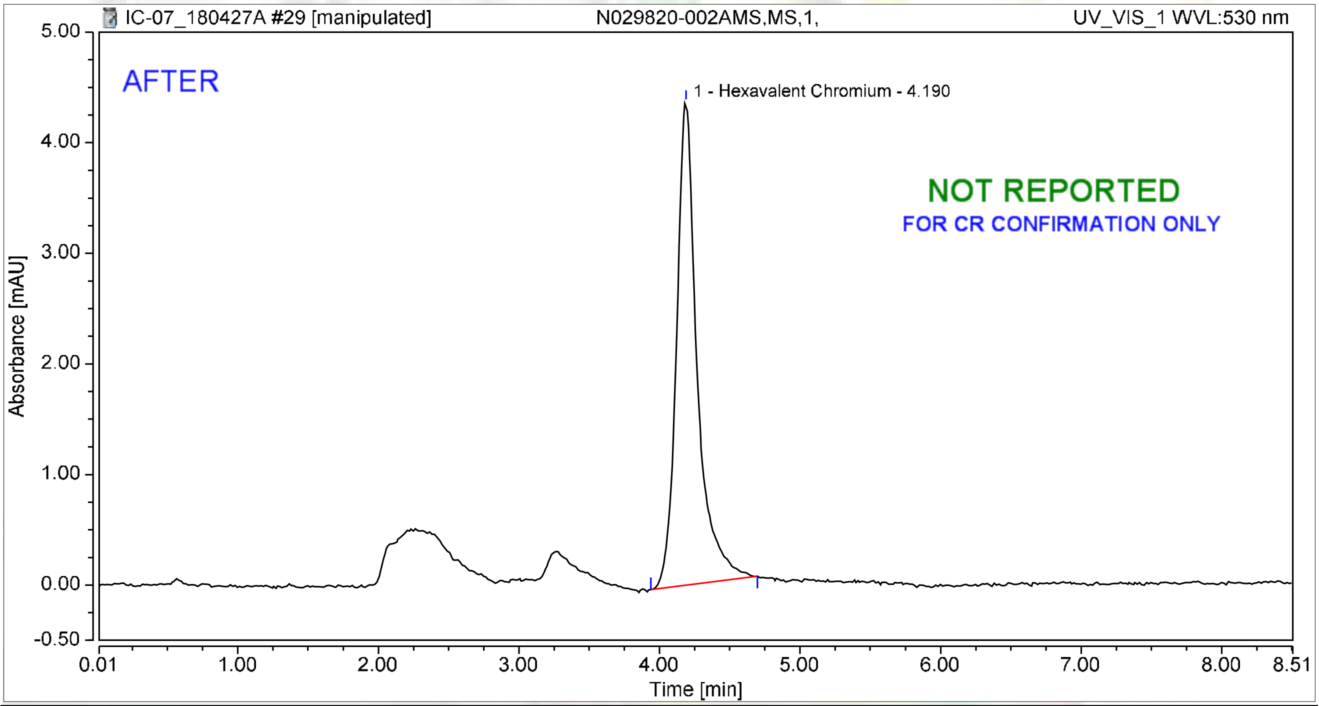
Chromatogram and Results

Injection Details

Injection Name:	**N029820-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.745	4.367	100.00	100.00	2.9399
Total:			**0.745**	**4.367**	**100.00**	**100.00**	

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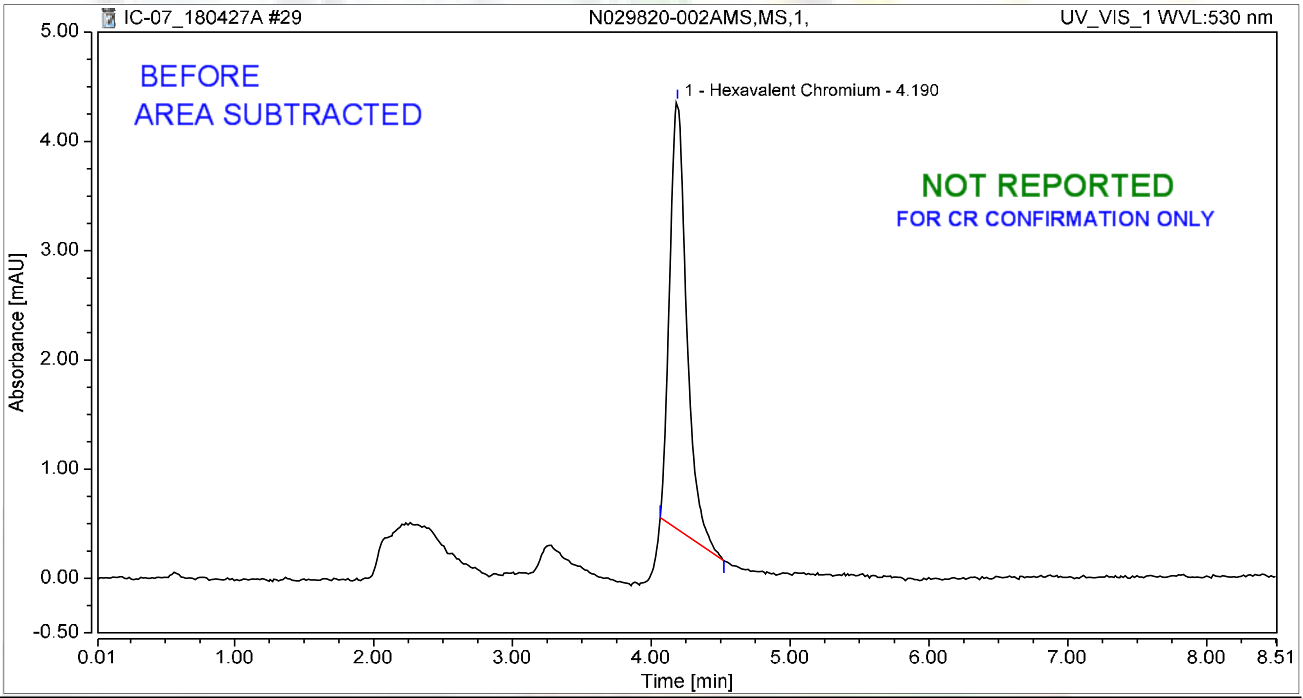
Chromatogram and Results

Injection Details

Injection Name:	**N029820-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.561	3.916	100.00	100.00	2.2138
Total:			**0.561**	**3.916**	**100.00**	**100.00**	

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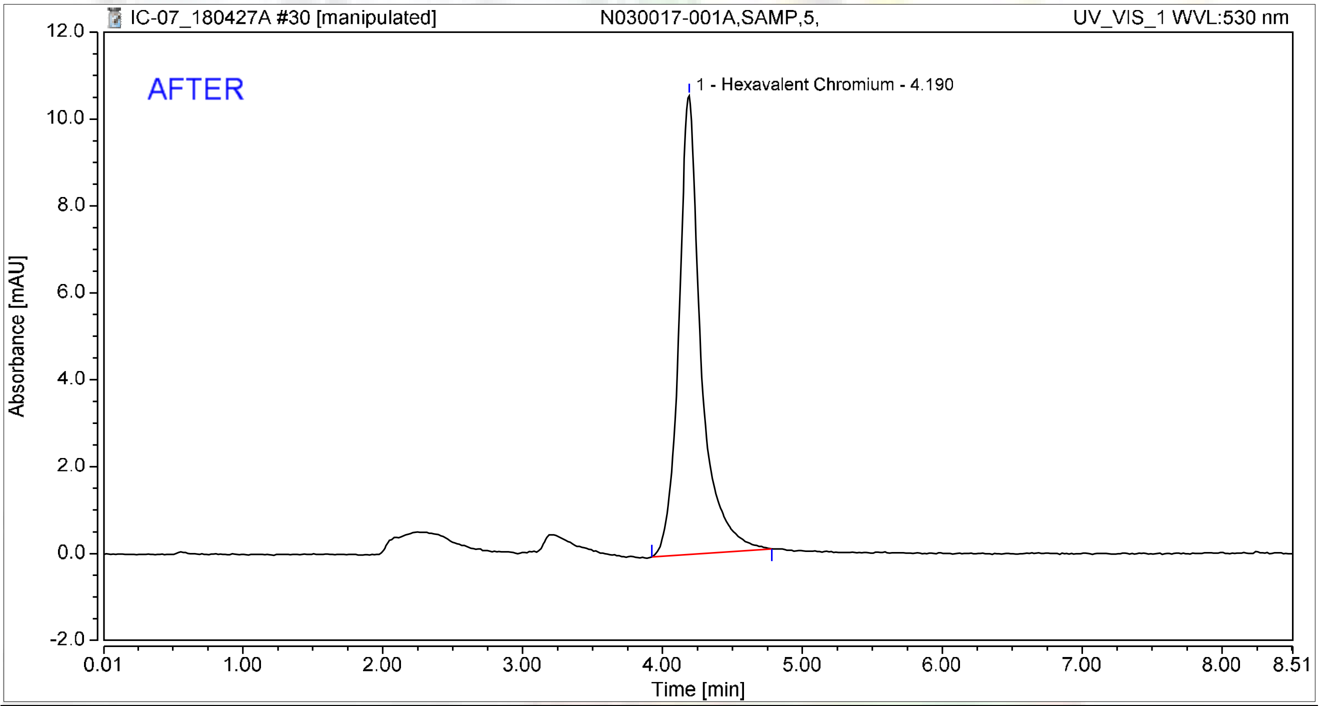
Chromatogram and Results

Injection Details

Injection Name:	**N030017-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.953	10.559	100.00	100.00	7.7048
Total:			**1.953**	**10.559**	**100.00**	**100.00**	

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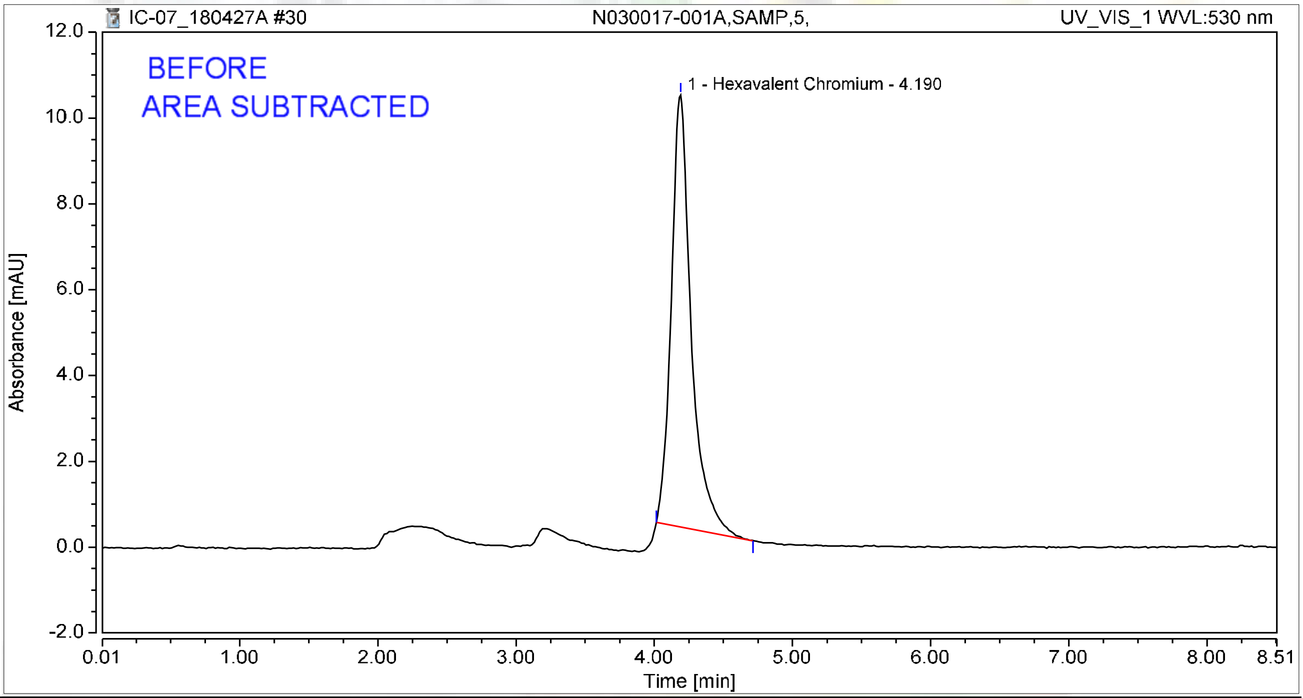
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.689	10.065	100.00	100.00	6.6609
Total:			**1.689**	**10.065**	**100.00**	**100.00**	

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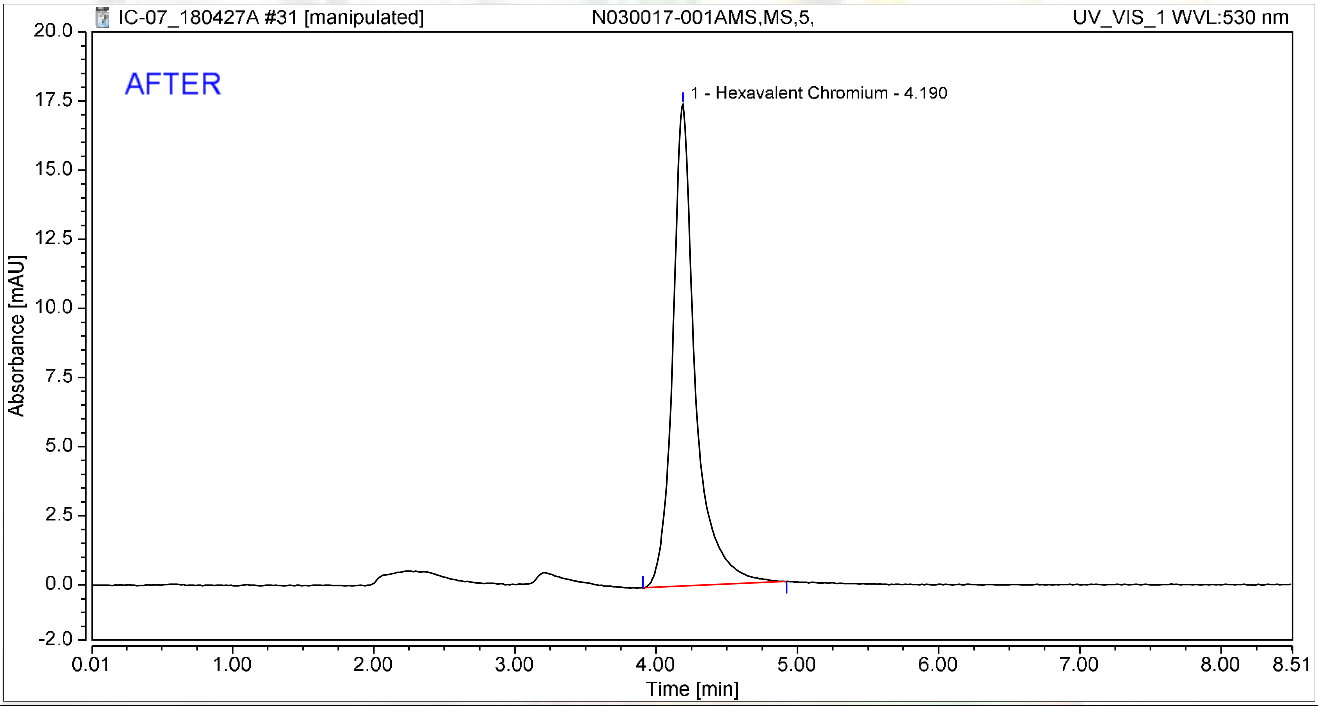
Chromatogram and Results

Injection Details

Injection Name:	**N030017-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	3.249	17.414	100.00	100.00	12.8182
Total:			**3.249**	**17.414**	**100.00**	**100.00**	

rba 5/6/2018

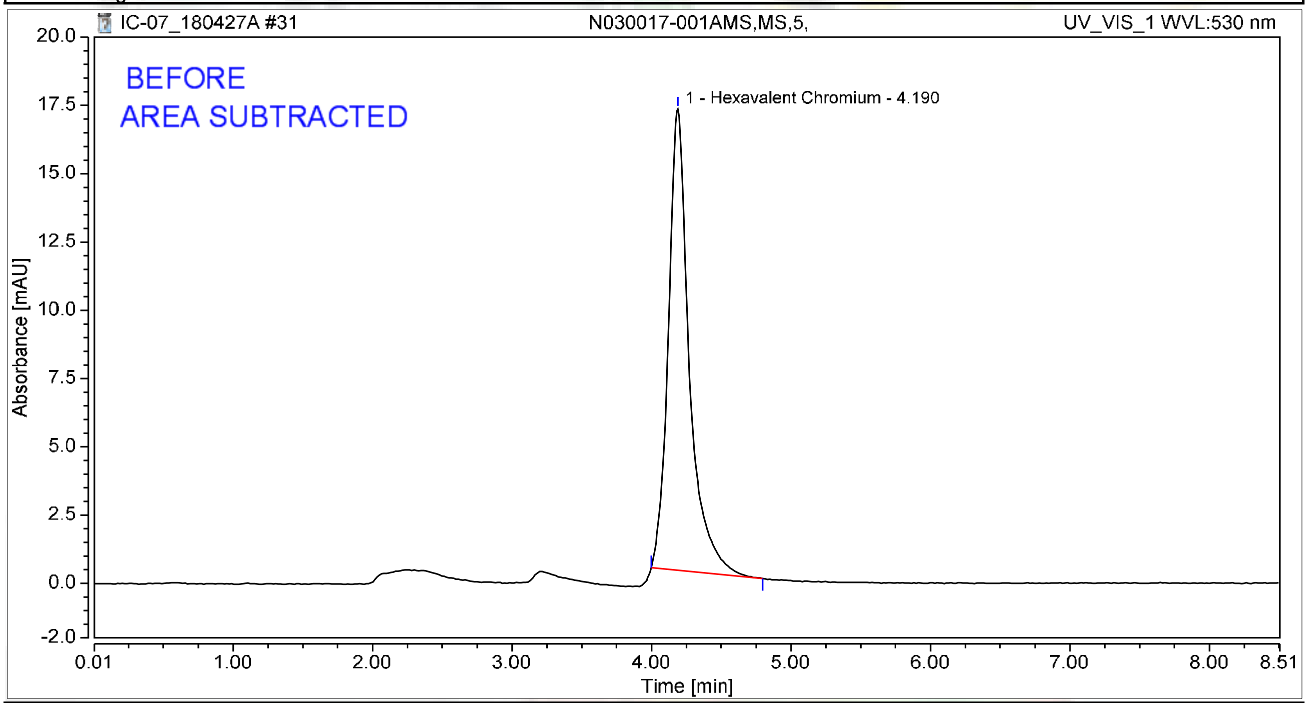
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.937	16.895	100.00	100.00	11.5857
Total:			**2.937**	**16.895**	**100.00**	**100.00**	

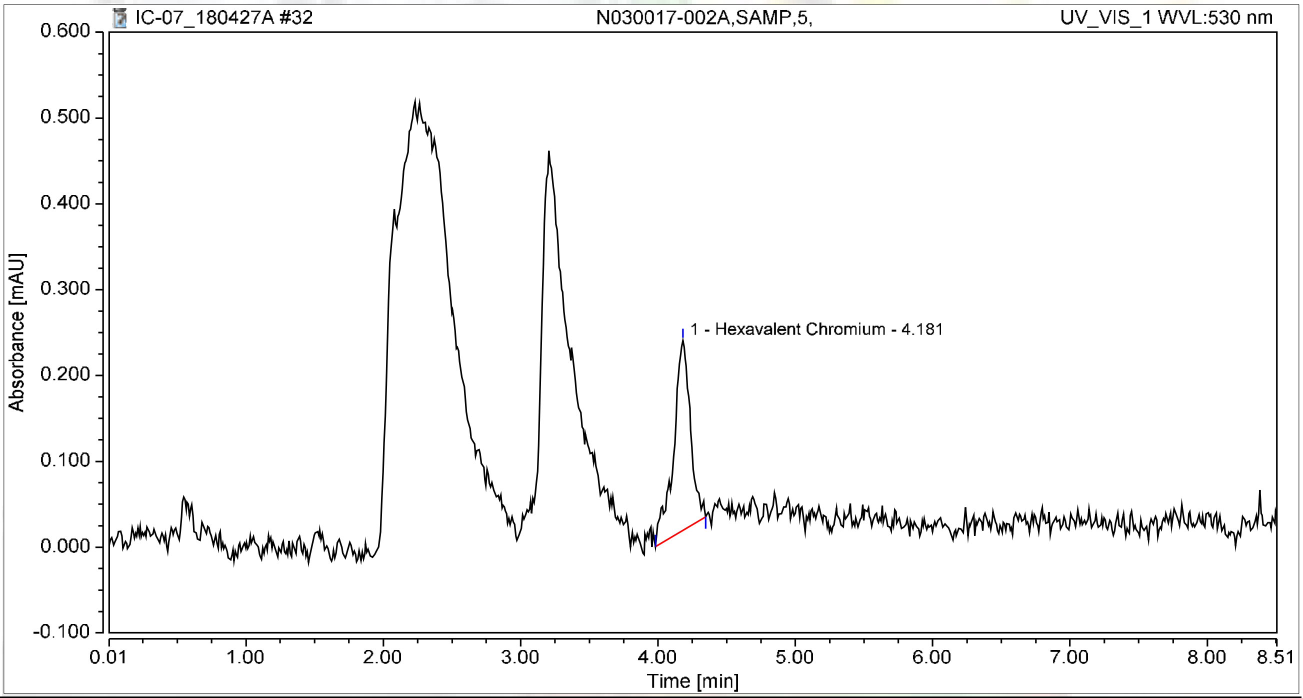
rba 5/6/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

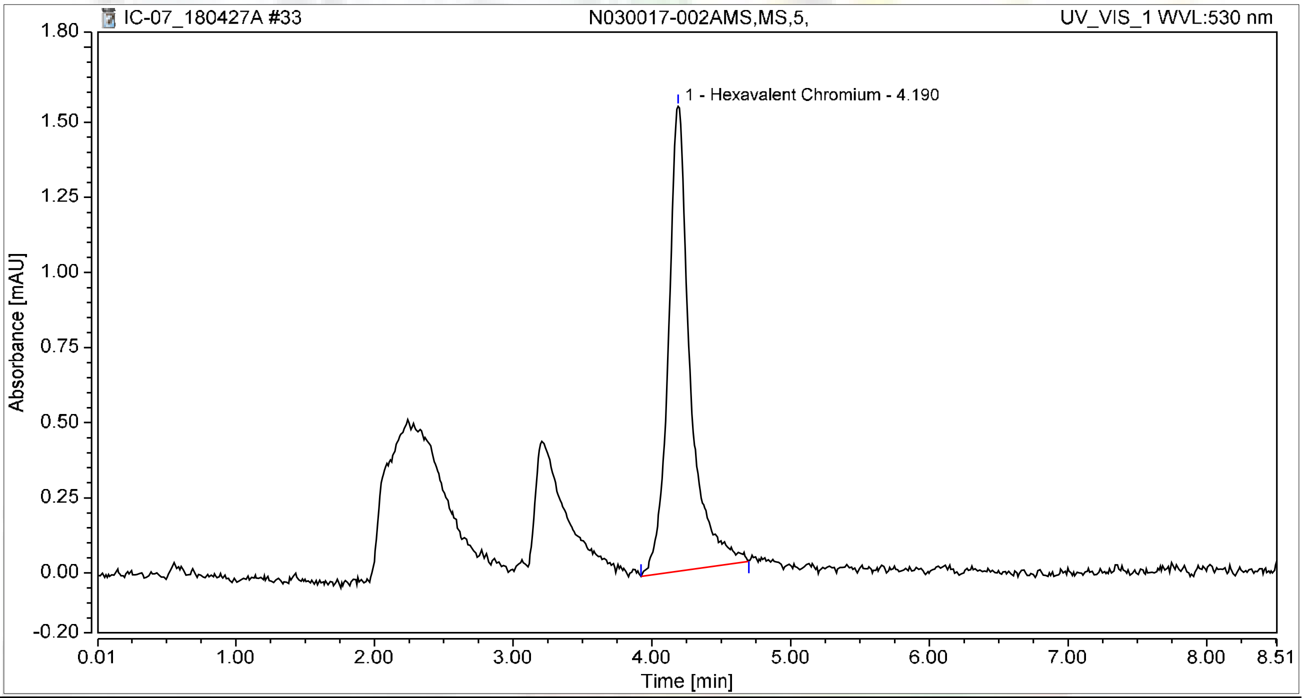
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.032	0.221	100.00	100.00	0.1243
Total:			**0.032**	**0.221**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

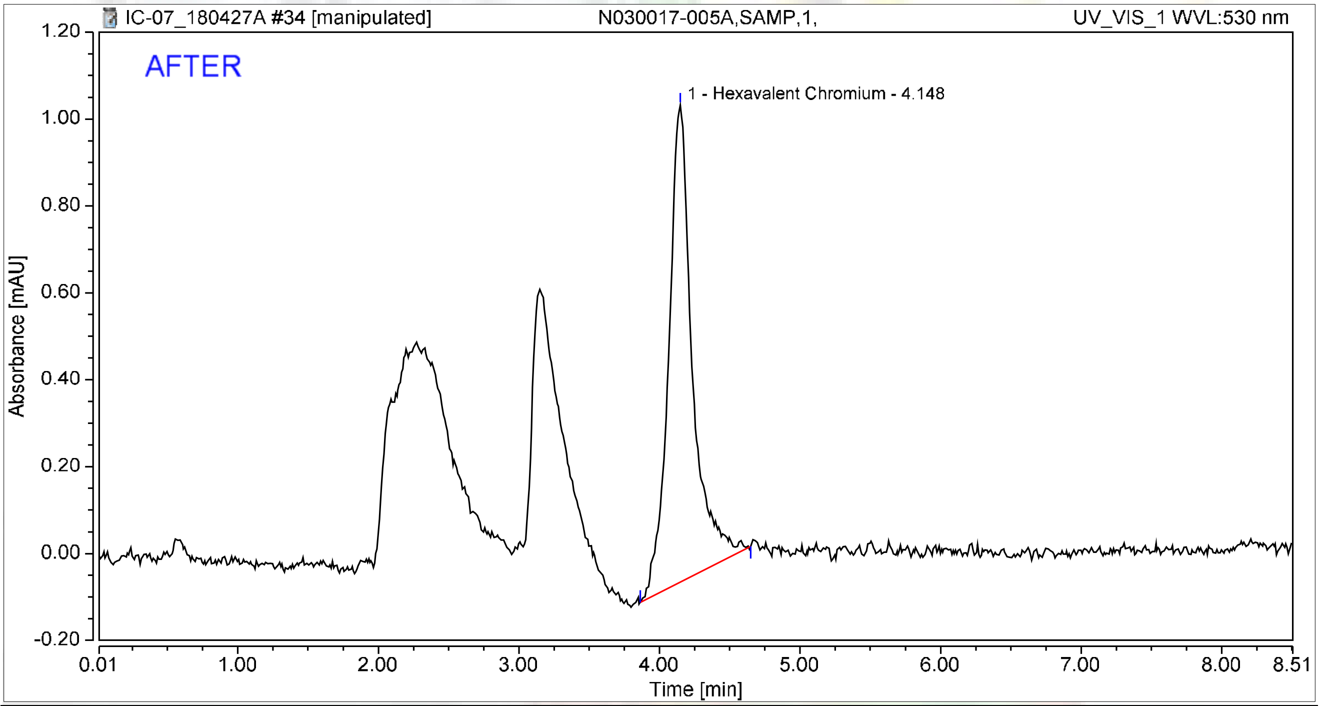
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.284	1.548	100.00	100.00	1.1211
Total:			**0.284**	**1.548**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.216	1.098	100.00	100.00	0.8526
Total:			**0.216**	**1.098**	**100.00**	**100.00**	

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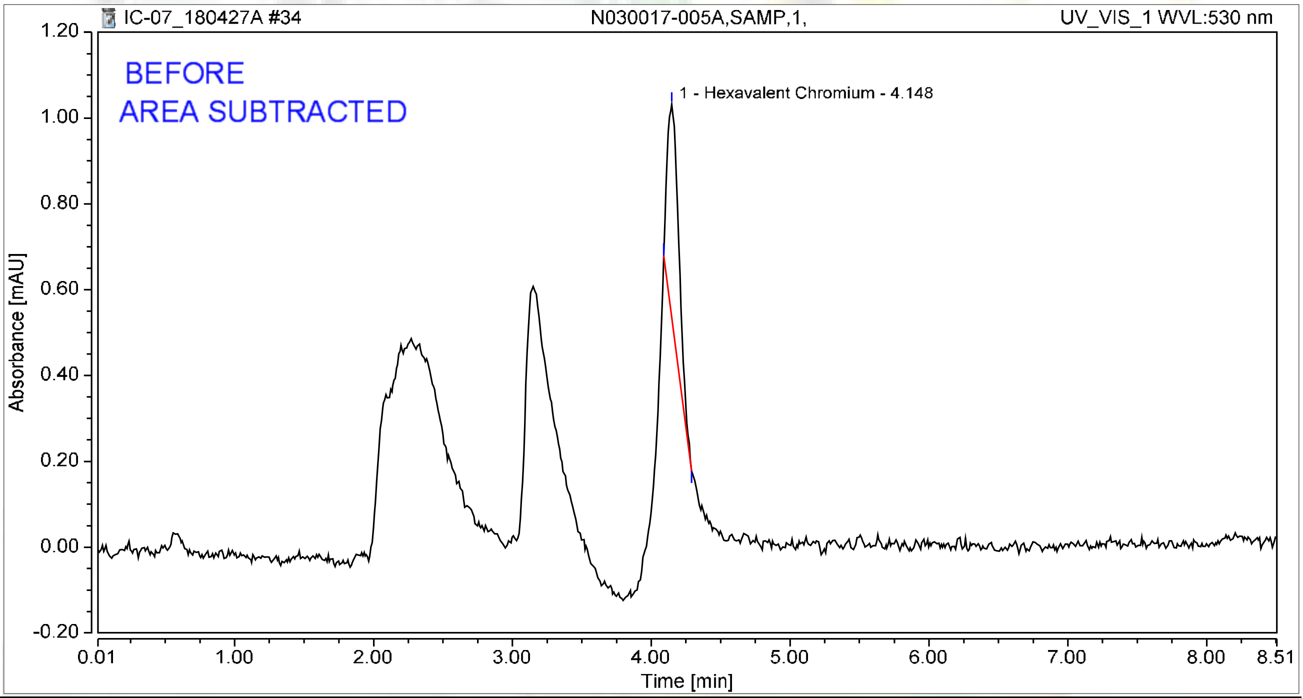
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.048	0.499	100.00	100.00	0.1904
Total:			**0.048**	**0.499**	**100.00**	**100.00**	

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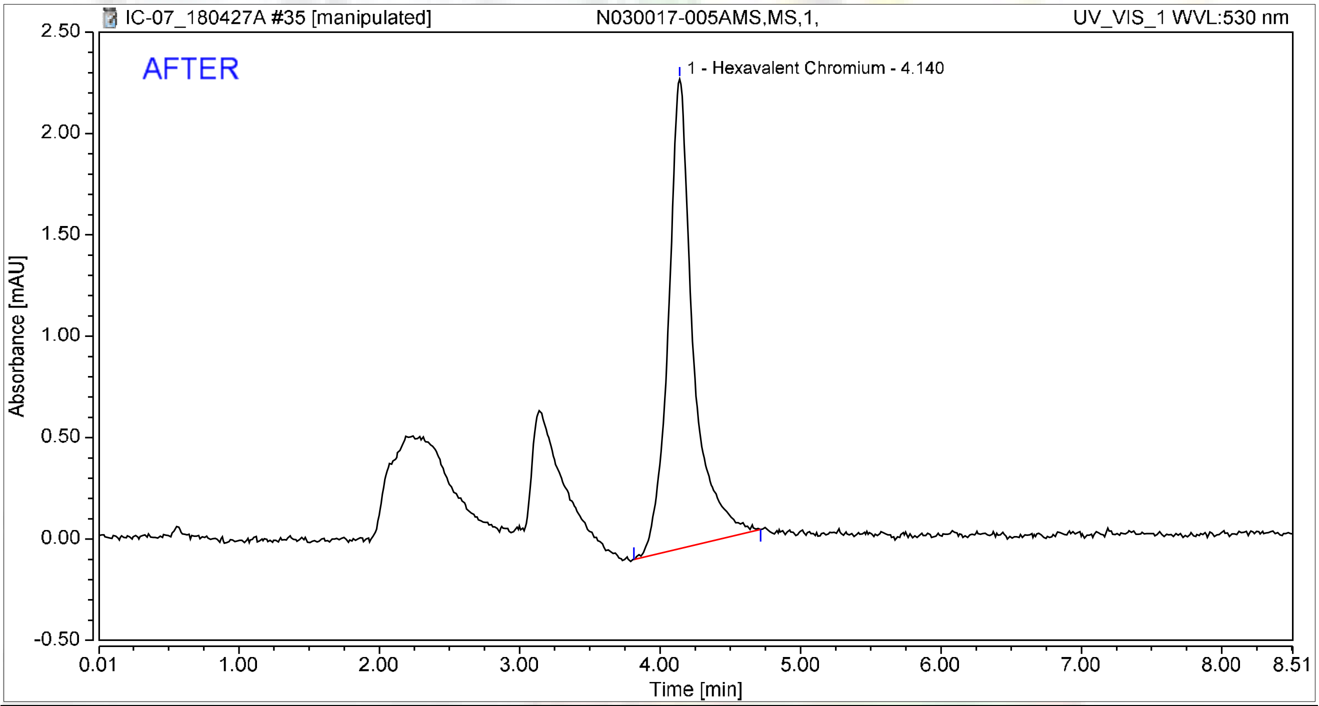
Chromatogram and Results

Injection Details

Injection Name:	**N030017-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.476	2.315	100.00	100.00	1.8777
Total:			**0.476**	**2.315**	**100.00**	**100.00**	

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Reviewed by:
Nancy 5/7/2018

My first report/Integration

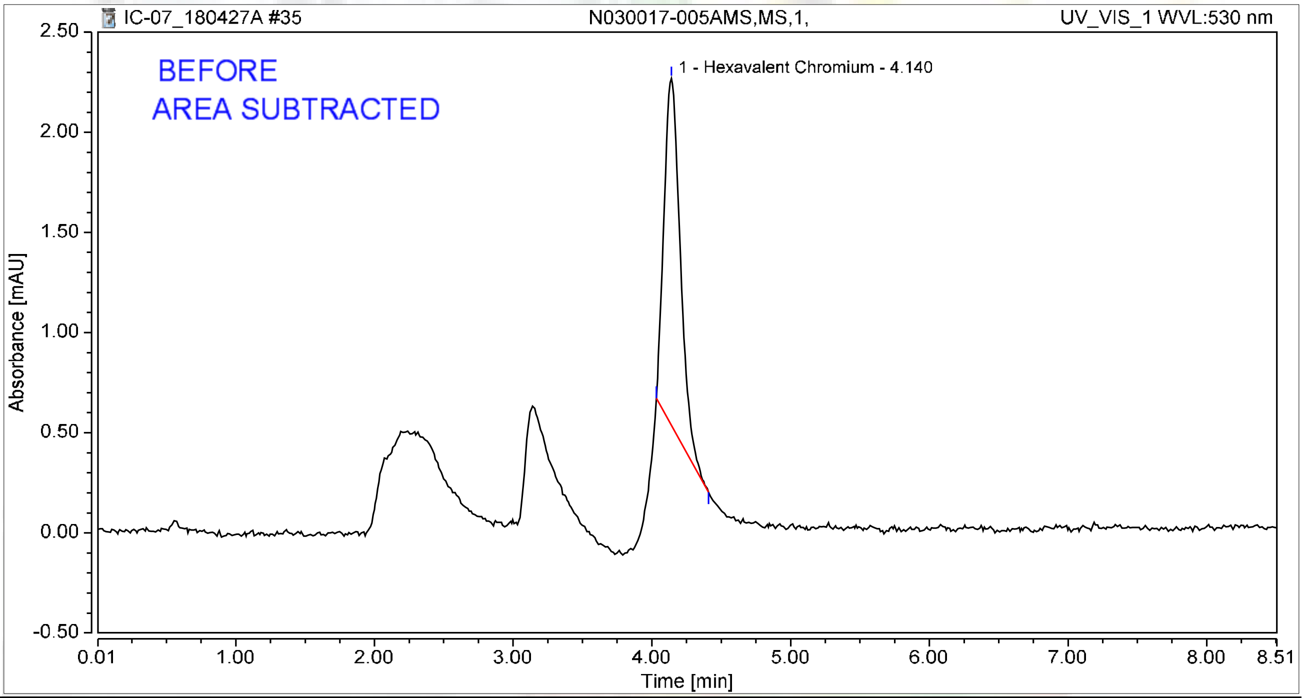
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N030017-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 12:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.237	1.731	100.00	100.00	0.9337
Total:			**0.237**	**1.731**	**100.00**	**100.00**	

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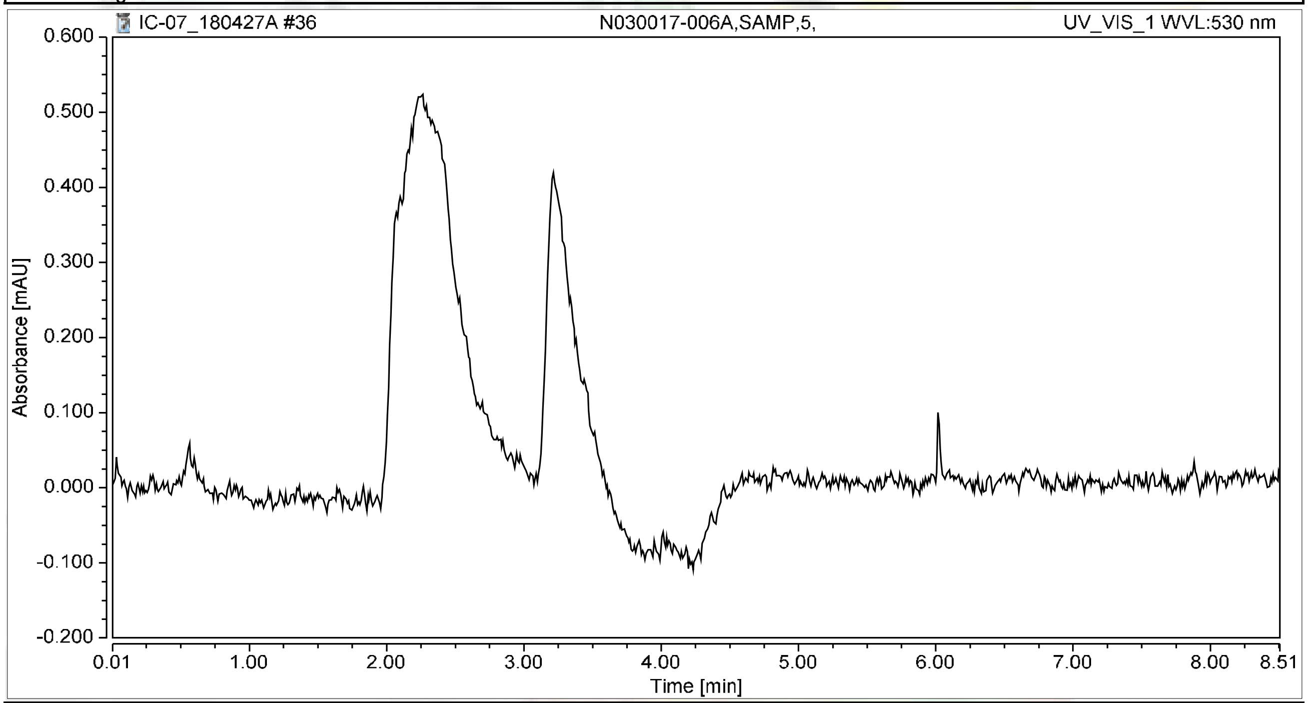
Chromatogram and Results

Injection Details

Injection Name:	**N030017-006A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

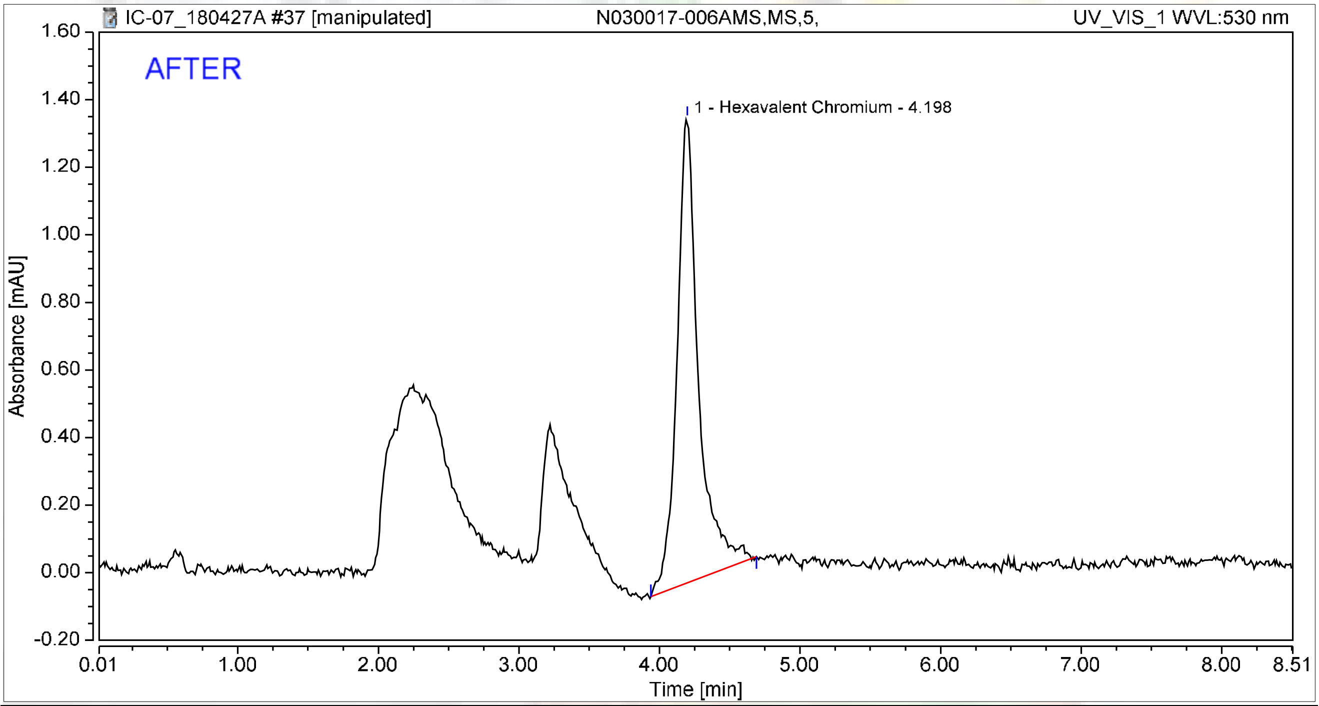
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-006AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.245	1.374	100.00	100.00	0.9662
Total:			**0.245**	**1.374**	**100.00**	**100.00**	

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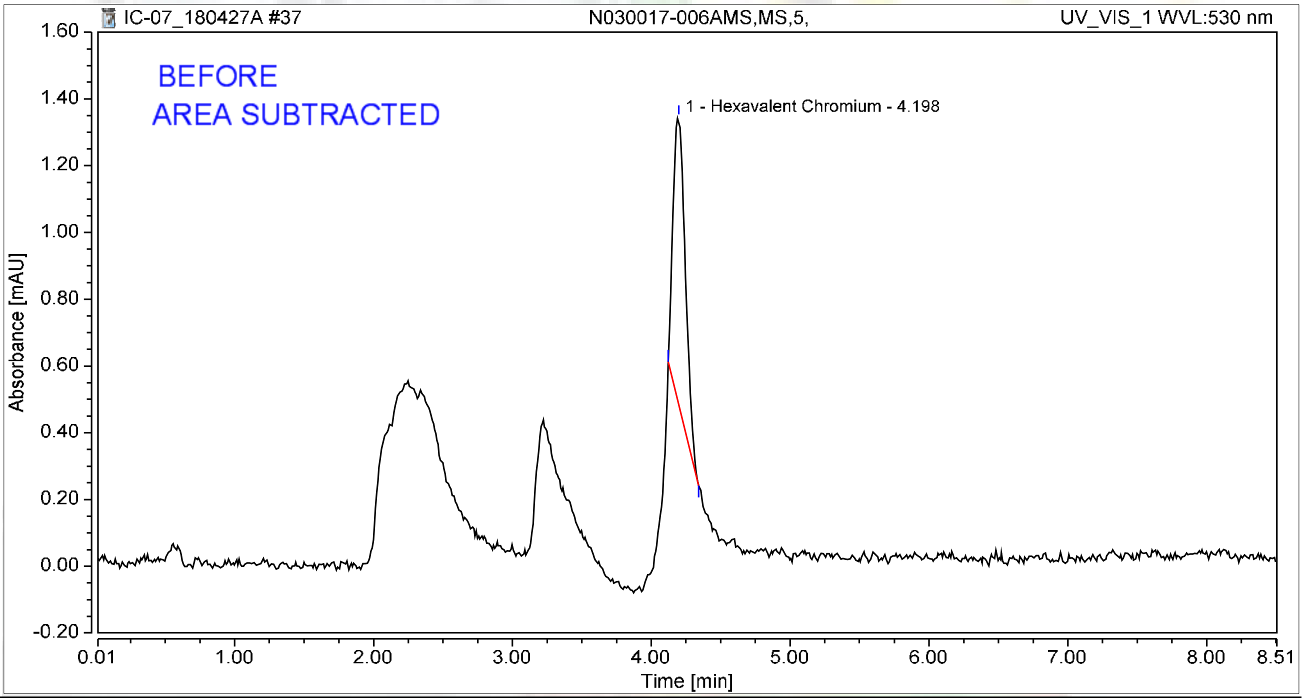
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-006AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.088	0.860	100.00	100.00	0.3476
Total:			**0.088**	**0.860**	**100.00**	**100.00**	

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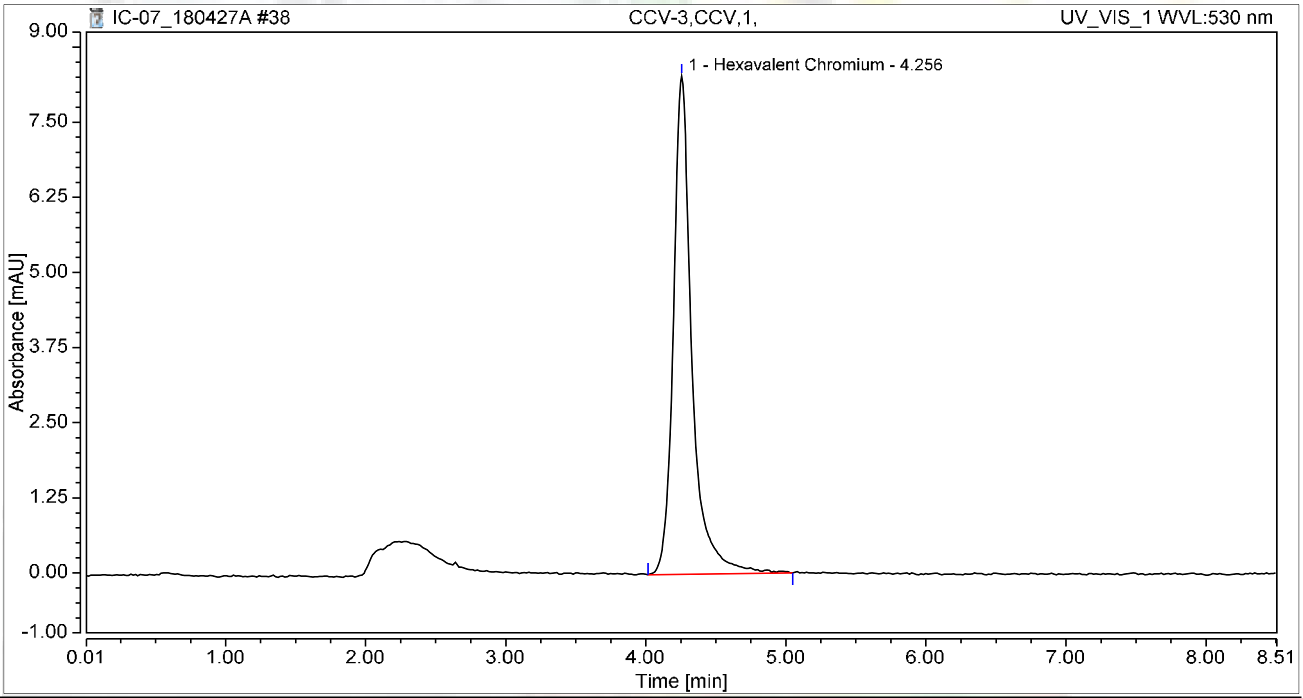
Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

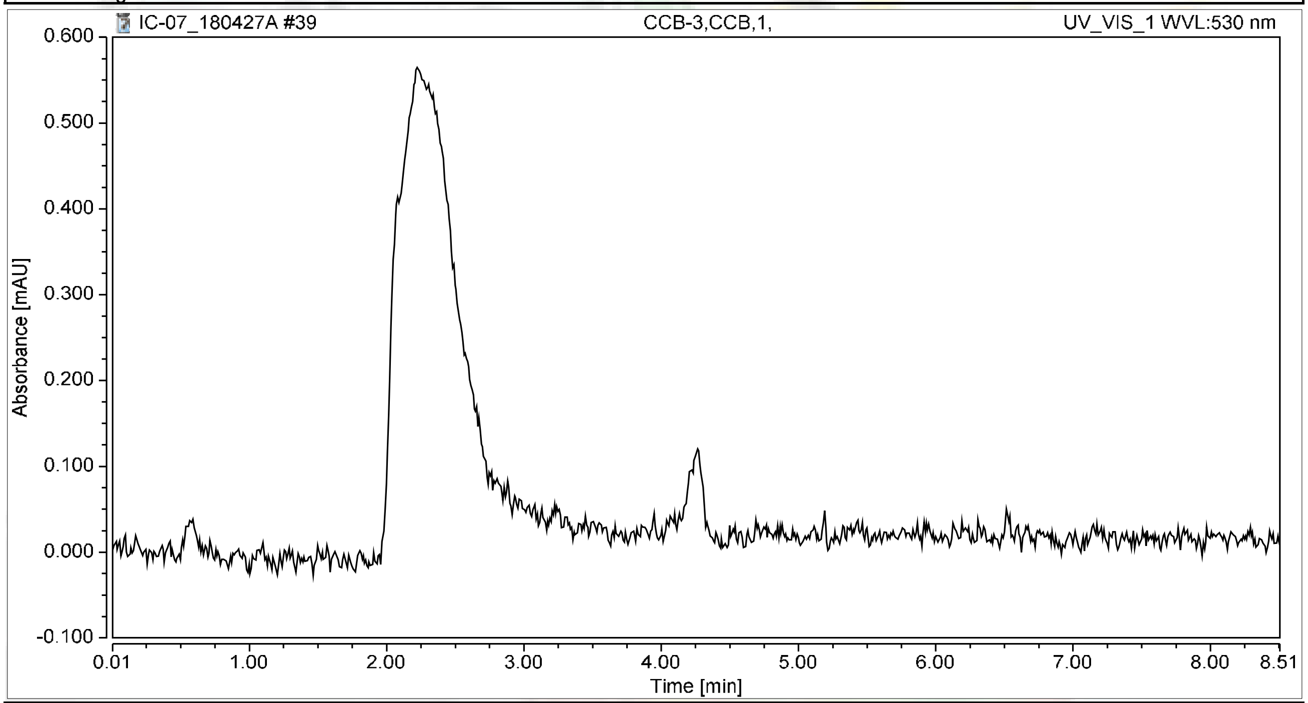
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.275	8.293	100.00	100.00	5.0276
Total:			**1.275**	**8.293**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

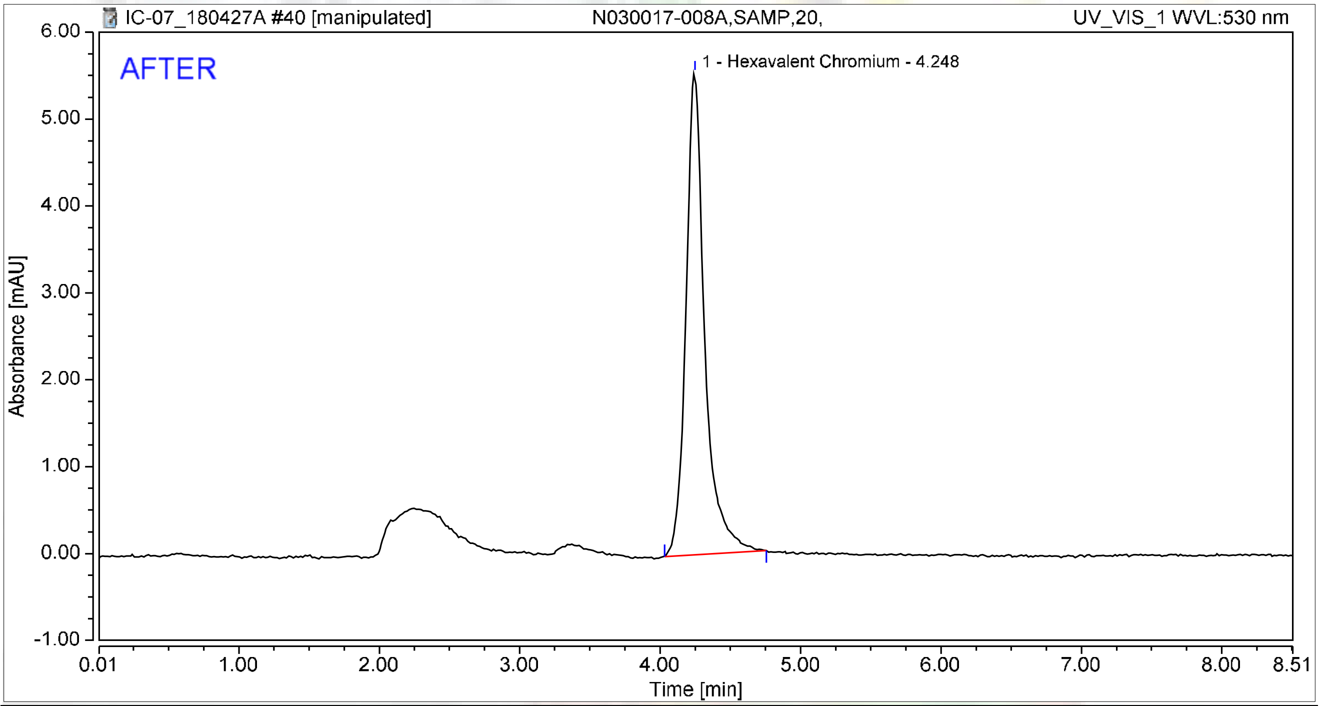
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-008A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.861	5.545	100.00	100.00	3.3969
Total:			**0.861**	**5.545**	**100.00**	**100.00**	

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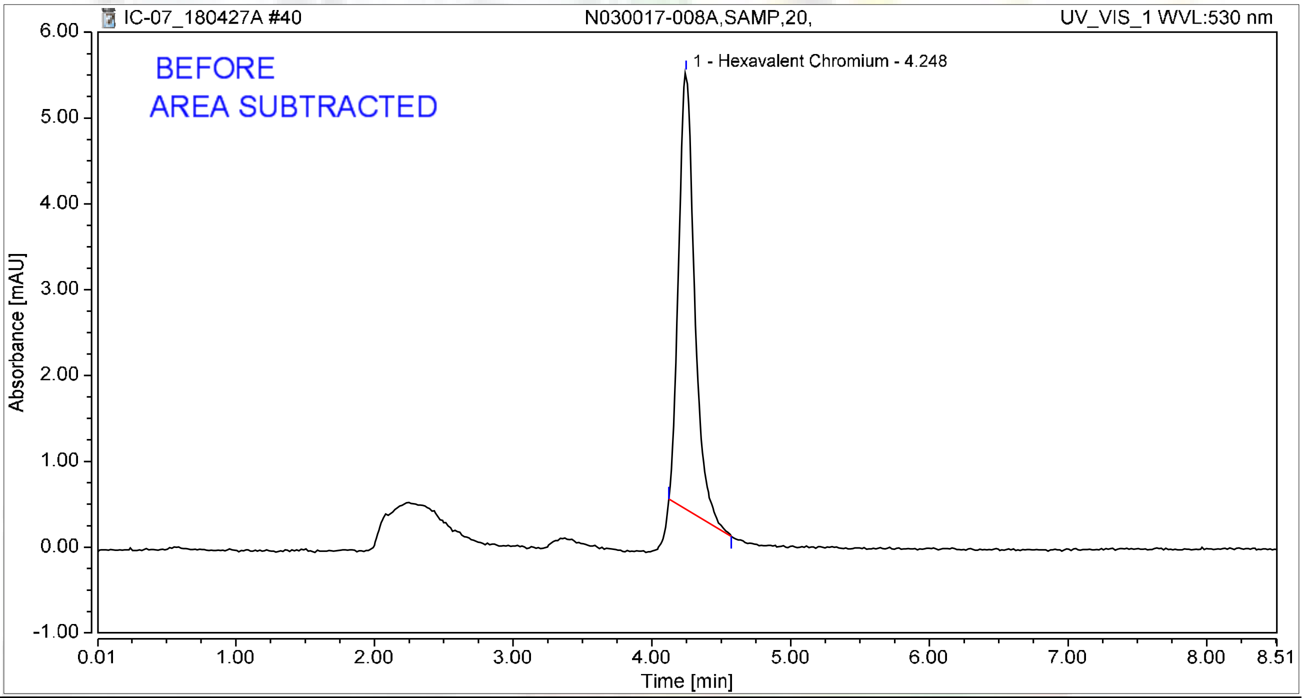
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-008A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.681	5.090	100.00	100.00	2.6851
Total:			**0.681**	**5.090**	**100.00**	**100.00**	

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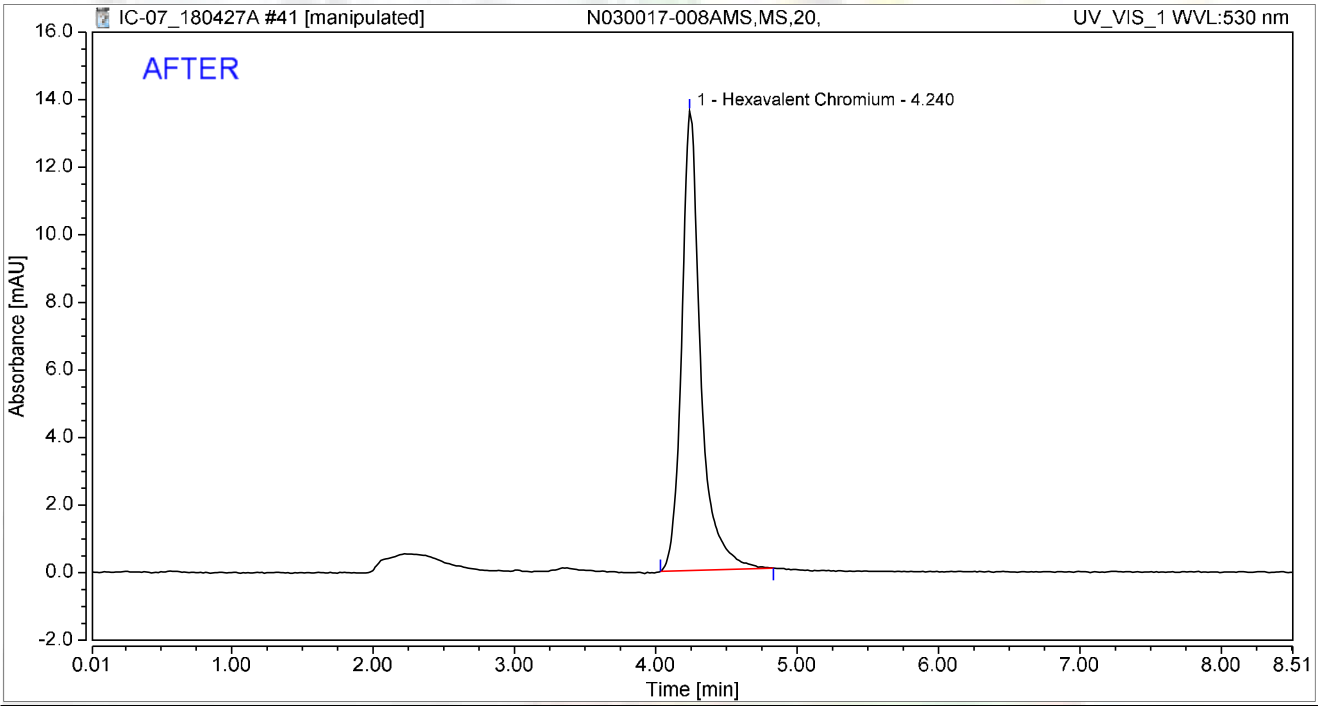
Chromatogram and Results

Injection Details

Injection Name:	**N030017-008AMS,MS,20,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	2.125	13.595	100.00	100.00	8.3809
Total:			**2.125**	**13.595**	**100.00**	**100.00**	

rba 5/6/2018

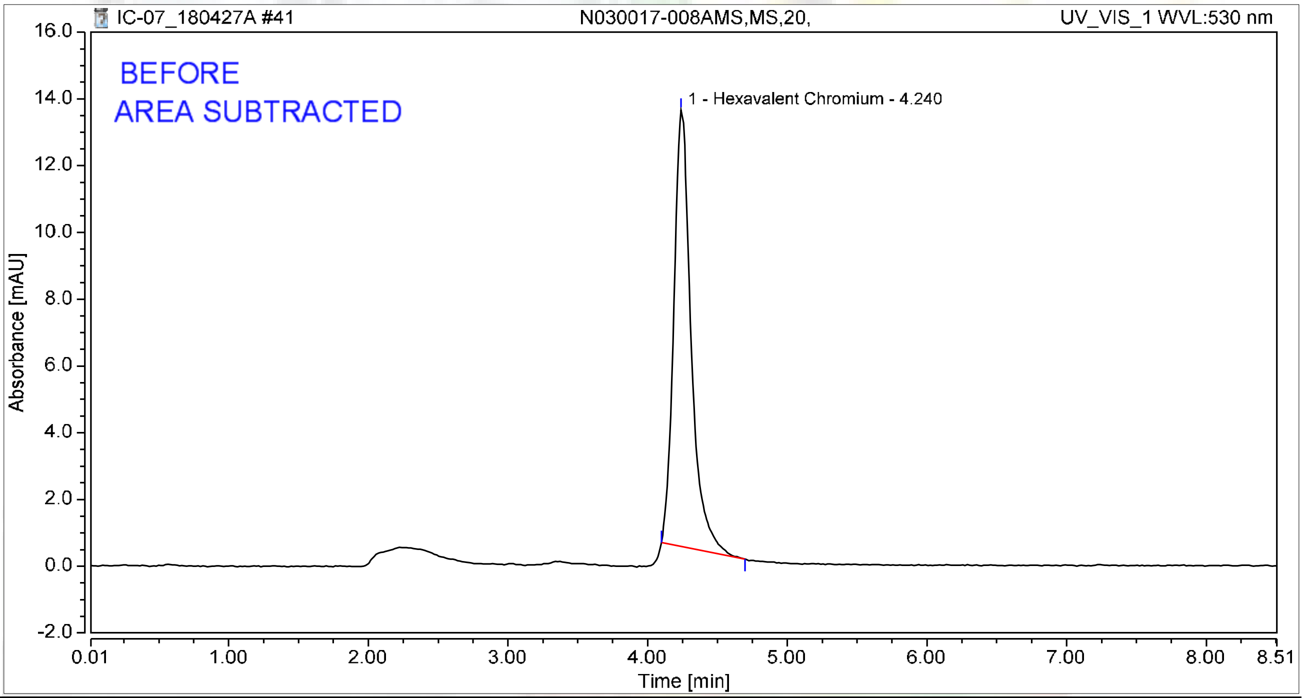
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-008AMS,MS,20,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	1.881	13.069	100.00	100.00	7.4189
Total:			**1.881**	**13.069**	**100.00**	**100.00**	

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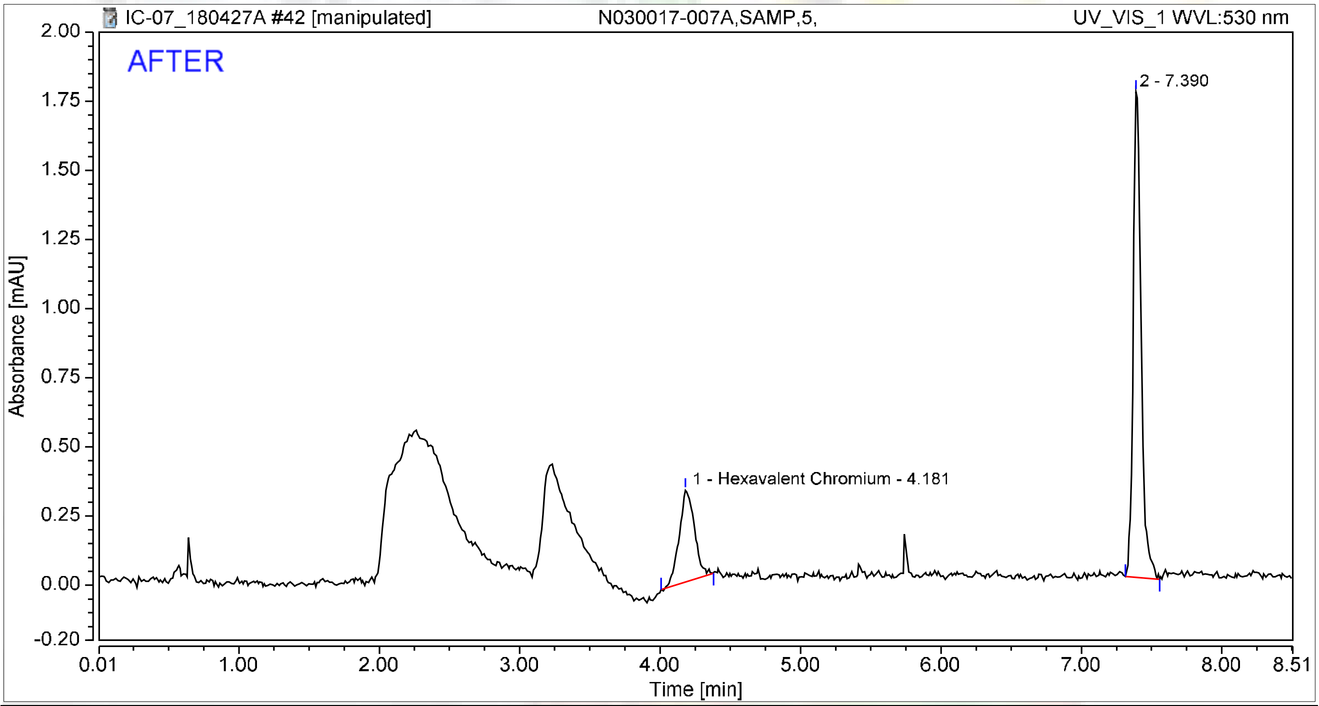
Chromatogram and Results

Injection Details

Injection Name:	**N030017-007A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.042	0.332	26.64	15.93	0.1653
2		7.390	0.115	1.755	73.36	84.07	n.a.
Total:			**0.157**	**2.087**	**100.00**	**100.00**	

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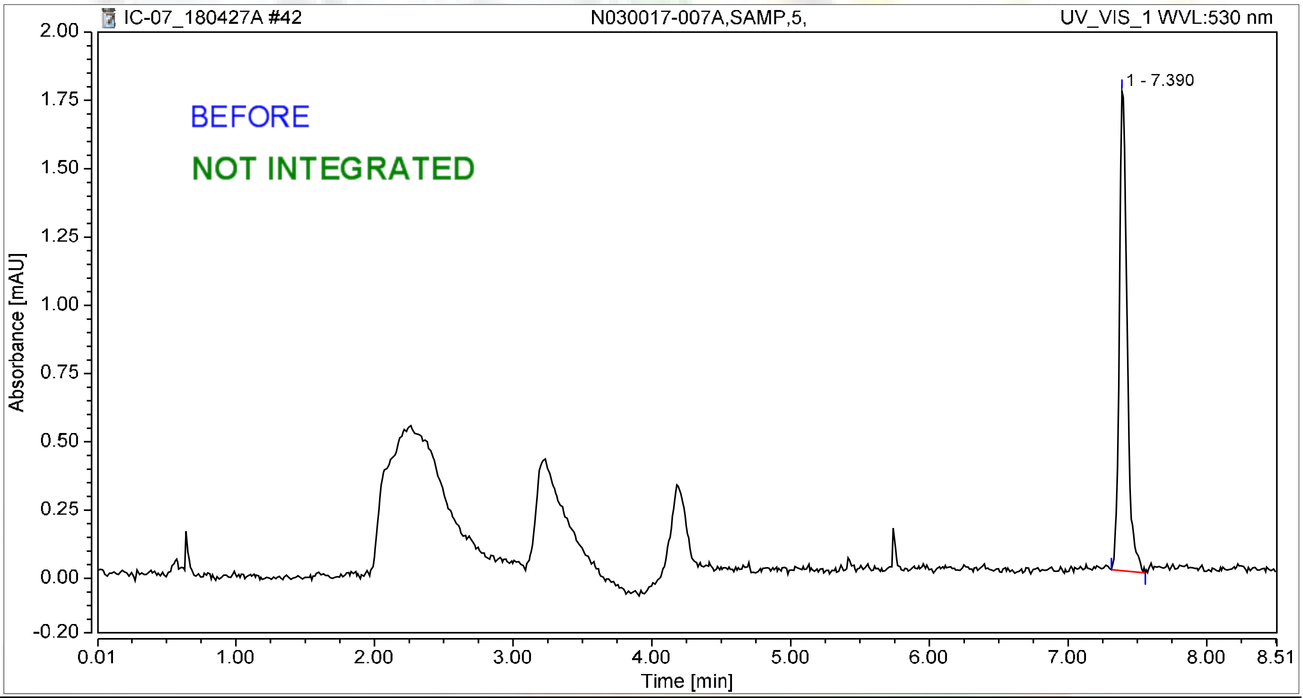
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-007A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 13:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.390	0.115	1.755	100.00	100.00	n.a.
Total:			**0.115**	**1.755**	**100.00**	**100.00**	

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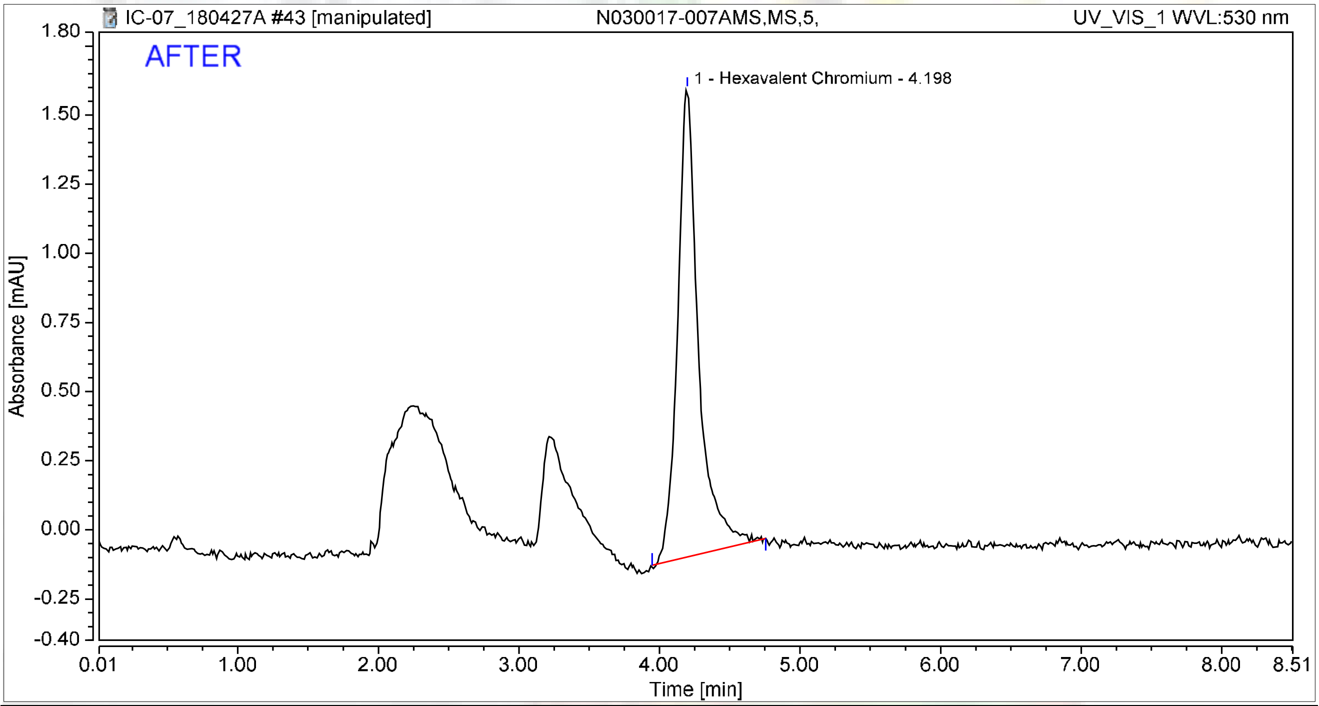
Chromatogram and Results

Injection Details

Injection Name:	**N030017-007AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.293	1.690	100.00	100.00	1.1557
Total:			**0.293**	**1.690**	**100.00**	**100.00**	

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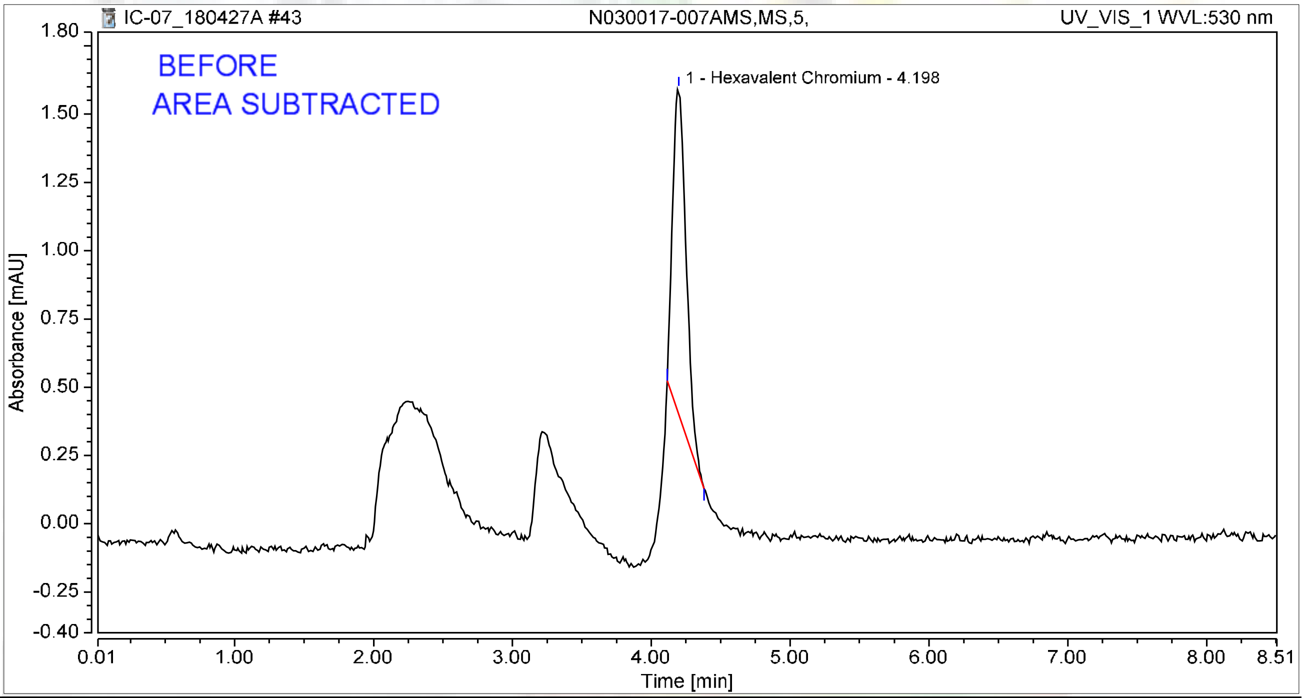
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-007AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.134	1.193	100.00	100.00	0.5288
Total:			**0.134**	**1.193**	**100.00**	**100.00**	

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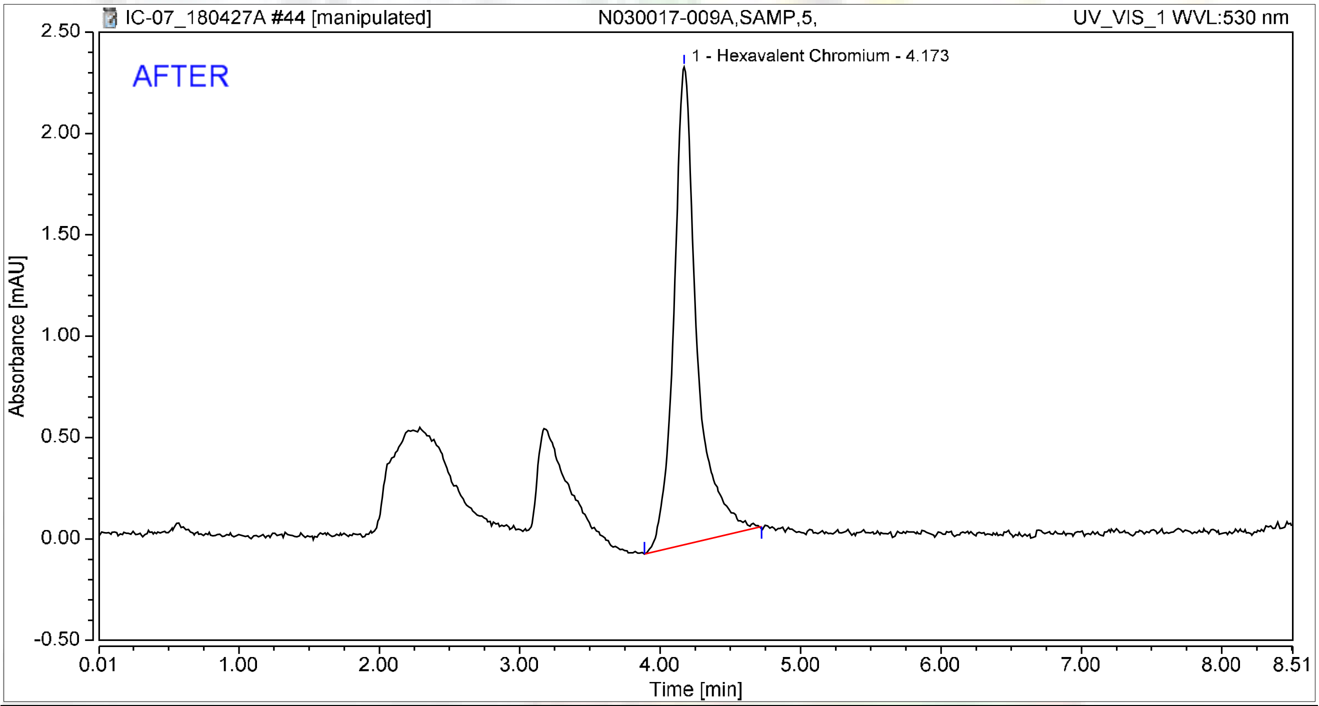
Chromatogram and Results

Injection Details

Injection Name:	**N030017-009A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.450	2.356	100.00	100.00	1.7756
Total:			**0.450**	**2.356**	**100.00**	**100.00**	

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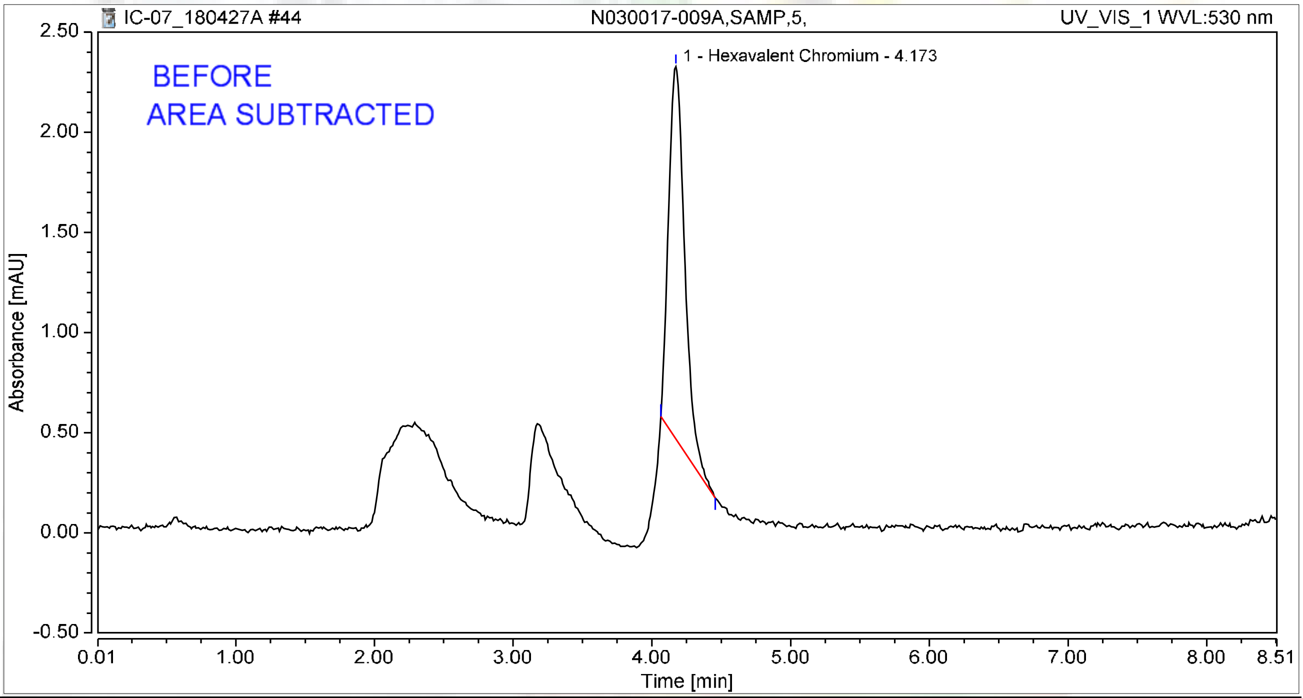
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-009A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.251	1.859	100.00	100.00	0.9910
Total:			**0.251**	**1.859**	**100.00**	**100.00**	

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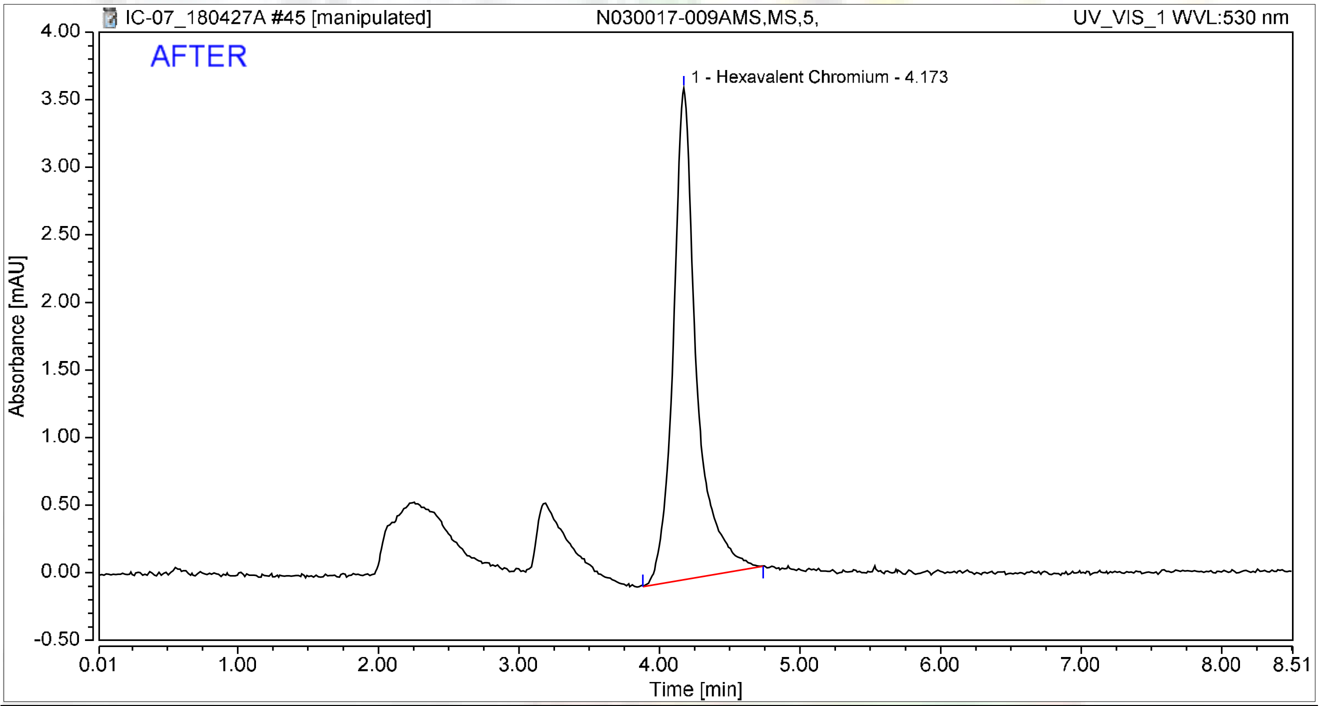
Chromatogram and Results

Injection Details

Injection Name:	**N030017-009AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.700	3.637	100.00	100.00	2.7614
Total:			**0.700**	**3.637**	**100.00**	**100.00**	

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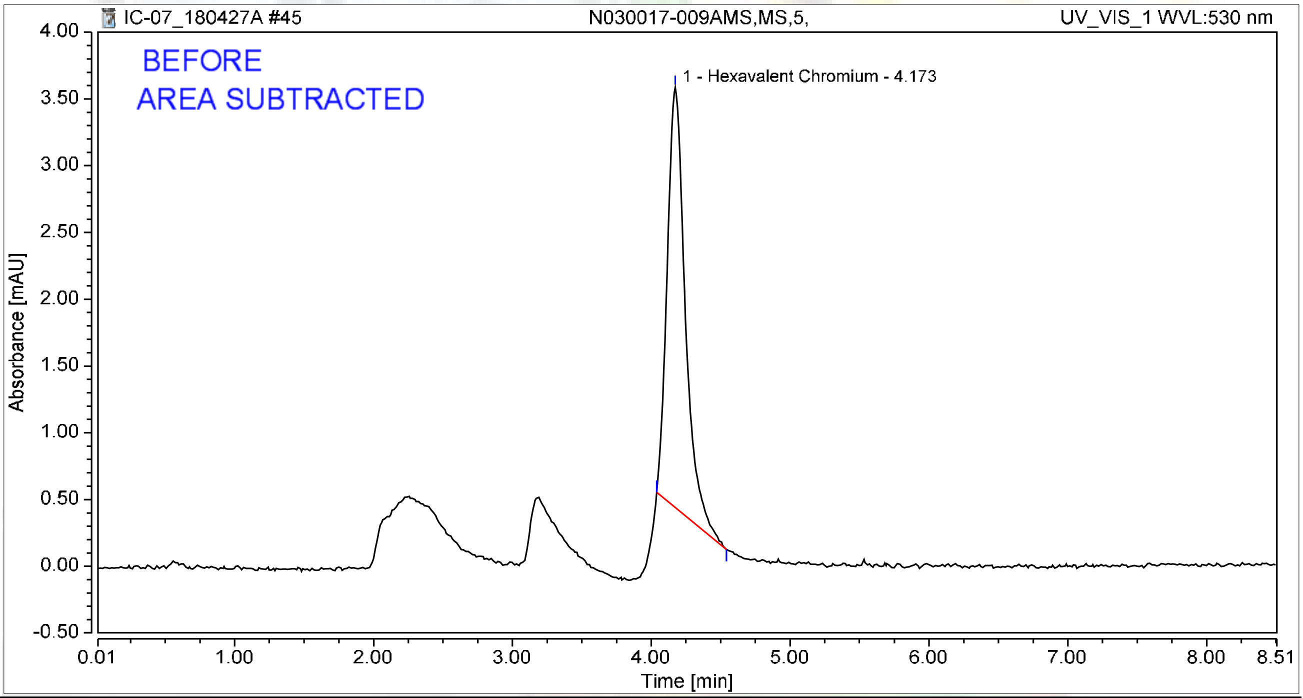
Chromatogram and Results

Injection Details

Injection Name:	**N030017-009AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.476	3.145	100.00	100.00	1.8785
Total:			**0.476**	**3.145**	**100.00**	**100.00**	

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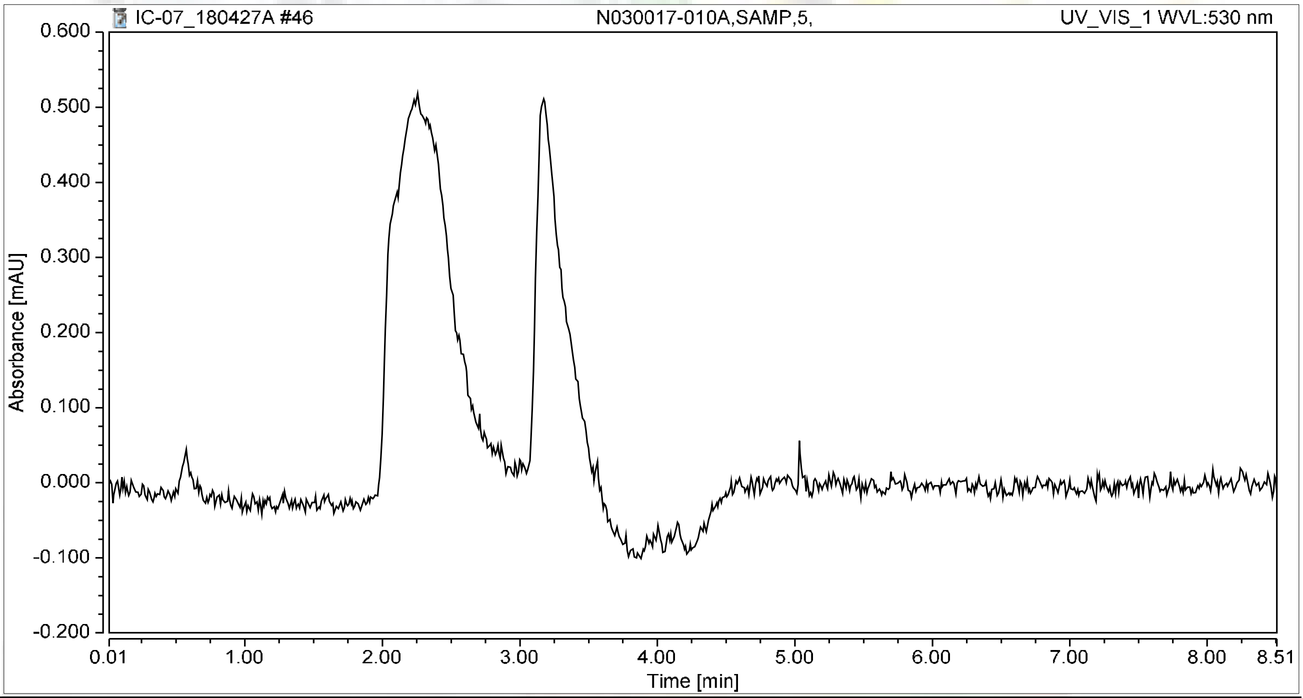
Chromatogram and Results

Injection Details

Injection Name:	**N030017-010A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

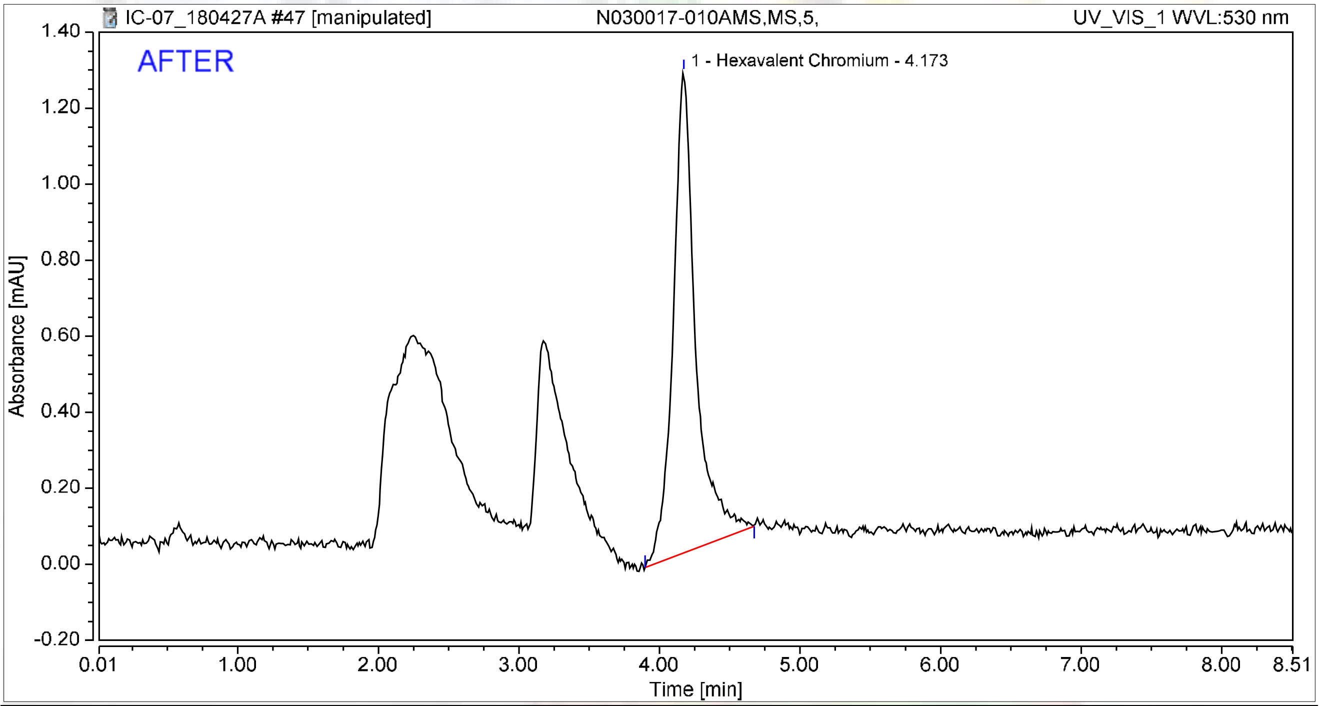
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-010AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.237	1.266	100.00	100.00	0.9333
Total:			**0.237**	**1.266**	**100.00**	**100.00**	

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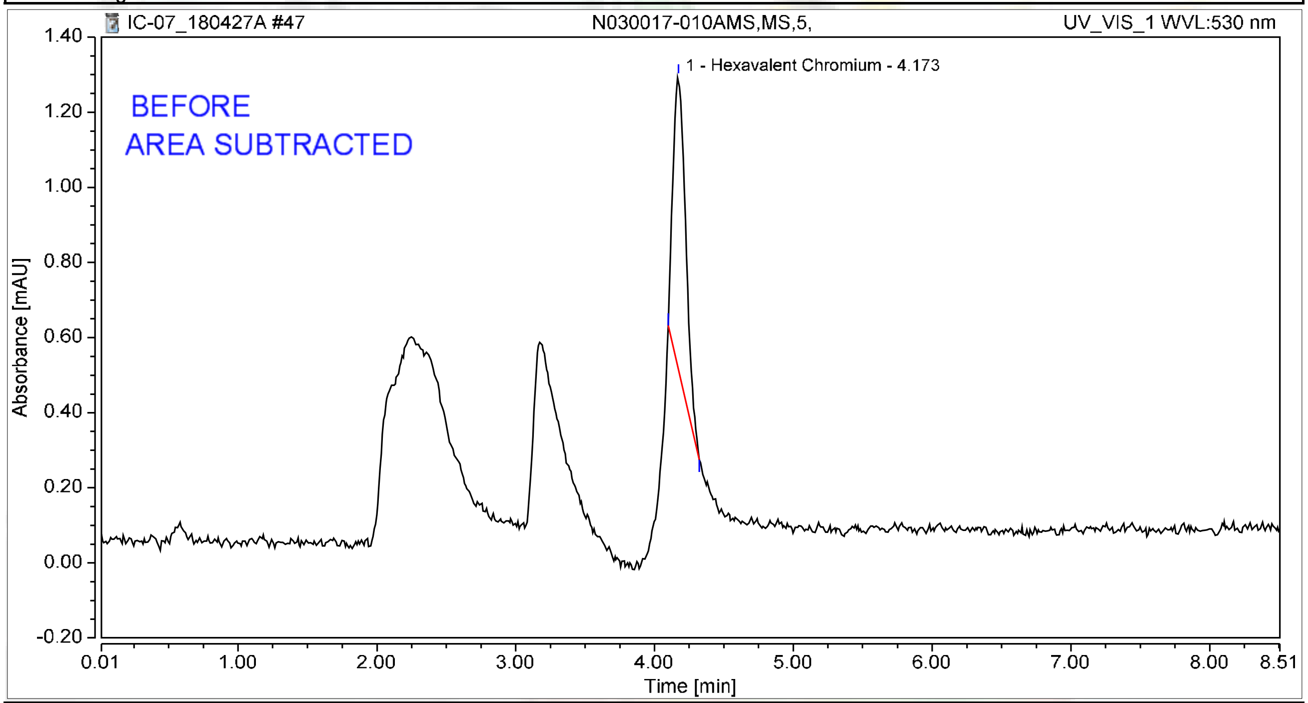
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-010AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.083	0.782	100.00	100.00	0.3278
Total:			**0.083**	**0.782**	**100.00**	**100.00**	

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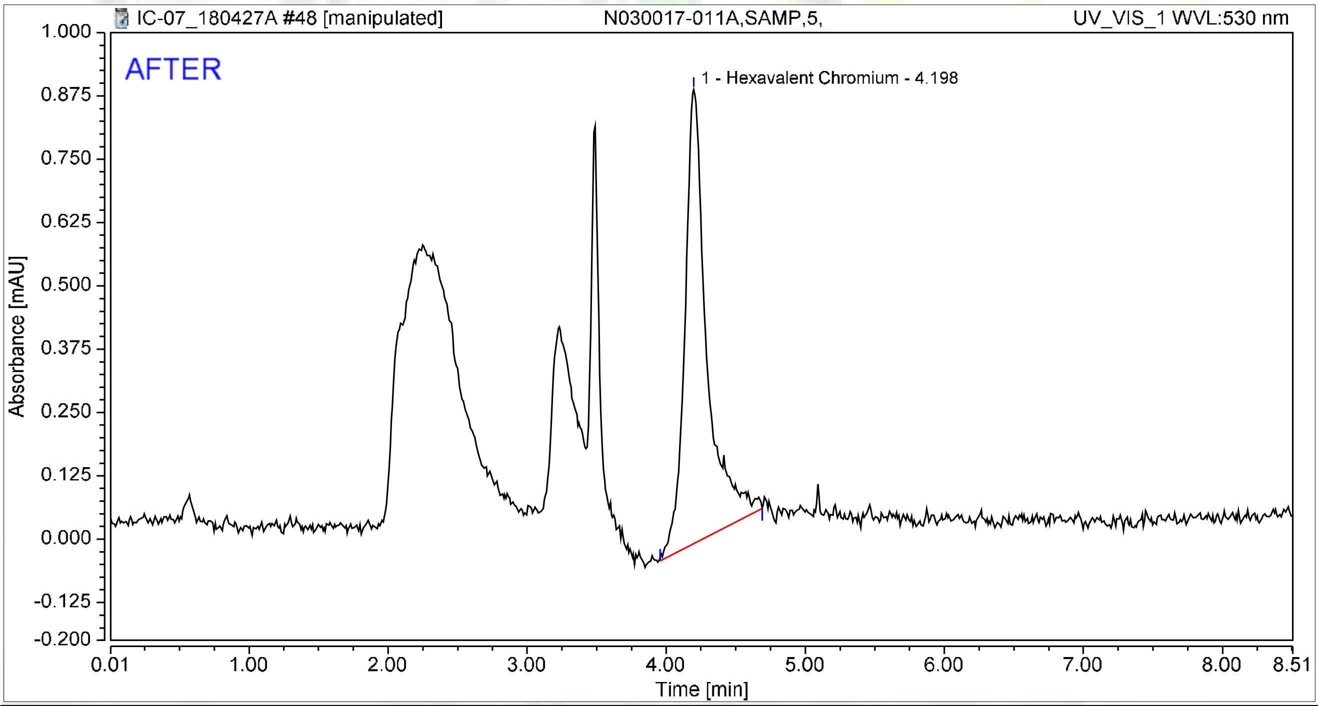
Chromatogram and Results

Injection Details

Injection Name:	**N030017-011A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.165	0.897	100.00	100.00	0.6525
Total:			**0.165**	**0.897**	**100.00**	**100.00**	

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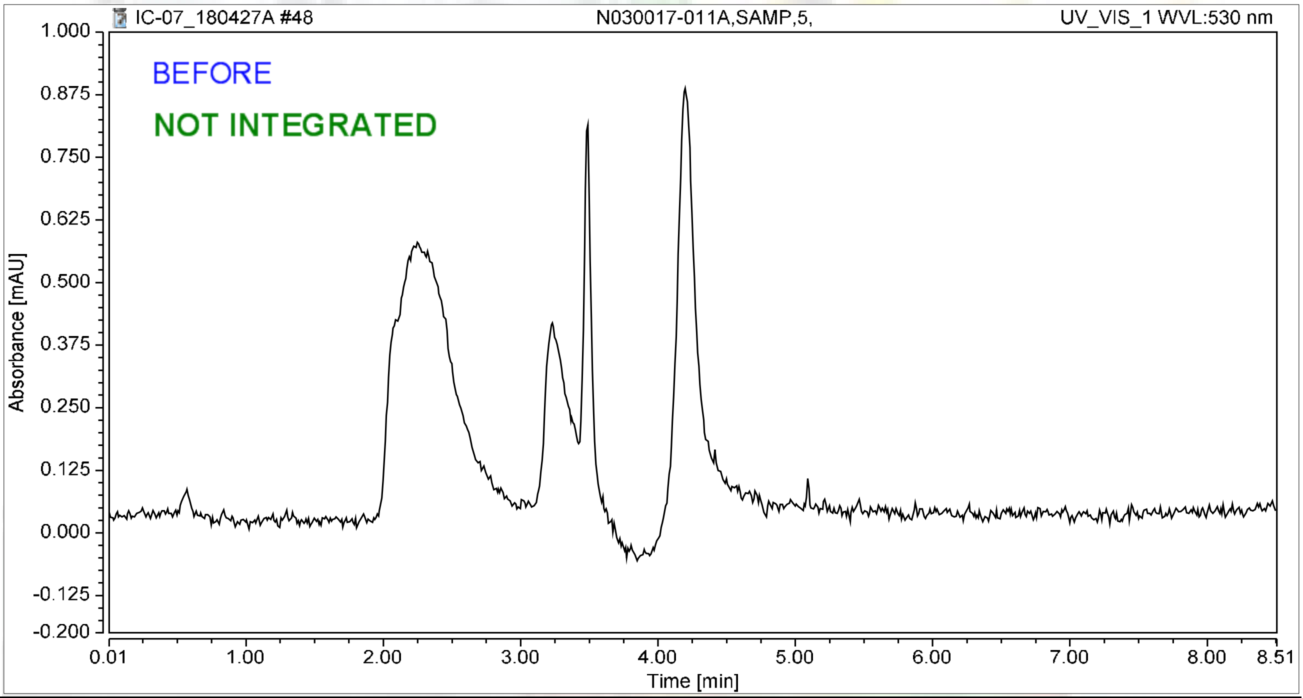
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-011A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 14:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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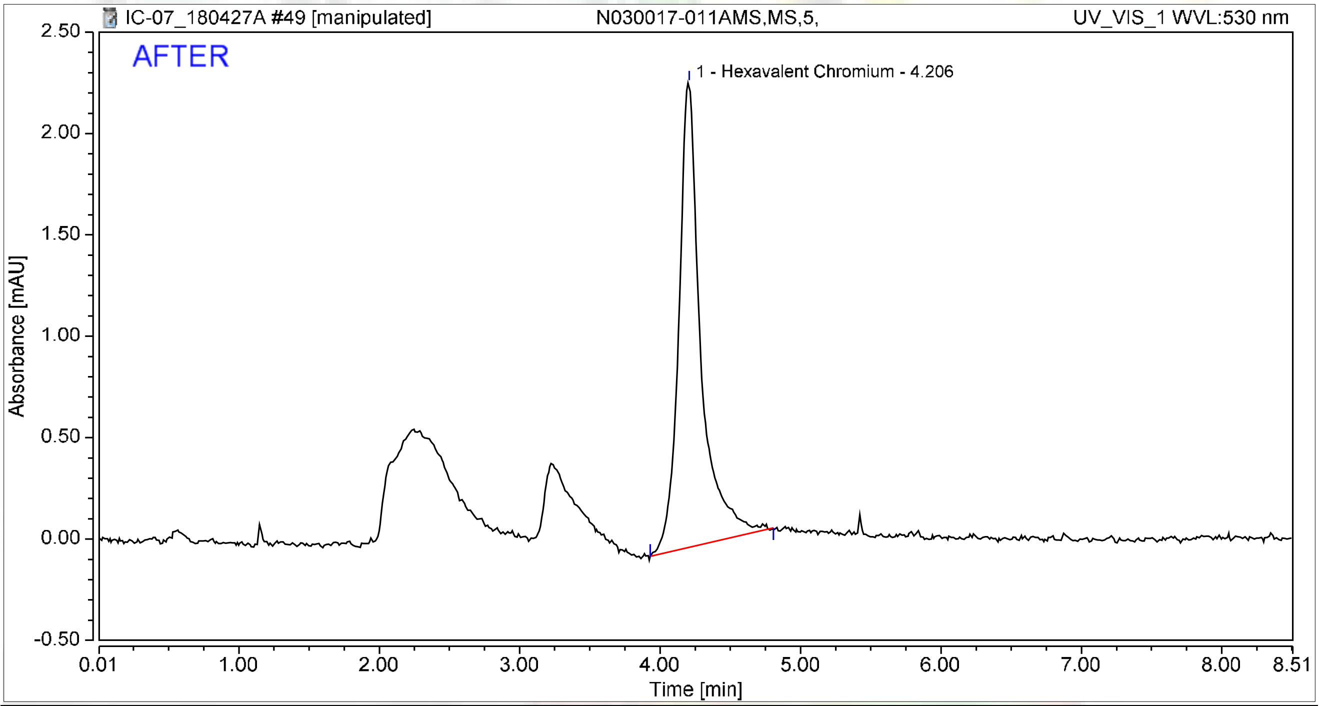
Chromatogram and Results

Injection Details

Injection Name:	**N030017-011AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.418	2.291	100.00	100.00	1.6481
Total:			**0.418**	**2.291**	**100.00**	**100.00**	

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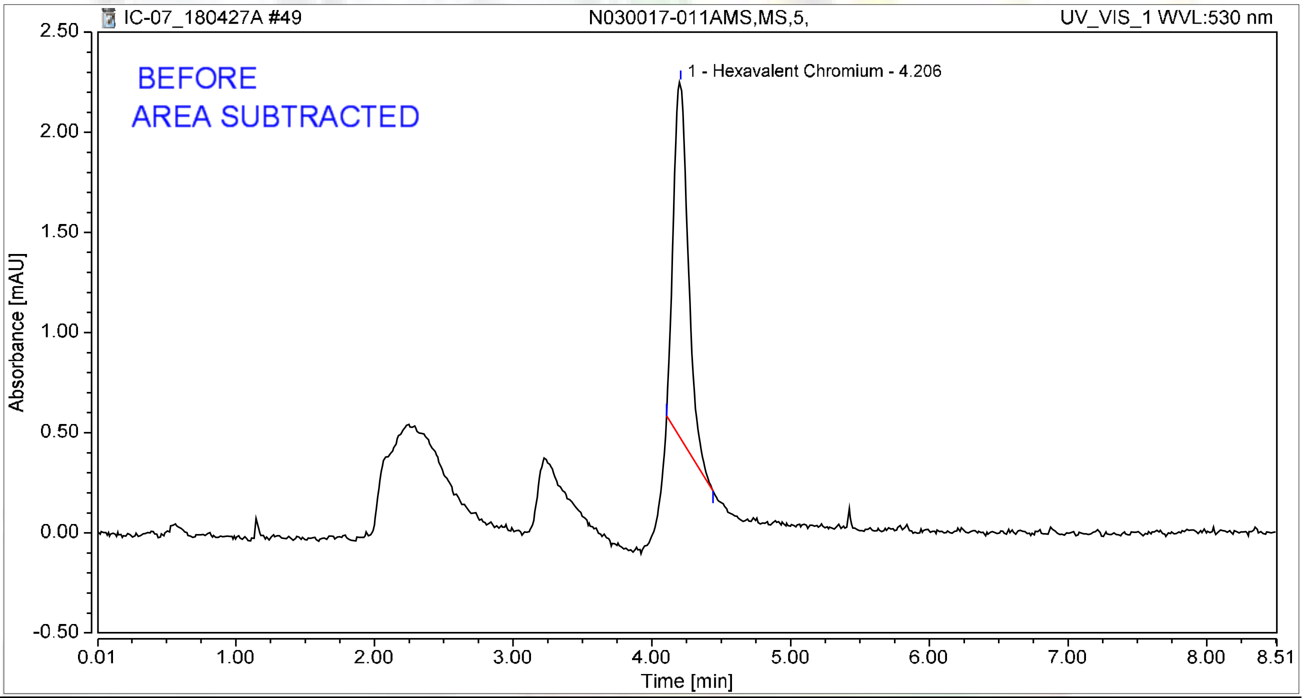
Chromatogram and Results

Injection Details

Injection Name:	**N030017-011AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.221	1.777	100.00	100.00	0.8724
Total:			**0.221**	**1.777**	**100.00**	**100.00**	

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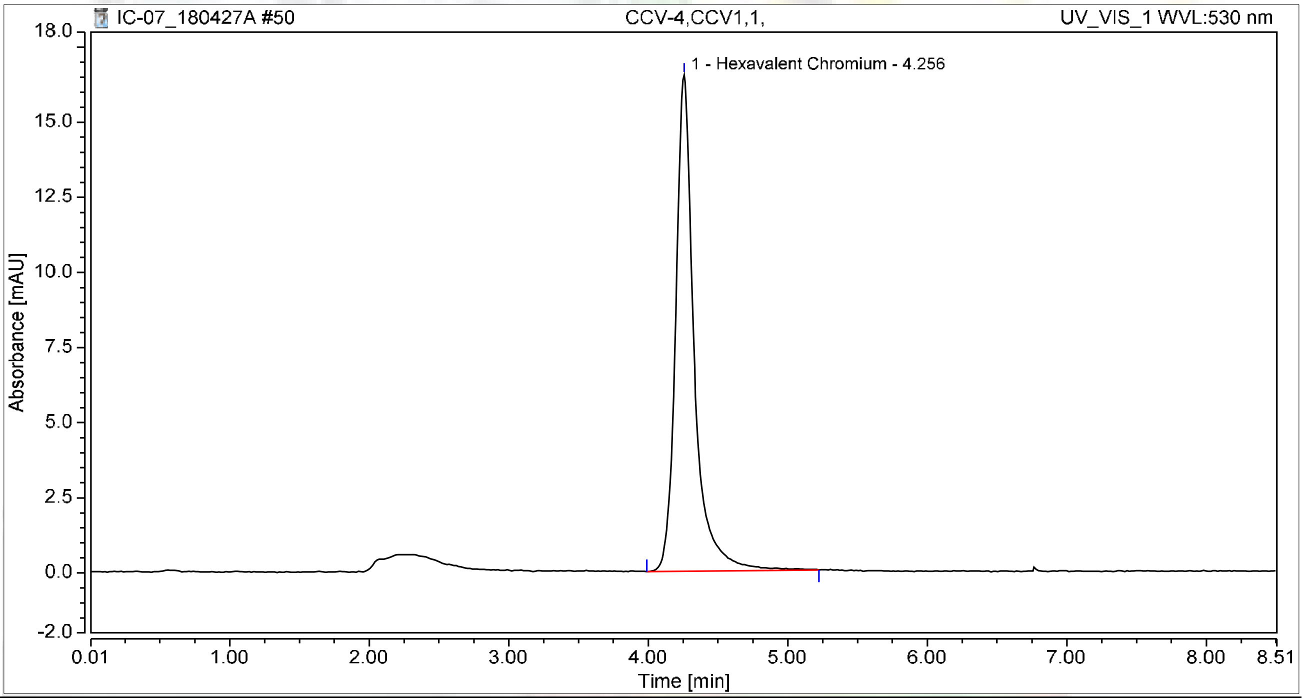
Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

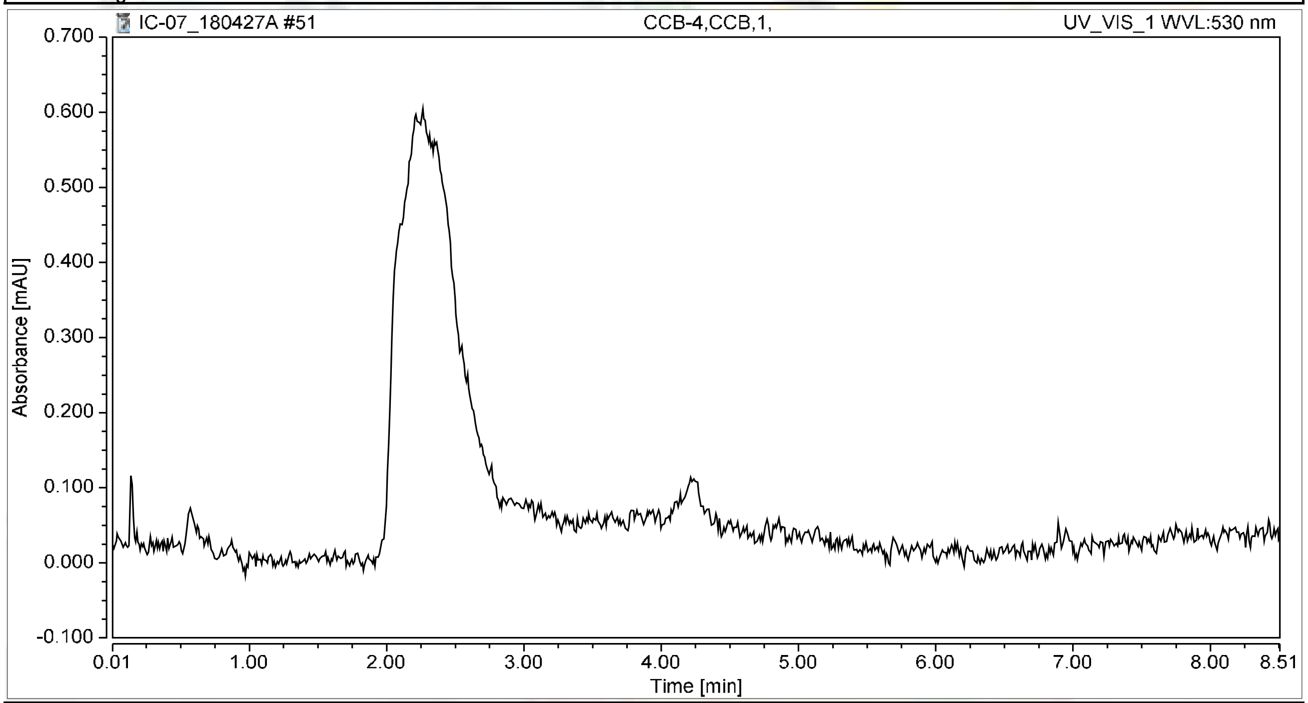
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.550	16.523	100.00	100.00	10.0598
Total:			**2.550**	**16.523**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

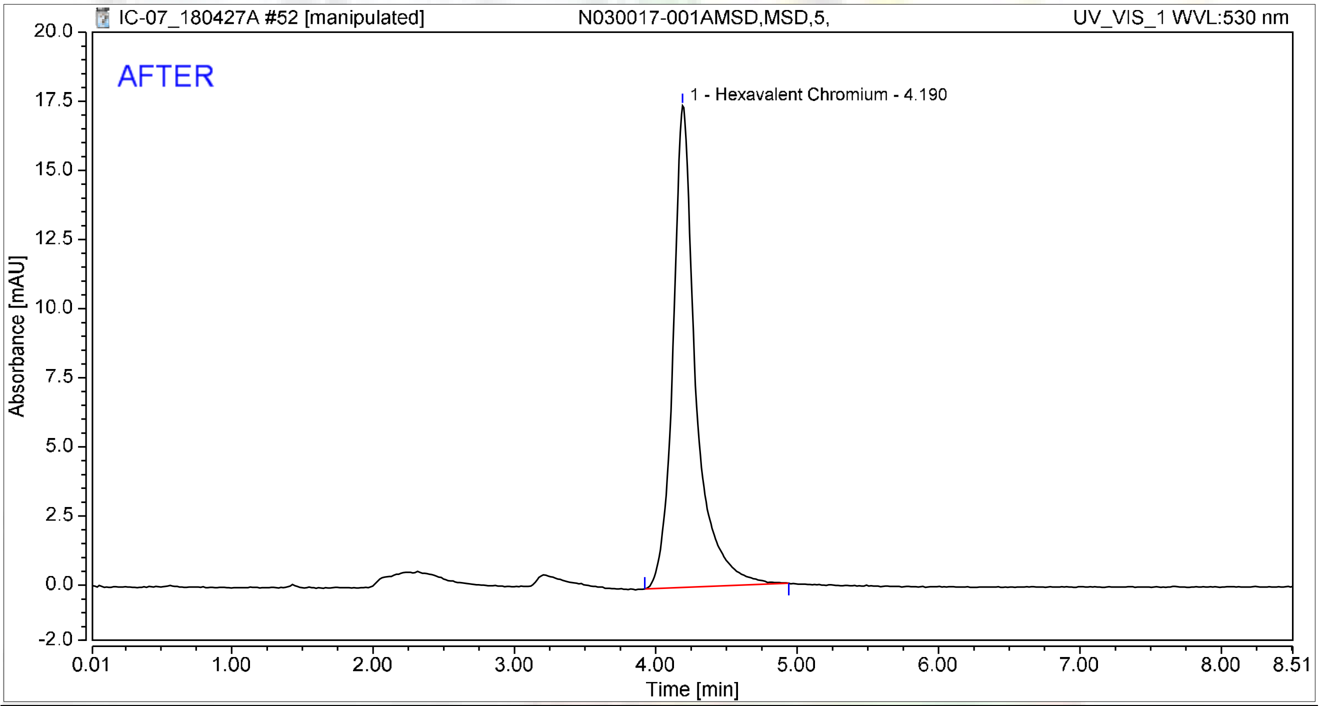
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-001AMSD,MSD,5,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	3.274	17.429	100.00	100.00	12.9141
Total:			**3.274**	**17.429**	**100.00**	**100.00**	

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Reviewed by:
Nancy 5/7/2018

My first report/Integration

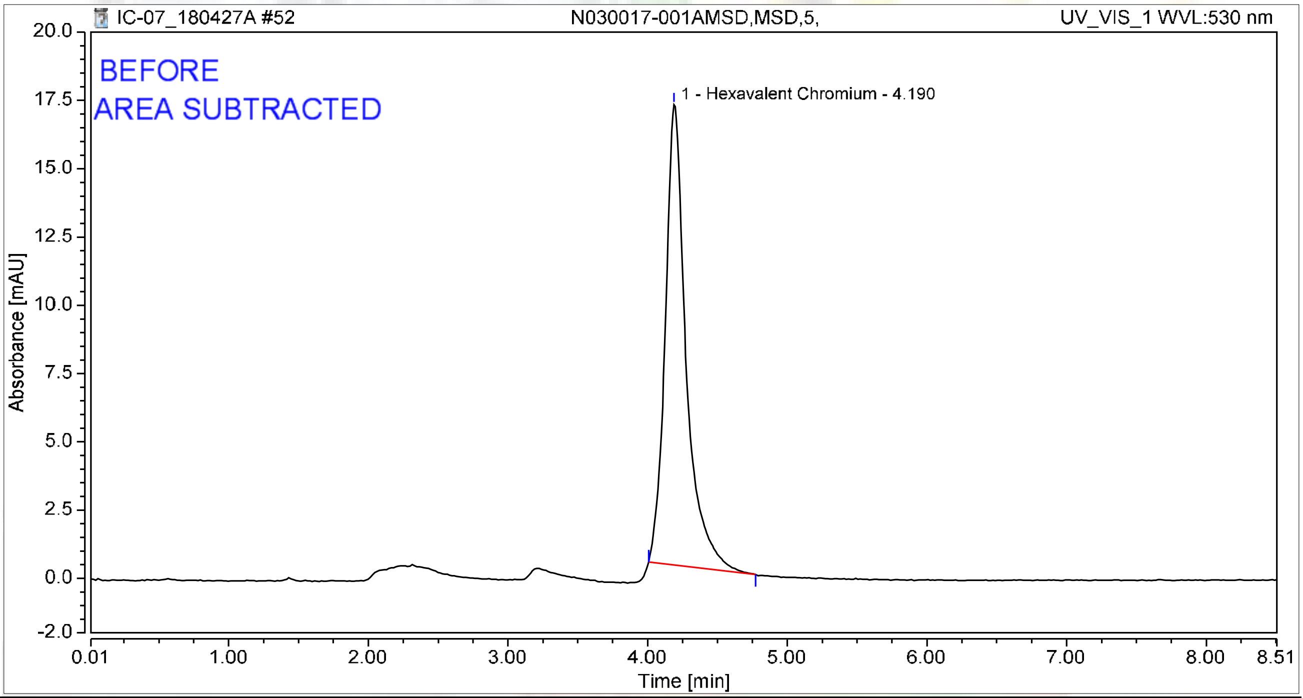
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N030017-001AMSD,MSD,5,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.923	16.842	100.00	100.00	11.5285
Total:			**2.923**	**16.842**	**100.00**	**100.00**	

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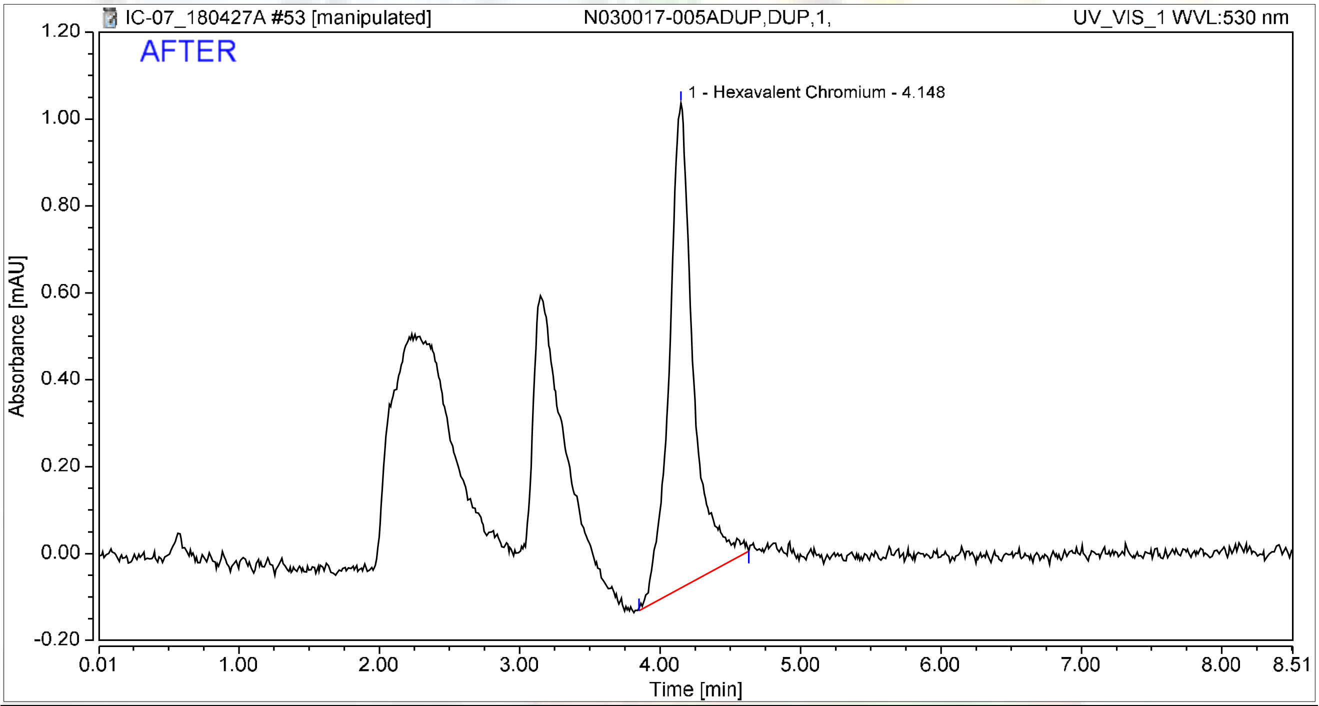
Chromatogram and Results

Injection Details

Injection Name:	**N030017-005ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.225	1.115	100.00	100.00	0.8873
Total:			**0.225**	**1.115**	**100.00**	**100.00**	

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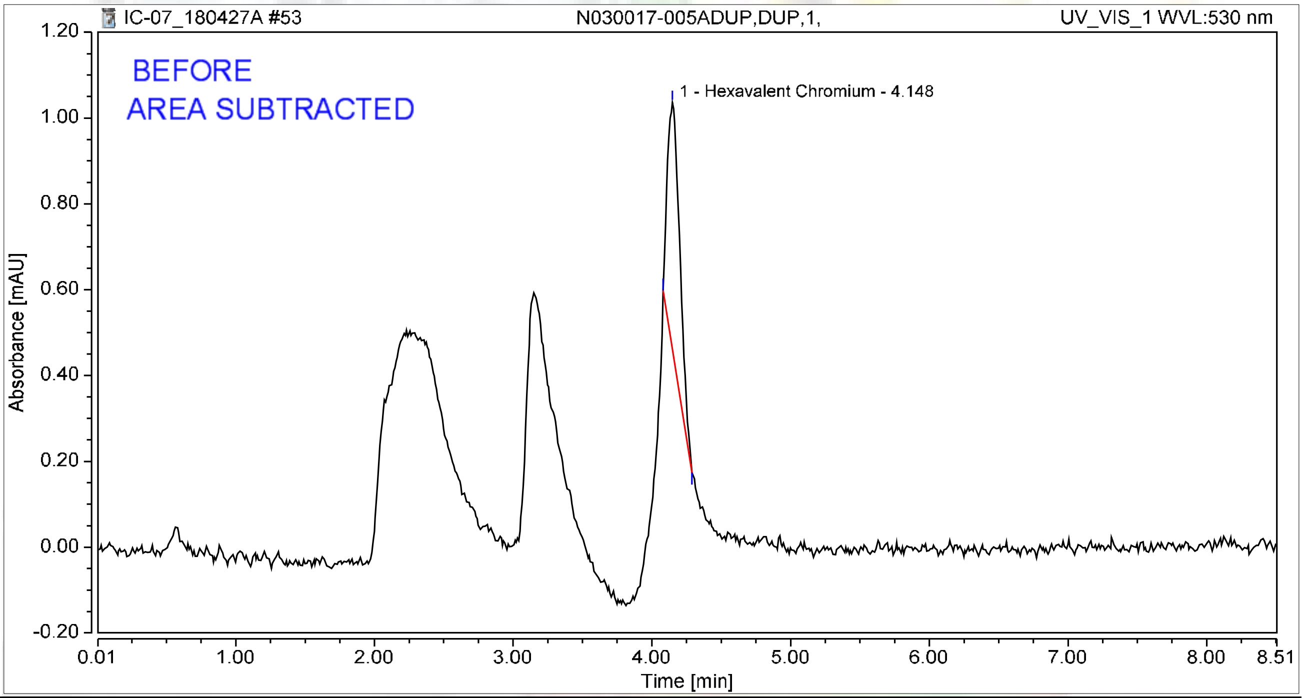
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-005ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.059	0.573	100.00	100.00	0.2346
Total:			**0.059**	**0.573**	**100.00**	**100.00**	

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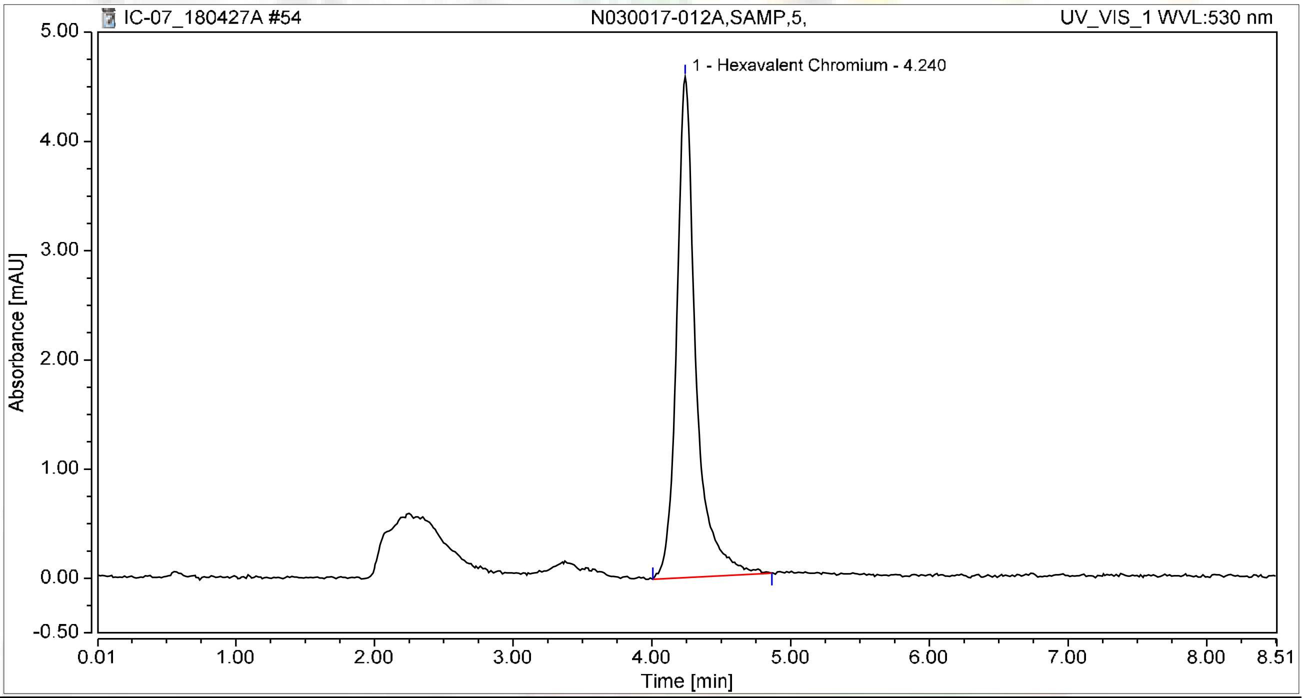
Chromatogram and Results

Injection Details

Injection Name:	**N030017-012A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 15:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

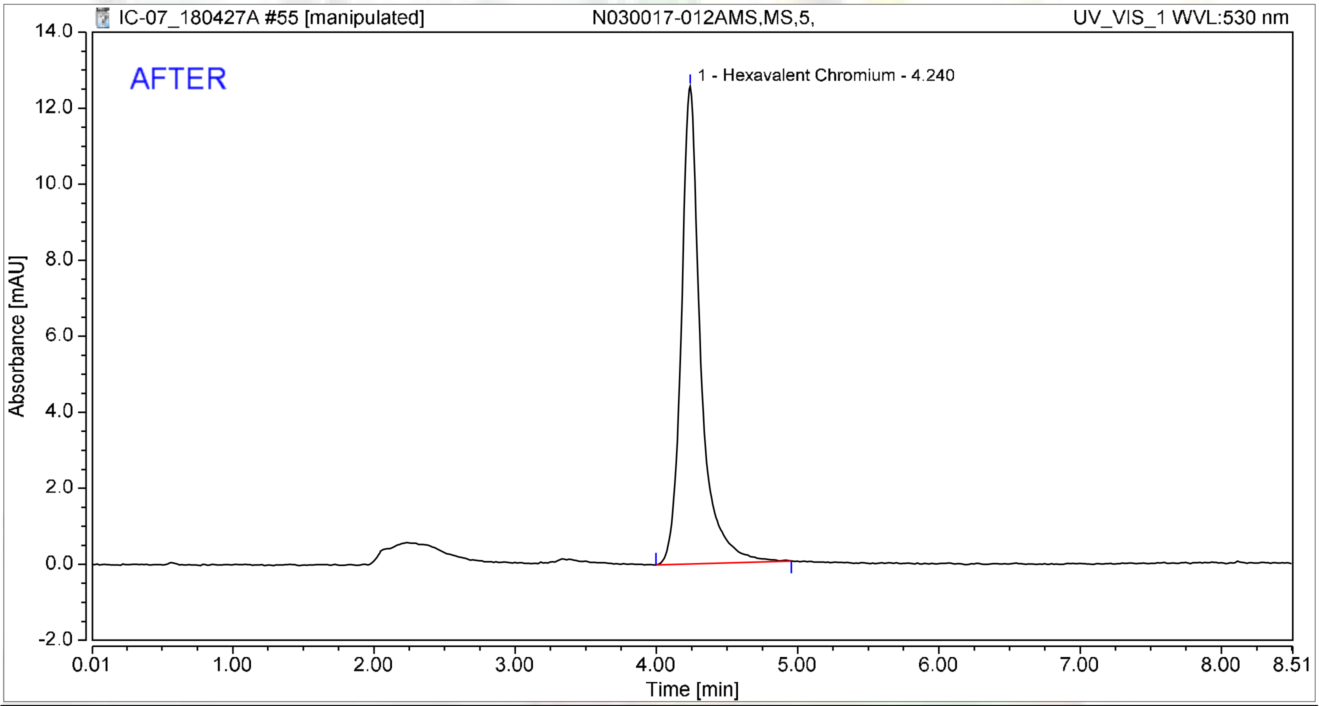
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.736	4.585	100.00	100.00	2.9034
Total:			**0.736**	**4.585**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-012AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	2.009	12.561	100.00	100.00	7.9255
Total:			**2.009**	**12.561**	**100.00**	**100.00**	

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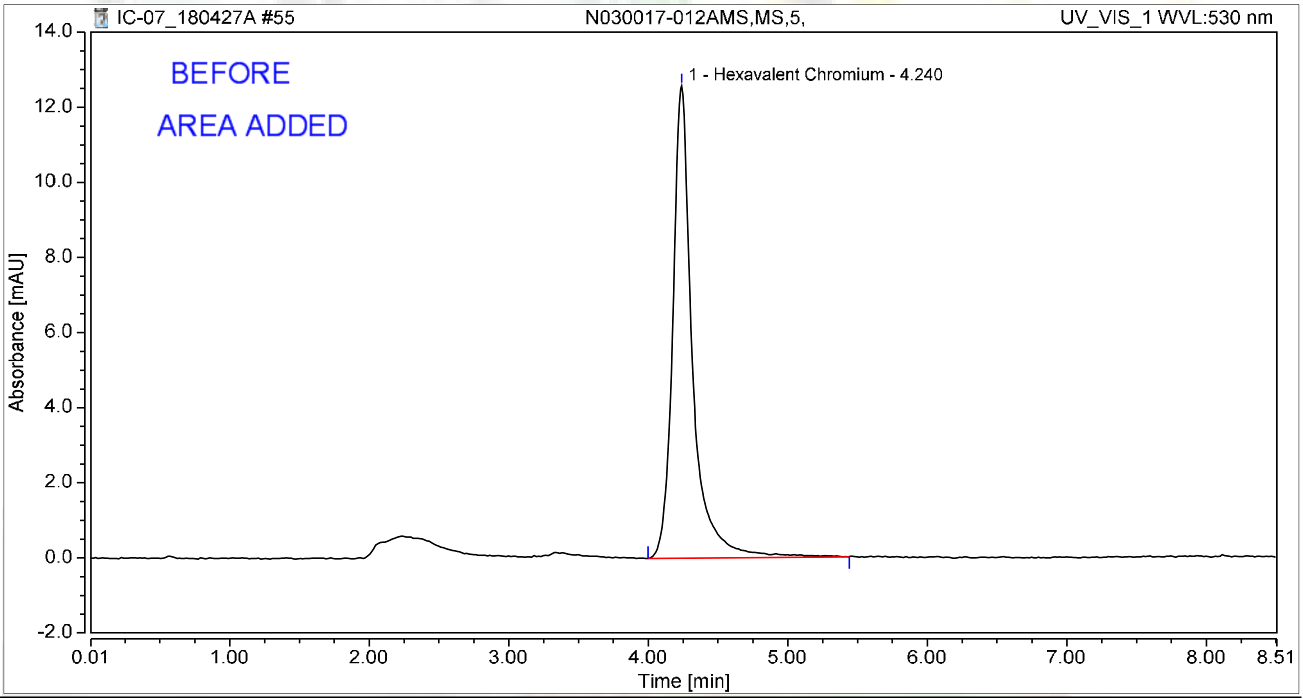
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-012AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 16:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	2.063	12.579	100.00	100.00	8.1379
Total:			**2.063**	**12.579**	**100.00**	**100.00**	

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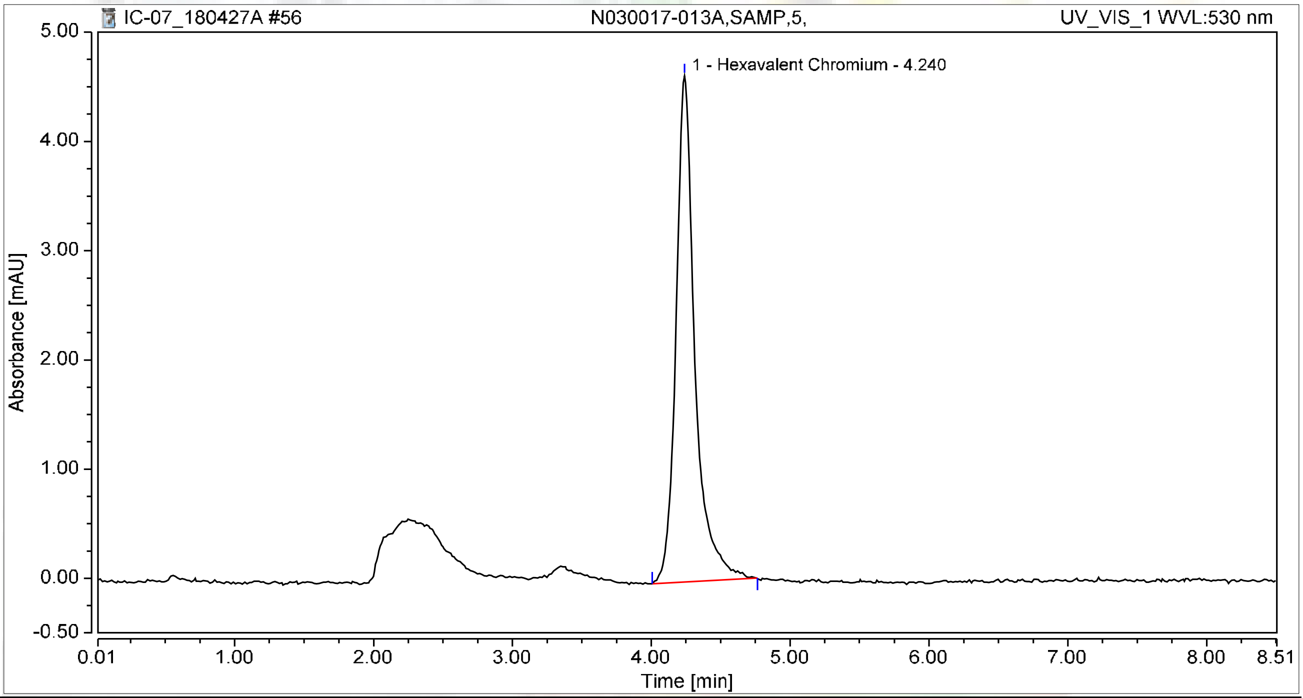
Chromatogram and Results

Injection Details

Injection Name:	**N030017-013A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 16:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

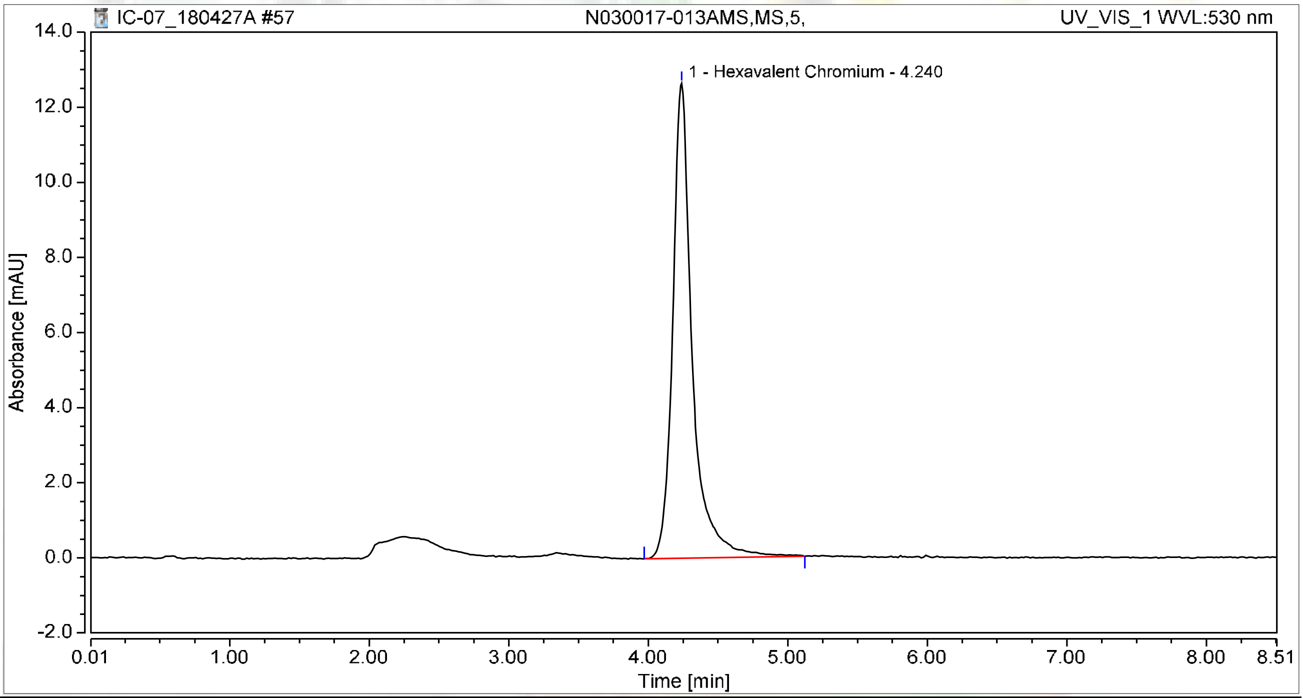
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.731	4.633	100.00	100.00	2.8843
Total:			**0.731**	**4.633**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-013AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 16:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

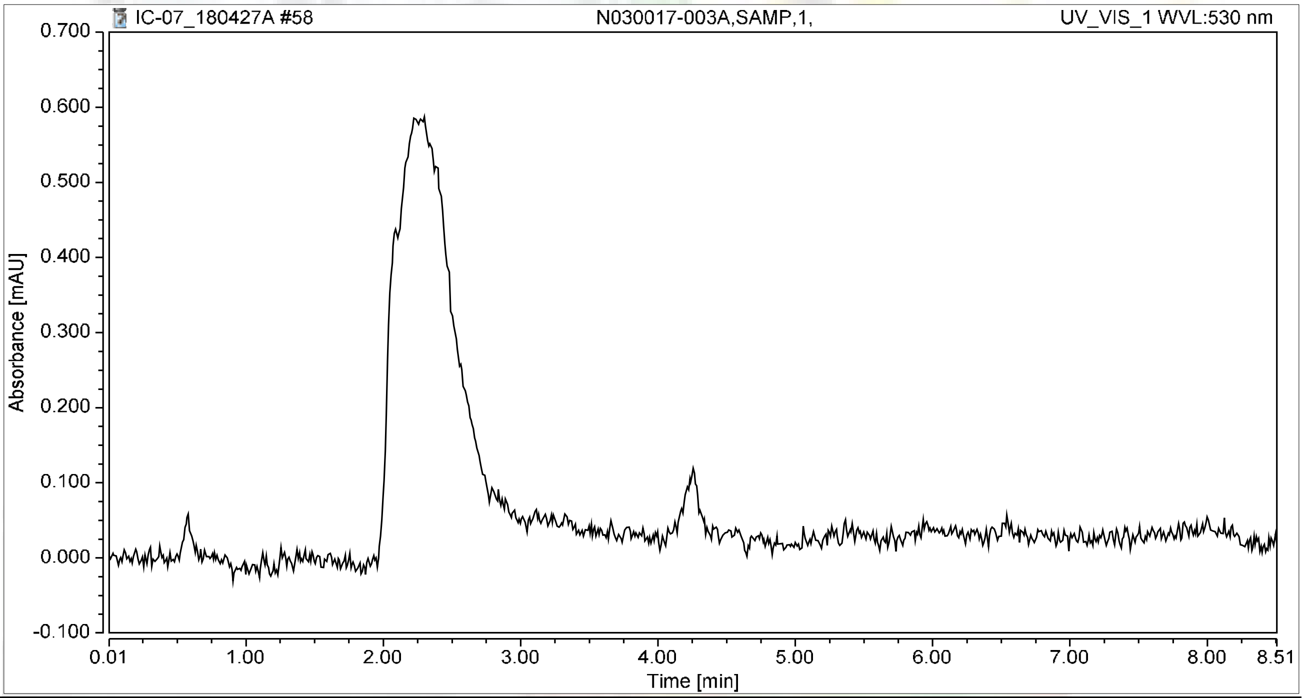
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	2.048	12.648	100.00	100.00	8.0801
Total:			**2.048**	**12.648**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 16:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

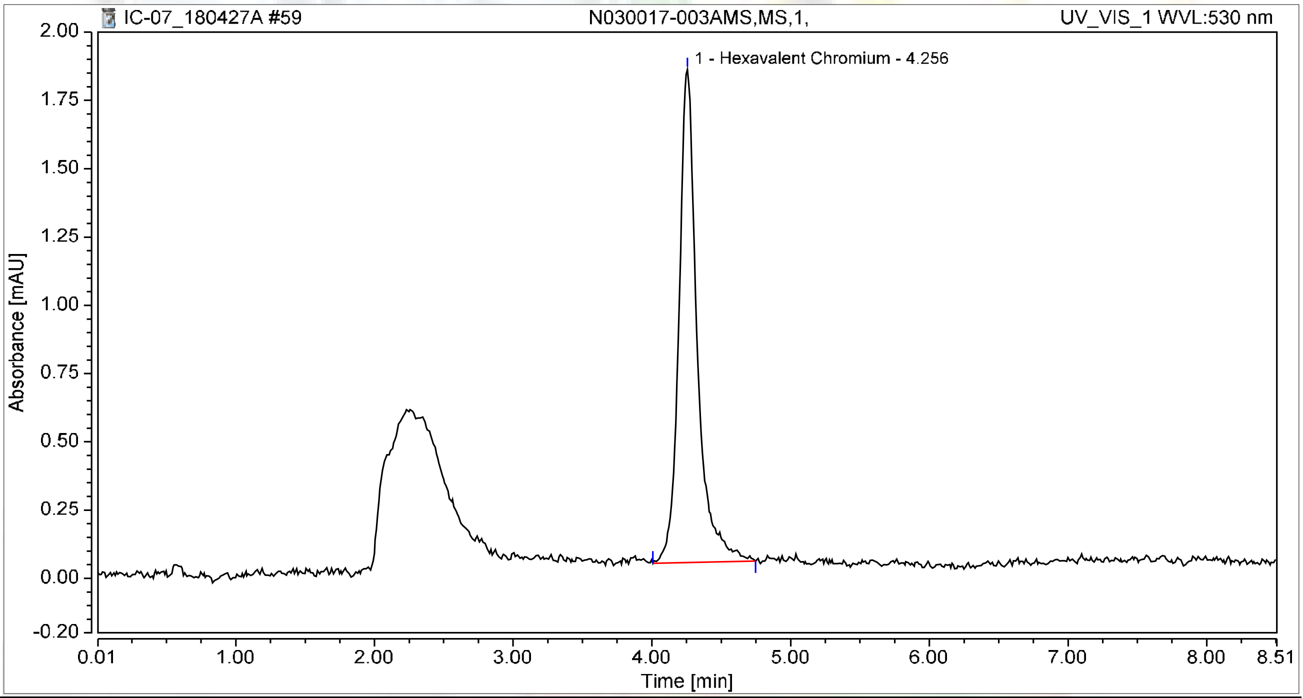
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 16:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

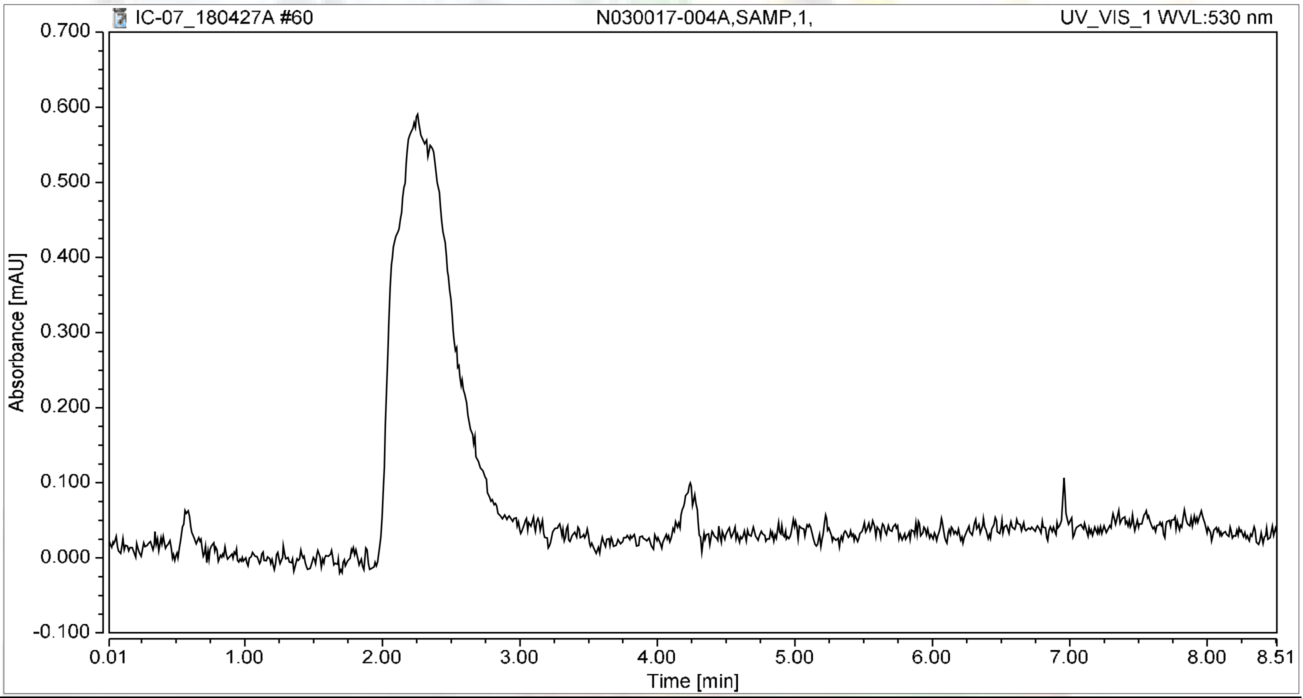
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.275	1.805	100.00	100.00	1.0847
Total:			**0.275**	**1.805**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-004A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 16:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

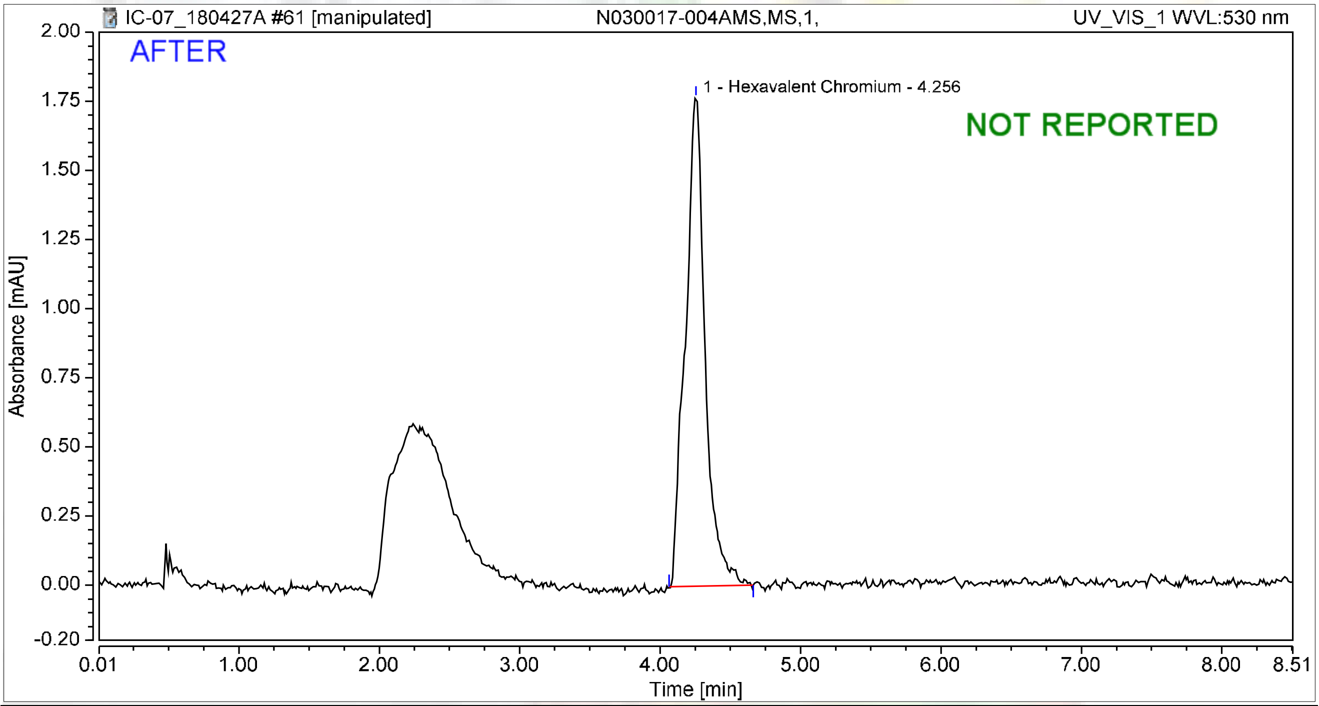
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.289	1.765	100.00	100.00	1.1401
Total:			**0.289**	**1.765**	**100.00**	**100.00**	

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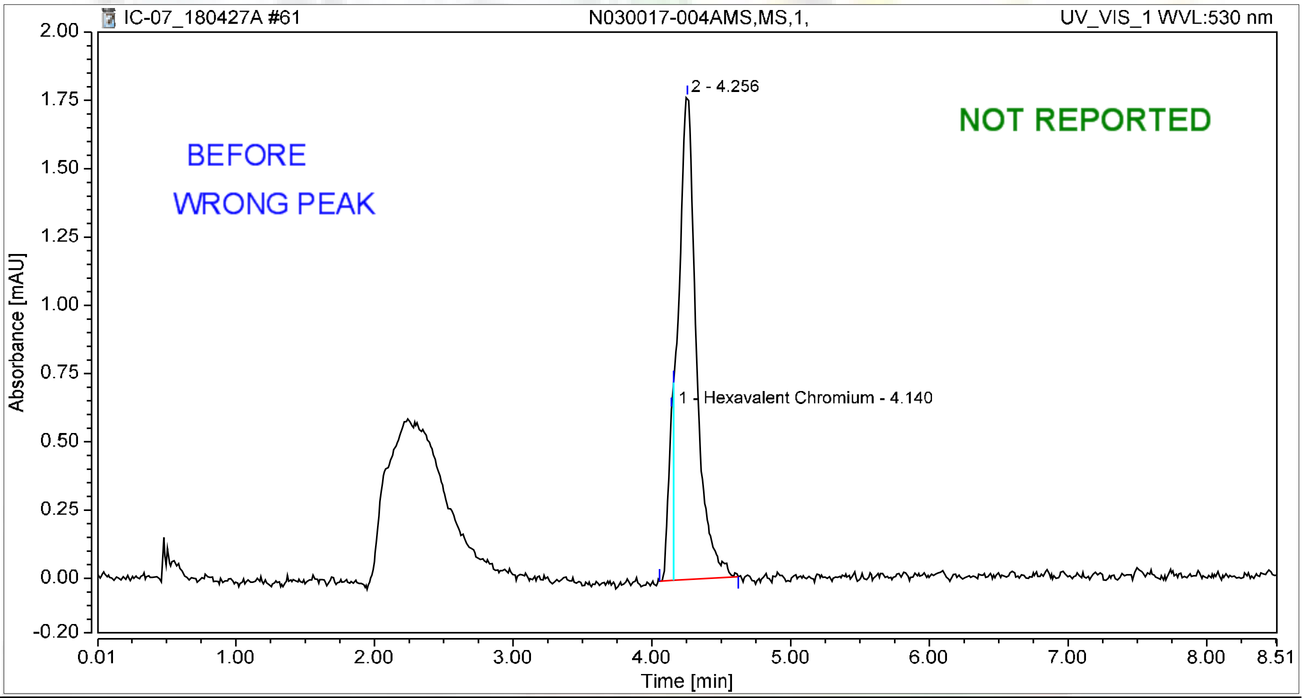
Chromatogram and Results

Injection Details

Injection Name:	**N030017-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.027	0.626	9.31	26.18	0.1058
2		4.256	0.261	1.766	90.69	73.82	n.a.
Total:			**0.288**	**2.392**	**100.00**	**100.00**	

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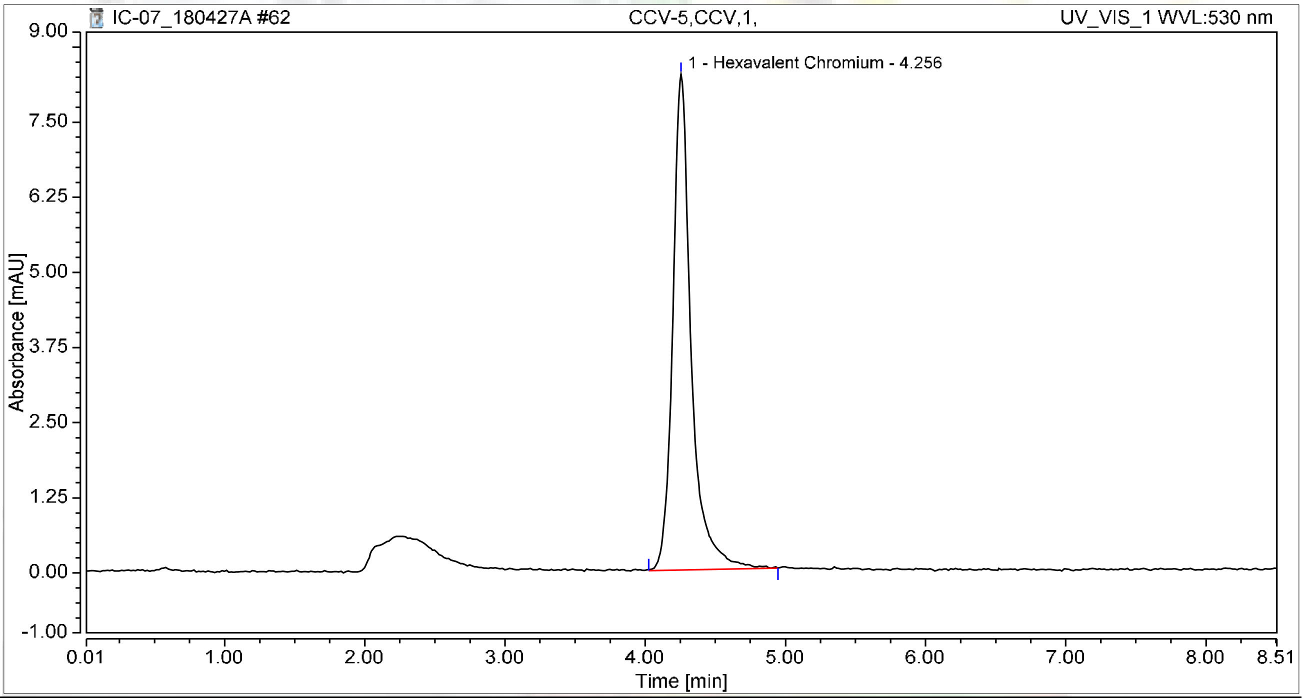
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 17:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

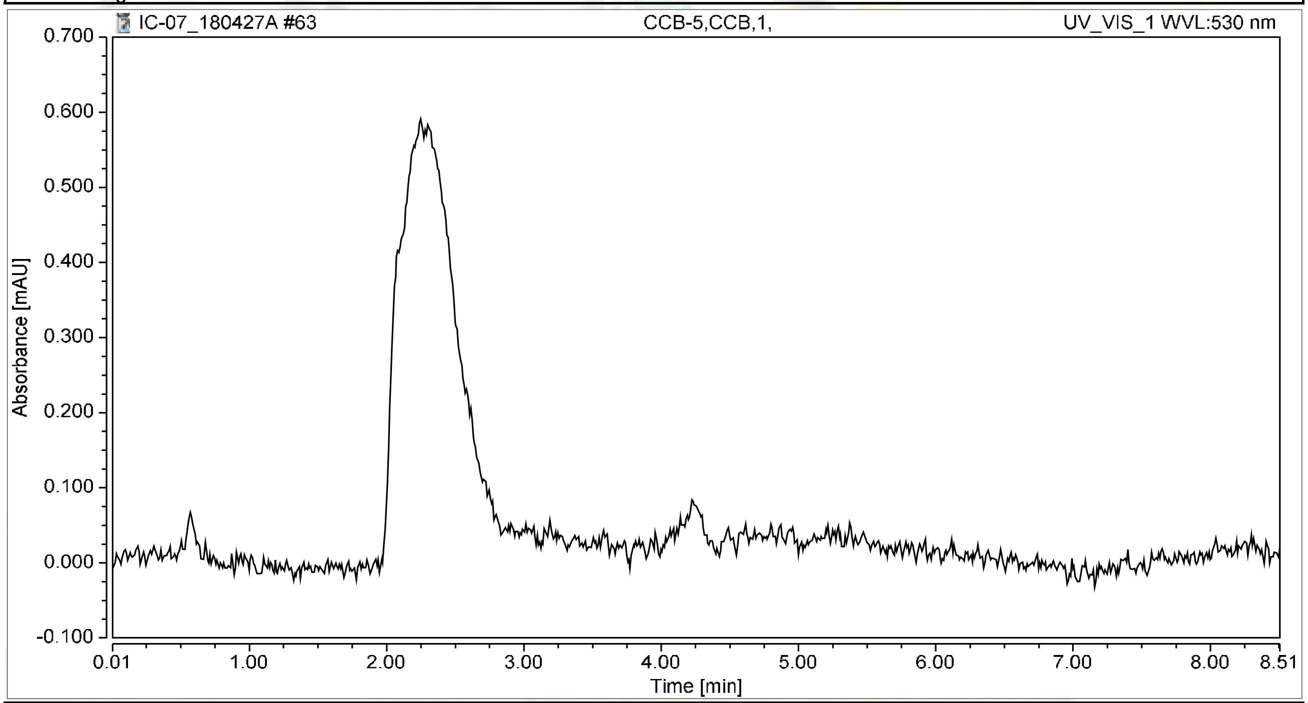
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.256	8.250	100.00	100.00	4.9540
Total:			**1.256**	**8.250**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

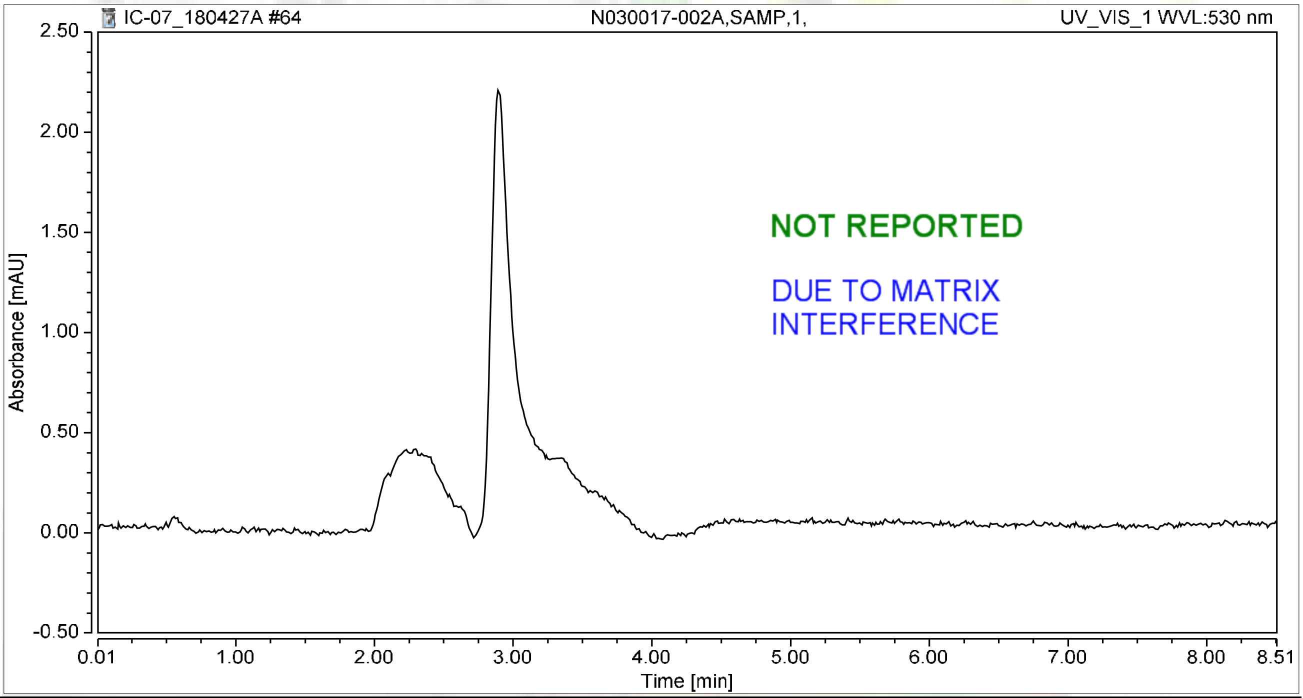
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 17:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

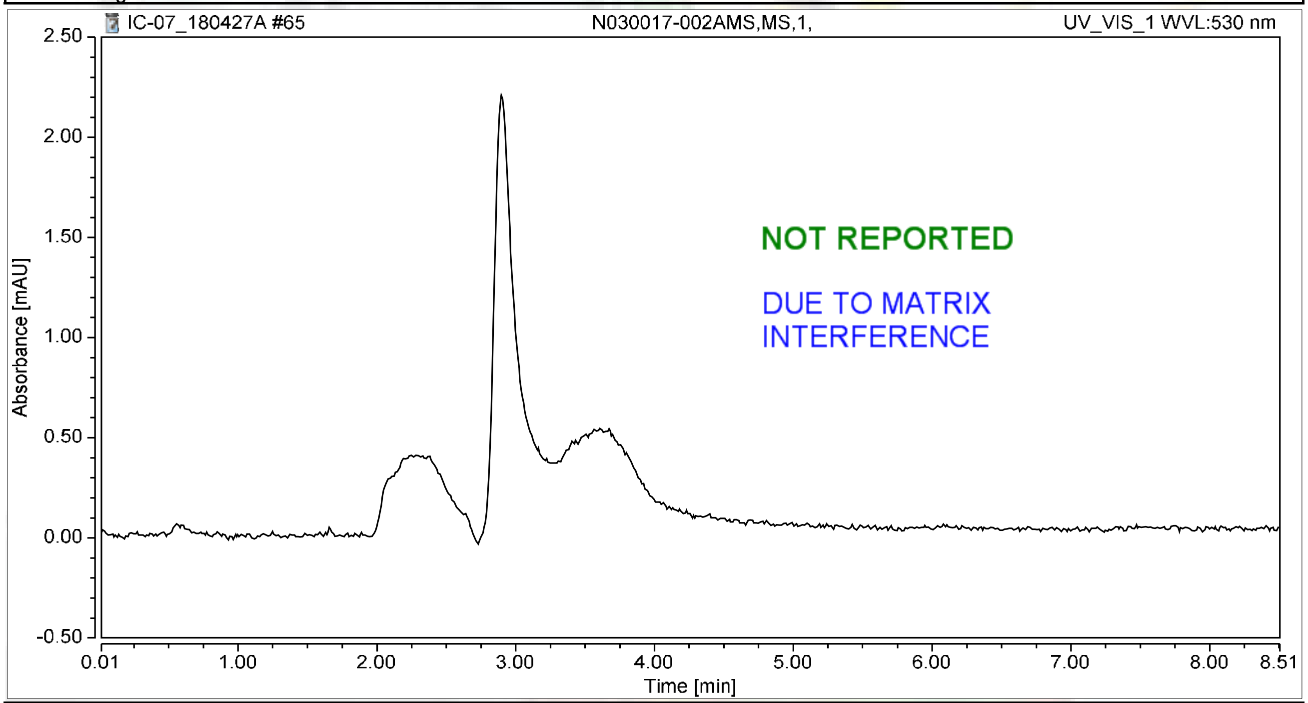
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 17:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

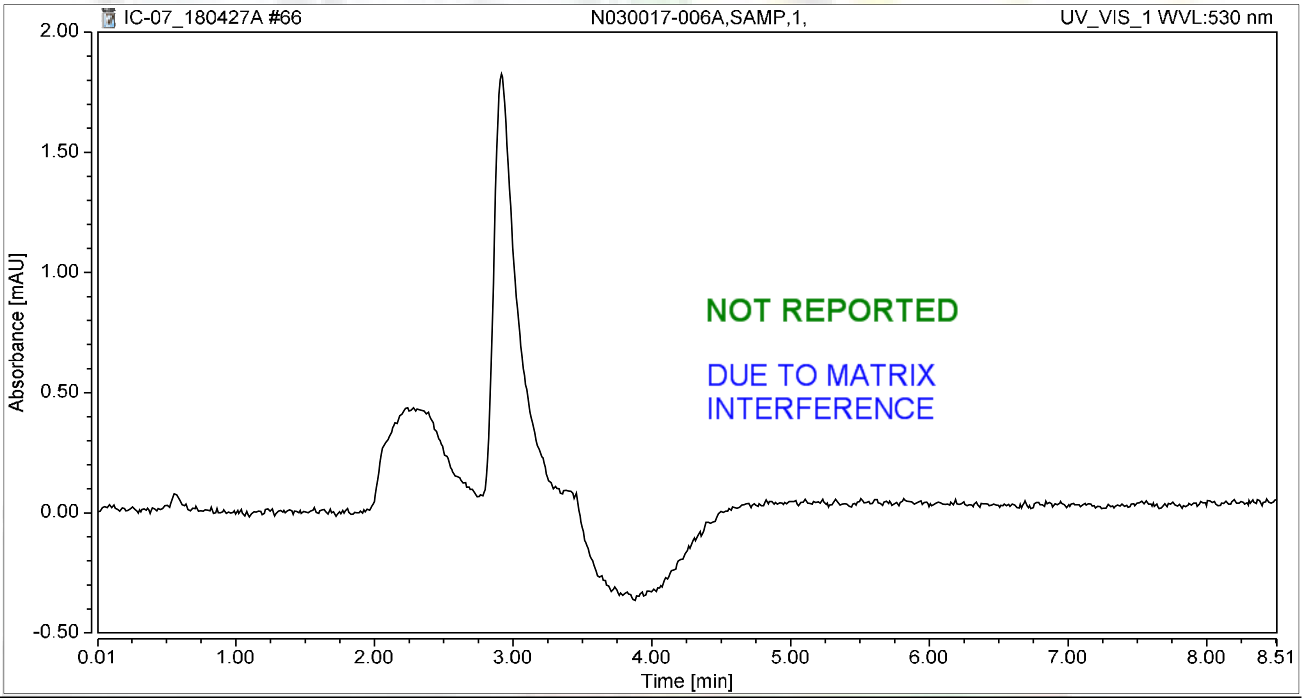
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 17:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

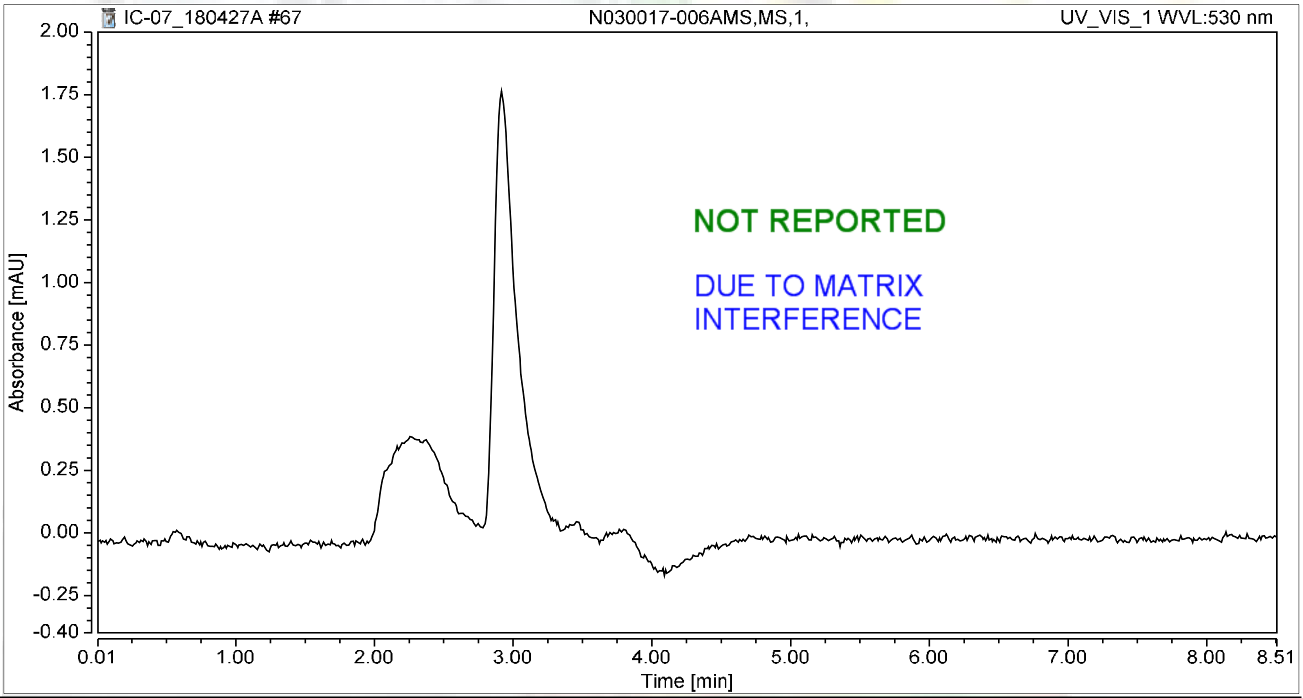
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

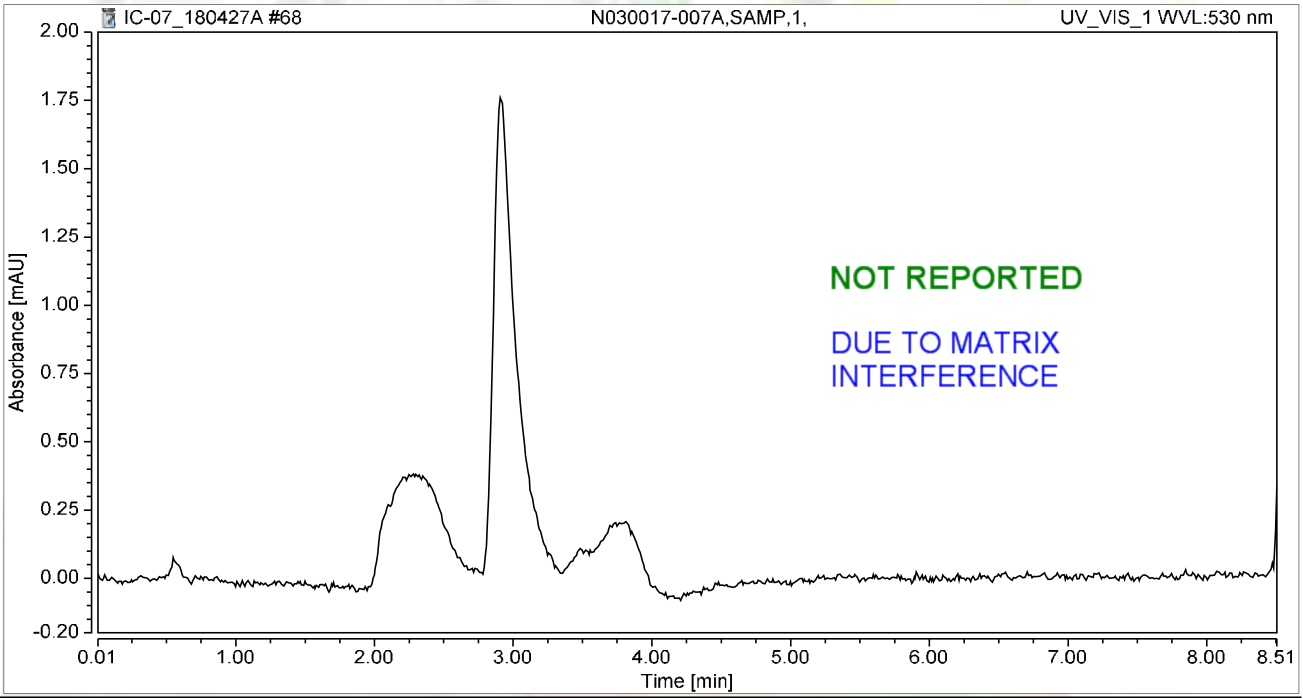
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

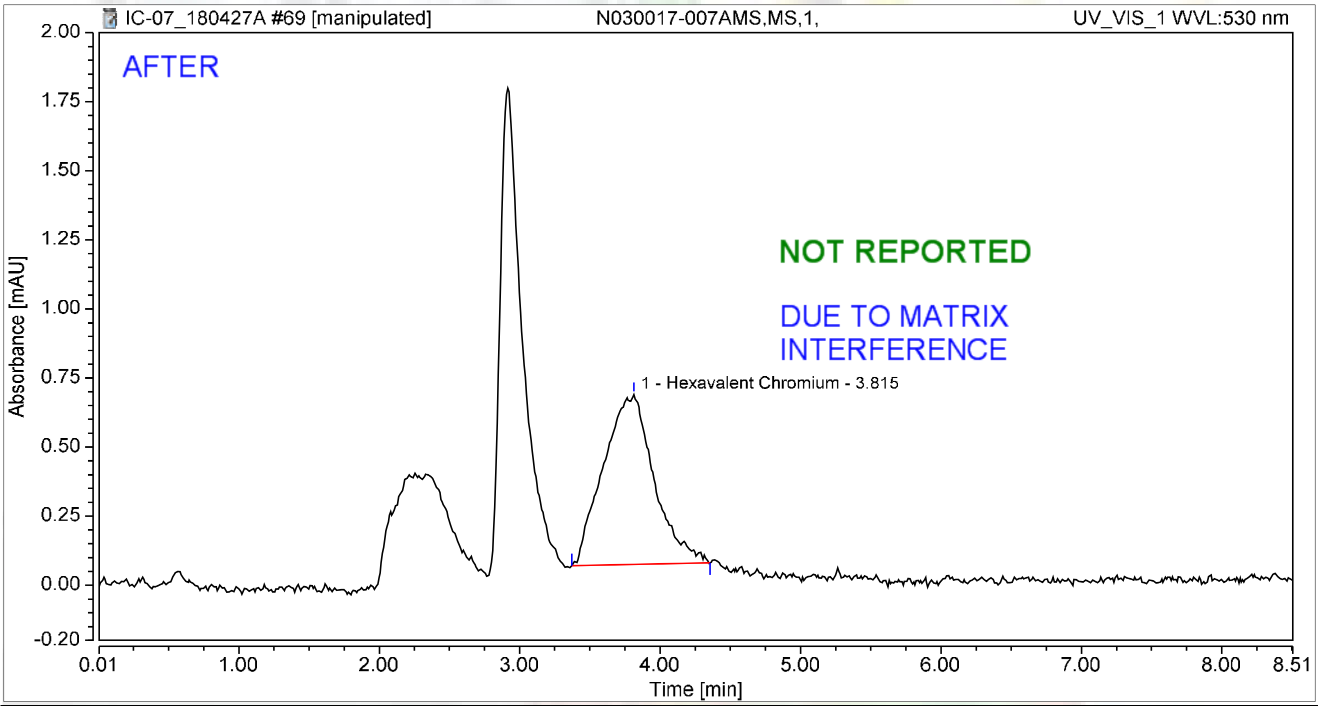
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.815	0.256	0.615	100.00	100.00	1.0118
Total:			**0.256**	**0.615**	**100.00**	**100.00**	

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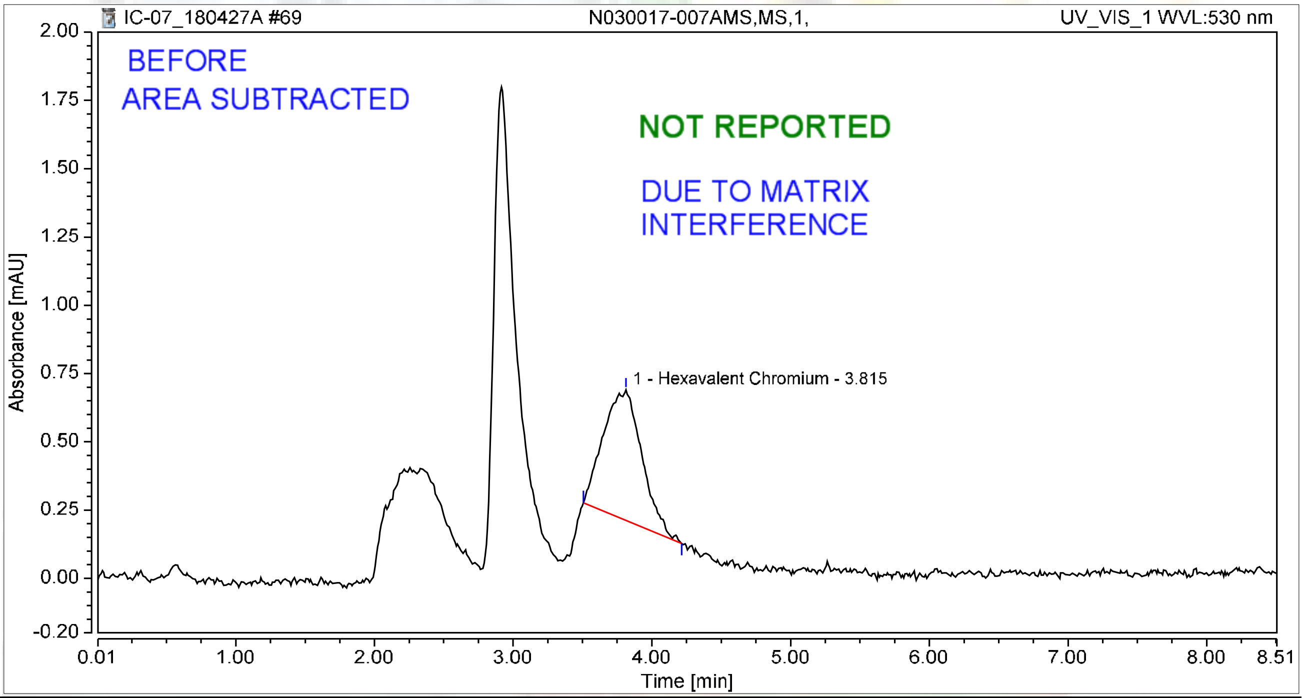
Chromatogram and Results

Injection Details

Injection Name:	**N030017-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.815	0.151	0.478	100.00	100.00	0.5974
Total:			**0.151**	**0.478**	**100.00**	**100.00**	

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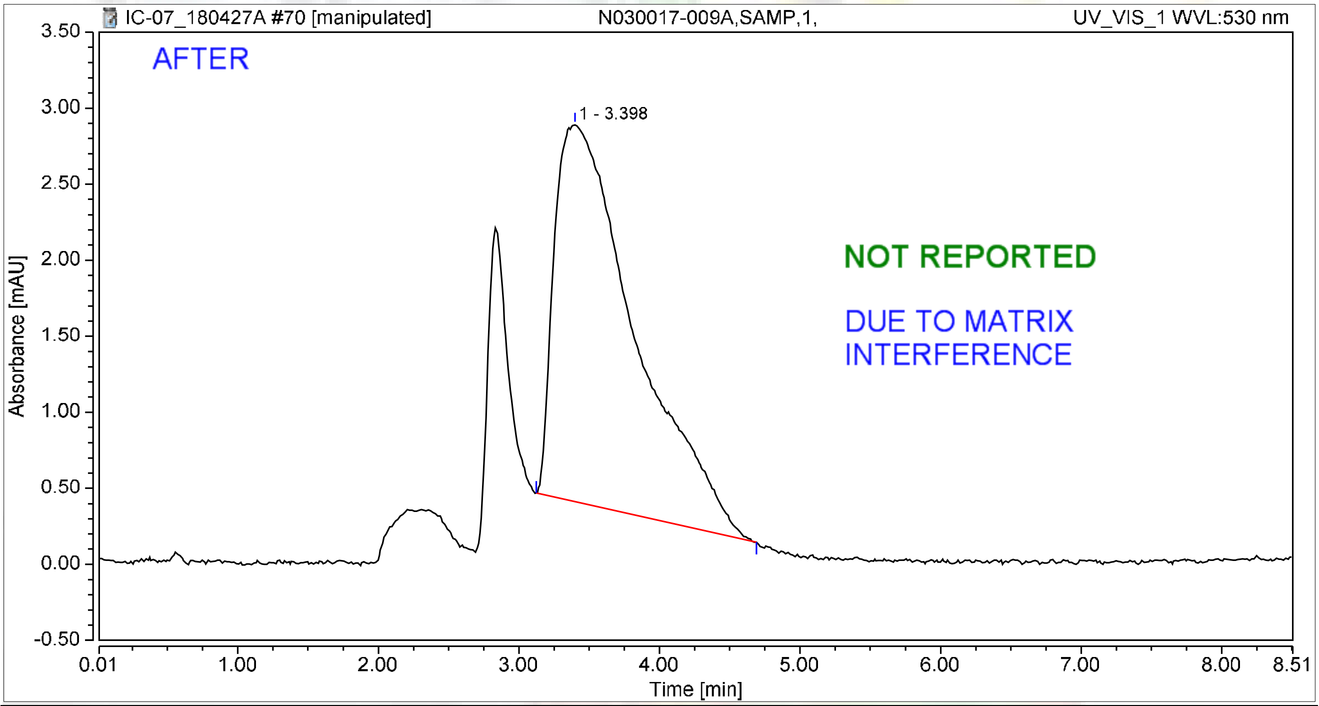
Chromatogram and Results

Injection Details

Injection Name:	**N030017-009A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.398	1.648	2.479	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.648**	**2.479**	**100.00**	**100.00**	

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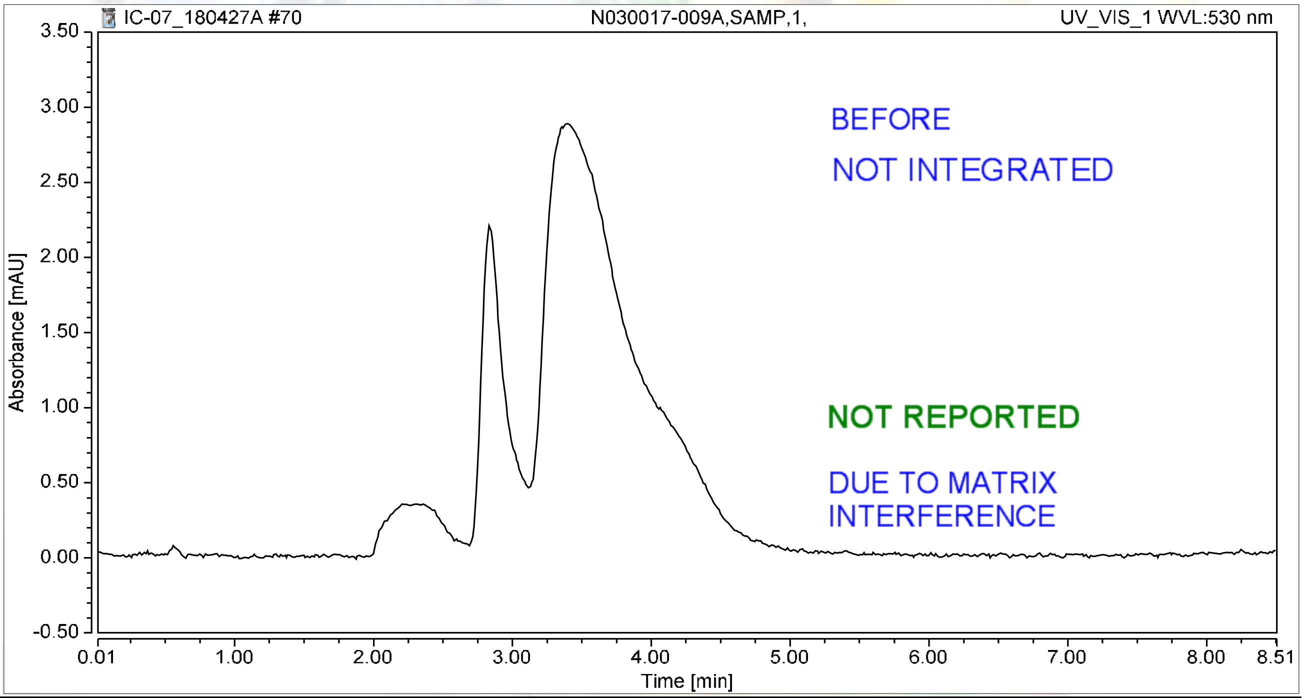
Chromatogram and Results

Injection Details

Injection Name:	**N030017-009A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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My first report/Integration

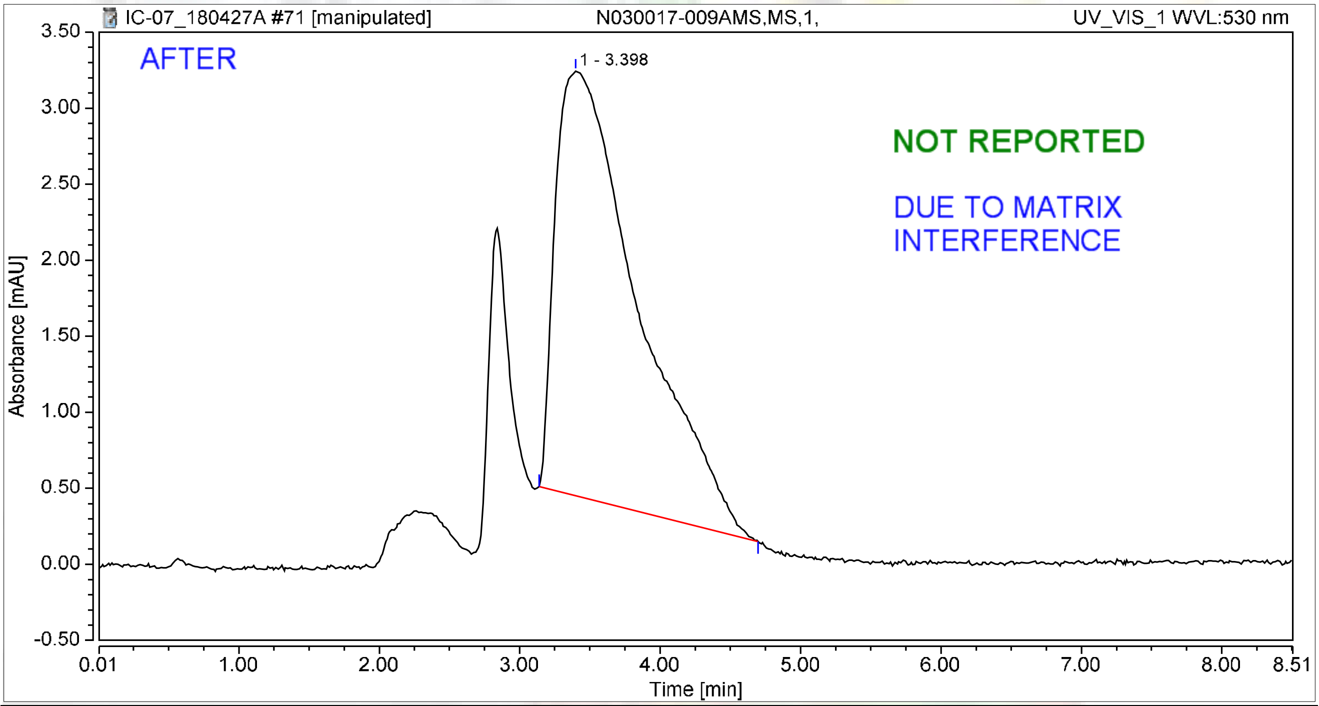
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N030017-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.398	1.903	2.791	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.903**	**2.791**	**100.00**	**100.00**	

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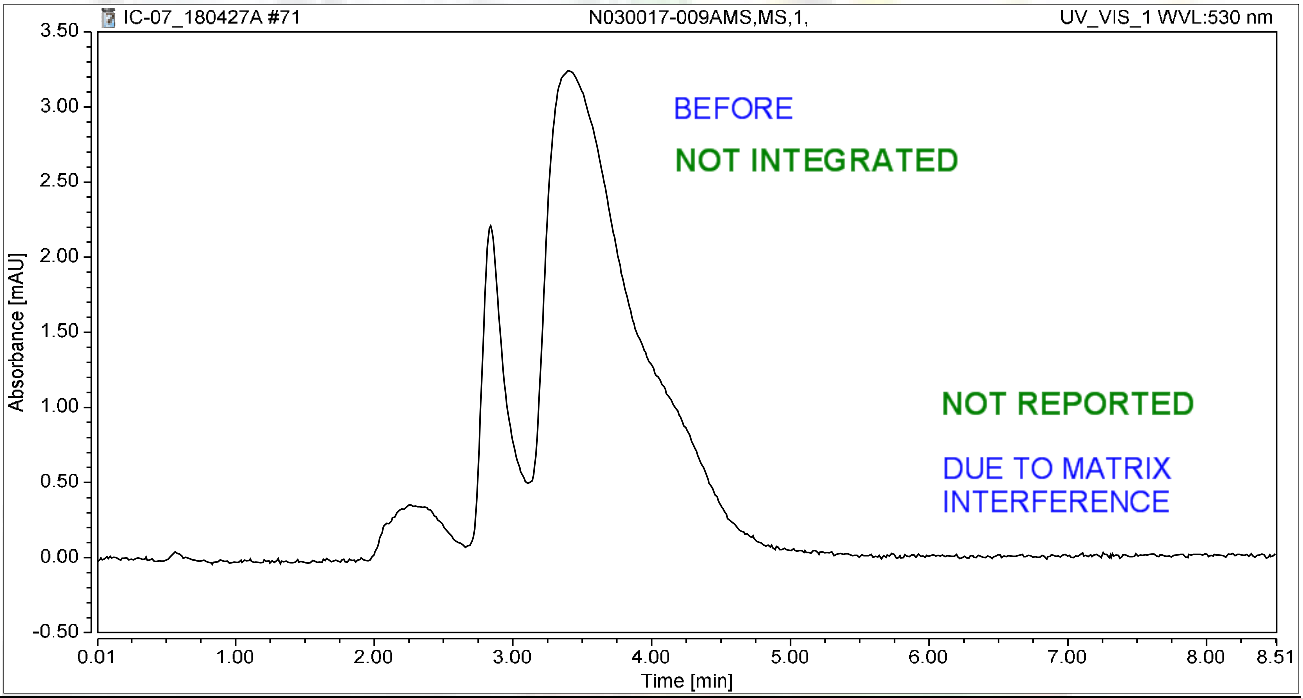
Chromatogram and Results

Injection Details

Injection Name:	**N030017-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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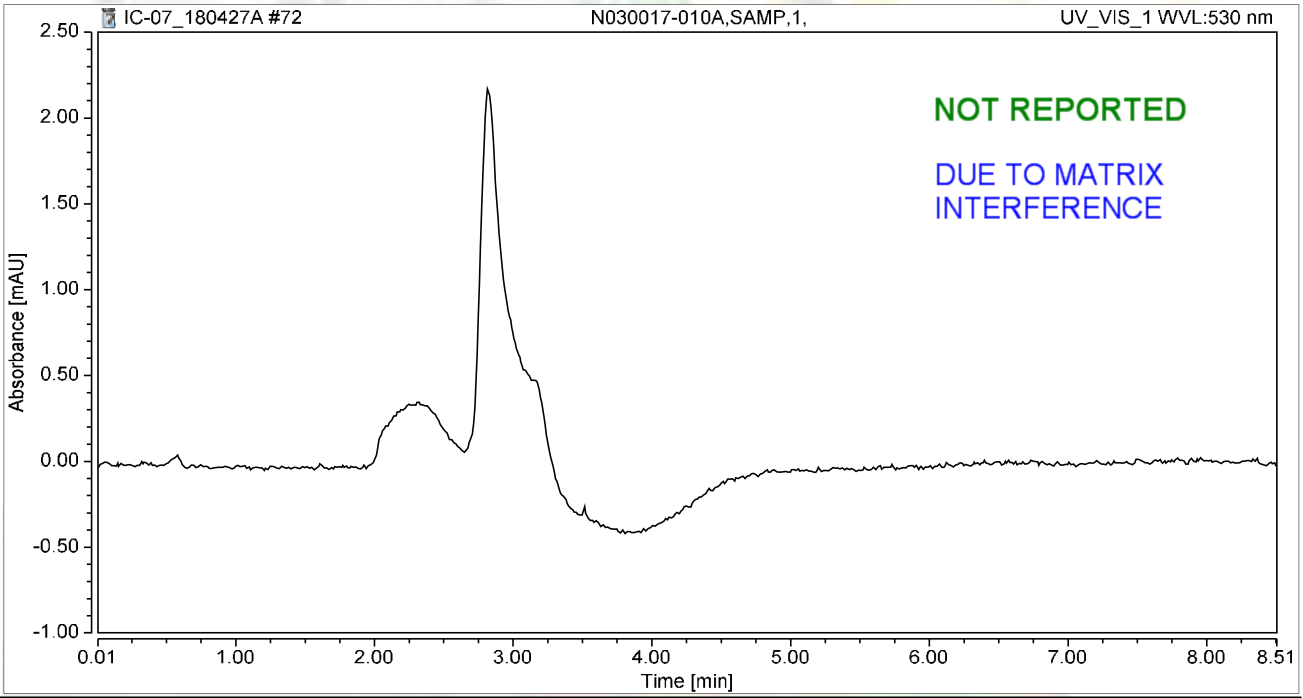
Chromatogram and Results

Injection Details

Injection Name:	**N030017-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 18:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

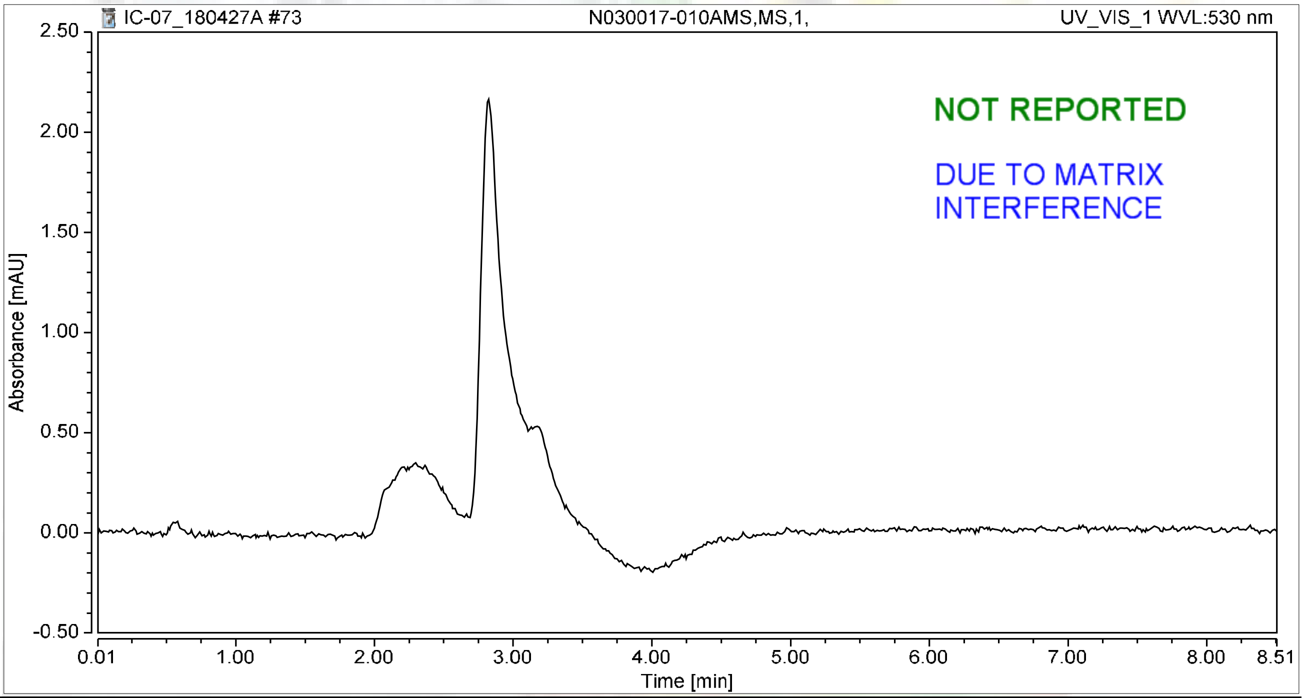
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

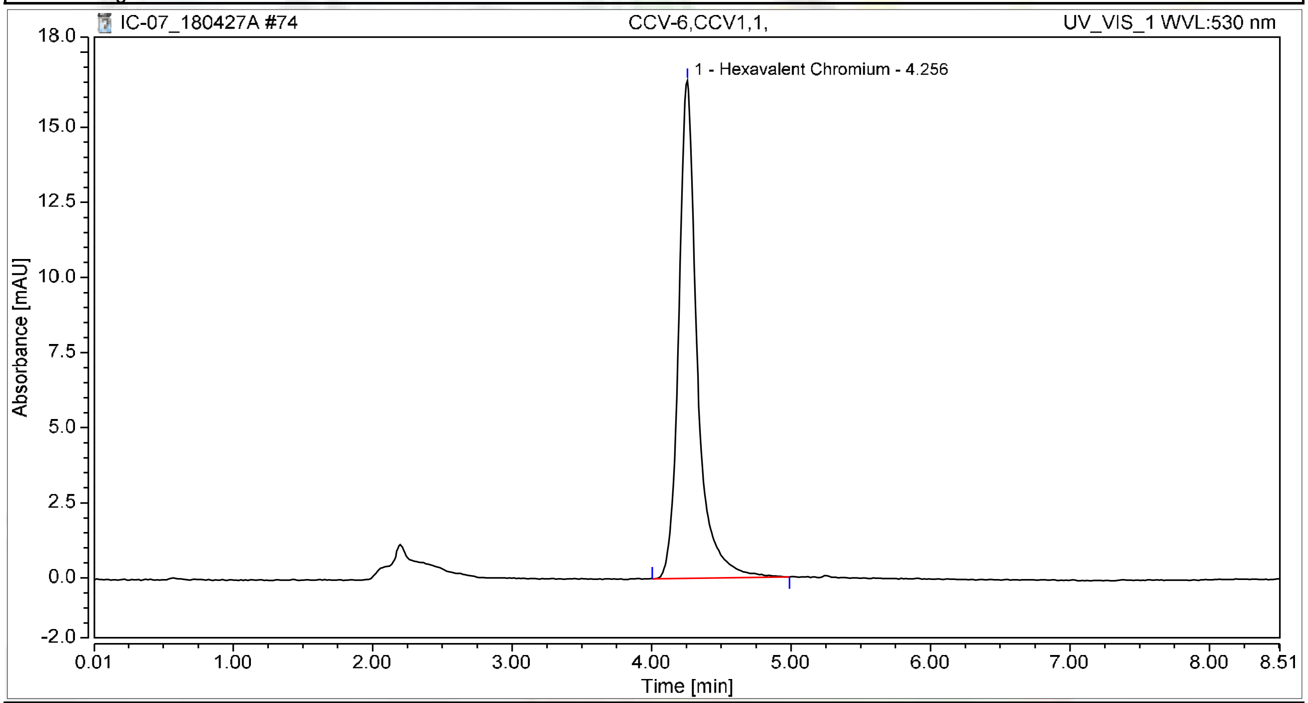
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

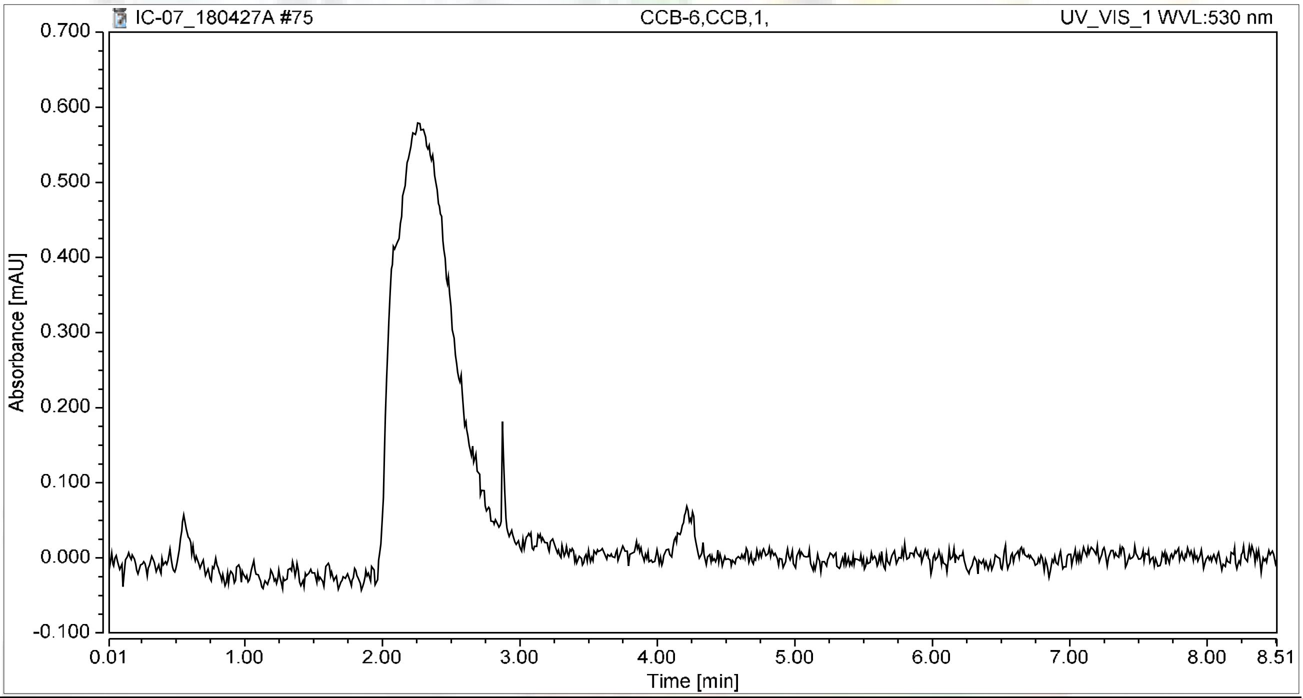
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.542	16.576	100.00	100.00	10.0271
Total:			**2.542**	**16.576**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

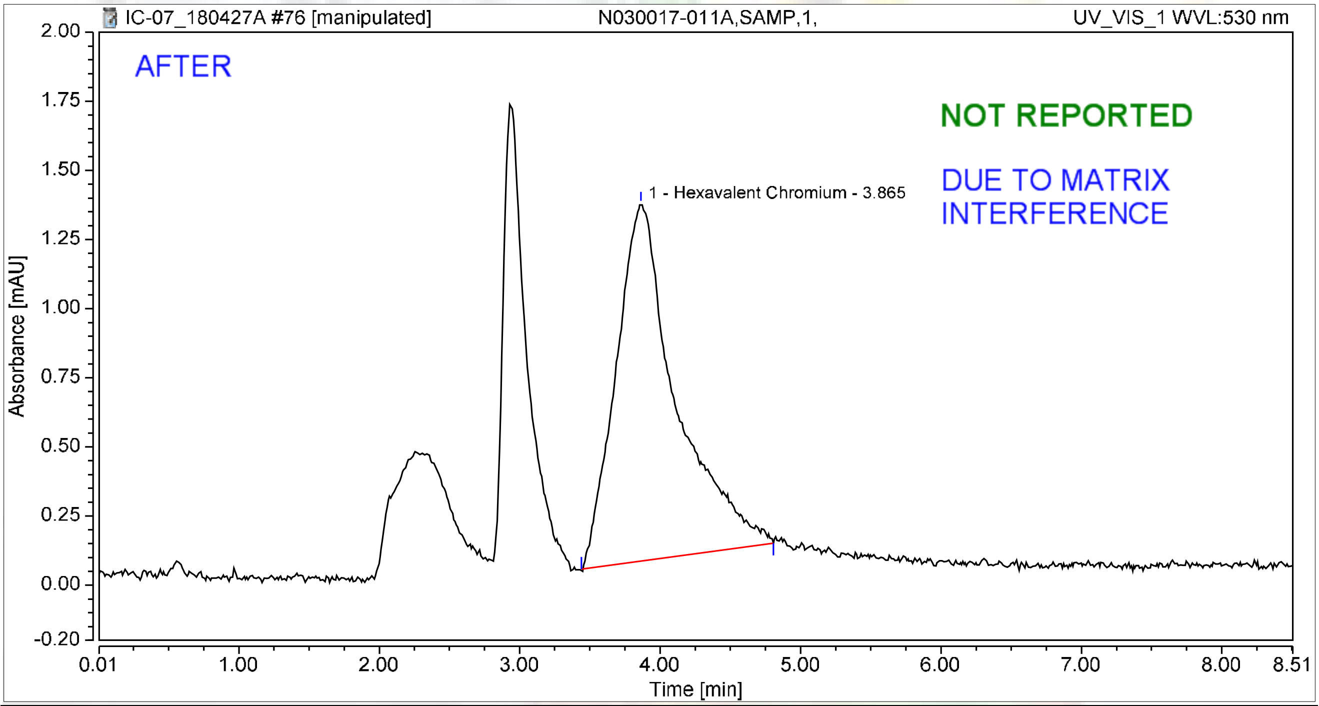
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.865	0.642	1.292	100.00	100.00	2.5325
Total:			**0.642**	**1.292**	**100.00**	**100.00**	

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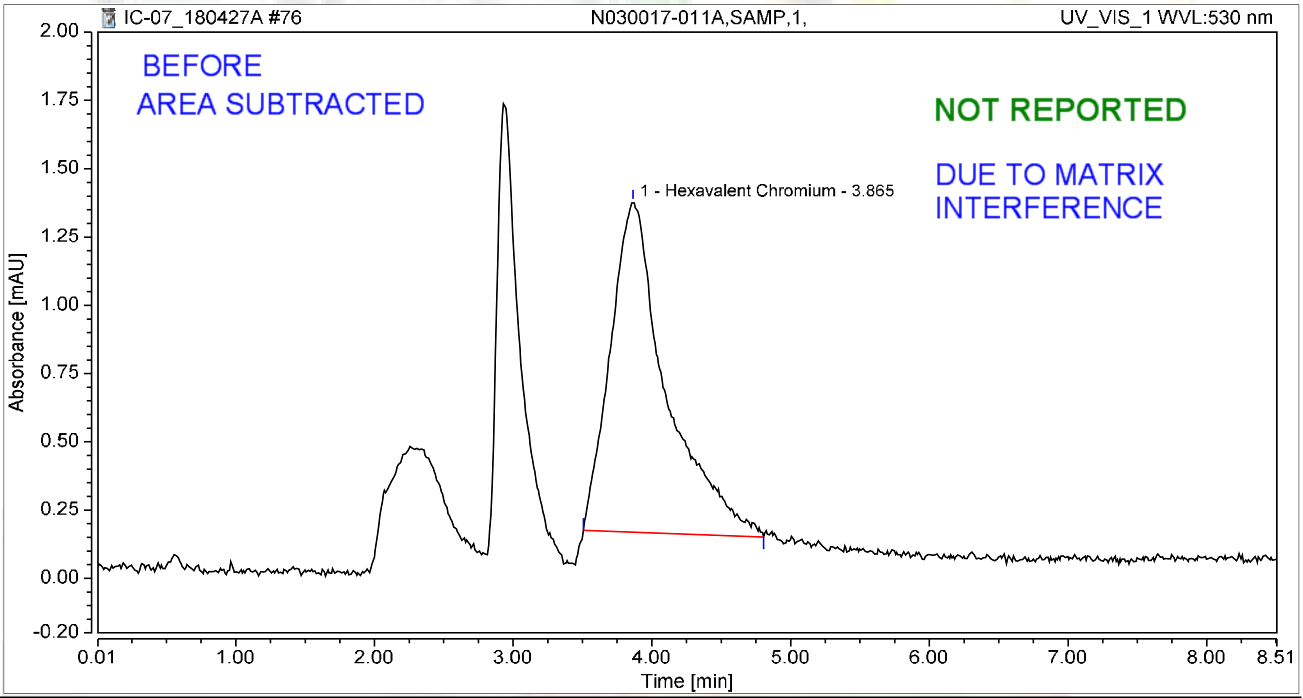
Chromatogram and Results

Injection Details

Injection Name:	**N030017-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.865	0.565	1.209	100.00	100.00	2.2270
Total:			**0.565**	**1.209**	**100.00**	**100.00**	

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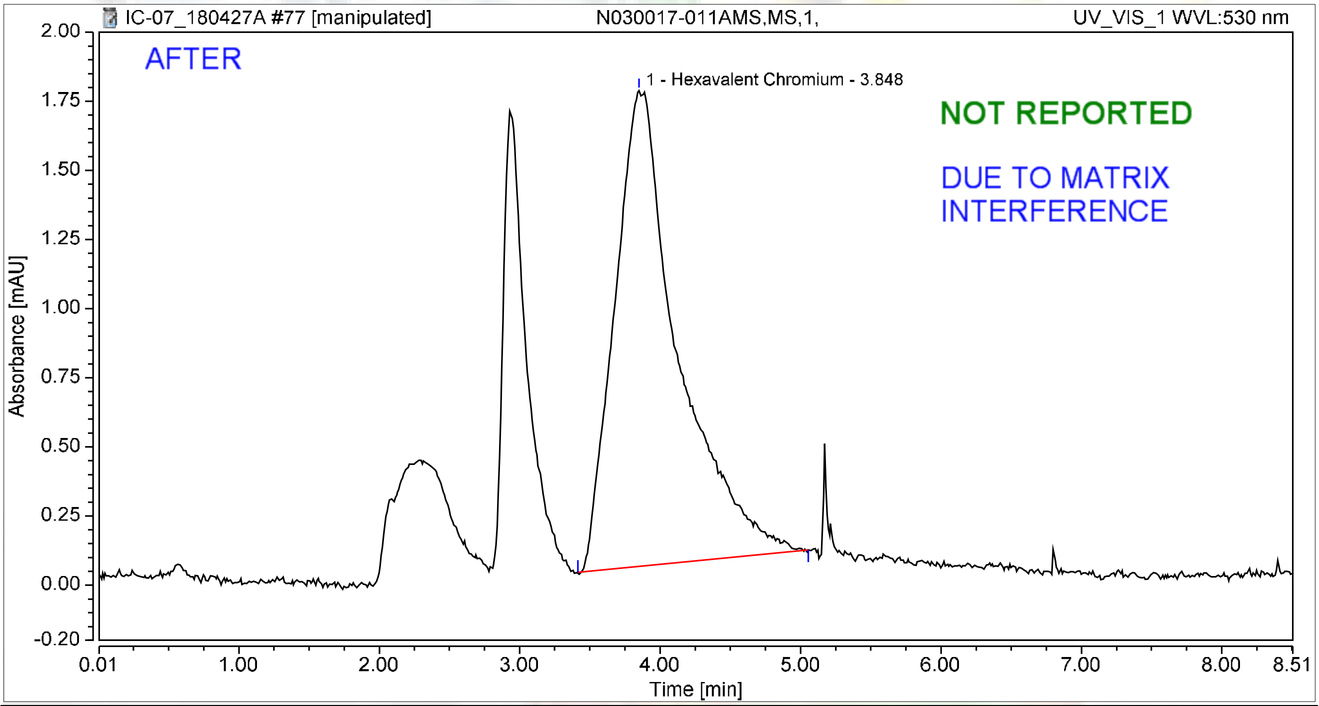
Chromatogram and Results

Injection Details			
Injection Name:	**N030017-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.848	0.901	1.721	100.00	100.00	3.5554
Total:			**0.901**	**1.721**	**100.00**	**100.00**	

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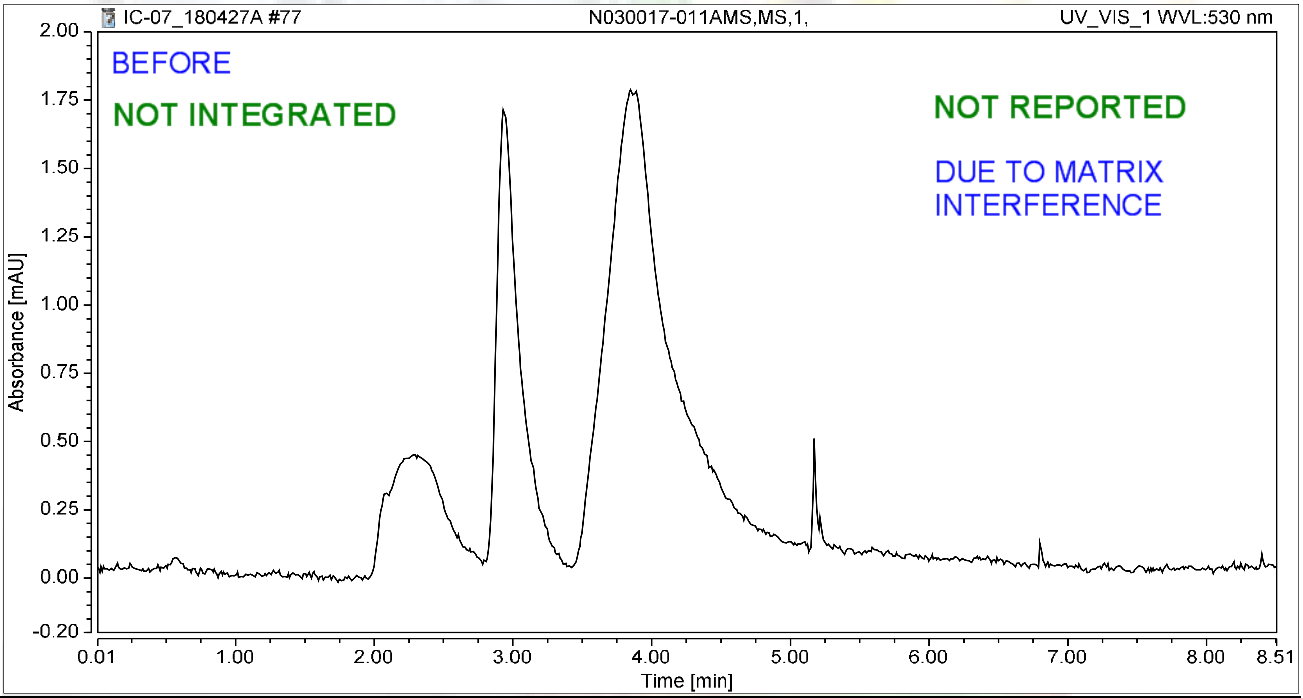
Chromatogram and Results

Injection Details

Injection Name:	**N030017-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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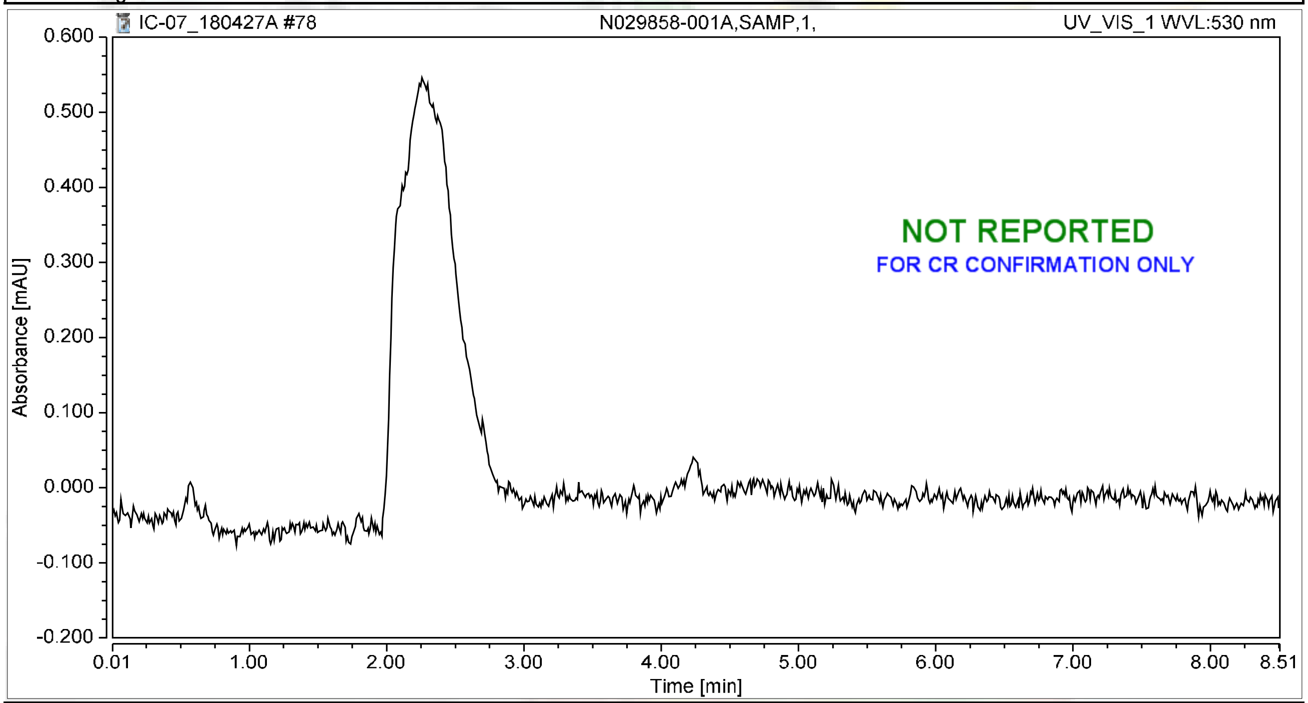
Chromatogram and Results

Injection Details

Injection Name:	**N029858-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

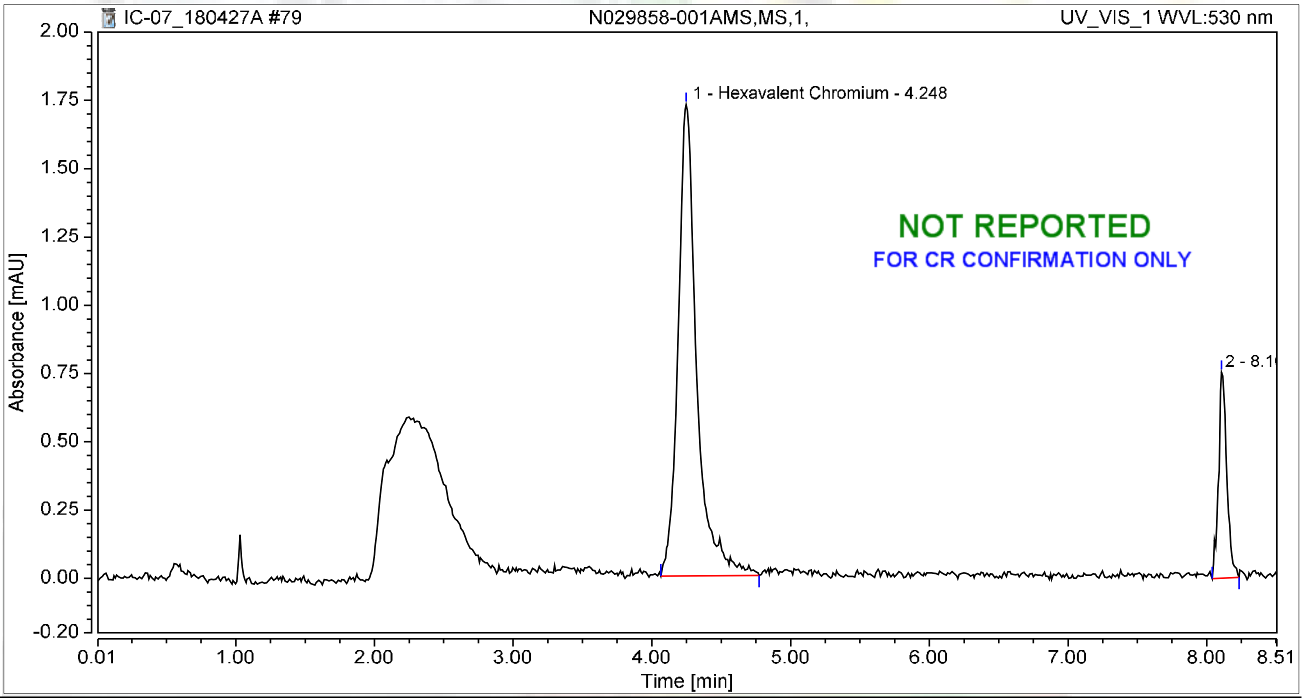
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029858-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 19:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

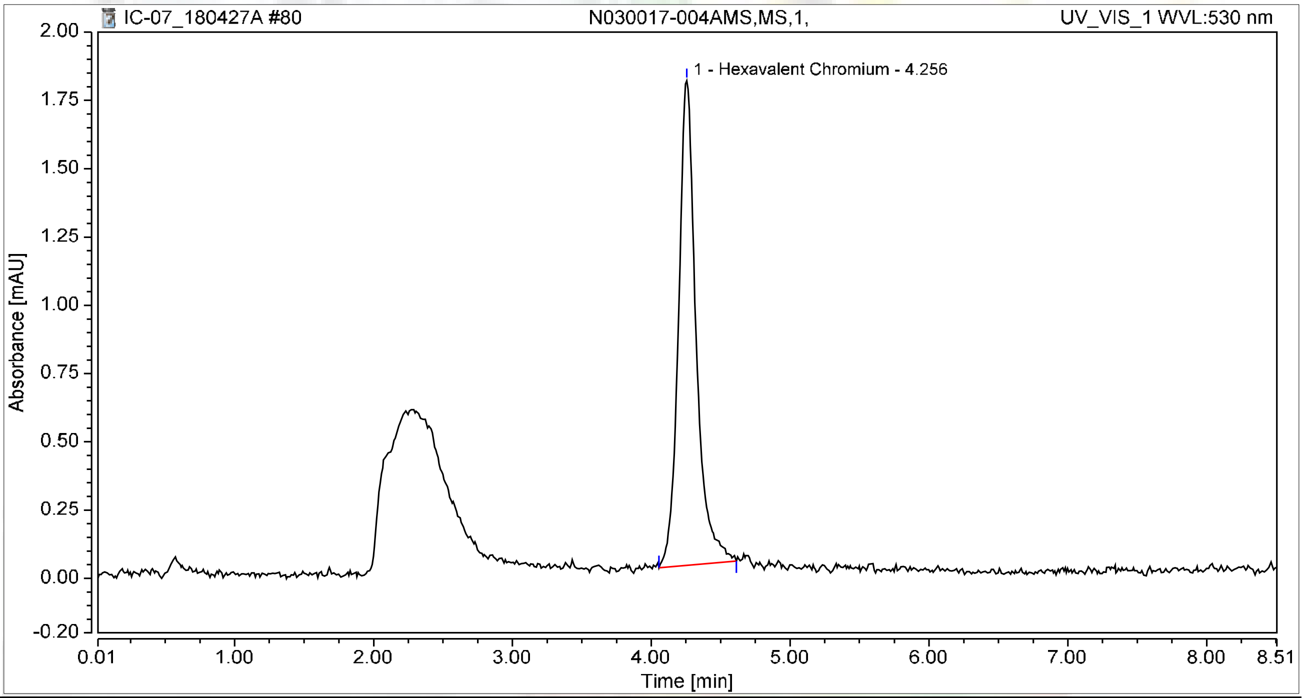
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.269	1.726	83.55	69.62	1.0599
2		8.106	0.053	0.753	16.45	30.38	n.a.
Total:			**0.322**	**2.479**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-004AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 20:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

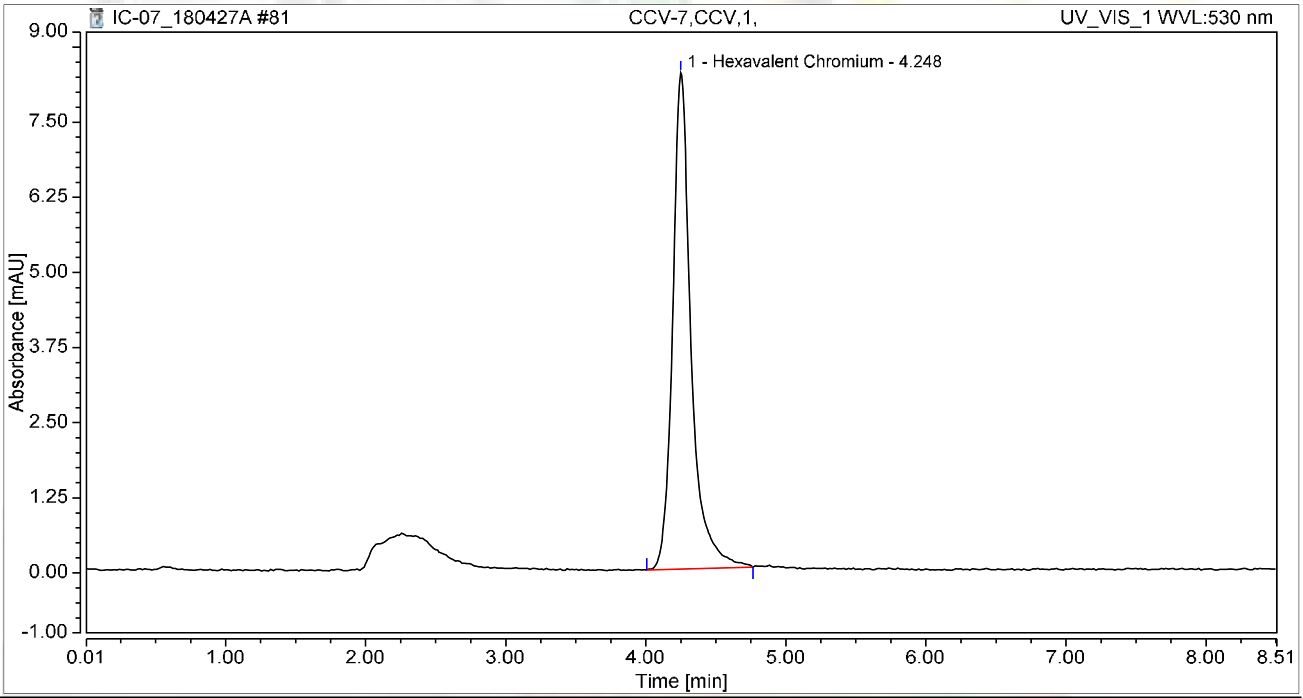
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.261	1.774	100.00	100.00	1.0281
Total:			**0.261**	**1.774**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 20:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

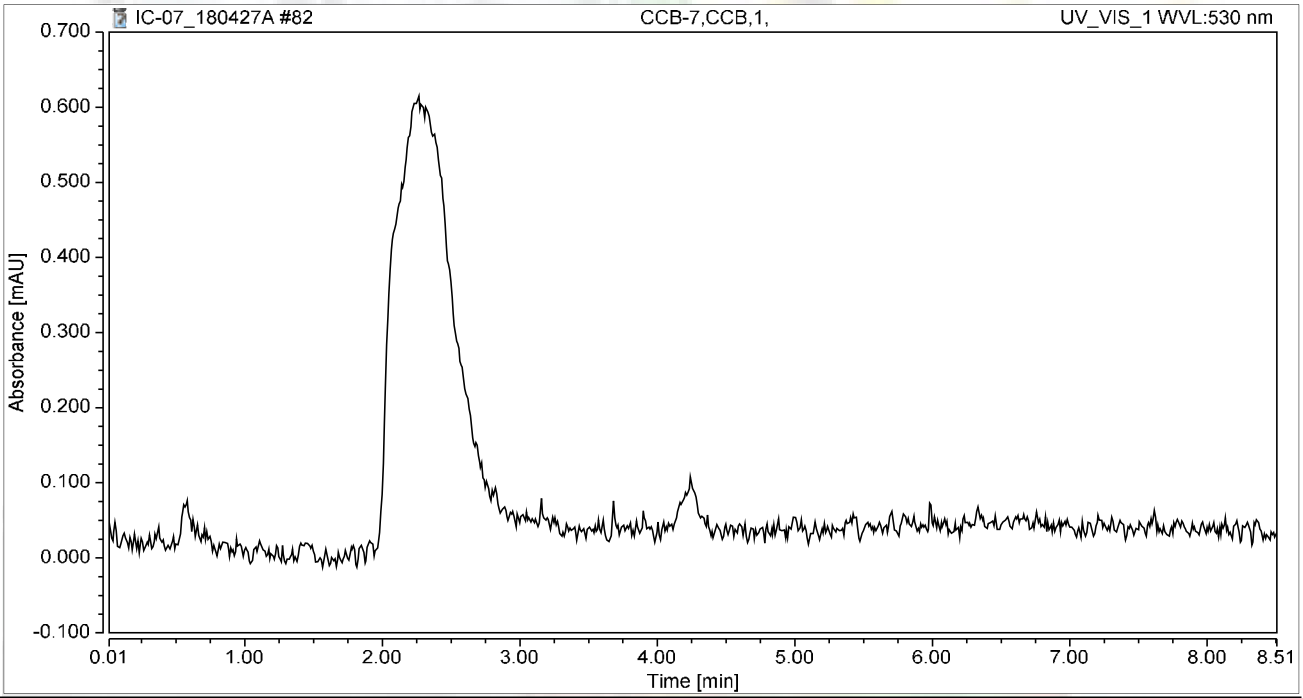
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.258	8.261	100.00	100.00	4.9623
Total:			**1.258**	**8.261**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180402_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**27/Apr/18 20:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

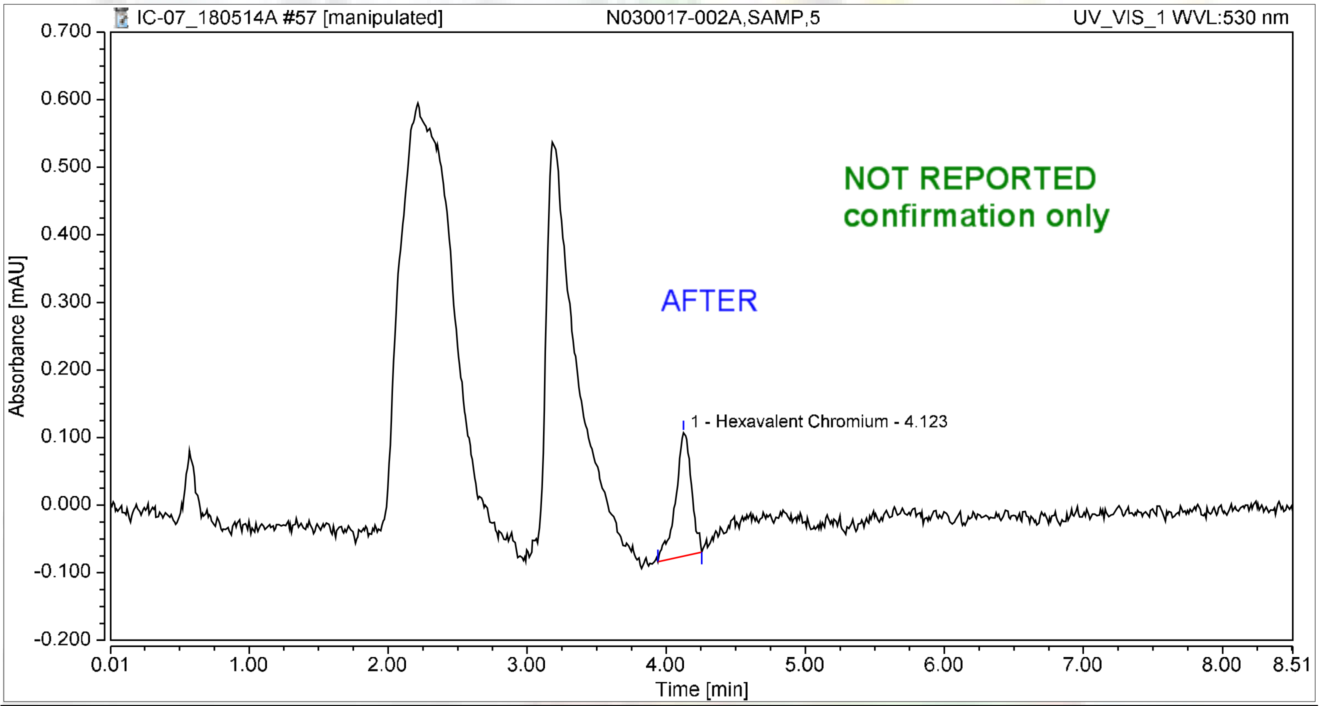
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-002A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 16:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.024	0.183	100.00	100.00	0.0940
Total:			**0.024**	**0.183**	**100.00**	**100.00**	

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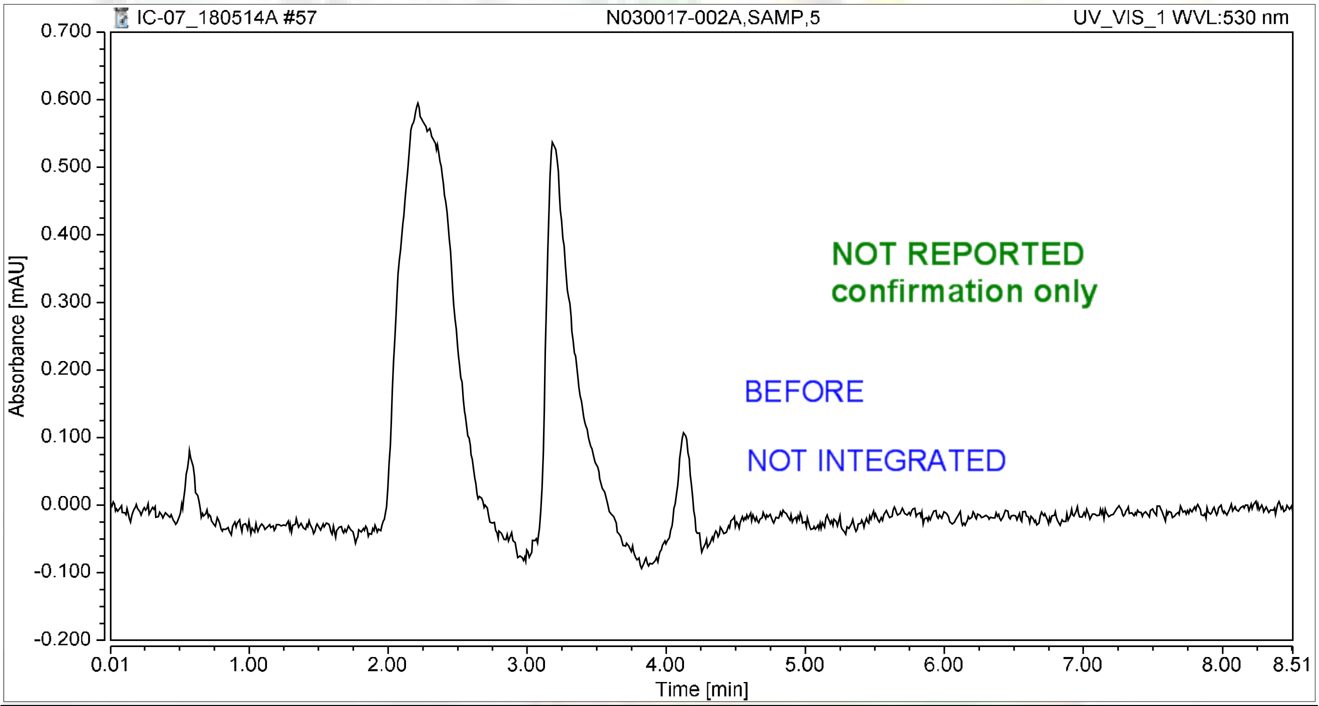
Chromatogram and Results

Injection Details

Injection Name:	**N030017-002A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 16:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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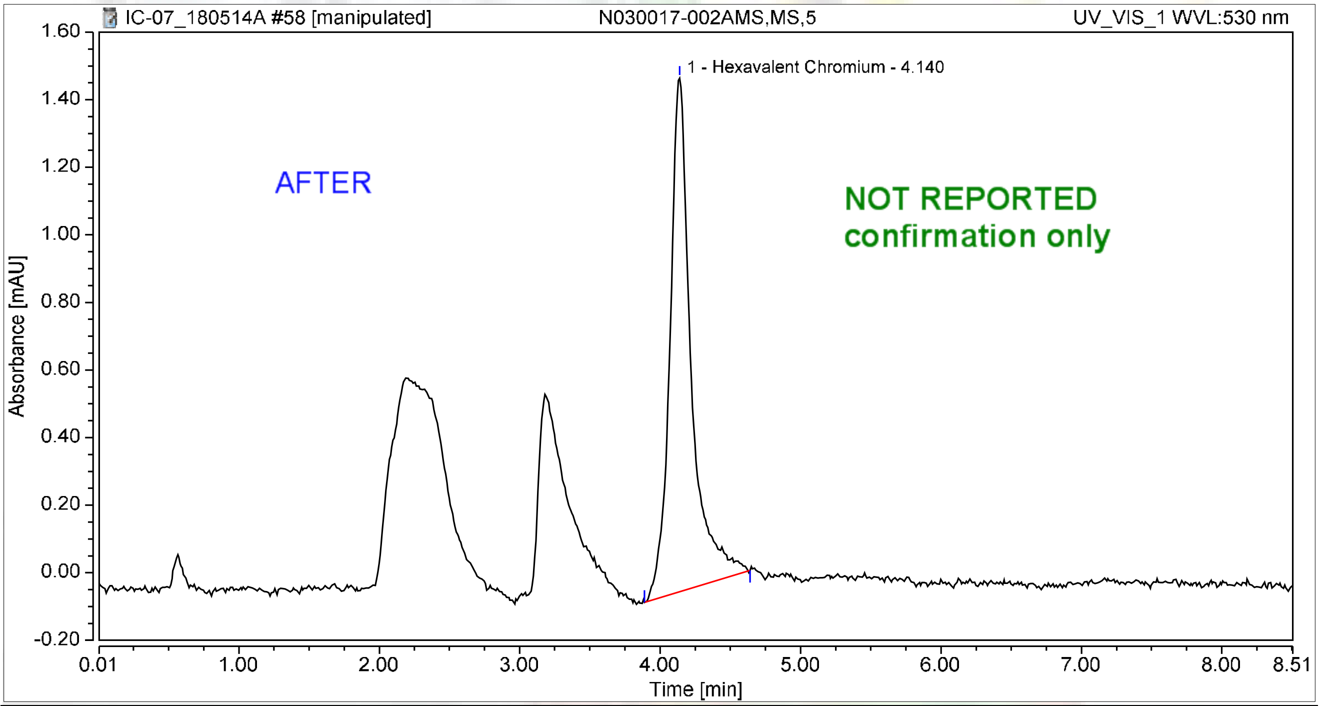
Chromatogram and Results

Injection Details

Injection Name:	**N030017-002AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.267	1.520	100.00	100.00	1.0421
Total:			**0.267**	**1.520**	**100.00**	**100.00**	

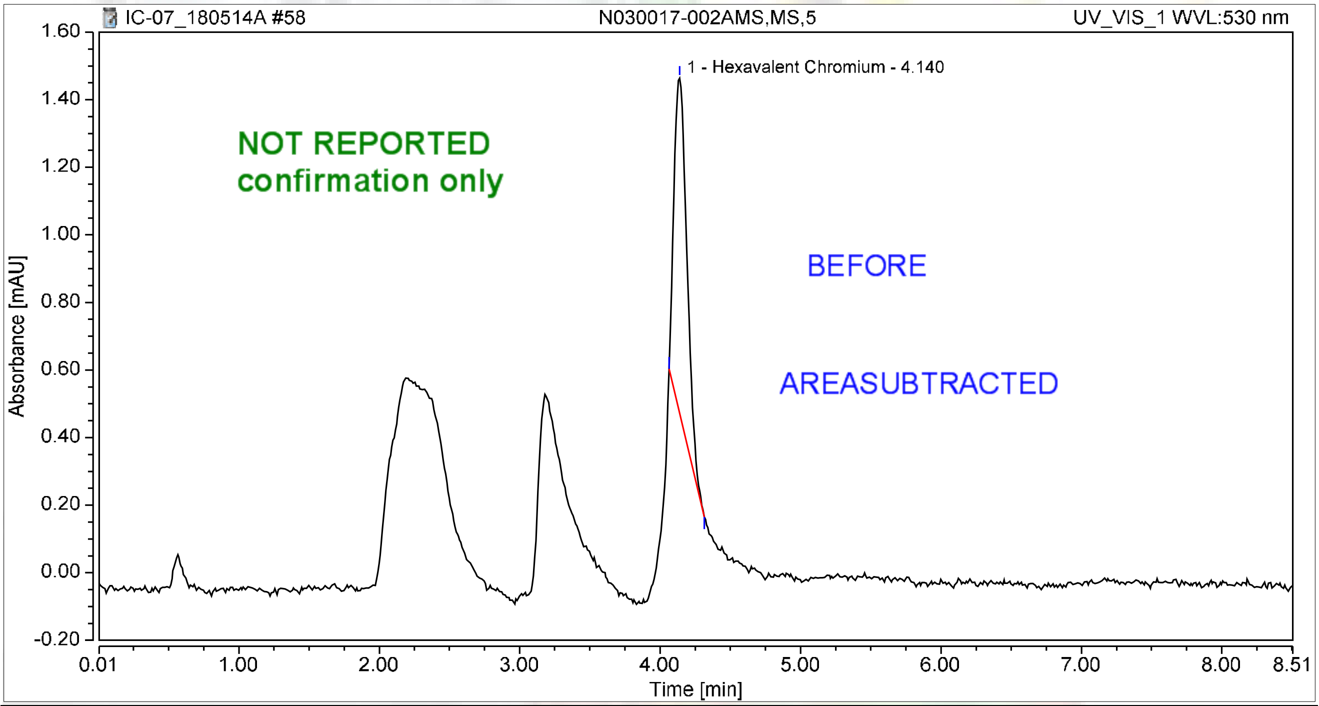
rba 5/16/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-002AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.105	0.992	100.00	100.00	0.4097
Total:			**0.105**	**0.992**	**100.00**	**100.00**	

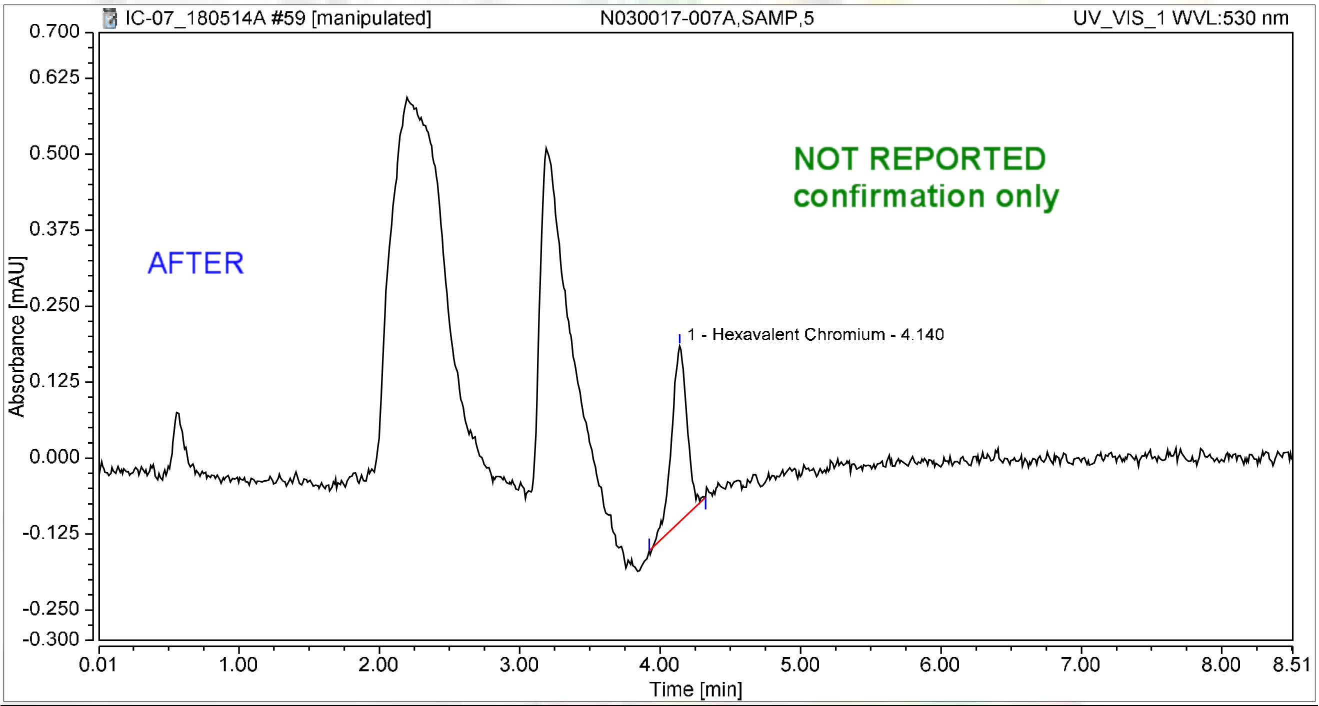
rba 5/16/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-007A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 17:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.037	0.289	100.00	100.00	0.1423
Total:			**0.037**	**0.289**	**100.00**	**100.00**	

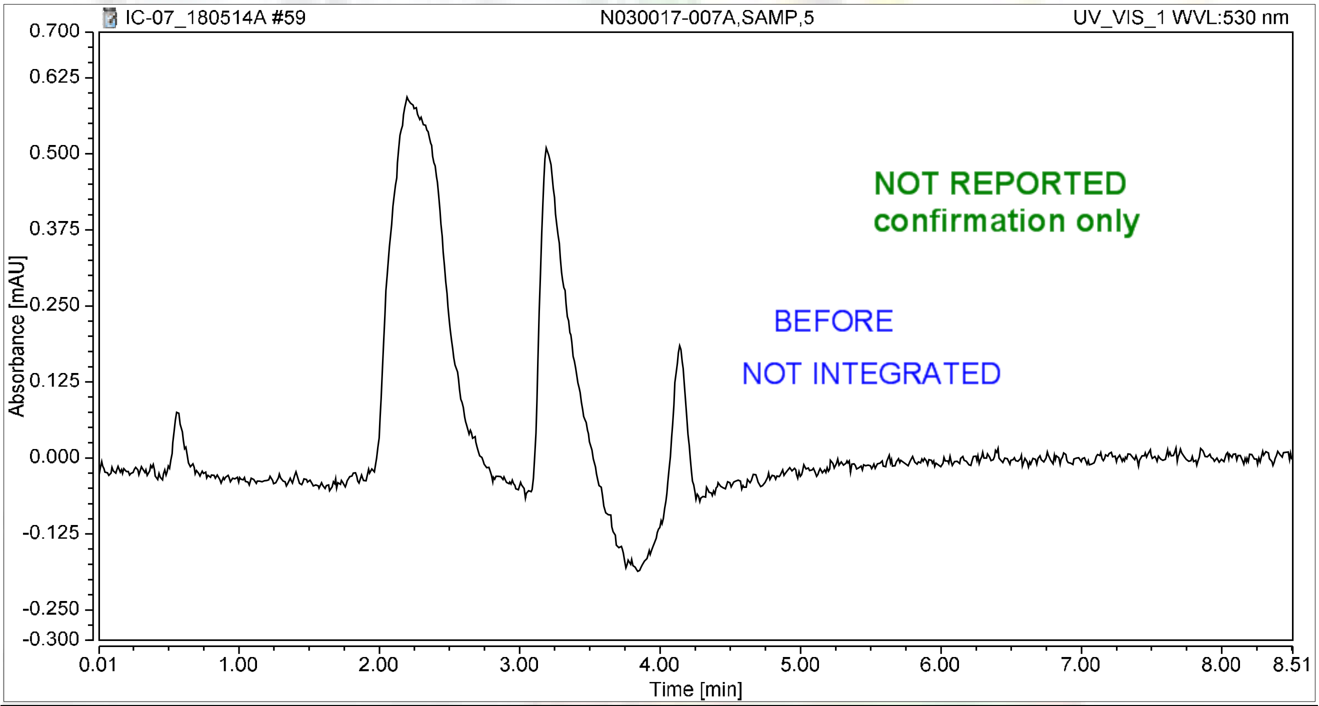
rba 5/16/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-007A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 17:17**	*Sample Weight:*	**1.0000**

Chromatogram



NOT REPORTED
confirmation only

BEFORE

NOT INTEGRATED

Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

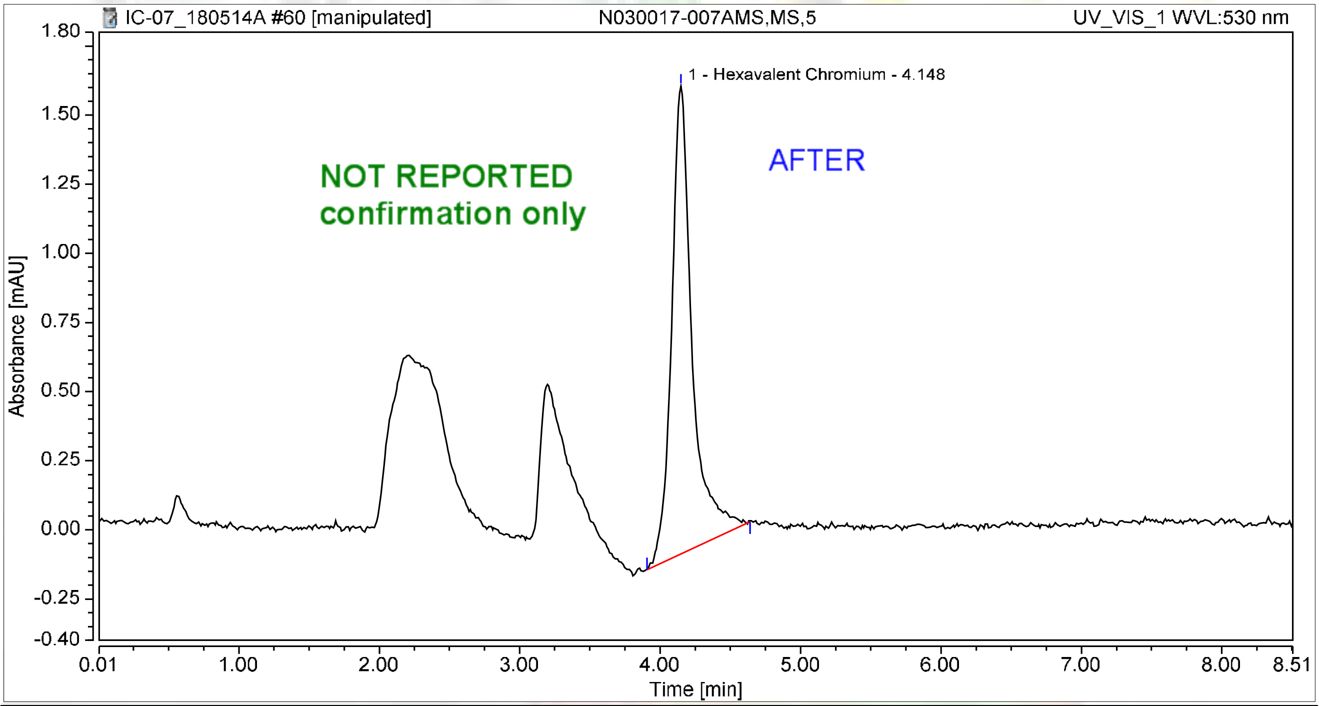
rba 5/16/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-007AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.288	1.692	100.00	100.00	1.1212
Total:			**0.288**	**1.692**	**100.00**	**100.00**	

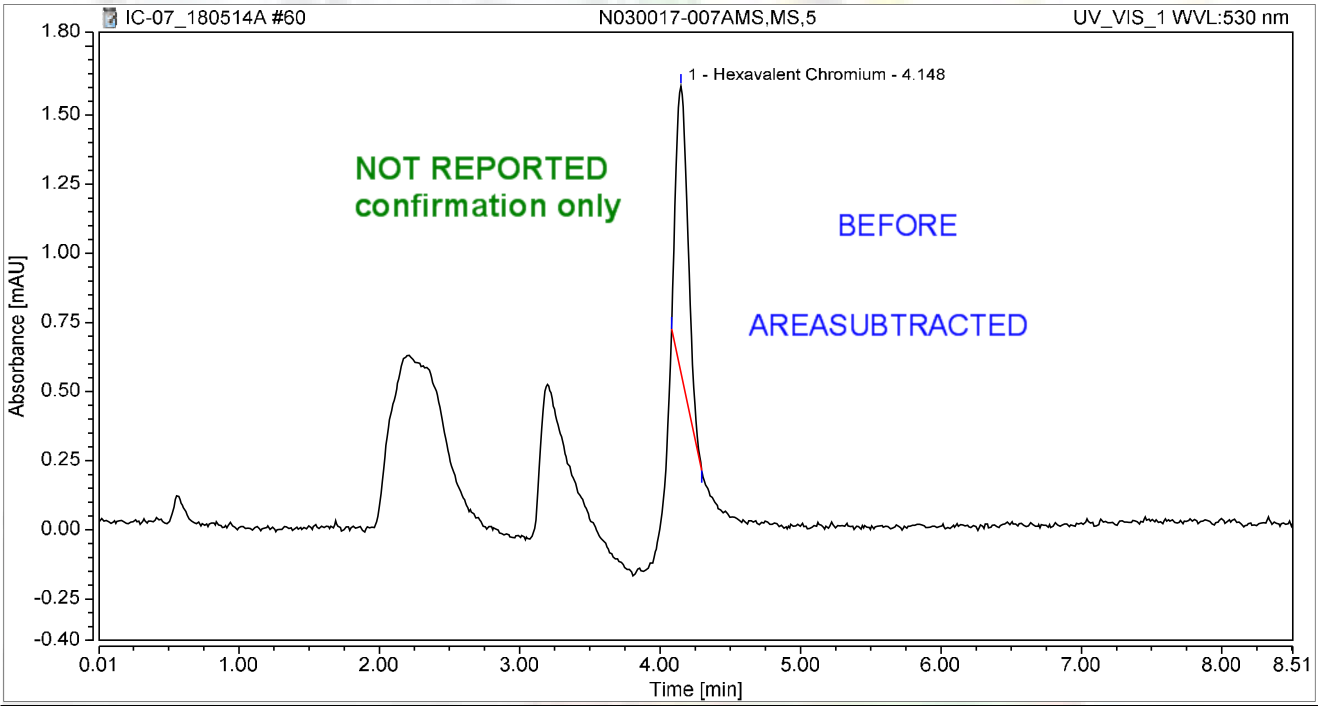
rba 5/16/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-007AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 17:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.104	1.036	100.00	100.00	0.4033
Total:			**0.104**	**1.036**	**100.00**	**100.00**	

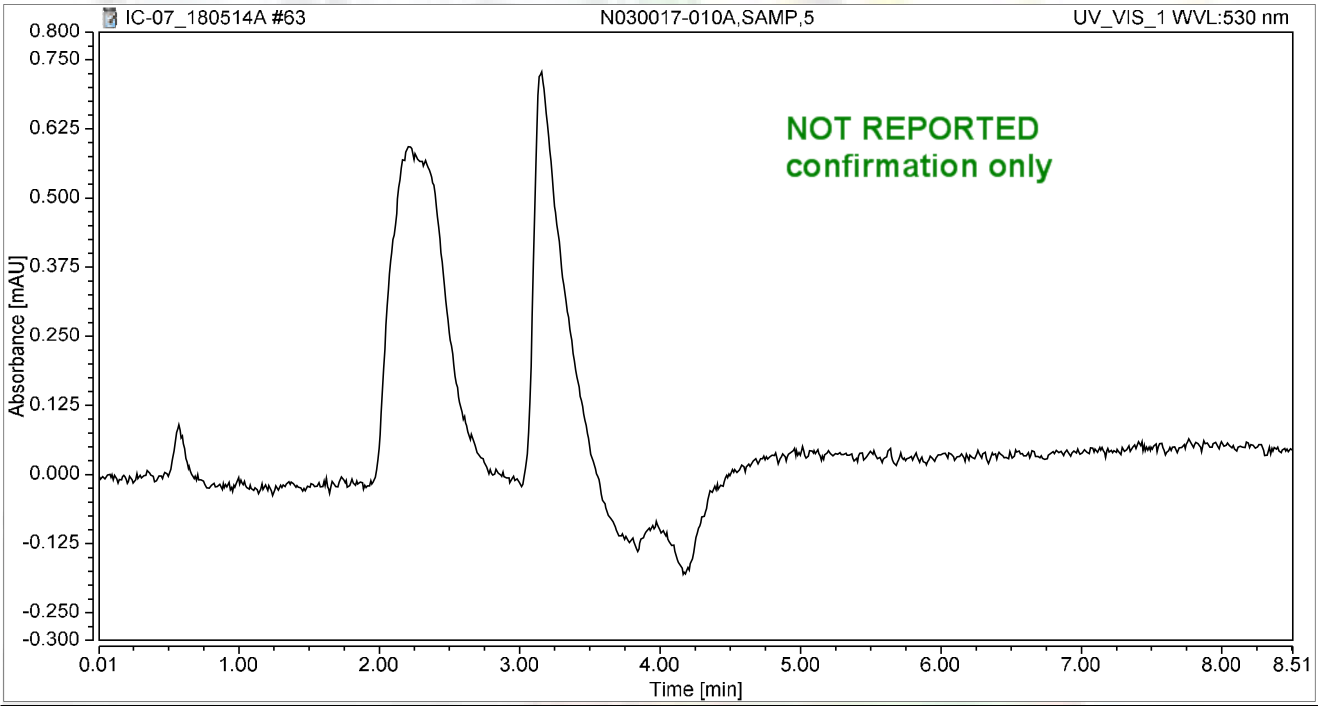
rba 5/16/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-010A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 17:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

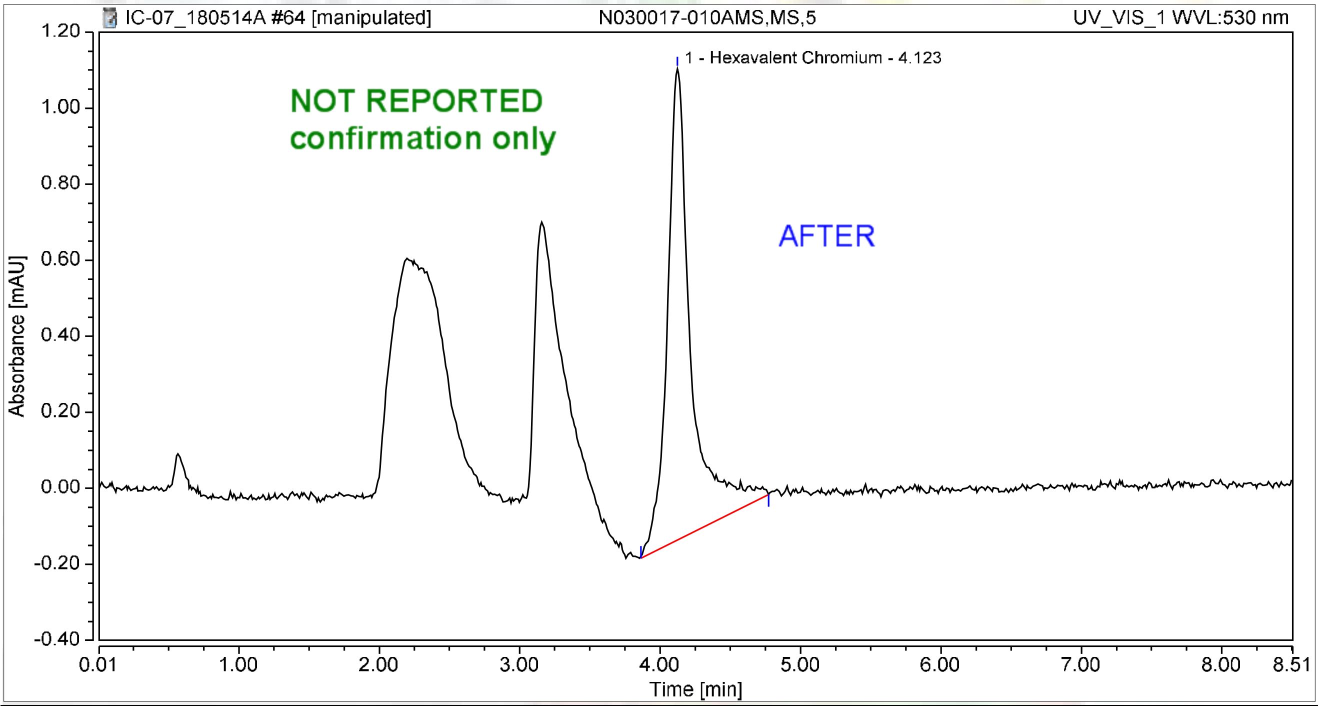
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030017-010AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 18:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.243	1.240	100.00	100.00	0.9484
Total:			**0.243**	**1.240**	**100.00**	**100.00**	

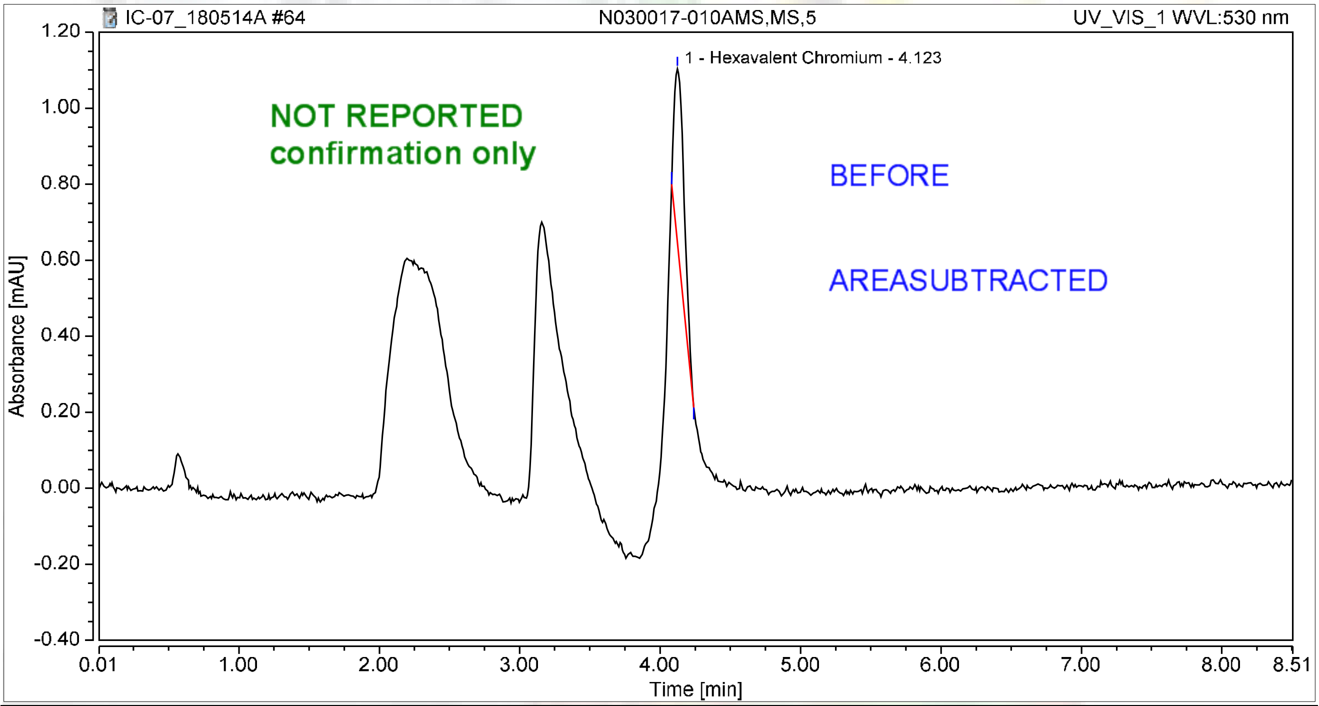
rba 5/16/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030017-010AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/May/18 18:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.040	0.458	100.00	100.00	0.1549
Total:			**0.040**	**0.458**	**100.00**	**100.00**	

rba 5/16/2018

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123845 **Analyst:** QBM

ASSET #: N029973, N030017, N030044 **Date Analyzed:** 5/4/2018

Method: **4500_NO3**

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec in MS/MSD failed, high bias. Possibly due to matrix interference.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 5/11/2018

2nd Level Reviewer RJB 05/11/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N030017-005C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.9664	*	1
	=	0.9664	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.97 mg/L

RB 05/11/2018

INITIAL CALIBRATION
DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

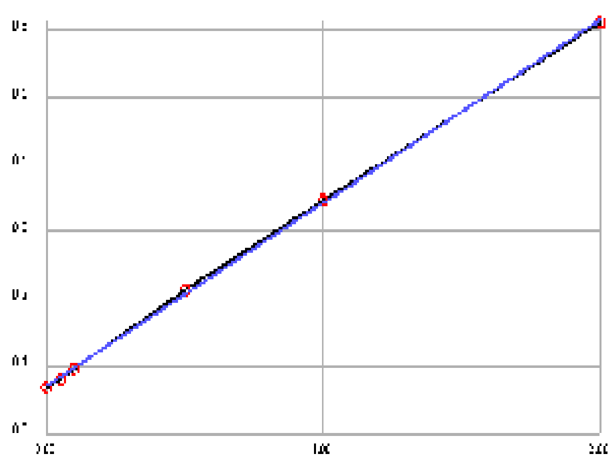
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2717x + 0.0711
Correlation	.999783

Calibrant	Energy	Set	Conc
1	0.0687	0.0000	-0.0090
2	0.0810	0.0500	0.0363
3	0.0972	0.1000	0.0959
4	0.2135	0.5000	0.5240
5	0.3473	1.0000	1.0165
6	0.6108	2.0000	1.9863



Notes:

05/11/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ICV** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.530	0.050	0.5000	0	106	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **CCV** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.491	0.050	0.5000	0	98.2	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **CCV** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016335**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.537	0.050	0.5000	0	107	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **CCV** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016343**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.488	0.050	0.5000	0	97.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030017
Project:	PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ICB** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **CCB** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **CCB** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **CCB** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016344**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 05-04-2018 15:33
Time end: 05-04-2018 18:22

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	17:42:52	-0.0071		0.0692
2	<BLANK>	17:43:51	0.0083		0.0734
3	<CAL1>	17:44:46	-0.0090	[0]	0.0687
4	<CAL2>	17:45:48	0.0363	[0.05]	0.0810
5	<CAL3>	17:46:43	0.0959	[0.1]	0.0972
6	<CAL4>	17:47:43	0.5240	[0.5]	0.2135
7	<CAL5>	17:48:39	1.0165	[1]	0.3473
8	<CAL6>	17:49:34	1.9863	[2]	0.6108
9	,BLANK,BLANK,1, NOT REPORTED	17:50:35	0.0495		0.0846
10	,ICV,ICV,1,	17:51:30	0.5295		0.2150
11	,ICB,ICB,1,	17:52:26	0.0109		0.0741
12	,MB-H2O,MBLK,1,	17:53:21	-0.0042		0.0700
13	,LCS-H2O,LCS,1,	17:54:21	0.5111		0.2100
14	,N029973-001C,SAMP,1,	17:55:17	0.0466		0.0838
15	,N029973-007C,SAMP,1,	17:56:12	-0.0024		0.0705
16	,N029973-009C,SAMP,1,	17:57:12	-0.0090		0.0687
17	,N029973-009CDUP,DUP,1,	17:58:08	0.0043		0.0723
18	,N029973-020C,SAMP,2,	17:59:09	0.4967		0.2061
19	,N029973-020CMS,MS,2,	18:00:05	1.1865		0.3935
20	,N029973-020CMSD,MSD,2,	18:00:59	1.1225		0.3761
21	,BLANK, NOT REPORTED	18:02:01	0.0168		0.0757
22	,CCV-1,CCV,1,	18:02:56	0.4909		0.2045
23	,CCB-1,CCB,1,	18:03:58	0.0091		0.0736
24	,N029973-011C,SAMP,1,	18:04:52	-0.0068		0.0693
25	,N029973-012C,SAMP,1,	18:05:47	-0.0053		0.0697
26	,N029973-014C,SAMP,1,	18:06:37	-0.0027		0.0704

RB 05/11/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N029973-017C,SAMP,1,	18:07:19	0.1327		0.1072
28	,N029973-018C,SAMP,1,	18:08:08	0.0021		0.0717
29	,N030017-005C,SAMP,1,	18:08:50	0.9664		0.3337
30	,N030017-006C,SAMP,1,	18:09:34	0.0580		0.0869
31	,N030017-007C,SAMP,1,	18:10:22	0.0576		0.0868
32	,N030017-008C,SAMP,1,	18:11:05	0.4960		0.2059
33	,BLANK, NOT REPORTED	18:11:55	0.0157		0.0754
34	,CCV-2,CCV,1,	18:12:37	0.5372		0.2171
35	,CCB-2,CCB,1,	18:13:20	-0.0071		0.0692
36	,N030017-011C,SAMP,1,	18:14:02	0.1452		0.1106
37	,N030044-001C,SAMP,2,	18:14:52	1.1232		0.3763
38	,N030044-002C,SAMP,5,	18:15:34	0.5380		0.2173
39	,N030044-006C,SAMP,10,	18:16:17	0.9362		0.3255
40	,N030044-007C,SAMP,10,	18:17:05	0.8656		0.3063
41	,N030044-008C,SAMP,20,	18:17:49	0.5667		0.2251
42	,BLANK, NOT REPORTED	18:18:32	-0.0101		0.0684
43	,CCV-3,CCV,1,	18:19:20	0.4875		0.2036
44	,CCB-3,CCB,1,	18:20:03	-0.0116		0.0680

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 5/4/2018
Time Analyzed: 3:33 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180504F
Color reagent: R180425A
2% Copper Sulfate: R180504E
Ammonium Hydroxide: CINV-180423A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N029973-001C		8.47							
N029973-007C		7.64							
N029973-009C		7.73							
N029973-011C		7.20							
N029973-012C		6.37							
N029973-014C		7.71							
N029973-017C		7.19							
N029973-018C		7.66							
N029973-020C		7.40							
N030017-005C		8.63							
N030017-006C		7.72							
N030017-007C		7.80							
N030017-008C		8.04							
N030017-011C		7.82							
N030044-001C		7.43							
N030044-002C		8.17							
N030044-006C		7.49							
N030044-007C		8.02							
N030044-008C		7.72							

Advanced Technology Laboratories, Inc.
Book # 1

RB 05/11/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name:	**Nitrate/Nitrite by Cadmium Reduction**	Matrix:	**Water**
Method Number:	SM4500NO3F	Unit:	mg/L
Analysis Date(s):	10/25,2017, 10/26/2017, 10/27/2017	Spike Conc:	0.05 mg/L
Analyst/Technician:	Quennie B. Manimtim		

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05

Method Blank

Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6020
Dissolved

METALS ARCUS
REV 1.0
071116

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67911 **Instrument ID:** ICPMS-02
ASSET #: N030017 **Analyst:** CEI
Method: **Date Analyzed:** 5/12/2018

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			~~X~~	X	
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X	X		~~X~~
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

~~RSD of Se for N030017-005 failed ; for re-run.~~
~~RSD of As for LLICV & LLCCV1 failed however, recovery passed criteria.~~
~~with confirmation for samples N030017-002, -007 & -010~~

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 5/16/18
2nd Level Reviewer [illegible] 5/16/2018 Date:

Metals Technical Batch Review Checklist (ARCUS02)
ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67911 **Instrument ID:** ICPMS-02
ASSET #: N030017 **Analyst:** CEI
Method: **Date Analyzed:** 5/15/2018

- [ ] EPA 6010B / 200.7
- [x] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			~~X~~		X
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			~~X~~		X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits			X			X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Se rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 5/16/18

2nd Level Reviewer 5/16/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N030017-001C** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 36.8376 * 1 * (25/25)

Chromium , ug/L = 36.8376

Reporting results in two significant figures,

Chromium , ug/L = 37

% RSD SUMMARY

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.089	4.9	15	PASS	0.088	6.23	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	7.29	15	PASS	0.48	2.51	15	PASS
Std3-5/50 ppb	ICAL	1	5.017	2.42	15	PASS	5.13	1.95	15	PASS
Std4-10/100 ppb	ICAL	1	10.082	0.4	15	PASS	9.99	2.89	15	PASS
Std5-20/200 ppb	ICAL	1	20.22	1.55	15	PASS	20.29	1.5	15	PASS
Std6-40/400 ppb	ICAL	1	39.93	1.0088	15	PASS	40.97	0.62	15	PASS
Std7-100/1000 ppb	ICAL	1	100.29	1.37	15	PASS	102.36	0.85	15	PASS
Std8-200/2000 ppb	ICAL	1	199.84	0.97	15	PASS	198.59	0.61	15	PASS
ICV	ICV	1	9.88	0.46	15	PASS	109.83	0.17	15	PASS
ICB	ICB	1	0.18	5.98	15	PASS	0.053	13.33	15	PASS
LLICV	CCV1	1	1.098	3.27	20	PASS	0.58	2.53	20	PASS
ICSA1	ICSA	1	0.046	10.51	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.0098	1.48	15	PASS	16.13	1.46	15	PASS
MB-67911	MBLK	1	0.0041	125.71	15	<PQL	<0.000	N/A	15	<PQL
LCS-67911	LCS	1	10.2	1.73	15	PASS	103.93	1.017	15	PASS
N030017-001C	SAMP	1	36.84	0.9	15	PASS	4.2	0.5	15	PASS
N030017-001C	SAMP	5	7.51	0.34	15	PASS	0.82	2.77	15	PASS
N030017-001C	SAMP	25	1.6	2.64	15	PASS	0.15	7.52	15	PASS
N030017-001C-PS	PS	1	45.96	0.72	15	PASS	97.96	0.56	15	PASS
N030017-001C-PS	PS	5	9.78	1.96	15	PASS	20.35	1.83	15	PASS
N030017-001C-MS	MS	1	43.55	1.26	15	PASS	95.3	0.56	15	PASS
N030017-001C-MS	MS	5	9.54	1.23	15	PASS	20.095	0.43	15	PASS
N030017-001C-MSD	MSD	1	43.88	1.1	15	PASS	95.37	1.26	15	PASS
CCV1	CCV	1	19.81	0.099	15	PASS	19.85	1.45	15	PASS
CCB1	CCB	1	0.0019	244.072	15	<PQL	<0.000	N/A	15	<PQL
N030017-001C-MSD	MSD	5	9.54	0.84	15	PASS	20.16	0.47	15	PASS
N030017-002C	SAMP	1	1.48	3.0034	15	PASS	5.19	1.37	15	PASS
N030017-002C	SAMP	5	0.53	5.62	15	PASS	1.5	2.54	15	PASS
N030017-005D	SAMP	1	1.25	1.93	15	PASS	13.93	1.5	15	PASS
N030017-005D	SAMP	5	0.26	4.1	15	PASS	2.82	4.12	15	PASS
N030017-006D	SAMP	1	<0.000	N/A	15	<PQL	106.47	1.035	15	PASS
N030017-006D	SAMP	5	<0.000	N/A	15	<PQL	21.74	1.38	15	PASS
N030017-007D	SAMP	1	1.99	2.32	15	PASS	34.047	0.12	15	PASS
N030017-007D	SAMP	5	0.42	11.64	15	PASS	7.16	1.59	15	PASS
N030017-008D	SAMP	1	62.058	1.18	15	PASS	68.9	1.037	15	PASS
CCV2	CCV	1	19.94	1.4	15	PASS	19.95	0.4	15	PASS
CCB2	CCB	1	0.0072	81.59	15	<PQL	0.011	77.73	15	<PQL
N030017-008D	SAMP	5	13.067	2.32	15	PASS	14.44	1.084	15	PASS
N030017-009C	SAMP	1	8.43	1.062	15	PASS	41.39	0.57	15	PASS
N030017-009C	SAMP	5	1.87	2.2	15	PASS	8.92	0.45	15	PASS

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030017-010C	SAMP	1	1.45	1.07	15	PASS	152.37	0.95	15	PASS
N030017-010C	SAMP	5	0.31	6.02	15	PASS	31.76	0.87	15	PASS
N030017-011D	SAMP	1	2.64	1.14	15	PASS	56.68	0.53	15	PASS
N030017-011D	SAMP	5	0.56	11.21	15	PASS	11.86	0.9	15	PASS
N030017-012C	SAMP	1	14.74	0.98	15	PASS	<0.000	N/A	15	<PQL
N030017-012C	SAMP	5	2.95	2.088	15	PASS	<0.000	N/A	15	<PQL
N030017-013C	SAMP	1	14.42	0.11	15	PASS	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.97	1.12	15	PASS	20.085	0.69	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N030017-013C	SAMP	5	3.026	1.73	15	PASS	0.033	75.49	15	<PQL
N030044-001D	SAMP	1	23.54	0.33	15	PASS	<0.000	N/A	15	<PQL
N030044-001D	SAMP	5	4.87	0.93	15	PASS	<0.000	N/A	15	<PQL
N030044-002D	SAMP	1	24.89	0.77	15	PASS	1.5	3.44	15	PASS
N030044-002D	SAMP	5	5.32	3.21	15	PASS	0.23	14.28	15	PASS
N030044-003C	SAMP	1	10.18	0.81	15	PASS	1.59	4.59	15	PASS
N030044-003C	SAMP	5	2.18	3.38	15	PASS	0.36	2.41	15	PASS
N030044-004C	SAMP	1	6161.6	0.17	15	PASS	3.84	1.62	15	PASS
N030044-004C	SAMP	5	1360.74	0.81	15	PASS	0.87	0.75	15	PASS
N030044-004C	SAMP	50	135.61	0.34	15	PASS	0.068	8.45	15	PASS
CCV4	CCV	1	20.24	0.58	15	PASS	20.36	2.14	15	PASS
CCB4	CCB	1	0.22	15.83	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.18	4.88	20	PASS	0.53	1.52	20	PASS
ICSA2	ICSA	1	0.15	0.55	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.26	1.0038	15	PASS	16.79	1.46	15	PASS
N030044-005C	SAMP	1	376.74	1.61	15	PASS	<0.000	N/A	15	<PQL
N030044-005C	SAMP	5	76.0027	0.35	15	PASS	<0.000	N/A	15	<PQL
N030044-006D	SAMP	1	1636.49	0.29	15	PASS	<0.000	N/A	15	<PQL
N030044-006D	SAMP	5	351.29	1.65	15	PASS	<0.000	N/A	15	<PQL
N030044-006D	SAMP	25	69.019	1.45	15	PASS	<0.000	N/A	15	<PQL
N030044-007D	SAMP	1	1771.28	0.82	15	PASS	<0.000	N/A	15	<PQL
N030044-007D	SAMP	5	362.15	3.99	15	PASS	<0.000	N/A	15	<PQL
N030044-007D	SAMP	25	72.084	1.088	15	PASS	<0.000	N/A	15	<PQL
N030044-008D	SAMP	1	6497.41	1.33	15	PASS	3.56	1.78	15	PASS
N030044-008D	SAMP	5	1380.72	1.46	15	PASS	0.7	9.098	15	PASS
CCV5	CCV	1	20.36	0.29	15	PASS	20.37	0.83	15	PASS
CCB5	CCB	1	0.32	2.29	15	PASS	<0.000	N/A	15	<PQL
N030044-008D	SAMP	50	140.23	1.23	15	PASS	0.025	25.94	15	<PQL
N030044-009C	SAMP	1	396.93	1.33	15	PASS	<0.000	N/A	15	<PQL
N030044-009C	SAMP	5	77.74	0.53	15	PASS	<0.000	N/A	15	<PQL
CCV6	CCV	1	20.5	0.58	15	PASS	20.88	0.55	15	PASS
CCB6	CCB	1	0.087	12.13	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV7	CCV	1	20.6	0.29	15	PASS	20.91	0.6	15	PASS
CCB7	CCB	1	0.066	4.58	15	PASS	0.0087	44.53	15	<PQL
LLCCV2	CCV2	1	1.11	2.017	20	PASS	0.6	3.49	20	PASS
ICSA3	ICSA	1	0.099	31.15	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.41	2.27	15	PASS	17.49	2.31	15	PASS

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	10.27	15	PASS	0.084	25.3	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.52	1.37	15	PASS	0.44	14.91	15	PASS
Std3-5/50 ppb	ICAL	1	4.98	4.32	15	PASS	5.04	2.78	15	PASS
Std4-10/100 ppb	ICAL	1	10.11	0.62	15	PASS	9.81	2.75	15	PASS
Std5-20/200 ppb	ICAL	1	20.26	1.6	15	PASS	20.062	5.44	15	PASS
Std6-40/400 ppb	ICAL	1	40.85	1.79	15	PASS	42.082	5.076	15	PASS
Std7-100/1000 ppb	ICAL	1	102.084	0.33	15	PASS	103.13	1.11	15	PASS
Std8-200/2000 ppb	ICAL	1	198.76	1.65	15	PASS	198.021	0.94	15	PASS
ICV	ICV	1	9.89	2.5	15	PASS	10.13	11.48	15	PASS
ICB	ICB	1	0.017	124.82	15	<PQL	0.03	250.88	15	<PQL
LLICV	CCV1	1	0.091	24.13	20	<PQL	0.57	10.84	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.021	57.92	15	<PQL
ICSAB1	ICSAB	1	22.11	0.34	15	PASS	20.18	4.43	15	PASS
MB-67911	MBLK	1	0.0052	151.54	15	<PQL	<0.000	0	15	PASS
LCS-67911	LCS	1	10.39	2.1	15	PASS	10.2	3.32	15	PASS
N030017-001C	SAMP	1	3.94	2.43	15	PASS	5.0042	2.61	15	PASS
N030017-001C	SAMP	5	0.77	6.91	15	PASS	1.031	12.39	15	PASS
N030017-001C	SAMP	25	0.14	10.25	15	PASS	0.19	33.0036	15	<PQL
N030017-001C-PS	PS	1	14.65	0.71	15	PASS	15.7	1.6	15	PASS
N030017-001C-PS	PS	5	2.94	4.92	15	PASS	3.3	8.7	15	PASS
N030017-001C-MS	MS	1	14.14	1.28	15	PASS	15.022	5.72	15	PASS
N030017-001C-MS	MS	5	3.027	7.22	15	PASS	3.18	13.31	15	PASS
N030017-001C-MSD	MSD	1	14.014	0.93	15	PASS	16.18	1.95	15	PASS
CCV1	CCV	1	19.87	1.059	15	PASS	19.95	4.21	15	PASS
CCB1	CCB	1	0.0056	209.53	15	<PQL	<0.000	N/A	15	<PQL
N030017-001C-MSD	MSD	5	2.82	2.53	15	PASS	2.83	4.48	15	PASS
N030017-002C	SAMP	1	5.46	2.64	15	PASS	5.37	3.54	15	PASS
N030017-002C	SAMP	5	1.069	3.96	15	PASS	0.96	8.25	15	PASS
N030017-005D	SAMP	1	1.48	2.47	15	PASS	0.91	17.27	15	NR!
N030017-005D	SAMP	5	0.26	3.71	15	PASS	0.2	20.39	15	<PQL
N030017-006D	SAMP	1	13.41	0.92	15	PASS	0.077	84.43	15	<PQL
N030017-006D	SAMP	5	2.76	4.67	15	PASS	<0.000	N/A	15	<PQL
N030017-007D	SAMP	1	14.45	1.61	15	PASS	0.23	23.092	15	<PQL
N030017-007D	SAMP	5	2.91	2.14	15	PASS	0.024	52.86	15	<PQL
N030017-008D	SAMP	1	10.51	0.51	15	PASS	0.97	16.78	15	NR!
CCV2	CCV	1	19.34	2.3	15	PASS	21.13	0.55	15	PASS
CCB2	CCB	1	0.011	44.74	15	<PQL	0.0065	168.68	15	<PQL
N030017-008D	SAMP	5	2.068	6.24	15	PASS	0.1	11.61	15	PASS
N030017-009C	SAMP	1	2.43	6.85	15	PASS	0.85	33.084	15	NR!
N030017-009C	SAMP	5	0.44	11.34	15	PASS	0.1	69.84	15	<PQL

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030017-010C	SAMP	1	2.21	1.038	15	PASS	0.78	48.056	15	NR!
N030017-010C	SAMP	5	0.49	5.12	15	PASS	0.13	26.52	15	<PQL
N030017-011D	SAMP	1	13.63	1.48	15	PASS	0.2	72.45	15	<PQL
N030017-011D	SAMP	5	2.85	3.59	15	PASS	0.026	194.35	15	<PQL
N030017-012C	SAMP	1	1.017	7.031	15	PASS	1.3	17.84	15	NR!
N030017-012C	SAMP	5	0.18	15.81	15	NR!	0.21	44.65	15	<PQL
N030017-013C	SAMP	1	0.98	10.19	15	PASS	1.11	9.35	15	PASS
CCV3	CCV	1	19.39	0.22	15	PASS	21.15	3.53	15	PASS
CCB3	CCB	1	0.014	23.087	15	<PQL	<0.000	N/A	15	<PQL
N030017-013C	SAMP	5	0.17	13.043	15	PASS	0.22	43.98	15	<PQL
N030044-001D	SAMP	1	1.13	5.69	15	PASS	1.056	0.33	15	PASS
N030044-001D	SAMP	5	0.25	7.75	15	PASS	0.31	32.36	15	<PQL
N030044-002D	SAMP	1	0.83	3.36	15	PASS	1.29	20.43	15	NR!
N030044-002D	SAMP	5	0.16	17.61	15	NR!	0.2	9.75	15	PASS
N030044-003C	SAMP	1	1.85	5.8	15	PASS	1.012	6.14	15	PASS
N030044-003C	SAMP	5	0.4	7.74	15	PASS	0.18	60.39	15	<PQL
N030044-004C	SAMP	1	3.94	2.068	15	PASS	4.043	17.31	15	NR!
N030044-004C	SAMP	5	0.84	4.99	15	PASS	0.94	12.15	15	PASS
N030044-004C	SAMP	50	0.054	31.75	15	<PQL	0.067	51.84	15	<PQL
CCV4	CCV	1	19.51	1.47	15	PASS	21.47	4.37	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.075	17.88	20	PASS	0.62	21.87	20	NR!
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.042	90.52	15	<PQL
ICSAB2	ICSAB	1	20.89	2.048	15	PASS	21.66	2.75	15	PASS
N030044-005C	SAMP	1	0.91	8.97	15	PASS	4.14	13.5	15	PASS
N030044-005C	SAMP	5	0.16	17.05	15	NR!	0.84	38.98	15	NR!
N030044-006D	SAMP	1	2.67	3.33	15	PASS	5.6	5.016	15	PASS
N030044-006D	SAMP	5	0.52	8.27	15	PASS	1.089	10.2	15	PASS
N030044-006D	SAMP	25	0.099	35.92	15	<PQL	0.21	36.25	15	<PQL
N030044-007D	SAMP	1	1.78	7.063	15	PASS	6.31	10.67	15	PASS
N030044-007D	SAMP	5	0.35	13.64	15	PASS	1.28	7.2	15	PASS
N030044-007D	SAMP	25	0.054	65.37	15	<PQL	0.16	8.46	15	PASS
N030044-008D	SAMP	1	4.51	7.66	15	PASS	28.95	6.44	15	PASS
N030044-008D	SAMP	5	0.88	4.87	15	PASS	5.6	9.67	15	PASS
CCV5	CCV	1	19.71	1.12	15	PASS	20.81	2.47	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N030044-008D	SAMP	50	0.052	58.47	15	<PQL	0.61	37.39	15	NR!
N030044-009C	SAMP	1	1.087	3.78	15	PASS	2.74	10.31	15	PASS
N030044-009C	SAMP	5	0.24	12.043	15	PASS	0.41	7.52	15	PASS
CCV6	CCV	1	19.79	1.14	15	PASS	21.86	4.69	15	PASS
CCB6	CCB	1	0.0043	193.44	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV7	CCV	1	19.56	1.87	15	PASS	21.7	2.49	15	PASS
CCB7	CCB	1	0.0019	697.69	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.075	20.15	20	<PQL	0.57	24.16	20	NR!
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.89	1.93	15	PASS	20.23	0.96	15	PASS

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.073	11.33	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.46	6.27	15	PASS
Std3-5/50 ppb	ICAL	1	4.84	0.91	15	PASS
Std4-10/100 ppb	ICAL	1	9.7	2.1	15	PASS
Std5-20/200 ppb	ICAL	1	19.65	2.56	15	PASS
Std6-40/400 ppb	ICAL	1	39.18	0.46	15	PASS
Std7-100/1000 ppb	ICAL	1	97.7	1.082	15	PASS
Std8-200/2000 ppb	ICAL	1	201.37	0.48	15	PASS
ICV	ICV	1	10.42	1.3	15	PASS
ICB	ICB	1	0.011	74.92	15	<PQL
LLICV	CCV1	1	0.49	8.15	20	PASS
ICSA1	ICSA	1	0.14	18.34	15	<PQL
ICSAB1	ICSAB	1	22.23	0.76	15	PASS
MB-67911	MBLK	1	0.089	25.67	15	<PQL
LCS-67911	LCS	1	9.98	1.22	15	PASS
N030017-001C	SAMP	1	22.38	0.58	15	PASS
N030017-001C	SAMP	5	4.22	3.028	15	PASS
N030017-001C	SAMP	25	0.83	2.48	15	PASS
N030017-001C-PS	PS	1	34.82	0.89	15	PASS
N030017-001C-PS	PS	5	6.63	1.1	15	PASS
N030017-001C-MS	MS	1	33.75	1.65	15	PASS
N030017-001C-MS	MS	5	6.44	2.26	15	PASS
N030017-001C-MSD	MSD	1	33.95	0.39	15	PASS
CCV1	CCV	1	19.35	0.38	15	PASS
CCB1	CCB	1	0.097	4.76	15	PASS
N030017-001C-MSD	MSD	5	6.52	3.0075	15	PASS
N030017-002C	SAMP	1	44.41	0.89	15	PASS
N030017-002C	SAMP	5	8.4	2.11	15	PASS
N030017-005D	SAMP	1	18.07	1.93	15	PASS
N030017-005D	SAMP	5	3.46	2.15	15	PASS
N030017-006D	SAMP	1	79.77	0.34	15	PASS
N030017-006D	SAMP	5	15.076	1.035	15	PASS
N030017-007D	SAMP	1	77.01	0.73	15	PASS
N030017-007D	SAMP	5	14.69	0.19	15	PASS
N030017-008D	SAMP	1	77.43	0.72	15	PASS
CCV2	CCV	1	19.43	2.31	15	PASS
CCB2	CCB	1	0.14	21.25	15	<PQL
N030017-008D	SAMP	5	15.026	1.89	15	PASS
N030017-009C	SAMP	1	59.54	0.71	15	PASS
N030017-009C	SAMP	5	11.78	1.58	15	PASS

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N030017-010C	SAMP	1	68.61	0.26	15	PASS
N030017-010C	SAMP	5	13.56	1.76	15	PASS
N030017-011D	SAMP	1	70.11	1.61	15	PASS
N030017-011D	SAMP	5	13.34	0.87	15	PASS
N030017-012C	SAMP	1	7.44	0.86	15	PASS
N030017-012C	SAMP	5	1.44	4.97	15	PASS
N030017-013C	SAMP	1	7.97	1.11	15	PASS
CCV3	CCV	1	19.58	0.4	15	PASS
CCB3	CCB	1	0.092	19.46	15	<PQL
N030017-013C	SAMP	5	1.47	1.39	15	PASS
N030044-001D	SAMP	1	10.89	1.47	15	PASS
N030044-001D	SAMP	5	2.084	1.62	15	PASS
N030044-002D	SAMP	1	19.24	1.26	15	PASS
N030044-002D	SAMP	5	3.73	2.43	15	PASS
N030044-003C	SAMP	1	16.52	0.55	15	PASS
N030044-003C	SAMP	5	3.07	0.93	15	PASS
N030044-004C	SAMP	1	46.006	0.26	15	PASS
N030044-004C	SAMP	5	9.18	1.67	15	PASS
N030044-004C	SAMP	50	0.9	6.32	15	PASS
CCV4	CCV	1	19.43	0.97	15	PASS
CCB4	CCB	1	0.075	13.033	15	PASS
LLCCV1	CCV2	1	0.51	7.17	20	PASS
ICSA2	ICSA	1	0.058	22.85	15	<PQL
ICSAB2	ICSAB	1	21.68	0.78	15	PASS
N030044-005C	SAMP	1	9.24	1.36	15	PASS
N030044-005C	SAMP	5	1.79	7.087	15	PASS
N030044-006D	SAMP	1	31.1	1.48	15	PASS
N030044-006D	SAMP	5	6.28	1.32	15	PASS
N030044-006D	SAMP	25	1.18	1.44	15	PASS
N030044-007D	SAMP	1	3.63	0.49	15	PASS
N030044-007D	SAMP	5	0.67	1.28	15	PASS
N030044-007D	SAMP	25	0.11	9.49	15	PASS
N030044-008D	SAMP	1	46.14	0.31	15	PASS
N030044-008D	SAMP	5	9.00082	0.78	15	PASS
CCV5	CCV	1	19.17	1.1	15	PASS
CCB5	CCB	1	0.099	3.6	15	PASS
N030044-008D	SAMP	50	0.81	0.85	15	PASS
N030044-009C	SAMP	1	16.44	0.72	15	PASS
N030044-009C	SAMP	5	3.17	3.35	15	PASS
CCV6	CCV	1	18.91	2.022	15	PASS
CCB6	CCB	1	0.1	6.71	15	PASS

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
CCV7	CCV	1	19.24	0.4	15	PASS
CCB7	CCB	1	0.086	22.62	15	<PQL
LLCCV2	CCV2	1	0.51	4.17	20	PASS
ICSA3	ICSA	1	0.067	23.64	15	<PQL
ICSAB3	ICSAB	1	22.63	0.48	15	PASS

PERCENT RSD SUMMARY: 180515A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	40.36	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.61	40.58	15	failed ~~NR!~~
Std3-5/50 ppb	ICAL	1	5.15	7.79	15	PASS
Std4-10/100 ppb	ICAL	1	10.095	1.64	15	PASS
Std5-20/200 ppb	ICAL	1	20.36	6.77	15	PASS
Std6-40/400 ppb	ICAL	1	40.61	2.4	15	PASS
Std7-100/1000 ppb	ICAL	1	99.84	1.75	15	PASS
Std8-200/2000 ppb	ICAL	1	199.91	1.89	15	PASS
ICV	ICV	1	10.48	4.74	15	PASS
ICB	ICB	1	0.053	99.7	15	<PQL
LLICV	CCV1	1	0.4	9.96	20	PASS
ICSA1	ICSA	1	0.0083	173.21	15	<PQL
ICSAB1	ICSAB	1	20.028	4.81	15	PASS
LLICV	CCV1	1	0.54	9.82	20	PASS
N030017-005D	SAMP	1	0.78	9.29	15	PASS
CCV1	CCV	1	20	2.61	15	PASS
CCB1	CCB	1	0.0087	173.21	15	<PQL
CCV2	CCV	1	20.96	3.051	15	PASS
CCB2	CCB	1	0.033	43.94	15	<PQL
CCV3	CCV	1	19.9	4.22	15	PASS
CCB3	CCB	1	0.017	173.21	15	<PQL
LLCCV1	CCV2	1	0.38	30.7	20	<PQL
ICSA2	ICSA	1	0.023	99.66	15	<PQL
ICSAB2	ICSAB	1	19.56	3.33	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180512A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0512001.D	RINSE	RINSE	1	05/12/18 10:20 AM
A0512002.D	Cal Blank	IBLK	1	05/12/18 10:26 AM
A0512003.D	Std1-0.1/1 ppb	ICAL	1	05/12/18 10:31 AM
A0512004.D	Std2-0.5/5 ppb	ICAL	1	05/12/18 10:37 AM
A0512005.D	Std3-5/50 ppb	ICAL	1	05/12/18 10:43 AM
A0512006.D	Std4-10/100 ppb	ICAL	1	05/12/18 10:48 AM
A0512007.D	Std5-20/200 ppb	ICAL	1	05/12/18 10:54 AM
A0512008.D	Std6-40/400 ppb	ICAL	1	05/12/18 10:59 AM
A0512009.D	Std7-100/1000 ppb	ICAL	1	05/12/18 11:05 AM
A0512010.D	Std8-200/2000 ppb	ICAL	1	05/12/18 11:11 AM
A0512011.D	ICV	ICV	1	05/12/18 11:17 AM
A0512012.D	ICB	ICB	1	05/12/18 11:22 AM
A0512013.D	LLICV	CCV1	1	05/12/18 11:27 AM
A0512014.D	ICSA1	ICSA	1	05/12/18 11:33 AM
A0512015.D	ICSAB1	ICSAB	1	05/12/18 11:39 AM
A0512016.D	MB-67911	MBLK	1	05/12/18 11:45 AM
A0512017.D	LCS-67911	LCS	1	05/12/18 11:50 AM
A0512018.D	N030017-001C	SAMP	1	05/12/18 11:56 AM
A0512019.D	N030017-001C	SAMP	5	05/12/18 12:02 PM
A0512020.D	N030017-001C	SAMP	25	05/12/18 12:07 PM
A0512021.D	N030017-001C-PS	PS	1	05/12/18 12:13 PM
A0512022.D	N030017-001C-PS	PS	5	05/12/18 12:18 PM
A0512023.D	N030017-001C-MS	MS	1	05/12/18 12:24 PM
A0512024.D	N030017-001C-MS	MS	5	05/12/18 12:29 PM
A0512025.D	N030017-001C-MSD	MSD	1	05/12/18 12:35 PM
A0512026.D	CCV1	CCV	1	05/12/18 12:41 PM
A0512027.D	CCB1	CCB	1	05/12/18 12:46 PM
A0512028.D	N030017-001C-MSD	MSD	5	05/12/18 12:52 PM
A0512029.D	N030017-002C	SAMP	1	05/12/18 12:58 PM
A0512030.D	N030017-002C	SAMP	5	05/12/18 1:03 PM
A0512031.D	N030017-005D	SAMP	1	05/12/18 1:09 PM
A0512032.D	N030017-005D	SAMP	5	05/12/18 1:14 PM
A0512033.D	N030017-006D	SAMP	1	05/12/18 1:20 PM
A0512034.D	N030017-006D	SAMP	5	05/12/18 1:25 PM
A0512035.D	N030017-007D	SAMP	1	05/12/18 1:31 PM
A0512036.D	N030017-007D	SAMP	5	05/12/18 1:37 PM
A0512037.D	N030017-008D	SAMP	1	05/12/18 1:42 PM
A0512038.D	CCV2	CCV	1	05/12/18 1:48 PM
A0512039.D	CCB2	CCB	1	05/12/18 1:53 PM
A0512040.D	N030017-008D	SAMP	5	05/12/18 1:59 PM
A0512041.D	N030017-009C	SAMP	1	05/12/18 2:05 PM
A0512042.D	N030017-009C	SAMP	5	05/12/18 2:10 PM

INJECTION LOG: 180512A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0512043.D	N030017-010C	SAMP	1	05/12/18 2:16 PM
A0512044.D	N030017-010C	SAMP	5	05/12/18 2:21 PM
A0512045.D	N030017-011D	SAMP	1	05/12/18 2:27 PM
A0512046.D	N030017-011D	SAMP	5	05/12/18 2:33 PM
A0512047.D	N030017-012C	SAMP	1	05/12/18 2:38 PM
A0512048.D	N030017-012C	SAMP	5	05/12/18 2:44 PM
A0512049.D	N030017-013C	SAMP	1	05/12/18 2:49 PM
A0512050.D	CCV3	CCV	1	05/12/18 2:55 PM
A0512051.D	CCB3	CCB	1	05/12/18 3:00 PM
A0512052.D	N030017-013C	SAMP	5	05/12/18 3:06 PM
A0512053.D	N030044-001D	SAMP	1	05/12/18 3:12 PM
A0512054.D	N030044-001D	SAMP	5	05/12/18 3:17 PM
A0512055.D	N030044-002D	SAMP	1	05/12/18 3:23 PM
A0512056.D	N030044-002D	SAMP	5	05/12/18 3:28 PM
A0512057.D	N030044-003C	SAMP	1	05/12/18 3:34 PM
A0512058.D	N030044-003C	SAMP	5	05/12/18 3:40 PM
A0512059.D	N030044-004C	SAMP	1	05/12/18 3:45 PM
A0512060.D	N030044-004C	SAMP	5	05/12/18 3:51 PM
A0512061.D	N030044-004C	SAMP	50	05/12/18 3:56 PM
A0512062.D	CCV4	CCV	1	05/12/18 4:02 PM
A0512063.D	CCB4	CCB	1	05/12/18 4:08 PM
A0512064.D	LLCCV1	CCV2	1	05/12/18 4:13 PM
A0512065.D	ICSA2	ICSA	1	05/12/18 4:19 PM
A0512066.D	ICSAB2	ICSAB	1	05/12/18 4:24 PM
A0512067.D	N030044-005C	SAMP	1	05/12/18 4:30 PM
A0512068.D	N030044-005C	SAMP	5	05/12/18 4:35 PM
A0512069.D	N030044-006D	SAMP	1	05/12/18 4:41 PM
A0512070.D	N030044-006D	SAMP	5	05/12/18 4:47 PM
A0512071.D	N030044-006D	SAMP	25	05/12/18 4:52 PM
A0512072.D	N030044-007D	SAMP	1	05/12/18 4:58 PM
A0512073.D	N030044-007D	SAMP	5	05/12/18 5:03 PM
A0512074.D	N030044-007D	SAMP	25	05/12/18 5:09 PM
A0512075.D	N030044-008D	SAMP	1	05/12/18 5:14 PM
A0512076.D	N030044-008D	SAMP	5	05/12/18 5:20 PM
A0512077.D	CCV5	CCV	1	05/12/18 5:26 PM
A0512078.D	CCB5	CCB	1	05/12/18 5:31 PM
A0512079.D	N030044-008D	SAMP	50	05/12/18 5:37 PM
A0512080.D	N030044-009C	SAMP	1	05/12/18 5:42 PM
A0512081.D	N030044-009C	SAMP	5	05/12/18 5:48 PM
A0512082.D	MB-68053	MBLK	1	05/12/18 5:54 PM
A0512083.D	LCS-68053	LCS	1	05/12/18 5:59 PM
A0512084.D	N030286-001A	SAMP	1	05/12/18 6:05 PM

INJECTION LOG: 180512A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0512085.D	N030286-001A	SAMP	5	05/12/18 6:10 PM
A0512086.D	N030286-001A-PS	PS	1	05/12/18 6:16 PM
A0512087.D	N030286-001A-MS	MS	1	05/12/18 6:22 PM
A0512088.D	N030286-001A-MSD	MSD	1	05/12/18 6:27 PM
A0512089.D	CCV6	CCV	1	05/12/18 6:33 PM
A0512090.D	CCB6	CCB	1	05/12/18 6:38 PM
A0512091.D	N030286-002A	SAMP	1	05/12/18 6:44 PM
A0512092.D	CCV7	CCV	1	05/12/18 6:50 PM
A0512093.D	CCB7	CCB	1	05/12/18 6:55 PM
A0512094.D	LLCCV2	CCV2	1	05/12/18 7:01 PM
A0512095.D	ICSA3	ICSA	1	05/12/18 7:06 PM
A0512096.D	ICSAB3	ICSAB	1	05/12/18 7:12 PM
A0512097.D	RINSE	RINSE	1	05/12/18 7:30 PM
A0512098.D	RINSE	RINSE	1	05/12/18 7:36 PM

INJECTION LOG: 180515A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0515001.D	RINSE	RINSE	1	05/15/18 11:19 AM
A0515002.D	Cal Blank	IBLK	1	05/15/18 11:24 AM
A0515003.D	Std1-0.1/1 ppb	ICAL	1	05/15/18 11:31 AM
A0515004.D	Std2-0.5/5 ppb	ICAL	1	05/15/18 11:37 AM
A0515005.D	Std3-5/50 ppb	ICAL	1	05/15/18 11:42 AM
A0515006.D	Std4-10/100 ppb	ICAL	1	05/15/18 11:48 AM
A0515007.D	Std5-20/200 ppb	ICAL	1	05/15/18 11:53 AM
A0515008.D	Std6-40/400 ppb	ICAL	1	05/15/18 12:00 PM
A0515009.D	Std7-100/1000 ppb	ICAL	1	05/15/18 12:04 PM
A0515010.D	Std8-200/2000 ppb	ICAL	1	05/15/18 12:10 PM
A0515011.D	ICV	ICV	1	05/15/18 12:16 PM
A0515012.D	ICB	ICB	1	05/15/18 12:21 PM
A0515013.D	LLICV	CCV1	1	05/15/18 12:27 PM
A0515014.D	ICSA1	ICSA	1	05/15/18 12:32 PM
A0515015.D	ICSAB1	ICSAB	1	05/15/18 12:38 PM
A0515016.D	LLICV	CCV1	1	05/15/18 12:44 PM
A0515017.D	N030148-001B	SAMP	1	05/15/18 12:49 PM
A0515018.D	N030148-001B	SAMP	5	05/15/18 12:55 PM
A0515019.D	N030006-008D	SAMP	5	05/15/18 1:01 PM
A0515020.D	N030017-005D	SAMP	1	05/15/18 1:07 PM
A0515021.D	N030091-001B	SAMP	125	05/15/18 1:13 PM
A0515022.D	N030091-001B-PS	PS	25	05/15/18 1:18 PM
A0515023.D	N030091-001B-MS	MS	25	05/15/18 1:24 PM
A0515024.D	N030091-001B-MSD	MSD	25	05/15/18 1:30 PM
A0515025.D	N030091-021B	SAMP	10	05/15/18 1:35 PM
A0515026.D	N030096-001D	SAMP	5	05/15/18 1:41 PM
A0515027.D	CCV1	CCV	1	05/15/18 1:46 PM
A0515028.D	CCB1	CCB	1	05/15/18 1:52 PM
A0515029.D	N030096-001D-MS	MS	1	05/15/18 1:58 PM
A0515030.D	N030096-001D-MSD	MSD	1	05/15/18 2:03 PM
A0515031.D	N030096-002D	SAMP	50	05/15/18 2:09 PM
A0515032.D	N030096-003D	SAMP	5	05/15/18 2:15 PM
A0515033.D	N030096-003D	SAMP	25	05/15/18 2:20 PM
A0515034.D	N030096-010D	SAMP	25	05/15/18 2:26 PM
A0515035.D	N030096-011D	SAMP	25	05/15/18 2:31 PM
A0515036.D	N030096-012D	SAMP	25	05/15/18 2:37 PM
A0515037.D	N030096-015D	SAMP	25	05/15/18 2:43 PM
A0515038.D	N030096-003D	SAMP	1	05/15/18 2:56 PM
A0515039.D	CCV2	CCV	1	05/15/18 3:01 PM
A0515040.D	CCB2	CCB	1	05/15/18 3:07 PM
A0515041.D	N030096-003D	SAMP	5	05/15/18 3:13 PM
A0515042.D	N030096-008C	SAMP	1	05/15/18 3:18 PM

INJECTION LOG: 180515A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0515043.D	MB-68076	MBLK	1	05/15/18 3:24 PM
A0515044.D	LCS-68076	LCS	1	05/15/18 3:30 PM
A0515045.D	N030345-001A	SAMP	1	05/15/18 3:35 PM
A0515046.D	N030345-001A	SAMP	5	05/15/18 3:41 PM
A0515047.D	N030345-001A-PS	PS	1	05/15/18 3:47 PM
A0515048.D	N030345-001A-MS	MS	1	05/15/18 3:52 PM
A0515049.D	N030345-001A-MSD	MSD	1	05/15/18 3:58 PM
A0515050.D	N030239-001A	SAMP	1	05/15/18 4:04 PM
A0515051.D	CCV3	CCV	1	05/15/18 4:10 PM
A0515052.D	CCB3	CCB	1	05/15/18 4:16 PM
A0515053.D	LLCCV1	CCV2	1	05/15/18 4:21 PM
A0515054.D	ICSA2	ICSA	1	05/15/18 4:27 PM
A0515055.D	ICSAB2	ICSAB	1	05/15/18 4:33 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/2/2018 9:10:03 A**
Prep End Date: **5/2/2018 2:00:00 P**
Prep Batch **67911** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/16/2018
Initials/ Date: 5/16/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-19**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67911	Aqueous		25	☐	0	0	25	1.000		
MB-67911	Aqueous		25	☐	0	0	25	1.000		
N030017-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-005D	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-006D	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-007D	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-008D	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-010C	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-011D	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-012C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/2/2018 9:10:03 A**
Prep End Date: **5/2/2018 2:00:00 P**
Prep Batch **67911** Prep Code: **3010_W_MSDI**

Reviewed/ Date: Nancy 5/16/2018
Initials/ Date: 5/16/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-19**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N030017-013C	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-002D	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-006D	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-007D	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-008D	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-009C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 12 May 2018 10:00:14 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	130412.00	0.00	
24	Mg	81575500.00	0.00	
25	Mg	10911600.00	0.00	
26	Mg	12591100.00	0.00	
59	Co	516474.00	0.00	
115	In	865083.00	0.00	
206	Pb	249990.00	0.00	
207	Pb	217798.00	0.00	
208	Pb	534825.00	0.00	

RSD (%)

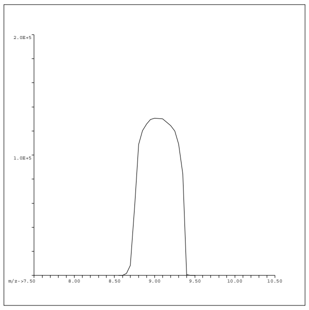
Element		Actual	Required	Flag
9	Be	0.40	5.00	
24	Mg	0.86	5.00	
25	Mg	0.79	5.00	
26	Mg	0.65	5.00	
59	Co	0.79	5.00	
115	In	0.51	5.00	
206	Pb	0.72	5.00	
207	Pb	0.95	5.00	
208	Pb	0.76	5.00	

Ion Ratio

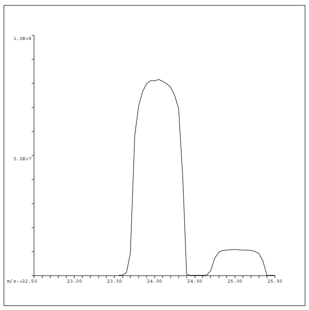
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

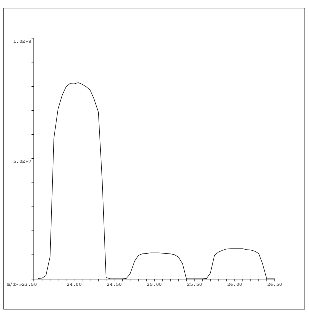
Element	Actual	Required	Flag



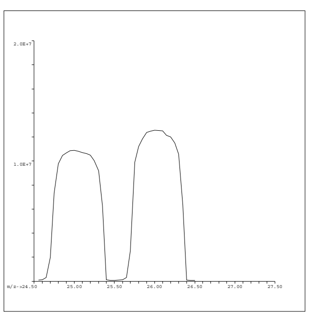
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



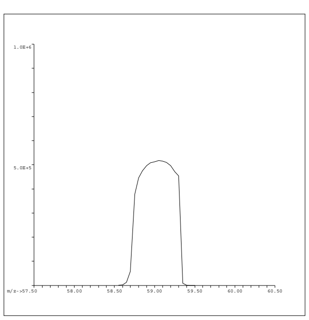
24 Mg
Mass Calib.
Actual: 24.05
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



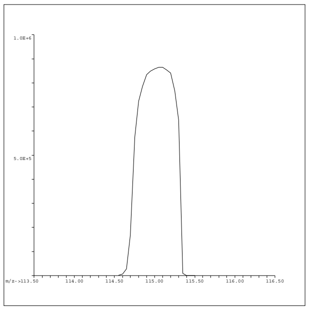
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



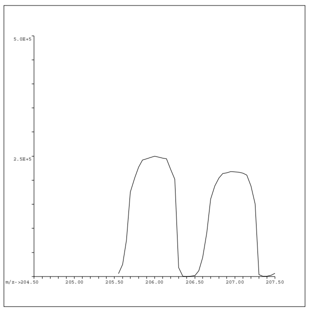
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



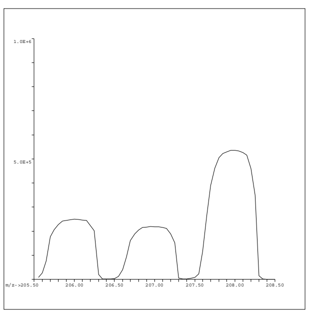
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



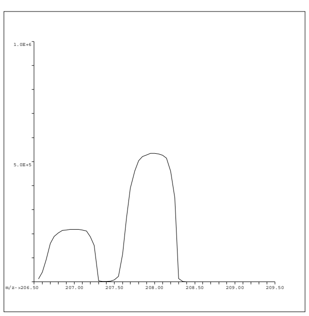
115 In
Mass Calib.
   Actual: 115.05
   Required: 114.90-115.10
   Flag:
Peak Width
   Actual: 0.60
   Required: 0.75
   Flag:



206 Pb
Mass Calib.
   Actual: 206.00
   Required: 205.90-206.10
   Flag:
Peak Width
   Actual: 0.70
   Required: 0.75
   Flag:



207 Pb
Mass Calib.
   Actual: 207.00
   Required: 206.90-207.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



208 Pb
Mass Calib.
   Actual: 208.00
   Required: 207.90-208.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 15 May 2018 10:38:32 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	72491.20	0.00	
24	Mg	56079300.00	0.00	
25	Mg	7514940.00	0.00	
26	Mg	8787920.00	0.00	
59	Co	366882.00	0.00	
115	In	729395.00	0.00	
206	Pb	202820.00	0.00	
207	Pb	176844.00	0.00	
208	Pb	430573.00	0.00	

RSD (%)

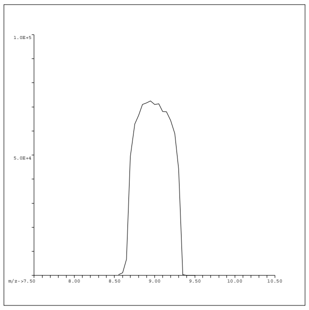
Element		Actual	Required	Flag
9	Be	1.87	5.00	
24	Mg	0.73	5.00	
25	Mg	0.68	5.00	
26	Mg	0.94	5.00	
59	Co	0.86	5.00	
115	In	0.55	5.00	
206	Pb	0.48	5.00	
207	Pb	0.91	5.00	
208	Pb	0.57	5.00	

Ion Ratio

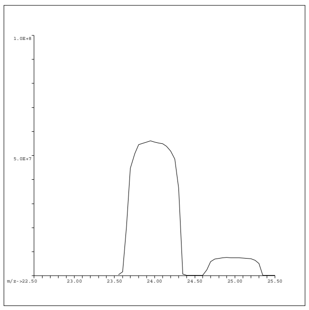
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

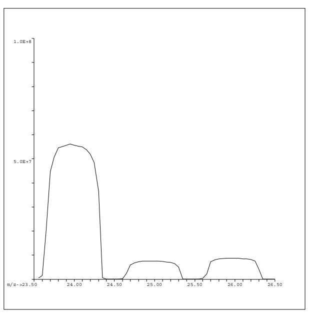
Element	Actual	Required	Flag



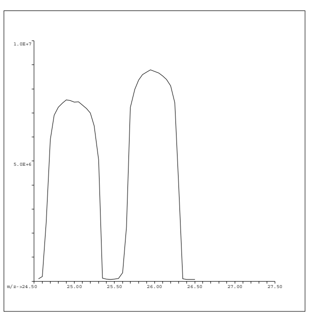
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



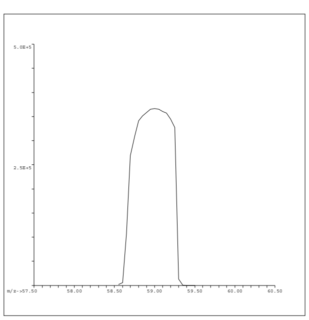
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



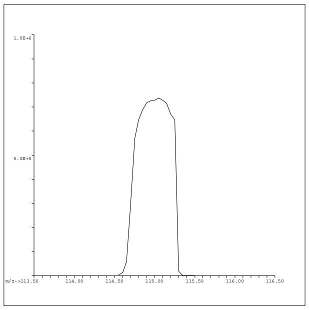
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



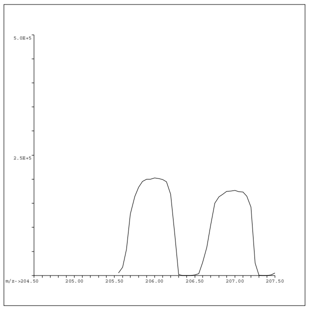
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



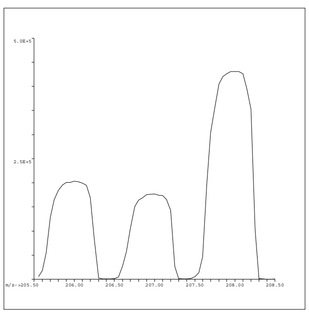
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



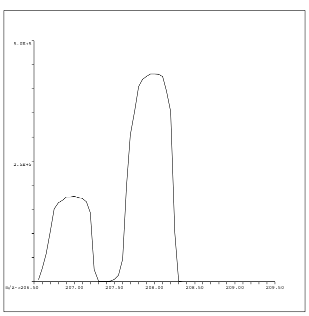
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION
DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180512A

Instrument ID: ICPMS-02

Analyte	Data File	A0512002.D	A0512003.D	A0512004.D	A0512005.D	A0512006.D	A0512007.D	A0512008.D	A0512009.D	A0512010.D	
	Acq. Date-Time	05/12/2018 10:26 AM	05/12/2018 10:31 AM	05/12/2018 10:37 AM	05/12/2018 10:43 AM	05/12/2018 10:48 AM	05/12/2018 10:54 AM	05/12/2018 10:59 AM	05/12/2018 11:05 AM	05/12/2018 11:11 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	61714		59722.7	59889.4	60359.4	60042.2	59303.1	58901.7	49849.9	
55 Mn [2]	CPS	130.9		1258.3	12252.6	23934.9	48217	96046.3	238177.3	390986	0.9999
52 Cr [2]	CPS	118.6		2657.9	24878.9	50278.7	100197.1	195288.1	487004.1	821301.2	1.0000
72 Ge (ISTD) [1]	CPS	54445		52409.5	52237.6	53672.2	52710.3	52626.7	52245.7	42058.3	
78 Se [1]	CPS	4.4		80	866.7	1729.1	3467.2	7259.7	17653.5	27283.7	0.9998
72 Ge (ISTD) [2]	CPS	43697.2	42416	42069.6	41890.1	42096.3	41811.1	41532.7	41010.4	35002.8	
75 As [2]	CPS	20.4	72	279.1	2505.1	5088.8	10108.1	20226	49883.8	82884.6	0.9999
103 Rh (ISTD) [2]	CPS	1494072.9		1446616.7	1455986.3	1447054.4	1433589.6	1427741.6	1436175.7	1194452.7	
95 Mo [2]	CPS	125.6		1641.3	16088.6	31910.5	63915.6	126832.5	318002.9	544995.3	0.9999

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MWST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180515A

Instrument ID: ICPMS-02

Analyte	Data File	A0515002.D	A0515004.D	A0515005.D	A0515006.D	A0515007.D	A0515008.D	A0515009.D	A0515010.D	
	Acq. Date-Time	05/15/2018 11:24 AM	05/15/2018 11:37 AM	05/15/2018 11:42 AM	05/15/2018 11:48 AM	05/15/2018 11:53 AM	05/15/2018 12:00 PM	05/15/2018 12:04 PM	05/15/2018 12:10 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	37440.2	38058.5	38175.5	38631.1	37929.3	34455	36754.4	36684.2	
78 Se [1]	CPS	0	82.2	695.6	1380.1	2734.8	4952.1	12987.8	25953.7	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MWST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.892	0.10	10.00	0	98.9	90	110				
Manganese	109.827	0.50	100.0	0	110	90	110				
Molybdenum	10.422	0.50	10.00	0	104	90	110				
Selenium	10.127	0.50	10.00	0	101	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.091	0.10	0.1000	0	90.6	80	120				
Manganese	0.582	0.50	0.5000	0	116	80	120				
Molybdenum	0.492	0.50	0.5000	0	98.3	80	120				
Selenium	0.569	0.50	0.5000	0	114	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024888**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.874	0.10	20.00	0	99.4	90	110				
Manganese	19.853	0.50	20.00	0	99.3	90	110				
Molybdenum	19.353	0.50	20.00	0	96.8	90	110				
Selenium	19.946	0.50	20.00	0	99.7	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.340	0.10	20.00	0	96.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.949	0.50	20.00	0	99.7	90	110				
Molybdenum	19.431	0.50	20.00	0	97.2	90	110				
Selenium	21.131	0.50	20.00	0	106	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.392	0.10	20.00	0	97.0	90	110				
Manganese	20.085	0.50	20.00	0	100	90	110				
Molybdenum	19.580	0.50	20.00	0	97.9	90	110				
Selenium	21.146	0.50	20.00	0	106	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.512	0.10	20.00	0	97.6	90	110				
Manganese	20.357	0.50	20.00	0	102	90	110				
Molybdenum	19.430	0.50	20.00	0	97.2	90	110				
Selenium	21.473	0.50	20.00	0	107	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	~~ND~~ 0.07475	0.10	0.1000	0	~~0~~ 74.8%	70	130				~~S~~
Manganese	0.530	0.50	0.5000	0	106	70	130				
Molybdenum	0.506	0.50	0.5000	0	101	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

5/16/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.615	0.50	0.5000	0	123	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.707	0.10	20.00	0	98.5	90	110				
Manganese	20.370	0.50	20.00	0	102	90	110				
Molybdenum	19.171	0.50	20.00	0	95.9	90	110				
Selenium	20.810	0.50	20.00	0	104	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.790	0.10	20.00	0	99.0	90	110				
Manganese	20.877	0.50	20.00	0	104	90	110				
Molybdenum	18.907	0.50	20.00	0	94.5	90	110				
Selenium	21.862	0.50	20.00	0	109	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.559	0.10	20.00	0	97.8	90	110				
Manganese	20.909	0.50	20.00	0	105	90	110				
Molybdenum	19.244	0.50	20.00	0	96.2	90	110				
Selenium	21.697	0.50	20.00	0	108	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124026**
Client ID: **ZZZZZZ**	Batch ID: **R124026**	TestNo: **EPA 6020**		Analysis Date: **5/12/2018**	SeqNo: **3024956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	~~ND~~ 0.07489	0.10	0.1000	0	~~0~~ 74.9%	70	130				~~S~~
Manganese	0.603	0.50	0.5000	0	121	70	130				
Molybdenum	0.511	0.50	0.5000	0	102	70	130				
Selenium	0.569	0.50	0.5000	0	114	70	130				

Nancy 5/16/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** | SampType: **ICV** | TestCode: **6020_DIS** | Units: **µg/L** | Prep Date: | RunNo: **124065**
Client ID: **ICV** | Batch ID: **R124065** | TestNo: **EPA 6020** | Analysis Date: **5/15/2018** | SeqNo: **3026644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.766	0.10	10.00	0	97.7	90	110				
Manganese	108.664	0.50	100.0	0	109	90	110				
Selenium	10.485	0.50	10.00	0	105	90	110				

Sample ID **LLICV** | SampType: **CCV1** | TestCode: **6020_DIS** | Units: **µg/L** | Prep Date: | RunNo: **124065**
Client ID: **ZZZZZZ** | Batch ID: **R124065** | TestNo: **EPA 6020** | Analysis Date: **5/15/2018** | SeqNo: **3026649**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.095	0.10	0.1000	0	95.1	80	120				
Manganese	0.467	0.50	0.5000	0	93.4	80	120				
Selenium	0.541	0.50	0.5000	0	108	80	120				

Sample ID **CCV1** | SampType: **CCV** | TestCode: **6020_DIS** | Units: **µg/L** | Prep Date: | RunNo: **124065**
Client ID: **CCV** | Batch ID: **R124065** | TestNo: **EPA 6020** | Analysis Date: **5/15/2018** | SeqNo: **3026660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.811	0.10	20.00	0	99.1	90	110				
Manganese	19.971	0.50	20.00	0	99.9	90	110				
Selenium	20.000	0.50	20.00	0	100	90	110				

Sample ID **CCV2** | SampType: **CCV** | TestCode: **6020_DIS** | Units: **µg/L** | Prep Date: | RunNo: **124065**
Client ID: **CCV** | Batch ID: **R124065** | TestNo: **EPA 6020** | Analysis Date: **5/15/2018** | SeqNo: **3026672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.956	0.10	20.00	0	99.8	90	110				
Manganese	20.297	0.50	20.00	0	101	90	110				
Selenium	20.959	0.50	20.00	0	105	90	110				

Reported Se only in this run.

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Nancy 5/16/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **CCV** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.125	0.10	20.00	0	101	90	110				
Manganese	20.561	0.50	20.00	0	103	90	110				
Selenium	19.898	0.50	20.00	0	99.5	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ZZZZZZ** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.07736 ~~ND~~	0.10	0.1000	0	77.4% ~~0~~	70	130				~~S~~
Manganese	0.514	0.50	0.5000	0	103	70	130				
Selenium	0.383	0.50	0.5000	0	76.6	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 5/16/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.883	1.0	10.00	0	98.8	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.098	1.0	1.000	0	110	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.810	1.0	20.00	0	99.0	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024814**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.941	1.0	20.00	0	99.7	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.966	1.0	20.00	0	99.8	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024838**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.245	1.0	20.00	0	101	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.176	1.0	1.000	0	118	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.361	1.0	20.00	0	102	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.500	1.0	20.00	0	103	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.596	1.0	20.00	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.112	1.0	1.000	0	111	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF
INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024901**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB7** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ICB** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **CCB** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **CCB** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **CCB** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Reported Se only in this run.

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Nancy 5/16/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID ICB	SampType: ICB	TestCode: 6020DIS_CrP	Units: µg/L	Prep Date:	RunNo: 124026					
Client ID: ICB	Batch ID: R124026	TestNo: EPA 6020		Analysis Date: 5/12/2018	SeqNo: 3024788					
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Chromium	0.182	1.0									

Sample ID CCB1	SampType: CCB	TestCode: 6020DIS_CrP	Units: µg/L	Prep Date:	RunNo: 124026						
Client ID: CCB	Batch ID: R124026	TestNo: EPA 6020		Analysis Date: 5/12/2018	SeqNo: 3024803						
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Chromium	ND	1.0									

Sample ID CCB2	SampType: CCB	TestCode: 6020DIS_CrP	Units: µg/L	Prep Date:	RunNo: 124026						
Client ID: CCB	Batch ID: R124026	TestNo: EPA 6020		Analysis Date: 5/12/2018	SeqNo: 3024815						
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Chromium	ND	1.0									

Sample ID CCB3	SampType: CCB	TestCode: 6020DIS_CrP	Units: µg/L	Prep Date:	RunNo: 124026						
Client ID: CCB	Batch ID: R124026	TestNo: EPA 6020		Analysis Date: 5/12/2018	SeqNo: 3024827						
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Chromium	ND	1.0									

Sample ID CCB4	SampType: CCB	TestCode: 6020DIS_CrP	Units: µg/L	Prep Date:	RunNo: 124026						
Client ID: CCB	Batch ID: R124026	TestNo: EPA 6020		Analysis Date: 5/12/2018	SeqNo: 3024839						
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Chromium	0.219	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124026**
Client ID: **CCB**	Batch ID: **R124026**	TestNo: **EPA 6020**		Analysis Date: **5/12/2018**	SeqNo: **3024854**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.315	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124026**
Client ID: **CCB**	Batch ID: **R124026**	TestNo: **EPA 6020**		Analysis Date: **5/12/2018**	SeqNo: **3024866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124026**
Client ID: **CCB**	Batch ID: **R124026**	TestNo: **EPA 6020**		Analysis Date: **5/12/2018**	SeqNo: **3024869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSA** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSAB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.108	0.10	20.00	0	111	80	120				
Manganese	16.127	0.50	20.00	0	80.6	80	120				
Molybdenum	22.227	0.50	20.00	0	111	80	120				
Selenium	20.184	0.50	20.00	0	101	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSA** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSAB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.895	0.10	20.00	0	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSAB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	16.790	0.50	20.00	0	83.9	80	120				
Molybdenum	21.676	0.50	20.00	0	108	80	120				
Selenium	21.664	0.50	20.00	0	108	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSA** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSAB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.891	0.10	20.00	0	104	80	120				
Manganese	17.489	0.50	20.00	0	87.4	80	120				
Molybdenum	22.626	0.50	20.00	0	113	80	120				
Selenium	20.226	0.50	20.00	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ICSA** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ICSAB** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.712	0.10	20.00	0	109	80	120				
Manganese	17.338	0.50	20.00	0	86.7	80	120				
Selenium	20.028	0.50	20.00	0	100	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ICSA** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ICSAB** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.273	0.10	20.00	0	106	80	120				
Manganese	17.690	0.50	20.00	0	88.5	80	120				
Selenium	19.562	0.50	20.00	0	97.8	80	120				

Reported Se only in this run.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 5/16/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSA** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSAB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.010	1.0	20.00	0	100	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSA** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.151	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSAB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.255	1.0	20.00	0	101	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSA** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSAB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.406	1.0	20.00	0	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	61714	61714	100	PASS	70-125	43697.2	43697.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	60080.2	61714	97.35	PASS	70-125	42416	43697.2	97.068	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	59722.7	61714	96.77	PASS	70-125	42069.6	43697.2	96.28	PASS	70-125
Std3-5/50 ppb	ICAL	1	59889.4	61714	97.043	PASS	70-125	41890.1	43697.2	95.86	PASS	70-125
Std4-10/100 ppb	ICAL	1	60359.4	61714	97.81	PASS	70-125	42096.3	43697.2	96.34	PASS	70-125
Std5-20/200 ppb	ICAL	1	60042.2	61714	97.29	PASS	70-125	41811.1	43697.2	95.68	PASS	70-125
Std6-40/400 ppb	ICAL	1	59303.1	61714	96.093	PASS	70-125	41532.7	43697.2	95.047	PASS	70-125
Std7-100/1000 ppb	ICAL	1	58901.7	61714	95.44	PASS	70-125	41010.4	43697.2	93.85	PASS	70-125
Std8-200/2000 ppb	ICAL	1	49849.9	61714	80.78	PASS	70-125	35002.8	43697.2	80.1	PASS	70-125
ICV	ICV	1	57494.6	61714	93.16	PASS	70-125	40192.6	43697.2	91.98	PASS	70-125
ICB	ICB	1	50923.2	61714	82.51	PASS	70-125	39411.9	43697.2	90.19	PASS	70-125
LLICV	CCV1	1	52960.4	61714	85.82	PASS	70-125	41028.1	43697.2	93.89	PASS	70-125
ICSA1	ICSA	1	61238.7	61714	99.23	PASS	70-125	41416.8	43697.2	94.78	PASS	70-125
ICSAB1	ICSAB	1	65963.3	61714	106.89	PASS	70-125	43984.6	43697.2	100.66	PASS	70-125
MB-67911	MBLK	1	65686.5	61714	106.44	PASS	70-125	46151.5	43697.2	105.62	PASS	70-125
LCS-67911	LCS	1	70777.5	61714	114.69	PASS	70-125	49971.6	43697.2	114.36	PASS	70-125
N030017-001C	SAMP	1	50872.9	61714	82.43	PASS	70-125	30736.4	43697.2	70.34	PASS	70-125
N030017-001C	SAMP	5	64697.3	61714	104.83	PASS	70-125	41855.6	43697.2	95.79	PASS	70-125
N030017-001C	SAMP	25	66980.9	61714	108.53	PASS	70-125	45294.8	43697.2	103.66	PASS	70-125
N030017-001C-PS	PS	1	54503.3	61714	88.32	PASS	70-125	34788	43697.2	79.61	PASS	70-125
N030017-001C-PS	PS	5	62866	61714	101.87	PASS	70-125	42585.3	43697.2	97.46	PASS	70-125
N030017-001C-MS	MS	1	51953	61714	84.18	PASS	70-125	34108.7	43697.2	78.057	PASS	70-125
N030017-001C-MS	MS	5	61999.4	61714	100.46	PASS	70-125	42201	43697.2	96.58	PASS	70-125
N030017-001C-MSD	MSD	1	50293.5	61714	81.49	PASS	70-125	33510.8	43697.2	76.69	PASS	70-125
CCV1	CCV	1	65768.5	61714	106.57	PASS	70-125	47769.6	43697.2	109.32	PASS	70-125
CCB1	CCB	1	64812.3	61714	105.02	PASS	70-125	48230.1	43697.2	110.37	PASS	70-125
N030017-001C-MSD	MSD	5	57486.8	61714	93.15	PASS	70-125	40141.3	43697.2	91.86	PASS	70-125
N030017-002C	SAMP	1	45852.9	61714	74.3	PASS	70-125	31225	43697.2	71.46	PASS	70-125
N030017-002C	SAMP	5	59032.1	61714	95.65	PASS	70-125	41105.8	43697.2	94.07	PASS	70-125
N030017-005D	SAMP	1	58368.6	61714	94.58	PASS	70-125	40728.3	43697.2	93.21	PASS	70-125
N030017-005D	SAMP	5	62741.3	61714	101.66	PASS	70-125	45099.9	43697.2	103.21	PASS	70-125
N030017-006D	SAMP	1	47592.2	61714	77.12	PASS	70-125	34242.3	43697.2	78.36	PASS	70-125
N030017-006D	SAMP	5	58852.5	61714	95.36	PASS	70-125	42954.1	43697.2	98.3	PASS	70-125
N030017-007D	SAMP	1	48625.1	61714	78.79	PASS	70-125	35078.5	43697.2	80.28	PASS	70-125
N030017-007D	SAMP	5	60215.4	61714	97.57	PASS	70-125	43648.2	43697.2	99.89	PASS	70-125
N030017-008D	SAMP	1	46650.6	61714	75.59	PASS	70-125	33205.6	43697.2	75.99	PASS	70-125
CCV2	CCV	1	63618.4	61714	103.09	PASS	70-125	48900.9	43697.2	111.91	PASS	70-125
CCB2	CCB	1	62276.3	61714	100.91	PASS	70-125	47834.3	43697.2	109.47	PASS	70-125
N030017-008D	SAMP	5	56179.9	61714	91.033	PASS	70-125	40364.1	43697.2	92.37	PASS	70-125
N030017-009C	SAMP	1	41157.3	61714	66.69	NR!	70-125	29350.4	43697.2	67.17	NR!	70-125
N030017-009C	SAMP	5	57368.8	61714	92.96	PASS	70-125	41585.1	43697.2	95.17	PASS	70-125

INTERNAL STANDARD: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030017-010C	SAMP	1	41359	61714	67.017	NR!	70-125	30363.5	43697.2	69.49	NR!	70-125
N030017-010C	SAMP	5	56468.8	61714	91.5	PASS	70-125	41454.6	43697.2	94.87	PASS	70-125
N030017-011D	SAMP	1	46196.3	61714	74.86	PASS	70-125	34114.3	43697.2	78.07	PASS	70-125
N030017-011D	SAMP	5	57212.3	61714	92.71	PASS	70-125	42684.6	43697.2	97.68	PASS	70-125
N030017-012C	SAMP	1	45998.9	61714	74.54	PASS	70-125	34635.3	43697.2	79.26	PASS	70-125
N030017-012C	SAMP	5	58433.3	61714	94.68	PASS	70-125	44039.1	43697.2	100.78	PASS	70-125
N030017-013C	SAMP	1	54543.4	61714	88.38	PASS	70-125	39633.7	43697.2	90.7	PASS	70-125
CCV3	CCV	1	59700	61714	96.74	PASS	70-125	45834.2	43697.2	104.89	PASS	70-125
CCB3	CCB	1	57725.6	61714	93.54	PASS	70-125	45486.5	43697.2	104.1	PASS	70-125
N030017-013C	SAMP	5	53813.5	61714	87.2	PASS	70-125	40995.7	43697.2	93.82	PASS	70-125
N030044-001D	SAMP	1	46300.8	61714	75.025	PASS	70-125	34114.2	43697.2	78.07	PASS	70-125
N030044-001D	SAMP	5	55342.8	61714	89.68	PASS	70-125	42127.3	43697.2	96.41	PASS	70-125
N030044-002D	SAMP	1	47090.7	61714	76.3	PASS	70-125	34401.5	43697.2	78.73	PASS	70-125
N030044-002D	SAMP	5	56074.4	61714	90.86	PASS	70-125	41020.2	43697.2	93.87	PASS	70-125
N030044-003C	SAMP	1	55697.3	61714	90.25	PASS	70-125	39742.7	43697.2	90.95	PASS	70-125
N030044-003C	SAMP	5	57071	61714	92.48	PASS	70-125	42819.4	43697.2	97.99	PASS	70-125
N030044-004C	SAMP	1	37799.2	61714	61.25	NR!	70-125	27408.2	43697.2	62.72	NR!	70-125
N030044-004C	SAMP	5	46472.4	61714	75.3	PASS	70-125	34826.7	43697.2	79.7	PASS	70-125
N030044-004C	SAMP	50	56802.4	61714	92.041	PASS	70-125	43589.1	43697.2	99.75	PASS	70-125
CCV4	CCV	1	57327.2	61714	92.89	PASS	70-125	44021.4	43697.2	100.74	PASS	70-125
CCB4	CCB	1	56116.5	61714	90.93	PASS	70-125	43906.7	43697.2	100.48	PASS	70-125
LLCCV1	CCV2	1	55179.1	61714	89.41	PASS	70-125	42838.5	43697.2	98.035	PASS	70-125
ICSA2	ICSA	1	54741.7	61714	88.7	PASS	70-125	40450.9	43697.2	92.57	PASS	70-125
ICSAB2	ICSAB	1	55396.2	61714	89.76	PASS	70-125	41046	43697.2	93.93	PASS	70-125
N030044-005C	SAMP	1	52992.1	61714	85.87	PASS	70-125	38938.5	43697.2	89.11	PASS	70-125
N030044-005C	SAMP	5	53022	61714	85.92	PASS	70-125	41372.3	43697.2	94.68	PASS	70-125
N030044-006D	SAMP	1	54360.8	61714	88.085	PASS	70-125	41014.6	43697.2	93.86	PASS	70-125
N030044-006D	SAMP	5	54785.4	61714	88.77	PASS	70-125	42336.9	43697.2	96.89	PASS	70-125
N030044-006D	SAMP	25	53230.5	61714	86.25	PASS	70-125	41714.1	43697.2	95.46	PASS	70-125
N030044-007D	SAMP	1	52741	61714	85.46	PASS	70-125	39243.7	43697.2	89.81	PASS	70-125
N030044-007D	SAMP	5	53510.3	61714	86.71	PASS	70-125	41126	43697.2	94.12	PASS	70-125
N030044-007D	SAMP	25	52859.3	61714	85.65	PASS	70-125	42163.1	43697.2	96.49	PASS	70-125
N030044-008D	SAMP	1	43648.2	61714	70.73	PASS	70-125	31619.3	43697.2	72.36	PASS	70-125
N030044-008D	SAMP	5	52255	61714	84.67	PASS	70-125	38916.2	43697.2	89.059	PASS	70-125
CCV5	CCV	1	56977.2	61714	92.32	PASS	70-125	44150.6	43697.2	101.04	PASS	70-125
CCB5	CCB	1	55819.9	61714	90.45	PASS	70-125	43570.3	43697.2	99.71	PASS	70-125
N030044-008D	SAMP	50	51789.2	61714	83.92	PASS	70-125	41051.5	43697.2	93.95	PASS	70-125
N030044-009C	SAMP	1	49550.4	61714	80.29	PASS	70-125	36637.5	43697.2	83.84	PASS	70-125
N030044-009C	SAMP	5	56559.1	61714	91.65	PASS	70-125	42772.6	43697.2	97.88	PASS	70-125
CCV6	CCV	1	47492	61714	76.95	PASS	70-125	38402.7	43697.2	87.88	PASS	70-125
CCB6	CCB	1	47503.2	61714	76.97	PASS	70-125	38603.2	43697.2	88.34	PASS	70-125

INTERNAL STANDARD: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV7	CCV	1	46938.3	61714	76.058	PASS	70-125	37921.7	43697.2	86.78	PASS	70-125
CCB7	CCB	1	46052.4	61714	74.62	PASS	70-125	38025.1	43697.2	87.02	PASS	70-125
LLCCV2	CCV2	1	45639.1	61714	73.95	PASS	70-125	37585.4	43697.2	86.013	PASS	70-125
ICSA3	ICSA	1	46036.9	61714	74.6	PASS	70-125	36678.7	43697.2	83.94	PASS	70-125
ICSAB3	ICSAB	1	48613	61714	78.77	PASS	70-125	37276.7	43697.2	85.31	PASS	70-125

INTERNAL STANDARD: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	54445	54445	100	PASS	70-125	1494072.9	1494072.9	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	53132.9	54445	97.59	PASS	70-125	1465493.4	1494072.9	98.087	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	52409.5	54445	96.26	PASS	70-125	1446616.7	1494072.9	96.82	PASS	70-125
Std3-5/50 ppb	ICAL	1	52237.6	54445	95.95	PASS	70-125	1455986.3	1494072.9	97.45	PASS	70-125
Std4-10/100 ppb	ICAL	1	53672.2	54445	98.58	PASS	70-125	1447054.4	1494072.9	96.85	PASS	70-125
Std5-20/200 ppb	ICAL	1	52710.3	54445	96.81	PASS	70-125	1433589.6	1494072.9	95.95	PASS	70-125
Std6-40/400 ppb	ICAL	1	52626.7	54445	96.66	PASS	70-125	1427741.6	1494072.9	95.56	PASS	70-125
Std7-100/1000 ppb	ICAL	1	52245.7	54445	95.96	PASS	70-125	1436175.7	1494072.9	96.12	PASS	70-125
Std8-200/2000 ppb	ICAL	1	42058.3	54445	77.25	PASS	70-125	1194452.7	1494072.9	79.95	PASS	70-125
ICV	ICV	1	50845.6	54445	93.39	PASS	70-125	1454920.7	1494072.9	97.38	PASS	70-125
ICB	ICB	1	43147	54445	79.25	PASS	70-125	1328394.7	1494072.9	88.91	PASS	70-125
LLICV	CCV1	1	47455.5	54445	87.16	PASS	70-125	1364618	1494072.9	91.34	PASS	70-125
ICSA1	ICSA	1	52458.2	54445	96.35	PASS	70-125	1333031.4	1494072.9	89.22	PASS	70-125
ICSAB1	ICSAB	1	56326.8	54445	103.46	PASS	70-125	1436878.5	1494072.9	96.17	PASS	70-125
MB-67911	MBLK	1	61133.1	54445	112.28	PASS	70-125	1610288.8	1494072.9	107.78	PASS	70-125
LCS-67911	LCS	1	64605	54445	118.66	PASS	70-125	1768948	1494072.9	118.4	PASS	70-125
N030017-001C	SAMP	1	37310.1	54445	68.53	NR!	70-125	907183.1	1494072.9	60.72	NR!	70-125
N030017-001C	SAMP	5	49783.3	54445	91.44	PASS	70-125	1348140.8	1494072.9	90.23	PASS	70-125
N030017-001C	SAMP	25	55009.1	54445	101.04	PASS	70-125	1474393.7	1494072.9	98.68	PASS	70-125
N030017-001C-PS	PS	1	39624.5	54445	72.78	PASS	70-125	1003567.5	1494072.9	67.17	NR!	70-125
N030017-001C-PS	PS	5	49550.6	54445	91.01	PASS	70-125	1349514	1494072.9	90.32	PASS	70-125
N030017-001C-MS	MS	1	38140.8	54445	70.054	PASS	70-125	992858	1494072.9	66.45	NR!	70-125
N030017-001C-MS	MS	5	48428.3	54445	88.95	PASS	70-125	1349453.6	1494072.9	90.32	PASS	70-125
N030017-001C-MSD	MSD	1	36677.7	54445	67.37	NR!	70-125	977698.2	1494072.9	65.44	NR!	70-125
CCV1	CCV	1	55691.5	54445	102.29	PASS	70-125	1622782.7	1494072.9	108.61	PASS	70-125
CCB1	CCB	1	55994.6	54445	102.85	PASS	70-125	1617129.9	1494072.9	108.24	PASS	70-125
N030017-001C-MSD	MSD	5	45720.4	54445	83.98	PASS	70-125	1238960.3	1494072.9	82.93	PASS	70-125
N030017-002C	SAMP	1	34040.8	54445	62.52	NR!	70-125	917868.8	1494072.9	61.43	NR!	70-125
N030017-002C	SAMP	5	46540.6	54445	85.48	PASS	70-125	1296419.9	1494072.9	86.77	PASS	70-125
N030017-005D	SAMP	1	45807.4	54445	84.14	PASS	70-125	1191117.4	1494072.9	79.72	PASS	70-125
N030017-005D	SAMP	5	51921.1	54445	95.36	PASS	70-125	1434787.2	1494072.9	96.032	PASS	70-125
N030017-006D	SAMP	1	36968.2	54445	67.9	NR!	70-125	970706.3	1494072.9	64.97	NR!	70-125
N030017-006D	SAMP	5	47518.9	54445	87.28	PASS	70-125	1329338.7	1494072.9	88.97	PASS	70-125
N030017-007D	SAMP	1	37912.7	54445	69.63	NR!	70-125	992070.4	1494072.9	66.4	NR!	70-125
N030017-007D	SAMP	5	48873.1	54445	89.77	PASS	70-125	1359632.8	1494072.9	91.002	PASS	70-125
N030017-008D	SAMP	1	35587.5	54445	65.36	NR!	70-125	965621	1494072.9	64.63	NR!	70-125
CCV2	CCV	1	54471.7	54445	100.05	PASS	70-125	1614910.7	1494072.9	108.09	PASS	70-125
CCB2	CCB	1	54161.9	54445	99.48	PASS	70-125	1601582.1	1494072.9	107.2	PASS	70-125
N030017-008D	SAMP	5	45138.6	54445	82.91	PASS	70-125	1237235.2	1494072.9	82.81	PASS	70-125
N030017-009C	SAMP	1	30717.5	54445	56.42	NR!	70-125	845695.6	1494072.9	56.6	NR!	70-125
N030017-009C	SAMP	5	45040.8	54445	82.73	PASS	70-125	1264570.2	1494072.9	84.64	PASS	70-125

INTERNAL STANDARD: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030017-010C	SAMP	1	32044.4	54445	58.86	NR!	70-125	866501.8	1494072.9	58	NR!	70-125
N030017-010C	SAMP	5	44644.2	54445	82	PASS	70-125	1244837.8	1494072.9	83.32	PASS	70-125
N030017-011D	SAMP	1	35469.4	54445	65.15	NR!	70-125	970228.3	1494072.9	64.94	NR!	70-125
N030017-011D	SAMP	5	46794.8	54445	85.95	PASS	70-125	1333943.9	1494072.9	89.28	PASS	70-125
N030017-012C	SAMP	1	36643.2	54445	67.3	NR!	70-125	1033345.9	1494072.9	69.16	NR!	70-125
N030017-012C	SAMP	5	48128.6	54445	88.4	PASS	70-125	1413776.7	1494072.9	94.63	PASS	70-125
N030017-013C	SAMP	1	43074.4	54445	79.12	PASS	70-125	1176895.9	1494072.9	78.77	PASS	70-125
CCV3	CCV	1	51074.2	54445	93.81	PASS	70-125	1515381.8	1494072.9	101.43	PASS	70-125
CCB3	CCB	1	50150.4	54445	92.11	PASS	70-125	1508208.8	1494072.9	100.95	PASS	70-125
N030017-013C	SAMP	5	45054.3	54445	82.75	PASS	70-125	1319136.1	1494072.9	88.29	PASS	70-125
N030044-001D	SAMP	1	35455	54445	65.12	NR!	70-125	1012276.5	1494072.9	67.75	NR!	70-125
N030044-001D	SAMP	5	46006.8	54445	84.5	PASS	70-125	1328822.1	1494072.9	88.94	PASS	70-125
N030044-002D	SAMP	1	36450.4	54445	66.95	NR!	70-125	997495.2	1494072.9	66.76	NR!	70-125
N030044-002D	SAMP	5	45092	54445	82.82	PASS	70-125	1282688.6	1494072.9	85.85	PASS	70-125
N030044-003C	SAMP	1	42541.8	54445	78.14	PASS	70-125	1172701.7	1494072.9	78.49	PASS	70-125
N030044-003C	SAMP	5	47677.3	54445	87.57	PASS	70-125	1365470.9	1494072.9	91.39	PASS	70-125
N030044-004C	SAMP	1	28914.2	54445	53.11	NR!	70-125	789452.8	1494072.9	52.84	NR!	70-125
N030044-004C	SAMP	5	37021.9	54445	68	NR!	70-125	1036038.7	1494072.9	69.34	NR!	70-125
N030044-004C	SAMP	50	48434.9	54445	88.96	PASS	70-125	1380939.7	1494072.9	92.43	PASS	70-125
CCV4	CCV	1	48632.2	54445	89.32	PASS	70-125	1474169.3	1494072.9	98.67	PASS	70-125
CCB4	CCB	1	47491.1	54445	87.23	PASS	70-125	1470746.5	1494072.9	98.44	PASS	70-125
LLCCV1	CCV2	1	46747.6	54445	85.86	PASS	70-125	1454392.7	1494072.9	97.34	PASS	70-125
ICSA2	ICSA	1	45309.5	54445	83.22	PASS	70-125	1282548.9	1494072.9	85.84	PASS	70-125
ICSAB2	ICSAB	1	45003	54445	82.66	PASS	70-125	1314014.2	1494072.9	87.95	PASS	70-125
N030044-005C	SAMP	1	43322.9	54445	79.57	PASS	70-125	1185329.1	1494072.9	79.34	PASS	70-125
N030044-005C	SAMP	5	45230.2	54445	83.075	PASS	70-125	1304338.3	1494072.9	87.3	PASS	70-125
N030044-006D	SAMP	1	45849.8	54445	84.21	PASS	70-125	1284755.8	1494072.9	85.99	PASS	70-125
N030044-006D	SAMP	5	48108.4	54445	88.36	PASS	70-125	1359062.8	1494072.9	90.96	PASS	70-125
N030044-006D	SAMP	25	46948.4	54445	86.23	PASS	70-125	1389100.2	1494072.9	92.97	PASS	70-125
N030044-007D	SAMP	1	44216.4	54445	81.21	PASS	70-125	1199142.4	1494072.9	80.26	PASS	70-125
N030044-007D	SAMP	5	46846.1	54445	86.043	PASS	70-125	1314834.9	1494072.9	88.003	PASS	70-125
N030044-007D	SAMP	25	46666.8	54445	85.71	PASS	70-125	1383053.4	1494072.9	92.57	PASS	70-125
N030044-008D	SAMP	1	34485.1	54445	63.34	NR!	70-125	933599.2	1494072.9	62.49	NR!	70-125
N030044-008D	SAMP	5	43711.7	54445	80.29	PASS	70-125	1188511.4	1494072.9	79.55	PASS	70-125
CCV5	CCV	1	50432.4	54445	92.63	PASS	70-125	1482843.5	1494072.9	99.25	PASS	70-125
CCB5	CCB	1	48205.5	54445	88.54	PASS	70-125	1462772.5	1494072.9	97.91	PASS	70-125
N030044-008D	SAMP	50	45757.4	54445	84.043	PASS	70-125	1349392.1	1494072.9	90.32	PASS	70-125
N030044-009C	SAMP	1	37926	54445	69.66	NR!	70-125	1080884.5	1494072.9	72.34	PASS	70-125
N030044-009C	SAMP	5	47798.4	54445	87.79	PASS	70-125	1288301.6	1494072.9	86.23	PASS	70-125
CCV6	CCV	1	42531.9	54445	78.12	PASS	70-125	1340896.5	1494072.9	89.75	PASS	70-125
CCB6	CCB	1	42422.8	54445	77.92	PASS	70-125	1345230.2	1494072.9	90.038	PASS	70-125

INTERNAL STANDARD: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV7	CCV	1	42165.4	54445	77.45	PASS	70-125	1319200.9	1494072.9	88.3	PASS	70-125
CCB7	CCB	1	42394.8	54445	77.87	PASS	70-125	1327286.8	1494072.9	88.84	PASS	70-125
LLCCV2	CCV2	1	41181.6	54445	75.64	PASS	70-125	1331834.5	1494072.9	89.14	PASS	70-125
ICSA3	ICSA	1	40117	54445	73.68	PASS	70-125	1149196.4	1494072.9	76.92	PASS	70-125
ICSAB3	ICSAB	1	41931.4	54445	77.016	PASS	70-125	1172469	1494072.9	78.47	PASS	70-125

INTERNAL STANDARD: 180515A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	37440.2	37440.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	39989.7	37440.2	106.81	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	38058.5	37440.2	101.65	PASS	70-125
Std3-5/50 ppb	ICAL	1	38175.5	37440.2	101.96	PASS	70-125
Std4-10/100 ppb	ICAL	1	38631.1	37440.2	103.18	PASS	70-125
Std5-20/200 ppb	ICAL	1	37929.3	37440.2	101.31	PASS	70-125
Std6-40/400 ppb	ICAL	1	34455	37440.2	92.027	PASS	70-125
Std7-100/1000 ppb	ICAL	1	36754.4	37440.2	98.17	PASS	70-125
Std8-200/2000 ppb	ICAL	1	36684.2	37440.2	97.98	PASS	70-125
ICV	ICV	1	28917.4	37440.2	77.24	PASS	70-125
ICB	ICB	1	35998.2	37440.2	96.15	PASS	70-125
LLICV	CCV1	1	37226.6	37440.2	99.43	PASS	70-125
ICSA1	ICSA	1	37374.6	37440.2	99.82	PASS	70-125
ICSAB1	ICSAB	1	37090.8	37440.2	99.067	PASS	70-125
LLICV	CCV1	1	38295.7	37440.2	102.28	PASS	70-125
N030017-005D	SAMP	1	31289.6	37440.2	83.57	PASS	70-125
CCV1	CCV	1	37350.2	37440.2	99.76	PASS	70-125
CCB1	CCB	1	36179.7	37440.2	96.63	PASS	70-125
CCV2	CCV	1	37374.7	37440.2	99.83	PASS	70-125
CCB2	CCB	1	37623	37440.2	100.49	PASS	70-125
CCV3	CCV	1	39646.7	37440.2	105.89	PASS	70-125
CCB3	CCB	1	37050.6	37440.2	98.96	PASS	70-125
LLCCV1	CCV2	1	37669.8	37440.2	100.61	PASS	70-125
ICSA2	ICSA	1	41348.7	37440.2	110.44	PASS	70-125
ICSAB2	ICSAB	1	36088.5	37440.2	96.39	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water **Dilution Test Summary**

Work Order No.: N030017
Test Method: EPA 6020
Analysis Date: 5/12/2018

Matrix: Groundwater
Batch No.: 67911

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Mn and Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030017-001C DT 5X	Arsenic	ug/L	3.832263	PASS	3.940562	2.75%	10
N030017-001C DT 5X	Chromium	ug/L	37.5585	PASS	36.8376	1.96%	10
N030017-001C DT 5X	Manganese	ug/L	4.118212	NA	4.202583	2.01%	10
N030017-001C DT 25X	Molybdenum	ug/L	20.86238	PASS	21.10646	1.16%	10
N030017-001C DT 25X	Selenium	ug/L	0	NA	5.155913	100.00%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030017-001C-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.650	0.10	10.00	3.941	107	80	120				
Manganese	97.958	0.50	100.0	4.203	93.8	80	120				

Sample ID **N030017-001C-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	33.156	2.5	10.00	21.11	120	80	120				S
Selenium	16.507	2.5	10.00	5.156	114	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030017
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N030017-001C-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	45.965	1.0	10.00	36.84	91.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

Method Detection Limit

Analytical Method:	**EPA 6020 / 200.8**	**Matrix:**	**Water**
Digestion Method:	**EPA 3010A**	**Amount of Sample:**	**25 mL**
Date of Analysis:	**9/25,10/2,11/3/17**	**Units:**	**ug/L**
Digestion Date:	**9/21, 9/28,10/9/17**		
Instrument Name:	**ICPMS2**		
Analysts:	**MEI**		

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

May 15, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030044

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 27, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California	
Project:	PG&E Topock - GMP, RC000753.0801	**CASE NARRATIVE**
Lab Order:	N030044	

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N030044-001, -002, -004 and -008 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N030017-001C-MS and N030017-001C-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for SM 4500-NO3F:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N029973-020CMS and N029973-020CMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *15-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N030044
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030044-001A	MW-35-060-Q218	Groundwater	4/27/2018 11:18:00 AM	4/27/2018	5/15/2018
N030044-001B	MW-35-060-Q218	Groundwater	4/27/2018 11:18:00 AM	4/27/2018	5/15/2018
N030044-001C	MW-35-060-Q218	Groundwater	4/27/2018 11:18:00 AM	4/27/2018	5/15/2018
N030044-001D	MW-35-060-Q218	Groundwater	4/27/2018 11:18:00 AM	4/27/2018	5/15/2018
N030044-002A	MW-35-135-Q218	Groundwater	4/27/2018 10:32:00 AM	4/27/2018	5/15/2018
N030044-002B	MW-35-135-Q218	Groundwater	4/27/2018 10:32:00 AM	4/27/2018	5/15/2018
N030044-002C	MW-35-135-Q218	Groundwater	4/27/2018 10:32:00 AM	4/27/2018	5/15/2018
N030044-002D	MW-35-135-Q218	Groundwater	4/27/2018 10:32:00 AM	4/27/2018	5/15/2018
N030044-003A	MW-50-095-Q218	Groundwater	4/27/2018 8:21:00 AM	4/27/2018	5/15/2018
N030044-003B	MW-50-095-Q218	Groundwater	4/27/2018 8:21:00 AM	4/27/2018	5/15/2018
N030044-003C	MW-50-095-Q218	Groundwater	4/27/2018 8:21:00 AM	4/27/2018	5/15/2018
N030044-004A	MW-50-200-Q218	Groundwater	4/27/2018 8:57:00 AM	4/27/2018	5/15/2018
N030044-004B	MW-50-200-Q218	Groundwater	4/27/2018 8:57:00 AM	4/27/2018	5/15/2018
N030044-004C	MW-50-200-Q218	Groundwater	4/27/2018 8:57:00 AM	4/27/2018	5/15/2018
N030044-005A	MW-19-Q218	Groundwater	4/27/2018 9:36:00 AM	4/27/2018	5/15/2018
N030044-005B	MW-19-Q218	Groundwater	4/27/2018 9:36:00 AM	4/27/2018	5/15/2018
N030044-005C	MW-19-Q218	Groundwater	4/27/2018 9:36:00 AM	4/27/2018	5/15/2018
N030044-006A	MW-20-070-Q218	Groundwater	4/27/2018 8:09:00 AM	4/27/2018	5/15/2018
N030044-006B	MW-20-070-Q218	Groundwater	4/27/2018 8:09:00 AM	4/27/2018	5/15/2018
N030044-006C	MW-20-070-Q218	Groundwater	4/27/2018 8:09:00 AM	4/27/2018	5/15/2018
N030044-006D	MW-20-070-Q218	Groundwater	4/27/2018 8:09:00 AM	4/27/2018	5/15/2018
N030044-007A	MW-20-100-Q218	Groundwater	4/27/2018 9:03:00 AM	4/27/2018	5/15/2018
N030044-007B	MW-20-100-Q218	Groundwater	4/27/2018 9:03:00 AM	4/27/2018	5/15/2018
N030044-007C	MW-20-100-Q218	Groundwater	4/27/2018 9:03:00 AM	4/27/2018	5/15/2018
N030044-007D	MW-20-100-Q218	Groundwater	4/27/2018 9:03:00 AM	4/27/2018	5/15/2018
N030044-008A	MW-20-130-Q218	Groundwater	4/27/2018 9:46:00 AM	4/27/2018	5/15/2018
N030044-008B	MW-20-130-Q218	Groundwater	4/27/2018 9:46:00 AM	4/27/2018	5/15/2018
N030044-008C	MW-20-130-Q218	Groundwater	4/27/2018 9:46:00 AM	4/27/2018	5/15/2018
N030044-008D	MW-20-130-Q218	Groundwater	4/27/2018 9:46:00 AM	4/27/2018	5/15/2018

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.0801
Lab Order:	N030044
Contract No:	

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030044-009A	MW-31-060-Q218	Groundwater	4/27/2018 10:48:00 AM	4/27/2018	5/15/2018
N030044-009B	MW-31-060-Q218	Groundwater	4/27/2018 10:48:00 AM	4/27/2018	5/15/2018
N030044-009C	MW-31-060-Q218	Groundwater	4/27/2018 10:48:00 AM	4/27/2018	5/15/2018
N030044-010A	MW-708-Q218	Groundwater	4/27/2018 11:25:00 AM	4/27/2018	5/15/2018
N030044-011A	MW-709-Q218	Groundwater	4/27/2018 11:05:00 AM	4/27/2018	5/15/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 11:18:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180427B** QC Batch: **R123693** PrepDate							Analyst: **LR**
Specific Conductance	5900	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 10:32:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180427B** QC Batch: **R123693** PrepDate							Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Client Sample ID: MW-50-095-Q218
Lab Order: N030044
Collection Date: 4/27/2018 8:21:00 AM
Project: PG&E Topock - GMP, RC000753.0801
Matrix: GROUNDWATER
Lab ID: N030044-003

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180427B**	QC Batch: **R123693**			PrepDate			Analyst: **LR**
Specific Conductance	5000	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-50-200-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 8:57:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427B**	QC Batch: **R123693**			PrepDate			Analyst: **LR**
Specific Conductance	20000	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-19-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:36:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427B**	QC Batch: **R123693**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 8:09:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180427B** QC Batch: **R123693** PrepDate							Analyst: **LR**
Specific Conductance	1800	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-100-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427B**	QC Batch: **R123693**			PrepDate			Analyst: **LR**
Specific Conductance	2100	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:46:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180427B** QC Batch: **R123693** PrepDate							Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180427B** QC Batch: **R123693** PrepDate							Analyst: **LR**
Specific Conductance	3200	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030044-004BDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **123693**
Client ID: **ZZZZZZ**	Batch ID: **R123693**	TestNo: **EPA 120.1**		Analysis Date: **4/27/2018**	SeqNo: **3010740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	19530.000	0.10						19560	0.153	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 11:18:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180430A**	QC Batch: **R123727**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	22	0.17	1.0		µg/L	5	4/30/2018 11:30 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	24	0.13	1.0		µg/L	1	5/12/2018 03:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 10:32:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180430A**	QC Batch: **R123727**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	26	0.17	1.0		µg/L	5	4/30/2018 11:49 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	25	0.13	1.0		µg/L	1	5/12/2018 03:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-50-095-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 8:21:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180430A** QC Batch: **R123727** PrepDate							Analyst: **RAB**
Hexavalent Chromium	11	0.17	1.0		µg/L	5	4/30/2018 12:08 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018**							Analyst: **CEI**
Chromium	10	0.13	1.0		µg/L	1	5/12/2018 03:34 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-50-200-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 8:57:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180430A** QC Batch: **R123727** PrepDate							Analyst: **RAB**
Hexavalent Chromium	6500	33	200		µg/L	1000	4/30/2018 12:26 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018**							Analyst: **CEI**
Chromium	6800	6.5	50		µg/L	50	5/12/2018 03:56 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-19-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:36:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180430A**	QC Batch: **R123727**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	370	1.7	10		µg/L	50	4/30/2018 01:04 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	380	0.65	5.0		µg/L	5	5/12/2018 04:35 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 8:09:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180430A** QC Batch: **R123727**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1700	6.6	40		µg/L	200	4/30/2018 01:23 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180512A** QC Batch: **67911**				PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	1700	3.2	25		µg/L	25	5/12/2018 04:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-100-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180430A**	QC Batch: **R123727**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1800	6.6	40		µg/L	200	4/30/2018 01:42 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	1800	3.2	25		µg/L	25	5/12/2018 05:09 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:46:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180430A** QC Batch: **R123727**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	6900	33	200		µg/L	1000	4/30/2018 02:01 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180512A** QC Batch: **67911**				PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	7000	6.5	50		µg/L	50	5/12/2018 05:37 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180430A**	QC Batch: **R123727**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	380	1.7	10		µg/L	50	4/30/2018 02:20 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	390	0.65	5.0		µg/L	5	5/12/2018 05:48 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-708-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180430A** QC Batch: **R123727** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/30/2018 02:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-709-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 11:05:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180430A** QC Batch: **R123727** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/30/2018 03:17 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123727** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **PBW** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123727** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **LCSW** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.144	0.20	5.000	0	103	90	110				

Sample ID **N030044-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	47.173	1.0	25.00	22.39	99.1	90	110				

Sample ID **N030044-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	37.018	1.0	25.00	11.00	104	90	110				

Sample ID **N030044-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11533.600	200	5000	6455	102	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030044-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	623.930	10	250.0	365.8	103	90	110				

Sample ID **N030044-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2734.280	40	1000	1703	103	90	110				

Sample ID **N030044-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2796.080	40	1000	1753	104	90	110				

Sample ID **N030044-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12136.800	200	5000	6918	104	90	110				

Sample ID **N030044-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	636.540	10	250.0	379.0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030044-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.168	0.20	1.000	0.1051	106	90	110				

Sample ID **N030044-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.133	0.20	1.000	0.1101	102	90	110				

Sample ID **N030044-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	21.917	1.0						22.39	2.13	20	

Sample ID **N030044-004AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11654.500	200	5000	6455	104	90	110	11530	1.04	20	

Sample ID **N030044-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	51.357	1.0	25.00	26.13	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-67911** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **PBW** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-67911** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **LCSW** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.197	1.0	10.00	0	102	85	115				

Sample ID **N030017-001C-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	43.552	1.0	10.00	36.84	67.1	75	125				S

Sample ID **N030017-001C-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	43.882	1.0	10.00	36.84	70.4	75	125	43.55	0.754	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 11:18:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	2.2	0.063	0.10		mg/L	2	5/4/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 10:32:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	2.7	0.16	0.25		mg/L	5	5/4/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 8:09:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	9.4	0.32	0.50		mg/L	10	5/4/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-100-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	8.7	0.32	0.50		mg/L	10	5/4/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:46:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	11	0.63	1.0		mg/L	20	5/4/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R123845** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **PBW** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R123845** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **LCSW** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	85	115				

Sample ID **N029973-009CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ZZZZZZ** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID **N029973-020CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ZZZZZZ** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.373	0.10	1.000	0.9934	138	75	125				S

Sample ID **N029973-020CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ZZZZZZ** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.245	0.10	1.000	0.9934	125	75	125	2.373	5.54	20	S

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030044
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N030044-001

Client Sample ID: MW-35-060-Q218
Collection Date: 4/27/2018 11:18:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate **5/2/2018**			Analyst: **CEI**
Arsenic	1.1	0.081	0.10		µg/L	1	5/12/2018 03:12 PM
Manganese	ND	0.26	0.50		µg/L	1	5/12/2018 03:12 PM
Molybdenum	10	1.1	2.5		µg/L	5	5/12/2018 03:17 PM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 03:17 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 10:32:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate	**5/2/2018**		Analyst: **CEI**
Arsenic	0.83	0.081	0.10		µg/L	1	5/12/2018 03:23 PM
Manganese	1.5	0.26	0.50		µg/L	1	5/12/2018 03:23 PM
Molybdenum	19	1.1	2.5		µg/L	5	5/12/2018 03:28 PM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 03:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 8:09:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Molybdenum	31	0.21	0.50		µg/L	1	5/12/2018 04:41 PM
Selenium	5.6	0.36	0.50		µg/L	1	5/12/2018 04:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-100-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Molybdenum	3.6	0.21	0.50		µg/L	1	5/12/2018 04:58 PM
Selenium	6.3	0.36	0.50		µg/L	1	5/12/2018 04:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:46:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-008		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	4.5	0.081	0.10		µg/L	1	5/12/2018 05:14 PM
Manganese	3.6	0.26	0.50		µg/L	1	5/12/2018 05:14 PM
Molybdenum	45	1.1	2.5		µg/L	5	5/12/2018 05:20 PM
Selenium	28	1.8	2.5		µg/L	5	5/12/2018 05:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate **5/2/2018**			Analyst: **CEI**
Arsenic	1.1	0.081	0.10		µg/L	1	5/12/2018 05:42 PM
Manganese	ND	0.26	0.50		µg/L	1	5/12/2018 05:42 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-67911** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **PBW** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-67911** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **LCSW** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.387	0.10	10.00	0	104	85	115				
Manganese	103.929	0.50	100.0	0	104	85	115				
Molybdenum	9.983	0.50	10.00	0	99.8	85	115				
Selenium	10.203	0.50	10.00	0	102	85	115				

Sample ID **N030017-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.135	0.10	10.00	3.941	102	75	125				
Manganese	95.296	0.50	100.0	4.203	91.1	75	125				

Sample ID **N030017-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	32.217	2.5	10.00	21.11	111	75	125				
Selenium	15.916	2.5	10.00	5.156	108	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030017-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.014	0.10	10.00	3.941	101	75	125	14.14	0.860	20	
Manganese	95.369	0.50	100.0	4.203	91.2	75	125	95.30	0.0765	20	

Sample ID **N030017-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	32.602	2.5	10.00	21.11	115	75	125	32.22	1.19	20	
Selenium	14.161	2.5	10.00	5.156	90.0	75	125	15.92	11.7	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:	Global ID:
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com / P.O.#	
Submitted By: Gantt Jeffers	Phone: 916-786-3302 / Fax:	Phone: 949-727-1400, ext 200 / Fax:	
Title: Geologist II	Sampled By: Jason Mahn	Matrix: Ground x / Sediment; Potable / Soil; NPDES / Other Solid; Surface	
Signature: / Date: 4/27/2018	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.		
I hereby authorize ASSET Labs to perform the tests indicated below.	Signature: / Date: 4/27/2018		
Project Name: PG&E Topock - GMP			
Project Number: RC000753.0801			

Sample Receipt Condition (Y N)
1. Chilled ✓
2. Headspace
3. Container Intact
4. Seal Present
5. IR number 2
6. Method of Cooling: ice

Sample Temp: 2.9°C / 3.1°C
Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	250 mL poly: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	2x250 mL poly: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	1 liter poly: Bromide, Sulfate, Chloride (EPA 300.0)	1 liter poly: Specific Conductance (EPA 120.1)	1 liter poly: Total Dissolved Solids (SM92540)	1 liter poly: Alkalinity, Total as CaCO3 (SM2320B)	125 mL poly: Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4	500 mL poly: Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3	500 mL poly: Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3	500 mL poly: Dissolved metals (SW6010B FF) (Cr); HNO3	500 mL poly: Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3	500 mL poly: Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030044 - 01	MW-35-060-Q218	4/27/2018	11:18		X			X			X	X					E	4	P	BNS	
2	- 02	MW-35-135-Q218	4/27/2018	10:32		X			X			X	X					E	4	P	BNS	
3	- 03	MW-50-095-Q218	4/27/2018	8:21		X			X						X			E	3	P	BN	
4	- 04	MW-50-200-Q218	4/27/2018	8:57		X			X						X			E	3	P	BN	
5	- 05	MW-19-Q218	4/27/2018	9:36		X			X						X			E	3	P	BN	
6	- 06	MW-20-070-Q218	4/27/2018	8:09		X			X			X		X				E	4	P	BNS	
7	- 07	MW-20-100-Q218	4/27/2018	9:03		X			X			X		X				E	4	P	BNS	
8	- 08	MW-20-130-Q218	4/27/2018	9:46		X			X			X	X					E	4	P	BNS	
9	- 09	MW-31-060-Q218	4/27/2018	10:48		X			X							X		E	3	P	BN	
10	- 10	MW-708-Q218	4/27/2018	11:25		X												E	1	P	B	

Relinquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
	4/27/18 1150		4/27/18 1150
	4/27/18 1412		4/27/18 1412

Turn Around Time (TAT)
- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

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P: 562.219.7435 F:562.219.7436
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CHAIN OF CUSTODY RECORD

Client:	Arcadis
Address:	1410 Rocky Ridge Dr # 330
Address:	Roseville, CA 95661
Phone:	916-786-3302
Fax:	
Submitted By:	Gantt Jeffers
Title:	Geologist II
Signature:	
Date:	4/27/2018
Project Name:	PG&E Topock - GMP
Project Number:	RC000753.0801
Report to:	Dan Bush
Company:	Arcadis
Email:	dan.bush@arcadis.com daniel.moore@critigen.com
Address:	1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone:	916-786-3302
Fax:	
Sampled By:	Jason Mahn
Signature:	
Date:	4/27/2018
Bill to:	Marty Bloes
Address:	
Address:	
Email to:	mbloes@pivox.com
P.O.#	
Phone:	949-727-1400, ext 200
Fax:	

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		✓
3. Container Intact		
4. Seal Present		
5. IR number	3	
6. Method of Cooling: Ice		
Sample Temp: 5.2		

Courier:

Tracking No.:

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly	Specific Conductance (EPA 120.1) — 1 liter poly	Total Dissolved Solids (SM92540) — 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly	Nitrate/Nitrite (SM4500N03 F) Nitrate: H2SO4 — 125 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030044 - 11	MW-709-Q218	4/27/2018	11:05		X												E	1	P	B	
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	4/27/18 1150		4/27/18 1150
	4/27/18 1412		4/27/18 1412

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1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
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Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 4/27/2018 Workorder: N030044

Rep sample Temp (Deg C): 2.9/3.1 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

	Yes	No	Not Present / NA
1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR YRT 5/3/2018 Reviewed By: Hk 05/03/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/1/2018 6:08 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>, Kalib Sumter <Kalib.Sumter@critigen.com>, Dan Moore <Daniel.Moore@critigen.com>

Hi Yoandra,
Method 6020 is acceptable.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, April 30, 2018 8:48 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)

Hi Laura,

Please kindly check the attached COCs. Some samples are requested to be analyzed for As, Cr, Mn, Mo and Se by 6010.

Please kindly confirm if they can be analyzed by 6020 instead of 6010, as we have been doing before.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

ASSET Laboratories

WORK ORDER Summary

27-Apr-18

WorkOrder: N030044

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** RTNE **Date Received:** 4/27/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030044-001A	MW-35-060-Q218	4/27/2018 11:18:00 AM	5/11/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-001B			5/11/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-001C			5/11/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030044-001D			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030044-002A	MW-35-135-Q218	4/27/2018 10:32:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-002B			5/11/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-002C			5/11/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030044-002D			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030044-003A	MW-50-095-Q218	4/27/2018 8:21:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-003B			5/11/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-003C			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030044-004A	MW-50-200-Q218	4/27/2018 8:57:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-004B			5/11/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-004C			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030044-005A	MW-19-Q218	4/27/2018 9:36:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-18

WorkOrder: N030044

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** RTNE **Date Received:** 4/27/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030044-005B	MW-19-Q218	4/27/2018 9:36:00 AM	5/11/2018	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-005C			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030044-006A	MW-20-070-Q218	4/27/2018 8:09:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-006B			5/11/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-006C			5/11/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030044-006D			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030044-007A	MW-20-100-Q218	4/27/2018 9:03:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-007B			5/11/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-007C			5/11/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030044-007D			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030044-008A	MW-20-130-Q218	4/27/2018 9:46:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-008B			5/11/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-008C			5/11/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030044-008D			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-18

WorkOrder: N030044

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** RTNE **Date Received:** 4/27/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030044-009A	MW-31-060-Q218	4/27/2018 10:48:00 AM	5/11/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-009B			5/11/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-009C			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030044-010A	MW-708-Q218	4/27/2018 11:25:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-011A	MW-709-Q218	4/27/2018 11:05:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-012A	FOLDER	5/11/2018	5/11/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/11/2018		Folder	Folder	☐	☐	☐	LAB
			5/11/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.0801

ASSET Laboratories Work Order:

N030044

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N030044

May 15, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030044

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 27, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.0801
Lab Order:	N030044

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N030044-001, -002, -004 and -008 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N030017-001C-MS and N030017-001C-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for SM 4500-NO3F:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria in QC samples N029973-020CMS and N029973-020CMSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *15-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N030044
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030044-001A	MW-35-060-Q218	Groundwater	4/27/2018 11:18:00 AM	4/27/2018	5/15/2018
N030044-001B	MW-35-060-Q218	Groundwater	4/27/2018 11:18:00 AM	4/27/2018	5/15/2018
N030044-001C	MW-35-060-Q218	Groundwater	4/27/2018 11:18:00 AM	4/27/2018	5/15/2018
N030044-001D	MW-35-060-Q218	Groundwater	4/27/2018 11:18:00 AM	4/27/2018	5/15/2018
N030044-002A	MW-35-135-Q218	Groundwater	4/27/2018 10:32:00 AM	4/27/2018	5/15/2018
N030044-002B	MW-35-135-Q218	Groundwater	4/27/2018 10:32:00 AM	4/27/2018	5/15/2018
N030044-002C	MW-35-135-Q218	Groundwater	4/27/2018 10:32:00 AM	4/27/2018	5/15/2018
N030044-002D	MW-35-135-Q218	Groundwater	4/27/2018 10:32:00 AM	4/27/2018	5/15/2018
N030044-003A	MW-50-095-Q218	Groundwater	4/27/2018 8:21:00 AM	4/27/2018	5/15/2018
N030044-003B	MW-50-095-Q218	Groundwater	4/27/2018 8:21:00 AM	4/27/2018	5/15/2018
N030044-003C	MW-50-095-Q218	Groundwater	4/27/2018 8:21:00 AM	4/27/2018	5/15/2018
N030044-004A	MW-50-200-Q218	Groundwater	4/27/2018 8:57:00 AM	4/27/2018	5/15/2018
N030044-004B	MW-50-200-Q218	Groundwater	4/27/2018 8:57:00 AM	4/27/2018	5/15/2018
N030044-004C	MW-50-200-Q218	Groundwater	4/27/2018 8:57:00 AM	4/27/2018	5/15/2018
N030044-005A	MW-19-Q218	Groundwater	4/27/2018 9:36:00 AM	4/27/2018	5/15/2018
N030044-005B	MW-19-Q218	Groundwater	4/27/2018 9:36:00 AM	4/27/2018	5/15/2018
N030044-005C	MW-19-Q218	Groundwater	4/27/2018 9:36:00 AM	4/27/2018	5/15/2018
N030044-006A	MW-20-070-Q218	Groundwater	4/27/2018 8:09:00 AM	4/27/2018	5/15/2018
N030044-006B	MW-20-070-Q218	Groundwater	4/27/2018 8:09:00 AM	4/27/2018	5/15/2018
N030044-006C	MW-20-070-Q218	Groundwater	4/27/2018 8:09:00 AM	4/27/2018	5/15/2018
N030044-006D	MW-20-070-Q218	Groundwater	4/27/2018 8:09:00 AM	4/27/2018	5/15/2018
N030044-007A	MW-20-100-Q218	Groundwater	4/27/2018 9:03:00 AM	4/27/2018	5/15/2018
N030044-007B	MW-20-100-Q218	Groundwater	4/27/2018 9:03:00 AM	4/27/2018	5/15/2018
N030044-007C	MW-20-100-Q218	Groundwater	4/27/2018 9:03:00 AM	4/27/2018	5/15/2018
N030044-007D	MW-20-100-Q218	Groundwater	4/27/2018 9:03:00 AM	4/27/2018	5/15/2018
N030044-008A	MW-20-130-Q218	Groundwater	4/27/2018 9:46:00 AM	4/27/2018	5/15/2018
N030044-008B	MW-20-130-Q218	Groundwater	4/27/2018 9:46:00 AM	4/27/2018	5/15/2018
N030044-008C	MW-20-130-Q218	Groundwater	4/27/2018 9:46:00 AM	4/27/2018	5/15/2018
N030044-008D	MW-20-130-Q218	Groundwater	4/27/2018 9:46:00 AM	4/27/2018	5/15/2018

CLIENT:	ARCADIS U.S., Inc. - California	
Project:	PG&E Topock - GMP, RC000753.0801	**Work Order Sample Summary**
Lab Order:	N030044	
Contract No:		

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030044-009A	MW-31-060-Q218	Groundwater	4/27/2018 10:48:00 AM	4/27/2018	5/15/2018
N030044-009B	MW-31-060-Q218	Groundwater	4/27/2018 10:48:00 AM	4/27/2018	5/15/2018
N030044-009C	MW-31-060-Q218	Groundwater	4/27/2018 10:48:00 AM	4/27/2018	5/15/2018
N030044-010A	MW-708-Q218	Groundwater	4/27/2018 11:25:00 AM	4/27/2018	5/15/2018
N030044-011A	MW-709-Q218	Groundwater	4/27/2018 11:05:00 AM	4/27/2018	5/15/2018

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 11:18:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180427B** QC Batch: **R123693** PrepDate							Analyst: **LR**
Specific Conductance	5900	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 10:32:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427B**	QC Batch: **R123693**			PrepDate			Analyst: **LR**
Specific Conductance	10000	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-50-095-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 8:21:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427B**	QC Batch: **R123693**			PrepDate			Analyst: **LR**
Specific Conductance	5000	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-50-200-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 8:57:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427B**	QC Batch: **R123693**			PrepDate			Analyst: **LR**
Specific Conductance	20000	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-19-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:36:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180427B** QC Batch: **R123693** PrepDate Analyst: **LR**							
Specific Conductance	2000	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

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ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 8:09:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427B**	QC Batch: **R123693**			PrepDate			Analyst: **LR**
Specific Conductance	1800	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-100-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180427B** QC Batch: **R123693** PrepDate							Analyst: **LR**
Specific Conductance	2100	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:46:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427B**	QC Batch: **R123693**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180427B** QC Batch: **R123693**				PrepDate			Analyst: **LR**
Specific Conductance	3200	0.10	0.10		umhos/cm	1	4/27/2018 04:00 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030044-004BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123693**
Client ID: **ZZZZZZ** Batch ID: **R123693** TestNo: **EPA 120.1** Analysis Date: **4/27/2018** SeqNo: **3010740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	19530.000	0.10						19560	0.153	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030044
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N030044-001

Client Sample ID: MW-35-060-Q218
Collection Date: 4/27/2018 11:18:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180430A** QC Batch: **R123727**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	22	0.17	1.0		µg/L	5	4/30/2018 11:30 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A** QC Batch: **67911**				PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	24	0.13	1.0		µg/L	1	5/12/2018 03:12 PM

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 10:32:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180430A**	QC Batch: **R123727**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	26	0.17	1.0		µg/L	5	4/30/2018 11:49 AM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	25	0.13	1.0		µg/L	1	5/12/2018 03:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-50-095-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 8:21:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180430A** QC Batch: **R123727** PrepDate Analyst: **RAB**							
Hexavalent Chromium	11	0.17	1.0		µg/L	5	4/30/2018 12:08 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018** Analyst: **CEI**							
Chromium	10	0.13	1.0		µg/L	1	5/12/2018 03:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-50-200-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 8:57:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180430A**	QC Batch: **R123727**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	6500	33	200		µg/L	1000	4/30/2018 12:26 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	6800	6.5	50		µg/L	50	5/12/2018 03:56 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-19-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:36:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180430A**	QC Batch: **R123727**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	370	1.7	10		µg/L	50	4/30/2018 01:04 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	380	0.65	5.0		µg/L	5	5/12/2018 04:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 8:09:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180430A** QC Batch: **R123727**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1700	6.6	40		µg/L	200	4/30/2018 01:23 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512A** QC Batch: **67911**				PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	1700	3.2	25		µg/L	25	5/12/2018 04:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030044
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N030044-007

Client Sample ID: MW-20-100-Q218
Collection Date: 4/27/2018 9:03:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180430A**	QC Batch: **R123727**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1800	6.6	40		µg/L	200	4/30/2018 01:42 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	1800	3.2	25		µg/L	25	5/12/2018 05:09 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:46:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180430A** QC Batch: **R123727** PrepDate Analyst: **RAB**							
Hexavalent Chromium	6900	33	200		µg/L	1000	4/30/2018 02:01 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018** Analyst: **CEI**							
Chromium	7000	6.5	50		µg/L	50	5/12/2018 05:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180430A**	QC Batch: **R123727**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	380	1.7	10		µg/L	50	4/30/2018 02:20 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	390	0.65	5.0		µg/L	5	5/12/2018 05:48 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-708-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 11:25:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180430A**	QC Batch: **R123727**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/30/2018 02:58 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-709-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 11:05:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180430A**	QC Batch: **R123727**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	4/30/2018 03:17 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123727** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **PBW** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123727** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **LCSW** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.144	0.20	5.000	0	103	90	110				

Sample ID **N030044-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	47.173	1.0	25.00	22.39	99.1	90	110				

Sample ID **N030044-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	37.018	1.0	25.00	11.00	104	90	110				

Sample ID **N030044-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11533.600	200	5000	6455	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030044-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123727**
Client ID: **ZZZZZZ**	Batch ID: **R123727**	TestNo: **EPA 218.6**	Analysis Date: **4/30/2018**	SeqNo: **3011940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	623.930	10	250.0	365.8	103	90	110				

Sample ID **N030044-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123727**
Client ID: **ZZZZZZ**	Batch ID: **R123727**	TestNo: **EPA 218.6**	Analysis Date: **4/30/2018**	SeqNo: **3011942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2734.280	40	1000	1703	103	90	110				

Sample ID **N030044-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123727**
Client ID: **ZZZZZZ**	Batch ID: **R123727**	TestNo: **EPA 218.6**	Analysis Date: **4/30/2018**	SeqNo: **3011944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2796.080	40	1000	1753	104	90	110				

Sample ID **N030044-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123727**
Client ID: **ZZZZZZ**	Batch ID: **R123727**	TestNo: **EPA 218.6**	Analysis Date: **4/30/2018**	SeqNo: **3011946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12136.800	200	5000	6918	104	90	110				

Sample ID **N030044-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123727**
Client ID: **ZZZZZZ**	Batch ID: **R123727**	TestNo: **EPA 218.6**	Analysis Date: **4/30/2018**	SeqNo: **3011948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	636.540	10	250.0	379.0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030044-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.168	0.20	1.000	0.1051	106	90	110				

Sample ID **N030044-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.133	0.20	1.000	0.1101	102	90	110				

Sample ID **N030044-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	21.917	1.0						22.39	2.13	20	

Sample ID **N030044-004AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11654.500	200	5000	6455	104	90	110	11530	1.04	20	

Sample ID **N030044-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	51.357	1.0	25.00	26.13	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-67911** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **PBW** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-67911** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **LCSW** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.197	1.0	10.00	0	102	85	115				

Sample ID **N030017-001C-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	43.552	1.0	10.00	36.84	67.1	75	125				S

Sample ID **N030017-001C-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	43.882	1.0	10.00	36.84	70.4	75	125	43.55	0.754	20	S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 11:18:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	2.2	0.063	0.10		mg/L	2	5/4/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 10:32:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	2.7	0.16	0.25		mg/L	5	5/4/2018

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 8:09:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180504D**	QC Batch: **R123845**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	9.4	0.32	0.50		mg/L	10	5/4/2018

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-100-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:03:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	8.7	0.32	0.50		mg/L	10	5/4/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:46:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180504D** QC Batch: **R123845** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	11	0.63	1.0		mg/L	20	5/4/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R123845** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **PBW** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R123845** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **LCSW** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	85	115				

Sample ID **N029973-009CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ZZZZZZ** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID **N029973-020CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ZZZZZZ** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.373	0.10	1.000	0.9934	138	75	125				S

Sample ID **N029973-020CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123845**
Client ID: **ZZZZZZ** Batch ID: **R123845** TestNo: **SM4500-NO3** Analysis Date: **5/4/2018** SeqNo: **3016323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.245	0.10	1.000	0.9934	125	75	125	2.373	5.54	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 11:18:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-001		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.1	0.081	0.10		µg/L	1	5/12/2018 03:12 PM
Manganese	ND	0.26	0.50		µg/L	1	5/12/2018 03:12 PM
Molybdenum	10	1.1	2.5		µg/L	5	5/12/2018 03:17 PM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 03:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 10:32:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-002		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	0.83	0.081	0.10		µg/L	1	5/12/2018 03:23 PM
Manganese	1.5	0.26	0.50		µg/L	1	5/12/2018 03:23 PM
Molybdenum	19	1.1	2.5		µg/L	5	5/12/2018 03:28 PM
Selenium	ND	1.8	2.5		µg/L	5	5/12/2018 03:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 8:09:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate	**5/2/2018**		Analyst: **CEI**
Molybdenum	31	0.21	0.50		µg/L	1	5/12/2018 04:41 PM
Selenium	5.6	0.36	0.50		µg/L	1	5/12/2018 04:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030044
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N030044-007

Client Sample ID: MW-20-100-Q218
Collection Date: 4/27/2018 9:03:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A**	QC Batch: **67911**			PrepDate		**5/2/2018**	Analyst: **CEI**
Molybdenum	3.6	0.21	0.50		µg/L	1	5/12/2018 04:58 PM
Selenium	6.3	0.36	0.50		µg/L	1	5/12/2018 04:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q218
Lab Order:	N030044	**Collection Date:**	4/27/2018 9:46:00 AM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030044-008		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180512A** QC Batch: **67911** PrepDate **5/2/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	4.5	0.081	0.10		µg/L	1	5/12/2018 05:14 PM
Manganese	3.6	0.26	0.50		µg/L	1	5/12/2018 05:14 PM
Molybdenum	45	1.1	2.5		µg/L	5	5/12/2018 05:20 PM
Selenium	28	1.8	2.5		µg/L	5	5/12/2018 05:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Client Sample ID: MW-31-060-Q218
Lab Order: N030044
Collection Date: 4/27/2018 10:48:00 AM
Project: PG&E Topock - GMP, RC000753.0801
Matrix: GROUNDWATER
Lab ID: N030044-009

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512A** QC Batch: **67911**				PrepDate **5/2/2018**			Analyst: **CEI**
Arsenic	1.1	0.081	0.10		µg/L	1	5/12/2018 05:42 PM
Manganese	ND	0.26	0.50		µg/L	1	5/12/2018 05:42 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-67911** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **PBW** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-67911** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **LCSW** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.387	0.10	10.00	0	104	85	115				
Manganese	103.929	0.50	100.0	0	104	85	115				
Molybdenum	9.983	0.50	10.00	0	99.8	85	115				
Selenium	10.203	0.50	10.00	0	102	85	115				

Sample ID **N030017-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.135	0.10	10.00	3.941	102	75	125				
Manganese	95.296	0.50	100.0	4.203	91.1	75	125				

Sample ID **N030017-001C-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	32.217	2.5	10.00	21.11	111	75	125				
Selenium	15.916	2.5	10.00	5.156	108	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030017-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.014	0.10	10.00	3.941	101	75	125	14.14	0.860	20	
Manganese	95.369	0.50	100.0	4.203	91.2	75	125	95.30	0.0765	20	

Sample ID **N030017-001C-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	32.602	2.5	10.00	21.11	115	75	125	32.22	1.19	20	
Selenium	14.161	2.5	10.00	5.156	90.0	75	125	15.92	11.7	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 2

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: Date: 4/27/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	
Project Name: PG&E Topock - GMP	Signature: Date: 4/27/2018	
Project Number: RC000753.0801		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling: Ice		
Sample Temp: 2.9°C / 3.1°C		
Courier:		
Tracking No.:		

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030044 - 01	MW-35-060-Q218	4/27/2018	11:18		X			X			X	X					E	4	P	BNS	
2	- 02	MW-35-135-Q218	4/27/2018	10:32		X			X			X	X					E	4	P	BNS	
3	- 03	MW-50-095-Q218	4/27/2018	8:21		X			X						X			E	3	P	BN	
4	- 04	MW-50-200-Q218	4/27/2018	8:57		X			X						X			E	3	P	BN	
5	- 05	MW-19-Q218	4/27/2018	9:36		X			X						X			E	3	P	BN	
6	- 06	MW-20-070-Q218	4/27/2018	8:09		X			X			X		X				E	4	P	BNS	
7	- 07	MW-20-100-Q218	4/27/2018	9:03		X			X			X		X				E	4	P	BNS	
8	- 08	MW-20-130-Q218	4/27/2018	9:46		X			X			X	X					E	4	P	BNS	
9	- 09	MW-31-060-Q218	4/27/2018	10:48		X			X							X		E	3	P	BN	
10	- 10	MW-708-Q218	4/27/2018	11:25		X												E	1	P	B	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	4/27/18 1150		4/27/18 1150
Reliquished by (Signature and Printed Name):	Date/Time: 4/27/18 1412	Reliquished by (Signature and Printed Name):	Date/Time: 4/27/18 1412
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Gantt Jeffers
Title: Geologist II
Signature: Date: 4/27/2018
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - GMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
Signature: Date: 4/27/2018

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	3	
6. Method of Cooling: Ice		
Sample Temp: 5.1 °C		

Courier:
Tracking No.:

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly	Specific Conductance (EPA 120.1) — 1 liter poly	Total Dissolved Solids (SM92540) — 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 — 125 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030044 - 11	MW-709-Q218	4/27/2018	11:05		X												E	1	P	B	
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Reliquished by (Signature and Printed Name)	Date/Time	Reliquished by (Signature and Printed Name)	Date/Time
	4/27/18 1150		4/27/18 1150
	4/27/18 1412		4/27/18 1412

Turn Around Time (TAT)
- A < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 4/27/2018 — Workorder: N030044

Rep sample Temp (Deg C): 2.9/3.1 — IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA — Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

	Yes	No	Not Present / NA
1. Shipping container/cooler in good condition?	☑	☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	☐	☐	Not Present ☑
3. Custody seals intact on sample bottles?	☐	☐	Not Present ☑
4. Chain of custody present?	☑	☐	
5. Sampler's name present in COC?	☑	☐	
6. Chain of custody signed when relinquished and received?	☑	☐	
7. Chain of custody agrees with sample labels?	☑	☐	
8. Samples in proper container/bottle?	☑	☐	
9. Sample containers intact?	☑	☐	
10. Sufficient sample volume for indicated test?	☑	☐	
11. All samples received within holding time?	☑	☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	☑	☐	NA ☐
13. Water - VOA vials have zero headspace?	☐	☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	☑	☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	☑	☐	NA ☐
16. Were there Non-Conformance issues at login?	☐	☐	NA ☑
Was Client notified?	☐	☐	NA ☑

Comments:

Checklist Completed By: YR 5/3/2018

Reviewed By: 05/03/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/1/2018 6:08 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>, Kalib Sumter <Kalib.Sumter@critigen.com>, Dan Moore <Daniel.Moore@critigen.com>

Hi Yoandra,
Method 6020 is acceptable.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, April 30, 2018 8:48 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)

Hi Laura,

Please kindly check the attached COCs. Some samples are requested to be analyzed for As, Cr, Mn, Mo and Se by 6010.

Please kindly confirm if they can be analyzed by 6020 instead of 6010, as we have been doing before.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

ASSET Laboratories

WORK ORDER Summary

27-Apr-18

WorkOrder: N030044

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** RTNE **Date Received:** 4/27/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030044-001A	MW-35-060-Q218	4/27/2018 11:18:00 AM	5/11/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-001B			5/11/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-001C			5/11/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030044-001D			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030044-002A	MW-35-135-Q218	4/27/2018 10:32:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-002B			5/11/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-002C			5/11/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030044-002D			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030044-003A	MW-50-095-Q218	4/27/2018 8:21:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-003B			5/11/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-003C			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030044-004A	MW-50-200-Q218	4/27/2018 8:57:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-004B			5/11/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-004C			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030044-005A	MW-19-Q218	4/27/2018 9:36:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-18

WorkOrder: N030044

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** RTNE **Date Received:** 4/27/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030044-005B	MW-19-Q218	4/27/2018 9:36:00 AM	5/11/2018	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-005C			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030044-006A	MW-20-070-Q218	4/27/2018 8:09:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-006B			5/11/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-006C			5/11/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030044-006D			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030044-007A	MW-20-100-Q218	4/27/2018 9:03:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-007B			5/11/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-007C			5/11/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030044-007D			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030044-008A	MW-20-130-Q218	4/27/2018 9:46:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-008B			5/11/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-008C			5/11/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030044-008D			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-18

WorkOrder: N030044

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** RTNE **Date Received:** 4/27/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030044-009A	MW-31-060-Q218	4/27/2018 10:48:00 AM	5/11/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-009B			5/11/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030044-009C			5/11/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030044-010A	MW-708-Q218	4/27/2018 11:25:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-011A	MW-709-Q218	4/27/2018 11:05:00 AM	5/11/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030044-012A	FOLDER	5/11/2018	5/11/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/11/2018		Folder	Folder	☐	☐	☐	LAB
			5/11/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N030044

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123693 **Analyst:** LSR

ASSET #: N030044 **Date Analyzed:** 4/27/2018

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 5/1/2018

2nd Level Reviewer [signature] 5/9/2018 Date:

LOGBOOK DATA,

QUANTITATION REPORT and/or

SPECTRA

Conductivity Logbook

Date: 4/27/18 1100
Analyst: UR CONT'D

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV-180108A	9.75 @ 24.5°C	% Rec: (90-110%)
1412	180131A	1408 @ 24.8°C	
9987	180108B	9960 @ 24.7°C	
99601	180201A	99300 @ 24.8°C	

	Sample ID	Matrix	Reading	Comments
1	NO30017-013B	H2O	4260 @ 22.2°C	
2	13BDP		4240 @ 21.8°C	
3				
4				
5				
6				
7				
8				
9	1413 uS/cm	CINV-171212C	1451 @ 24.2°C	2% 4/27/18 LSR
10	10000	180108C	10240 @ 24.7°C	Accept: ~~10% water, 20% soil~~
Dup	99672	171215A	101900 @ 24.8°C	% Rec: (90-110%)
	Std Chk:			

Date: 4/27/18 1600
Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV-180108A	9.75 @ 24.5°C	% Rec: (90-110%)
1412	180131A	1408 @ 24.8°C	
9987	180108B	9960 @ 24.7°C	
99601	180201A	99300 @ ~~24~~.8°C	

	Sample ID	Matrix	Reading	Comments
1	NO30043-001J	H2O	6130 @ 24.1°C	
2	1JB		6140 @ 24.0°C	
3	NO30044-001B		5870 @ 24.4°C	STD CHK:
4	2B		10130 @ 23.7°C	1413 - CINV171212C
5	3B		5020 @ 23.1°C	= 1441 @ 26.4°C
6	4B		19560 @ 22.8°C	10000 - CINV180108C
7	4B DUP		19530 @ 22.5°C	= 10310 @ 25.4°C
8	5B		2050 @ 22.5°C	99672 - CINV171215A
9	6B		1764 @ 22.4°C	= 98700 @ 25.7°C
10	7B		2070 @ 21.8°C	2% 4/27/18 LSR
Dup	8B		10900 @ 21.9°C	Accept: 10% ~~water, 20% soil~~
	~~Std Chk:~~ 9B		3220 @ 22.5°C	% Rec: (90-110%)

Julia Ramit 5/1/2018

Logbook # 6

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R123727
ASSET #: N030044

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 4/30/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ___________

Initial Calibration and Initial Calibration Verification	**Ist Level Review**			**2nd Level Review**		
	Y	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	**N**	**N/A**
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 5/6/2018

2nd Level Reviewer [signature] 5/7/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6} ,µg/L = A * DF

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N030044-001A** , the concentration in µg/L is calculated as follows:

Cr^{+6} ,µg/L = 4.4775 * 5

Cr^{+6} ,µg/L = 22.3875

Reporting results in two significant figures,

Cr^{+6} ,µg/L = 22

rba 5/6/2018

ANALYSIS RUN LOG

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	04/30/18 10:42 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/30/18 10:52 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/30/18 11:01 AM	Reported
13	MB-R123727	MBLK	1	Hexavalent Chromium	04/30/18 11:11 AM	Reported
14	LCS-R123727	LCS	1	Hexavalent Chromium	04/30/18 11:20 AM	Reported
15	N030044-001A	SAMP	5	Hexavalent Chromium	04/30/18 11:30 AM	Reported
16	N030044-001AMS	MS	5	Hexavalent Chromium	04/30/18 11:39 AM	Reported
17	N030044-002A	SAMP	5	Hexavalent Chromium	04/30/18 11:49 AM	Reported
18	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 11:58 AM	Not Reported
19	N030044-003A	SAMP	5	Hexavalent Chromium	04/30/18 12:08 PM	Reported
20	N030044-003AMS	MS	5	Hexavalent Chromium	04/30/18 12:17 PM	Reported
21	N030044-004A	SAMP	1000	Hexavalent Chromium	04/30/18 12:26 PM	Reported
22	N030044-004AMS	MS	1000	Hexavalent Chromium	04/30/18 12:36 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/30/18 12:45 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/30/18 12:55 PM	Reported
25	N030044-005A	SAMP	50	Hexavalent Chromium	04/30/18 1:04 PM	Reported
26	N030044-005AMS	MS	50	Hexavalent Chromium	04/30/18 1:14 PM	Reported
27	N030044-006A	SAMP	200	Hexavalent Chromium	04/30/18 1:23 PM	Reported
28	N030044-006AMS	MS	200	Hexavalent Chromium	04/30/18 1:33 PM	Reported
29	N030044-007A	SAMP	200	Hexavalent Chromium	04/30/18 1:42 PM	Reported
30	N030044-007AMS	MS	200	Hexavalent Chromium	04/30/18 1:52 PM	Reported
31	N030044-008A	SAMP	1000	Hexavalent Chromium	04/30/18 2:01 PM	Reported
32	N030044-008AMS	MS	1000	Hexavalent Chromium	04/30/18 2:10 PM	Reported
33	N030044-009A	SAMP	50	Hexavalent Chromium	04/30/18 2:20 PM	Reported
34	N030044-009AMS	MS	50	Hexavalent Chromium	04/30/18 2:29 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/30/18 2:39 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/30/18 2:48 PM	Reported
37	N030044-010A	SAMP	1	Hexavalent Chromium	04/30/18 2:58 PM	Reported
38	N030044-010AMS	MS	1	Hexavalent Chromium	04/30/18 3:07 PM	Reported
39	N030044-011A	SAMP	1	Hexavalent Chromium	04/30/18 3:17 PM	Reported
40	N030044-011AMS	MS	1	Hexavalent Chromium	04/30/18 3:26 PM	Reported
41	N030044-001ADUP	DUP	5	Hexavalent Chromium	04/30/18 3:36 PM	Reported
42	N030044-004AMSD	MSD	1000	Hexavalent Chromium	04/30/18 3:45 PM	Reported

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INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 3:55 PM	Reported
44	N029859-008A	SAMP	1	Hexavalent Chromium	04/30/18 4:06 PM	Not Reported
45	N029859-008AMS	MS	1	Hexavalent Chromium	04/30/18 4:17 PM	Not Reported
46	N029859-009A	SAMP	1	Hexavalent Chromium	04/30/18 4:26 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/30/18 4:36 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/30/18 4:45 PM	Reported
49	N029859-009AMS	MS	1	Hexavalent Chromium	04/30/18 4:55 PM	Not Reported
50	N029859-011A	SAMP	1	Hexavalent Chromium	04/30/18 5:04 PM	Not Reported
51	N029859-011AMS	MS	1	Hexavalent Chromium	04/30/18 5:14 PM	Not Reported
52	CCV-4	CCV	1	Hexavalent Chromium	04/30/18 5:23 PM	Reported
53	CCB-4	CCB	1	Hexavalent Chromium	04/30/18 5:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180430A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**30/Apr/18 18:19:59**
No. of Injections:	**56**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		04/30/2018 10:42	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/30/2018 10:52	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/30/2018 11:01	Finished	ICB R180418A
13	MB-H2O,MBLK,1,	13	1000	Unknown		04/30/2018 11:11	Finished	MB R180418A
14	LCS-H2O,LCS,1,	14	1000	Unknown		04/30/2018 11:20	Finished	LCS, IWST-180129B
15	N030044-001A,SAMF	15	1000	Unknown		04/30/2018 11:30	Finished	SAMP,2>10mL
16	N030044-001AMS,MS	16	1000	Unknown		04/30/2018 11:39	Finished	MS (5ppb), IWST-180129B,2>1
17	N030044-002A,SAMF	17	1000	Unknown		04/30/2018 11:49	Finished	SAMP,2>10mL
18	N030044-002AMS,MS	18	1000	Unknown		04/30/2018 11:58	Finished	MS (5ppb), IWST-180129B,2>1
19	N030044-003A,SAMF	19	1000	Unknown		04/30/2018 12:08	Finished	SAMP,2>10mL
20	N030044-003AMS,MS	20	1000	Unknown		04/30/2018 12:17	Finished	MS (5ppb), IWST-180129B,2>1
21	N030044-004A,SAMF	21	1000	Unknown		04/30/2018 12:26	Finished	SAMP,0.01>10mL
22	N030044-004AMS,MS	22	1000	Unknown		04/30/2018 12:36	Finished	MS (5ppb), IWST-180129B,0.0
23	CCV-1,CCV1,1,	23	1000	Unknown		04/30/2018 12:45	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	24	1000	Unknown		04/30/2018 12:55	Finished	CCB R180418A
25	N030044-005A,SAMF	25	1000	Unknown		04/30/2018 13:04	Finished	SAMP,0.2>10mL
26	N030044-005AMS,MS	26	1000	Unknown		04/30/2018 13:14	Finished	MS (5ppb), IWST-180129B,0.2
27	N030044-006A,SAMF	27	1000	Unknown		04/30/2018 13:23	Finished	SAMP,0.05>10mL
28	N030044-006AMS,MS	28	1000	Unknown		04/30/2018 13:33	Finished	MS (5ppb), IWST-180129B,0.0
29	N030044-007A,SAMF	29	1000	Unknown		04/30/2018 13:42	Finished	SAMP,0.05>10mL
30	N030044-007AMS,MS	30	1000	Unknown		04/30/2018 13:52	Finished	MS (5ppb), IWST-180129B,0.0
31	N030044-008A,SAMF	31	1000	Unknown		04/30/2018 14:01	Finished	SAMP,0.01>10mL
32	N030044-008AMS,MS	32	1000	Unknown		04/30/2018 14:10	Finished	MS (5ppb), IWST-180129B,0.0
33	N030044-009A,SAMF	33	1000	Unknown		04/30/2018 14:20	Finished	SAMP,0.2>10mL
34	N030044-009AMS,MS	34	1000	Unknown		04/30/2018 14:29	Finished	MS (5ppb), IWST-180129B,0.2
35	CCV-2,CCV,1,	35	1000	Unknown		04/30/2018 14:39	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	36	1000	Unknown		04/30/2018 14:48	Finished	CCB R180418A
37	N030044-010A,SAMF	37	1000	Unknown		04/30/2018 14:58	Finished	SAMP,10mL
38	N030044-010AMS,MS	38	1000	Unknown		04/30/2018 15:07	Finished	MS (1ppb), IWST-180129B,10
39	N030044-011A,SAMF	39	1000	Unknown		04/30/2018 15:17	Finished	SAMP,10mL
40	N030044-011AMS,MS	40	1000	Unknown		04/30/2018 15:26	Finished	MS (1ppb), IWST-180129B,10
41	N030044-001ADUP,D	41	1000	Unknown		04/30/2018 15:36	Finished	DUP,2>10mL
42	N030044-004AMSD,M	42	1000	Unknown		04/30/2018 15:45	Finished	MSD (5ppb), IWST-180129B,0.
43	N030044-002AMS,MS	43	1000	Unknown		04/30/2018 15:55	Finished	MS (5ppb), IWST-180129B,2>1
44	N029859-008A,SAMF	1	1000	Unknown		04/30/2018 16:06	Finished	SAMP,10mL
45	N029859-008AMS,MS	2	1000	Unknown		04/30/2018 16:17	Finished	MS (1ppb), IWST-180129B,10
46	N029859-009A,SAMF	3	1000	Unknown		04/30/2018 16:26	Finished	SAMP,10mL
47	CCV-3,CCV1,1,	4	1000	Unknown		04/30/2018 16:36	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	5	1000	Unknown		04/30/2018 16:45	Finished	CCB R180418A
49	N029859-009AMS,MS	6	1000	Unknown		04/30/2018 16:55	Finished	MS (1ppb), IWST-180129B,10
50	N029859-011A,SAMF	7	1000	Unknown		04/30/2018 17:04	Finished	SAMP,10mL
51	N029859-011AMS,MS	8	1000	Unknown		04/30/2018 17:14	Finished	MS (1ppb), IWST-180129B,10
52	CCV-4,CCV,1,	9	1000	Unknown		04/30/2018 17:23	Finished	CCV @5ppb, IWST-180129A
53	CCB-4,CCB,1,	10	1000	Unknown		04/30/2018 17:33	Finished	CCB R180418A
54	SHUTDOWN	11	1000	Unknown		04/30/2018 17:42	Finished	
55	Eluent: R180430A	12	1000	Unknown		n.a.	Finished	Eluent
56	PCR: R180430B	13	1000	Unknown		n.a.	Finished	Post-Column Reagent

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SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 4/27/18
Time Prepared: 0902H
Prepared By: NBA

Slope: 97.47
pH 4: 4.02 @ 25.0°C
7: 7.01 @ 25.0°C
10: 10.00 @ 25.0°C
LU: 7.02 @ 25.0°C

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CWV-171116A
NH4OH + NH4SO4 eluent: N1804 26A
NH4OH + NH4SO4 buffer: N1804 18A

6N NaOH: N171229A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030017-001A	9.62	-	~250 ml	~250 ml		
2)	2A	9.66	-				
3)	3A	9.64	-				
4)	4A	9.56	-				
5)	5A	9.23	9.32			+2 drops NaOH	
6)	6A	9.56	-				
7)	7A	9.53	-				
8)	8A	9.56	-				
9)	9A	9.56	-				1/2
10)	9A	9.53	-				2/2
11)	10A	9.58	-				1/2
12)	10A	9.56	-				2/2
13)	11A	9.57	-				
14)	12A	9.54	-				
15)	13A	9.54	-				

Sample Preparation

Date Prepared: 4/30/18
Time Prepared: 1045H
Prepared By: NBA

Slope: 97.82
pH 4: 4.03 @ 25.0°C
7: 7.01 @ 25.0°C
10: 10.02 @ 25.0°C
LU: 7.01 @ 25.0°C

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CWV-171116A
NH4OH + NH4SO4 eluent: N1804 30A
NH4OH + NH4SO4 buffer: N1804 18A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030044-001A	9.31	-	~250 ml	~250 ml		
2)	2A	9.34	-				
3)	3A	9.43	-				
4)	4A	9.44	-				
5)	5A	9.38	-				
6)	6A	9.41	-				
7)	7A	9.30	-				
8)	8A	9.31	-				
9)	9A	9.41	-				
10)	10A	9.60	-				
11)	11A	9.63	-				
12)							
13)							
14)							
15)							

Logbook No. 14

nba 5/6/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/30/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0607	0.2618	1.2924	2.5813	3.8731	5.1050	0.9999

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ICV** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.194	0.20	5.000	0	104	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-1** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.015	0.20	10.00	0	100	95	105				

Sample ID **CCV-2** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **CCV** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.067	0.20	5.000	0	101	95	105				

Sample ID **CCV-3** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ZZZZZZ** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.128	0.20	10.00	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-4** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **CCV** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.081	0.20	5.000	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

ASSET Laboratories

Date: *30-Apr-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **ICB** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **CCB** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011938**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **CCB** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011950**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **CCB** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123727**
Client ID: **CCB** Batch ID: **R123727** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3011961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/30/2018

Sample Name	Retention Time	Evaluation
ICV	4.248	
CCV-1	4.256	
CCV-2	4.256	
CCV-3	4.256	
CCV-4	4.248	

Average	4.253	
Actual RT Window	4.173 -	4.333
Applied RT Window	4.053 -	4.453

MB-R123727	N.A.	N.A.
LCS-R123727	4.256	PASS
N030044-001A	4.231	PASS
N030044-001AMS	4.231	PASS
N030044-002A	4.215	PASS
N030044-002AMS	N.A.	N.A.
N030044-003A	4.240	PASS
N030044-003AMS	4.231	PASS
N030044-004A	4.256	PASS
N030044-004AMS	4.248	PASS
N030044-005A	4.256	PASS
N030044-005AMS	4.256	PASS
N030044-006A	4.256	PASS
N030044-006AMS	4.256	PASS
N030044-007A	4.256	PASS
N030044-007AMS	4.256	PASS
N030044-008A	4.256	PASS
N030044-008AMS	4.256	PASS
N030044-009A	4.256	PASS
N030044-009AMS	4.256	PASS
N030044-010A	4.265	PASS
N030044-010AMS	4.256	PASS
N030044-011A	4.256	PASS
N030044-011AMS	4.256	PASS

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RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/30/2018

Sample Name	Retention Time	Evaluation
ICV	4.248	
CCV-1	4.256	
CCV-2	4.256	
CCV-3	4.256	
CCV-4	4.248	

Average	4.253	
Actual RT Window	4.173 -	4.333
Applied RT Window	4.053 -	4.453

N030044-001ADUP	4.240	PASS
N030044-004AMSD	4.256	PASS
N030044-002AMS	4.223	PASS
N029859-008A	4.248	PASS
N029859-008AMS	4.256	PASS
N029859-009A	N.A.	N.A.
N029859-009AMS	4.256	PASS
N029859-011A	4.240	PASS
N029859-011AMS	4.240	PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2018 (1st Quarter)

Method Name:	**Hexavalent Chromium by IC**	Matrix:	**WATER**
Method Number:	EPA Method 218.6/7199	Unit:	µg/L
Analysis Date(s):	3/21/2018		
Analyst:	Ria Abes		

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.116

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.201	100

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	04/30/18 10:42 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/30/18 10:52 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/30/18 11:01 AM	Reported
13	MB-R123727	MBLK	1	Hexavalent Chromium	04/30/18 11:11 AM	Reported
14	LCS-R123727	LCS	1	Hexavalent Chromium	04/30/18 11:20 AM	Reported
15	N030044-001A	SAMP	5	Hexavalent Chromium	04/30/18 11:30 AM	Reported
16	N030044-001AMS	MS	5	Hexavalent Chromium	04/30/18 11:39 AM	Reported
17	N030044-002A	SAMP	5	Hexavalent Chromium	04/30/18 11:49 AM	Reported
18	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 11:58 AM	Not Reported
19	N030044-003A	SAMP	5	Hexavalent Chromium	04/30/18 12:08 PM	Reported
20	N030044-003AMS	MS	5	Hexavalent Chromium	04/30/18 12:17 PM	Reported
21	N030044-004A	SAMP	1000	Hexavalent Chromium	04/30/18 12:26 PM	Reported
22	N030044-004AMS	MS	1000	Hexavalent Chromium	04/30/18 12:36 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/30/18 12:45 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/30/18 12:55 PM	Reported
25	N030044-005A	SAMP	50	Hexavalent Chromium	04/30/18 1:04 PM	Reported
26	N030044-005AMS	MS	50	Hexavalent Chromium	04/30/18 1:14 PM	Reported
27	N030044-006A	SAMP	200	Hexavalent Chromium	04/30/18 1:23 PM	Reported
28	N030044-006AMS	MS	200	Hexavalent Chromium	04/30/18 1:33 PM	Reported
29	N030044-007A	SAMP	200	Hexavalent Chromium	04/30/18 1:42 PM	Reported
30	N030044-007AMS	MS	200	Hexavalent Chromium	04/30/18 1:52 PM	Reported
31	N030044-008A	SAMP	1000	Hexavalent Chromium	04/30/18 2:01 PM	Reported
32	N030044-008AMS	MS	1000	Hexavalent Chromium	04/30/18 2:10 PM	Reported
33	N030044-009A	SAMP	50	Hexavalent Chromium	04/30/18 2:20 PM	Reported
34	N030044-009AMS	MS	50	Hexavalent Chromium	04/30/18 2:29 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/30/18 2:39 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/30/18 2:48 PM	Reported
37	N030044-010A	SAMP	1	Hexavalent Chromium	04/30/18 2:58 PM	Reported
38	N030044-010AMS	MS	1	Hexavalent Chromium	04/30/18 3:07 PM	Reported
39	N030044-011A	SAMP	1	Hexavalent Chromium	04/30/18 3:17 PM	Reported
40	N030044-011AMS	MS	1	Hexavalent Chromium	04/30/18 3:26 PM	Reported
41	N030044-001ADUP	DUP	5	Hexavalent Chromium	04/30/18 3:36 PM	Reported
42	N030044-004AMSD	MSD	1000	Hexavalent Chromium	04/30/18 3:45 PM	Reported

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INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 3:55 PM	Reported
44	N029859-008A	SAMP	1	Hexavalent Chromium	04/30/18 4:06 PM	Not Reported
45	N029859-008AMS	MS	1	Hexavalent Chromium	04/30/18 4:17 PM	Not Reported
46	N029859-009A	SAMP	1	Hexavalent Chromium	04/30/18 4:26 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/30/18 4:36 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/30/18 4:45 PM	Reported
49	N029859-009AMS	MS	1	Hexavalent Chromium	04/30/18 4:55 PM	Not Reported
50	N029859-011A	SAMP	1	Hexavalent Chromium	04/30/18 5:04 PM	Not Reported
51	N029859-011AMS	MS	1	Hexavalent Chromium	04/30/18 5:14 PM	Not Reported
52	CCV-4	CCV	1	Hexavalent Chromium	04/30/18 5:23 PM	Reported
53	CCB-4	CCB	1	Hexavalent Chromium	04/30/18 5:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180430A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**30/Apr/18 18:19:59**
No. of Injections:	**56**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		04/30/2018 10:42	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/30/2018 10:52	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/30/2018 11:01	Finished	ICB R180418A
13	MB-H2O,MBLK,1,	13	1000	Unknown		04/30/2018 11:11	Finished	MB R180418A
14	LCS-H2O,LCS,1,	14	1000	Unknown		04/30/2018 11:20	Finished	LCS, IWST-180129B
15	N030044-001A,SAMF	15	1000	Unknown		04/30/2018 11:30	Finished	SAMP,2>10mL
16	N030044-001AMS,MS	16	1000	Unknown		04/30/2018 11:39	Finished	MS (5ppb), IWST-180129B,2>1
17	N030044-002A,SAMF	17	1000	Unknown		04/30/2018 11:49	Finished	SAMP,2>10mL
18	N030044-002AMS,MS	18	1000	Unknown		04/30/2018 11:58	Finished	MS (5ppb), IWST-180129B,2>1
19	N030044-003A,SAMF	19	1000	Unknown		04/30/2018 12:08	Finished	SAMP,2>10mL
20	N030044-003AMS,MS	20	1000	Unknown		04/30/2018 12:17	Finished	MS (5ppb), IWST-180129B,2>1
21	N030044-004A,SAMF	21	1000	Unknown		04/30/2018 12:26	Finished	SAMP,0.01>10mL
22	N030044-004AMS,MS	22	1000	Unknown		04/30/2018 12:36	Finished	MS (5ppb), IWST-180129B,0.0
23	CCV-1,CCV1,1,	23	1000	Unknown		04/30/2018 12:45	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	24	1000	Unknown		04/30/2018 12:55	Finished	CCB R180418A
25	N030044-005A,SAMF	25	1000	Unknown		04/30/2018 13:04	Finished	SAMP,0.2>10mL
26	N030044-005AMS,MS	26	1000	Unknown		04/30/2018 13:14	Finished	MS (5ppb), IWST-180129B,0.2
27	N030044-006A,SAMF	27	1000	Unknown		04/30/2018 13:23	Finished	SAMP,0.05>10mL
28	N030044-006AMS,MS	28	1000	Unknown		04/30/2018 13:33	Finished	MS (5ppb), IWST-180129B,0.0
29	N030044-007A,SAMF	29	1000	Unknown		04/30/2018 13:42	Finished	SAMP,0.05>10mL
30	N030044-007AMS,MS	30	1000	Unknown		04/30/2018 13:52	Finished	MS (5ppb), IWST-180129B,0.0
31	N030044-008A,SAMF	31	1000	Unknown		04/30/2018 14:01	Finished	SAMP,0.01>10mL
32	N030044-008AMS,MS	32	1000	Unknown		04/30/2018 14:10	Finished	MS (5ppb), IWST-180129B,0.0
33	N030044-009A,SAMF	33	1000	Unknown		04/30/2018 14:20	Finished	SAMP,0.2>10mL
34	N030044-009AMS,MS	34	1000	Unknown		04/30/2018 14:29	Finished	MS (5ppb), IWST-180129B,0.2
35	CCV-2,CCV,1,	35	1000	Unknown		04/30/2018 14:39	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	36	1000	Unknown		04/30/2018 14:48	Finished	CCB R180418A
37	N030044-010A,SAMF	37	1000	Unknown		04/30/2018 14:58	Finished	SAMP,10mL
38	N030044-010AMS,MS	38	1000	Unknown		04/30/2018 15:07	Finished	MS (1ppb), IWST-180129B,10
39	N030044-011A,SAMF	39	1000	Unknown		04/30/2018 15:17	Finished	SAMP,10mL
40	N030044-011AMS,MS	40	1000	Unknown		04/30/2018 15:26	Finished	MS (1ppb), IWST-180129B,10
41	N030044-001ADUP,D	41	1000	Unknown		04/30/2018 15:36	Finished	DUP,2>10mL
42	N030044-004AMSD,M	42	1000	Unknown		04/30/2018 15:45	Finished	MSD (5ppb), IWST-180129B,0.
43	N030044-002AMS,MS	43	1000	Unknown		04/30/2018 15:55	Finished	MS (5ppb), IWST-180129B,2>1
44	N029859-008A,SAMF	1	1000	Unknown		04/30/2018 16:06	Finished	SAMP,10mL
45	N029859-008AMS,MS	2	1000	Unknown		04/30/2018 16:17	Finished	MS (1ppb), IWST-180129B,10
46	N029859-009A,SAMF	3	1000	Unknown		04/30/2018 16:26	Finished	SAMP,10mL
47	CCV-3,CCV1,1,	4	1000	Unknown		04/30/2018 16:36	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	5	1000	Unknown		04/30/2018 16:45	Finished	CCB R180418A
49	N029859-009AMS,MS	6	1000	Unknown		04/30/2018 16:55	Finished	MS (1ppb), IWST-180129B,10
50	N029859-011A,SAMF	7	1000	Unknown		04/30/2018 17:04	Finished	SAMP,10mL
51	N029859-011AMS,MS	8	1000	Unknown		04/30/2018 17:14	Finished	MS (1ppb), IWST-180129B,10
52	CCV-4,CCV,1,	9	1000	Unknown		04/30/2018 17:23	Finished	CCV @5ppb, IWST-180129A
53	CCB-4,CCB,1,	10	1000	Unknown		04/30/2018 17:33	Finished	CCB R180418A
54	SHUTDOWN	11	1000	Unknown		04/30/2018 17:42	Finished	
55	Eluent: R180430A	12	1000	Unknown		n.a.	Finished	Eluent
56	PCR: R180430B	13	1000	Unknown		n.a.	Finished	Post-Column Reagent

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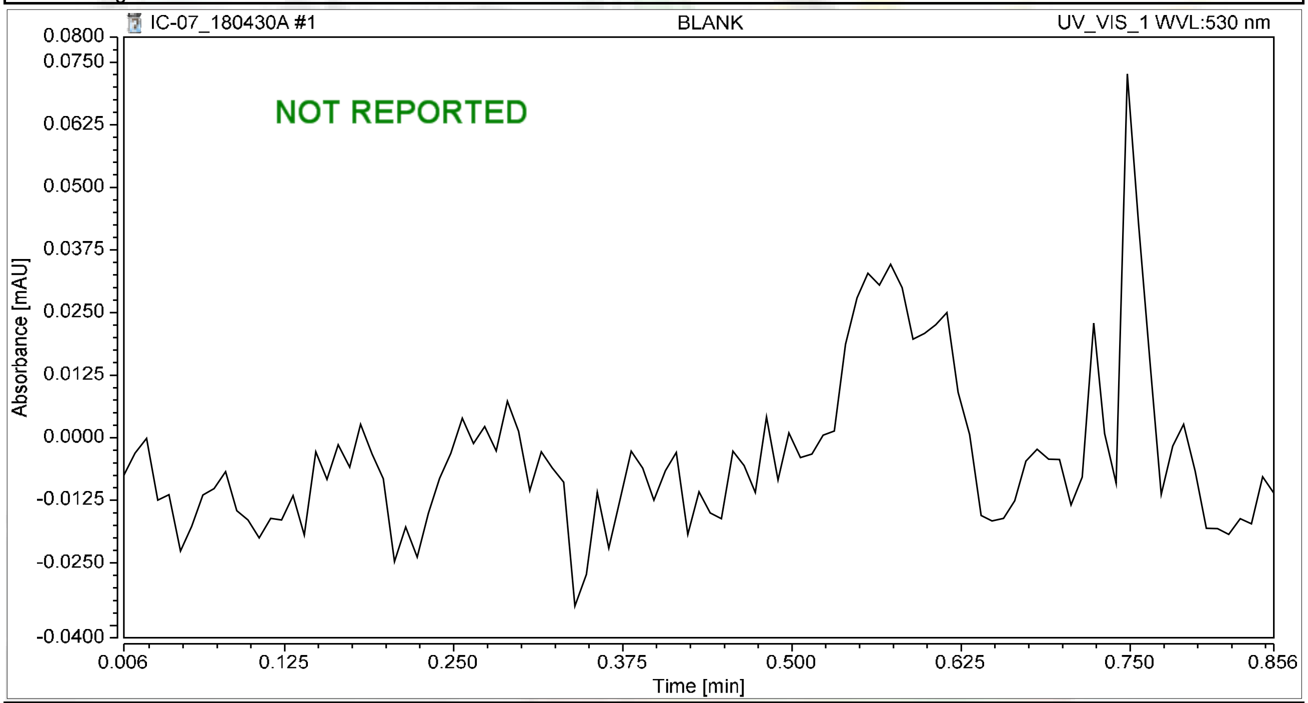
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.85**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

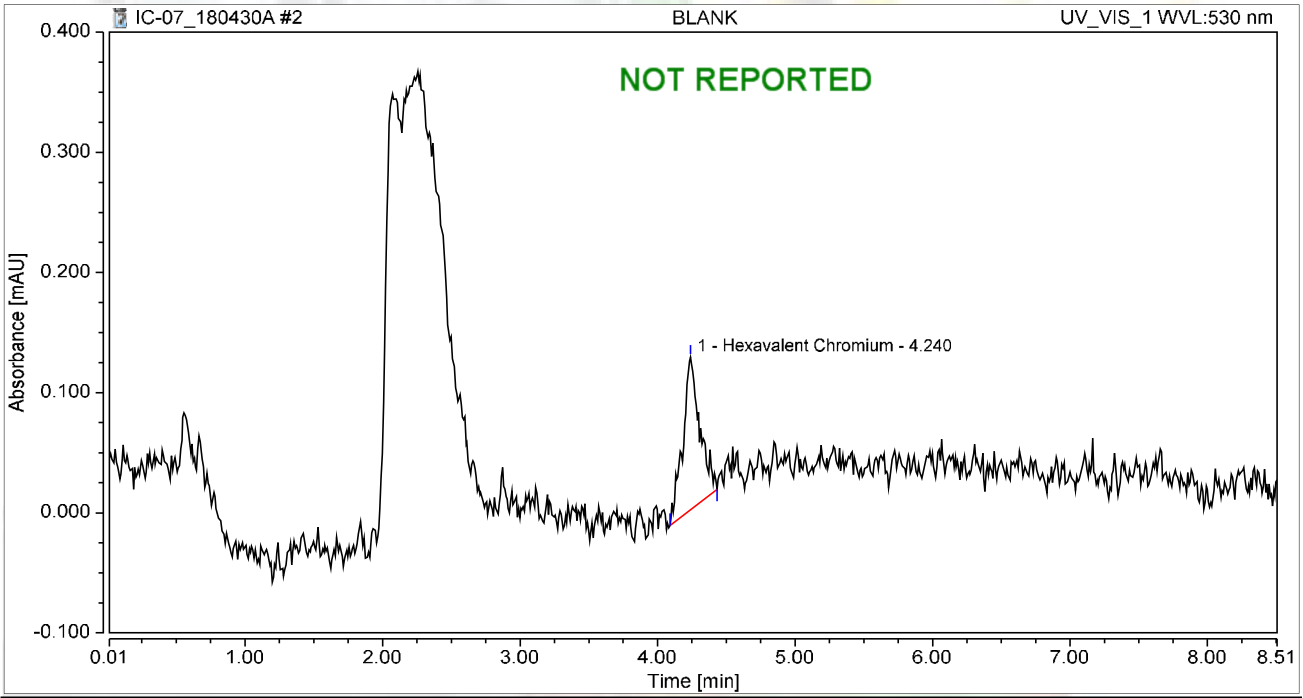
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

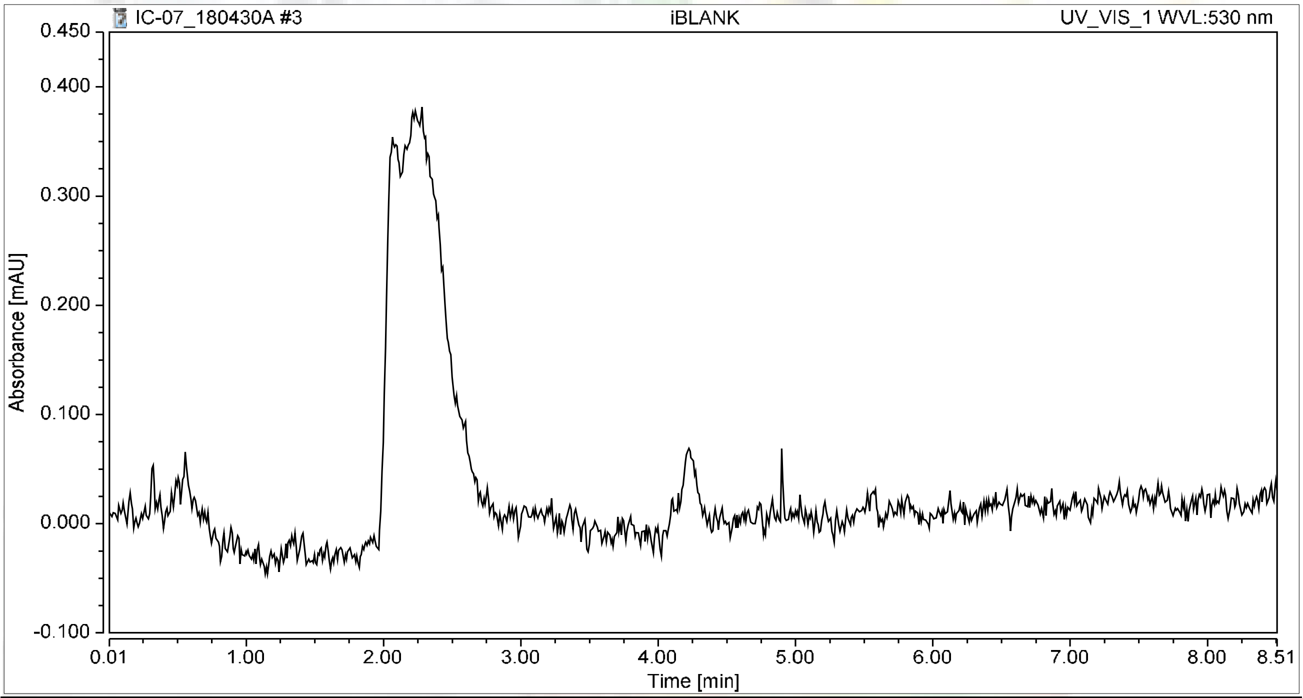
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.018	0.127	100.00	100.00	0.0705
Total:			**0.018**	**0.127**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

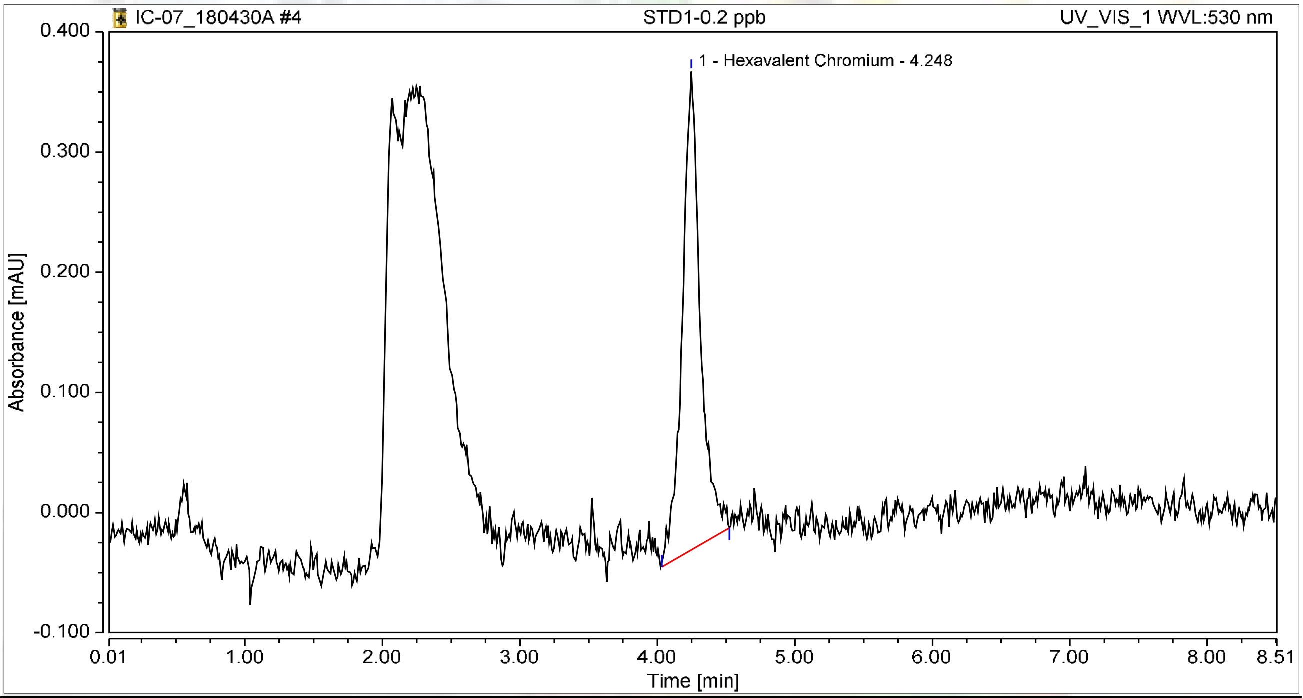
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

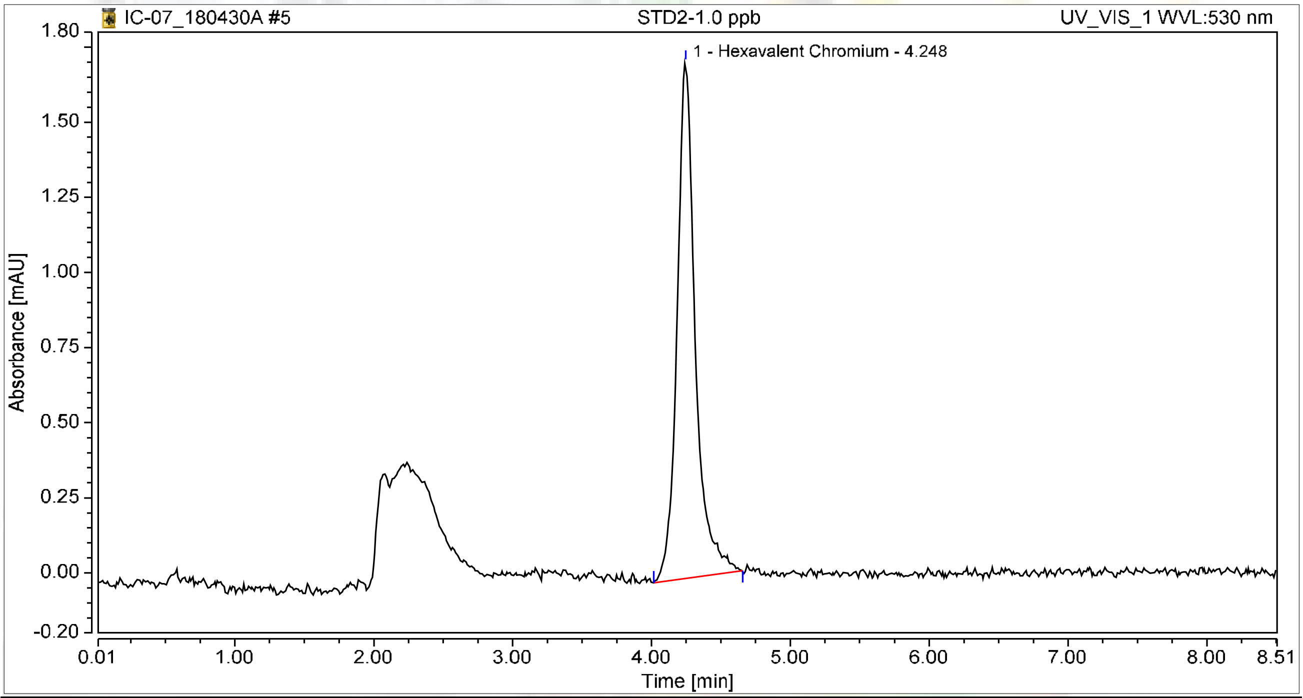
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.061	0.398	100.00	100.00	0.2363
Total:			**0.061**	**0.398**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

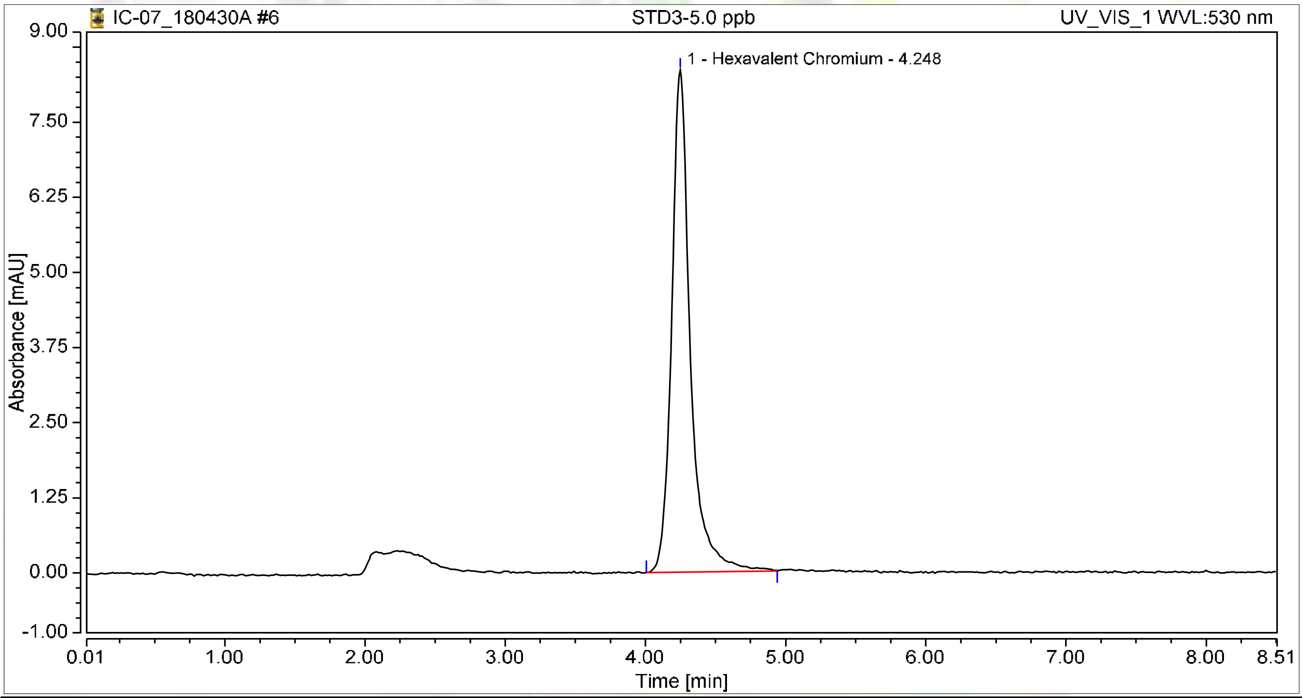
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.262	1.718	100.00	100.00	1.0201
Total:			**0.262**	**1.718**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

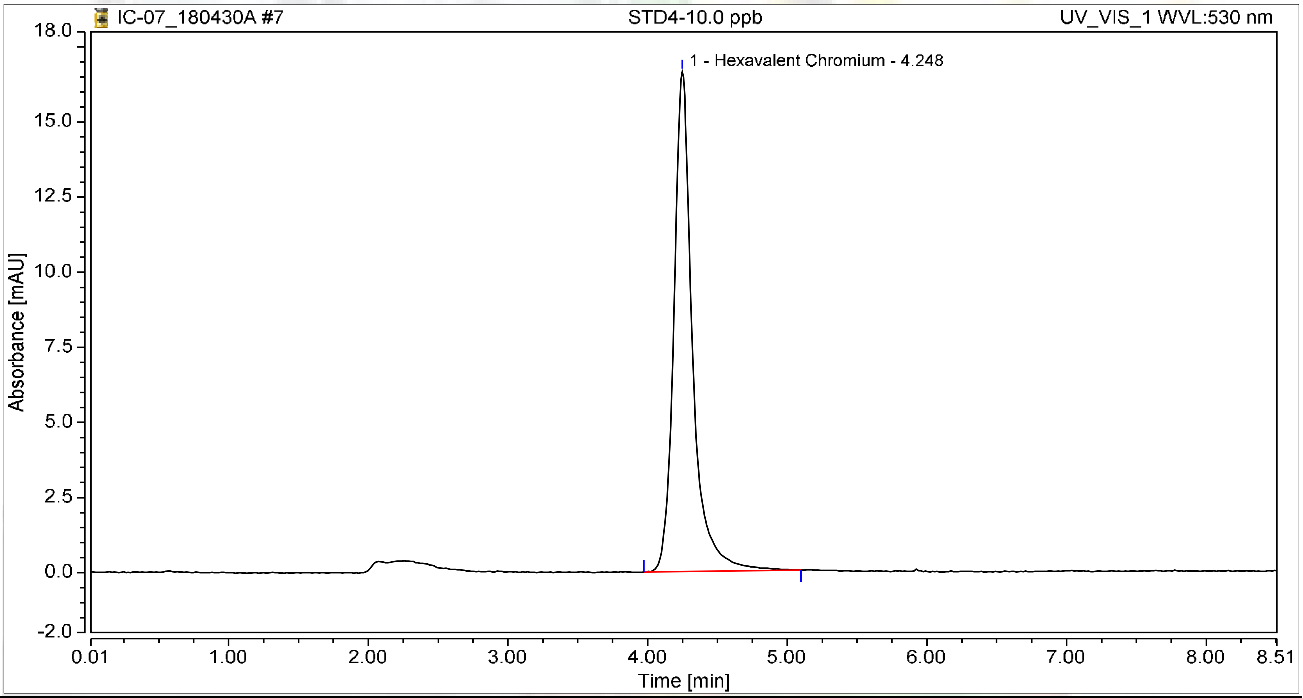
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.292	8.359	100.00	100.00	5.0360
Total:			**1.292**	**8.359**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

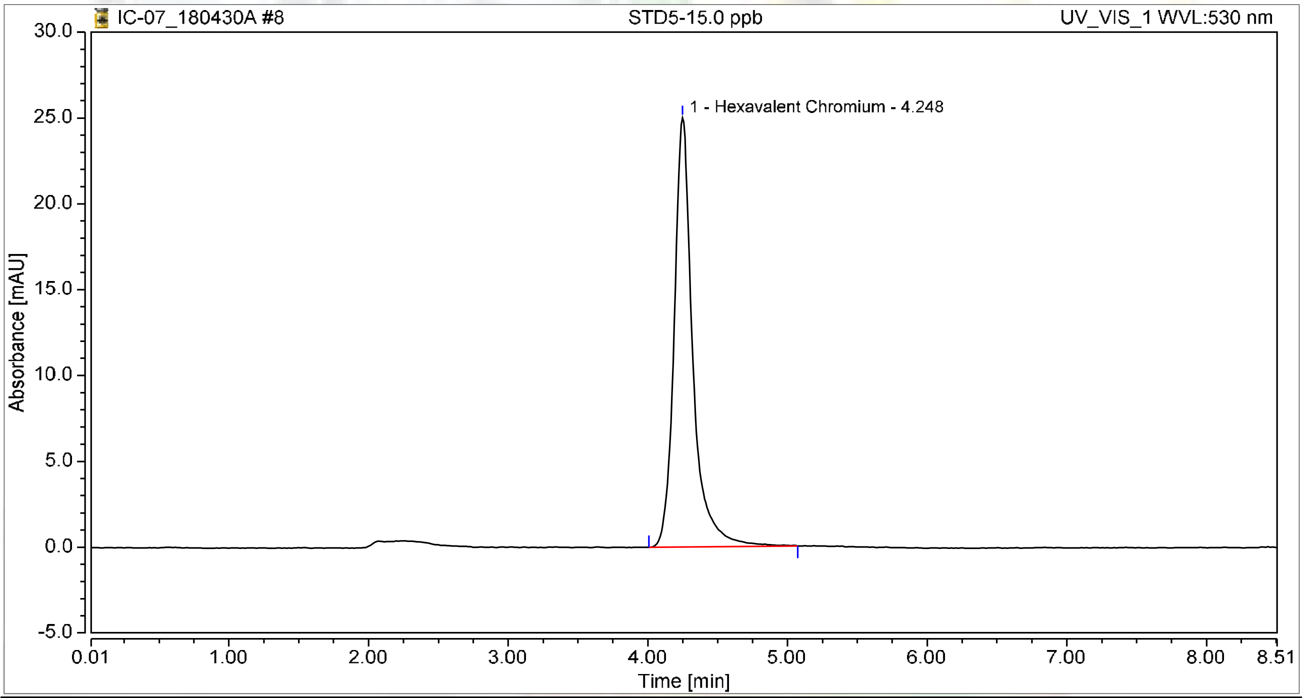
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.581	16.640	100.00	100.00	10.0583
Total:			**2.581**	**16.640**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

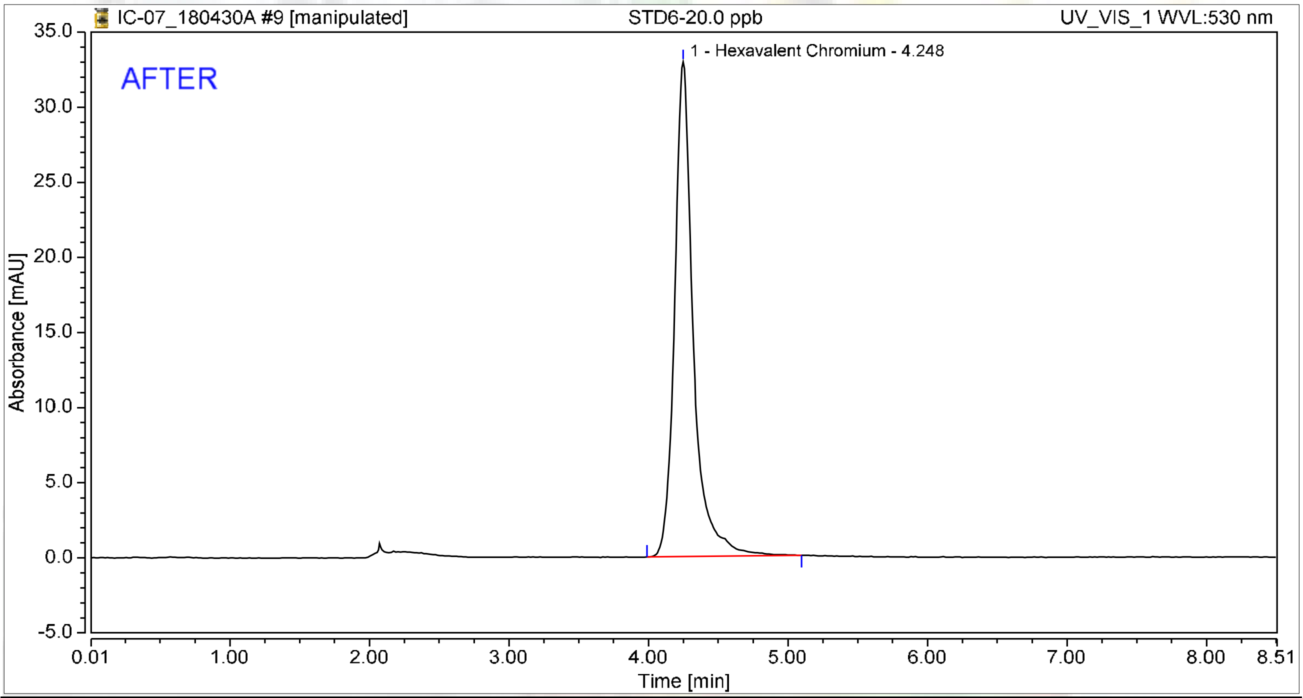
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.873	25.002	100.00	100.00	15.0915
Total:			**3.873**	**25.002**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.105	32.932	100.00	100.00	19.8919
Total:			**5.105**	**32.932**	**100.00**	**100.00**	

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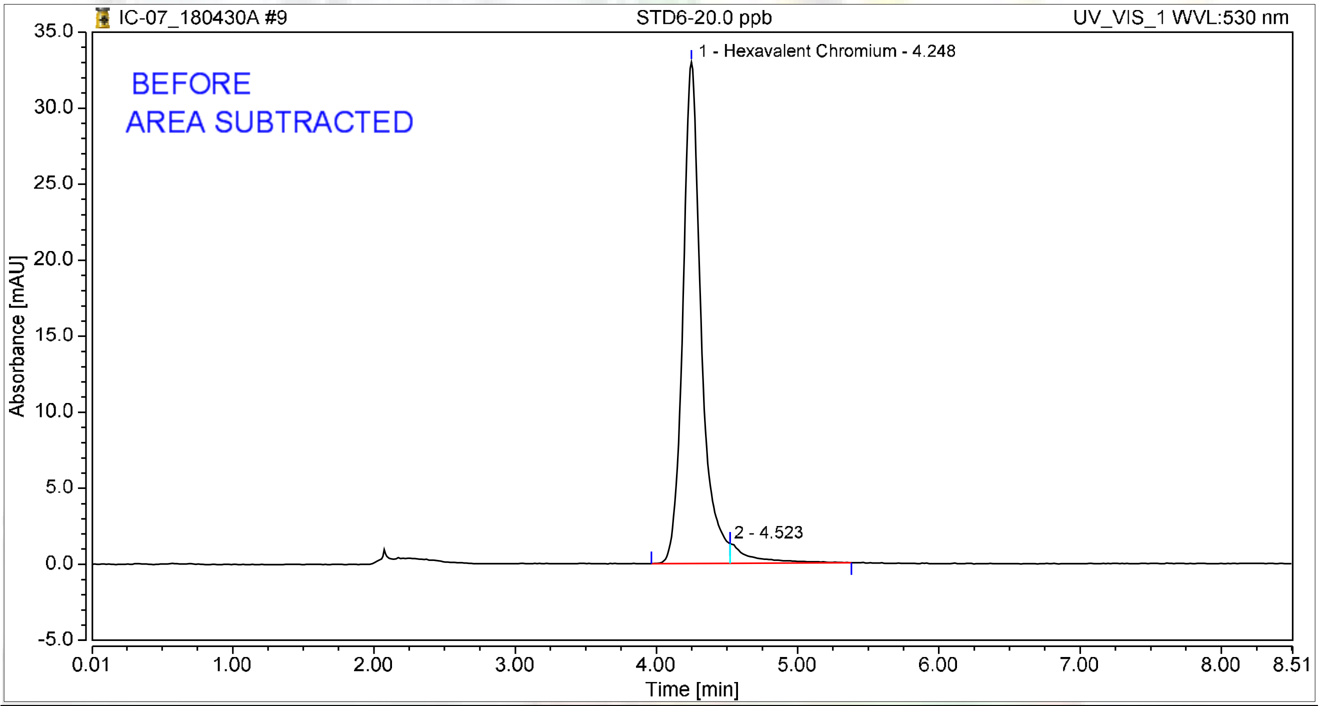
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	4.957	32.968	95.88	96.27	19.6162
2		4.523	0.213	1.278	4.12	3.73	n.a.
Total:			**5.170**	**34.246**	**100.00**	**100.00**	

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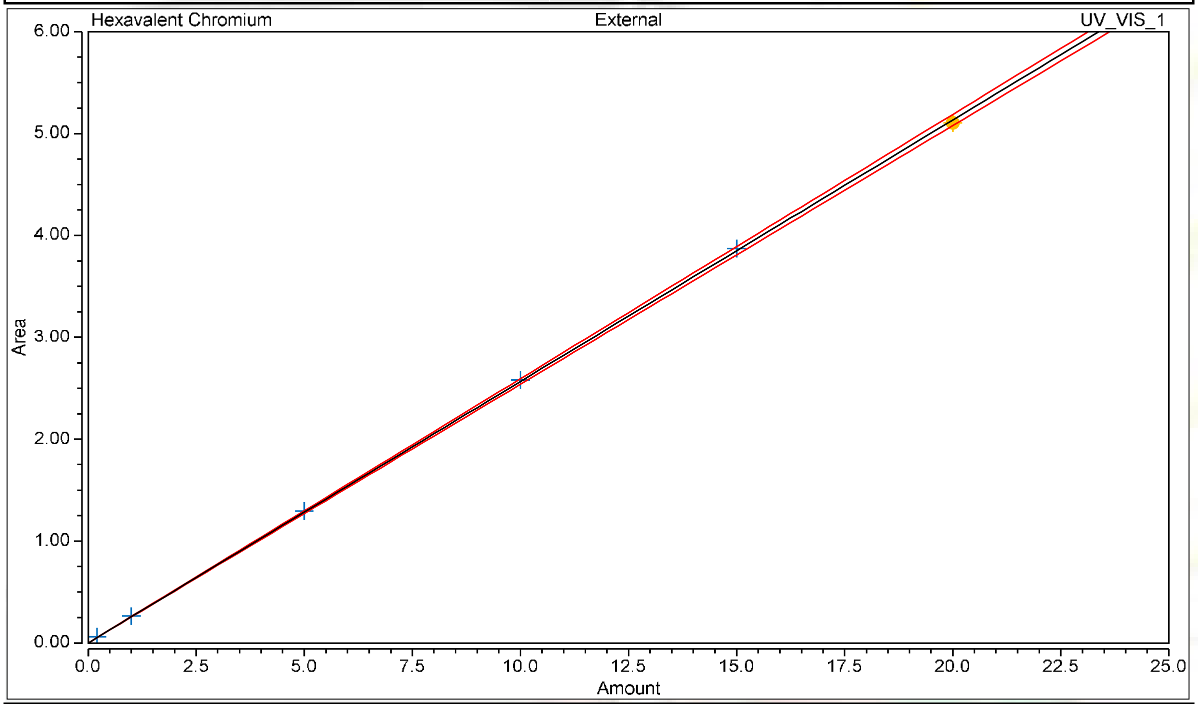
Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2566
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99992

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

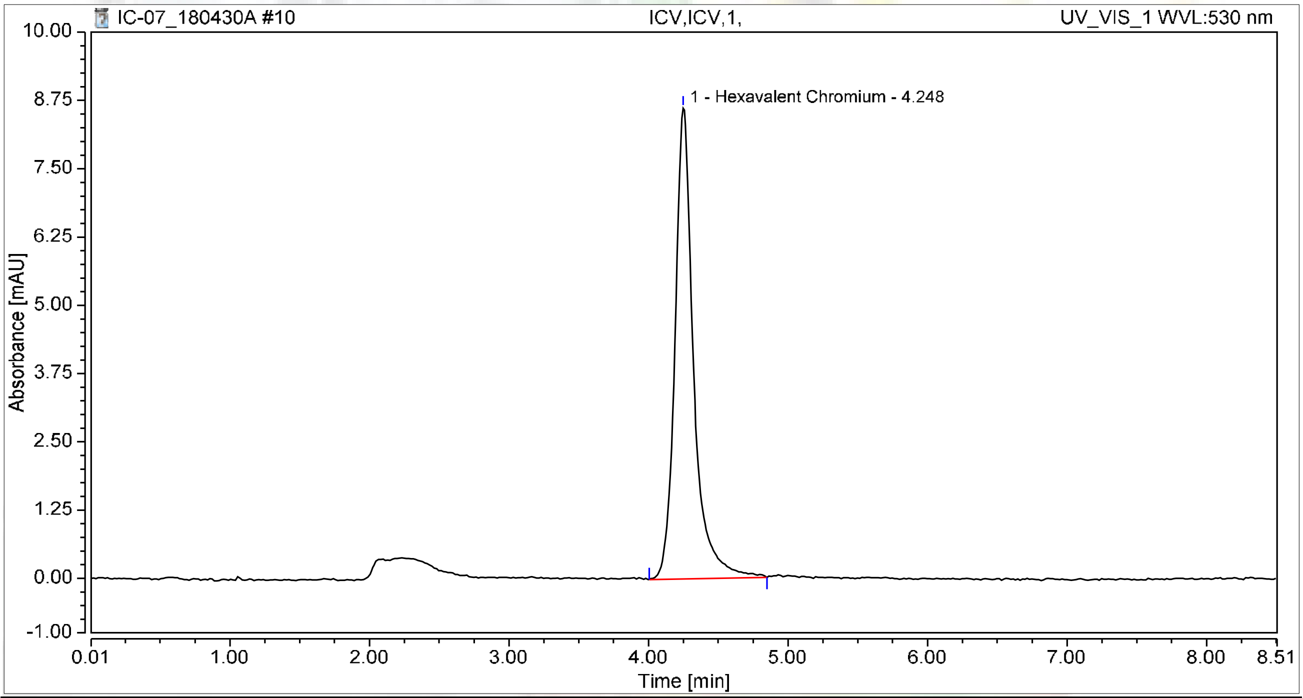
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0607	0.061	0.398
5	STD2-1.0 ppb	02	1.0000	0.2618	0.262	1.718
6	STD3-5.0 ppb	03	5.0000	1.2924	1.292	8.359
7	STD4-10.0 ppb	04	10.0000	2.5813	2.581	16.640
8	STD5-15.0 ppb	05	15.0000	3.8731	3.873	25.002
9	STD6-20.0 ppb	06	20.0000	5.1050	5.105	32.932

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

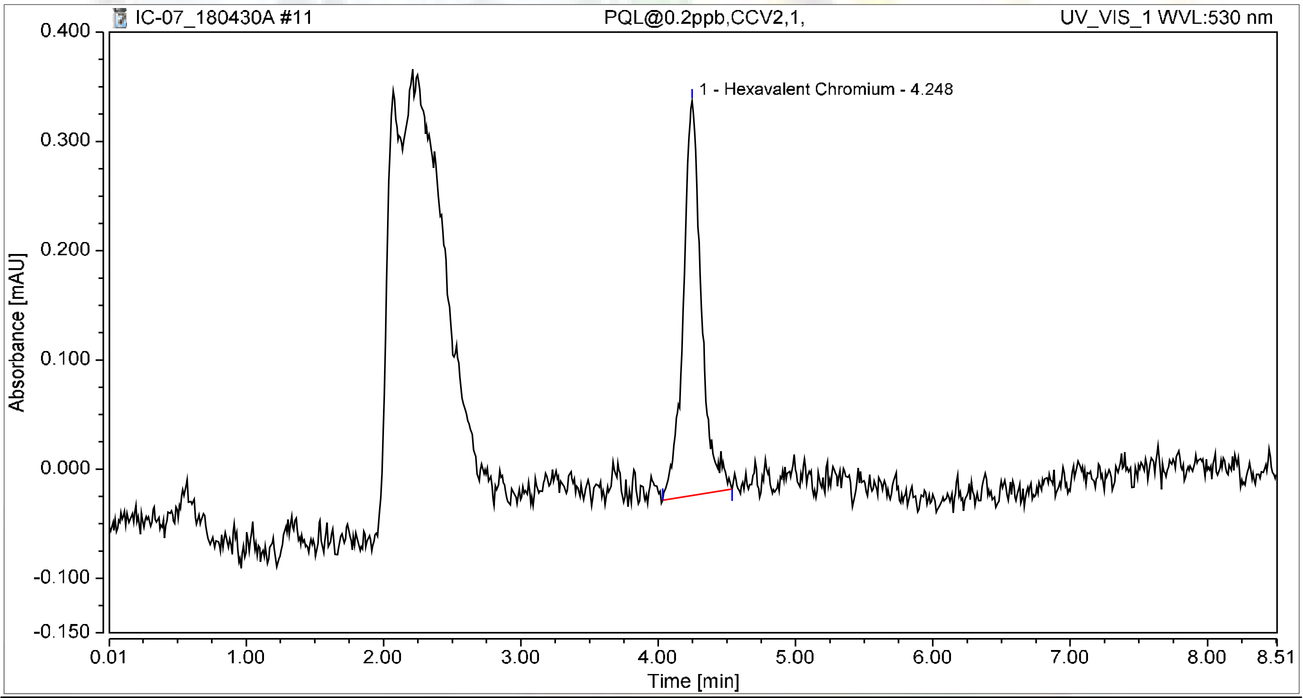
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.333	8.618	100.00	100.00	5.1938
Total:			**1.333**	**8.618**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

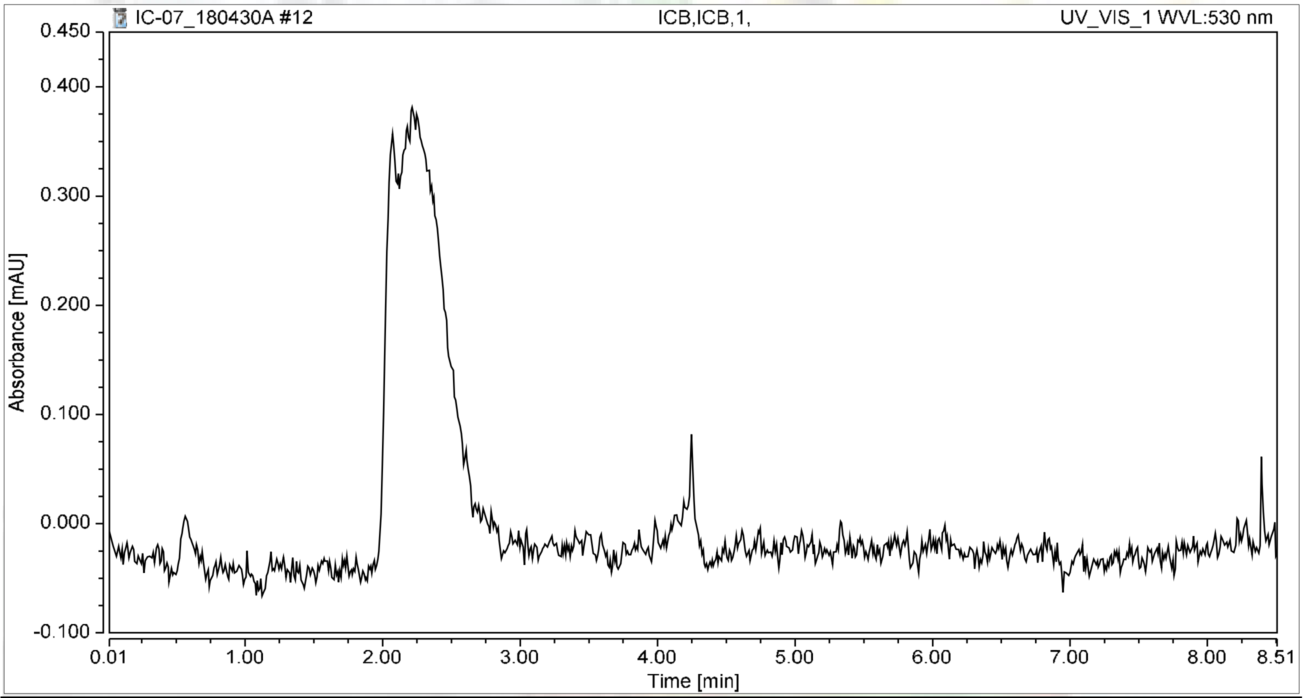
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.055	0.361	100.00	100.00	0.2153
Total:			**0.055**	**0.361**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	04/30/18 10:42 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/30/18 10:52 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/30/18 11:01 AM	Reported
13	MB-R123727	MBLK	1	Hexavalent Chromium	04/30/18 11:11 AM	Reported
14	LCS-R123727	LCS	1	Hexavalent Chromium	04/30/18 11:20 AM	Reported
15	N030044-001A	SAMP	5	Hexavalent Chromium	04/30/18 11:30 AM	Reported
16	N030044-001AMS	MS	5	Hexavalent Chromium	04/30/18 11:39 AM	Reported
17	N030044-002A	SAMP	5	Hexavalent Chromium	04/30/18 11:49 AM	Reported
18	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 11:58 AM	Not Reported
19	N030044-003A	SAMP	5	Hexavalent Chromium	04/30/18 12:08 PM	Reported
20	N030044-003AMS	MS	5	Hexavalent Chromium	04/30/18 12:17 PM	Reported
21	N030044-004A	SAMP	1000	Hexavalent Chromium	04/30/18 12:26 PM	Reported
22	N030044-004AMS	MS	1000	Hexavalent Chromium	04/30/18 12:36 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/30/18 12:45 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/30/18 12:55 PM	Reported
25	N030044-005A	SAMP	50	Hexavalent Chromium	04/30/18 1:04 PM	Reported
26	N030044-005AMS	MS	50	Hexavalent Chromium	04/30/18 1:14 PM	Reported
27	N030044-006A	SAMP	200	Hexavalent Chromium	04/30/18 1:23 PM	Reported
28	N030044-006AMS	MS	200	Hexavalent Chromium	04/30/18 1:33 PM	Reported
29	N030044-007A	SAMP	200	Hexavalent Chromium	04/30/18 1:42 PM	Reported
30	N030044-007AMS	MS	200	Hexavalent Chromium	04/30/18 1:52 PM	Reported
31	N030044-008A	SAMP	1000	Hexavalent Chromium	04/30/18 2:01 PM	Reported
32	N030044-008AMS	MS	1000	Hexavalent Chromium	04/30/18 2:10 PM	Reported
33	N030044-009A	SAMP	50	Hexavalent Chromium	04/30/18 2:20 PM	Reported
34	N030044-009AMS	MS	50	Hexavalent Chromium	04/30/18 2:29 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/30/18 2:39 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/30/18 2:48 PM	Reported
37	N030044-010A	SAMP	1	Hexavalent Chromium	04/30/18 2:58 PM	Reported
38	N030044-010AMS	MS	1	Hexavalent Chromium	04/30/18 3:07 PM	Reported
39	N030044-011A	SAMP	1	Hexavalent Chromium	04/30/18 3:17 PM	Reported
40	N030044-011AMS	MS	1	Hexavalent Chromium	04/30/18 3:26 PM	Reported
41	N030044-001ADUP	DUP	5	Hexavalent Chromium	04/30/18 3:36 PM	Reported
42	N030044-004AMSD	MSD	1000	Hexavalent Chromium	04/30/18 3:45 PM	Reported

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INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 3:55 PM	Reported
44	N029859-008A	SAMP	1	Hexavalent Chromium	04/30/18 4:06 PM	Not Reported
45	N029859-008AMS	MS	1	Hexavalent Chromium	04/30/18 4:17 PM	Not Reported
46	N029859-009A	SAMP	1	Hexavalent Chromium	04/30/18 4:26 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/30/18 4:36 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/30/18 4:45 PM	Reported
49	N029859-009AMS	MS	1	Hexavalent Chromium	04/30/18 4:55 PM	Not Reported
50	N029859-011A	SAMP	1	Hexavalent Chromium	04/30/18 5:04 PM	Not Reported
51	N029859-011AMS	MS	1	Hexavalent Chromium	04/30/18 5:14 PM	Not Reported
52	CCV-4	CCV	1	Hexavalent Chromium	04/30/18 5:23 PM	Reported
53	CCB-4	CCB	1	Hexavalent Chromium	04/30/18 5:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180430A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**30/Apr/18 18:19:59**
No. of Injections:	**56**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		04/30/2018 10:42	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/30/2018 10:52	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/30/2018 11:01	Finished	ICB R180418A
13	MB-H2O,MBLK,1,	13	1000	Unknown		04/30/2018 11:11	Finished	MB R180418A
14	LCS-H2O,LCS,1,	14	1000	Unknown		04/30/2018 11:20	Finished	LCS, IWST-180129B
15	N030044-001A,SAMP	15	1000	Unknown		04/30/2018 11:30	Finished	SAMP,2>10mL
16	N030044-001AMS,MS	16	1000	Unknown		04/30/2018 11:39	Finished	MS (5ppb), IWST-180129B,2>1
17	N030044-002A,SAMP	17	1000	Unknown		04/30/2018 11:49	Finished	SAMP,2>10mL
18	N030044-002AMS,MS	18	1000	Unknown		04/30/2018 11:58	Finished	MS (5ppb), IWST-180129B,2>1
19	N030044-003A,SAMP	19	1000	Unknown		04/30/2018 12:08	Finished	SAMP,2>10mL
20	N030044-003AMS,MS	20	1000	Unknown		04/30/2018 12:17	Finished	MS (5ppb), IWST-180129B,2>1
21	N030044-004A,SAMP	21	1000	Unknown		04/30/2018 12:26	Finished	SAMP,0.01>10mL
22	N030044-004AMS,MS	22	1000	Unknown		04/30/2018 12:36	Finished	MS (5ppb), IWST-180129B,0.0
23	CCV-1,CCV1,1,	23	1000	Unknown		04/30/2018 12:45	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	24	1000	Unknown		04/30/2018 12:55	Finished	CCB R180418A
25	N030044-005A,SAMP	25	1000	Unknown		04/30/2018 13:04	Finished	SAMP,0.2>10mL
26	N030044-005AMS,MS	26	1000	Unknown		04/30/2018 13:14	Finished	MS (5ppb), IWST-180129B,0.2
27	N030044-006A,SAMP	27	1000	Unknown		04/30/2018 13:23	Finished	SAMP,0.05>10mL
28	N030044-006AMS,MS	28	1000	Unknown		04/30/2018 13:33	Finished	MS (5ppb), IWST-180129B,0.0
29	N030044-007A,SAMP	29	1000	Unknown		04/30/2018 13:42	Finished	SAMP,0.05>10mL
30	N030044-007AMS,MS	30	1000	Unknown		04/30/2018 13:52	Finished	MS (5ppb), IWST-180129B,0.0
31	N030044-008A,SAMP	31	1000	Unknown		04/30/2018 14:01	Finished	SAMP,0.01>10mL
32	N030044-008AMS,MS	32	1000	Unknown		04/30/2018 14:10	Finished	MS (5ppb), IWST-180129B,0.0
33	N030044-009A,SAMP	33	1000	Unknown		04/30/2018 14:20	Finished	SAMP,0.2>10mL
34	N030044-009AMS,MS	34	1000	Unknown		04/30/2018 14:29	Finished	MS (5ppb), IWST-180129B,0.2
35	CCV-2,CCV,1,	35	1000	Unknown		04/30/2018 14:39	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	36	1000	Unknown		04/30/2018 14:48	Finished	CCB R180418A
37	N030044-010A,SAMP	37	1000	Unknown		04/30/2018 14:58	Finished	SAMP,10mL
38	N030044-010AMS,MS	38	1000	Unknown		04/30/2018 15:07	Finished	MS (1ppb), IWST-180129B,10
39	N030044-011A,SAMP	39	1000	Unknown		04/30/2018 15:17	Finished	SAMP,10mL
40	N030044-011AMS,MS	40	1000	Unknown		04/30/2018 15:26	Finished	MS (1ppb), IWST-180129B,10
41	N030044-001ADUP,D	41	1000	Unknown		04/30/2018 15:36	Finished	DUP,2>10mL
42	N030044-004AMSD,M	42	1000	Unknown		04/30/2018 15:45	Finished	MSD (5ppb), IWST-180129B,0.
43	N030044-002AMS,MS	43	1000	Unknown		04/30/2018 15:55	Finished	MS (5ppb), IWST-180129B,2>1
44	N029859-008A,SAMP	1	1000	Unknown		04/30/2018 16:06	Finished	SAMP,10mL
45	N029859-008AMS,MS	2	1000	Unknown		04/30/2018 16:17	Finished	MS (1ppb), IWST-180129B,10
46	N029859-009A,SAMP	3	1000	Unknown		04/30/2018 16:26	Finished	SAMP,10mL
47	CCV-3,CCV1,1,	4	1000	Unknown		04/30/2018 16:36	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	5	1000	Unknown		04/30/2018 16:45	Finished	CCB R180418A
49	N029859-009AMS,MS	6	1000	Unknown		04/30/2018 16:55	Finished	MS (1ppb), IWST-180129B,10
50	N029859-011A,SAMP	7	1000	Unknown		04/30/2018 17:04	Finished	SAMP,10mL
51	N029859-011AMS,MS	8	1000	Unknown		04/30/2018 17:14	Finished	MS (1ppb), IWST-180129B,10
52	CCV-4,CCV,1,	9	1000	Unknown		04/30/2018 17:23	Finished	CCV @5ppb, IWST-180129A
53	CCB-4,CCB,1,	10	1000	Unknown		04/30/2018 17:33	Finished	CCB R180418A
54	SHUTDOWN	11	1000	Unknown		04/30/2018 17:42	Finished	
55	Eluent: R180430A	12	1000	Unknown		n.a.	Finished	Eluent
56	PCR: R180430B	13	1000	Unknown		n.a.	Finished	Post-Column Reagent

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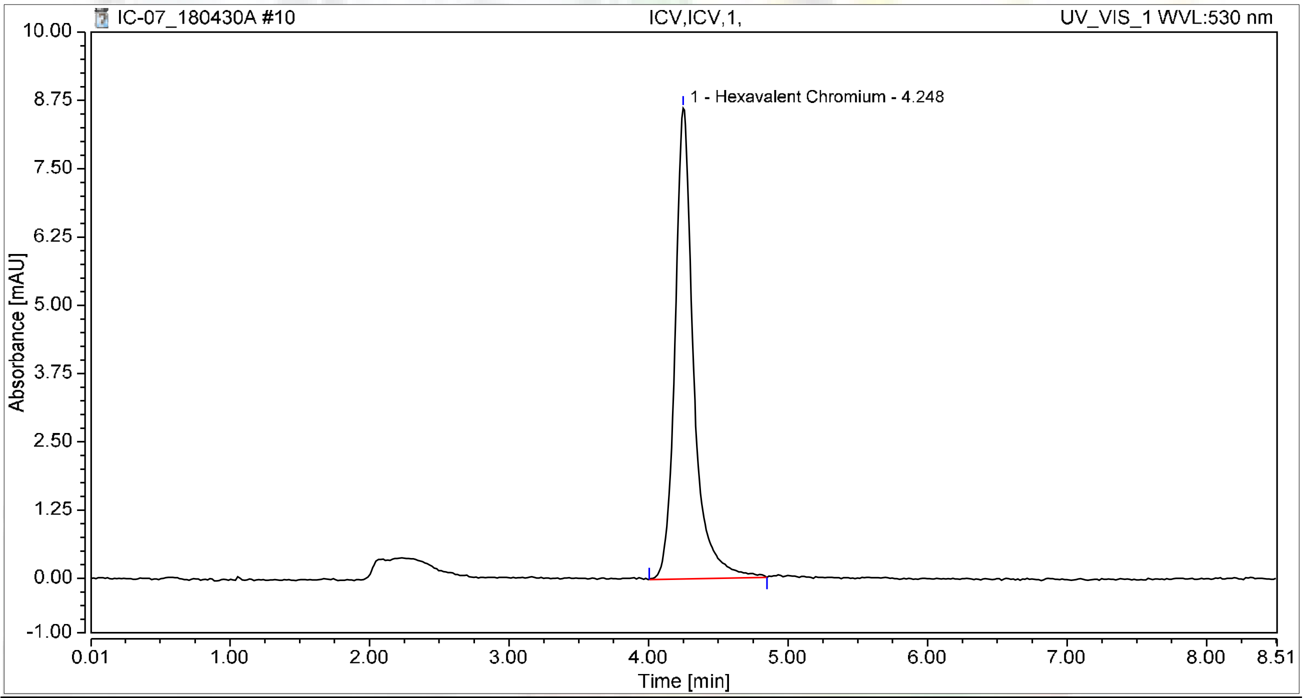
Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

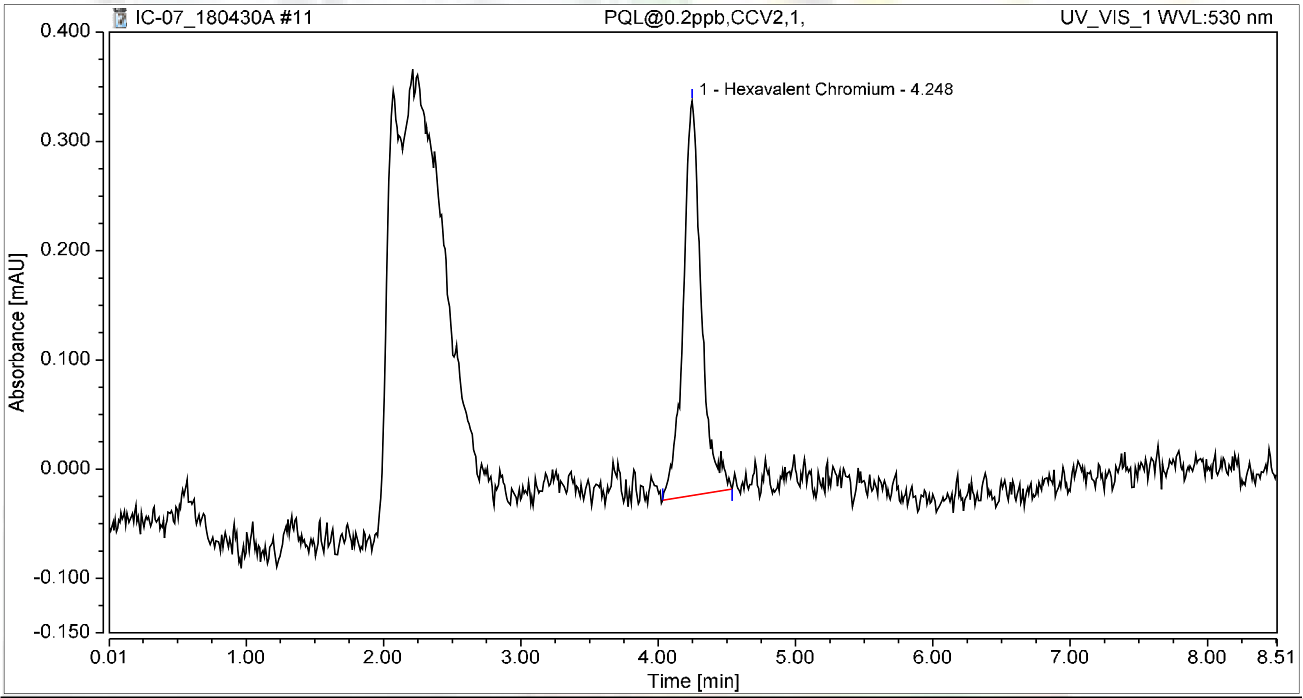
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.333	8.618	100.00	100.00	5.1938
Total:			**1.333**	**8.618**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

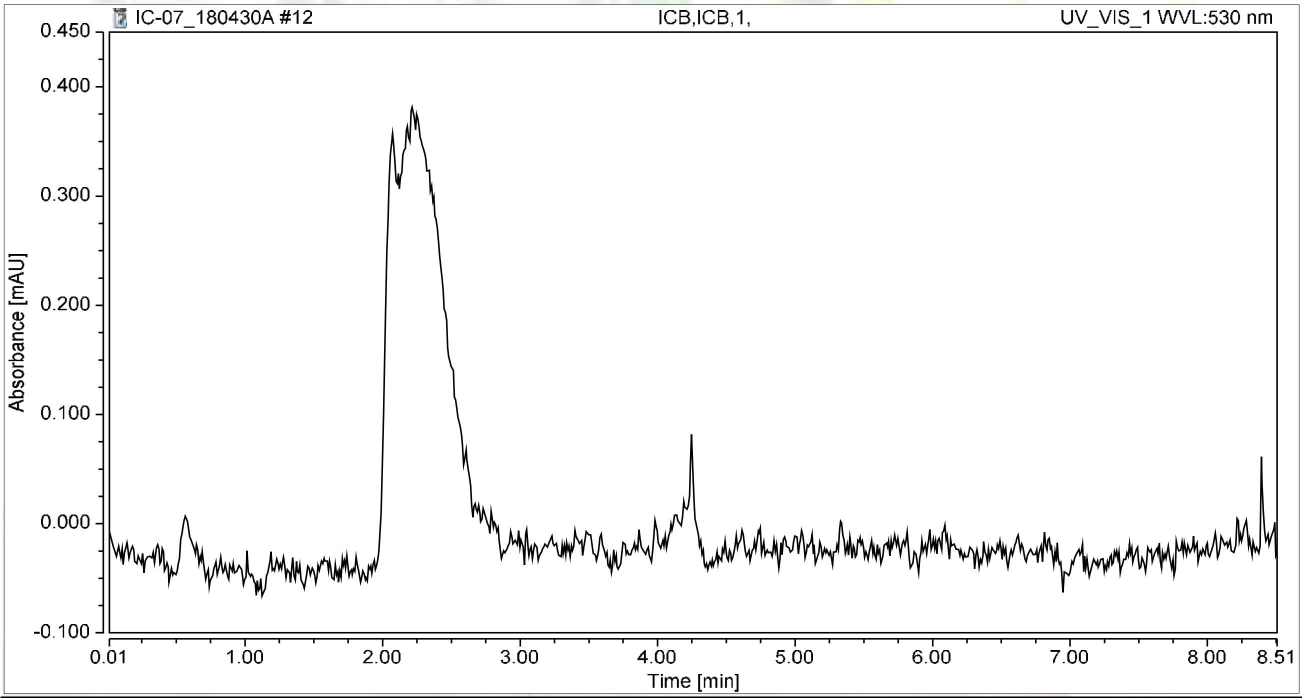
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.055	0.361	100.00	100.00	0.2153
Total:			**0.055**	**0.361**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

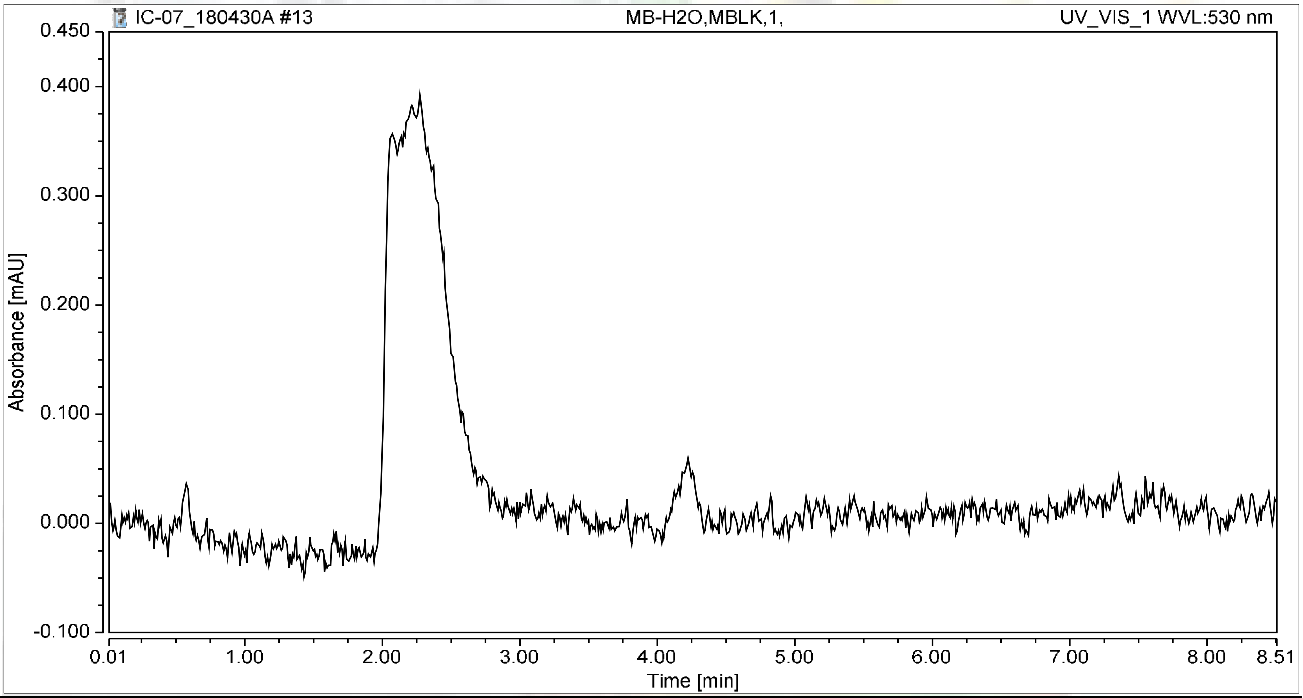
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 11:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

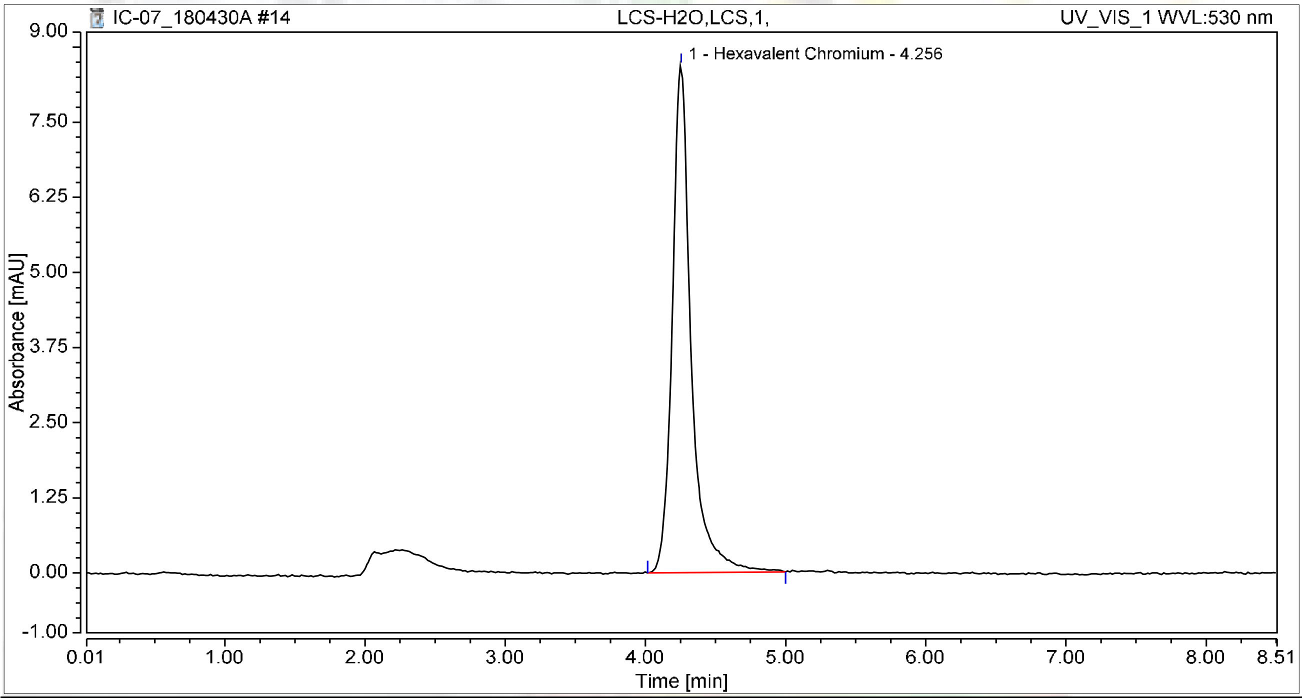
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 11:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

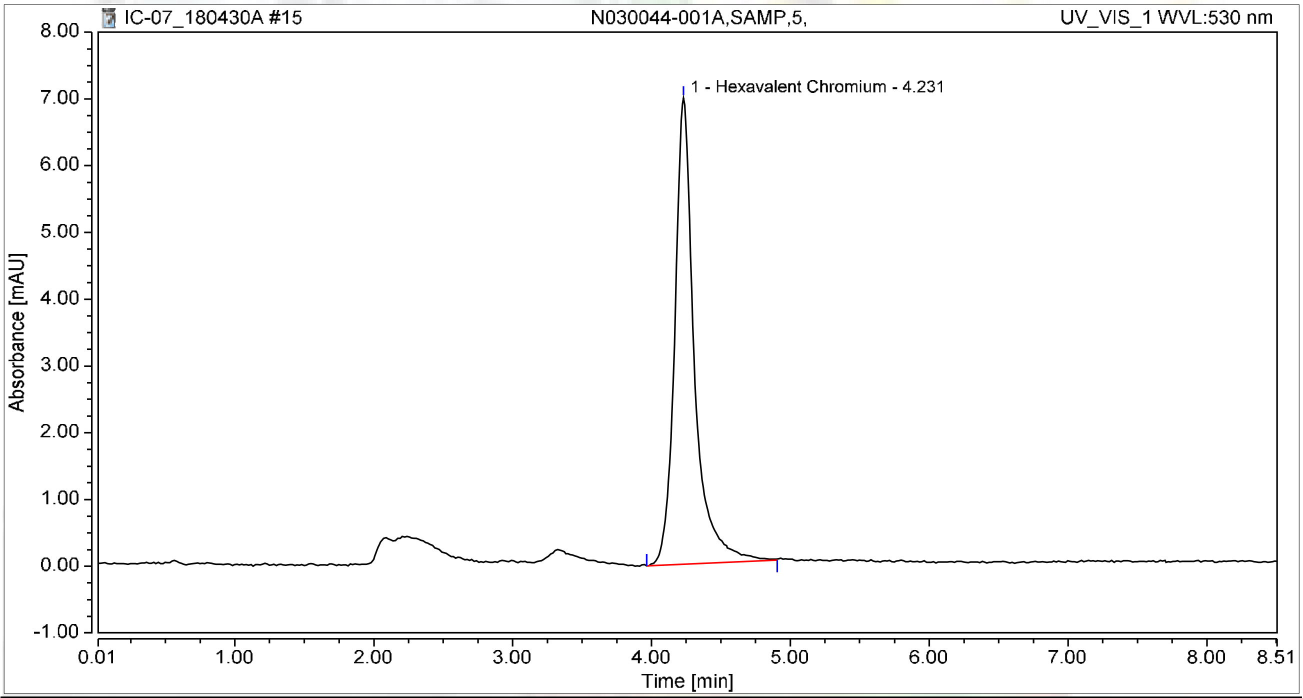
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.320	8.442	100.00	100.00	5.1436
Total:			**1.320**	**8.442**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-001A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 11:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

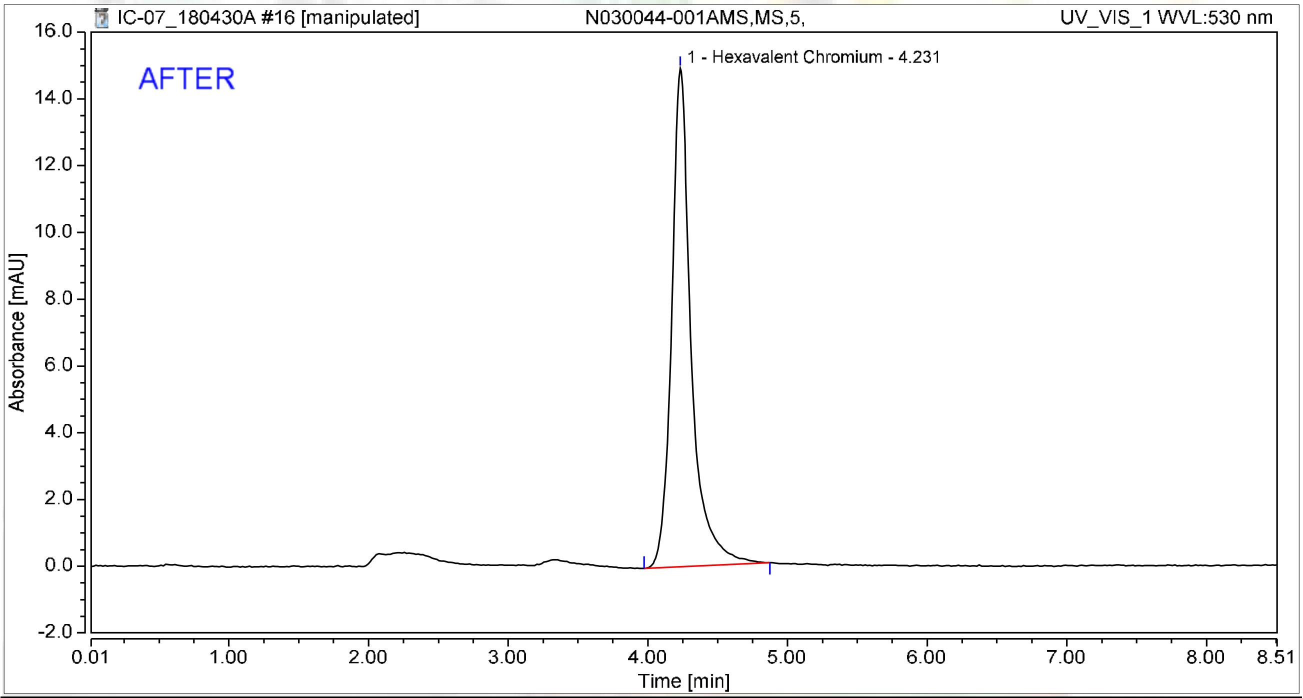
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.149	6.987	100.00	100.00	4.4775
Total:			**1.149**	**6.987**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-001AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 11:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.421	14.929	100.00	100.00	9.4345
Total:			**2.421**	**14.929**	**100.00**	**100.00**	

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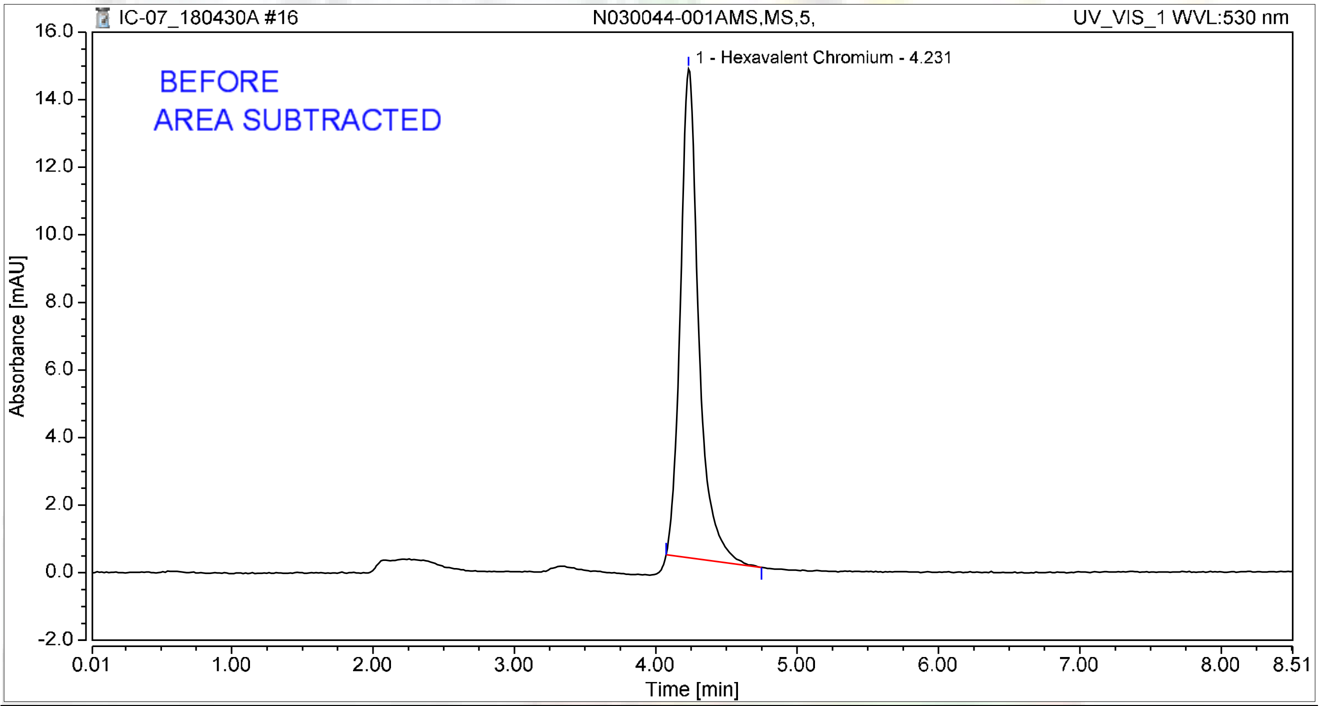
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030044-001AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 11:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.186	14.474	100.00	100.00	8.6489
Total:			**2.186**	**14.474**	**100.00**	**100.00**	

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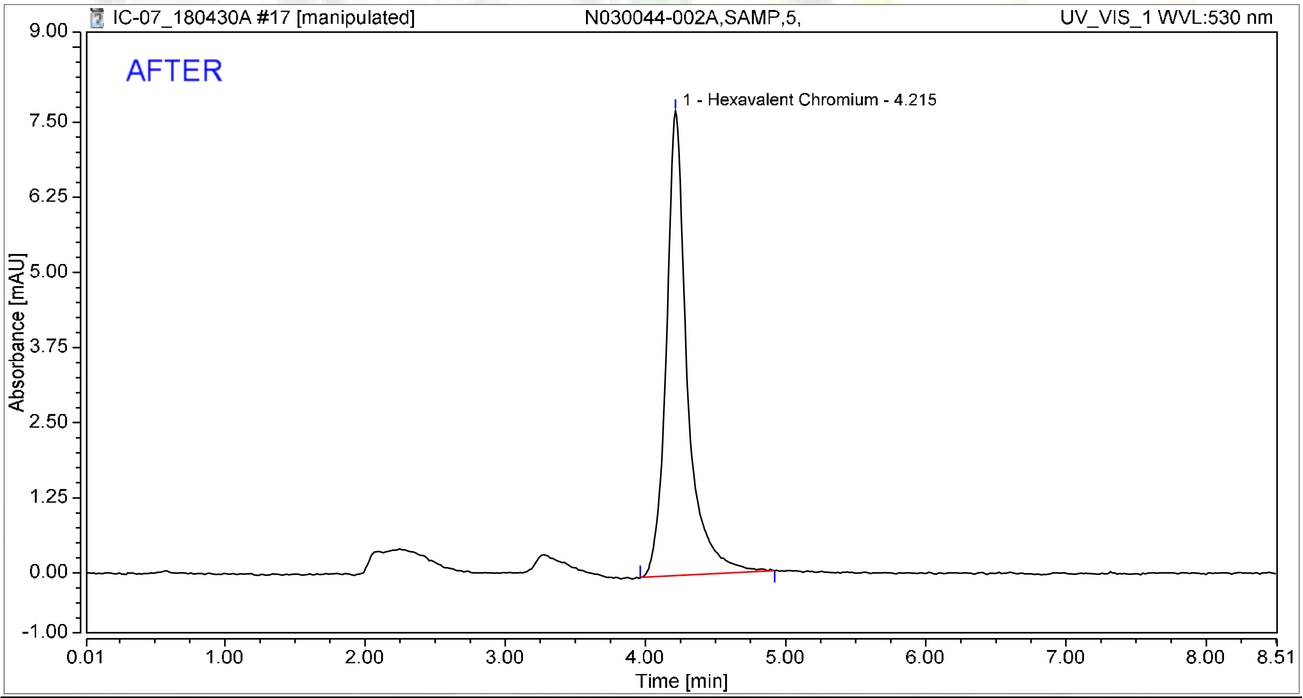
Chromatogram and Results

Injection Details

Injection Name:	**N030044-002A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 11:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.341	7.732	100.00	100.00	5.2257
Total:			**1.341**	**7.732**	**100.00**	**100.00**	

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Reviewed by:
Nancy 5/7/2018

My first report/Integration

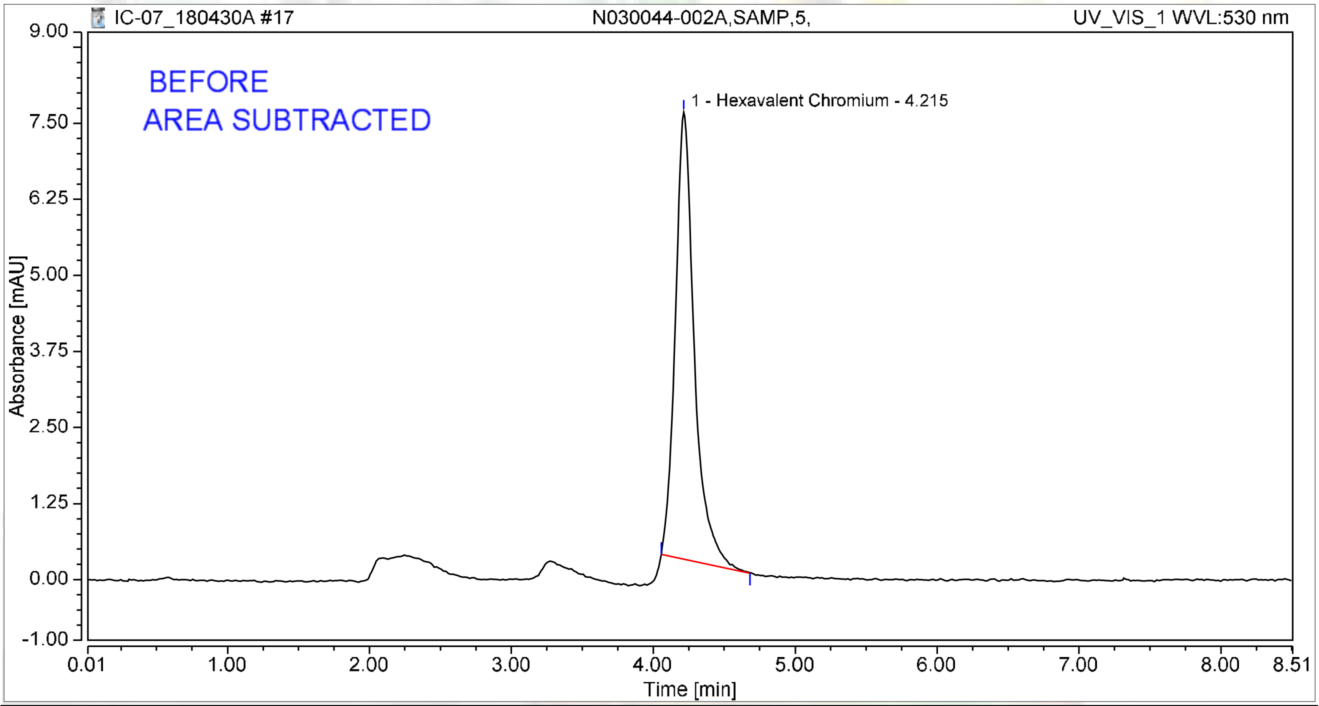
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N030044-002A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 11:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.140	7.350	100.00	100.00	4.5126
Total:			**1.140**	**7.350**	**100.00**	**100.00**	

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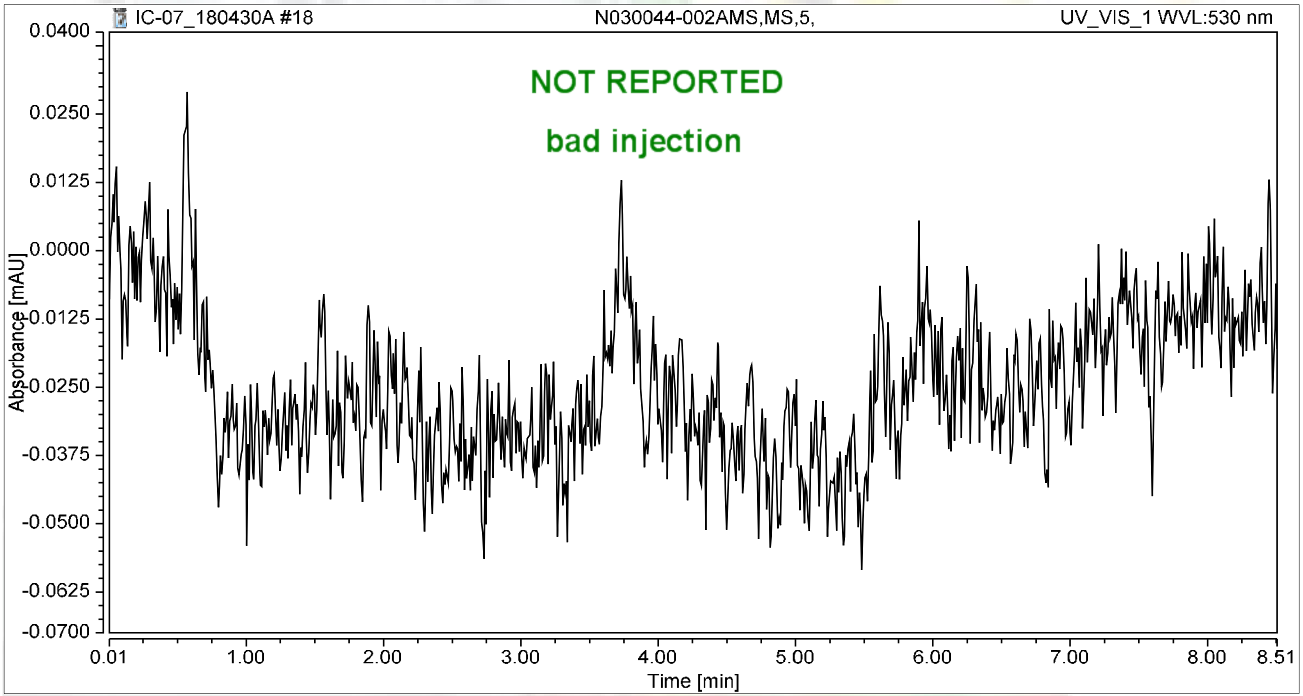
Chromatogram and Results

Injection Details

Injection Name:	**N030044-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 11:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

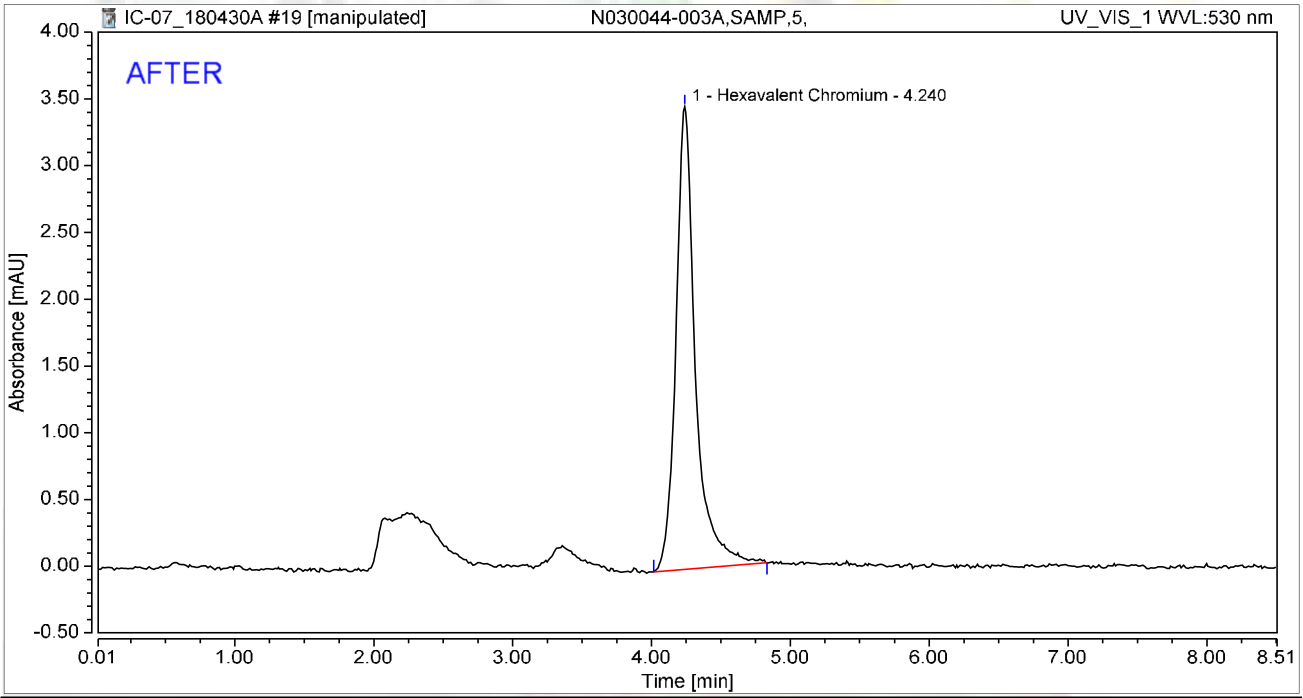
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 12:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.565	3.465	100.00	100.00	2.1997
Total:			**0.565**	**3.465**	**100.00**	**100.00**	

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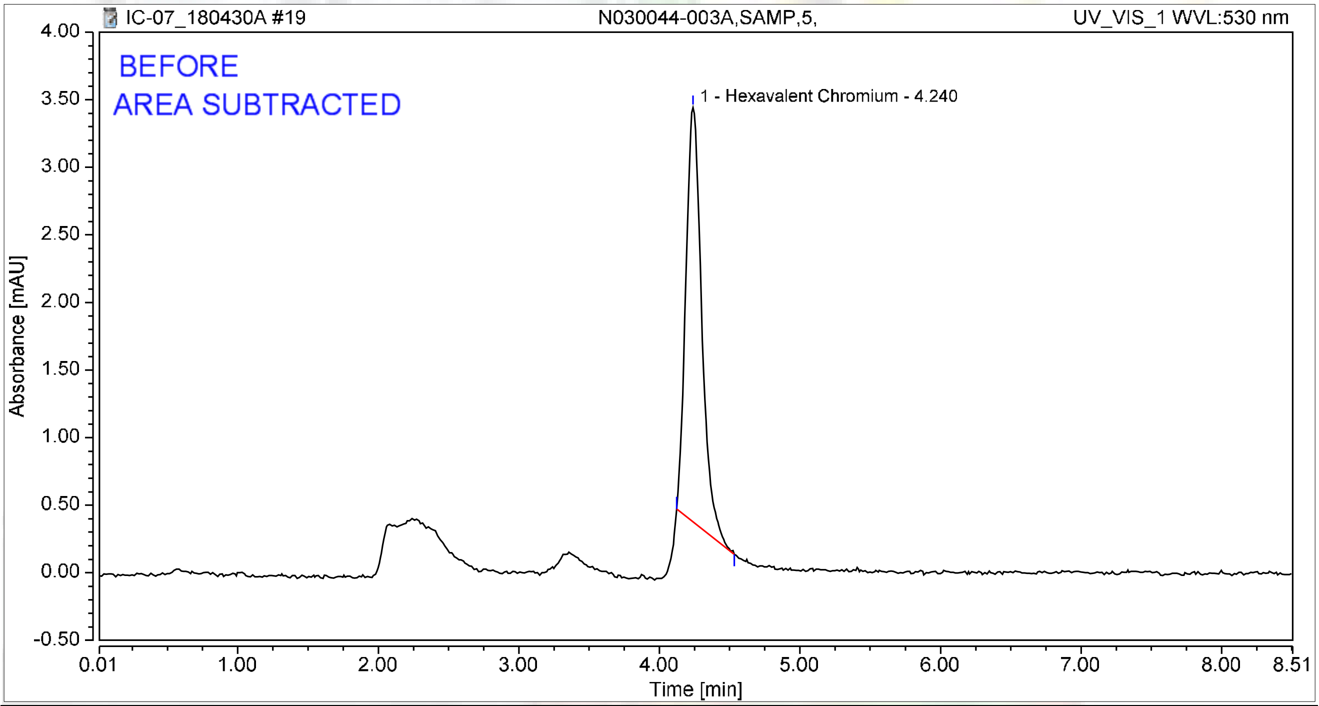
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030044-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 12:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.401	3.066	100.00	100.00	1.5887
Total:			**0.401**	**3.066**	**100.00**	**100.00**	

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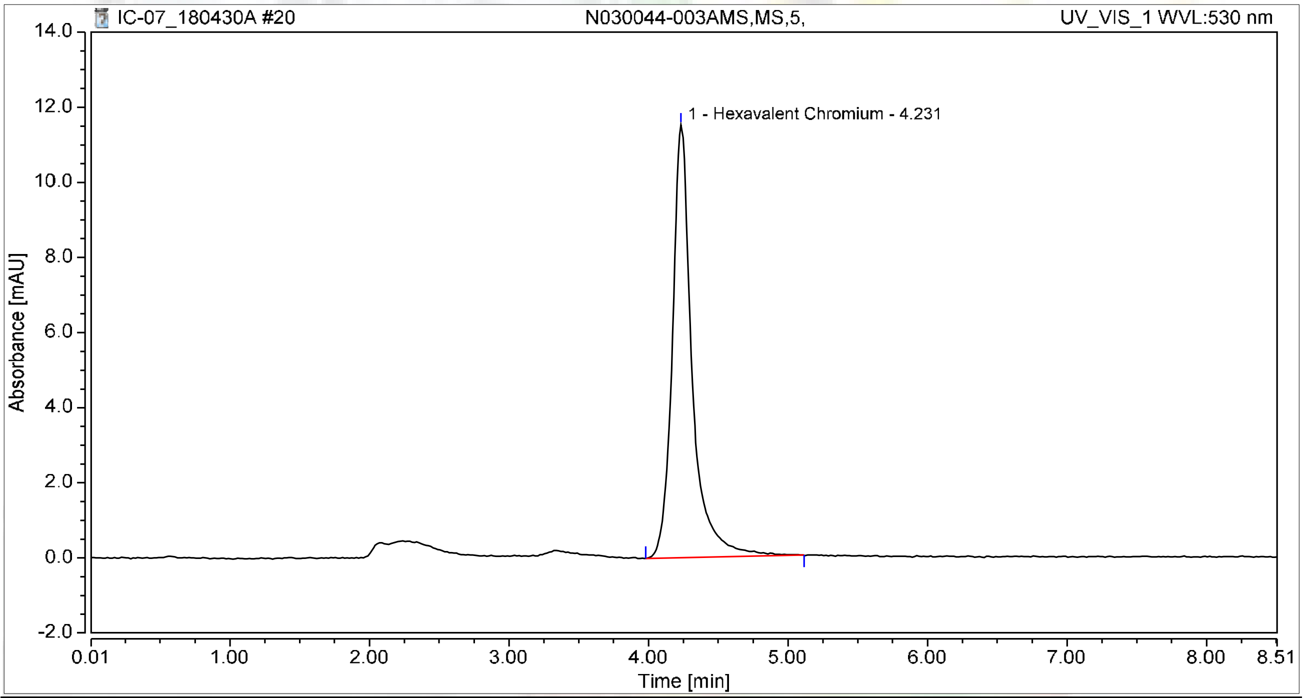
Chromatogram and Results

Injection Details

Injection Name:	**N030044-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 12:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

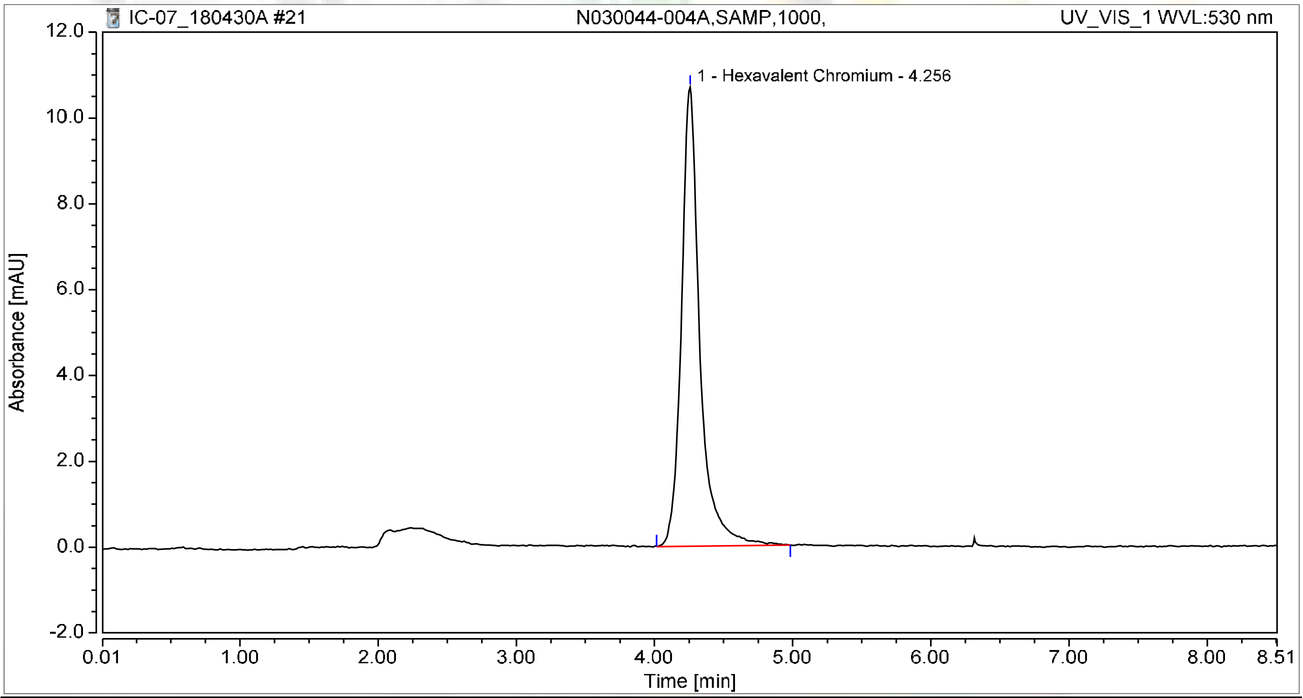
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.900	11.524	100.00	100.00	7.4035
Total:			**1.900**	**11.524**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-004A,SAMP,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 12:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

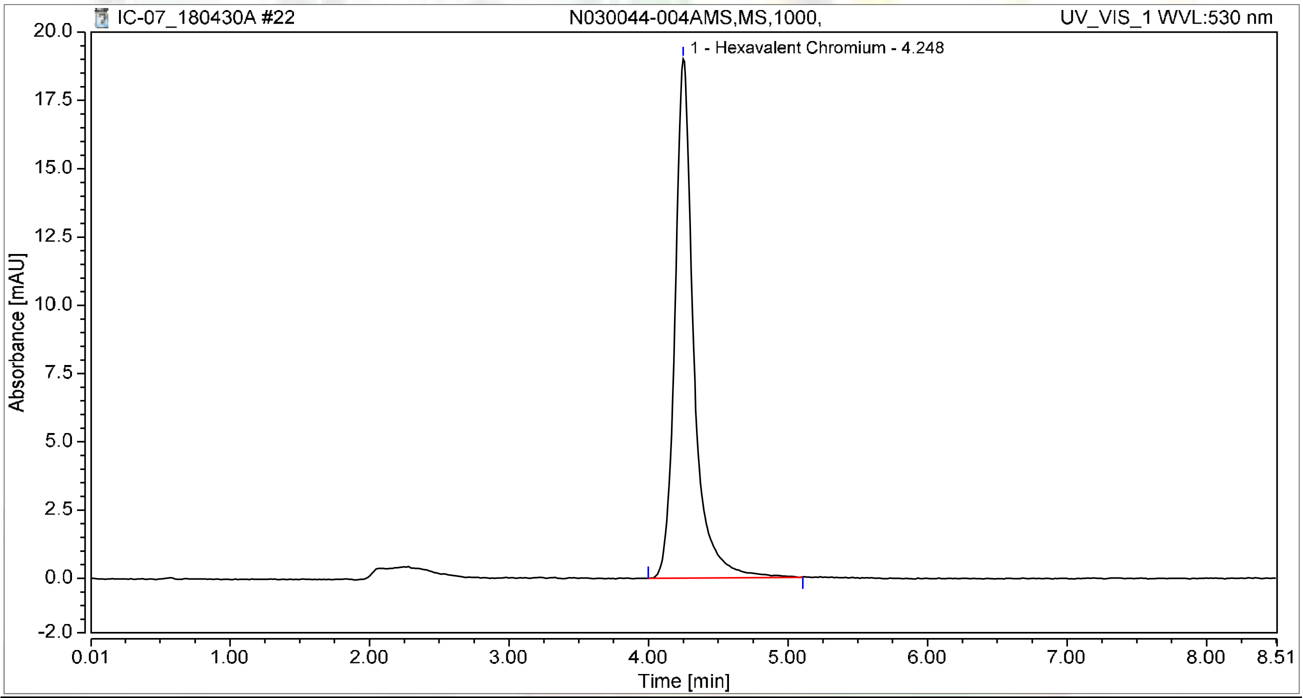
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.657	10.699	100.00	100.00	6.4549
Total:			**1.657**	**10.699**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-004AMS,MS,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

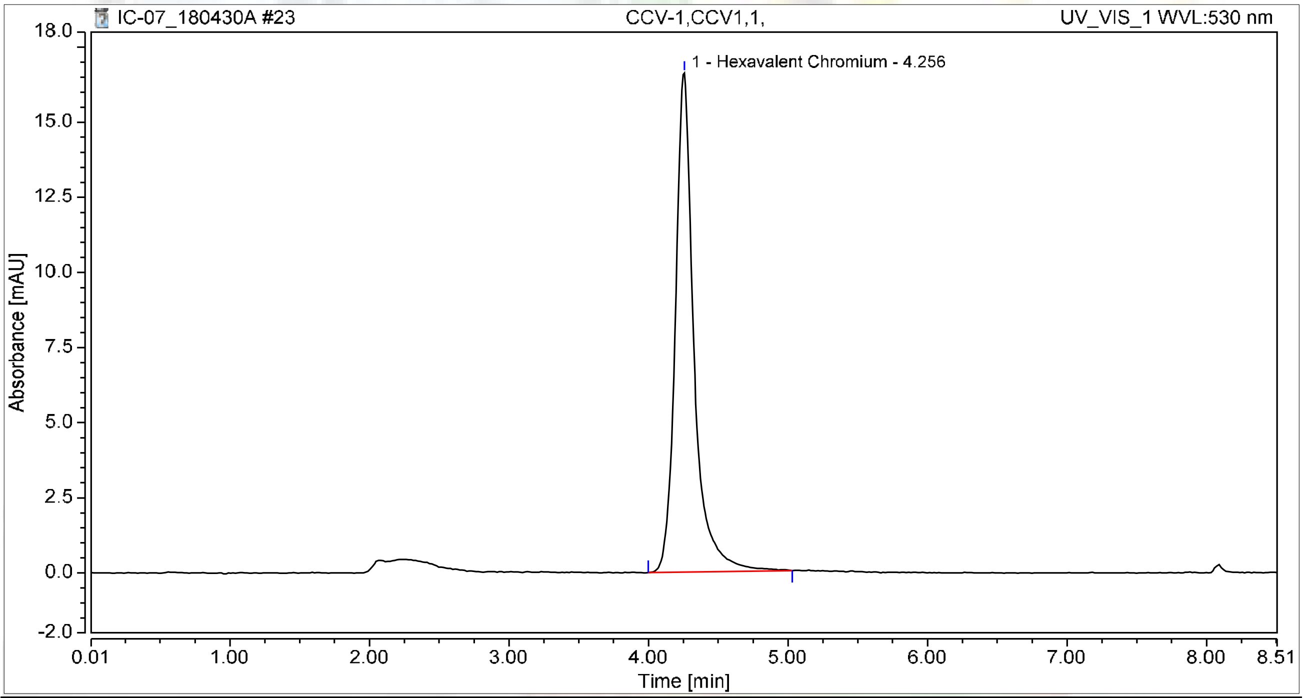
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.960	19.016	100.00	100.00	11.5336
Total:			**2.960**	**19.016**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 12:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

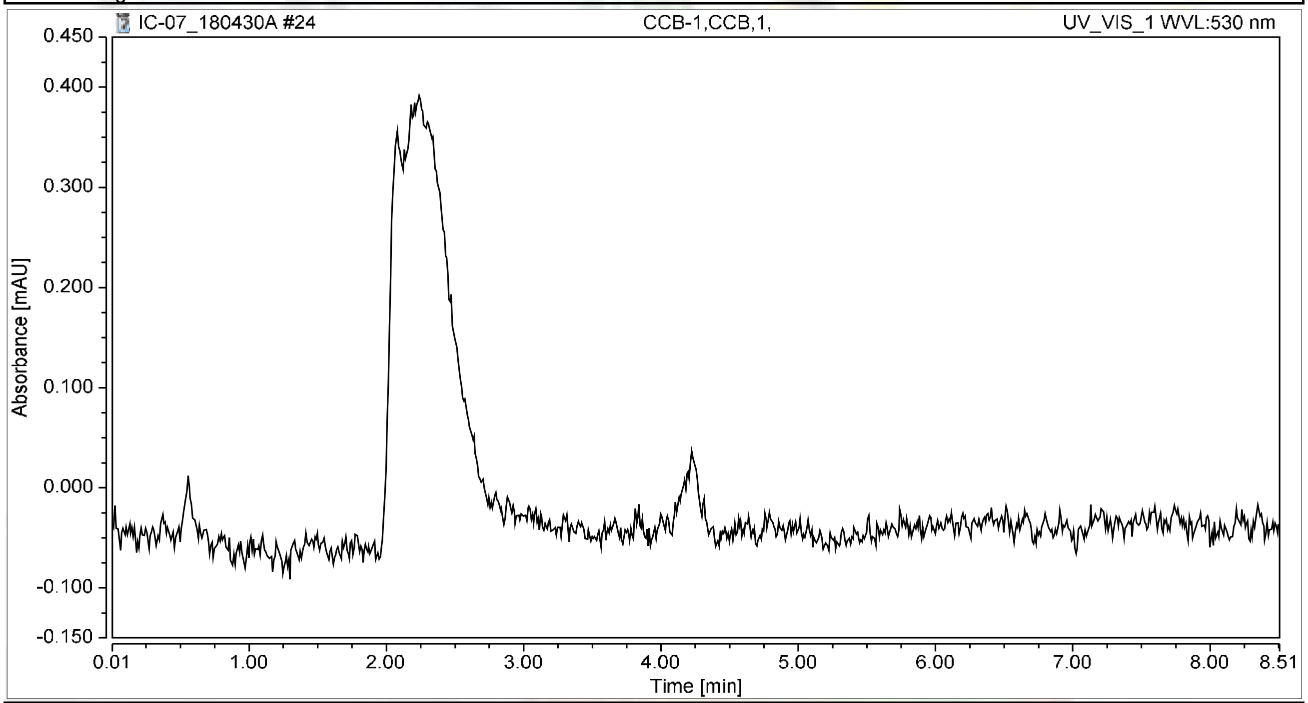
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.570	16.607	100.00	100.00	10.0146
Total:			**2.570**	**16.607**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

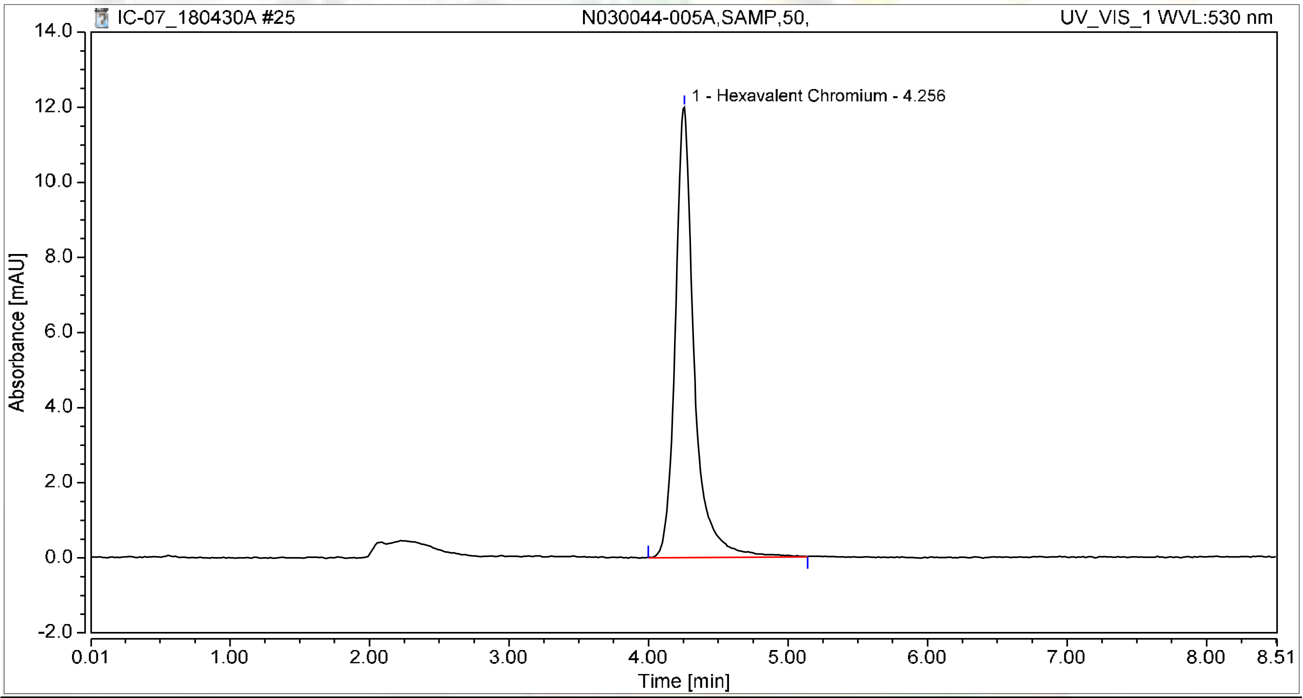
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-005A,SAMP,50,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 13:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

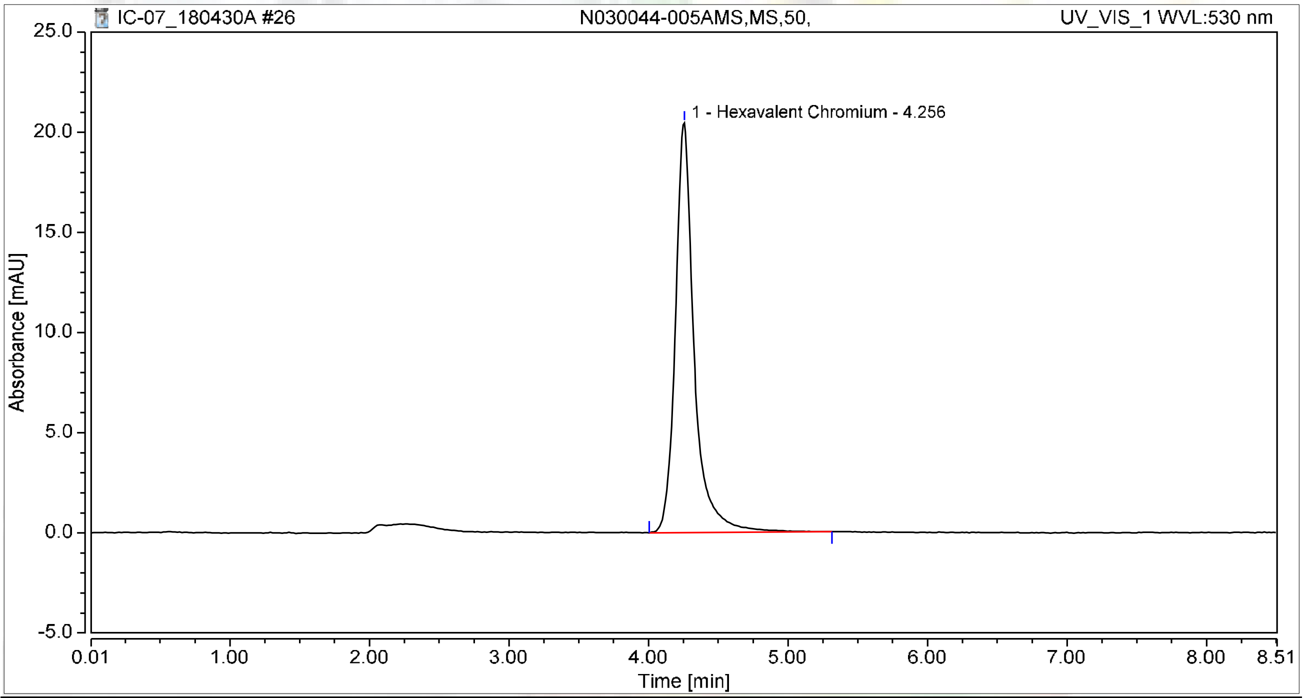
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.878	11.995	100.00	100.00	7.3164
Total:			**1.878**	**11.995**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-005AMS,MS,50,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 13:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

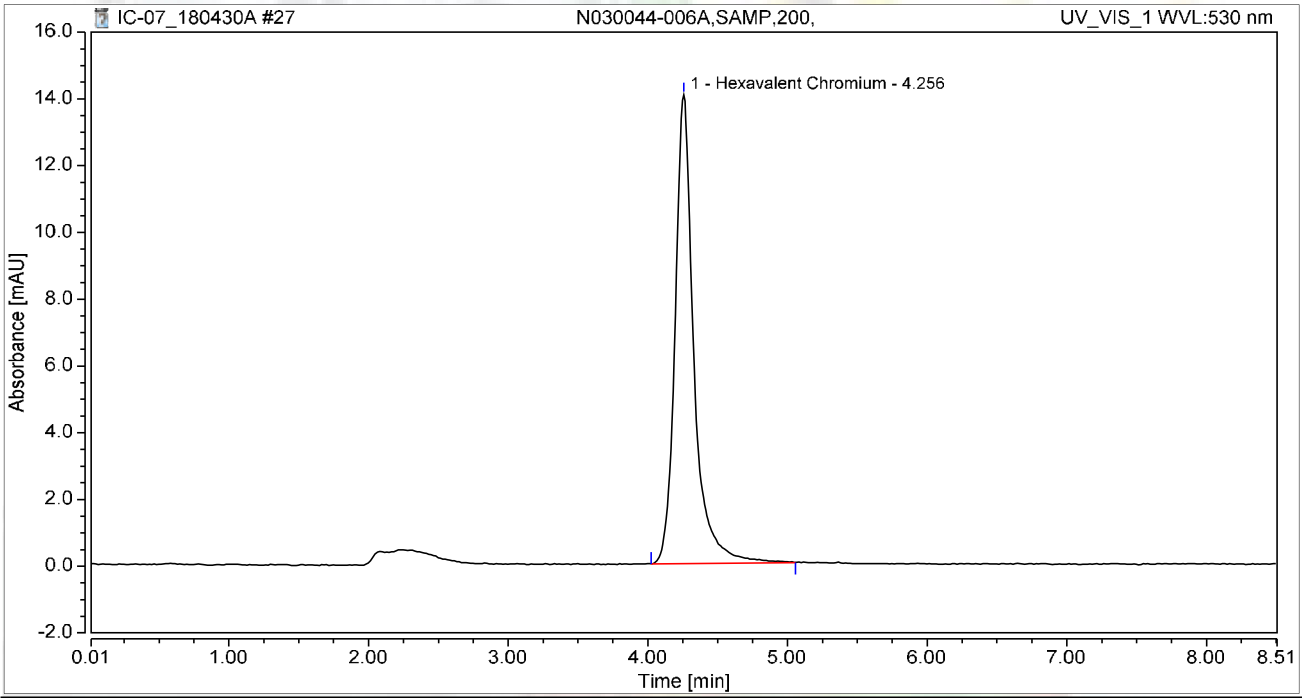
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	3.202	20.442	100.00	100.00	12.4786
Total:			**3.202**	**20.442**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-006A,SAMP,200,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 13:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

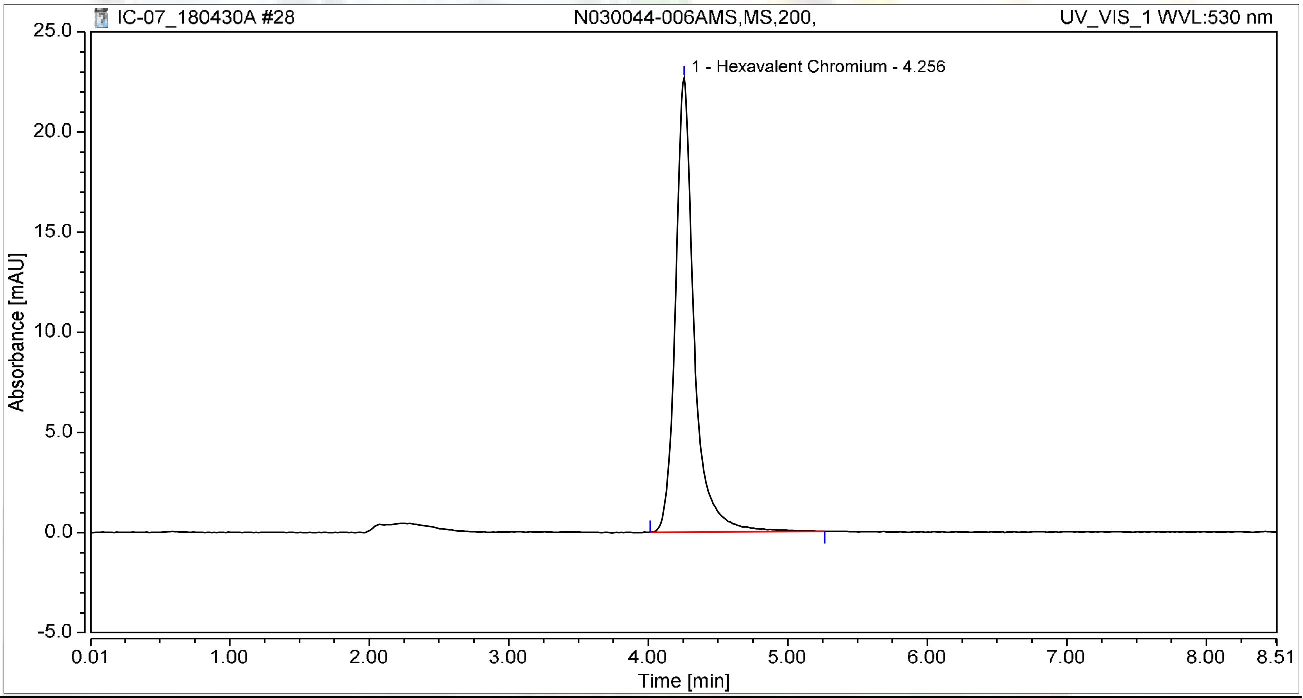
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.186	14.054	100.00	100.00	8.5166
Total:			**2.186**	**14.054**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-006AMS,MS,200,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 13:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

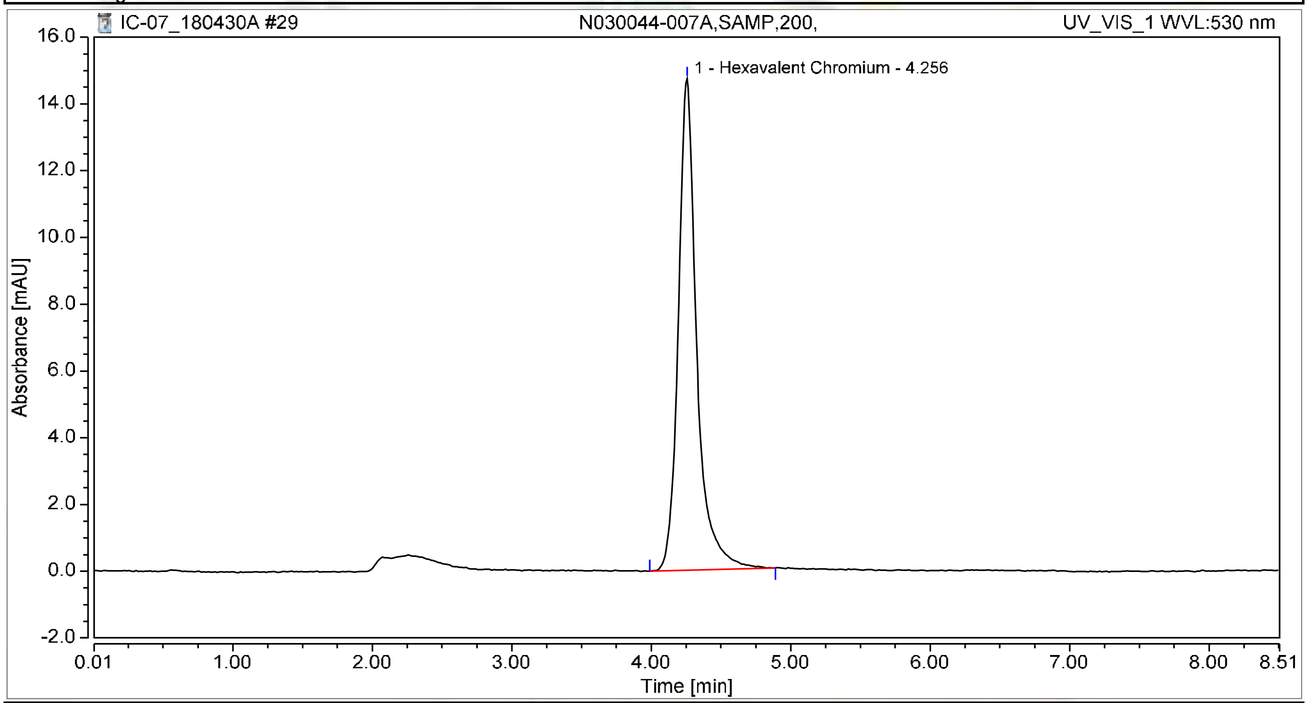
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	3.509	22.672	100.00	100.00	13.6714
Total:			**3.509**	**22.672**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-007A,SAMP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 13:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

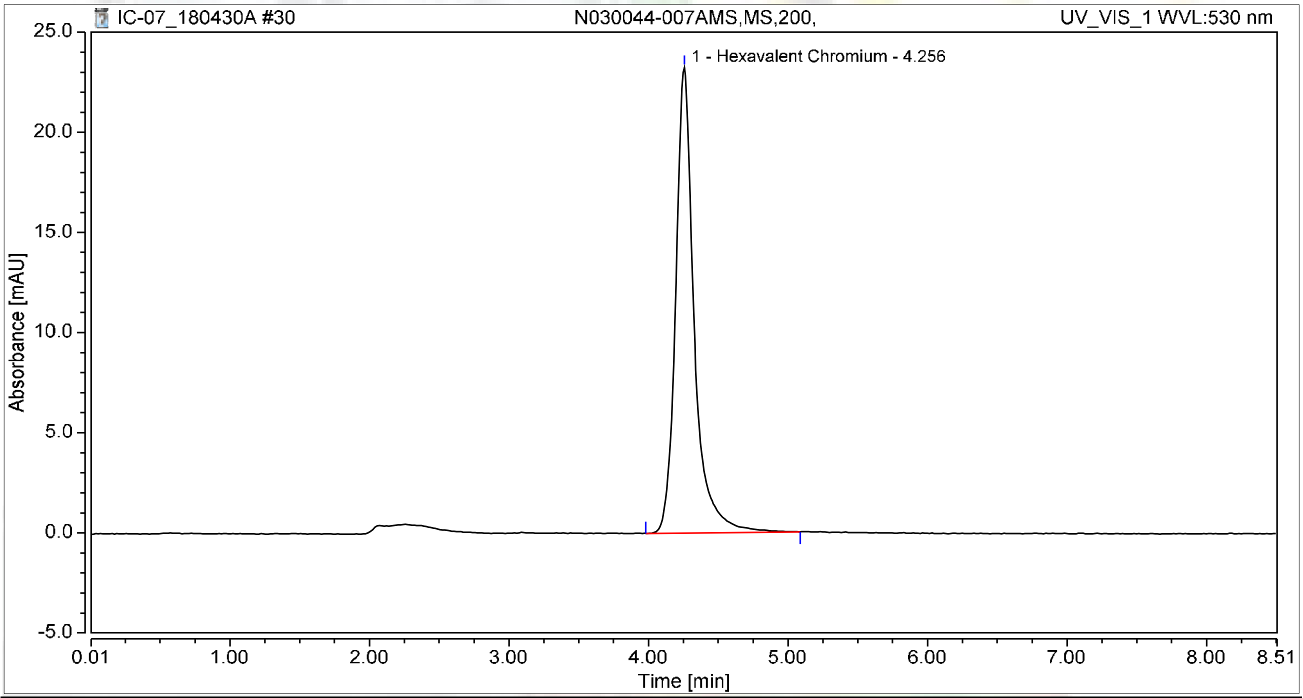
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.249	14.723	100.00	100.00	8.7627
Total:			**2.249**	**14.723**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-007AMS,MS,200,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 13:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

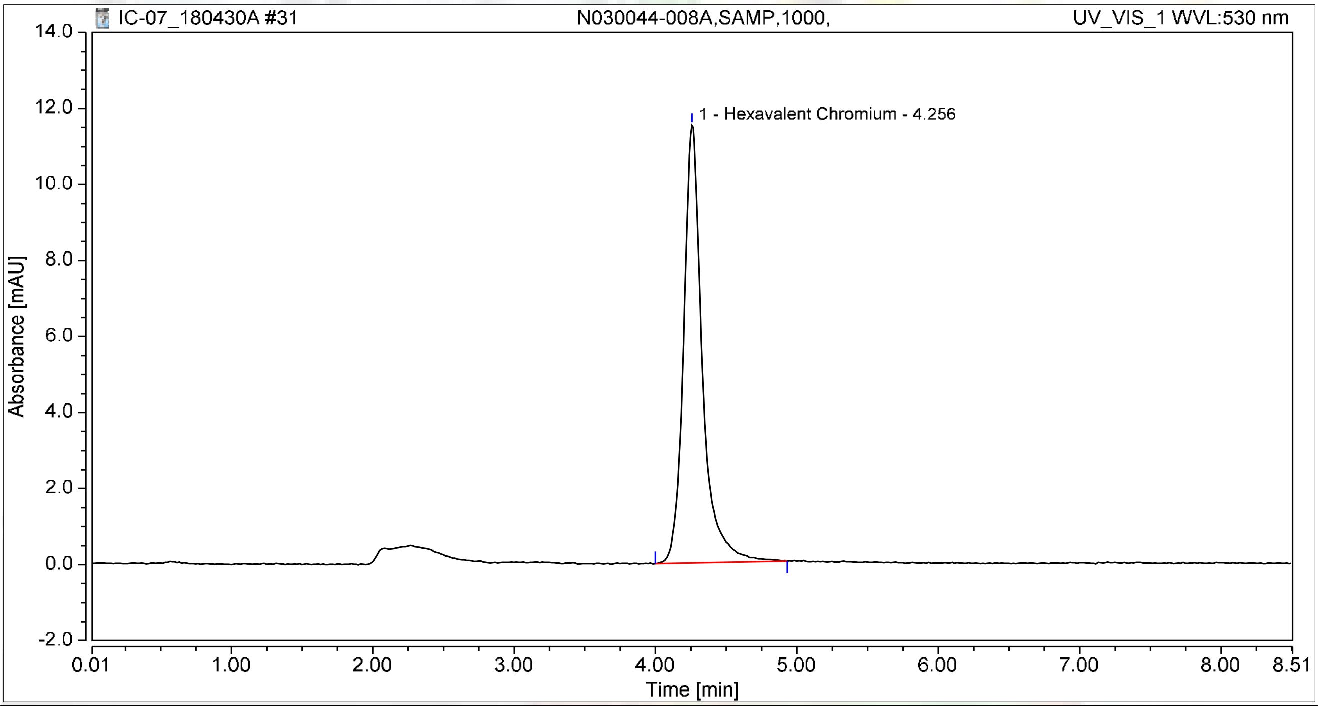
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	3.588	23.250	100.00	100.00	13.9804
Total:			**3.588**	**23.250**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-008A,SAMP,1000,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

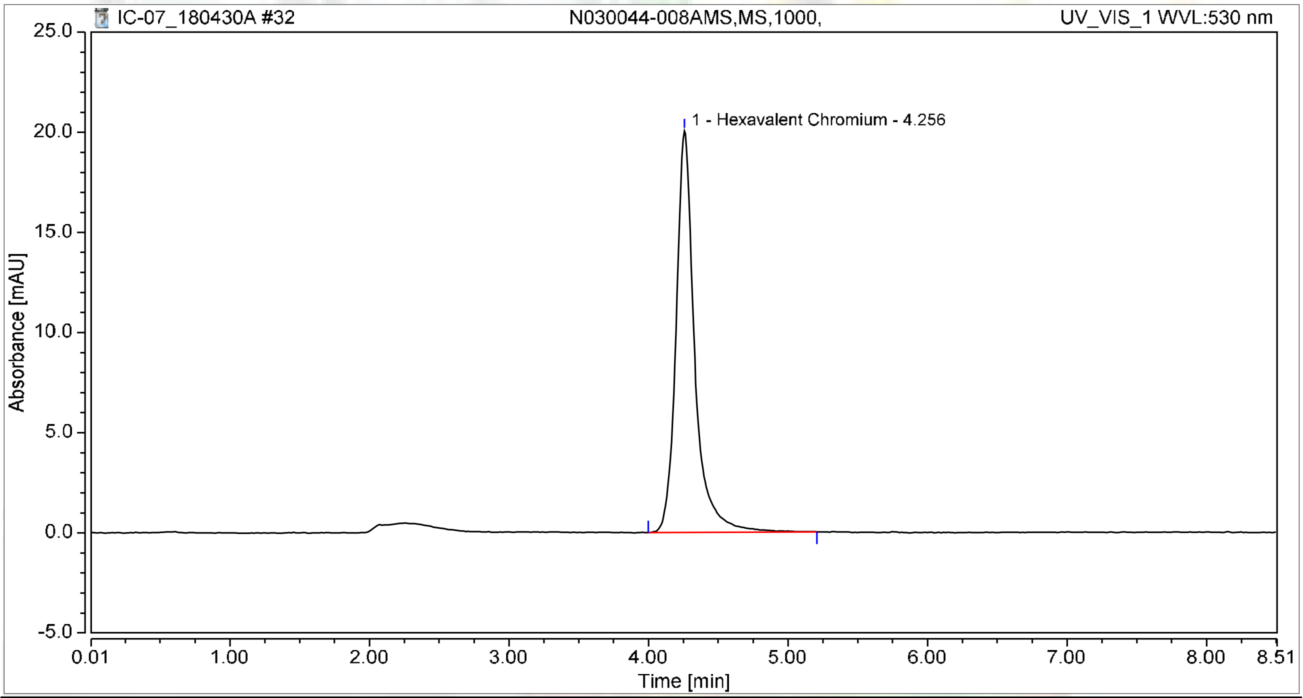
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.775	11.509	100.00	100.00	6.9181
Total:			**1.775**	**11.509**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-008AMS,MS,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 14:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

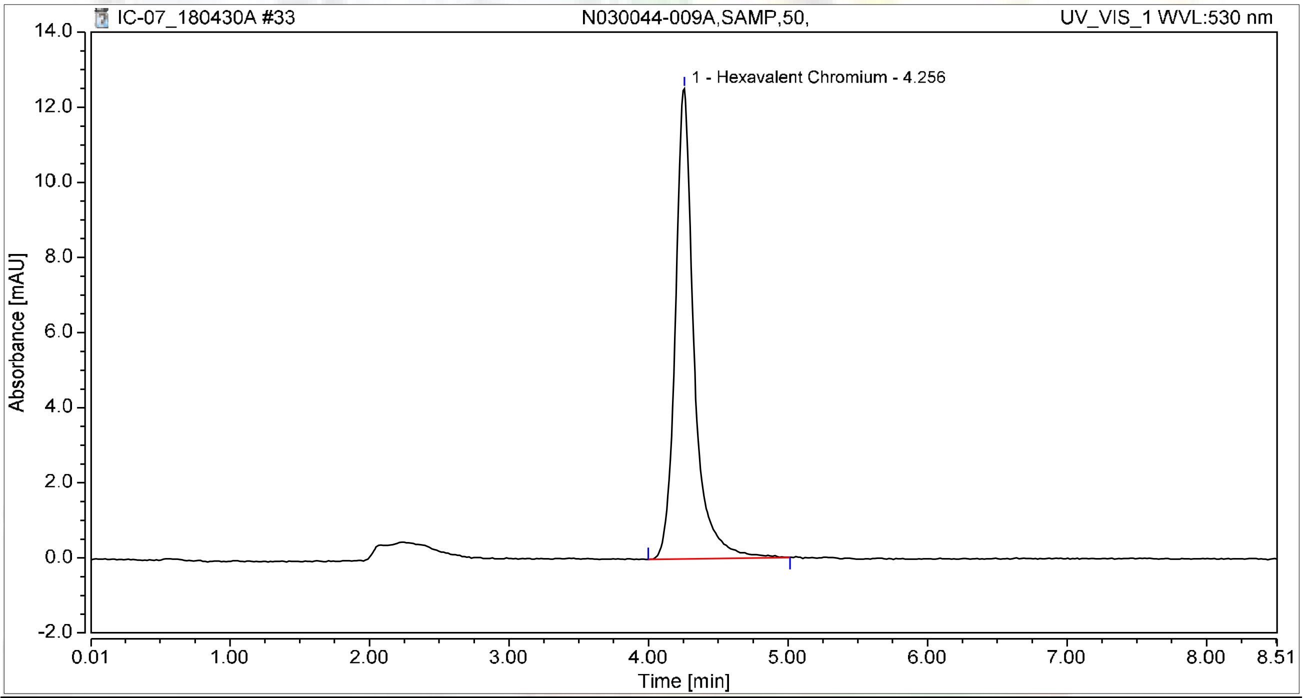
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	3.115	20.061	100.00	100.00	12.1368
Total:			**3.115**	**20.061**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-009A,SAMP,50,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 14:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

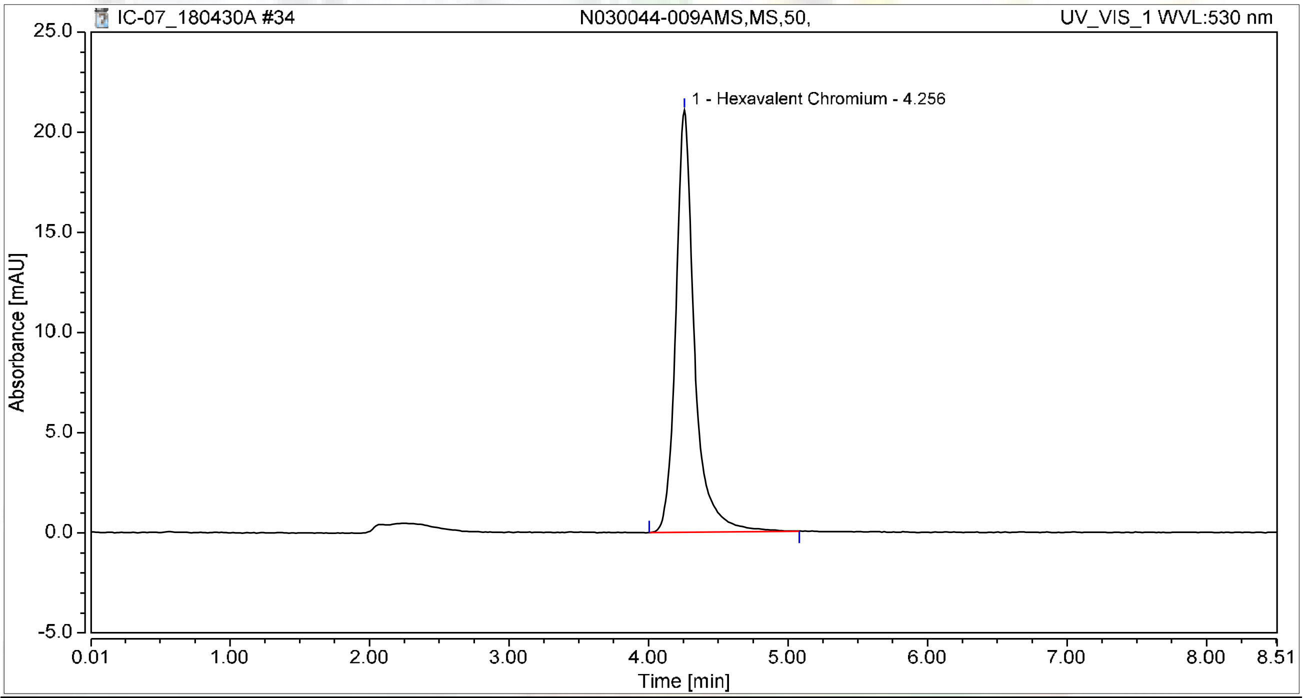
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.945	12.523	100.00	100.00	7.5798
Total:			**1.945**	**12.523**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-009AMS,MS,50,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 14:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

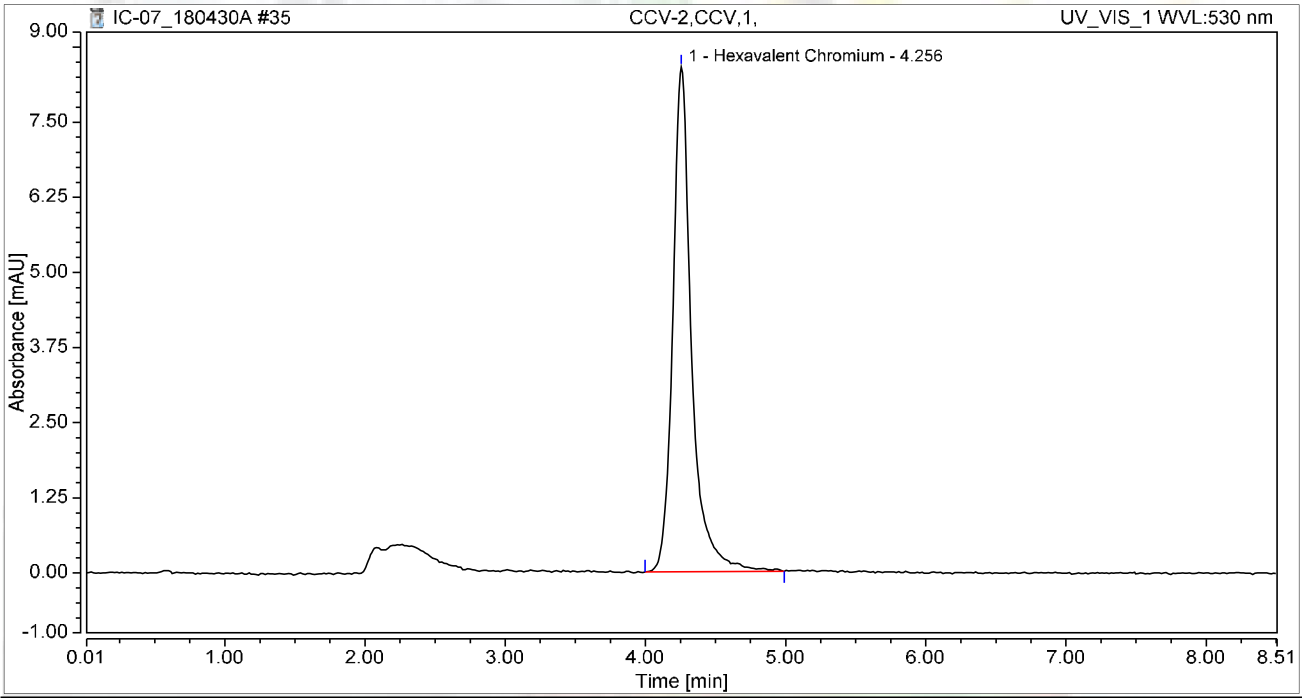
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	3.267	21.077	100.00	100.00	12.7308
Total:			**3.267**	**21.077**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 14:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

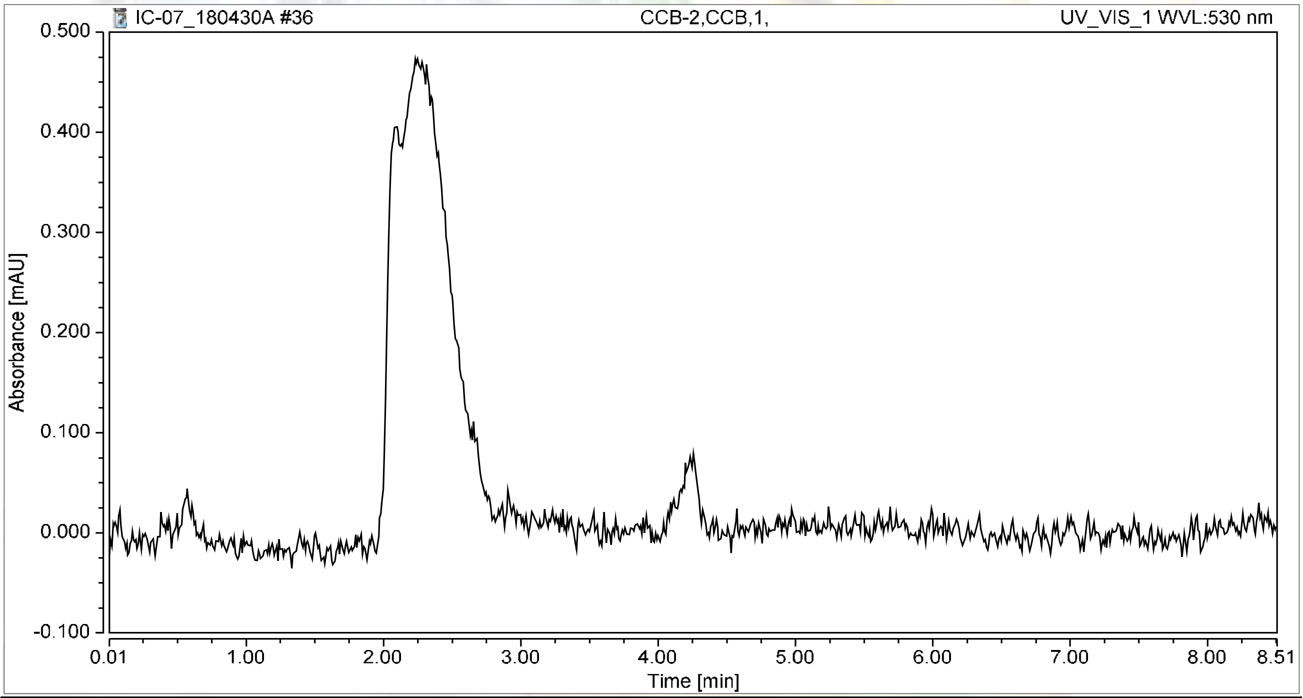
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	1.300	8.401	100.00	100.00	5.0668
Total:			**1.300**	**8.401**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 14:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

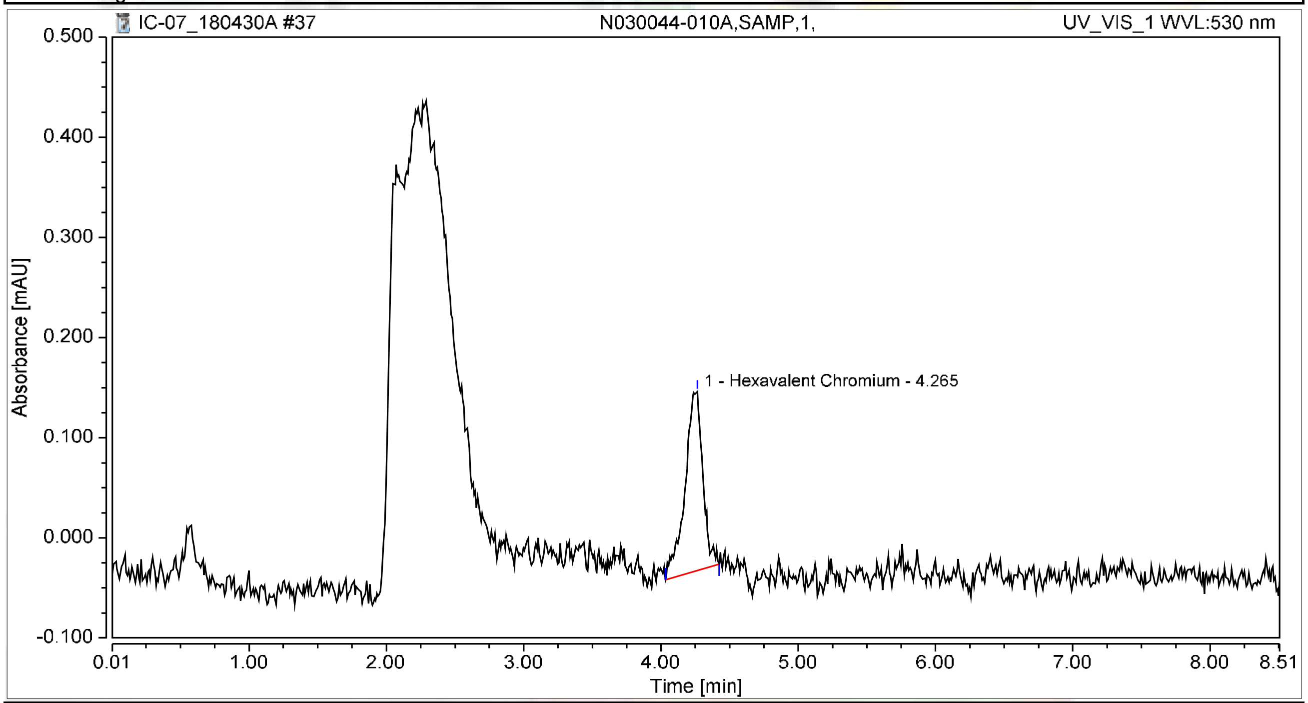
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 14:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

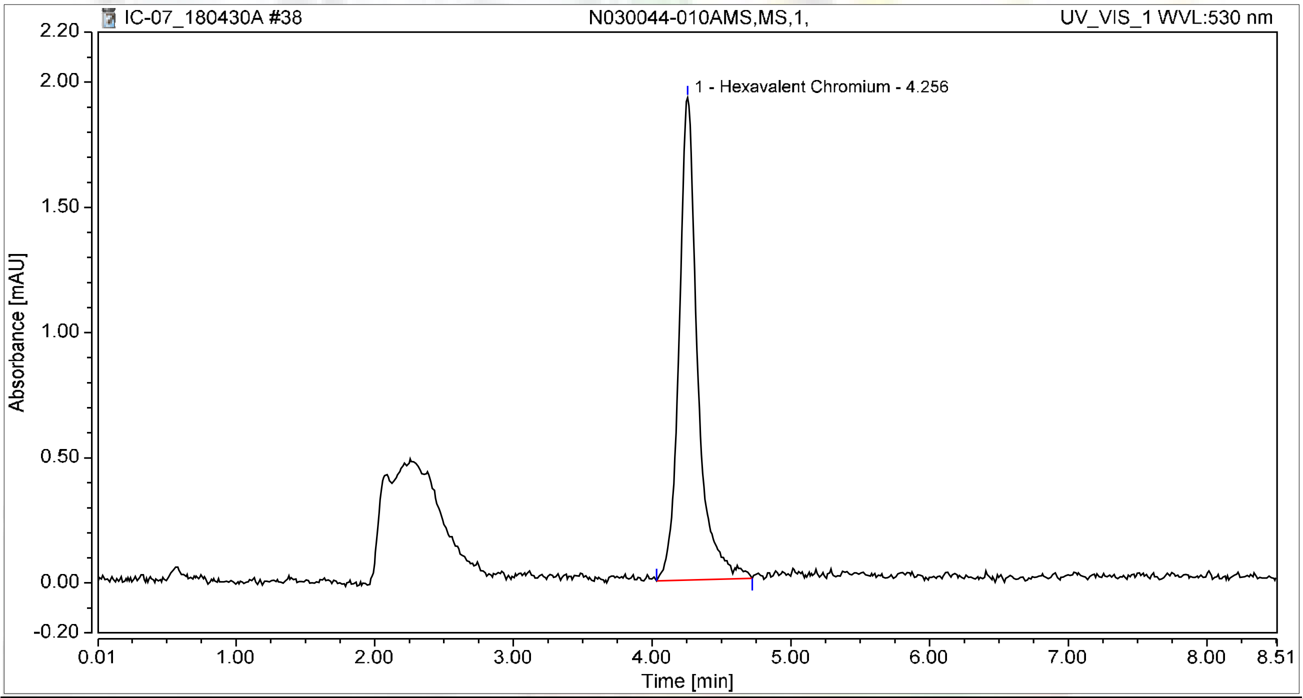
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.265	0.027	0.178	100.00	100.00	0.1051
Total:			**0.027**	**0.178**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 15:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

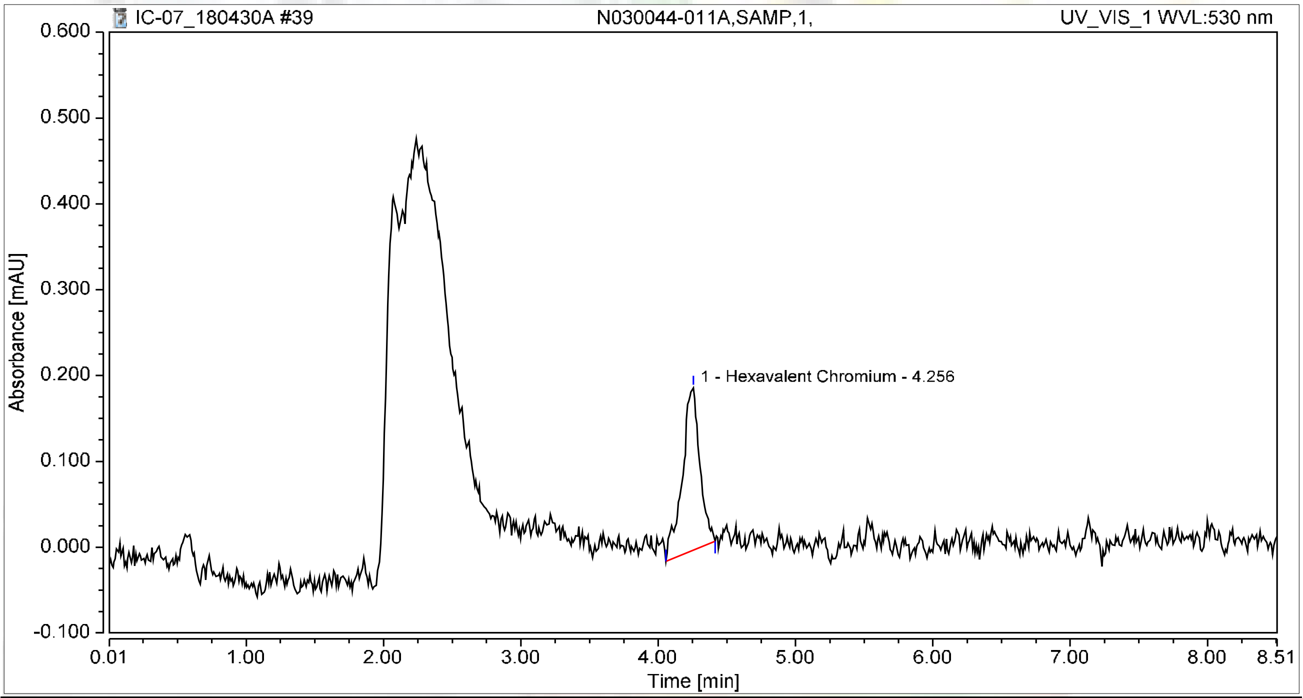
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.300	1.926	100.00	100.00	1.1680
Total:			**0.300**	**1.926**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 15:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

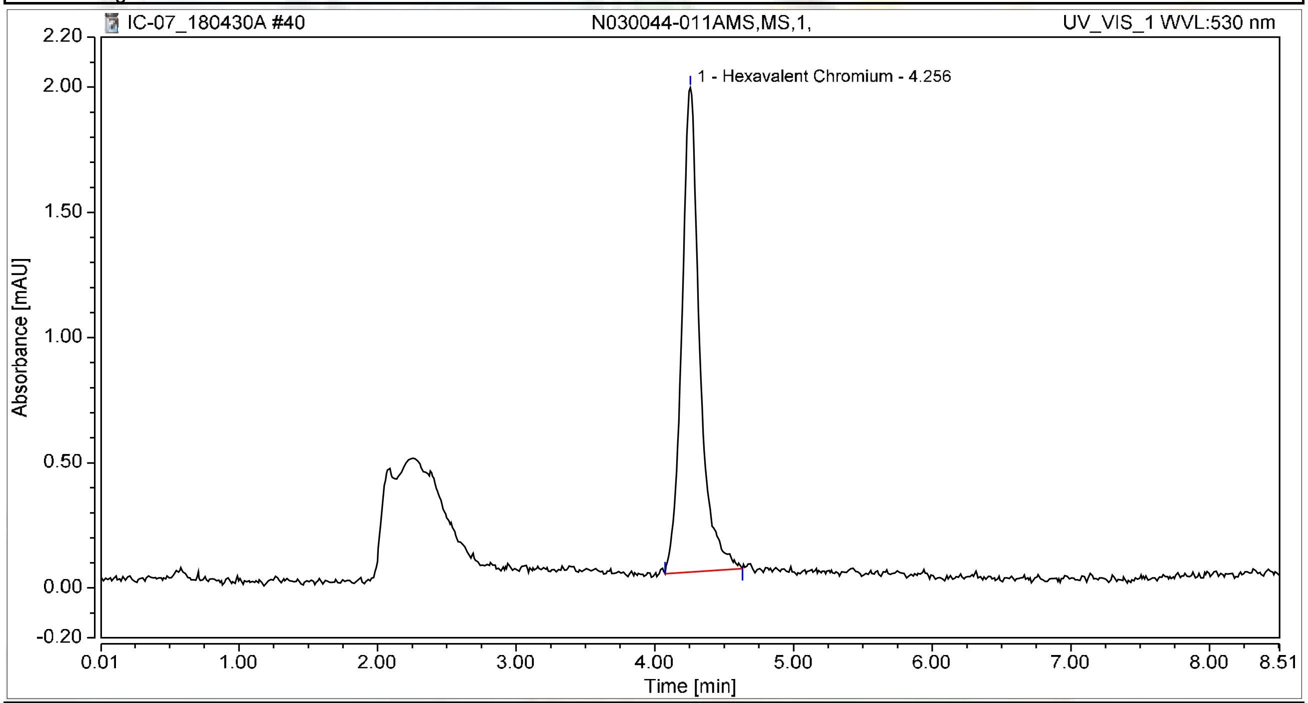
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.028	0.189	100.00	100.00	0.1101
Total:			**0.028**	**0.189**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 15:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

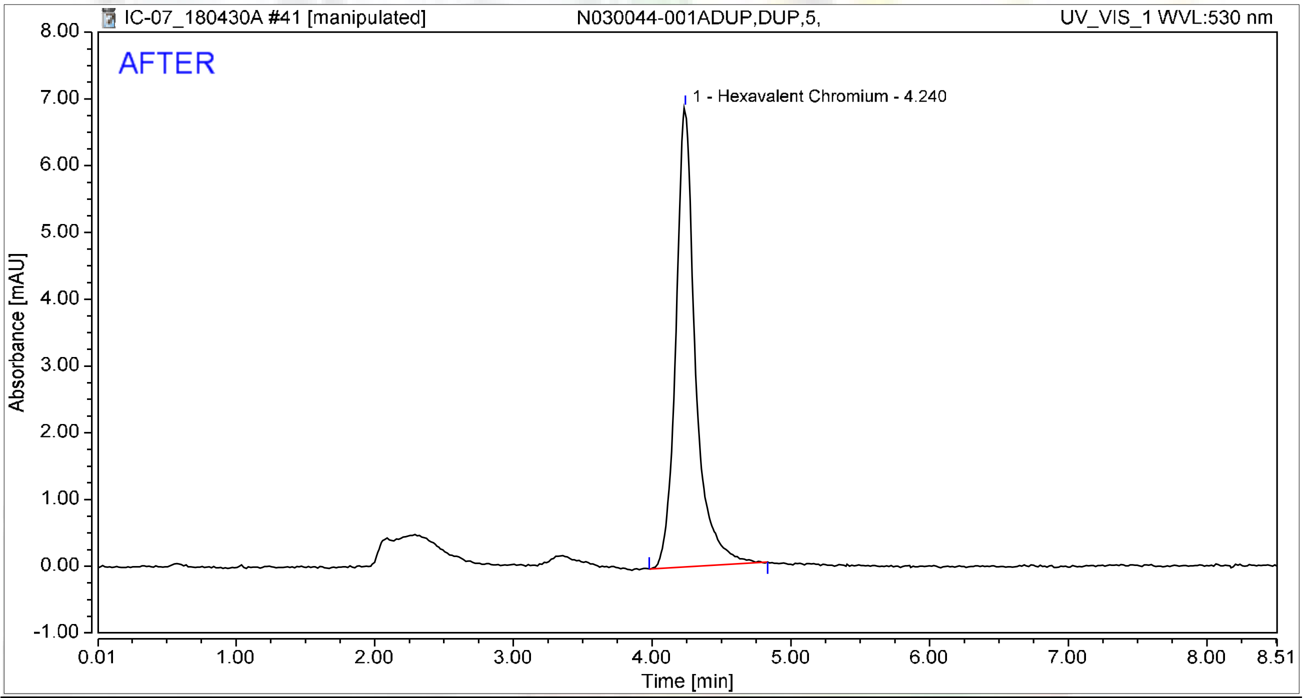
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.291	1.934	100.00	100.00	1.1329
Total:			**0.291**	**1.934**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030044-001ADUP,DUP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 15:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	1.125	6.882	100.00	100.00	4.3833
Total:			**1.125**	**6.882**	**100.00**	**100.00**	

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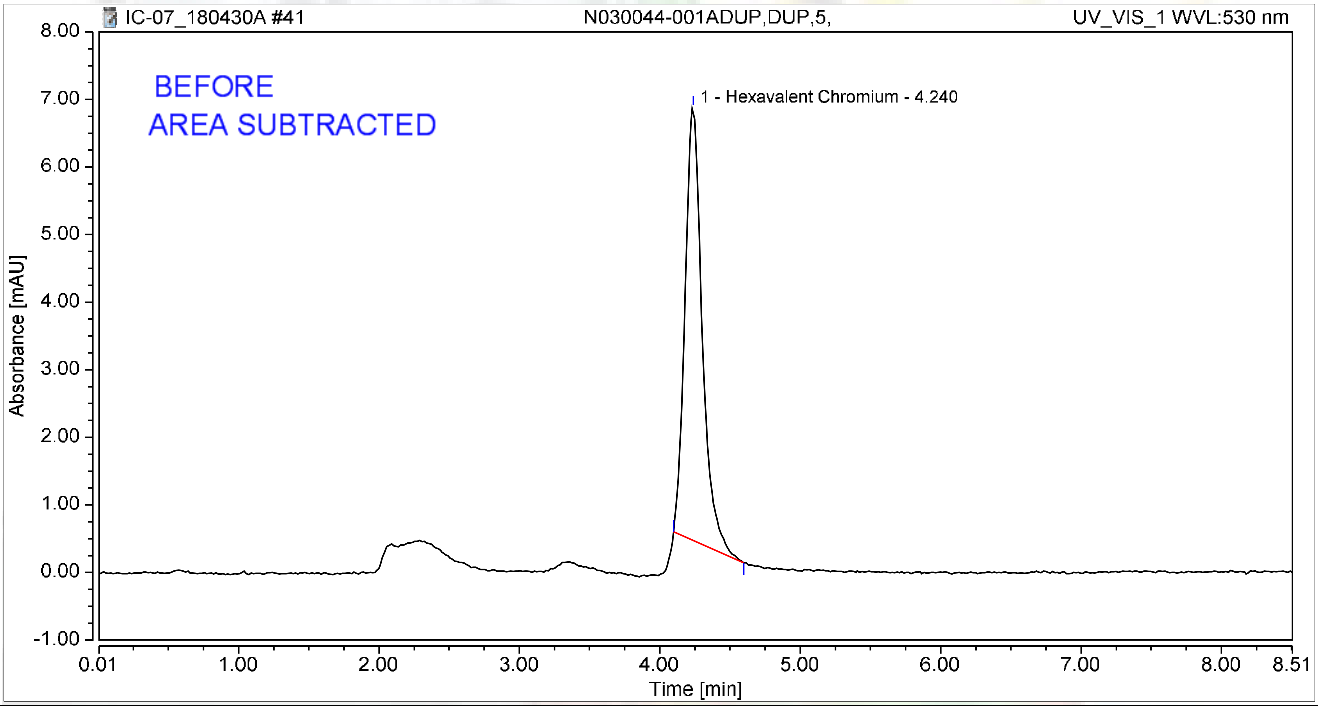
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030044-001ADUP,DUP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 15:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.912	6.398	100.00	100.00	3.6087
Total:			**0.912**	**6.398**	**100.00**	**100.00**	

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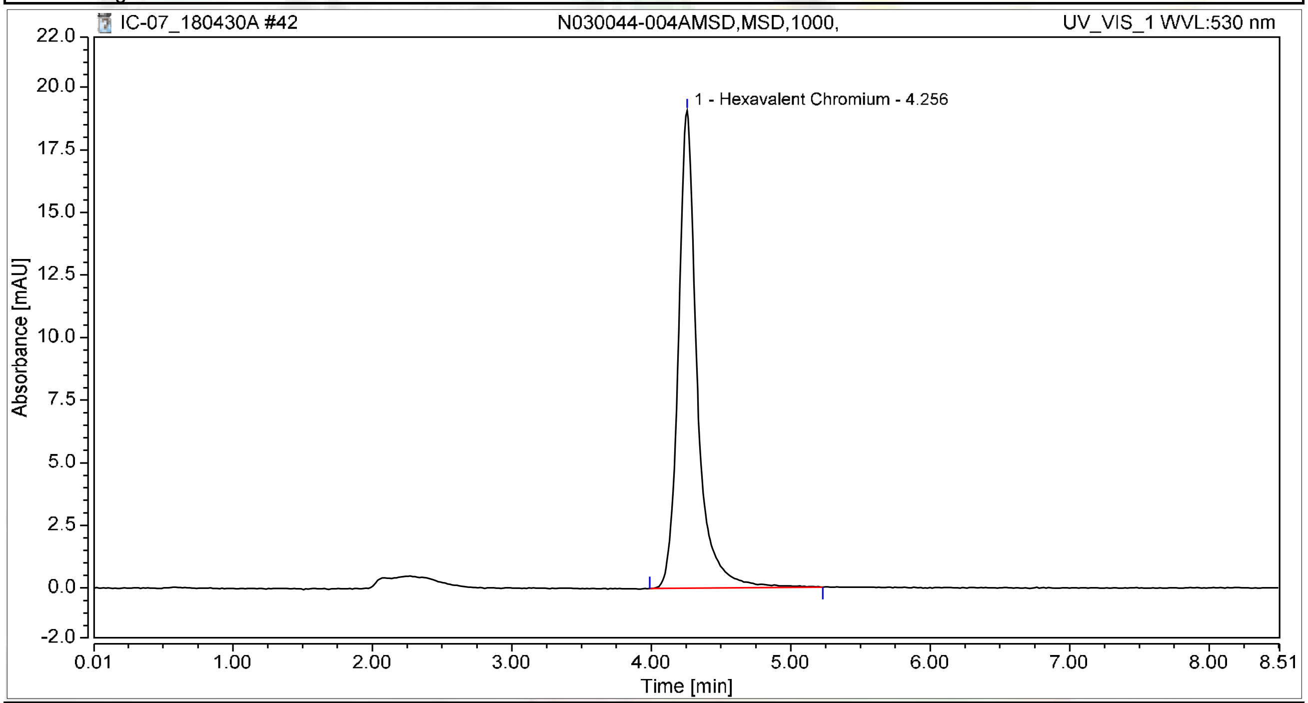
Chromatogram and Results

Injection Details

Injection Name:	**N030044-004AMSD,MSD,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 15:45**	*Sample Weight:*	**1.0000**

Chromatogram



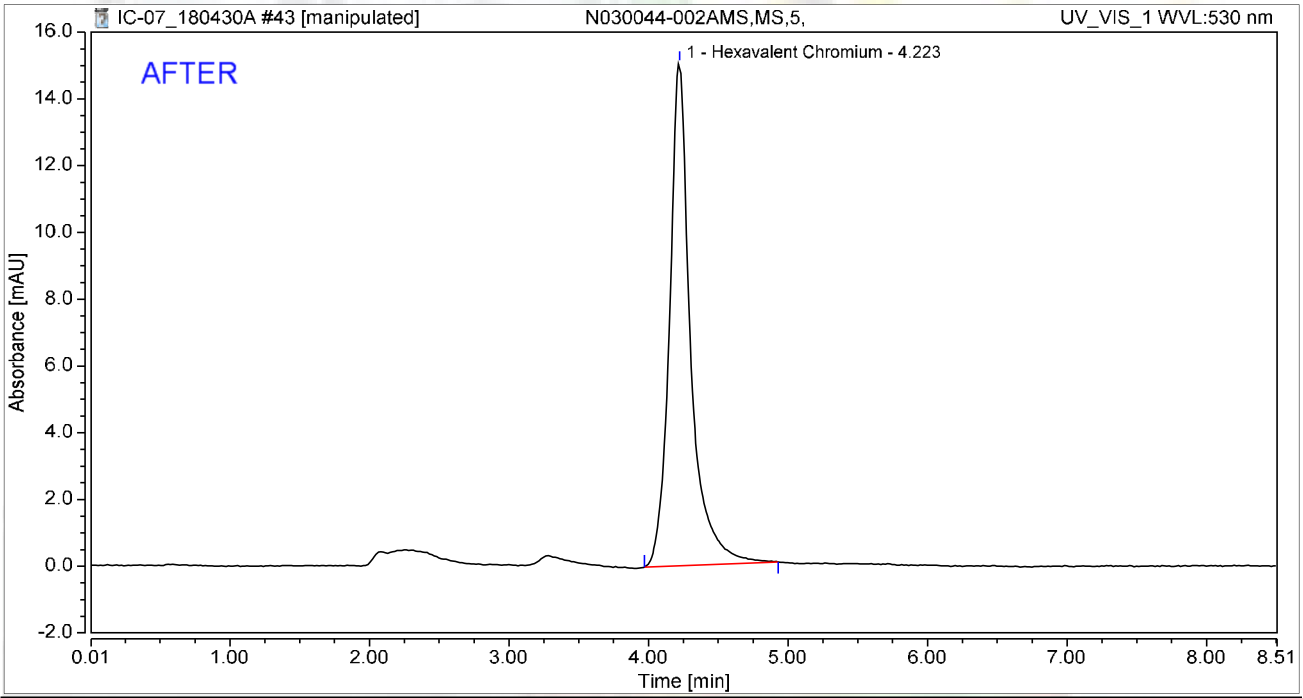
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.991	19.077	100.00	100.00	11.6545
Total:			**2.991**	**19.077**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details			
Injection Name:	**N030044-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 15:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	2.636	15.057	100.00	100.00	10.2714
Total:			**2.636**	**15.057**	**100.00**	**100.00**	

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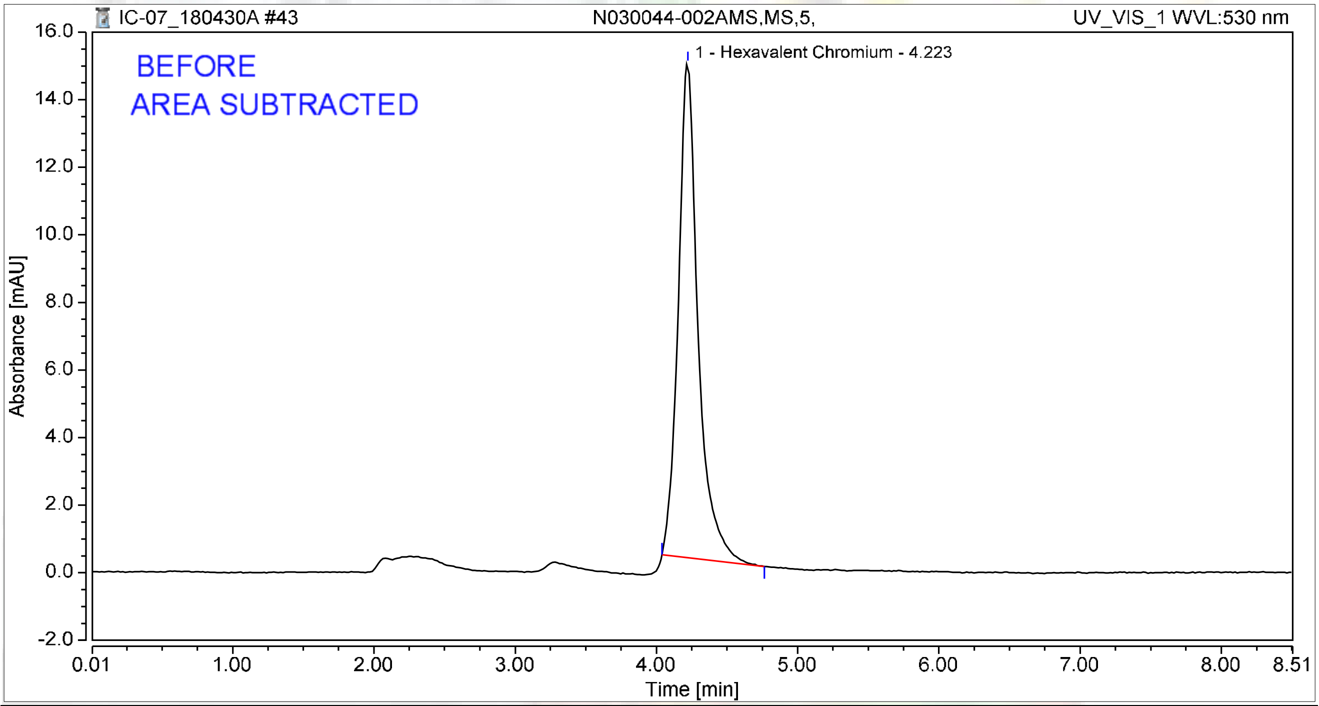
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030044-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 15:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	2.391	14.628	100.00	100.00	9.4614
Total:			**2.391**	**14.628**	**100.00**	**100.00**	

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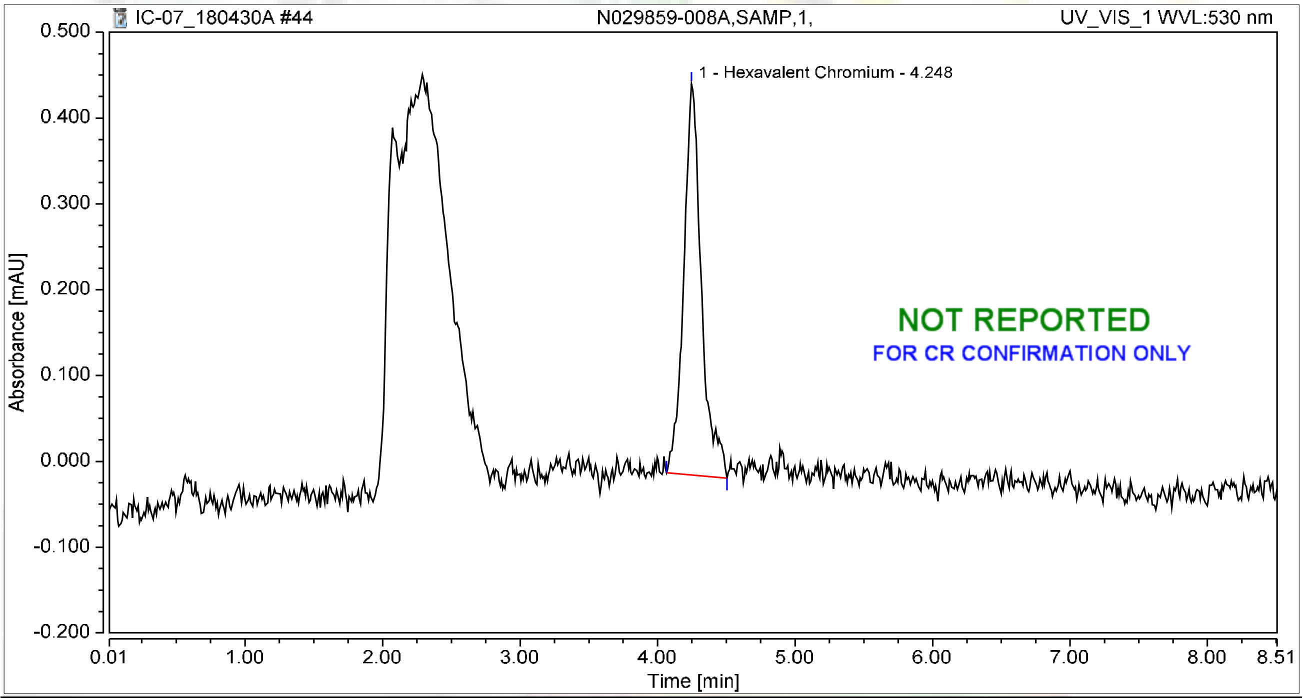
Chromatogram and Results

Injection Details

Injection Name:	**N029859-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 16:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

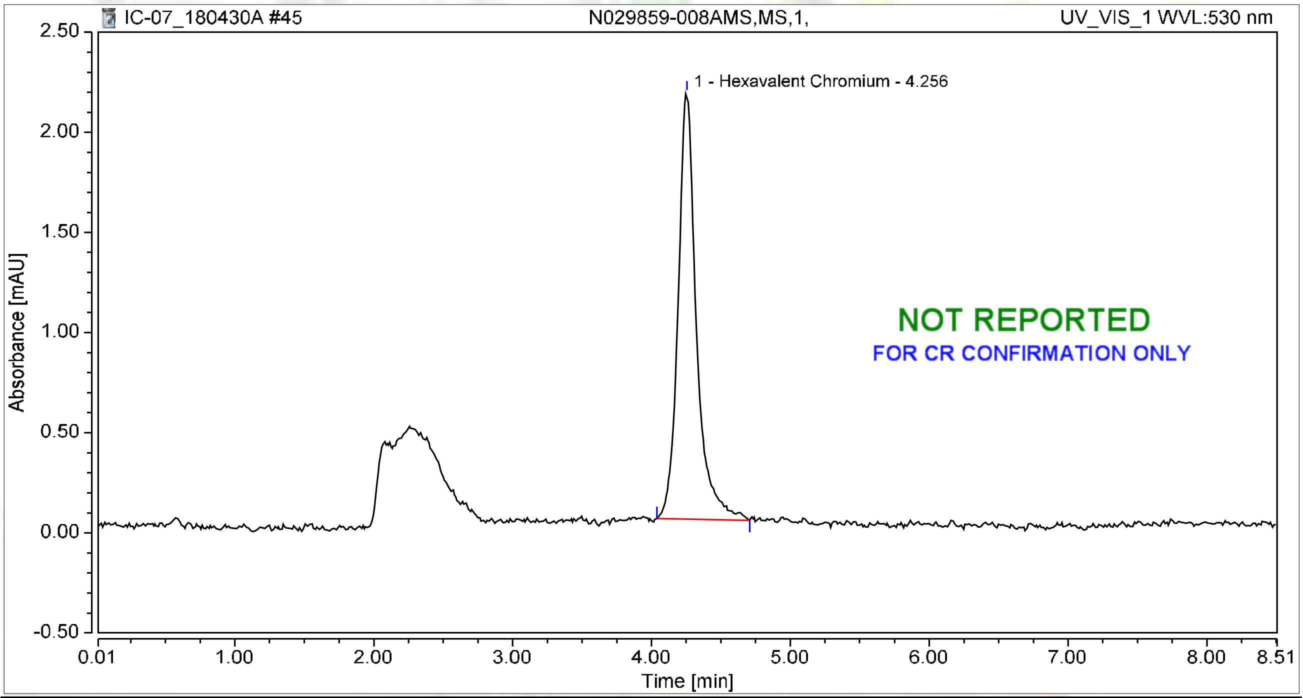
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.068	0.456	100.00	100.00	0.2644
Total:			**0.068**	**0.456**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029859-008AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 16:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

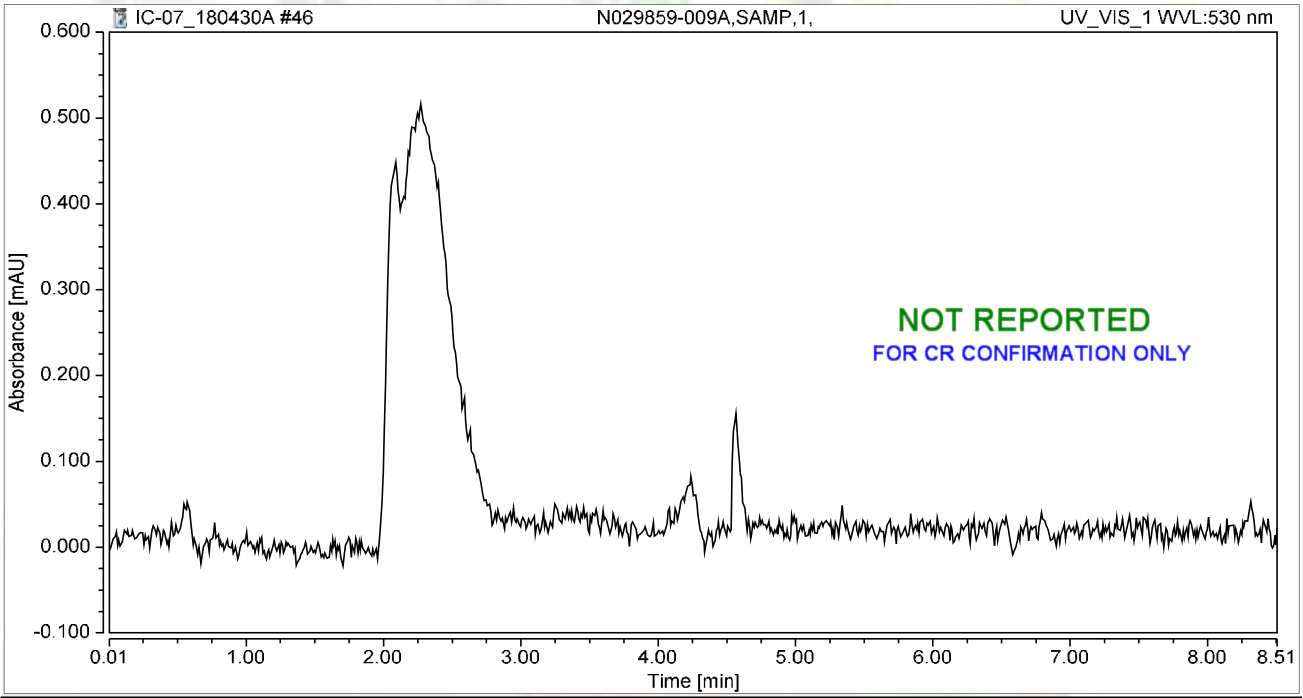
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.326	2.129	100.00	100.00	1.2711
Total:			**0.326**	**2.129**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029859-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 16:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

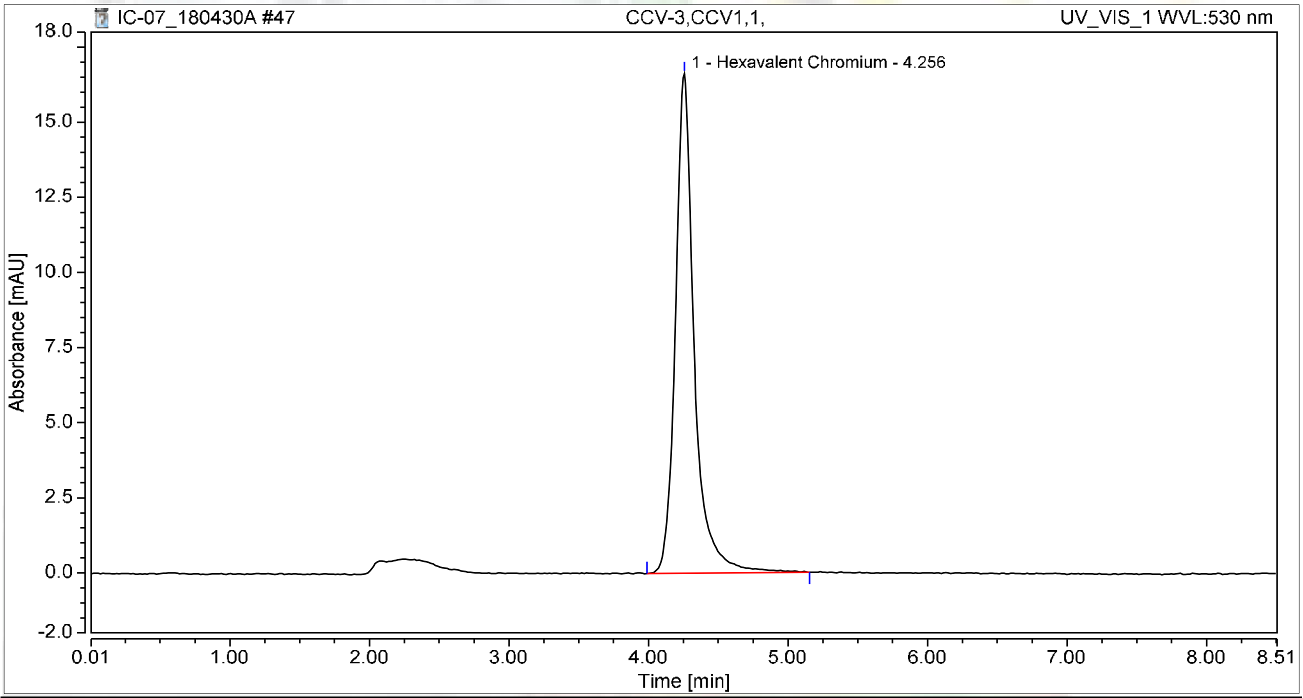
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 16:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

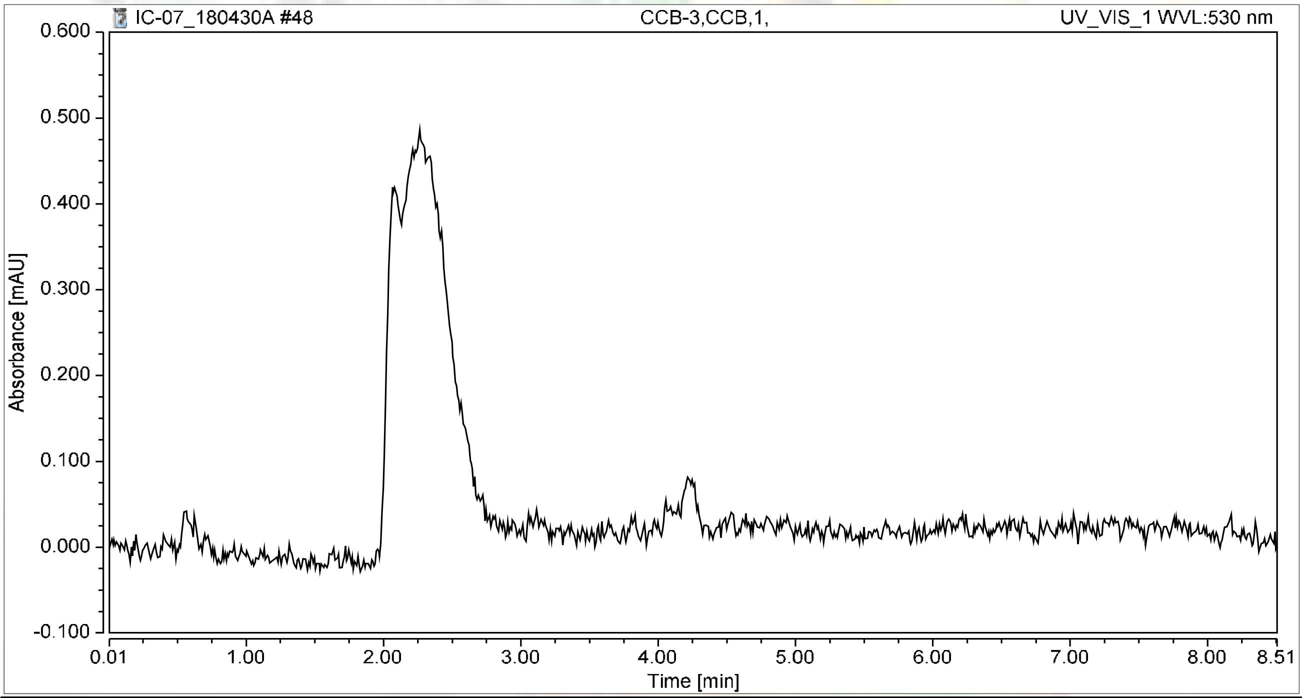
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	2.599	16.630	100.00	100.00	10.1281
Total:			**2.599**	**16.630**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 16:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

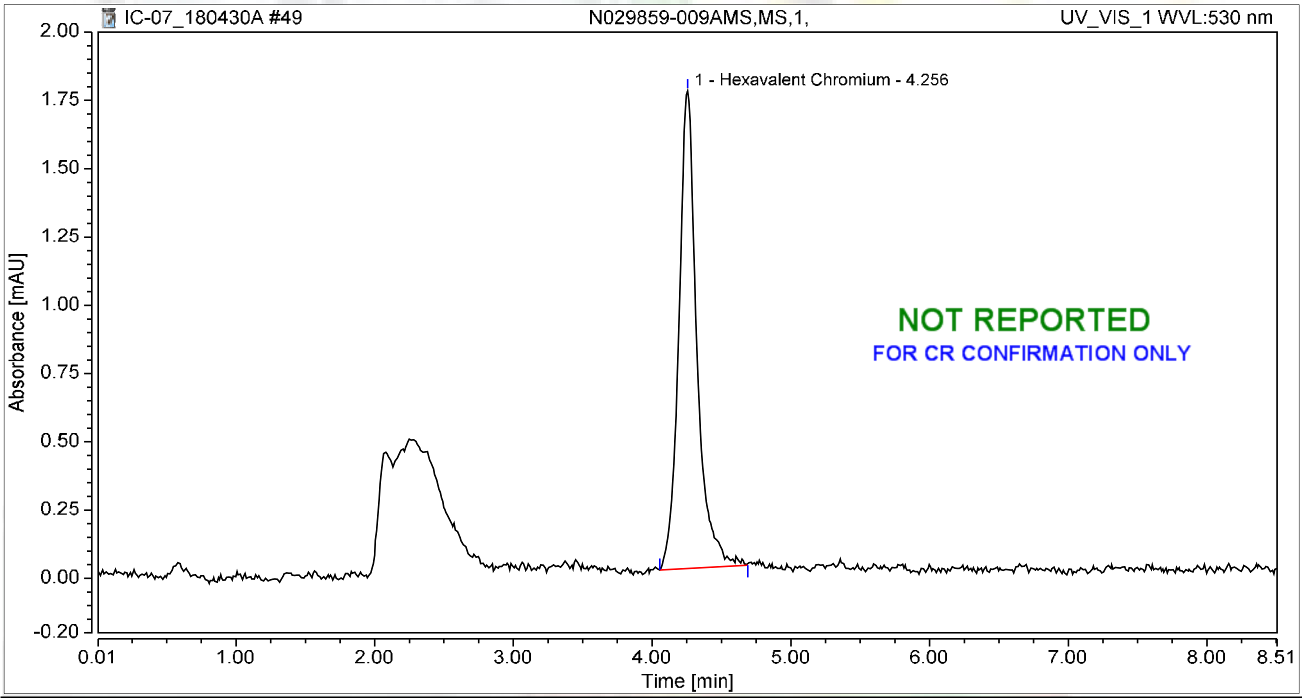
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029859-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 16:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

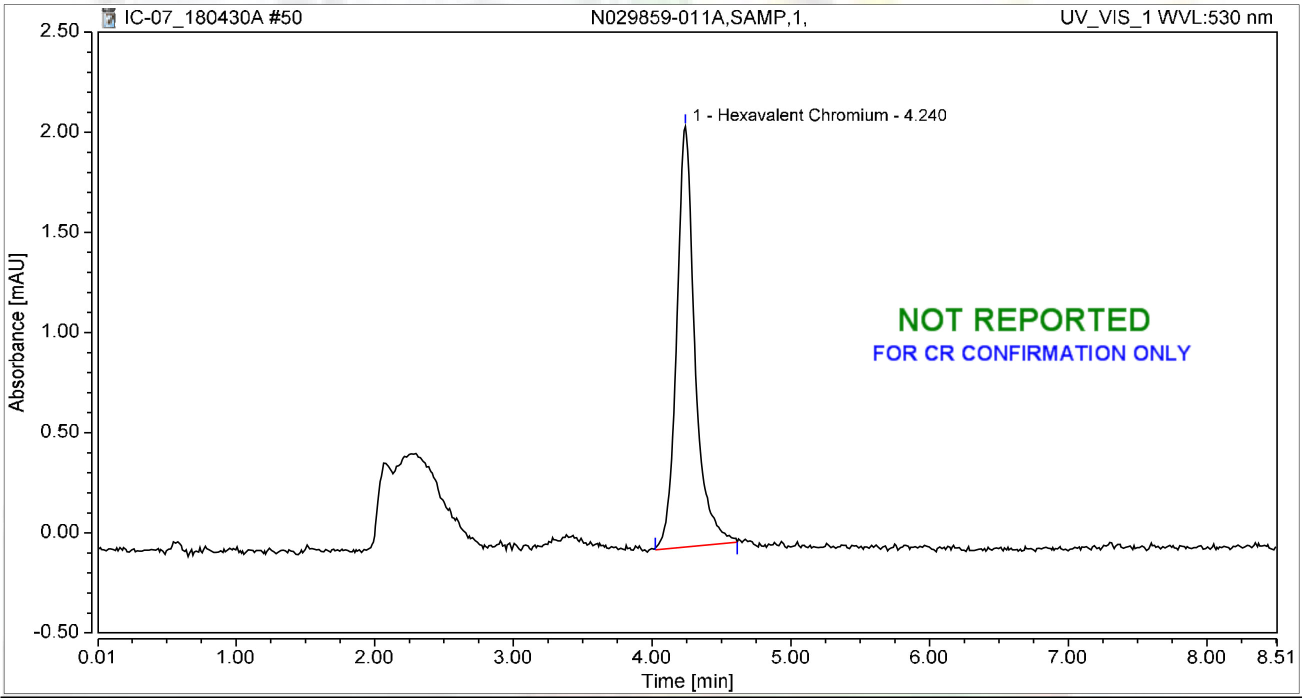
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.256	0.265	1.749	100.00	100.00	1.0323
Total:			**0.265**	**1.749**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029859-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 17:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

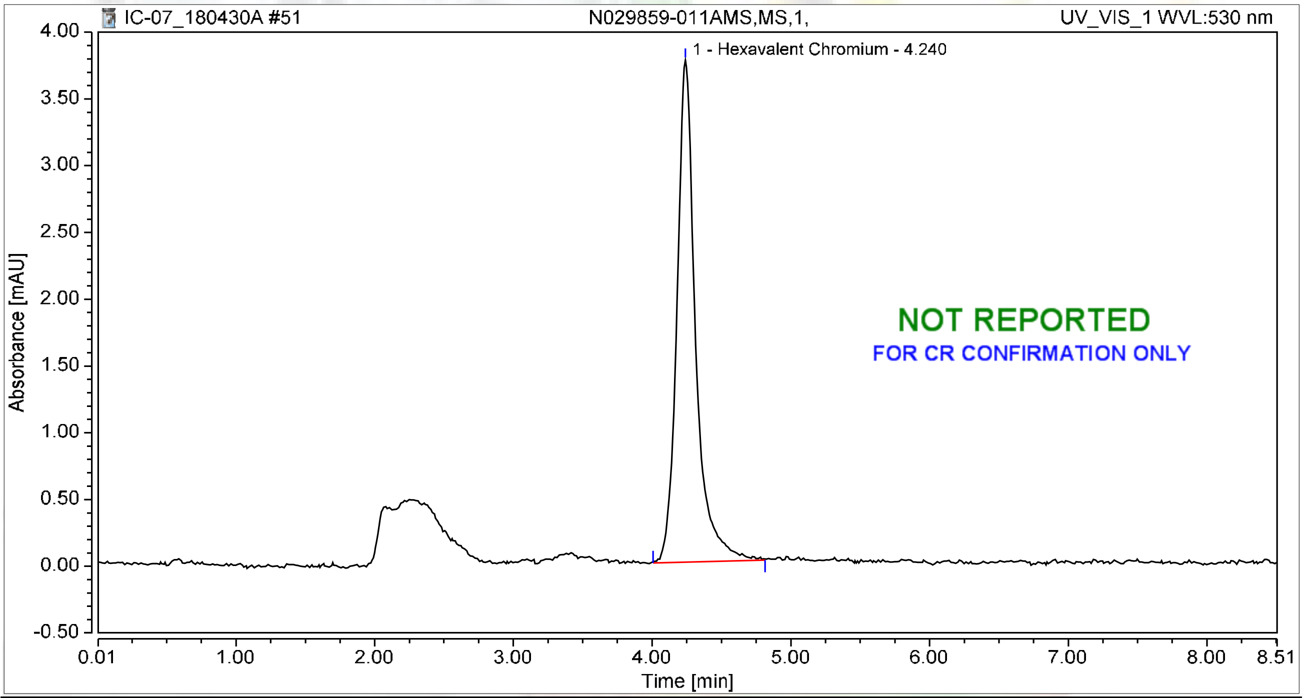
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.320	2.100	100.00	100.00	1.2480
Total:			**0.320**	**2.100**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029859-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 17:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

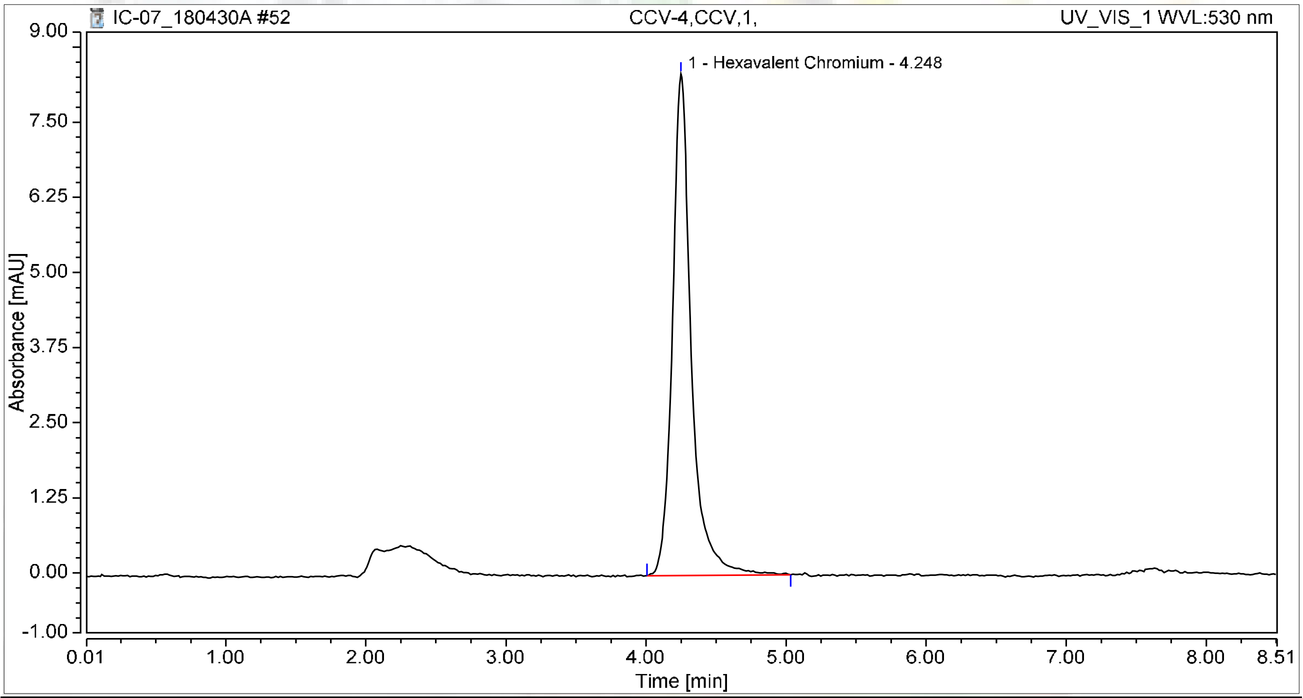
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.585	3.757	100.00	100.00	2.2811
Total:			**0.585**	**3.757**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 17:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

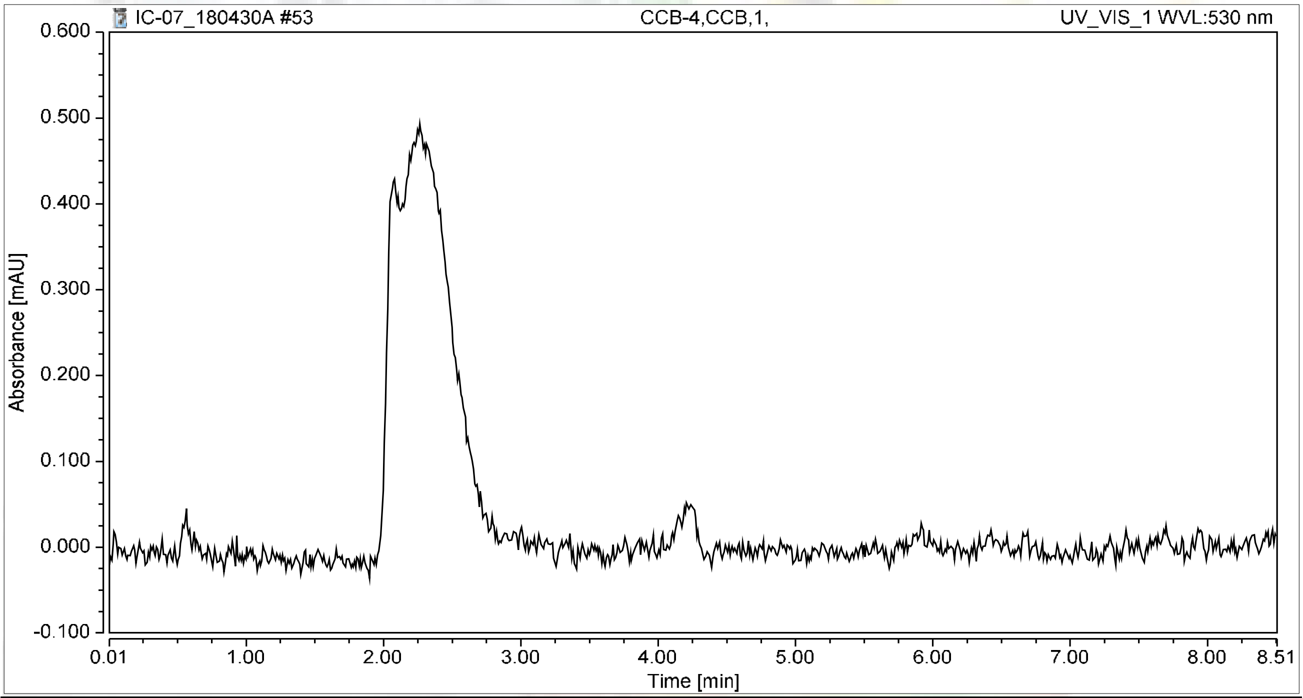
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.304	8.344	100.00	100.00	5.0813
Total:			**1.304**	**8.344**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 17:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123845 **Analyst:** QBM

ASSET #: N029973, N030017, N030044 **Date Analyzed:** 5/4/2018

Method: **4500_NO3**

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec in MS/MSD failed, high bias. Possibly due to matrix interference.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 5/11/2018

2nd Level Reviewer RB 05/11/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N030044-001C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	1.1232	*	2
	=	2.2464	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N	**=**	**2.2**	**mg/L**

RB 05/11/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

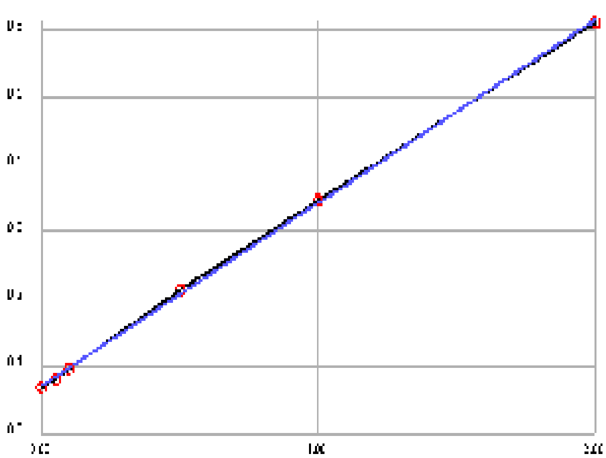
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2717x + 0.0711
Correlation	.999783

Calibrant	Energy	Set	Conc
1	0.0687	0.0000	-0.0090
2	0.0810	0.0500	0.0363
3	0.0972	0.1000	0.0959
4	0.2135	0.5000	0.5240
5	0.3473	1.0000	1.0165
6	0.6108	2.0000	1.9863



Notes:

05/11/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **123845**						
Client ID: **ICV**	Batch ID: **R123845**	TestNo: **SM4500-NO3**		Analysis Date: **5/4/2018**		SeqNo: **3016313**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrate/Nitrite as N	0.530	0.050	0.5000	0	106	90	110					

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **123845**						
Client ID: **CCV**	Batch ID: **R123845**	TestNo: **SM4500-NO3**		Analysis Date: **5/4/2018**		SeqNo: **3016324**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrate/Nitrite as N	0.491	0.050	0.5000	0	98.2	90	110					

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **123845**						
Client ID: **CCV**	Batch ID: **R123845**	TestNo: **SM4500-NO3**		Analysis Date: **5/4/2018**		SeqNo: **3016335**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrate/Nitrite as N	0.537	0.050	0.5000	0	107	90	110					

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **123845**						
Client ID: **CCV**	Batch ID: **R123845**	TestNo: **SM4500-NO3**		Analysis Date: **5/4/2018**		SeqNo: **3016343**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrate/Nitrite as N	0.488	0.050	0.5000	0	97.5	90	110					

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:				RunNo: **123845**			
Client ID: **ICB**	Batch ID: **R123845**	TestNo: **SM4500-NO3**		Analysis Date: **5/4/2018**				SeqNo: **3016314**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:				RunNo: **123845**			
Client ID: **CCB**	Batch ID: **R123845**	TestNo: **SM4500-NO3**		Analysis Date: **5/4/2018**				SeqNo: **3016325**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:				RunNo: **123845**			
Client ID: **CCB**	Batch ID: **R123845**	TestNo: **SM4500-NO3**		Analysis Date: **5/4/2018**				SeqNo: **3016336**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:				RunNo: **123845**			
Client ID: **CCB**	Batch ID: **R123845**	TestNo: **SM4500-NO3**		Analysis Date: **5/4/2018**				SeqNo: **3016344**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 05-04-2018 15:33
Time end: 05-04-2018 18:22

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	17:42:52	-0.0071		0.0692
2	<BLANK>	17:43:51	0.0083		0.0734
3	<CAL1>	17:44:46	-0.0090	[0]	0.0687
4	<CAL2>	17:45:48	0.0363	[0.05]	0.0810
5	<CAL3>	17:46:43	0.0959	[0.1]	0.0972
6	<CAL4>	17:47:43	0.5240	[0.5]	0.2135
7	<CAL5>	17:48:39	1.0165	[1]	0.3473
8	<CAL6>	17:49:34	1.9863	[2]	0.6108
9	,BLANK,BLANK,1, NOT REPORTED	17:50:35	0.0495		0.0846
10	,ICV,ICV,1,	17:51:30	0.5295		0.2150
11	,ICB,ICB,1,	17:52:26	0.0109		0.0741
12	,MB-H2O,MBLK,1,	17:53:21	-0.0042		0.0700
13	,LCS-H2O,LCS,1,	17:54:21	0.5111		0.2100
14	,N029973-001C,SAMP,1,	17:55:17	0.0466		0.0838
15	,N029973-007C,SAMP,1,	17:56:12	-0.0024		0.0705
16	,N029973-009C,SAMP,1,	17:57:12	-0.0090		0.0687
17	,N029973-009CDUP,DUP,1,	17:58:08	0.0043		0.0723
18	,N029973-020C,SAMP,2,	17:59:09	0.4967		0.2061
19	,N029973-020CMS,MS,2,	18:00:05	1.1865		0.3935
20	,N029973-020CMSD,MSD,2,	18:00:59	1.1225		0.3761
21	,BLANK, NOT REPORTED	18:02:01	0.0168		0.0757
22	,CCV-1,CCV,1,	18:02:56	0.4909		0.2045
23	,CCB-1,CCB,1,	18:03:58	0.0091		0.0736
24	,N029973-011C,SAMP,1,	18:04:52	-0.0068		0.0693
25	,N029973-012C,SAMP,1,	18:05:47	-0.0053		0.0697
26	,N029973-014C,SAMP,1,	18:06:37	-0.0027		0.0704

RJB 05/11/2018

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N029973-017C,SAMP,1,	18:07:19	0.1327		0.1072
28	,N029973-018C,SAMP,1,	18:08:08	0.0021		0.0717
29	,N030017-005C,SAMP,1,	18:08:50	0.9664		0.3337
30	,N030017-006C,SAMP,1,	18:09:34	0.0580		0.0869
31	,N030017-007C,SAMP,1,	18:10:22	0.0576		0.0868
32	,N030017-008C,SAMP,1,	18:11:05	0.4960		0.2059
33	,BLANK, NOT REPORTED	18:11:55	0.0157		0.0754
34	,CCV-2,CCV,1,	18:12:37	0.5372		0.2171
35	,CCB-2,CCB,1,	18:13:20	-0.0071		0.0692
36	,N030017-011C,SAMP,1,	18:14:02	0.1452		0.1106
37	,N030044-001C,SAMP,2,	18:14:52	1.1232		0.3763
38	,N030044-002C,SAMP,5,	18:15:34	0.5380		0.2173
39	,N030044-006C,SAMP,10,	18:16:17	0.9362		0.3255
40	,N030044-007C,SAMP,10,	18:17:05	0.8656		0.3063
41	,N030044-008C,SAMP,20,	18:17:49	0.5667		0.2251
42	,BLANK, NOT REPORTED	18:18:32	-0.0101		0.0684
43	,CCV-3,CCV,1,	18:19:20	0.4875		0.2036
44	,CCB-3,CCB,1,	18:20:03	-0.0116		0.0680

RB 05/11/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 5/4/2018
Time Analyzed: 3:33 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer:_R180504F
Color reagent:_R180425A
2% Copper Sulfate:_R180504E
Ammonium Hydroxide: CINV-180423A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N029973-001C		8.47							
N029973-007C		7.64							
N029973-009C		7.73							
N029973-011C		7.20							
N029973-012C		6.37							
N029973-014C		7.71							
N029973-017C		7.19							
N029973-018C		7.66							
N029973-020C		7.40							
N030017-005C		8.63							
N030017-006C		7.72							
N030017-007C		7.80							
N030017-008C		8.04							
N030017-011C		7.82							
N030044-001C		7.43							
N030044-002C		8.17							
N030044-006C		7.49							
N030044-007C		8.02							
N030044-008C		7.72							

Advanced Technology Laboratories, Inc.
Book # 1

RB 05/11/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67911
ASSET #: N030044
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/12/2018

Method:

- [ ] EPA 6010B / 200.7
- [X] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X			X	
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Cr in N030017-001CMS/MSD failed. However, LCS passed criteria.
%Rec of Mo in N030017-001CPS failed. However, LCS passed criteria.
%RSD of Se in LLCCV-1 and LLCCV-2 failed. However, %Rec of Se passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 5/15/18

2nd Level Reviewer 5/15/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N030044-001D** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 23.5392 * 1 * (25/25)

Chromium , ug/L = 23.5392

Reporting results in two significant figures,

Chromium , ug/L = 24

% RSD SUMMARY

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.089	4.9	15	PASS	0.088	6.23	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	7.29	15	PASS	0.48	2.51	15	PASS
Std3-5/50 ppb	ICAL	1	5.017	2.42	15	PASS	5.13	1.95	15	PASS
Std4-10/100 ppb	ICAL	1	10.082	0.4	15	PASS	9.99	2.89	15	PASS
Std5-20/200 ppb	ICAL	1	20.22	1.55	15	PASS	20.29	1.5	15	PASS
Std6-40/400 ppb	ICAL	1	39.93	1.0088	15	PASS	40.97	0.62	15	PASS
Std7-100/1000 ppb	ICAL	1	100.29	1.37	15	PASS	102.36	0.85	15	PASS
Std8-200/2000 ppb	ICAL	1	199.84	0.97	15	PASS	198.59	0.61	15	PASS
ICV	ICV	1	9.88	0.46	15	PASS	109.83	0.17	15	PASS
ICB	ICB	1	0.18	5.98	15	PASS	0.053	13.33	15	PASS
LLICV	CCV1	1	1.098	3.27	20	PASS	0.58	2.53	20	PASS
ICSA1	ICSA	1	0.046	10.51	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.0098	1.48	15	PASS	16.13	1.46	15	PASS
MB-67911	MBLK	1	0.0041	125.71	15	<PQL	<0.000	N/A	15	<PQL
LCS-67911	LCS	1	10.2	1.73	15	PASS	103.93	1.017	15	PASS
N030017-001C	SAMP	1	36.84	0.9	15	PASS	4.2	0.5	15	PASS
N030017-001C	SAMP	5	7.51	0.34	15	PASS	0.82	2.77	15	PASS
N030017-001C	SAMP	25	1.6	2.64	15	PASS	0.15	7.52	15	PASS
N030017-001C-PS	PS	1	45.96	0.72	15	PASS	97.96	0.56	15	PASS
N030017-001C-PS	PS	5	9.78	1.96	15	PASS	20.35	1.83	15	PASS
N030017-001C-MS	MS	1	43.55	1.26	15	PASS	95.3	0.56	15	PASS
N030017-001C-MS	MS	5	9.54	1.23	15	PASS	20.095	0.43	15	PASS
N030017-001C-MSD	MSD	1	43.88	1.1	15	PASS	95.37	1.26	15	PASS
CCV1	CCV	1	19.81	0.099	15	PASS	19.85	1.45	15	PASS
CCB1	CCB	1	0.0019	244.072	15	<PQL	<0.000	N/A	15	<PQL
N030017-001C-MSD	MSD	5	9.54	0.84	15	PASS	20.16	0.47	15	PASS
N030017-002C	SAMP	1	1.48	3.0034	15	PASS	5.19	1.37	15	PASS
N030017-002C	SAMP	5	0.53	5.62	15	PASS	1.5	2.54	15	PASS
N030017-005D	SAMP	1	1.25	1.93	15	PASS	13.93	1.5	15	PASS
N030017-005D	SAMP	5	0.26	4.1	15	PASS	2.82	4.12	15	PASS
N030017-006D	SAMP	1	<0.000	N/A	15	<PQL	106.47	1.035	15	PASS
N030017-006D	SAMP	5	<0.000	N/A	15	<PQL	21.74	1.38	15	PASS
N030017-007D	SAMP	1	1.99	2.32	15	PASS	34.047	0.12	15	PASS
N030017-007D	SAMP	5	0.42	11.64	15	PASS	7.16	1.59	15	PASS
N030017-008D	SAMP	1	62.058	1.18	15	PASS	68.9	1.037	15	PASS
CCV2	CCV	1	19.94	1.4	15	PASS	19.95	0.4	15	PASS
CCB2	CCB	1	0.0072	81.59	15	<PQL	0.011	77.73	15	<PQL
N030017-008D	SAMP	5	13.067	2.32	15	PASS	14.44	1.084	15	PASS
N030017-009C	SAMP	1	8.43	1.062	15	PASS	41.39	0.57	15	PASS
N030017-009C	SAMP	5	1.87	2.2	15	PASS	8.92	0.45	15	PASS

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030017-010C	SAMP	1	1.45	1.07	15	PASS	152.37	0.95	15	PASS
N030017-010C	SAMP	5	0.31	6.02	15	PASS	31.76	0.87	15	PASS
N030017-011D	SAMP	1	2.64	1.14	15	PASS	56.68	0.53	15	PASS
N030017-011D	SAMP	5	0.56	11.21	15	PASS	11.86	0.9	15	PASS
N030017-012C	SAMP	1	14.74	0.98	15	PASS	<0.000	N/A	15	<PQL
N030017-012C	SAMP	5	2.95	2.088	15	PASS	<0.000	N/A	15	<PQL
N030017-013C	SAMP	1	14.42	0.11	15	PASS	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.97	1.12	15	PASS	20.085	0.69	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N030017-013C	SAMP	5	3.026	1.73	15	PASS	0.033	75.49	15	<PQL
N030044-001D	SAMP	1	23.54	0.33	15	PASS	<0.000	N/A	15	<PQL
N030044-001D	SAMP	5	4.87	0.93	15	PASS	<0.000	N/A	15	<PQL
N030044-002D	SAMP	1	24.89	0.77	15	PASS	1.5	3.44	15	PASS
N030044-002D	SAMP	5	5.32	3.21	15	PASS	0.23	14.28	15	PASS
N030044-003C	SAMP	1	10.18	0.81	15	PASS	1.59	4.59	15	PASS
N030044-003C	SAMP	5	2.18	3.38	15	PASS	0.36	2.41	15	PASS
N030044-004C	SAMP	1	6161.6	0.17	15	PASS	3.84	1.62	15	PASS
N030044-004C	SAMP	5	1360.74	0.81	15	PASS	0.87	0.75	15	PASS
N030044-004C	SAMP	50	135.61	0.34	15	PASS	0.068	8.45	15	PASS
CCV4	CCV	1	20.24	0.58	15	PASS	20.36	2.14	15	PASS
CCB4	CCB	1	0.22	15.83	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.18	4.88	20	PASS	0.53	1.52	20	PASS
ICSA2	ICSA	1	0.15	0.55	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.26	1.0038	15	PASS	16.79	1.46	15	PASS
N030044-005C	SAMP	1	376.74	1.61	15	PASS	<0.000	N/A	15	<PQL
N030044-005C	SAMP	5	76.0027	0.35	15	PASS	<0.000	N/A	15	<PQL
N030044-006D	SAMP	1	1636.49	0.29	15	PASS	<0.000	N/A	15	<PQL
N030044-006D	SAMP	5	351.29	1.65	15	PASS	<0.000	N/A	15	<PQL
N030044-006D	SAMP	25	69.019	1.45	15	PASS	<0.000	N/A	15	<PQL
N030044-007D	SAMP	1	1771.28	0.82	15	PASS	<0.000	N/A	15	<PQL
N030044-007D	SAMP	5	362.15	3.99	15	PASS	<0.000	N/A	15	<PQL
N030044-007D	SAMP	25	72.084	1.088	15	PASS	<0.000	N/A	15	<PQL
N030044-008D	SAMP	1	6497.41	1.33	15	PASS	3.56	1.78	15	PASS
N030044-008D	SAMP	5	1380.72	1.46	15	PASS	0.7	9.098	15	PASS
CCV5	CCV	1	20.36	0.29	15	PASS	20.37	0.83	15	PASS
CCB5	CCB	1	0.32	2.29	15	PASS	<0.000	N/A	15	<PQL
N030044-008D	SAMP	50	140.23	1.23	15	PASS	0.025	25.94	15	<PQL
N030044-009C	SAMP	1	396.93	1.33	15	PASS	<0.000	N/A	15	<PQL
N030044-009C	SAMP	5	77.74	0.53	15	PASS	<0.000	N/A	15	<PQL
CCV6	CCV	1	20.5	0.58	15	PASS	20.88	0.55	15	PASS
CCB6	CCB	1	0.087	12.13	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV7	CCV	1	20.6	0.29	15	PASS	20.91	0.6	15	PASS
CCB7	CCB	1	0.066	4.58	15	PASS	0.0087	44.53	15	<PQL
LLCCV2	CCV2	1	1.11	2.017	20	PASS	0.6	3.49	20	PASS
ICSA3	ICSA	1	0.099	31.15	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.41	2.27	15	PASS	17.49	2.31	15	PASS

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	10.27	15	PASS	0.084	25.3	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.52	1.37	15	PASS	0.44	14.91	15	PASS
Std3-5/50 ppb	ICAL	1	4.98	4.32	15	PASS	5.04	2.78	15	PASS
Std4-10/100 ppb	ICAL	1	10.11	0.62	15	PASS	9.81	2.75	15	PASS
Std5-20/200 ppb	ICAL	1	20.26	1.6	15	PASS	20.062	5.44	15	PASS
Std6-40/400 ppb	ICAL	1	40.85	1.79	15	PASS	42.082	5.076	15	PASS
Std7-100/1000 ppb	ICAL	1	102.084	0.33	15	PASS	103.13	1.11	15	PASS
Std8-200/2000 ppb	ICAL	1	198.76	1.65	15	PASS	198.021	0.94	15	PASS
ICV	ICV	1	9.89	2.5	15	PASS	10.13	11.48	15	PASS
ICB	ICB	1	0.017	124.82	15	<PQL	0.03	250.88	15	<PQL
LLICV	CCV1	1	0.091	24.13	20	<PQL	0.57	10.84	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.021	57.92	15	<PQL
ICSAB1	ICSAB	1	22.11	0.34	15	PASS	20.18	4.43	15	PASS
MB-67911	MBLK	1	0.0052	151.54	15	<PQL	<0.000	0	15	PASS
LCS-67911	LCS	1	10.39	2.1	15	PASS	10.2	3.32	15	PASS
N030017-001C	SAMP	1	3.94	2.43	15	PASS	5.0042	2.61	15	PASS
N030017-001C	SAMP	5	0.77	6.91	15	PASS	1.031	12.39	15	PASS
N030017-001C	SAMP	25	0.14	10.25	15	PASS	0.19	33.0036	15	<PQL
N030017-001C-PS	PS	1	14.65	0.71	15	PASS	15.7	1.6	15	PASS
N030017-001C-PS	PS	5	2.94	4.92	15	PASS	3.3	8.7	15	PASS
N030017-001C-MS	MS	1	14.14	1.28	15	PASS	15.022	5.72	15	PASS
N030017-001C-MS	MS	5	3.027	7.22	15	PASS	3.18	13.31	15	PASS
N030017-001C-MSD	MSD	1	14.014	0.93	15	PASS	16.18	1.95	15	PASS
CCV1	CCV	1	19.87	1.059	15	PASS	19.95	4.21	15	PASS
CCB1	CCB	1	0.0056	209.53	15	<PQL	<0.000	N/A	15	<PQL
N030017-001C-MSD	MSD	5	2.82	2.53	15	PASS	2.83	4.48	15	PASS
N030017-002C	SAMP	1	5.46	2.64	15	PASS	5.37	3.54	15	PASS
N030017-002C	SAMP	5	1.069	3.96	15	PASS	0.96	8.25	15	PASS
N030017-005D	SAMP	1	1.48	2.47	15	PASS	0.91	17.27	15	NR!
N030017-005D	SAMP	5	0.26	3.71	15	PASS	0.2	20.39	15	<PQL
N030017-006D	SAMP	1	13.41	0.92	15	PASS	0.077	84.43	15	<PQL
N030017-006D	SAMP	5	2.76	4.67	15	PASS	<0.000	N/A	15	<PQL
N030017-007D	SAMP	1	14.45	1.61	15	PASS	0.23	23.092	15	<PQL
N030017-007D	SAMP	5	2.91	2.14	15	PASS	0.024	52.86	15	<PQL
N030017-008D	SAMP	1	10.51	0.51	15	PASS	0.97	16.78	15	NR!
CCV2	CCV	1	19.34	2.3	15	PASS	21.13	0.55	15	PASS
CCB2	CCB	1	0.011	44.74	15	<PQL	0.0065	168.68	15	<PQL
N030017-008D	SAMP	5	2.068	6.24	15	PASS	0.1	11.61	15	PASS
N030017-009C	SAMP	1	2.43	6.85	15	PASS	0.85	33.084	15	NR!
N030017-009C	SAMP	5	0.44	11.34	15	PASS	0.1	69.84	15	<PQL

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030017-010C	SAMP	1	2.21	1.038	15	PASS	0.78	48.056	15	NR!
N030017-010C	SAMP	5	0.49	5.12	15	PASS	0.13	26.52	15	<PQL
N030017-011D	SAMP	1	13.63	1.48	15	PASS	0.2	72.45	15	<PQL
N030017-011D	SAMP	5	2.85	3.59	15	PASS	0.026	194.35	15	<PQL
N030017-012C	SAMP	1	1.017	7.031	15	PASS	1.3	17.84	15	NR!
N030017-012C	SAMP	5	0.18	15.81	15	NR!	0.21	44.65	15	<PQL
N030017-013C	SAMP	1	0.98	10.19	15	PASS	1.11	9.35	15	PASS
CCV3	CCV	1	19.39	0.22	15	PASS	21.15	3.53	15	PASS
CCB3	CCB	1	0.014	23.087	15	<PQL	<0.000	N/A	15	<PQL
N030017-013C	SAMP	5	0.17	13.043	15	PASS	0.22	43.98	15	<PQL
N030044-001D	SAMP	1	1.13	5.69	15	PASS	1.056	0.33	15	PASS
N030044-001D	SAMP	5	0.25	7.75	15	PASS	0.31	32.36	15	<PQL
N030044-002D	SAMP	1	0.83	3.36	15	PASS	1.29	20.43	15	NR!
N030044-002D	SAMP	5	0.16	17.61	15	NR!	0.2	9.75	15	PASS
N030044-003C	SAMP	1	1.85	5.8	15	PASS	1.012	6.14	15	PASS
N030044-003C	SAMP	5	0.4	7.74	15	PASS	0.18	60.39	15	<PQL
N030044-004C	SAMP	1	3.94	2.068	15	PASS	4.043	17.31	15	NR!
N030044-004C	SAMP	5	0.84	4.99	15	PASS	0.94	12.15	15	PASS
N030044-004C	SAMP	50	0.054	31.75	15	<PQL	0.067	51.84	15	<PQL
CCV4	CCV	1	19.51	1.47	15	PASS	21.47	4.37	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.075	17.88	20	PASS	0.62	21.87	20	~~NR!~~ failed
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.042	90.52	15	<PQL
ICSAB2	ICSAB	1	20.89	2.048	15	PASS	21.66	2.75	15	PASS
N030044-005C	SAMP	1	0.91	8.97	15	PASS	4.14	13.5	15	PASS
N030044-005C	SAMP	5	0.16	17.05	15	NR!	0.84	38.98	15	NR!
N030044-006D	SAMP	1	2.67	3.33	15	PASS	5.6	5.016	15	PASS
N030044-006D	SAMP	5	0.52	8.27	15	PASS	1.089	10.2	15	PASS
N030044-006D	SAMP	25	0.099	35.92	15	<PQL	0.21	36.25	15	<PQL
N030044-007D	SAMP	1	1.78	7.063	15	PASS	6.31	10.67	15	PASS
N030044-007D	SAMP	5	0.35	13.64	15	PASS	1.28	7.2	15	PASS
N030044-007D	SAMP	25	0.054	65.37	15	<PQL	0.16	8.46	15	PASS
N030044-008D	SAMP	1	4.51	7.66	15	PASS	28.95	6.44	15	PASS
N030044-008D	SAMP	5	0.88	4.87	15	PASS	5.6	9.67	15	PASS
CCV5	CCV	1	19.71	1.12	15	PASS	20.81	2.47	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N030044-008D	SAMP	50	0.052	58.47	15	<PQL	0.61	37.39	15	NR!
N030044-009C	SAMP	1	1.087	3.78	15	PASS	2.74	10.31	15	PASS
N030044-009C	SAMP	5	0.24	12.043	15	PASS	0.41	7.52	15	PASS
CCV6	CCV	1	19.79	1.14	15	PASS	21.86	4.69	15	PASS
CCB6	CCB	1	0.0043	193.44	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV7	CCV	1	19.56	1.87	15	PASS	21.7	2.49	15	PASS
CCB7	CCB	1	0.0019	697.69	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.075	20.15	20	<PQL	0.57	24.16	20	~~NR!~~ failed
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.89	1.93	15	PASS	20.23	0.96	15	PASS

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.073	11.33	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.46	6.27	15	PASS
Std3-5/50 ppb	ICAL	1	4.84	0.91	15	PASS
Std4-10/100 ppb	ICAL	1	9.7	2.1	15	PASS
Std5-20/200 ppb	ICAL	1	19.65	2.56	15	PASS
Std6-40/400 ppb	ICAL	1	39.18	0.46	15	PASS
Std7-100/1000 ppb	ICAL	1	97.7	1.082	15	PASS
Std8-200/2000 ppb	ICAL	1	201.37	0.48	15	PASS
ICV	ICV	1	10.42	1.3	15	PASS
ICB	ICB	1	0.011	74.92	15	<PQL
LLICV	CCV1	1	0.49	8.15	20	PASS
ICSA1	ICSA	1	0.14	18.34	15	<PQL
ICSAB1	ICSAB	1	22.23	0.76	15	PASS
MB-67911	MBLK	1	0.089	25.67	15	<PQL
LCS-67911	LCS	1	9.98	1.22	15	PASS
N030017-001C	SAMP	1	22.38	0.58	15	PASS
N030017-001C	SAMP	5	4.22	3.028	15	PASS
N030017-001C	SAMP	25	0.83	2.48	15	PASS
N030017-001C-PS	PS	1	34.82	0.89	15	PASS
N030017-001C-PS	PS	5	6.63	1.1	15	PASS
N030017-001C-MS	MS	1	33.75	1.65	15	PASS
N030017-001C-MS	MS	5	6.44	2.26	15	PASS
N030017-001C-MSD	MSD	1	33.95	0.39	15	PASS
CCV1	CCV	1	19.35	0.38	15	PASS
CCB1	CCB	1	0.097	4.76	15	PASS
N030017-001C-MSD	MSD	5	6.52	3.0075	15	PASS
N030017-002C	SAMP	1	44.41	0.89	15	PASS
N030017-002C	SAMP	5	8.4	2.11	15	PASS
N030017-005D	SAMP	1	18.07	1.93	15	PASS
N030017-005D	SAMP	5	3.46	2.15	15	PASS
N030017-006D	SAMP	1	79.77	0.34	15	PASS
N030017-006D	SAMP	5	15.076	1.035	15	PASS
N030017-007D	SAMP	1	77.01	0.73	15	PASS
N030017-007D	SAMP	5	14.69	0.19	15	PASS
N030017-008D	SAMP	1	77.43	0.72	15	PASS
CCV2	CCV	1	19.43	2.31	15	PASS
CCB2	CCB	1	0.14	21.25	15	<PQL
N030017-008D	SAMP	5	15.026	1.89	15	PASS
N030017-009C	SAMP	1	59.54	0.71	15	PASS
N030017-009C	SAMP	5	11.78	1.58	15	PASS

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N030017-010C	SAMP	1	68.61	0.26	15	PASS
N030017-010C	SAMP	5	13.56	1.76	15	PASS
N030017-011D	SAMP	1	70.11	1.61	15	PASS
N030017-011D	SAMP	5	13.34	0.87	15	PASS
N030017-012C	SAMP	1	7.44	0.86	15	PASS
N030017-012C	SAMP	5	1.44	4.97	15	PASS
N030017-013C	SAMP	1	7.97	1.11	15	PASS
CCV3	CCV	1	19.58	0.4	15	PASS
CCB3	CCB	1	0.092	19.46	15	<PQL
N030017-013C	SAMP	5	1.47	1.39	15	PASS
N030044-001D	SAMP	1	10.89	1.47	15	PASS
N030044-001D	SAMP	5	2.084	1.62	15	PASS
N030044-002D	SAMP	1	19.24	1.26	15	PASS
N030044-002D	SAMP	5	3.73	2.43	15	PASS
N030044-003C	SAMP	1	16.52	0.55	15	PASS
N030044-003C	SAMP	5	3.07	0.93	15	PASS
N030044-004C	SAMP	1	46.006	0.26	15	PASS
N030044-004C	SAMP	5	9.18	1.67	15	PASS
N030044-004C	SAMP	50	0.9	6.32	15	PASS
CCV4	CCV	1	19.43	0.97	15	PASS
CCB4	CCB	1	0.075	13.033	15	PASS
LLCCV1	CCV2	1	0.51	7.17	20	PASS
ICSA2	ICSA	1	0.058	22.85	15	<PQL
ICSAB2	ICSAB	1	21.68	0.78	15	PASS
N030044-005C	SAMP	1	9.24	1.36	15	PASS
N030044-005C	SAMP	5	1.79	7.087	15	PASS
N030044-006D	SAMP	1	31.1	1.48	15	PASS
N030044-006D	SAMP	5	6.28	1.32	15	PASS
N030044-006D	SAMP	25	1.18	1.44	15	PASS
N030044-007D	SAMP	1	3.63	0.49	15	PASS
N030044-007D	SAMP	5	0.67	1.28	15	PASS
N030044-007D	SAMP	25	0.11	9.49	15	PASS
N030044-008D	SAMP	1	46.14	0.31	15	PASS
N030044-008D	SAMP	5	9.00082	0.78	15	PASS
CCV5	CCV	1	19.17	1.1	15	PASS
CCB5	CCB	1	0.099	3.6	15	PASS
N030044-008D	SAMP	50	0.81	0.85	15	PASS
N030044-009C	SAMP	1	16.44	0.72	15	PASS
N030044-009C	SAMP	5	3.17	3.35	15	PASS
CCV6	CCV	1	18.91	2.022	15	PASS
CCB6	CCB	1	0.1	6.71	15	PASS

PERCENT RSD SUMMARY: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
CCV7	CCV	1	19.24	0.4	15	PASS
CCB7	CCB	1	0.086	22.62	15	<PQL
LLCCV2	CCV2	1	0.51	4.17	20	PASS
ICSA3	ICSA	1	0.067	23.64	15	<PQL
ICSAB3	ICSAB	1	22.63	0.48	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180512A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0512001.D	RINSE	RINSE	1	05/12/18 10:20 AM
A0512002.D	Cal Blank	IBLK	1	05/12/18 10:26 AM
A0512003.D	Std1-0.1/1 ppb	ICAL	1	05/12/18 10:31 AM
A0512004.D	Std2-0.5/5 ppb	ICAL	1	05/12/18 10:37 AM
A0512005.D	Std3-5/50 ppb	ICAL	1	05/12/18 10:43 AM
A0512006.D	Std4-10/100 ppb	ICAL	1	05/12/18 10:48 AM
A0512007.D	Std5-20/200 ppb	ICAL	1	05/12/18 10:54 AM
A0512008.D	Std6-40/400 ppb	ICAL	1	05/12/18 10:59 AM
A0512009.D	Std7-100/1000 ppb	ICAL	1	05/12/18 11:05 AM
A0512010.D	Std8-200/2000 ppb	ICAL	1	05/12/18 11:11 AM
A0512011.D	ICV	ICV	1	05/12/18 11:17 AM
A0512012.D	ICB	ICB	1	05/12/18 11:22 AM
A0512013.D	LLICV	CCV1	1	05/12/18 11:27 AM
A0512014.D	ICSA1	ICSA	1	05/12/18 11:33 AM
A0512015.D	ICSAB1	ICSAB	1	05/12/18 11:39 AM
A0512016.D	MB-67911	MBLK	1	05/12/18 11:45 AM
A0512017.D	LCS-67911	LCS	1	05/12/18 11:50 AM
A0512018.D	N030017-001C	SAMP	1	05/12/18 11:56 AM
A0512019.D	N030017-001C	SAMP	5	05/12/18 12:02 PM
A0512020.D	N030017-001C	SAMP	25	05/12/18 12:07 PM
A0512021.D	N030017-001C-PS	PS	1	05/12/18 12:13 PM
A0512022.D	N030017-001C-PS	PS	5	05/12/18 12:18 PM
A0512023.D	N030017-001C-MS	MS	1	05/12/18 12:24 PM
A0512024.D	N030017-001C-MS	MS	5	05/12/18 12:29 PM
A0512025.D	N030017-001C-MSD	MSD	1	05/12/18 12:35 PM
A0512026.D	CCV1	CCV	1	05/12/18 12:41 PM
A0512027.D	CCB1	CCB	1	05/12/18 12:46 PM
A0512028.D	N030017-001C-MSD	MSD	5	05/12/18 12:52 PM
A0512029.D	N030017-002C	SAMP	1	05/12/18 12:58 PM
A0512030.D	N030017-002C	SAMP	5	05/12/18 1:03 PM
A0512031.D	N030017-005D	SAMP	1	05/12/18 1:09 PM
A0512032.D	N030017-005D	SAMP	5	05/12/18 1:14 PM
A0512033.D	N030017-006D	SAMP	1	05/12/18 1:20 PM
A0512034.D	N030017-006D	SAMP	5	05/12/18 1:25 PM
A0512035.D	N030017-007D	SAMP	1	05/12/18 1:31 PM
A0512036.D	N030017-007D	SAMP	5	05/12/18 1:37 PM
A0512037.D	N030017-008D	SAMP	1	05/12/18 1:42 PM
A0512038.D	CCV2	CCV	1	05/12/18 1:48 PM
A0512039.D	CCB2	CCB	1	05/12/18 1:53 PM
A0512040.D	N030017-008D	SAMP	5	05/12/18 1:59 PM
A0512041.D	N030017-009C	SAMP	1	05/12/18 2:05 PM
A0512042.D	N030017-009C	SAMP	5	05/12/18 2:10 PM

INJECTION LOG: 180512A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0512043.D	N030017-010C	SAMP	1	05/12/18 2:16 PM
A0512044.D	N030017-010C	SAMP	5	05/12/18 2:21 PM
A0512045.D	N030017-011D	SAMP	1	05/12/18 2:27 PM
A0512046.D	N030017-011D	SAMP	5	05/12/18 2:33 PM
A0512047.D	N030017-012C	SAMP	1	05/12/18 2:38 PM
A0512048.D	N030017-012C	SAMP	5	05/12/18 2:44 PM
A0512049.D	N030017-013C	SAMP	1	05/12/18 2:49 PM
A0512050.D	CCV3	CCV	1	05/12/18 2:55 PM
A0512051.D	CCB3	CCB	1	05/12/18 3:00 PM
A0512052.D	N030017-013C	SAMP	5	05/12/18 3:06 PM
A0512053.D	N030044-001D	SAMP	1	05/12/18 3:12 PM
A0512054.D	N030044-001D	SAMP	5	05/12/18 3:17 PM
A0512055.D	N030044-002D	SAMP	1	05/12/18 3:23 PM
A0512056.D	N030044-002D	SAMP	5	05/12/18 3:28 PM
A0512057.D	N030044-003C	SAMP	1	05/12/18 3:34 PM
A0512058.D	N030044-003C	SAMP	5	05/12/18 3:40 PM
A0512059.D	N030044-004C	SAMP	1	05/12/18 3:45 PM
A0512060.D	N030044-004C	SAMP	5	05/12/18 3:51 PM
A0512061.D	N030044-004C	SAMP	50	05/12/18 3:56 PM
A0512062.D	CCV4	CCV	1	05/12/18 4:02 PM
A0512063.D	CCB4	CCB	1	05/12/18 4:08 PM
A0512064.D	LLCCV1	CCV2	1	05/12/18 4:13 PM
A0512065.D	ICSA2	ICSA	1	05/12/18 4:19 PM
A0512066.D	ICSAB2	ICSAB	1	05/12/18 4:24 PM
A0512067.D	N030044-005C	SAMP	1	05/12/18 4:30 PM
A0512068.D	N030044-005C	SAMP	5	05/12/18 4:35 PM
A0512069.D	N030044-006D	SAMP	1	05/12/18 4:41 PM
A0512070.D	N030044-006D	SAMP	5	05/12/18 4:47 PM
A0512071.D	N030044-006D	SAMP	25	05/12/18 4:52 PM
A0512072.D	N030044-007D	SAMP	1	05/12/18 4:58 PM
A0512073.D	N030044-007D	SAMP	5	05/12/18 5:03 PM
A0512074.D	N030044-007D	SAMP	25	05/12/18 5:09 PM
A0512075.D	N030044-008D	SAMP	1	05/12/18 5:14 PM
A0512076.D	N030044-008D	SAMP	5	05/12/18 5:20 PM
A0512077.D	CCV5	CCV	1	05/12/18 5:26 PM
A0512078.D	CCB5	CCB	1	05/12/18 5:31 PM
A0512079.D	N030044-008D	SAMP	50	05/12/18 5:37 PM
A0512080.D	N030044-009C	SAMP	1	05/12/18 5:42 PM
A0512081.D	N030044-009C	SAMP	5	05/12/18 5:48 PM
A0512082.D	MB-68053	MBLK	1	05/12/18 5:54 PM
A0512083.D	LCS-68053	LCS	1	05/12/18 5:59 PM
A0512084.D	N030286-001A	SAMP	1	05/12/18 6:05 PM

INJECTION LOG: 180512A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0512085.D	N030286-001A	SAMP	5	05/12/18 6:10 PM
A0512086.D	N030286-001A-PS	PS	1	05/12/18 6:16 PM
A0512087.D	N030286-001A-MS	MS	1	05/12/18 6:22 PM
A0512088.D	N030286-001A-MSD	MSD	1	05/12/18 6:27 PM
A0512089.D	CCV6	CCV	1	05/12/18 6:33 PM
A0512090.D	CCB6	CCB	1	05/12/18 6:38 PM
A0512091.D	N030286-002A	SAMP	1	05/12/18 6:44 PM
A0512092.D	CCV7	CCV	1	05/12/18 6:50 PM
A0512093.D	CCB7	CCB	1	05/12/18 6:55 PM
A0512094.D	LLCCV2	CCV2	1	05/12/18 7:01 PM
A0512095.D	ICSA3	ICSA	1	05/12/18 7:06 PM
A0512096.D	ICSAB3	ICSAB	1	05/12/18 7:12 PM
A0512097.D	RINSE	RINSE	1	05/12/18 7:30 PM
A0512098.D	RINSE	RINSE	1	05/12/18 7:36 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/2/2018 9:10:03 A**
Prep End Date: **5/2/2018 2:00:00 P**
Prep Batch **67911** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/15/2018
Initials/ Date: 5/15/2018
Technician: **Claire Ignacio**

Prep Factor Units **mL / mL** Temp. (°C): **94.5** Location: **02-19**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67911	Aqueous		25	☐	0	0	25	1.000		
MB-67911	Aqueous		25	☐	0	0	25	1.000		
N030017-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-005D	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-006D	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-007D	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-008D	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-010C	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-011D	Groundwater	<2	25	☐	0	0	25	1.000		
N030017-012C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/2/2018 9:10:03 A**
Prep End Date: **5/2/2018 2:00:00 P**
Prep Batch **67911** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/15/2018
Initials/ Date: 5/15/2018
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.5**	**02-19**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N030017-013C	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-002D	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-006D	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-007D	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-008D	Groundwater	<2	25	☐	0	0	25	1.000		
N030044-009C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 12 May 2018 10:00:14 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	130412.00	0.00	
24	Mg	81575500.00	0.00	
25	Mg	10911600.00	0.00	
26	Mg	12591100.00	0.00	
59	Co	516474.00	0.00	
115	In	865083.00	0.00	
206	Pb	249990.00	0.00	
207	Pb	217798.00	0.00	
208	Pb	534825.00	0.00	

RSD (%)

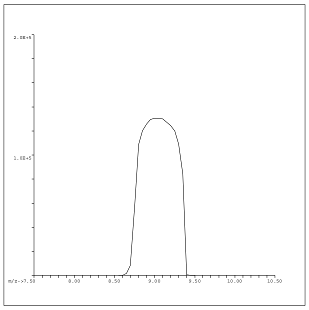
Element		Actual	Required	Flag
9	Be	0.40	5.00	
24	Mg	0.86	5.00	
25	Mg	0.79	5.00	
26	Mg	0.65	5.00	
59	Co	0.79	5.00	
115	In	0.51	5.00	
206	Pb	0.72	5.00	
207	Pb	0.95	5.00	
208	Pb	0.76	5.00	

Ion Ratio

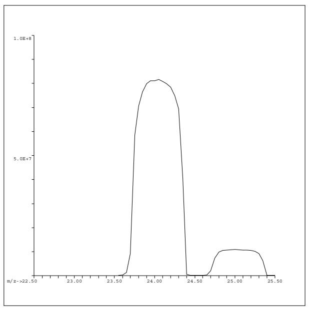
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

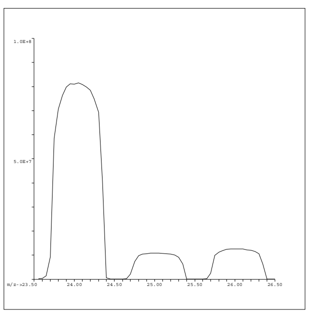
Element	Actual	Required	Flag



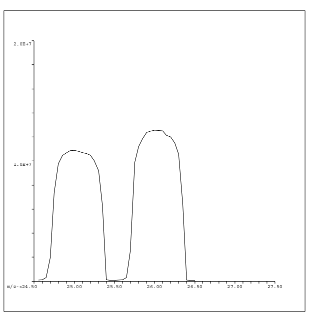
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



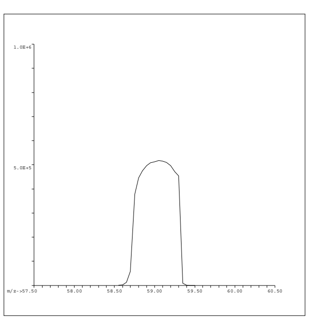
24 Mg
Mass Calib.
Actual: 24.05
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



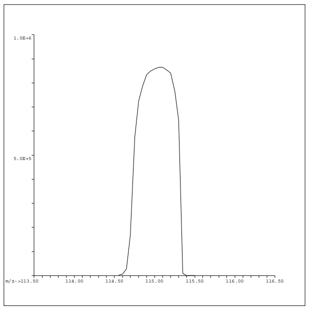
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



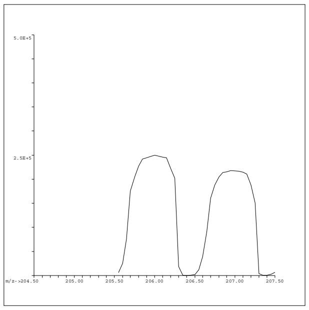
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



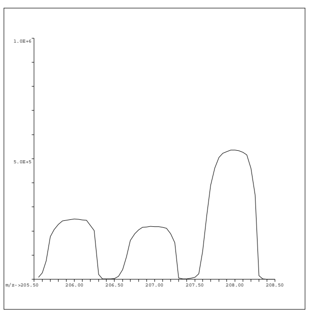
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



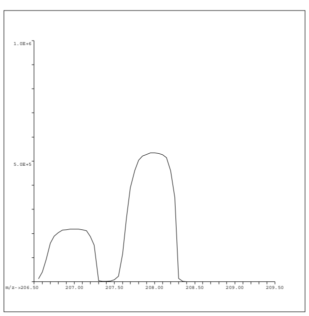
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180512A

Instrument ID: ICPMS-02

Analyte	Data File	A0512002.D	A0512003.D	A0512004.D	A0512005.D	A0512006.D	A0512007.D	A0512008.D	A0512009.D	A0512010.D	
	Acq. Date-Time	05/12/2018 10:26 AM	05/12/2018 10:31 AM	05/12/2018 10:37 AM	05/12/2018 10:43 AM	05/12/2018 10:48 AM	05/12/2018 10:54 AM	05/12/2018 10:59 AM	05/12/2018 11:05 AM	05/12/2018 11:11 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	61714		59722.7	59889.4	60359.4	60042.2	59303.1	58901.7	49849.9	
55 Mn [2]	CPS	130.9		1258.3	12252.6	23934.9	48217	96046.3	238177.3	390986	0.9999
52 Cr [2]	CPS	118.6		2657.9	24878.9	50278.7	100197.1	195288.1	487004.1	821301.2	1.0000
72 Ge (ISTD) [1]	CPS	54445		52409.5	52237.6	53672.2	52710.3	52626.7	52245.7	42058.3	
78 Se [1]	CPS	4.4		80	866.7	1729.1	3467.2	7259.7	17653.5	27283.7	0.9998
72 Ge (ISTD) [2]	CPS	43697.2	42416	42069.6	41890.1	42096.3	41811.1	41532.7	41010.4	35002.8	
75 As [2]	CPS	20.4	72	279.1	2505.1	5088.8	10108.1	20226	49883.8	82884.6	0.9999
103 Rh (ISTD) [2]	CPS	1494072.9		1446616.7	1455986.3	1447054.4	1433589.6	1427741.6	1436175.7	1194452.7	
95 Mo [2]	CPS	125.6		1641.3	16088.6	31910.5	63915.6	126832.5	318002.9	544995.3	0.9999

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MWST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.892	0.10	10.00	0	98.9	90	110				
Manganese	109.827	0.50	100.0	0	110	90	110				
Molybdenum	10.422	0.50	10.00	0	104	90	110				
Selenium	10.127	0.50	10.00	0	101	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.091	0.10	0.1000	0	90.6	80	120				
Manganese	0.582	0.50	0.5000	0	116	80	120				
Molybdenum	0.492	0.50	0.5000	0	98.3	80	120				
Selenium	0.569	0.50	0.5000	0	114	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024888**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.874	0.10	20.00	0	99.4	90	110				
Manganese	19.853	0.50	20.00	0	99.3	90	110				
Molybdenum	19.353	0.50	20.00	0	96.8	90	110				
Selenium	19.946	0.50	20.00	0	99.7	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.340	0.10	20.00	0	96.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.949	0.50	20.00	0	99.7	90	110				
Molybdenum	19.431	0.50	20.00	0	97.2	90	110				
Selenium	21.131	0.50	20.00	0	106	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.392	0.10	20.00	0	97.0	90	110				
Manganese	20.085	0.50	20.00	0	100	90	110				
Molybdenum	19.580	0.50	20.00	0	97.9	90	110				
Selenium	21.146	0.50	20.00	0	106	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.512	0.10	20.00	0	97.6	90	110				
Manganese	20.357	0.50	20.00	0	102	90	110				
Molybdenum	19.430	0.50	20.00	0	97.2	90	110				
Selenium	21.473	0.50	20.00	0	107	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	~~ND~~ 0.07475	0.10	0.1000	0	~~0~~ 74.8%	70	130				~~S~~
Manganese	0.530	0.50	0.5000	0	106	70	130				
Molybdenum	0.506	0.50	0.5000	0	101	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 5/15/2018

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.615	0.50	0.5000	0	123	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.707	0.10	20.00	0	98.5	90	110				
Manganese	20.370	0.50	20.00	0	102	90	110				
Molybdenum	19.171	0.50	20.00	0	95.9	90	110				
Selenium	20.810	0.50	20.00	0	104	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.790	0.10	20.00	0	99.0	90	110				
Manganese	20.877	0.50	20.00	0	104	90	110				
Molybdenum	18.907	0.50	20.00	0	94.5	90	110				
Selenium	21.862	0.50	20.00	0	109	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.559	0.10	20.00	0	97.8	90	110				
Manganese	20.909	0.50	20.00	0	105	90	110				
Molybdenum	19.244	0.50	20.00	0	96.2	90	110				
Selenium	21.697	0.50	20.00	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**

Client ID: **ZZZZZZ** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	~~ND~~ 0.07489	0.10	0.1000	0	~~0~~ 74.9%	70	130				~~S~~
Manganese	0.603	0.50	0.5000	0	121	70	130				
Molybdenum	0.511	0.50	0.5000	0	102	70	130				
Selenium	0.569	0.50	0.5000	0	114	70	130				

Nancy 5/15/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.883	1.0	10.00	0	98.8	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.098	1.0	1.000	0	110	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.810	1.0	20.00	0	99.0	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024814**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.941	1.0	20.00	0	99.7	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.966	1.0	20.00	0	99.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024838**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.245	1.0	20.00	0	101	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.176	1.0	1.000	0	118	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.361	1.0	20.00	0	102	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.500	1.0	20.00	0	103	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCV** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.596	1.0	20.00	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.112	1.0	1.000	0	111	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024901**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID CCB6	SampType: CCB	TestCode: 6020_DIS	Units: µg/L	Prep Date:			RunNo: 124026			
Client ID: CCB	Batch ID: R124026	TestNo: EPA 6020		Analysis Date: 5/12/2018			SeqNo: 3024952			
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Selenium	ND	0.50									

Sample ID CCB7	SampType: CCB	TestCode: 6020_DIS	Units: µg/L	Prep Date:			RunNo: 124026				
Client ID: CCB	Batch ID: R124026	TestNo: EPA 6020		Analysis Date: 5/12/2018			SeqNo: 3024955				
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.182	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024815**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.219	1.0									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024854**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.315	1.0									

Sample ID **CCB6** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **CCB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSA** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSAB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.108	0.10	20.00	0	111	80	120				
Manganese	16.127	0.50	20.00	0	80.6	80	120				
Molybdenum	22.227	0.50	20.00	0	111	80	120				
Selenium	20.184	0.50	20.00	0	101	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSA** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSAB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.895	0.10	20.00	0	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSAB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	16.790	0.50	20.00	0	83.9	80	120				
Molybdenum	21.676	0.50	20.00	0	108	80	120				
Selenium	21.664	0.50	20.00	0	108	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSA** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSAB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.891	0.10	20.00	0	104	80	120				
Manganese	17.489	0.50	20.00	0	87.4	80	120				
Molybdenum	22.626	0.50	20.00	0	113	80	120				
Selenium	20.226	0.50	20.00	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSA** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSAB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.010	1.0	20.00	0	100	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSA** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.151	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSAB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.255	1.0	20.00	0	101	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSA** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ICSAB** Batch ID: **R124026** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3024872**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.406	1.0	20.00	0	102	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	61714	61714	100	PASS	70-125	43697.2	43697.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	60080.2	61714	97.35	PASS	70-125	42416	43697.2	97.068	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	59722.7	61714	96.77	PASS	70-125	42069.6	43697.2	96.28	PASS	70-125
Std3-5/50 ppb	ICAL	1	59889.4	61714	97.043	PASS	70-125	41890.1	43697.2	95.86	PASS	70-125
Std4-10/100 ppb	ICAL	1	60359.4	61714	97.81	PASS	70-125	42096.3	43697.2	96.34	PASS	70-125
Std5-20/200 ppb	ICAL	1	60042.2	61714	97.29	PASS	70-125	41811.1	43697.2	95.68	PASS	70-125
Std6-40/400 ppb	ICAL	1	59303.1	61714	96.093	PASS	70-125	41532.7	43697.2	95.047	PASS	70-125
Std7-100/1000 ppb	ICAL	1	58901.7	61714	95.44	PASS	70-125	41010.4	43697.2	93.85	PASS	70-125
Std8-200/2000 ppb	ICAL	1	49849.9	61714	80.78	PASS	70-125	35002.8	43697.2	80.1	PASS	70-125
ICV	ICV	1	57494.6	61714	93.16	PASS	70-125	40192.6	43697.2	91.98	PASS	70-125
ICB	ICB	1	50923.2	61714	82.51	PASS	70-125	39411.9	43697.2	90.19	PASS	70-125
LLICV	CCV1	1	52960.4	61714	85.82	PASS	70-125	41028.1	43697.2	93.89	PASS	70-125
ICSA1	ICSA	1	61238.7	61714	99.23	PASS	70-125	41416.8	43697.2	94.78	PASS	70-125
ICSAB1	ICSAB	1	65963.3	61714	106.89	PASS	70-125	43984.6	43697.2	100.66	PASS	70-125
MB-67911	MBLK	1	65686.5	61714	106.44	PASS	70-125	46151.5	43697.2	105.62	PASS	70-125
LCS-67911	LCS	1	70777.5	61714	114.69	PASS	70-125	49971.6	43697.2	114.36	PASS	70-125
N030017-001C	SAMP	1	50872.9	61714	82.43	PASS	70-125	30736.4	43697.2	70.34	PASS	70-125
N030017-001C	SAMP	5	64697.3	61714	104.83	PASS	70-125	41855.6	43697.2	95.79	PASS	70-125
N030017-001C	SAMP	25	66980.9	61714	108.53	PASS	70-125	45294.8	43697.2	103.66	PASS	70-125
N030017-001C-PS	PS	1	54503.3	61714	88.32	PASS	70-125	34788	43697.2	79.61	PASS	70-125
N030017-001C-PS	PS	5	62866	61714	101.87	PASS	70-125	42585.3	43697.2	97.46	PASS	70-125
N030017-001C-MS	MS	1	51953	61714	84.18	PASS	70-125	34108.7	43697.2	78.057	PASS	70-125
N030017-001C-MS	MS	5	61999.4	61714	100.46	PASS	70-125	42201	43697.2	96.58	PASS	70-125
N030017-001C-MSD	MSD	1	50293.5	61714	81.49	PASS	70-125	33510.8	43697.2	76.69	PASS	70-125
CCV1	CCV	1	65768.5	61714	106.57	PASS	70-125	47769.6	43697.2	109.32	PASS	70-125
CCB1	CCB	1	64812.3	61714	105.02	PASS	70-125	48230.1	43697.2	110.37	PASS	70-125
N030017-001C-MSD	MSD	5	57486.8	61714	93.15	PASS	70-125	40141.3	43697.2	91.86	PASS	70-125
N030017-002C	SAMP	1	45852.9	61714	74.3	PASS	70-125	31225	43697.2	71.46	PASS	70-125
N030017-002C	SAMP	5	59032.1	61714	95.65	PASS	70-125	41105.8	43697.2	94.07	PASS	70-125
N030017-005D	SAMP	1	58368.6	61714	94.58	PASS	70-125	40728.3	43697.2	93.21	PASS	70-125
N030017-005D	SAMP	5	62741.3	61714	101.66	PASS	70-125	45099.9	43697.2	103.21	PASS	70-125
N030017-006D	SAMP	1	47592.2	61714	77.12	PASS	70-125	34242.3	43697.2	78.36	PASS	70-125
N030017-006D	SAMP	5	58852.5	61714	95.36	PASS	70-125	42954.1	43697.2	98.3	PASS	70-125
N030017-007D	SAMP	1	48625.1	61714	78.79	PASS	70-125	35078.5	43697.2	80.28	PASS	70-125
N030017-007D	SAMP	5	60215.4	61714	97.57	PASS	70-125	43648.2	43697.2	99.89	PASS	70-125
N030017-008D	SAMP	1	46650.6	61714	75.59	PASS	70-125	33205.6	43697.2	75.99	PASS	70-125
CCV2	CCV	1	63618.4	61714	103.09	PASS	70-125	48900.9	43697.2	111.91	PASS	70-125
CCB2	CCB	1	62276.3	61714	100.91	PASS	70-125	47834.3	43697.2	109.47	PASS	70-125
N030017-008D	SAMP	5	56179.9	61714	91.033	PASS	70-125	40364.1	43697.2	92.37	PASS	70-125
N030017-009C	SAMP	1	41157.3	61714	66.69	NR!	70-125	29350.4	43697.2	67.17	NR!	70-125
N030017-009C	SAMP	5	57368.8	61714	92.96	PASS	70-125	41585.1	43697.2	95.17	PASS	70-125

INTERNAL STANDARD: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030017-010C	SAMP	1	41359	61714	67.017	NR!	70-125	30363.5	43697.2	69.49	NR!	70-125
N030017-010C	SAMP	5	56468.8	61714	91.5	PASS	70-125	41454.6	43697.2	94.87	PASS	70-125
N030017-011D	SAMP	1	46196.3	61714	74.86	PASS	70-125	34114.3	43697.2	78.07	PASS	70-125
N030017-011D	SAMP	5	57212.3	61714	92.71	PASS	70-125	42684.6	43697.2	97.68	PASS	70-125
N030017-012C	SAMP	1	45998.9	61714	74.54	PASS	70-125	34635.3	43697.2	79.26	PASS	70-125
N030017-012C	SAMP	5	58433.3	61714	94.68	PASS	70-125	44039.1	43697.2	100.78	PASS	70-125
N030017-013C	SAMP	1	54543.4	61714	88.38	PASS	70-125	39633.7	43697.2	90.7	PASS	70-125
CCV3	CCV	1	59700	61714	96.74	PASS	70-125	45834.2	43697.2	104.89	PASS	70-125
CCB3	CCB	1	57725.6	61714	93.54	PASS	70-125	45486.5	43697.2	104.1	PASS	70-125
N030017-013C	SAMP	5	53813.5	61714	87.2	PASS	70-125	40995.7	43697.2	93.82	PASS	70-125
N030044-001D	SAMP	1	46300.8	61714	75.025	PASS	70-125	34114.2	43697.2	78.07	PASS	70-125
N030044-001D	SAMP	5	55342.8	61714	89.68	PASS	70-125	42127.3	43697.2	96.41	PASS	70-125
N030044-002D	SAMP	1	47090.7	61714	76.3	PASS	70-125	34401.5	43697.2	78.73	PASS	70-125
N030044-002D	SAMP	5	56074.4	61714	90.86	PASS	70-125	41020.2	43697.2	93.87	PASS	70-125
N030044-003C	SAMP	1	55697.3	61714	90.25	PASS	70-125	39742.7	43697.2	90.95	PASS	70-125
N030044-003C	SAMP	5	57071	61714	92.48	PASS	70-125	42819.4	43697.2	97.99	PASS	70-125
N030044-004C	SAMP	1	37799.2	61714	61.25	NR!	70-125	27408.2	43697.2	62.72	NR!	70-125
N030044-004C	SAMP	5	46472.4	61714	75.3	PASS	70-125	34826.7	43697.2	79.7	PASS	70-125
N030044-004C	SAMP	50	56802.4	61714	92.041	PASS	70-125	43589.1	43697.2	99.75	PASS	70-125
CCV4	CCV	1	57327.2	61714	92.89	PASS	70-125	44021.4	43697.2	100.74	PASS	70-125
CCB4	CCB	1	56116.5	61714	90.93	PASS	70-125	43906.7	43697.2	100.48	PASS	70-125
LLCCV1	CCV2	1	55179.1	61714	89.41	PASS	70-125	42838.5	43697.2	98.035	PASS	70-125
ICSA2	ICSA	1	54741.7	61714	88.7	PASS	70-125	40450.9	43697.2	92.57	PASS	70-125
ICSAB2	ICSAB	1	55396.2	61714	89.76	PASS	70-125	41046	43697.2	93.93	PASS	70-125
N030044-005C	SAMP	1	52992.1	61714	85.87	PASS	70-125	38938.5	43697.2	89.11	PASS	70-125
N030044-005C	SAMP	5	53022	61714	85.92	PASS	70-125	41372.3	43697.2	94.68	PASS	70-125
N030044-006D	SAMP	1	54360.8	61714	88.085	PASS	70-125	41014.6	43697.2	93.86	PASS	70-125
N030044-006D	SAMP	5	54785.4	61714	88.77	PASS	70-125	42336.9	43697.2	96.89	PASS	70-125
N030044-006D	SAMP	25	53230.5	61714	86.25	PASS	70-125	41714.1	43697.2	95.46	PASS	70-125
N030044-007D	SAMP	1	52741	61714	85.46	PASS	70-125	39243.7	43697.2	89.81	PASS	70-125
N030044-007D	SAMP	5	53510.3	61714	86.71	PASS	70-125	41126	43697.2	94.12	PASS	70-125
N030044-007D	SAMP	25	52859.3	61714	85.65	PASS	70-125	42163.1	43697.2	96.49	PASS	70-125
N030044-008D	SAMP	1	43648.2	61714	70.73	PASS	70-125	31619.3	43697.2	72.36	PASS	70-125
N030044-008D	SAMP	5	52255	61714	84.67	PASS	70-125	38916.2	43697.2	89.059	PASS	70-125
CCV5	CCV	1	56977.2	61714	92.32	PASS	70-125	44150.6	43697.2	101.04	PASS	70-125
CCB5	CCB	1	55819.9	61714	90.45	PASS	70-125	43570.3	43697.2	99.71	PASS	70-125
N030044-008D	SAMP	50	51789.2	61714	83.92	PASS	70-125	41051.5	43697.2	93.95	PASS	70-125
N030044-009C	SAMP	1	49550.4	61714	80.29	PASS	70-125	36637.5	43697.2	83.84	PASS	70-125
N030044-009C	SAMP	5	56559.1	61714	91.65	PASS	70-125	42772.6	43697.2	97.88	PASS	70-125
CCV6	CCV	1	47492	61714	76.95	PASS	70-125	38402.7	43697.2	87.88	PASS	70-125
CCB6	CCB	1	47503.2	61714	76.97	PASS	70-125	38603.2	43697.2	88.34	PASS	70-125

INTERNAL STANDARD: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV7	CCV	1	46938.3	61714	76.058	PASS	70-125	37921.7	43697.2	86.78	PASS	70-125
CCB7	CCB	1	46052.4	61714	74.62	PASS	70-125	38025.1	43697.2	87.02	PASS	70-125
LLCCV2	CCV2	1	45639.1	61714	73.95	PASS	70-125	37585.4	43697.2	86.013	PASS	70-125
ICSA3	ICSA	1	46036.9	61714	74.6	PASS	70-125	36678.7	43697.2	83.94	PASS	70-125
ICSAB3	ICSAB	1	48613	61714	78.77	PASS	70-125	37276.7	43697.2	85.31	PASS	70-125

INTERNAL STANDARD: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	54445	54445	100	PASS	70-125	1494072.9	1494072.9	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	53132.9	54445	97.59	PASS	70-125	1465493.4	1494072.9	98.087	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	52409.5	54445	96.26	PASS	70-125	1446616.7	1494072.9	96.82	PASS	70-125
Std3-5/50 ppb	ICAL	1	52237.6	54445	95.95	PASS	70-125	1455986.3	1494072.9	97.45	PASS	70-125
Std4-10/100 ppb	ICAL	1	53672.2	54445	98.58	PASS	70-125	1447054.4	1494072.9	96.85	PASS	70-125
Std5-20/200 ppb	ICAL	1	52710.3	54445	96.81	PASS	70-125	1433589.6	1494072.9	95.95	PASS	70-125
Std6-40/400 ppb	ICAL	1	52626.7	54445	96.66	PASS	70-125	1427741.6	1494072.9	95.56	PASS	70-125
Std7-100/1000 ppb	ICAL	1	52245.7	54445	95.96	PASS	70-125	1436175.7	1494072.9	96.12	PASS	70-125
Std8-200/2000 ppb	ICAL	1	42058.3	54445	77.25	PASS	70-125	1194452.7	1494072.9	79.95	PASS	70-125
ICV	ICV	1	50845.6	54445	93.39	PASS	70-125	1454920.7	1494072.9	97.38	PASS	70-125
ICB	ICB	1	43147	54445	79.25	PASS	70-125	1328394.7	1494072.9	88.91	PASS	70-125
LLICV	CCV1	1	47455.5	54445	87.16	PASS	70-125	1364618	1494072.9	91.34	PASS	70-125
ICSA1	ICSA	1	52458.2	54445	96.35	PASS	70-125	1333031.4	1494072.9	89.22	PASS	70-125
ICSAB1	ICSAB	1	56326.8	54445	103.46	PASS	70-125	1436878.5	1494072.9	96.17	PASS	70-125
MB-67911	MBLK	1	61133.1	54445	112.28	PASS	70-125	1610288.8	1494072.9	107.78	PASS	70-125
LCS-67911	LCS	1	64605	54445	118.66	PASS	70-125	1768948	1494072.9	118.4	PASS	70-125
N030017-001C	SAMP	1	37310.1	54445	68.53	NR!	70-125	907183.1	1494072.9	60.72	NR!	70-125
N030017-001C	SAMP	5	49783.3	54445	91.44	PASS	70-125	1348140.8	1494072.9	90.23	PASS	70-125
N030017-001C	SAMP	25	55009.1	54445	101.04	PASS	70-125	1474393.7	1494072.9	98.68	PASS	70-125
N030017-001C-PS	PS	1	39624.5	54445	72.78	PASS	70-125	1003567.5	1494072.9	67.17	NR!	70-125
N030017-001C-PS	PS	5	49550.6	54445	91.01	PASS	70-125	1349514	1494072.9	90.32	PASS	70-125
N030017-001C-MS	MS	1	38140.8	54445	70.054	PASS	70-125	992858	1494072.9	66.45	NR!	70-125
N030017-001C-MS	MS	5	48428.3	54445	88.95	PASS	70-125	1349453.6	1494072.9	90.32	PASS	70-125
N030017-001C-MSD	MSD	1	36677.7	54445	67.37	NR!	70-125	977698.2	1494072.9	65.44	NR!	70-125
CCV1	CCV	1	55691.5	54445	102.29	PASS	70-125	1622782.7	1494072.9	108.61	PASS	70-125
CCB1	CCB	1	55994.6	54445	102.85	PASS	70-125	1617129.9	1494072.9	108.24	PASS	70-125
N030017-001C-MSD	MSD	5	45720.4	54445	83.98	PASS	70-125	1238960.3	1494072.9	82.93	PASS	70-125
N030017-002C	SAMP	1	34040.8	54445	62.52	NR!	70-125	917868.8	1494072.9	61.43	NR!	70-125
N030017-002C	SAMP	5	46540.6	54445	85.48	PASS	70-125	1296419.9	1494072.9	86.77	PASS	70-125
N030017-005D	SAMP	1	45807.4	54445	84.14	PASS	70-125	1191117.4	1494072.9	79.72	PASS	70-125
N030017-005D	SAMP	5	51921.1	54445	95.36	PASS	70-125	1434787.2	1494072.9	96.032	PASS	70-125
N030017-006D	SAMP	1	36968.2	54445	67.9	NR!	70-125	970706.3	1494072.9	64.97	NR!	70-125
N030017-006D	SAMP	5	47518.9	54445	87.28	PASS	70-125	1329338.7	1494072.9	88.97	PASS	70-125
N030017-007D	SAMP	1	37912.7	54445	69.63	NR!	70-125	992070.4	1494072.9	66.4	NR!	70-125
N030017-007D	SAMP	5	48873.1	54445	89.77	PASS	70-125	1359632.8	1494072.9	91.002	PASS	70-125
N030017-008D	SAMP	1	35587.5	54445	65.36	NR!	70-125	965621	1494072.9	64.63	NR!	70-125
CCV2	CCV	1	54471.7	54445	100.05	PASS	70-125	1614910.7	1494072.9	108.09	PASS	70-125
CCB2	CCB	1	54161.9	54445	99.48	PASS	70-125	1601582.1	1494072.9	107.2	PASS	70-125
N030017-008D	SAMP	5	45138.6	54445	82.91	PASS	70-125	1237235.2	1494072.9	82.81	PASS	70-125
N030017-009C	SAMP	1	30717.5	54445	56.42	NR!	70-125	845695.6	1494072.9	56.6	NR!	70-125
N030017-009C	SAMP	5	45040.8	54445	82.73	PASS	70-125	1264570.2	1494072.9	84.64	PASS	70-125

INTERNAL STANDARD: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030017-010C	SAMP	1	32044.4	54445	58.86	NR!	70-125	866501.8	1494072.9	58	NR!	70-125
N030017-010C	SAMP	5	44644.2	54445	82	PASS	70-125	1244837.8	1494072.9	83.32	PASS	70-125
N030017-011D	SAMP	1	35469.4	54445	65.15	NR!	70-125	970228.3	1494072.9	64.94	NR!	70-125
N030017-011D	SAMP	5	46794.8	54445	85.95	PASS	70-125	1333943.9	1494072.9	89.28	PASS	70-125
N030017-012C	SAMP	1	36643.2	54445	67.3	NR!	70-125	1033345.9	1494072.9	69.16	NR!	70-125
N030017-012C	SAMP	5	48128.6	54445	88.4	PASS	70-125	1413776.7	1494072.9	94.63	PASS	70-125
N030017-013C	SAMP	1	43074.4	54445	79.12	PASS	70-125	1176895.9	1494072.9	78.77	PASS	70-125
CCV3	CCV	1	51074.2	54445	93.81	PASS	70-125	1515381.8	1494072.9	101.43	PASS	70-125
CCB3	CCB	1	50150.4	54445	92.11	PASS	70-125	1508208.8	1494072.9	100.95	PASS	70-125
N030017-013C	SAMP	5	45054.3	54445	82.75	PASS	70-125	1319136.1	1494072.9	88.29	PASS	70-125
N030044-001D	SAMP	1	35455	54445	65.12	NR!	70-125	1012276.5	1494072.9	67.75	NR!	70-125
N030044-001D	SAMP	5	46006.8	54445	84.5	PASS	70-125	1328822.1	1494072.9	88.94	PASS	70-125
N030044-002D	SAMP	1	36450.4	54445	66.95	NR!	70-125	997495.2	1494072.9	66.76	NR!	70-125
N030044-002D	SAMP	5	45092	54445	82.82	PASS	70-125	1282688.6	1494072.9	85.85	PASS	70-125
N030044-003C	SAMP	1	42541.8	54445	78.14	PASS	70-125	1172701.7	1494072.9	78.49	PASS	70-125
N030044-003C	SAMP	5	47677.3	54445	87.57	PASS	70-125	1365470.9	1494072.9	91.39	PASS	70-125
N030044-004C	SAMP	1	28914.2	54445	53.11	NR!	70-125	789452.8	1494072.9	52.84	NR!	70-125
N030044-004C	SAMP	5	37021.9	54445	68	NR!	70-125	1036038.7	1494072.9	69.34	NR!	70-125
N030044-004C	SAMP	50	48434.9	54445	88.96	PASS	70-125	1380939.7	1494072.9	92.43	PASS	70-125
CCV4	CCV	1	48632.2	54445	89.32	PASS	70-125	1474169.3	1494072.9	98.67	PASS	70-125
CCB4	CCB	1	47491.1	54445	87.23	PASS	70-125	1470746.5	1494072.9	98.44	PASS	70-125
LLCCV1	CCV2	1	46747.6	54445	85.86	PASS	70-125	1454392.7	1494072.9	97.34	PASS	70-125
ICSA2	ICSA	1	45309.5	54445	83.22	PASS	70-125	1282548.9	1494072.9	85.84	PASS	70-125
ICSAB2	ICSAB	1	45003	54445	82.66	PASS	70-125	1314014.2	1494072.9	87.95	PASS	70-125
N030044-005C	SAMP	1	43322.9	54445	79.57	PASS	70-125	1185329.1	1494072.9	79.34	PASS	70-125
N030044-005C	SAMP	5	45230.2	54445	83.075	PASS	70-125	1304338.3	1494072.9	87.3	PASS	70-125
N030044-006D	SAMP	1	45849.8	54445	84.21	PASS	70-125	1284755.8	1494072.9	85.99	PASS	70-125
N030044-006D	SAMP	5	48108.4	54445	88.36	PASS	70-125	1359062.8	1494072.9	90.96	PASS	70-125
N030044-006D	SAMP	25	46948.4	54445	86.23	PASS	70-125	1389100.2	1494072.9	92.97	PASS	70-125
N030044-007D	SAMP	1	44216.4	54445	81.21	PASS	70-125	1199142.4	1494072.9	80.26	PASS	70-125
N030044-007D	SAMP	5	46846.1	54445	86.043	PASS	70-125	1314834.9	1494072.9	88.003	PASS	70-125
N030044-007D	SAMP	25	46666.8	54445	85.71	PASS	70-125	1383053.4	1494072.9	92.57	PASS	70-125
N030044-008D	SAMP	1	34485.1	54445	63.34	NR!	70-125	933599.2	1494072.9	62.49	NR!	70-125
N030044-008D	SAMP	5	43711.7	54445	80.29	PASS	70-125	1188511.4	1494072.9	79.55	PASS	70-125
CCV5	CCV	1	50432.4	54445	92.63	PASS	70-125	1482843.5	1494072.9	99.25	PASS	70-125
CCB5	CCB	1	48205.5	54445	88.54	PASS	70-125	1462772.5	1494072.9	97.91	PASS	70-125
N030044-008D	SAMP	50	45757.4	54445	84.043	PASS	70-125	1349392.1	1494072.9	90.32	PASS	70-125
N030044-009C	SAMP	1	37926	54445	69.66	NR!	70-125	1080884.5	1494072.9	72.34	PASS	70-125
N030044-009C	SAMP	5	47798.4	54445	87.79	PASS	70-125	1288301.6	1494072.9	86.23	PASS	70-125
CCV6	CCV	1	42531.9	54445	78.12	PASS	70-125	1340896.5	1494072.9	89.75	PASS	70-125
CCB6	CCB	1	42422.8	54445	77.92	PASS	70-125	1345230.2	1494072.9	90.038	PASS	70-125

INTERNAL STANDARD: 180512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV7	CCV	1	42165.4	54445	77.45	PASS	70-125	1319200.9	1494072.9	88.3	PASS	70-125
CCB7	CCB	1	42394.8	54445	77.87	PASS	70-125	1327286.8	1494072.9	88.84	PASS	70-125
LLCCV2	CCV2	1	41181.6	54445	75.64	PASS	70-125	1331834.5	1494072.9	89.14	PASS	70-125
ICSA3	ICSA	1	40117	54445	73.68	PASS	70-125	1149196.4	1494072.9	76.92	PASS	70-125
ICSAB3	ICSAB	1	41931.4	54445	77.016	PASS	70-125	1172469	1494072.9	78.47	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water **Dilution Test Summary**

Work Order No.: N030044
Test Method: EPA 6020
Analysis Date: 5/12/2018

Matrix: Groundwater
Batch No.: 67911

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to several analytes. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030017-001C DT 5X	Arsenic	ug/L	3.832263	PASS	3.940562	2.75%	10
N030017-001C DT 5X	Chromium	ug/L	37.5585	PASS	36.8376	1.96%	10
N030017-001C DT 5X	Manganese	ug/L	4.118212	NA	4.202583	2.01%	10
N030017-001C DT ~~5X~~ 25x	Molybdenum	ug/L	20.86238	PASS	21.10646	1.16%	10
N030017-001C DT ~~5X~~ 25X	Selenium	ug/L	0	NA	5.155913	100.00%	10

Note: NA - Not applicable

Nancy 5/15/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030017-001C-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	14.650	0.10	10.00	3.941	107	80	120				
Manganese	97.958	0.50	100.0	4.203	93.8	80	120				

Sample ID **N030017-001C-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	33.156	2.5	10.00	21.11	120	80	120				S
Selenium	16.507	2.5	10.00	5.156	114	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030044
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N030017-001C-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124026**
Client ID: **ZZZZZZ** Batch ID: **67911** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3024797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	45.965	1.0	10.00	36.84	91.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

May 15, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030075

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 30, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Libucao for

Quennie Manimtim
Laboratory Director

ASSET Laboratories **Date:** *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.0801
Lab Order:	N030075

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N030075-001, -005, -007 and -008 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

ASSET Laboratories

Date: *15-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N030075
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030075-001A	MW-65-225-Q218	Groundwater	4/30/2018 1:24:00 PM	4/30/2018	5/15/2018
N030075-001B	MW-65-225-Q218	Groundwater	4/30/2018 1:24:00 PM	4/30/2018	5/15/2018
N030075-001C	MW-65-225-Q218	Groundwater	4/30/2018 1:24:00 PM	4/30/2018	5/15/2018
N030075-001D	MW-65-225-Q218	Groundwater	4/30/2018 1:24:00 PM	4/30/2018	5/15/2018
N030075-002A	MW-65-160-Q218	Groundwater	4/30/2018 2:31:00 PM	4/30/2018	5/15/2018
N030075-002B	MW-65-160-Q218	Groundwater	4/30/2018 2:31:00 PM	4/30/2018	5/15/2018
N030075-002C	MW-65-160-Q218	Groundwater	4/30/2018 2:31:00 PM	4/30/2018	5/15/2018
N030075-002D	MW-65-160-Q218	Groundwater	4/30/2018 2:31:00 PM	4/30/2018	5/15/2018
N030075-003A	MW-67-185-Q218	Groundwater	4/30/2018 3:13:00 PM	4/30/2018	5/15/2018
N030075-003B	MW-67-185-Q218	Groundwater	4/30/2018 3:13:00 PM	4/30/2018	5/15/2018
N030075-003C	MW-67-185-Q218	Groundwater	4/30/2018 3:13:00 PM	4/30/2018	5/15/2018
N030075-003D	MW-67-185-Q218	Groundwater	4/30/2018 3:13:00 PM	4/30/2018	5/15/2018
N030075-004A	MW-67-225-Q218	Groundwater	4/30/2018 2:07:00 PM	4/30/2018	5/15/2018
N030075-004B	MW-67-225-Q218	Groundwater	4/30/2018 2:07:00 PM	4/30/2018	5/15/2018
N030075-004C	MW-67-225-Q218	Groundwater	4/30/2018 2:07:00 PM	4/30/2018	5/15/2018
N030075-004D	MW-67-225-Q218	Groundwater	4/30/2018 2:07:00 PM	4/30/2018	5/15/2018
N030075-005A	MW-67-260-Q218	Groundwater	4/30/2018 1:07:00 PM	4/30/2018	5/15/2018
N030075-005B	MW-67-260-Q218	Groundwater	4/30/2018 1:07:00 PM	4/30/2018	5/15/2018
N030075-005C	MW-67-260-Q218	Groundwater	4/30/2018 1:07:00 PM	4/30/2018	5/15/2018
N030075-005D	MW-67-260-Q218	Groundwater	4/30/2018 1:07:00 PM	4/30/2018	5/15/2018
N030075-006A	MW-66-165-Q218	Groundwater	4/30/2018 2:49:00 PM	4/30/2018	5/15/2018
N030075-006B	MW-66-165-Q218	Groundwater	4/30/2018 2:49:00 PM	4/30/2018	5/15/2018
N030075-006C	MW-66-165-Q218	Groundwater	4/30/2018 2:49:00 PM	4/30/2018	5/15/2018
N030075-006D	MW-66-165-Q218	Groundwater	4/30/2018 2:49:00 PM	4/30/2018	5/15/2018
N030075-007A	MW-66-230-Q218	Groundwater	4/30/2018 3:29:00 PM	4/30/2018	5/15/2018
N030075-007B	MW-66-230-Q218	Groundwater	4/30/2018 3:29:00 PM	4/30/2018	5/15/2018
N030075-007C	MW-66-230-Q218	Groundwater	4/30/2018 3:29:00 PM	4/30/2018	5/15/2018
N030075-007D	MW-66-230-Q218	Groundwater	4/30/2018 3:29:00 PM	4/30/2018	5/15/2018
N030075-008A	MW-909-Q218	Groundwater	4/30/2018 3:39:00 PM	4/30/2018	5/15/2018

CLIENT:	ARCADIS U.S., Inc. - California	
Project:	PG&E Topock - GMP, RC000753.0801	**Work Order Sample Summary**
Lab Order:	N030075	
Contract No:		

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030075-008B	MW-909-Q218	Groundwater	4/30/2018 3:39:00 PM	4/30/2018	5/15/2018
N030075-008C	MW-909-Q218	Groundwater	4/30/2018 3:39:00 PM	4/30/2018	5/15/2018
N030075-008D	MW-909-Q218	Groundwater	4/30/2018 3:39:00 PM	4/30/2018	5/15/2018
N030075-009A	MW-710-Q218	Groundwater	4/30/2018 4:15:00 PM	4/30/2018	5/15/2018
N030075-010A	MW-711-Q218	Groundwater	4/30/2018 4:08:00 PM	4/30/2018	5/15/2018
N030075-011A	MW-712-Q218	Groundwater	4/30/2018 4:15:00 PM	4/30/2018	5/15/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 1:24:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180501A** QC Batch: **R123747** PrepDate							Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	5/1/2018 10:30 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180501A** QC Batch: **R123747** PrepDate Analyst: **LR**							
Specific Conductance	3700	0.10	0.10		umhos/cm	1	5/1/2018 10:30 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-185-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:13:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180501A**	QC Batch: **R123747**			PrepDate			Analyst: **LR**
Specific Conductance	7300	0.10	0.10		umhos/cm	1	5/1/2018 10:30 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-225-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180501A**	QC Batch: **R123747**			PrepDate			Analyst: **LR**
Specific Conductance	6900	0.10	0.10		umhos/cm	1	5/1/2018 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-260-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180501A**	QC Batch: **R123747**			PrepDate			Analyst: **LR**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	5/1/2018 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030075
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N030075-006

Client Sample ID: MW-66-165-Q218
Collection Date: 4/30/2018 2:49:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180501A** QC Batch: **R123747** PrepDate							Analyst: **LR**
Specific Conductance	3900	0.10	0.10		umhos/cm	1	5/1/2018 10:30 AM

Qualifiers:

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-230-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:29:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180501A**	QC Batch: **R123747**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	5/1/2018 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:39:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180501A**	QC Batch: **R123747**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	5/1/2018 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030075-008BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123747**
Client ID: **ZZZZZZ** Batch ID: **R123747** TestNo: **EPA 120.1** Analysis Date: **5/1/2018** SeqNo: **3012605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17510.000	0.10						17490	0.114	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 1:24:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180501A** QC Batch: **R123787**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	110	0.66	4.0		µg/L	20	5/1/2018 01:47 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180512C** QC Batch: **67912**				PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	100	0.13	1.0		µg/L	1	5/13/2018 01:51 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180501A**	QC Batch: **R123787**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	160	0.66	4.0		µg/L	20	5/1/2018 10:28 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	170	0.13	1.0		µg/L	1	5/13/2018 02:02 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-185-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:13:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180501A**	QC Batch: **R123787**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1800	6.6	40		µg/L	200	5/1/2018 11:06 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	1700	3.2	25		µg/L	25	5/13/2018 02:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-225-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180501A**	QC Batch: **R123787**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2800	17	100		µg/L	500	5/1/2018 11:44 AM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	2800	3.2	25		µg/L	25	5/13/2018 03:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-260-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180501A**	QC Batch: **R123787**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	820	3.3	20		µg/L	100	5/1/2018 12:03 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	830	0.65	5.0		µg/L	5	5/13/2018 03:20 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-165-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:49:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180501A** QC Batch: **R123787** PrepDate							Analyst: **RAB**
Hexavalent Chromium	540	3.3	20		µg/L	100	5/1/2018 12:22 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180512C** QC Batch: **67912** PrepDate **5/2/2018**							Analyst: **CEI**
Chromium	540	0.65	5.0		µg/L	5	5/13/2018 03:37 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-230-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:29:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180501A** QC Batch: **R123787** PrepDate Analyst: **RAB**							
Hexavalent Chromium	6700	33	200		µg/L	1000	5/1/2018 12:41 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180512C** QC Batch: **67912** PrepDate **5/2/2018** Analyst: **CEI**							
Chromium	6900	6.5	50		µg/L	50	5/13/2018 04:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030075
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N030075-008

Client Sample ID: MW-909-Q218
Collection Date: 4/30/2018 3:39:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180501A** QC Batch: **R123787** PrepDate Analyst: **RAB**							
Hexavalent Chromium	6800	33	200		µg/L	1000	5/1/2018 01:00 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A EPA 6020							
RunID: **NV00922-ICP7_180512C** QC Batch: **67912** PrepDate **5/2/2018** Analyst: **CEI**							
Chromium	6900	6.5	50		µg/L	50	5/13/2018 04:21 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-710-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 4:15:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180501A**	QC Batch: **R123787**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/1/2018 02:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-711-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 4:08:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180501A**	QC Batch: **R123787**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/1/2018 02:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-712-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 4:15:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180501A**	QC Batch: **R123787**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/1/2018 02:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123787** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **PBW** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123787** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **LCSW** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013557**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.084	0.20	5.000	0	102	90	110				

Sample ID **N030072-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.561	0.20	1.000	1.500	106	90	110				

Sample ID **N030075-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	269.726	4.0	100.0	163.8	106	90	110				

Sample ID **N030075-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2817.440	40	1000	1795	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030075-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013567**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5315.150	100	2500	2808	100	90	110				

Sample ID **N030075-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1328.010	20	500.0	820.2	102	90	110				

Sample ID **N030075-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1052.060	20	500.0	543.6	102	90	110				

Sample ID **N030075-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11963.100	200	5000	6692	105	90	110				

Sample ID **N030075-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11859.600	200	5000	6751	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030072-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.540	0.20						1.500	2.66	20	

Sample ID **N030075-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	212.458	4.0	100.0	107.7	105	90	110				

Sample ID **N030075-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	209.362	4.0	100.0	107.7	102	90	110	212.5	1.47	20	

Sample ID **N030075-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.026	0.20	1.000	0	103	90	110				

Sample ID **N030075-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030075-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**

Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.064	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-67912** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**
Client ID: **PBW** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-67912** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**
Client ID: **LCSW** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.611	1.0	10.00	0	106	85	115				

Sample ID **N030073-002B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**
Client ID: **ZZZZZZ** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	45.009	1.0	10.00	35.19	98.2	75	125				

Sample ID **N030073-002B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**
Client ID: **ZZZZZZ** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	45.420	1.0	10.00	35.19	102	75	125	45.01	0.910	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 1:24:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	1.9	0.063	0.10		mg/L	2	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	11	0.63	1.0		mg/L	20	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-185-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:13:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C** QC Batch: **R123927**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	77	3.2	5.0		mg/L	100	5/8/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-225-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C** QC Batch: **R123927**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	27	1.6	2.5		mg/L	50	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-260-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C** QC Batch: **R123927**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.46	0.032	0.050		mg/L	1	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
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ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-165-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:49:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-006		

NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate Analyst: **QBM**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Nitrate/Nitrite as N	24	0.63	1.0		mg/L	20	5/8/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-230-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:29:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C**	QC Batch: **R123927**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	22	0.63	1.0		mg/L	20	5/8/2018

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:39:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	23	0.63	1.0		mg/L	20	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R123927** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **PBW** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R123927** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **LCSW** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.489	0.050	0.5000	0	97.9	85	115				

Sample ID **N030006-004CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **ZZZZZZ** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	14.553	0.50						14.22	2.29	20	

Sample ID **N030006-003CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **ZZZZZZ** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	13.350	0.50	5.000	9.474	77.5	75	125				

Sample ID **N030006-003CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **ZZZZZZ** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	13.371	0.50	5.000	9.474	77.9	75	125	13.35	0.157	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 1:24:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-001		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180512C** QC Batch: **67912** PrepDate **5/2/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.9	0.081	0.10		µg/L	1	5/13/2018 01:51 AM
Manganese	56	0.26	0.50		µg/L	1	5/13/2018 01:51 AM
Molybdenum	54	1.1	2.5		µg/L	5	5/13/2018 01:57 AM
Selenium	1.4	0.36	0.50		µg/L	1	5/13/2018 01:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate		**5/2/2018**	Analyst: **CEI**
Arsenic	0.85	0.081	0.10		µg/L	1	5/13/2018 02:02 AM
Manganese	21	0.26	0.50		µg/L	1	5/13/2018 02:02 AM
Molybdenum	53	0.21	0.50		µg/L	1	5/13/2018 02:02 AM
Selenium	8.5	0.36	0.50		µg/L	1	5/13/2018 02:02 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-185-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:13:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-003		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180512C** QC Batch: **67912** PrepDate **5/2/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	0.96	0.081	0.10		µg/L	1	5/13/2018 02:13 AM
Manganese	ND	0.26	0.50		µg/L	1	5/13/2018 02:13 AM
Molybdenum	7.6	0.21	0.50		µg/L	1	5/13/2018 02:13 AM
Selenium	350	1.8	2.5		µg/L	5	5/13/2018 02:47 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-225-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-004		

DISSOLVED METALS BY ICP-MS — EPA 3010A — EPA 6020

RunID: **NV00922-ICP7_180512C** QC Batch: **67912** PrepDate **5/2/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	3.5	0.081	0.10		µg/L	1	5/13/2018 02:58 AM
Manganese	7.4	0.26	0.50		µg/L	1	5/13/2018 02:58 AM
Molybdenum	48	0.21	0.50		µg/L	1	5/13/2018 02:58 AM
Selenium	89	0.36	0.50		µg/L	1	5/13/2018 02:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-260-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate		**5/2/2018**	Analyst: **CEI**
Arsenic	9.1	0.081	0.10		µg/L	1	5/13/2018 03:15 AM
Manganese	130	0.26	0.50		µg/L	1	5/13/2018 03:15 AM
Molybdenum	80	1.1	2.5		µg/L	5	5/13/2018 03:20 AM
Selenium	0.96	0.36	0.50		µg/L	1	5/13/2018 03:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-165-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:49:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate		**5/2/2018**	Analyst: **CEI**
Arsenic	1.2	0.081	0.10		µg/L	1	5/13/2018 03:32 AM
Manganese	ND	0.26	0.50		µg/L	1	5/13/2018 03:32 AM
Molybdenum	6.9	0.21	0.50		µg/L	1	5/13/2018 03:32 AM
Selenium	31	0.36	0.50		µg/L	1	5/13/2018 03:32 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-230-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:29:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate	**5/2/2018**		Analyst: **CEI**
Arsenic	6.4	0.081	0.10		µg/L	1	5/13/2018 03:54 AM
Manganese	4.5	0.26	0.50		µg/L	1	5/13/2018 03:54 AM
Molybdenum	83	1.1	2.5		µg/L	5	5/13/2018 04:00 AM
Selenium	17	0.36	0.50		µg/L	1	5/13/2018 03:54 AM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:39:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate	**5/2/2018**		Analyst: **CEI**
Arsenic	6.0	0.081	0.10		µg/L	1	5/13/2018 04:11 AM
Manganese	4.3	0.26	0.50		µg/L	1	5/13/2018 04:11 AM
Molybdenum	82	1.1	2.5		µg/L	5	5/13/2018 04:16 AM
Selenium	17	0.36	0.50		µg/L	1	5/13/2018 04:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-67912** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**
Client ID: **PBW** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-67912** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**
Client ID: **LCSW** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.662	0.10	10.00	0	107	85	115				
Manganese	105.534	0.50	100.0	0	106	85	115				
Molybdenum	10.131	0.50	10.00	0	101	85	115				
Selenium	10.144	0.50	10.00	0	101	85	115				

Sample ID **N030073-002B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**
Client ID: **ZZZZZZ** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.280	0.10	10.00	0.9936	103	75	125				
Manganese	99.612	0.50	100.0	0	99.6	75	125				
Molybdenum	14.574	0.50	10.00	3.246	113	75	125				
Selenium	9.657	0.50	10.00	0	96.6	75	125				

Sample ID **N030073-002B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**
Client ID: **ZZZZZZ** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.462	0.10	10.00	0.9936	105	75	125	11.28	1.60	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030073-002B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/2/2018**	RunNo: **124028**
Client ID: **ZZZZZZ**	Batch ID: **67912**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/12/2018**	SeqNo: **3025134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	99.326	0.50	100.0	0	99.3	75	125	99.61	0.287	20	
Molybdenum	14.460	0.50	10.00	3.246	112	75	125	14.57	0.782	20	
Selenium	9.808	0.50	10.00	0	98.1	75	125	9.657	1.55	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Gantt Jeffers
Title: Geologist II
Signature: Date: 4/30/2018
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - GMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
Signature: Date: 4/30/2018

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O #
Phone: 949-727-1400, ext 200 Fax:

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace	✓	
3. Container Intact	✓	
4. Seal Present	✓	
5. IR number	2	
6. Method of Cooling: ICE		

Sample Temp: 2.1°C / 3.5°C
Courier:
Tracking No.:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030075 - 01	MW-65-225-Q218	4/30/2018	13:24		X			X			X	X					E	4	P	BNS	
2	- 02	MW-65-160-Q218	4/30/2018	14:31		X			X			X	X					E	4	P	BNS	
3	- 03	MW-67-185-Q218	4/30/2018	15:13		X			X			X	X					E	4	P	BNS	
4	- 04	MW-67-225-Q218	4/30/2018	14:07		X			X			X	X					E	4	P	BNS	
5	- 05	MW-67-260-Q218	4/30/2018	13:07		X			X			X	X					E	4	P	BNS	
6	- 06	MW-66-165-Q218	4/30/2018	14:49		X			X			X	X					E	4	P	BNS	
7	- 07	MW-66-230-Q218	4/30/2018	15:29		X			X			X	X					E	4	P	BNS	
8	- 08	MW-909-Q218	4/30/2018	15:39		X			X			X	X					E	4	P	BNS	
9	- 09	MW-710-Q218	4/30/2018	16:15		X												E	1	P	B	
10	- 10	MW-711-Q218	4/30/2018	16:08		X												E	1	P	B	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	4/30/18 1640		4/30/18 16:40
	4/30/18 18:45		4/30/18 18:45

Turn Around Time (TAT)
A < 24 Hrs or Same Day TAT
B = Next Workday
C = 2 Workdays
D = 3 Workdays
X E = Routine 5-7 Workdays
TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn$(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

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Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Gantt Jeffers
Title: Geologist II
Signature: [signature] Date: 4/30/2018
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - GMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
Signature: [signature] Date: 4/30/2018

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		✓
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	2	

6. Method of Cooling: ICE
Sample Temp: 2.1°C / 3.5°C
Courier:
Tracking No.:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030075 - 11	MW-712-Q218	4/30/2018	16:15		X												E	1	P	B	
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
[signature]	4/30/18 1640	[signature]	4/30/18 16:40
[signature]	4/30/18 18:45	[signature]	4/30/18 18:45

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Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 4/30/2018 Workorder: N030075

Rep sample Temp (Deg C): 2.1/3.5 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

	Yes	No	Not Present / NA
1. Shipping container/cooler in good condition?	☑	☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	☐	☐	Not Present ☑
3. Custody seals intact on sample bottles?	☐	☐	Not Present ☑
4. Chain of custody present?	☑	☐	
5. Sampler's name present in COC?	☑	☐	
6. Chain of custody signed when relinquished and received?	☑	☐	
7. Chain of custody agrees with sample labels?	☑	☐	
8. Samples in proper container/bottle?	☑	☐	
9. Sample containers intact?	☑	☐	
10. Sufficient sample volume for indicated test?	☑	☐	
11. All samples received within holding time?	☑	☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	☑	☐	NA ☐
13. Water - VOA vials have zero headspace?	☐	☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	☑	☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	☑	☐	NA ☐
16. Were there Non-Conformance issues at login?	☐	☐	NA ☑
Was Client notified?	☐	☐	NA ☑

Comments:

For:

Checklist Completed By: DA [signature] 5/2/2018

Reviewed By: [signature] 05/09/2018

ASSET Laboratories

WORK ORDER Summary

01-May-18

WorkOrder: N030075

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/30/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030075-001A	MW-65-225-Q218	4/30/2018 1:24:00 PM	5/14/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-001B			5/14/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030075-001C			5/14/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030075-001D			5/14/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030075-002A	MW-65-160-Q218	4/30/2018 2:31:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-002B			5/14/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030075-002C			5/14/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030075-002D			5/14/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030075-003A	MW-67-185-Q218	4/30/2018 3:13:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-003B			5/14/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030075-003C			5/14/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030075-003D			5/14/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030075-004A	MW-67-225-Q218	4/30/2018 2:07:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-004B			5/14/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030075-004C			5/14/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

01-May-18

WorkOrder: N030075

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/30/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030075-004D	MW-67-225-Q218	4/30/2018 2:07:00 PM	5/14/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030075-005A	MW-67-260-Q218	4/30/2018 1:07:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-005B			5/14/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030075-005C			5/14/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030075-005D			5/14/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030075-006A	MW-66-165-Q218	4/30/2018 2:49:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-006B			5/14/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030075-006C			5/14/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030075-006D			5/14/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030075-007A	MW-66-230-Q218	4/30/2018 3:29:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-007B			5/14/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030075-007C			5/14/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030075-007D			5/14/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

01-May-18

WorkOrder: N030075

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/30/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030075-008A	MW-909-Q218	4/30/2018 3:39:00 PM	5/14/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-008B			5/14/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030075-008C			5/14/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030075-008D			5/14/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030075-009A	MW-710-Q218	4/30/2018 4:15:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-010A	MW-711-Q218	4/30/2018 4:08:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-011A	MW-712-Q218	4/30/2018 4:15:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-012A	FOLDER	5/14/2018	5/14/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/14/2018		Folder	Folder	☐	☐	☐	LAB
			5/14/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP
Project No.: RC000753.0801

ASSET Laboratories Work Order:
N030075

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N030075

May 15, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030075

RE: PG&E Topock - GMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 30, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.0801
Lab Order:	N030075

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N030075-001, -005, -007 and -008 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

ASSET Laboratories

Date: *15-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.0801
Lab Order: N030075
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030075-001A	MW-65-225-Q218	Groundwater	4/30/2018 1:24:00 PM	4/30/2018	5/15/2018
N030075-001B	MW-65-225-Q218	Groundwater	4/30/2018 1:24:00 PM	4/30/2018	5/15/2018
N030075-001C	MW-65-225-Q218	Groundwater	4/30/2018 1:24:00 PM	4/30/2018	5/15/2018
N030075-001D	MW-65-225-Q218	Groundwater	4/30/2018 1:24:00 PM	4/30/2018	5/15/2018
N030075-002A	MW-65-160-Q218	Groundwater	4/30/2018 2:31:00 PM	4/30/2018	5/15/2018
N030075-002B	MW-65-160-Q218	Groundwater	4/30/2018 2:31:00 PM	4/30/2018	5/15/2018
N030075-002C	MW-65-160-Q218	Groundwater	4/30/2018 2:31:00 PM	4/30/2018	5/15/2018
N030075-002D	MW-65-160-Q218	Groundwater	4/30/2018 2:31:00 PM	4/30/2018	5/15/2018
N030075-003A	MW-67-185-Q218	Groundwater	4/30/2018 3:13:00 PM	4/30/2018	5/15/2018
N030075-003B	MW-67-185-Q218	Groundwater	4/30/2018 3:13:00 PM	4/30/2018	5/15/2018
N030075-003C	MW-67-185-Q218	Groundwater	4/30/2018 3:13:00 PM	4/30/2018	5/15/2018
N030075-003D	MW-67-185-Q218	Groundwater	4/30/2018 3:13:00 PM	4/30/2018	5/15/2018
N030075-004A	MW-67-225-Q218	Groundwater	4/30/2018 2:07:00 PM	4/30/2018	5/15/2018
N030075-004B	MW-67-225-Q218	Groundwater	4/30/2018 2:07:00 PM	4/30/2018	5/15/2018
N030075-004C	MW-67-225-Q218	Groundwater	4/30/2018 2:07:00 PM	4/30/2018	5/15/2018
N030075-004D	MW-67-225-Q218	Groundwater	4/30/2018 2:07:00 PM	4/30/2018	5/15/2018
N030075-005A	MW-67-260-Q218	Groundwater	4/30/2018 1:07:00 PM	4/30/2018	5/15/2018
N030075-005B	MW-67-260-Q218	Groundwater	4/30/2018 1:07:00 PM	4/30/2018	5/15/2018
N030075-005C	MW-67-260-Q218	Groundwater	4/30/2018 1:07:00 PM	4/30/2018	5/15/2018
N030075-005D	MW-67-260-Q218	Groundwater	4/30/2018 1:07:00 PM	4/30/2018	5/15/2018
N030075-006A	MW-66-165-Q218	Groundwater	4/30/2018 2:49:00 PM	4/30/2018	5/15/2018
N030075-006B	MW-66-165-Q218	Groundwater	4/30/2018 2:49:00 PM	4/30/2018	5/15/2018
N030075-006C	MW-66-165-Q218	Groundwater	4/30/2018 2:49:00 PM	4/30/2018	5/15/2018
N030075-006D	MW-66-165-Q218	Groundwater	4/30/2018 2:49:00 PM	4/30/2018	5/15/2018
N030075-007A	MW-66-230-Q218	Groundwater	4/30/2018 3:29:00 PM	4/30/2018	5/15/2018
N030075-007B	MW-66-230-Q218	Groundwater	4/30/2018 3:29:00 PM	4/30/2018	5/15/2018
N030075-007C	MW-66-230-Q218	Groundwater	4/30/2018 3:29:00 PM	4/30/2018	5/15/2018
N030075-007D	MW-66-230-Q218	Groundwater	4/30/2018 3:29:00 PM	4/30/2018	5/15/2018
N030075-008A	MW-909-Q218	Groundwater	4/30/2018 3:39:00 PM	4/30/2018	5/15/2018

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.0801
Lab Order:	N030075
Contract No:	

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030075-008B	MW-909-Q218	Groundwater	4/30/2018 3:39:00 PM	4/30/2018	5/15/2018
N030075-008C	MW-909-Q218	Groundwater	4/30/2018 3:39:00 PM	4/30/2018	5/15/2018
N030075-008D	MW-909-Q218	Groundwater	4/30/2018 3:39:00 PM	4/30/2018	5/15/2018
N030075-009A	MW-710-Q218	Groundwater	4/30/2018 4:15:00 PM	4/30/2018	5/15/2018
N030075-010A	MW-711-Q218	Groundwater	4/30/2018 4:08:00 PM	4/30/2018	5/15/2018
N030075-011A	MW-712-Q218	Groundwater	4/30/2018 4:15:00 PM	4/30/2018	5/15/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 1:24:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180501A** QC Batch: **R123747** PrepDate Analyst: **LR**							
Specific Conductance	17000	0.10	0.10		umhos/cm	1	5/1/2018 10:30 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180501A**	QC Batch: **R123747**			PrepDate			Analyst: **LR**
Specific Conductance	3700	0.10	0.10		umhos/cm	1	5/1/2018 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-185-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:13:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180501A** QC Batch: **R123747** PrepDate							Analyst: **LR**
Specific Conductance	7300	0.10	0.10		umhos/cm	1	5/1/2018 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-225-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180501A**	QC Batch: **R123747**			PrepDate			Analyst: **LR**
Specific Conductance	6900	0.10	0.10		umhos/cm	1	5/1/2018 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-260-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180501A**	QC Batch: **R123747**			PrepDate			Analyst: **LR**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	5/1/2018 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-165-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:49:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180501A**	QC Batch: **R123747**			PrepDate			Analyst: **LR**
Specific Conductance	3900	0.10	0.10		umhos/cm	1	5/1/2018 10:30 AM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-230-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:29:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180501A** QC Batch: **R123747** PrepDate							Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	5/1/2018 10:30 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:39:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180501A**	QC Batch: **R123747**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	5/1/2018 10:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030075-008BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123747**
Client ID: **ZZZZZZ** Batch ID: **R123747** TestNo: **EPA 120.1** Analysis Date: **5/1/2018** SeqNo: **3012605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	17510.000	0.10						17490	0.114	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 1:24:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180501A** QC Batch: **R123787** PrepDate							Analyst: **RAB**
Hexavalent Chromium	110	0.66	4.0		µg/L	20	5/1/2018 01:47 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180512C** QC Batch: **67912** PrepDate **5/2/2018**							Analyst: **CEI**
Chromium	100	0.13	1.0		µg/L	1	5/13/2018 01:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180501A**	QC Batch: **R123787**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	160	0.66	4.0		µg/L	20	5/1/2018 10:28 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	170	0.13	1.0		µg/L	1	5/13/2018 02:02 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-185-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:13:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180501A** QC Batch: **R123787**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1800	6.6	40		µg/L	200	5/1/2018 11:06 AM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180512C** QC Batch: **67912**				PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	1700	3.2	25		µg/L	25	5/13/2018 02:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-225-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180501A**	QC Batch: **R123787**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2800	17	100		µg/L	500	5/1/2018 11:44 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	2800	3.2	25		µg/L	25	5/13/2018 03:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-260-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180501A** QC Batch: **R123787** PrepDate							Analyst: **RAB**
Hexavalent Chromium	820	3.3	20		µg/L	100	5/1/2018 12:03 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180512C** QC Batch: **67912** PrepDate **5/2/2018**							Analyst: **CEI**
Chromium	830	0.65	5.0		µg/L	5	5/13/2018 03:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-165-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:49:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180501A**	QC Batch: **R123787**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	540	3.3	20		µg/L	100	5/1/2018 12:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	540	0.65	5.0		µg/L	5	5/13/2018 03:37 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-230-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:29:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
				EPA 218.6			
RunID: **NV00922-IC7_180501A**	QC Batch: **R123787**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	6700	33	200		µg/L	1000	5/1/2018 12:41 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate		**5/2/2018**	Analyst: **CEI**
Chromium	6900	6.5	50		µg/L	50	5/13/2018 04:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:39:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180501A** QC Batch: **R123787** PrepDate Analyst: **RAB**							
Hexavalent Chromium	6800	33	200		µg/L	1000	5/1/2018 01:00 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180512C** QC Batch: **67912** PrepDate **5/2/2018** Analyst: **CEI**							
Chromium	6900	6.5	50		µg/L	50	5/13/2018 04:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-710-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 4:15:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180501A** QC Batch: **R123787** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/1/2018 02:16 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-711-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 4:08:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180501A** QC Batch: **R123787** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/1/2018 02:34 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-712-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 4:15:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180501A**	QC Batch: **R123787**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/1/2018 02:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123787** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **PBW** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123787** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **LCSW** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013557**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.084	0.20	5.000	0	102	90	110				

Sample ID **N030072-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.561	0.20	1.000	1.500	106	90	110				

Sample ID **N030075-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	269.726	4.0	100.0	163.8	106	90	110				

Sample ID **N030075-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2817.440	40	1000	1795	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030075-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013567**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5315.150	100	2500	2808	100	90	110				

Sample ID **N030075-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1328.010	20	500.0	820.2	102	90	110				

Sample ID **N030075-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1052.060	20	500.0	543.6	102	90	110				

Sample ID **N030075-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11963.100	200	5000	6692	105	90	110				

Sample ID **N030075-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11859.600	200	5000	6751	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030075
Project:	PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030072-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.540	0.20						1.500	2.66	20	

Sample ID **N030075-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	212.458	4.0	100.0	107.7	105	90	110				

Sample ID **N030075-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	209.362	4.0	100.0	107.7	102	90	110	212.5	1.47	20	

Sample ID **N030075-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.026	0.20	1.000	0	103	90	110				

Sample ID **N030075-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030075-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.064	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-67912** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**
Client ID: **PBW** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-67912** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**
Client ID: **LCSW** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.611	1.0	10.00	0	106	85	115				

Sample ID **N030073-002B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**
Client ID: **ZZZZZZ** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	45.009	1.0	10.00	35.19	98.2	75	125				

Sample ID **N030073-002B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**
Client ID: **ZZZZZZ** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	45.420	1.0	10.00	35.19	102	75	125	45.01	0.910	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030075
Project: PG&E Topock - GMP, RC000753.0801
Lab ID: N030075-001

Client Sample ID: MW-65-225-Q218
Collection Date: 4/30/2018 1:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C**	QC Batch: **R123927**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	1.9	0.063	0.10		mg/L	2	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	11	0.63	1.0		mg/L	20	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-185-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:13:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180508C**	QC Batch: **R123927**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	77	3.2	5.0		mg/L	100	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-225-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	27	1.6	2.5		mg/L	50	5/8/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-260-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.46	0.032	0.050		mg/L	1	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-165-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:49:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	24	0.63	1.0		mg/L	20	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-230-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:29:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	22	0.63	1.0		mg/L	20	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:39:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180508C** QC Batch: **R123927** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	23	0.63	1.0		mg/L	20	5/8/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R123927**	SampType: **MBLK**	TestCode: **4500N03F_W** Units: **mg/L**	Prep Date:	RunNo: **123927**
Client ID: **PBW**	Batch ID: **R123927**	TestNo: **SM4500-NO3**	Analysis Date: **5/8/2018**	SeqNo: **3020555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R123927**	SampType: **LCS**	TestCode: **4500N03F_W** Units: **mg/L**	Prep Date:	RunNo: **123927**
Client ID: **LCSW**	Batch ID: **R123927**	TestNo: **SM4500-NO3**	Analysis Date: **5/8/2018**	SeqNo: **3020556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.489	0.050	0.5000	0	97.9	85	115				

Sample ID **N030006-004CDUP**	SampType: **DUP**	TestCode: **4500N03F_W** Units: **mg/L**	Prep Date:	RunNo: **123927**
Client ID: **ZZZZZZ**	Batch ID: **R123927**	TestNo: **SM4500-NO3**	Analysis Date: **5/8/2018**	SeqNo: **3020560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	14.553	0.50						14.22	2.29	20	

Sample ID **N030006-003CMS**	SampType: **MS**	TestCode: **4500N03F_W** Units: **mg/L**	Prep Date:	RunNo: **123927**
Client ID: **ZZZZZZ**	Batch ID: **R123927**	TestNo: **SM4500-NO3**	Analysis Date: **5/8/2018**	SeqNo: **3020562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	13.350	0.50	5.000	9.474	77.5	75	125				

Sample ID **N030006-003CMSD**	SampType: **MSD**	TestCode: **4500N03F_W** Units: **mg/L**	Prep Date:	RunNo: **123927**
Client ID: **ZZZZZZ**	Batch ID: **R123927**	TestNo: **SM4500-NO3**	Analysis Date: **5/8/2018**	SeqNo: **3020563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	13.371	0.50	5.000	9.474	77.9	75	125	13.35	0.157	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 1:24:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-001		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180512C** QC Batch: **67912** PrepDate **5/2/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.9	0.081	0.10		µg/L	1	5/13/2018 01:51 AM
Manganese	56	0.26	0.50		µg/L	1	5/13/2018 01:51 AM
Molybdenum	54	1.1	2.5		µg/L	5	5/13/2018 01:57 AM
Selenium	1.4	0.36	0.50		µg/L	1	5/13/2018 01:51 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:31:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-002		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180512C** QC Batch: **67912** PrepDate **5/2/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	0.85	0.081	0.10		µg/L	1	5/13/2018 02:02 AM
Manganese	21	0.26	0.50		µg/L	1	5/13/2018 02:02 AM
Molybdenum	53	0.21	0.50		µg/L	1	5/13/2018 02:02 AM
Selenium	8.5	0.36	0.50		µg/L	1	5/13/2018 02:02 AM

CLIENT: ARCADIS U.S., Inc. - California
Client Sample ID: MW-67-185-Q218
Lab Order: N030075
Collection Date: 4/30/2018 3:13:00 PM
Project: PG&E Topock - GMP, RC000753.0801
Matrix: GROUNDWATER
Lab ID: N030075-003

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate		**5/2/2018**	Analyst: **CEI**
Arsenic	0.96	0.081	0.10		µg/L	1	5/13/2018 02:13 AM
Manganese	ND	0.26	0.50		µg/L	1	5/13/2018 02:13 AM
Molybdenum	7.6	0.21	0.50		µg/L	1	5/13/2018 02:13 AM
Selenium	350	1.8	2.5		µg/L	5	5/13/2018 02:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-225-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate		**5/2/2018**	Analyst: **CEI**
Arsenic	3.5	0.081	0.10		µg/L	1	5/13/2018 02:58 AM
Manganese	7.4	0.26	0.50		µg/L	1	5/13/2018 02:58 AM
Molybdenum	48	0.21	0.50		µg/L	1	5/13/2018 02:58 AM
Selenium	89	0.36	0.50		µg/L	1	5/13/2018 02:58 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-260-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-005		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180512C** QC Batch: **67912** PrepDate **5/2/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	9.1	0.081	0.10		µg/L	1	5/13/2018 03:15 AM
Manganese	130	0.26	0.50		µg/L	1	5/13/2018 03:15 AM
Molybdenum	80	1.1	2.5		µg/L	5	5/13/2018 03:20 AM
Selenium	0.96	0.36	0.50		µg/L	1	5/13/2018 03:15 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-165-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 2:49:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate **5/2/2018**			Analyst: **CEI**
Arsenic	1.2	0.081	0.10		µg/L	1	5/13/2018 03:32 AM
Manganese	ND	0.26	0.50		µg/L	1	5/13/2018 03:32 AM
Molybdenum	6.9	0.21	0.50		µg/L	1	5/13/2018 03:32 AM
Selenium	31	0.36	0.50		µg/L	1	5/13/2018 03:32 AM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-230-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:29:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate		**5/2/2018**	Analyst: **CEI**
Arsenic	6.4	0.081	0.10		µg/L	1	5/13/2018 03:54 AM
Manganese	4.5	0.26	0.50		µg/L	1	5/13/2018 03:54 AM
Molybdenum	83	1.1	2.5		µg/L	5	5/13/2018 04:00 AM
Selenium	17	0.36	0.50		µg/L	1	5/13/2018 03:54 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *15-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q218
Lab Order:	N030075	**Collection Date:**	4/30/2018 3:39:00 PM
Project:	PG&E Topock - GMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N030075-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180512C**	QC Batch: **67912**			PrepDate		**5/2/2018**	Analyst: **CEI**
Arsenic	6.0	0.081	0.10		µg/L	1	5/13/2018 04:11 AM
Manganese	4.3	0.26	0.50		µg/L	1	5/13/2018 04:11 AM
Molybdenum	82	1.1	2.5		µg/L	5	5/13/2018 04:16 AM
Selenium	17	0.36	0.50		µg/L	1	5/13/2018 04:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-67912** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**
Client ID: **PBW** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-67912** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**
Client ID: **LCSW** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.662	0.10	10.00	0	107	85	115				
Manganese	105.534	0.50	100.0	0	106	85	115				
Molybdenum	10.131	0.50	10.00	0	101	85	115				
Selenium	10.144	0.50	10.00	0	101	85	115				

Sample ID **N030073-002B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**
Client ID: **ZZZZZZ** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.280	0.10	10.00	0.9936	103	75	125				
Manganese	99.612	0.50	100.0	0	99.6	75	125				
Molybdenum	14.574	0.50	10.00	3.246	113	75	125				
Selenium	9.657	0.50	10.00	0	96.6	75	125				

Sample ID **N030073-002B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**
Client ID: **ZZZZZZ** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.462	0.10	10.00	0.9936	105	75	125	11.28	1.60	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030075
Project:	PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030073-002B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/2/2018** RunNo: **124028**

Client ID: **ZZZZZZ** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	99.326	0.50	100.0	0	99.3	75	125	99.61	0.287	20	
Molybdenum	14.460	0.50	10.00	3.246	112	75	125	14.57	0.782	20	
Selenium	9.808	0.50	10.00	0	98.1	75	125	9.657	1.55	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Gantt Jeffers
Title: Geologist II
Signature: Date: 4/30/2018
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - GMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
Signature: Date: 4/30/2018

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O #
Phone: 949-727-1400, ext 200 Fax:

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		✓
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	2	
6. Method of Cooling: ICE		
Sample Temp: 2.1°C/3.5°C		

Courier:
Tracking No.:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Containers / Analyses:
- 250 mL poly — Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH
- 2x250 mL poly — Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH
- 1 liter poly — Bromide, Sulfate, Chloride (EPA 300.0)
- 1 liter poly — Specific Conductance (EPA 120.1)
- 1 liter poly — Total Dissolved Solids (SM92540)
- 1 liter poly — Alkalinity, Total as CaCO3 (SM2320B)
- 125 mL poly — Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4
- 500 mL poly — Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3
- 500 mL poly — Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3
- 500 mL poly — Dissolved metals (SW6010B FF) (Cr); HNO3
- 500 mL poly — Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3
- 500 mL poly — Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) 250 mL	Cr(VI) 2x250 mL	Br/SO4/Cl	Spec. Cond.	TDS	Alkalinity	Nitrate/Nitrite	Metals Dissolved (SW6020A)	Diss. metals (Cr, Mo, Se)	Diss. metals (Cr)	Diss. metals (As, Cr, Mn)	Diss. metals (Cr, Mn, Mo, Se)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030075 - 01	MW-65-225-Q218	4/30/2018	13:24		X			X			X	X					E	4	P	BNS	
2	- 02	MW-65-160-Q218	4/30/2018	14:31		X			X			X	X					E	4	P	BNS	
3	- 03	MW-67-185-Q218	4/30/2018	15:13		X			X			X	X					E	4	P	BNS	
4	- 04	MW-67-225-Q218	4/30/2018	14:07		X			X			X	X					E	4	P	BNS	
5	- 05	MW-67-260-Q218	4/30/2018	13:07		X			X			X	X					E	4	P	BNS	
6	- 06	MW-66-165-Q218	4/30/2018	14:49		X			X			X	X					E	4	P	BNS	
7	- 07	MW-66-230-Q218	4/30/2018	15:29		X			X			X	X					E	4	P	BNS	
8	- 08	MW-909-Q218	4/30/2018	15:39		X			X			X	X					E	4	P	BNS	
9	- 09	MW-710-Q218	4/30/2018	16:15		X												E	1	P	B	
10	- 10	MW-711-Q218	4/30/2018	16:08		X												E	1	P	B	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	4/30/18 1640		4/30/18 16:40
	4/30/18 18:45		4/30/18 18:45

Turn Around Time (TAT)
- A < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- E X = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: [signature] Date: 4/30/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	
Project Name: PG&E Topock - GMP	Signature: [signature] Date: 4/30/2018	
Project Number: RC000753.0801		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
Global ID:		Regulatory	
		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		✓
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	2	

6. Method of Cooling: ICE
Sample Temp: 2.1°C / 3.5°C
Courier:
Tracking No.:

Matrix: Ground x, Sediment, Potable, Soil, NPDES, Other Solid, Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030075 - 11	MW-712-Q218	4/30/2018	16:15		X												E	1	P	B	
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
[signature]	4/30/18 1640	[signature]	4/30/18 16:40
[signature]	4/30/18 18:45	[signature]	4/30/18 18:45

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- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

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Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

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Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 4/30/2018 Workorder: N030075

Rep sample Temp (Deg C): 2.1/3.5 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

For:

Checklist Completed By: DA [signature] 5/2/2018

Reviewed By: [signature] 05/09/2018

ASSET Laboratories

WORK ORDER Summary

01-May-18

WorkOrder: N030075

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/30/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030075-001A	MW-65-225-Q218	4/30/2018 1:24:00 PM	5/14/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-001B			5/14/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030075-001C			5/14/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030075-001D			5/14/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030075-002A	MW-65-160-Q218	4/30/2018 2:31:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-002B			5/14/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030075-002C			5/14/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030075-002D			5/14/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030075-003A	MW-67-185-Q218	4/30/2018 3:13:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-003B			5/14/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030075-003C			5/14/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030075-003D			5/14/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030075-004A	MW-67-225-Q218	4/30/2018 2:07:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-004B			5/14/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030075-004C			5/14/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

01-May-18

WorkOrder: N030075

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/30/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030075-004D	MW-67-225-Q218	4/30/2018 2:07:00 PM	5/14/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030075-005A	MW-67-260-Q218	4/30/2018 1:07:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-005B			5/14/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030075-005C			5/14/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030075-005D			5/14/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030075-006A	MW-66-165-Q218	4/30/2018 2:49:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-006B			5/14/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030075-006C			5/14/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030075-006D			5/14/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030075-007A	MW-66-230-Q218	4/30/2018 3:29:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-007B			5/14/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030075-007C			5/14/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030075-007D			5/14/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

01-May-18

WorkOrder: N030075

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/30/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030075-008A	MW-909-Q218	4/30/2018 3:39:00 PM	5/14/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-008B			5/14/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030075-008C			5/14/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030075-008D			5/14/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/14/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030075-009A	MW-710-Q218	4/30/2018 4:15:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-010A	MW-711-Q218	4/30/2018 4:08:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-011A	MW-712-Q218	4/30/2018 4:15:00 PM	5/14/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030075-012A	FOLDER	5/14/2018	5/14/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/14/2018		Folder	Folder	☐	☐	☐	LAB
			5/14/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N030075

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123747 **Analyst:** LSR

ASSET #: N030075 **Date Analyzed:** 5/1/2018

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 5/9/2018

2nd Level Reviewer Nancy 5/11/2018 Date:

LOGBOOK DATA,
QUANTITATION REPORT and/or
SPECTRA

Conductivity Logbook

Date: 5/1/18 1030
Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 us/cm	CINV-180108A	9.89 @ 18.8°C	% Rec: (90-110%)
1412	180131A	1413 @ 18.8°C	
9987	180108B	10060 @ 18.7°C	
99601	180201A	99200 @ 18.8°C	

	Sample ID	Matrix	Reading	Comments
1	N030075-001B	H2O	16780 @ 19.2°C	
2	2B		3660 @ 19.4°C	
3	3B		7260 @ 18.9°C	
4	4B		6860 @ 18.7°C	
5	5B		17650 @ 18.8°C	
6	6B		3880 @ 18.7°C	
7	7B		17460 @ 18.8°C	
8	8B		17490 @ 18.7°C	
9	8B DUP		17510 @ 18.4°C	2% 5/1/18 LSR
10	1413 us/cm	CINV-171121C	1410 @ 18.8°C	Accept: ~~10% water, 20% soil~~
Dup	10000	180108C	10050 @ 18.9°C	
	Std Chk: 99672	171215A	99050 @ 18.9°C	% Rec: (90-110%)

Lilia Ramit 5/9/2018

Date: 5/2/18 1350
Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 us/cm	CINV-180108A	9.70 @ 18.7°C	% Rec: (90-110%)
1412	180131A	1429 @ 18.8°C	
9987	180108B	10030 @ 18.7°C	
99601	180201A	99900 @ 18.8°C	

	Sample ID	Matrix	Reading	Comments
1	N030096-001B	H2O	10820 @ 18.6°C	
2	1B DUP		10850 @ 18.2°C	
3	2B		3280 @ 18.3°C	STD CHK:
4	3B		15470 @ 18.7°C	1413 CINV-171121C
5	4B		19550 @ 18.8°C	= 1433 @ 18.8°C
6	5B		3120 @ 18.6°C	10,000 CINV-180108C
7	6B		5930 @ 18.5°C	= 10010 @ 18.8°C
8	7B		11420 @ 18.6°C	99672 CINV171215A
9	8B		10890 @ 18.6°C	= 97100 @ 18.7°C
10	10B		7310 @ 18.5°C	2%
Dup	11B		12150 @ 18.7°C	Accept: 10% water, 20% soil 5/2/18
	Std Chk:			% Rec: (90-110%)

Logbook # 6

EPA 218.6

IC ARCUS
REV 2.0
011416

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R123787
ASSET #: N030075

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 5/1/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ___________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 5/6/2018

2nd Level Reviewer: Nancy 5/7/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}\ ,\mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N030075-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}\ ,\mu g/L = 5.3855 * 20$$

$$Cr^{+6}\ ,\mu g/L = 107.7100$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}\ ,\mu g/L = 110}$$

rba 5/6/2018

ANALYSIS RUN LOG

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	04/30/18 10:42 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/30/18 10:52 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/30/18 11:01 AM	Reported
13	MB-R123727	MBLK	1	Hexavalent Chromium	04/30/18 11:11 AM	Reported
14	LCS-R123727	LCS	1	Hexavalent Chromium	04/30/18 11:20 AM	Reported
15	N030044-001A	SAMP	5	Hexavalent Chromium	04/30/18 11:30 AM	Reported
16	N030044-001AMS	MS	5	Hexavalent Chromium	04/30/18 11:39 AM	Reported
17	N030044-002A	SAMP	5	Hexavalent Chromium	04/30/18 11:49 AM	Reported
18	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 11:58 AM	Not Reported
19	N030044-003A	SAMP	5	Hexavalent Chromium	04/30/18 12:08 PM	Reported
20	N030044-003AMS	MS	5	Hexavalent Chromium	04/30/18 12:17 PM	Reported
21	N030044-004A	SAMP	1000	Hexavalent Chromium	04/30/18 12:26 PM	Reported
22	N030044-004AMS	MS	1000	Hexavalent Chromium	04/30/18 12:36 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/30/18 12:45 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/30/18 12:55 PM	Reported
25	N030044-005A	SAMP	50	Hexavalent Chromium	04/30/18 1:04 PM	Reported
26	N030044-005AMS	MS	50	Hexavalent Chromium	04/30/18 1:14 PM	Reported
27	N030044-006A	SAMP	200	Hexavalent Chromium	04/30/18 1:23 PM	Reported
28	N030044-006AMS	MS	200	Hexavalent Chromium	04/30/18 1:33 PM	Reported
29	N030044-007A	SAMP	200	Hexavalent Chromium	04/30/18 1:42 PM	Reported
30	N030044-007AMS	MS	200	Hexavalent Chromium	04/30/18 1:52 PM	Reported
31	N030044-008A	SAMP	1000	Hexavalent Chromium	04/30/18 2:01 PM	Reported
32	N030044-008AMS	MS	1000	Hexavalent Chromium	04/30/18 2:10 PM	Reported
33	N030044-009A	SAMP	50	Hexavalent Chromium	04/30/18 2:20 PM	Reported
34	N030044-009AMS	MS	50	Hexavalent Chromium	04/30/18 2:29 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/30/18 2:39 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/30/18 2:48 PM	Reported
37	N030044-010A	SAMP	1	Hexavalent Chromium	04/30/18 2:58 PM	Reported
38	N030044-010AMS	MS	1	Hexavalent Chromium	04/30/18 3:07 PM	Reported
39	N030044-011A	SAMP	1	Hexavalent Chromium	04/30/18 3:17 PM	Reported
40	N030044-011AMS	MS	1	Hexavalent Chromium	04/30/18 3:26 PM	Reported
41	N030044-001ADUP	DUP	5	Hexavalent Chromium	04/30/18 3:36 PM	Reported
42	N030044-004AMSD	MSD	1000	Hexavalent Chromium	04/30/18 3:45 PM	Reported

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 3:55 PM	Reported
44	N029859-008A	SAMP	1	Hexavalent Chromium	04/30/18 4:06 PM	Not Reported
45	N029859-008AMS	MS	1	Hexavalent Chromium	04/30/18 4:17 PM	Not Reported
46	N029859-009A	SAMP	1	Hexavalent Chromium	04/30/18 4:26 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/30/18 4:36 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/30/18 4:45 PM	Reported
49	N029859-009AMS	MS	1	Hexavalent Chromium	04/30/18 4:55 PM	Not Reported
50	N029859-011A	SAMP	1	Hexavalent Chromium	04/30/18 5:04 PM	Not Reported
51	N029859-011AMS	MS	1	Hexavalent Chromium	04/30/18 5:14 PM	Not Reported
52	CCV-4	CCV	1	Hexavalent Chromium	04/30/18 5:23 PM	Reported
53	CCB-4	CCB	1	Hexavalent Chromium	04/30/18 5:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180430A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**30/Apr/18 18:19:59**
No. of Injections:	**56**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		04/30/2018 10:42	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/30/2018 10:52	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/30/2018 11:01	Finished	ICB R180418A
13	MB-H2O,MBLK,1,	13	1000	Unknown		04/30/2018 11:11	Finished	MB R180418A
14	LCS-H2O,LCS,1,	14	1000	Unknown		04/30/2018 11:20	Finished	LCS, IWST-180129B
15	N030044-001A,SAMF	15	1000	Unknown		04/30/2018 11:30	Finished	SAMP,2>10mL
16	N030044-001AMS,MS	16	1000	Unknown		04/30/2018 11:39	Finished	MS (5ppb), IWST-180129B,2>1
17	N030044-002A,SAMF	17	1000	Unknown		04/30/2018 11:49	Finished	SAMP,2>10mL
18	N030044-002AMS,MS	18	1000	Unknown		04/30/2018 11:58	Finished	MS (5ppb), IWST-180129B,2>1
19	N030044-003A,SAMF	19	1000	Unknown		04/30/2018 12:08	Finished	SAMP,2>10mL
20	N030044-003AMS,MS	20	1000	Unknown		04/30/2018 12:17	Finished	MS (5ppb), IWST-180129B,2>1
21	N030044-004A,SAMF	21	1000	Unknown		04/30/2018 12:26	Finished	SAMP,0.01>10mL
22	N030044-004AMS,MS	22	1000	Unknown		04/30/2018 12:36	Finished	MS (5ppb), IWST-180129B,0.0
23	CCV-1,CCV1,1,	23	1000	Unknown		04/30/2018 12:45	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	24	1000	Unknown		04/30/2018 12:55	Finished	CCB R180418A
25	N030044-005A,SAMF	25	1000	Unknown		04/30/2018 13:04	Finished	SAMP,0.2>10mL
26	N030044-005AMS,MS	26	1000	Unknown		04/30/2018 13:14	Finished	MS (5ppb), IWST-180129B,0.2
27	N030044-006A,SAMF	27	1000	Unknown		04/30/2018 13:23	Finished	SAMP,0.05>10mL
28	N030044-006AMS,MS	28	1000	Unknown		04/30/2018 13:33	Finished	MS (5ppb), IWST-180129B,0.0
29	N030044-007A,SAMF	29	1000	Unknown		04/30/2018 13:42	Finished	SAMP,0.05>10mL
30	N030044-007AMS,MS	30	1000	Unknown		04/30/2018 13:52	Finished	MS (5ppb), IWST-180129B,0.0
31	N030044-008A,SAMF	31	1000	Unknown		04/30/2018 14:01	Finished	SAMP,0.01>10mL
32	N030044-008AMS,MS	32	1000	Unknown		04/30/2018 14:10	Finished	MS (5ppb), IWST-180129B,0.0
33	N030044-009A,SAMF	33	1000	Unknown		04/30/2018 14:20	Finished	SAMP,0.2>10mL
34	N030044-009AMS,MS	34	1000	Unknown		04/30/2018 14:29	Finished	MS (5ppb), IWST-180129B,0.2
35	CCV-2,CCV,1,	35	1000	Unknown		04/30/2018 14:39	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	36	1000	Unknown		04/30/2018 14:48	Finished	CCB R180418A
37	N030044-010A,SAMF	37	1000	Unknown		04/30/2018 14:58	Finished	SAMP,10mL
38	N030044-010AMS,MS	38	1000	Unknown		04/30/2018 15:07	Finished	MS (1ppb), IWST-180129B,10
39	N030044-011A,SAMF	39	1000	Unknown		04/30/2018 15:17	Finished	SAMP,10mL
40	N030044-011AMS,MS	40	1000	Unknown		04/30/2018 15:26	Finished	MS (1ppb), IWST-180129B,10
41	N030044-001ADUP,D	41	1000	Unknown		04/30/2018 15:36	Finished	DUP,2>10mL
42	N030044-004AMSD,M	42	1000	Unknown		04/30/2018 15:45	Finished	MSD (5ppb), IWST-180129B,0.
43	N030044-002AMS,MS	43	1000	Unknown		04/30/2018 15:55	Finished	MS (5ppb), IWST-180129B,2>1
44	N029859-008A,SAMF	1	1000	Unknown		04/30/2018 16:06	Finished	SAMP,10mL
45	N029859-008AMS,MS	2	1000	Unknown		04/30/2018 16:17	Finished	MS (1ppb), IWST-180129B,10
46	N029859-009A,SAMF	3	1000	Unknown		04/30/2018 16:26	Finished	SAMP,10mL
47	CCV-3,CCV1,1,	4	1000	Unknown		04/30/2018 16:36	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	5	1000	Unknown		04/30/2018 16:45	Finished	CCB R180418A
49	N029859-009AMS,MS	6	1000	Unknown		04/30/2018 16:55	Finished	MS (1ppb), IWST-180129B,10
50	N029859-011A,SAMF	7	1000	Unknown		04/30/2018 17:04	Finished	SAMP,10mL
51	N029859-011AMS,MS	8	1000	Unknown		04/30/2018 17:14	Finished	MS (1ppb), IWST-180129B,10
52	CCV-4,CCV,1,	9	1000	Unknown		04/30/2018 17:23	Finished	CCV @5ppb, IWST-180129A
53	CCB-4,CCB,1,	10	1000	Unknown		04/30/2018 17:33	Finished	CCB R180418A
54	SHUTDOWN	11	1000	Unknown		04/30/2018 17:42	Finished	
55	Eluent: R180430A	12	1000	Unknown		n.a.	Finished	Eluent
56	PCR: R180430B	13	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180501A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/01/18 8:08 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/01/18 8:19 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/01/18 8:28 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/01/18 8:38 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/01/18 8:47 AM	Reported
15	MB-R123787	MBLK	1	Hexavalent Chromium	05/01/18 8:57 AM	Reported
16	LCS-R123787	LCS	1	Hexavalent Chromium	05/01/18 9:06 AM	Reported
17	N030072-001A	SAMP	1	Hexavalent Chromium	05/01/18 10:08 AM	Reported
18	N030072-001AMS	MS	1	Hexavalent Chromium	05/01/18 10:19 AM	Reported
19	N030075-002A	SAMP	20	Hexavalent Chromium	05/01/18 10:28 AM	Reported
20	N030075-002AMS	MS	20	Hexavalent Chromium	05/01/18 10:38 AM	~~Not~~ Reported
21	N030075-001A	SAMP	100	Hexavalent Chromium	05/01/18 10:47 AM	Not Reported
22	N030075-001AMS	MS	100	Hexavalent Chromium	05/01/18 10:57 AM	Not Reported
23	N030075-003A	SAMP	200	Hexavalent Chromium	05/01/18 11:06 AM	Reported
24	N030075-003AMS	MS	200	Hexavalent Chromium	05/01/18 11:16 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/01/18 11:25 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/01/18 11:35 AM	Reported
27	N030075-004A	SAMP	500	Hexavalent Chromium	05/01/18 11:44 AM	Reported
28	N030075-004AMS	MS	500	Hexavalent Chromium	05/01/18 11:54 AM	Reported
29	N030075-005A	SAMP	100	Hexavalent Chromium	05/01/18 12:03 PM	Reported
30	N030075-005AMS	MS	100	Hexavalent Chromium	05/01/18 12:13 PM	Reported
31	N030075-006A	SAMP	100	Hexavalent Chromium	05/01/18 12:22 PM	Reported
32	N030075-006AMS	MS	100	Hexavalent Chromium	05/01/18 12:31 PM	Reported
33	N030075-007A	SAMP	1000	Hexavalent Chromium	05/01/18 12:41 PM	Reported
34	N030075-007AMS	MS	1000	Hexavalent Chromium	05/01/18 12:50 PM	Reported
35	N030075-008A	SAMP	1000	Hexavalent Chromium	05/01/18 1:00 PM	Reported
36	N030075-008AMS	MS	1000	Hexavalent Chromium	05/01/18 1:09 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/01/18 1:19 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/01/18 1:28 PM	Reported
39	N030072-001ADUP	DUP	1	Hexavalent Chromium	05/01/18 1:38 PM	Reported
40	N030075-001A	SAMP	20	Hexavalent Chromium	05/01/18 1:47 PM	Reported
41	N030075-001AMS	MS	20	Hexavalent Chromium	05/01/18 1:57 PM	Reported
42	N030075-001AMSD	MSD	20	Hexavalent Chromium	05/01/18 2:06 PM	Reported

INJECTION LOG: 180501A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030075-009A	SAMP	1	Hexavalent Chromium	05/01/18 2:16 PM	Reported
44	N030075-009AMS	MS	1	Hexavalent Chromium	05/01/18 2:25 PM	Reported
45	N030075-010A	SAMP	1	Hexavalent Chromium	05/01/18 2:34 PM	Reported
46	N030075-010AMS	MS	1	Hexavalent Chromium	05/01/18 2:44 PM	Not Reported
47	N030075-011A	SAMP	1	Hexavalent Chromium	05/01/18 2:53 PM	Reported
48	N030075-011AMS	MS	1	Hexavalent Chromium	05/01/18 3:03 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/01/18 3:12 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	05/01/18 3:22 PM	Reported
51	N030075-010AMS	MS	1	Hexavalent Chromium	05/01/18 3:31 PM	Reported
52	LCS-R123788	LCS	1	Hexavalent Chromium	05/01/18 3:52 PM	Reported
53	MB-R123788	MBLK	1	Hexavalent Chromium	05/01/18 4:03 PM	Reported
54	N030073-001A	SAMP	10	Hexavalent Chromium	05/01/18 4:13 PM	Reported
55	N030073-008A	SAMP	5	Hexavalent Chromium	05/01/18 4:22 PM	Reported
56	N030073-002A	SAMP	20	Hexavalent Chromium	05/01/18 4:32 PM	Not Reported
57	N030073-003A	SAMP	1	Hexavalent Chromium	05/01/18 4:41 PM	Reported
58	N030073-001AMS	MS	10	Hexavalent Chromium	05/01/18 4:50 PM	Reported
59	N030073-001AMSD	MSD	10	Hexavalent Chromium	05/01/18 5:00 PM	Reported
60	N030073-002A	SAMP	5	Hexavalent Chromium	05/01/18 5:09 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	05/01/18 5:19 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	05/01/18 5:28 PM	Reported
63	N030073-003ADUP	DUP	1	Hexavalent Chromium	05/01/18 5:38 PM	Reported
64	N030073-004A	SAMP	1	Hexavalent Chromium	05/01/18 5:47 PM	Reported
65	N030073-009A	SAMP	20	Hexavalent Chromium	05/01/18 5:57 PM	Reported
66	N030073-006A	SAMP	20	Hexavalent Chromium	05/01/18 6:06 PM	Reported
67	N030073-007A	SAMP	1	Hexavalent Chromium	05/01/18 6:16 PM	Reported
68	N030073-010A	SAMP	1	Hexavalent Chromium	05/01/18 6:25 PM	Reported
69	N030073-011A	SAMP	1	Hexavalent Chromium	05/01/18 6:35 PM	Reported
70	N030073-012A	SAMP	1	Hexavalent Chromium	05/01/18 6:44 PM	Reported
71	N030073-013A	SAMP	1	Hexavalent Chromium	05/01/18 6:53 PM	Reported
72	N030073-005A	SAMP	20	Hexavalent Chromium	05/01/18 7:03 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	05/01/18 7:12 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	05/01/18 7:22 PM	Reported
75	N030073-002AMS	MS	5	Hexavalent Chromium	05/01/18 7:31 PM	Reported
76	CCV-7	CCV	1	Hexavalent Chromium	05/01/18 7:41 PM	Reported
77	CCB-7	CCB	1	Hexavalent Chromium	05/01/18 7:50 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180501A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**02/May/18 18:57:17**
No. of Injections:	**80**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/01/2018 08:08	Finished	BLANK
11	BLANK	2	1000	Unknown		05/01/2018 08:19	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		05/01/2018 08:28	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/01/2018 08:38	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		05/01/2018 08:47	Finished	CCB R180418A
15	MB-H2O,MBLK,1,	6	1000	Unknown		05/01/2018 08:57	Finished	MB R180418A
16	LCS-H2O,LCS,1,	7	1000	Unknown		05/01/2018 09:06	Finished	LCS, IWST-180129B
17	N030072-001A,SAMF	9	1000	Unknown		05/01/2018 10:08	Finished	SAMP,10mL
18	N030072-001AMS,MS	10	1000	Unknown		05/01/2018 10:19	Finished	MS (1ppb), IWST-180129B,10
19	N030075-002A,SAMF	11	1000	Unknown		05/01/2018 10:28	Finished	SAMP,0.5>10mL
20	N030075-002AMS,MS	12	1000	Unknown		05/01/2018 10:38	Finished	MS (5ppb), IWST-180129B,0.5
21	N030075-001A,SAMF	13	1000	Unknown		05/01/2018 10:47	Finished	SAMP,0.1>10mL
22	N030075-001AMS,MS	14	1000	Unknown		05/01/2018 10:57	Finished	MS (5ppb), IWST-180129B,0.1
23	N030075-003A,SAMF	15	1000	Unknown		05/01/2018 11:06	Finished	SAMP,0.05>10mL
24	N030075-003AMS,MS	16	1000	Unknown		05/01/2018 11:16	Finished	MS (5ppb), IWST-180129B,0.0
25	CCV-2,CCV1,1,	17	1000	Unknown		05/01/2018 11:25	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	18	1000	Unknown		05/01/2018 11:35	Finished	CCB R180409B
27	N030075-004A,SAMF	19	1000	Unknown		05/01/2018 11:44	Finished	SAMP,0.02>10mL
28	N030075-004AMS,MS	20	1000	Unknown		05/01/2018 11:54	Finished	MS (5ppb), IWST-180129B,0.0
29	N030075-005A,SAMF	21	1000	Unknown		05/01/2018 12:03	Finished	SAMP,0.1>10mL
30	N030075-005AMS,MS	22	1000	Unknown		05/01/2018 12:13	Finished	MS (5ppb), IWST-180129B,0.1
31	N030075-006A,SAMF	23	1000	Unknown		05/01/2018 12:22	Finished	SAMP,0.1>10mL
32	N030075-006AMS,MS	24	1000	Unknown		05/01/2018 12:31	Finished	MS (5ppb), IWST-180129B,0.1
33	N030075-007A,SAMF	25	1000	Unknown		05/01/2018 12:41	Finished	SAMP,0.01>10mL
34	N030075-007AMS,MS	26	1000	Unknown		05/01/2018 12:50	Finished	MS (5ppb), IWST-180129B,0.0
35	N030075-008A,SAMF	27	1000	Unknown		05/01/2018 13:00	Finished	SAMP,0.01>10mL
36	N030075-008AMS,MS	28	1000	Unknown		05/01/2018 13:09	Finished	MS (5ppb), IWST-180129B,0.0
37	CCV-3,CCV,1,	29	1000	Unknown		05/01/2018 13:19	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	30	1000	Unknown		05/01/2018 13:28	Finished	CCB R180418A
39	N030072-001ADUP,D	31	1000	Unknown		05/01/2018 13:38	Finished	DUP,10mL
40	N030075-001A,SAMF	32	1000	Unknown		05/01/2018 13:47	Finished	SAMP,0.5>10mL
41	N030075-001AMS,MS	33	1000	Unknown		05/01/2018 13:57	Finished	MS (5ppb), IWST-180129B,0.5
42	N030075-001AMSD,M	34	1000	Unknown		05/01/2018 14:06	Finished	MSD (5ppb), IWST-180129B,0.
43	N030075-009A,SAMF	35	1000	Unknown		05/01/2018 14:16	Finished	SAMP,10mL
44	N030075-009AMS,MS	36	1000	Unknown		05/01/2018 14:25	Finished	MS (1ppb), IWST-180129B,10
45	N030075-010A,SAMF	37	1000	Unknown		05/01/2018 14:34	Finished	SAMP,10mL
46	N030075-010AMS,MS	38	1000	Unknown		05/01/2018 14:44	Finished	MS (1ppb), IWST-180129B,10
47	N030075-011A,SAMF	39	1000	Unknown		05/01/2018 14:53	Finished	SAMP,10mL
48	N030075-011AMS,MS	40	1000	Unknown		05/01/2018 15:03	Finished	MS (1ppb), IWST-180129B,10
49	CCV-4,CCV1,1,	41	1000	Unknown		05/01/2018 15:12	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	42	1000	Unknown		05/01/2018 15:22	Finished	CCB R180418A
51	N030075-010AMS,MS	43	1000	Unknown		05/01/2018 15:31	Finished	MS (1ppb), IWST-180129B,10
52	LCS-2,LCS,1,	1	1000	Unknown		05/01/2018 15:52	Finished	LCS, IWST-180129B
53	MB-2,MBLK,1,	2	1000	Unknown		05/01/2018 16:03	Finished	MB R180409B
54	N030073-001A,SAMF	3	1000	Unknown		05/01/2018 16:13	Finished	SAMP,1>10mL
55	N030073-008A,SAMF	4	1000	Unknown		05/01/2018 16:22	Finished	SAMP,2>10mL
56	N030073-002A,SAMF	5	1000	Unknown		05/01/2018 16:32	Finished	SAMP,0.5>10mL
57	N030073-003A,SAMF	6	1000	Unknown		05/01/2018 16:41	Finished	SAMP,10mL
58	N030073-001AMS,MS	7	1000	Unknown		05/01/2018 16:50	Finished	MS (5ppb), IWST-180129B,1>1
59	N030073-001AMSD,M	8	1000	Unknown		05/01/2018 17:00	Finished	MSD (5ppb), IWST-180129B,1>
60	N030073-002A,SAMF	9	1000	Unknown		05/01/2018 17:09	Finished	SAMP,2>10mL

61	CCV-5,CCV,1,	10	1000	Unknown		05/01/2018 17:19	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	11	1000	Unknown		05/01/2018 17:28	Finished	CCB R180409B
63	N030073-003ADUP,D	12	1000	Unknown		05/01/2018 17:38	Finished	SAMP,0.5>10mL
64	N030073-004A,SAMF	13	1000	Unknown		05/01/2018 17:47	Finished	SAMP,10mL
65	N030073-009A,SAMF	14	1000	Unknown		05/01/2018 17:57	Finished	SAMP,0.5>10mL
66	N030073-006A,SAMF	15	1000	Unknown		05/01/2018 18:06	Finished	SAMP,0.5>10mL
67	N030073-007A,SAMF	16	1000	Unknown		05/01/2018 18:16	Finished	SAMP,10mL
68	N030073-010A,SAMF	17	1000	Unknown		05/01/2018 18:25	Finished	SAMP,10mL
69	N030073-011A,SAMF	18	1000	Unknown		05/01/2018 18:35	Finished	SAMP,10mL
70	N030073-012A,SAMF	19	1000	Unknown		05/01/2018 18:44	Finished	SAMP,10mL
71	N030073-013A,SAMF	20	1000	Unknown		05/01/2018 18:53	Finished	SAMP,10mL
72	N030073-005A,SAMF	21	1000	Unknown		05/01/2018 19:03	Finished	SAMP,0.5>10mL
73	CCV-6,CCV1,1,	22	1000	Unknown		05/01/2018 19:12	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	23	1000	Unknown		05/01/2018 19:22	Finished	CCB R180409B
75	N030073-002AMS,MS	24	1000	Unknown		05/01/2018 19:31	Finished	MS (5ppb), IWST-180129B,2>1
76	CCV-7,CCV,1,	25	1000	Unknown		05/01/2018 19:41	Finished	CCV @5ppb, IWST-180129A
77	CCB-7,CCB,1,	26	1000	Unknown		05/01/2018 19:50	Finished	CCB R180409B
78	SHUTDOWN	27	1000	Unknown		05/01/2018 20:00	Finished	
79	Eluent: R180430A	28	1000	Unknown		n.a.	Finished	Eluent
80	PCR: R180430B	29	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 5/1/18
Time Prepared: 0945H
Prepared By: MBA

Slope: 97.4 h
pH 4: 4.00@25.0°C
7: 7.02@25.0°C
10: 9.99@25.0°C
LCS: 7.01@25.0°C

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M180430A
NH4OH + NH4SO4 buffer: M180418A / M180409B

6N NaOH: M171228A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	~~M029~~ M030072-01A	9.49	–	~250ml			M180409B
2)	M030075-001A	9.51	–				M180418A
3)	2A	9.78	–				
4)	3A	9.39	–				
5)	4A	9.40	–				
6)	5A	9.64	–				
7)	6A	9.36	–				
8)	7A	9.57	–				
9)	8A	9.57	–				
10)	9A	9.69	–				
11)	10A	9.61	–				
12)	11A	9.64	–				
13)	M030073-1A	9.32	–				M180409B
14)	2A	9.48	–				
15)	3A	9.14	9.34			+5 drops NaOH	
	4A	9.75	–				

Sample Preparation

Date Prepared: 5/1/18
Time Prepared: 0945H
Prepared By: MBA

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M180430A
NH4OH + NH4SO4 buffer: M180409B

6N NaOH: M171228A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M030073-5A	9.30	–	~250ml	~250ml		M180409B
2)	6A	9.23	9.33			+3 drops NaOH	
3)	7A	9.37	–				
4)	8A	9.32	–				
5)	9A	9.23	9.48			+4 " "	
6)	10A	9.52	–				
7)	11A	9.61	–				
8)	12A	9.56	–				
9)	13A	9.60	–				
10)							
11)							
12)							
13)							
14)							
15)							

rba 5/6/2018

Logbook No. 14

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/30/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0607	0.2618	1.2924	2.5813	3.8731	5.1050	0.9999

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ICV** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3013550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.194	0.20	5.000	0	104	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3013551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **CCV** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.004	0.20	5.000	0	100	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.222	0.20	0.2000	0	111	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.101	0.20	10.00	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **CCV** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.012	0.20	5.000	0	100	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ZZZZZZ** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.106	0.20	10.00	0	101	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **CCV** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.043	0.20	5.000	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **ICB** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3013552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **CCB** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013555**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **CCB** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **CCB** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **CCB** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013588**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123787**
Client ID: **CCB** Batch ID: **R123787** TestNo: **EPA 218.6** Analysis Date: **5/1/2018** SeqNo: **3013591**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/1/2018

Sample Name	Retention Time	Evaluation
ICV	4.248	
CCV-1	4.248	
CCV-2	4.248	
CCV-3	4.240	
CCV-4	4.248	
CCV-5	4.248	
CCV-6	4.248	
CCV-7	4.240	

Average	4.246	
Actual RT Window	4.166 -	4.326
Applied RT Window	4.046 -	4.446

MB-R123787	N.A.	N.A.
LCS-R123787	4.248	PASS
N030072-001A	4.240	PASS
N030072-001AMS	4.240	PASS
N030075-002A	4.248	PASS
N030075-002AMS	4.240	PASS
N030075-001A	4.248	PASS
N030075-001AMS	4.248	PASS
N030075-003A	4.248	PASS
N030075-003AMS	4.248	PASS
N030075-004A	4.248	PASS
N030075-004AMS	4.248	PASS
N030075-005A	4.240	PASS
N030075-005AMS	4.248	PASS
N030075-006A	4.248	PASS
N030075-006AMS	4.248	PASS
N030075-007A	4.240	PASS
N030075-007AMS	4.248	PASS
N030075-008A	4.248	PASS
N030075-008AMS	4.248	PASS
N030072-001ADUP	4.240	PASS
N030075-001A	4.231	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/1/2018

Sample Name	Retention Time	Evaluation
ICV	4.248	
CCV-1	4.248	
CCV-2	4.248	
CCV-3	4.240	
CCV-4	4.248	
CCV-5	4.248	
CCV-6	4.248	
CCV-7	4.240	

Average	4.246	
Actual RT Window	4.166 -	4.326
Applied RT Window	4.046 -	4.446

N030075-001AMS	4.231	PASS
N030075-001AMSD	4.231	PASS
N030075-009A	N.A.	N.A.
N030075-009AMS	4.248	PASS
N030075-010A	N.A.	N.A.
N030075-010AMS	4.240	PASS
N030075-011A	N.A.	N.A.
N030075-011AMS	4.248	PASS
N030075-010AMS	4.248	PASS
LCS-R123788	4.240	PASS
MB-R123788	N.A.	N.A.
N030073-001A	4.240	PASS
N030073-008A	4.240	PASS
N030073-002A	4.248	PASS
N030073-003A	4.231	PASS
N030073-001AMS	4.240	PASS
N030073-001AMSD	4.240	PASS
N030073-002A	4.240	PASS
N030073-003ADUP	4.231	PASS
N030073-004A	4.231	PASS
N030073-009A	4.240	PASS
N030073-006A	4.240	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/1/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.248		
CCV-2	4.248		
CCV-3	4.240		
CCV-4	4.248		
CCV-5	4.248		
CCV-6	4.248		
CCV-7	4.240		
Average	4.246		
Actual RT Window	4.166 -	4.326	
Applied RT Window	4.046 -	4.446	
N030073-007A	4.231		PASS
N030073-010A	N.A.		N.A.
N030073-011A	N.A.		N.A.
N030073-012A	N.A.		N.A.
N030073-013A	N.A.		N.A.
N030073-005A	4.240		PASS
N030073-002AMS	4.240		PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2018 (1st Quarter)

Method Name:	**Hexavalent Chromium by IC**	Matrix:	**WATER**
Method Number:	EPA Method 218.6/7199	Unit:	µg/L
Analysis Date(s):	3/21/2018		
Analyst:	Ria Abes		

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.116

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.201	100

RAW DATA

INITIAL CALIBRATION

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	04/30/18 10:42 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/30/18 10:52 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/30/18 11:01 AM	Reported
13	MB-R123727	MBLK	1	Hexavalent Chromium	04/30/18 11:11 AM	Reported
14	LCS-R123727	LCS	1	Hexavalent Chromium	04/30/18 11:20 AM	Reported
15	N030044-001A	SAMP	5	Hexavalent Chromium	04/30/18 11:30 AM	Reported
16	N030044-001AMS	MS	5	Hexavalent Chromium	04/30/18 11:39 AM	Reported
17	N030044-002A	SAMP	5	Hexavalent Chromium	04/30/18 11:49 AM	Reported
18	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 11:58 AM	Not Reported
19	N030044-003A	SAMP	5	Hexavalent Chromium	04/30/18 12:08 PM	Reported
20	N030044-003AMS	MS	5	Hexavalent Chromium	04/30/18 12:17 PM	Reported
21	N030044-004A	SAMP	1000	Hexavalent Chromium	04/30/18 12:26 PM	Reported
22	N030044-004AMS	MS	1000	Hexavalent Chromium	04/30/18 12:36 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/30/18 12:45 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/30/18 12:55 PM	Reported
25	N030044-005A	SAMP	50	Hexavalent Chromium	04/30/18 1:04 PM	Reported
26	N030044-005AMS	MS	50	Hexavalent Chromium	04/30/18 1:14 PM	Reported
27	N030044-006A	SAMP	200	Hexavalent Chromium	04/30/18 1:23 PM	Reported
28	N030044-006AMS	MS	200	Hexavalent Chromium	04/30/18 1:33 PM	Reported
29	N030044-007A	SAMP	200	Hexavalent Chromium	04/30/18 1:42 PM	Reported
30	N030044-007AMS	MS	200	Hexavalent Chromium	04/30/18 1:52 PM	Reported
31	N030044-008A	SAMP	1000	Hexavalent Chromium	04/30/18 2:01 PM	Reported
32	N030044-008AMS	MS	1000	Hexavalent Chromium	04/30/18 2:10 PM	Reported
33	N030044-009A	SAMP	50	Hexavalent Chromium	04/30/18 2:20 PM	Reported
34	N030044-009AMS	MS	50	Hexavalent Chromium	04/30/18 2:29 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/30/18 2:39 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/30/18 2:48 PM	Reported
37	N030044-010A	SAMP	1	Hexavalent Chromium	04/30/18 2:58 PM	Reported
38	N030044-010AMS	MS	1	Hexavalent Chromium	04/30/18 3:07 PM	Reported
39	N030044-011A	SAMP	1	Hexavalent Chromium	04/30/18 3:17 PM	Reported
40	N030044-011AMS	MS	1	Hexavalent Chromium	04/30/18 3:26 PM	Reported
41	N030044-001ADUP	DUP	5	Hexavalent Chromium	04/30/18 3:36 PM	Reported
42	N030044-004AMSD	MSD	1000	Hexavalent Chromium	04/30/18 3:45 PM	Reported

rba 5/6/2018

Nancy 5/7/2018

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 3:55 PM	Reported
44	N029859-008A	SAMP	1	Hexavalent Chromium	04/30/18 4:06 PM	Not Reported
45	N029859-008AMS	MS	1	Hexavalent Chromium	04/30/18 4:17 PM	Not Reported
46	N029859-009A	SAMP	1	Hexavalent Chromium	04/30/18 4:26 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/30/18 4:36 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/30/18 4:45 PM	Reported
49	N029859-009AMS	MS	1	Hexavalent Chromium	04/30/18 4:55 PM	Not Reported
50	N029859-011A	SAMP	1	Hexavalent Chromium	04/30/18 5:04 PM	Not Reported
51	N029859-011AMS	MS	1	Hexavalent Chromium	04/30/18 5:14 PM	Not Reported
52	CCV-4	CCV	1	Hexavalent Chromium	04/30/18 5:23 PM	Reported
53	CCB-4	CCB	1	Hexavalent Chromium	04/30/18 5:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180430A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**30/Apr/18 18:19:59**
No. of Injections:	**56**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		04/30/2018 10:42	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/30/2018 10:52	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/30/2018 11:01	Finished	ICB R180418A
13	MB-H2O,MBLK,1,	13	1000	Unknown		04/30/2018 11:11	Finished	MB R180418A
14	LCS-H2O,LCS,1,	14	1000	Unknown		04/30/2018 11:20	Finished	LCS, IWST-180129B
15	N030044-001A,SAMF	15	1000	Unknown		04/30/2018 11:30	Finished	SAMP,2>10mL
16	N030044-001AMS,MS	16	1000	Unknown		04/30/2018 11:39	Finished	MS (5ppb), IWST-180129B,2>1
17	N030044-002A,SAMF	17	1000	Unknown		04/30/2018 11:49	Finished	SAMP,2>10mL
18	N030044-002AMS,MS	18	1000	Unknown		04/30/2018 11:58	Finished	MS (5ppb), IWST-180129B,2>1
19	N030044-003A,SAMF	19	1000	Unknown		04/30/2018 12:08	Finished	SAMP,2>10mL
20	N030044-003AMS,MS	20	1000	Unknown		04/30/2018 12:17	Finished	MS (5ppb), IWST-180129B,2>1
21	N030044-004A,SAMF	21	1000	Unknown		04/30/2018 12:26	Finished	SAMP,0.01>10mL
22	N030044-004AMS,MS	22	1000	Unknown		04/30/2018 12:36	Finished	MS (5ppb), IWST-180129B,0.0
23	CCV-1,CCV1,1,	23	1000	Unknown		04/30/2018 12:45	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	24	1000	Unknown		04/30/2018 12:55	Finished	CCB R180418A
25	N030044-005A,SAMF	25	1000	Unknown		04/30/2018 13:04	Finished	SAMP,0.2>10mL
26	N030044-005AMS,MS	26	1000	Unknown		04/30/2018 13:14	Finished	MS (5ppb), IWST-180129B,0.2
27	N030044-006A,SAMF	27	1000	Unknown		04/30/2018 13:23	Finished	SAMP,0.05>10mL
28	N030044-006AMS,MS	28	1000	Unknown		04/30/2018 13:33	Finished	MS (5ppb), IWST-180129B,0.0
29	N030044-007A,SAMF	29	1000	Unknown		04/30/2018 13:42	Finished	SAMP,0.05>10mL
30	N030044-007AMS,MS	30	1000	Unknown		04/30/2018 13:52	Finished	MS (5ppb), IWST-180129B,0.0
31	N030044-008A,SAMF	31	1000	Unknown		04/30/2018 14:01	Finished	SAMP,0.01>10mL
32	N030044-008AMS,MS	32	1000	Unknown		04/30/2018 14:10	Finished	MS (5ppb), IWST-180129B,0.0
33	N030044-009A,SAMF	33	1000	Unknown		04/30/2018 14:20	Finished	SAMP,0.2>10mL
34	N030044-009AMS,MS	34	1000	Unknown		04/30/2018 14:29	Finished	MS (5ppb), IWST-180129B,0.2
35	CCV-2,CCV,1,	35	1000	Unknown		04/30/2018 14:39	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	36	1000	Unknown		04/30/2018 14:48	Finished	CCB R180418A
37	N030044-010A,SAMF	37	1000	Unknown		04/30/2018 14:58	Finished	SAMP,10mL
38	N030044-010AMS,MS	38	1000	Unknown		04/30/2018 15:07	Finished	MS (1ppb), IWST-180129B,10
39	N030044-011A,SAMF	39	1000	Unknown		04/30/2018 15:17	Finished	SAMP,10mL
40	N030044-011AMS,MS	40	1000	Unknown		04/30/2018 15:26	Finished	MS (1ppb), IWST-180129B,10
41	N030044-001ADUP,D	41	1000	Unknown		04/30/2018 15:36	Finished	DUP,2>10mL
42	N030044-004AMSD,M	42	1000	Unknown		04/30/2018 15:45	Finished	MSD (5ppb), IWST-180129B,0.
43	N030044-002AMS,MS	43	1000	Unknown		04/30/2018 15:55	Finished	MS (5ppb), IWST-180129B,2>1
44	N029859-008A,SAMF	1	1000	Unknown		04/30/2018 16:06	Finished	SAMP,10mL
45	N029859-008AMS,MS	2	1000	Unknown		04/30/2018 16:17	Finished	MS (1ppb), IWST-180129B,10
46	N029859-009A,SAMF	3	1000	Unknown		04/30/2018 16:26	Finished	SAMP,10mL
47	CCV-3,CCV1,1,	4	1000	Unknown		04/30/2018 16:36	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	5	1000	Unknown		04/30/2018 16:45	Finished	CCB R180418A
49	N029859-009AMS,MS	6	1000	Unknown		04/30/2018 16:55	Finished	MS (1ppb), IWST-180129B,10
50	N029859-011A,SAMF	7	1000	Unknown		04/30/2018 17:04	Finished	SAMP,10mL
51	N029859-011AMS,MS	8	1000	Unknown		04/30/2018 17:14	Finished	MS (1ppb), IWST-180129B,10
52	CCV-4,CCV,1,	9	1000	Unknown		04/30/2018 17:23	Finished	CCV @5ppb, IWST-180129A
53	CCB-4,CCB,1,	10	1000	Unknown		04/30/2018 17:33	Finished	CCB R180418A
54	SHUTDOWN	11	1000	Unknown		04/30/2018 17:42	Finished	
55	Eluent: R180430A	12	1000	Unknown		n.a.	Finished	Eluent
56	PCR: R180430B	13	1000	Unknown		n.a.	Finished	Post-Column Reagent

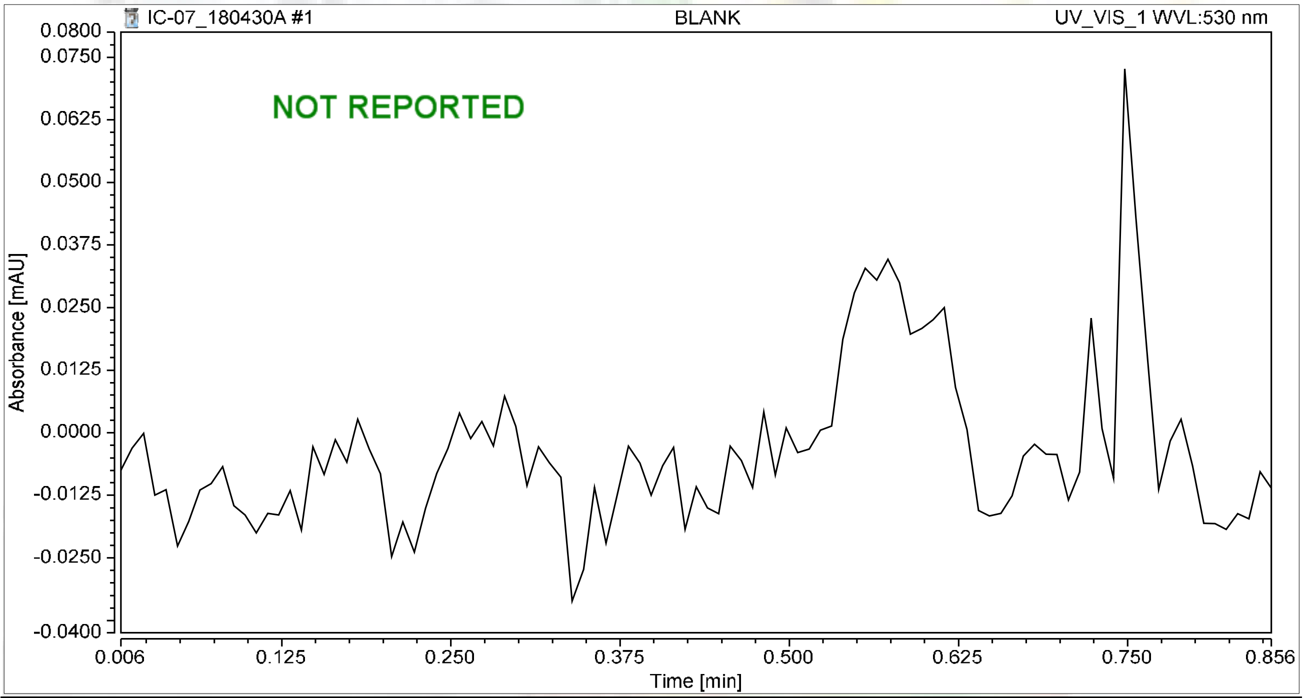
rba 5/6/2018

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.85**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

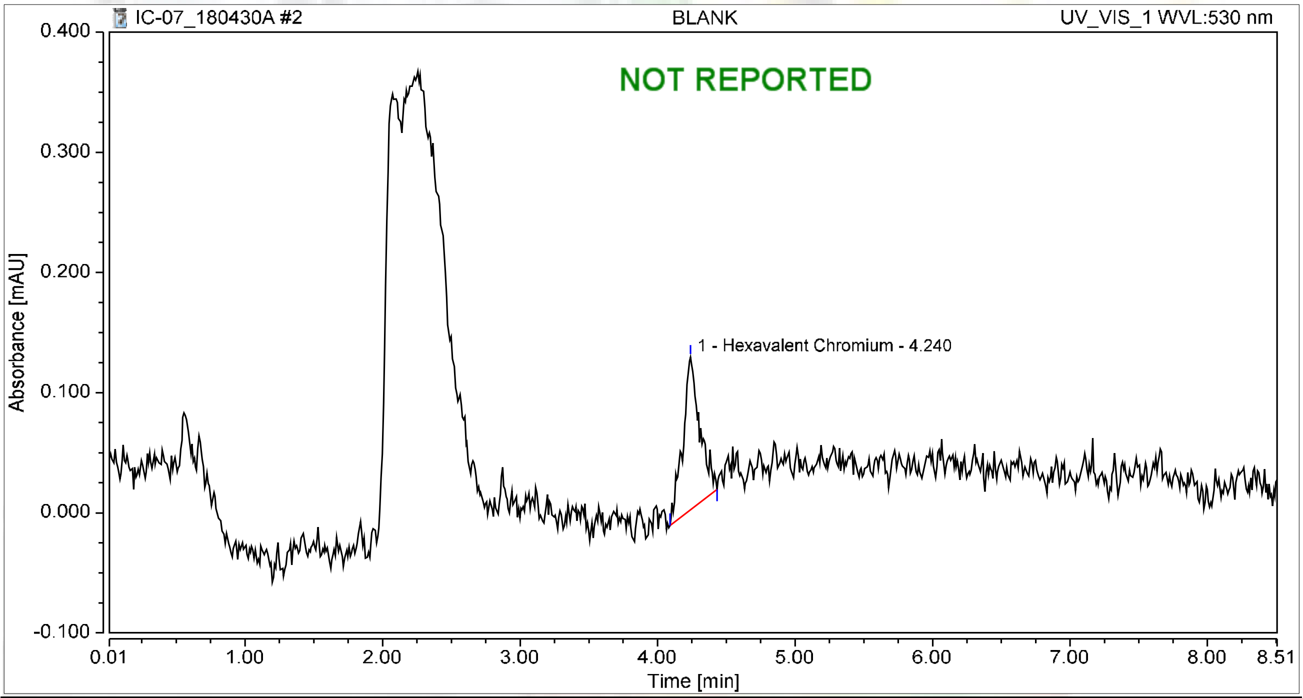
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

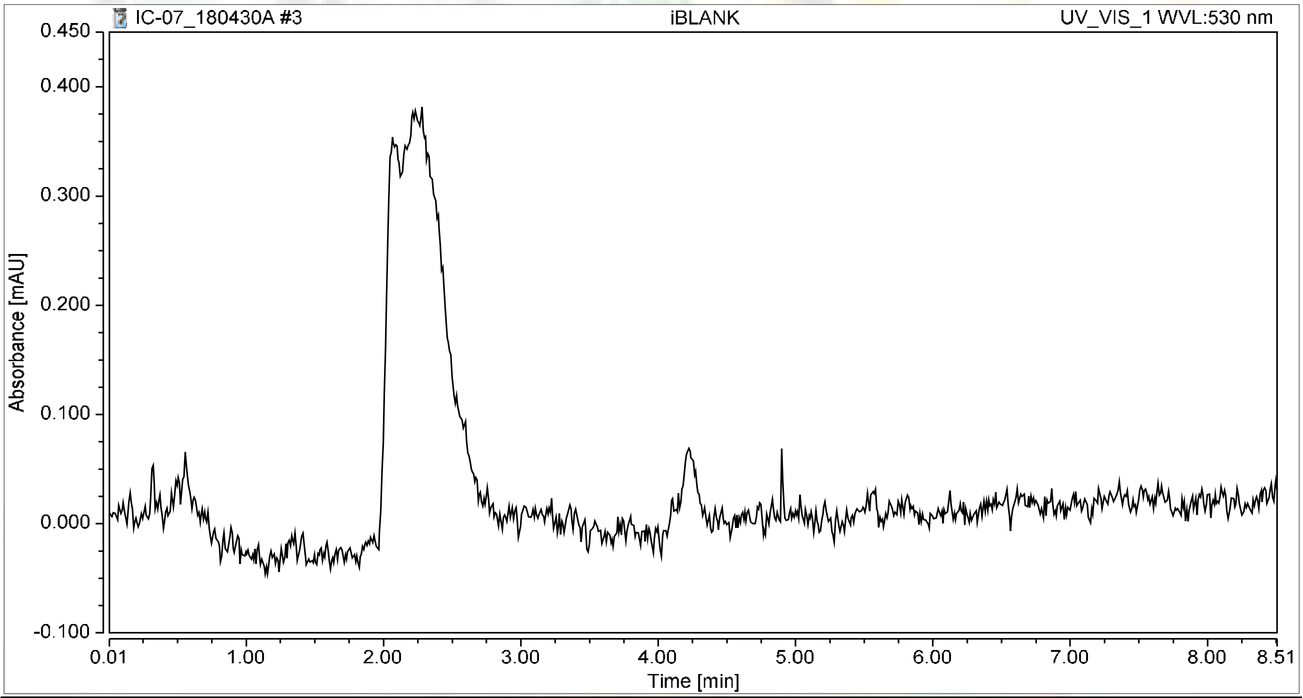
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.018	0.127	100.00	100.00	0.0705
Total:			**0.018**	**0.127**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

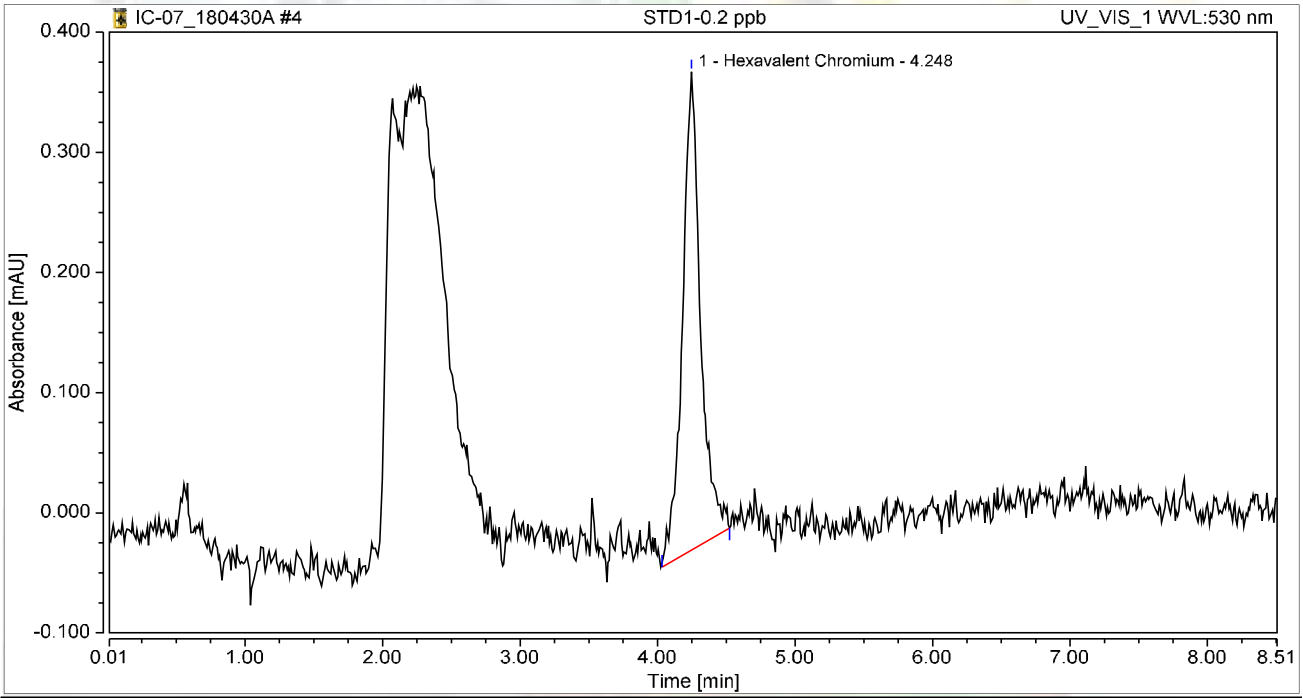
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

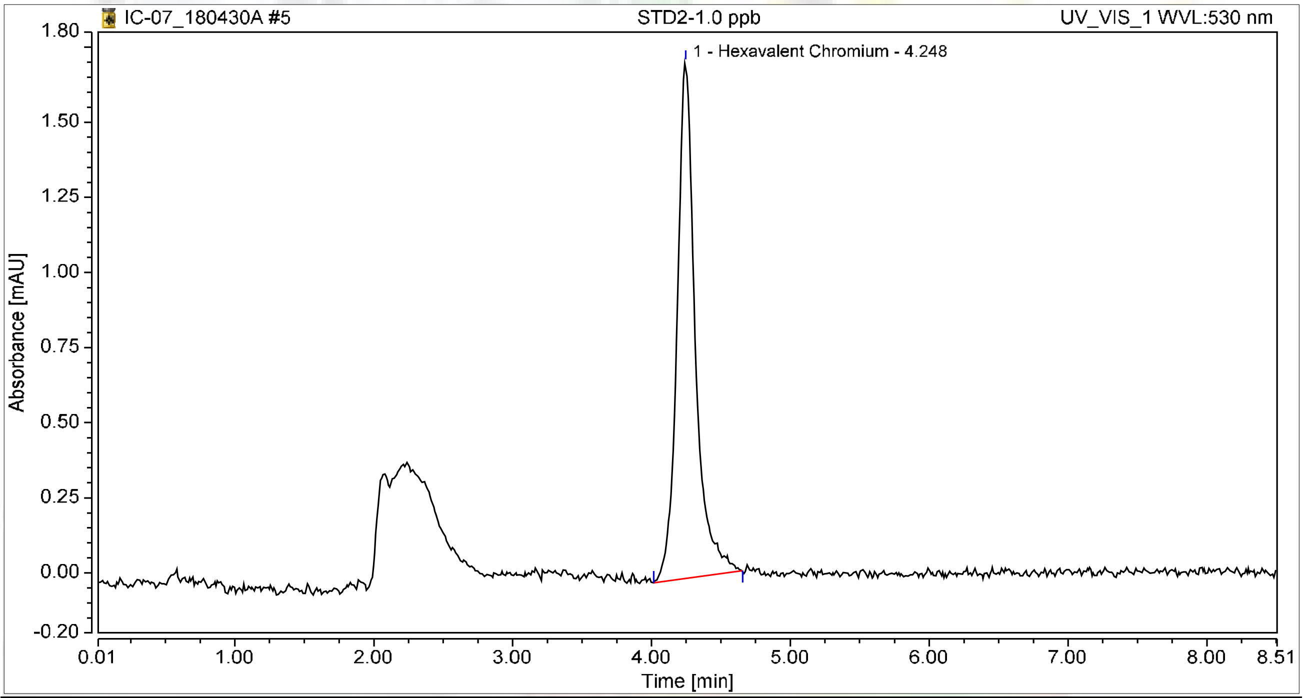
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.061	0.398	100.00	100.00	0.2363
Total:			**0.061**	**0.398**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

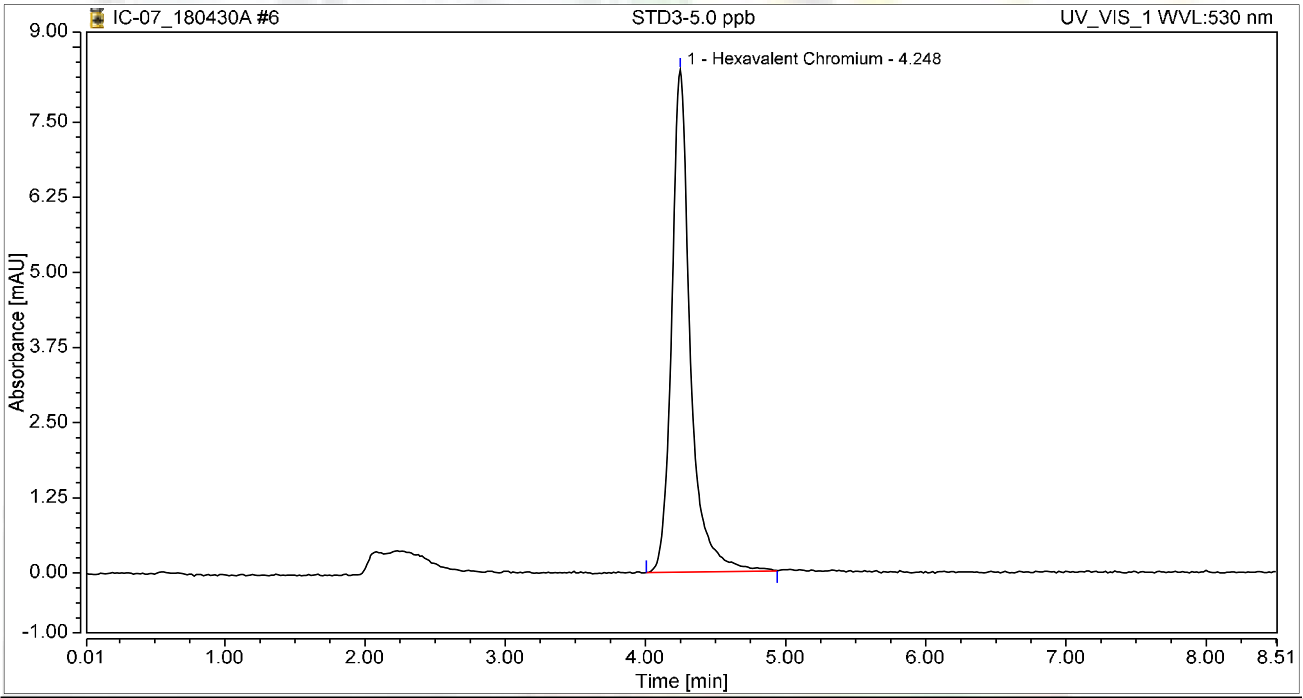
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.262	1.718	100.00	100.00	1.0201
Total:			**0.262**	**1.718**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

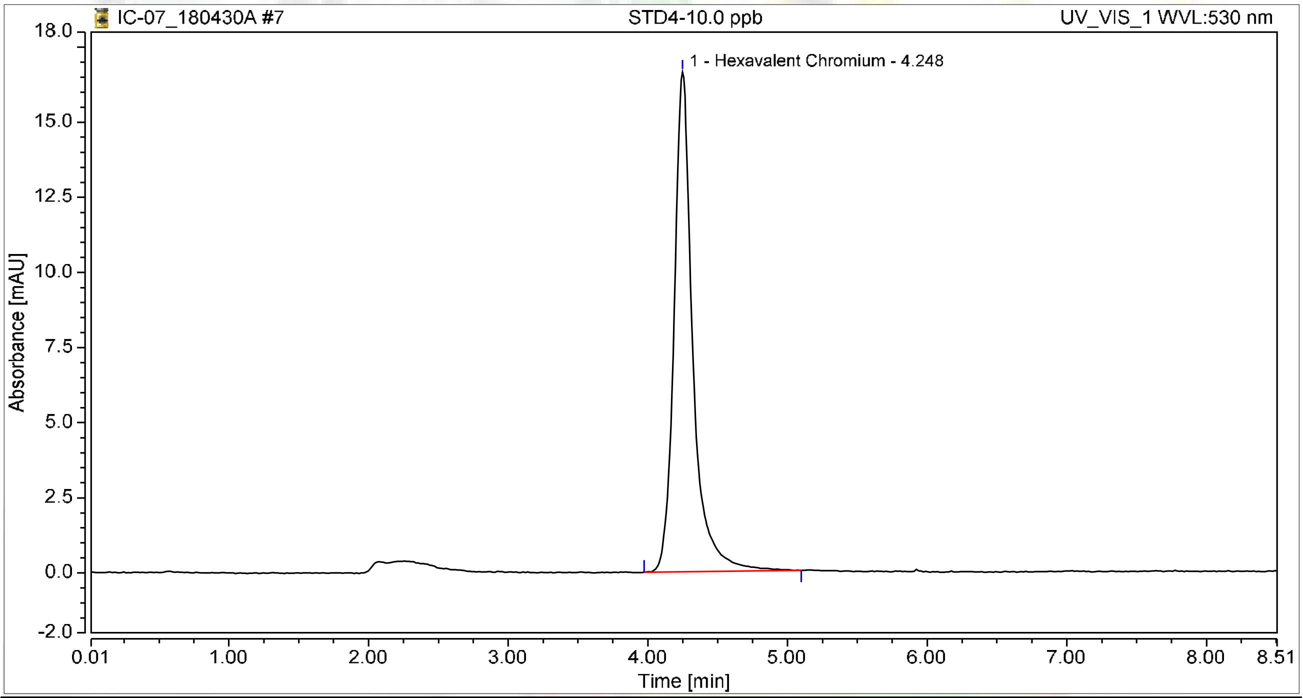
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.292	8.359	100.00	100.00	5.0360
Total:			**1.292**	**8.359**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

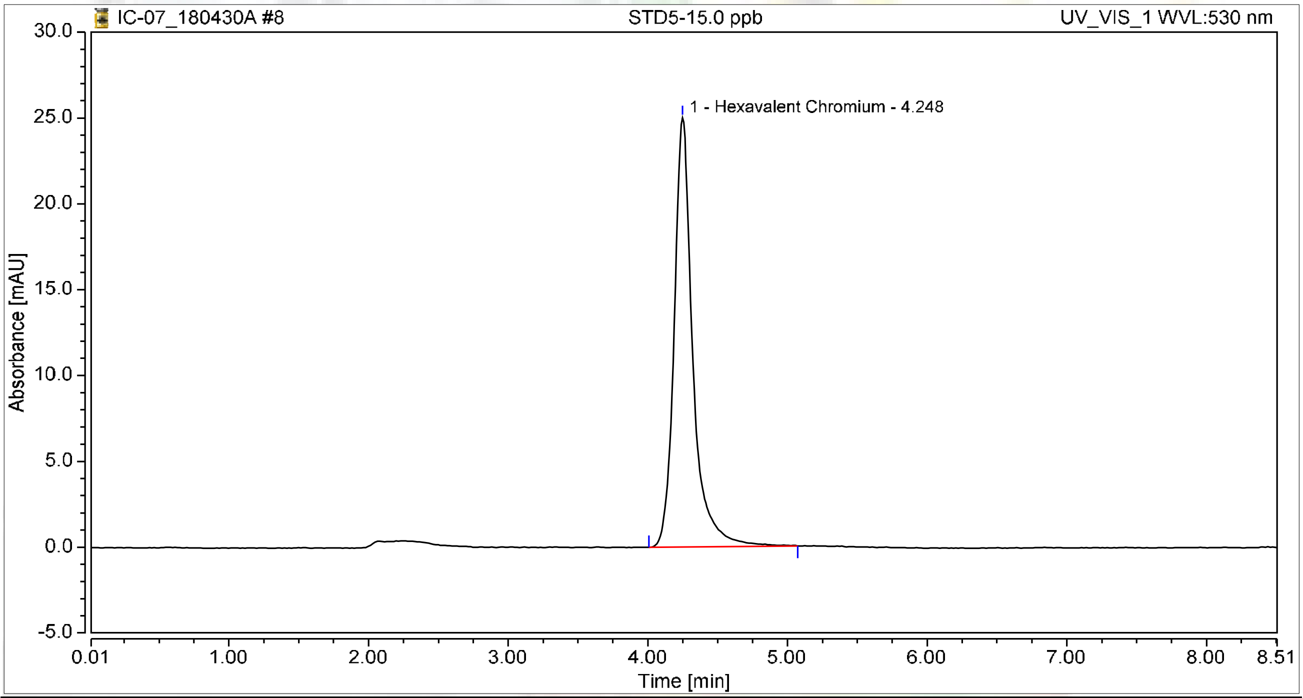
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.581	16.640	100.00	100.00	10.0583
Total:			**2.581**	**16.640**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

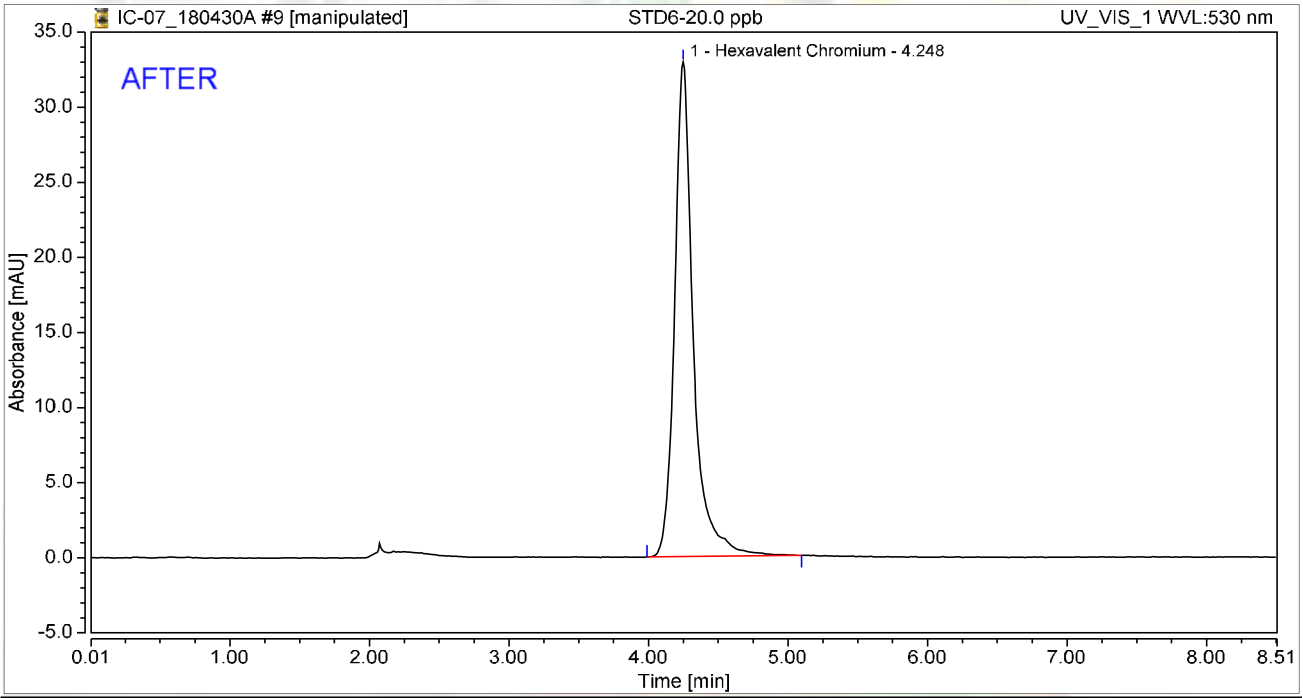
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.873	25.002	100.00	100.00	15.0915
Total:			**3.873**	**25.002**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.105	32.932	100.00	100.00	19.8919
Total:			**5.105**	**32.932**	**100.00**	**100.00**	

rba 5/6/2018

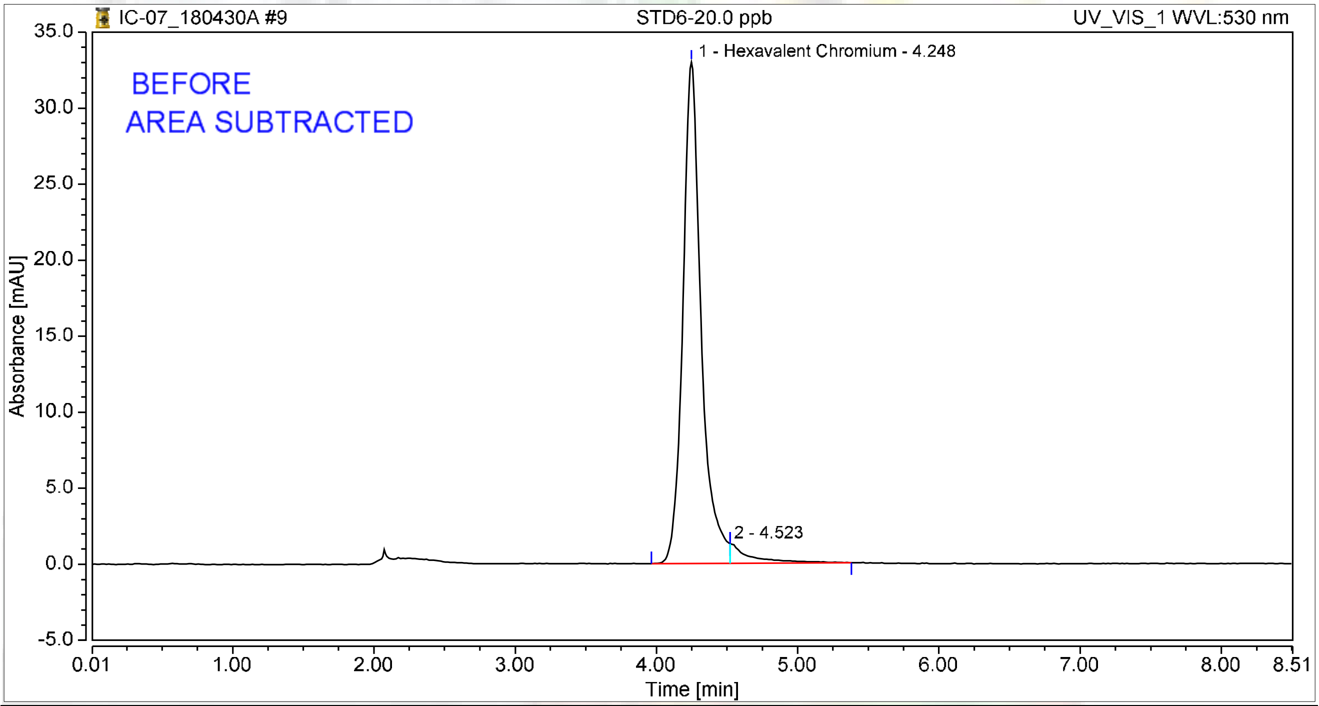
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	4.957	32.968	95.88	96.27	19.6162
2		4.523	0.213	1.278	4.12	3.73	n.a.
Total:			**5.170**	**34.246**	**100.00**	**100.00**	

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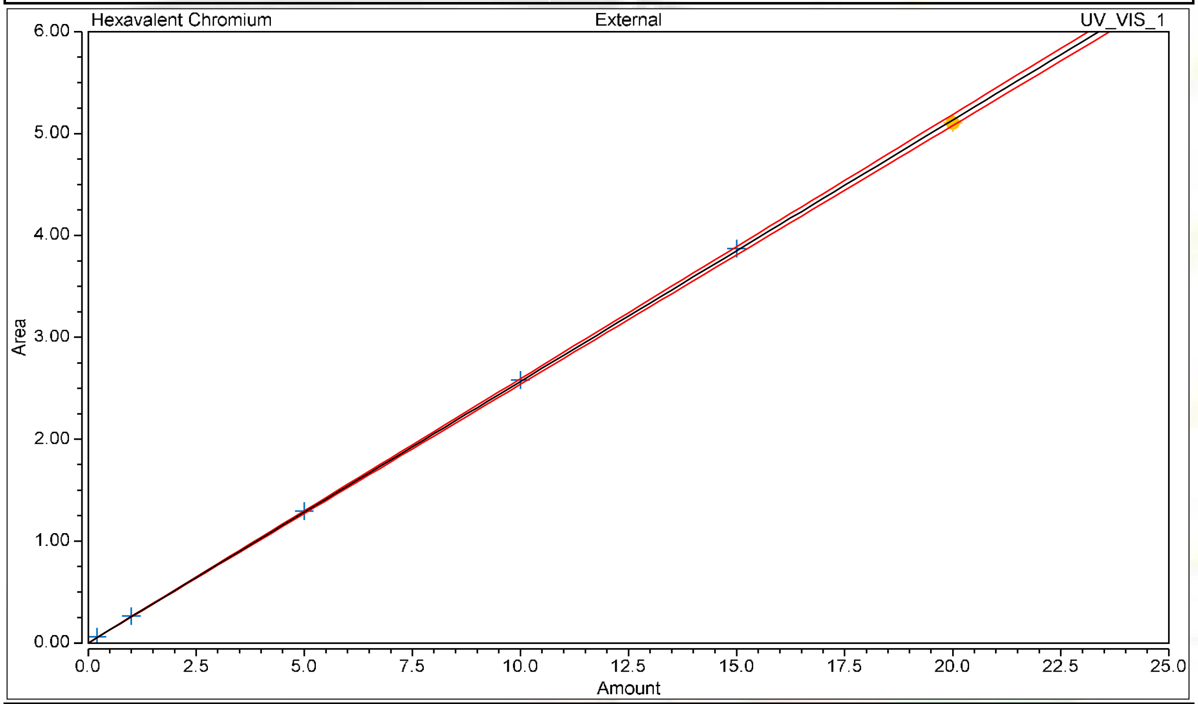
Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2566
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99992

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

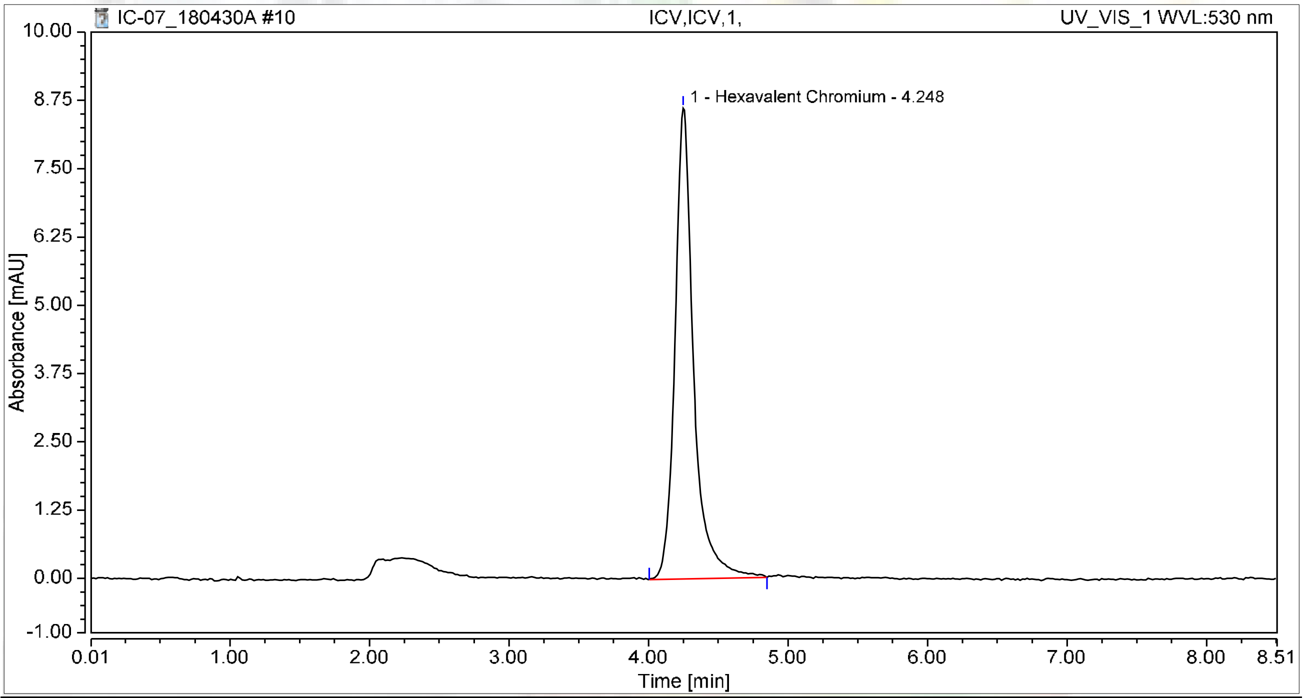
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0607	0.061	0.398
5	STD2-1.0 ppb	02	1.0000	0.2618	0.262	1.718
6	STD3-5.0 ppb	03	5.0000	1.2924	1.292	8.359
7	STD4-10.0 ppb	04	10.0000	2.5813	2.581	16.640
8	STD5-15.0 ppb	05	15.0000	3.8731	3.873	25.002
9	STD6-20.0 ppb	06	20.0000	5.1050	5.105	32.932

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

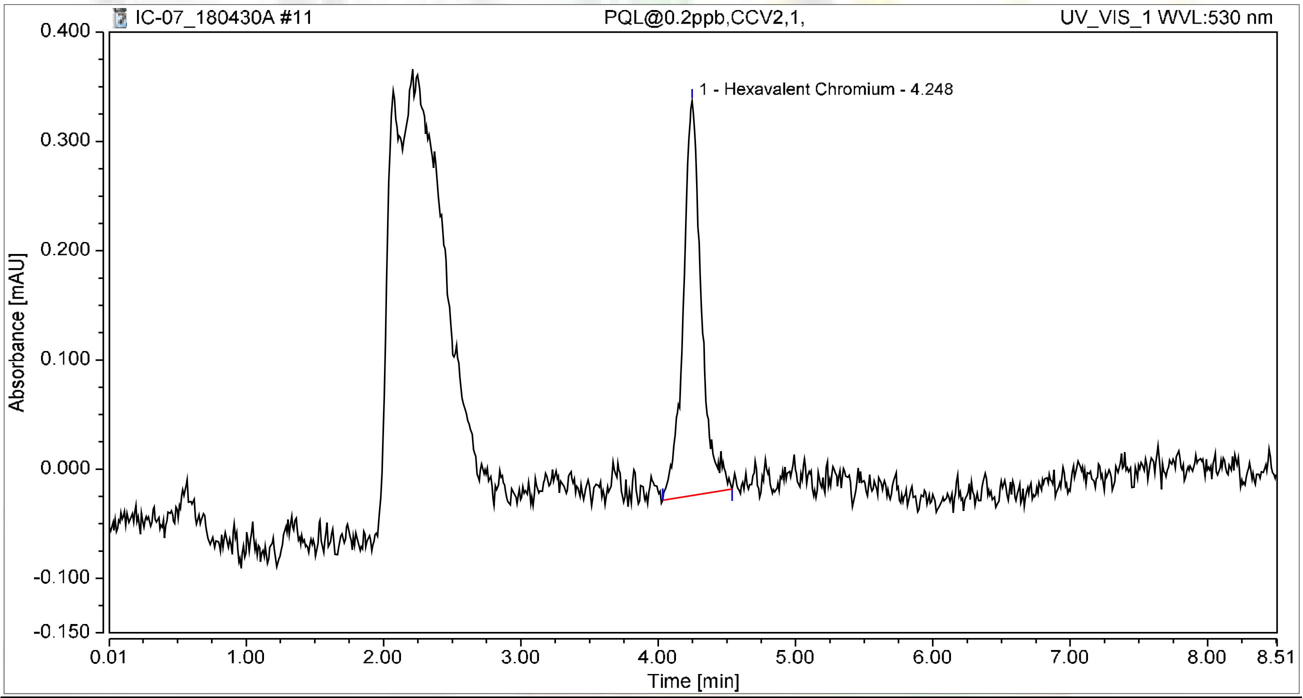
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.333	8.618	100.00	100.00	5.1938
Total:			**1.333**	**8.618**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

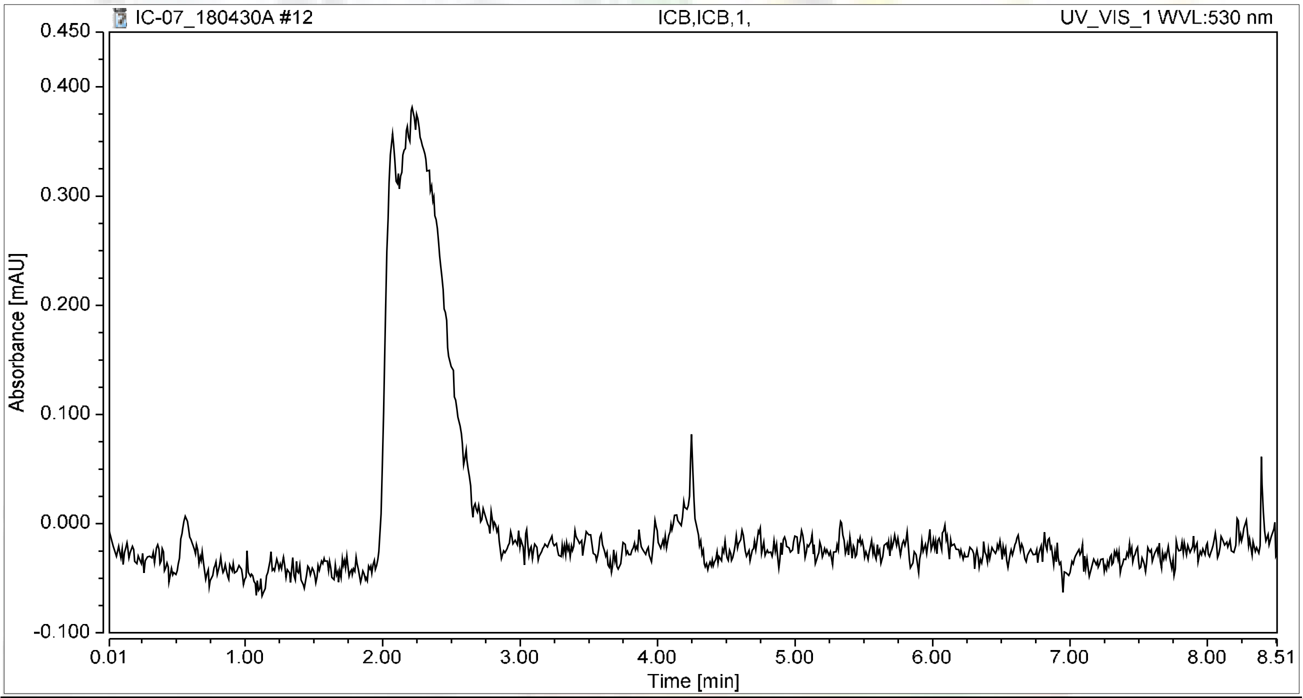
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.055	0.361	100.00	100.00	0.2153
Total:			**0.055**	**0.361**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180501A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/01/18 8:08 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/01/18 8:19 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/01/18 8:28 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/01/18 8:38 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/01/18 8:47 AM	Reported
15	MB-R123787	MBLK	1	Hexavalent Chromium	05/01/18 8:57 AM	Reported
16	LCS-R123787	LCS	1	Hexavalent Chromium	05/01/18 9:06 AM	Reported
17	N030072-001A	SAMP	1	Hexavalent Chromium	05/01/18 10:08 AM	Reported
18	N030072-001AMS	MS	1	Hexavalent Chromium	05/01/18 10:19 AM	Reported
19	N030075-002A	SAMP	20	Hexavalent Chromium	05/01/18 10:28 AM	Reported
20	N030075-002AMS	MS	20	Hexavalent Chromium	05/01/18 10:38 AM	~~Not~~ Reported
21	N030075-001A	SAMP	100	Hexavalent Chromium	05/01/18 10:47 AM	Not Reported
22	N030075-001AMS	MS	100	Hexavalent Chromium	05/01/18 10:57 AM	Not Reported
23	N030075-003A	SAMP	200	Hexavalent Chromium	05/01/18 11:06 AM	Reported
24	N030075-003AMS	MS	200	Hexavalent Chromium	05/01/18 11:16 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/01/18 11:25 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/01/18 11:35 AM	Reported
27	N030075-004A	SAMP	500	Hexavalent Chromium	05/01/18 11:44 AM	Reported
28	N030075-004AMS	MS	500	Hexavalent Chromium	05/01/18 11:54 AM	Reported
29	N030075-005A	SAMP	100	Hexavalent Chromium	05/01/18 12:03 PM	Reported
30	N030075-005AMS	MS	100	Hexavalent Chromium	05/01/18 12:13 PM	Reported
31	N030075-006A	SAMP	100	Hexavalent Chromium	05/01/18 12:22 PM	Reported
32	N030075-006AMS	MS	100	Hexavalent Chromium	05/01/18 12:31 PM	Reported
33	N030075-007A	SAMP	1000	Hexavalent Chromium	05/01/18 12:41 PM	Reported
34	N030075-007AMS	MS	1000	Hexavalent Chromium	05/01/18 12:50 PM	Reported
35	N030075-008A	SAMP	1000	Hexavalent Chromium	05/01/18 1:00 PM	Reported
36	N030075-008AMS	MS	1000	Hexavalent Chromium	05/01/18 1:09 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/01/18 1:19 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/01/18 1:28 PM	Reported
39	N030072-001ADUP	DUP	1	Hexavalent Chromium	05/01/18 1:38 PM	Reported
40	N030075-001A	SAMP	20	Hexavalent Chromium	05/01/18 1:47 PM	Reported
41	N030075-001AMS	MS	20	Hexavalent Chromium	05/01/18 1:57 PM	Reported
42	N030075-001AMSD	MSD	20	Hexavalent Chromium	05/01/18 2:06 PM	Reported

Nancy 5/7/2018

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INJECTION LOG: 180501A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030075-009A	SAMP	1	Hexavalent Chromium	05/01/18 2:16 PM	Reported
44	N030075-009AMS	MS	1	Hexavalent Chromium	05/01/18 2:25 PM	Reported
45	N030075-010A	SAMP	1	Hexavalent Chromium	05/01/18 2:34 PM	Reported
46	N030075-010AMS	MS	1	Hexavalent Chromium	05/01/18 2:44 PM	Not Reported
47	N030075-011A	SAMP	1	Hexavalent Chromium	05/01/18 2:53 PM	Reported
48	N030075-011AMS	MS	1	Hexavalent Chromium	05/01/18 3:03 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/01/18 3:12 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	05/01/18 3:22 PM	Reported
51	N030075-010AMS	MS	1	Hexavalent Chromium	05/01/18 3:31 PM	Reported
52	LCS-R123788	LCS	1	Hexavalent Chromium	05/01/18 3:52 PM	Reported
53	MB-R123788	MBLK	1	Hexavalent Chromium	05/01/18 4:03 PM	Reported
54	N030073-001A	SAMP	10	Hexavalent Chromium	05/01/18 4:13 PM	Reported
55	N030073-008A	SAMP	5	Hexavalent Chromium	05/01/18 4:22 PM	Reported
56	N030073-002A	SAMP	20	Hexavalent Chromium	05/01/18 4:32 PM	Not Reported
57	N030073-003A	SAMP	1	Hexavalent Chromium	05/01/18 4:41 PM	Reported
58	N030073-001AMS	MS	10	Hexavalent Chromium	05/01/18 4:50 PM	Reported
59	N030073-001AMSD	MSD	10	Hexavalent Chromium	05/01/18 5:00 PM	Reported
60	N030073-002A	SAMP	5	Hexavalent Chromium	05/01/18 5:09 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	05/01/18 5:19 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	05/01/18 5:28 PM	Reported
63	N030073-003ADUP	DUP	1	Hexavalent Chromium	05/01/18 5:38 PM	Reported
64	N030073-004A	SAMP	1	Hexavalent Chromium	05/01/18 5:47 PM	Reported
65	N030073-009A	SAMP	20	Hexavalent Chromium	05/01/18 5:57 PM	Reported
66	N030073-006A	SAMP	20	Hexavalent Chromium	05/01/18 6:06 PM	Reported
67	N030073-007A	SAMP	1	Hexavalent Chromium	05/01/18 6:16 PM	Reported
68	N030073-010A	SAMP	1	Hexavalent Chromium	05/01/18 6:25 PM	Reported
69	N030073-011A	SAMP	1	Hexavalent Chromium	05/01/18 6:35 PM	Reported
70	N030073-012A	SAMP	1	Hexavalent Chromium	05/01/18 6:44 PM	Reported
71	N030073-013A	SAMP	1	Hexavalent Chromium	05/01/18 6:53 PM	Reported
72	N030073-005A	SAMP	20	Hexavalent Chromium	05/01/18 7:03 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	05/01/18 7:12 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	05/01/18 7:22 PM	Reported
75	N030073-002AMS	MS	5	Hexavalent Chromium	05/01/18 7:31 PM	Reported
76	CCV-7	CCV	1	Hexavalent Chromium	05/01/18 7:41 PM	Reported
77	CCB-7	CCB	1	Hexavalent Chromium	05/01/18 7:50 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180501A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**02/May/18 18:57:17**
No. of Injections:	**80**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/01/2018 08:08	Finished	BLANK
11	BLANK	2	1000	Unknown		05/01/2018 08:19	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		05/01/2018 08:28	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/01/2018 08:38	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		05/01/2018 08:47	Finished	CCB R180418A
15	MB-H2O,MBLK,1,	6	1000	Unknown		05/01/2018 08:57	Finished	MB R180418A
16	LCS-H2O,LCS,1,	7	1000	Unknown		05/01/2018 09:06	Finished	LCS, IWST-180129B
17	N030072-001A,SAMF	9	1000	Unknown		05/01/2018 10:08	Finished	SAMP,10mL
18	N030072-001AMS,MS	10	1000	Unknown		05/01/2018 10:19	Finished	MS (1ppb), IWST-180129B,10
19	N030075-002A,SAMF	11	1000	Unknown		05/01/2018 10:28	Finished	SAMP,0.5>10mL
20	N030075-002AMS,MS	12	1000	Unknown		05/01/2018 10:38	Finished	MS (5ppb), IWST-180129B,0.5
21	N030075-001A,SAMF	13	1000	Unknown		05/01/2018 10:47	Finished	SAMP,0.1>10mL
22	N030075-001AMS,MS	14	1000	Unknown		05/01/2018 10:57	Finished	MS (5ppb), IWST-180129B,0.1
23	N030075-003A,SAMF	15	1000	Unknown		05/01/2018 11:06	Finished	SAMP,0.05>10mL
24	N030075-003AMS,MS	16	1000	Unknown		05/01/2018 11:16	Finished	MS (5ppb), IWST-180129B,0.0
25	CCV-2,CCV1,1,	17	1000	Unknown		05/01/2018 11:25	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	18	1000	Unknown		05/01/2018 11:35	Finished	CCB R180409B
27	N030075-004A,SAMF	19	1000	Unknown		05/01/2018 11:44	Finished	SAMP,0.02>10mL
28	N030075-004AMS,MS	20	1000	Unknown		05/01/2018 11:54	Finished	MS (5ppb), IWST-180129B,0.0
29	N030075-005A,SAMF	21	1000	Unknown		05/01/2018 12:03	Finished	SAMP,0.1>10mL
30	N030075-005AMS,MS	22	1000	Unknown		05/01/2018 12:13	Finished	MS (5ppb), IWST-180129B,0.1
31	N030075-006A,SAMF	23	1000	Unknown		05/01/2018 12:22	Finished	SAMP,0.1>10mL
32	N030075-006AMS,MS	24	1000	Unknown		05/01/2018 12:31	Finished	MS (5ppb), IWST-180129B,0.1
33	N030075-007A,SAMF	25	1000	Unknown		05/01/2018 12:41	Finished	SAMP,0.01>10mL
34	N030075-007AMS,MS	26	1000	Unknown		05/01/2018 12:50	Finished	MS (5ppb), IWST-180129B,0.0
35	N030075-008A,SAMF	27	1000	Unknown		05/01/2018 13:00	Finished	SAMP,0.01>10mL
36	N030075-008AMS,MS	28	1000	Unknown		05/01/2018 13:09	Finished	MS (5ppb), IWST-180129B,0.0
37	CCV-3,CCV,1,	29	1000	Unknown		05/01/2018 13:19	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	30	1000	Unknown		05/01/2018 13:28	Finished	CCB R180418A
39	N030072-001ADUP,D	31	1000	Unknown		05/01/2018 13:38	Finished	DUP,10mL
40	N030075-001A,SAMF	32	1000	Unknown		05/01/2018 13:47	Finished	SAMP,0.5>10mL
41	N030075-001AMS,MS	33	1000	Unknown		05/01/2018 13:57	Finished	MS (5ppb), IWST-180129B,0.5
42	N030075-001AMSD,M	34	1000	Unknown		05/01/2018 14:06	Finished	MSD (5ppb), IWST-180129B,0.
43	N030075-009A,SAMF	35	1000	Unknown		05/01/2018 14:16	Finished	SAMP,10mL
44	N030075-009AMS,MS	36	1000	Unknown		05/01/2018 14:25	Finished	MS (1ppb), IWST-180129B,10
45	N030075-010A,SAMF	37	1000	Unknown		05/01/2018 14:34	Finished	SAMP,10mL
46	N030075-010AMS,MS	38	1000	Unknown		05/01/2018 14:44	Finished	MS (1ppb), IWST-180129B,10
47	N030075-011A,SAMF	39	1000	Unknown		05/01/2018 14:53	Finished	SAMP,10mL
48	N030075-011AMS,MS	40	1000	Unknown		05/01/2018 15:03	Finished	MS (1ppb), IWST-180129B,10
49	CCV-4,CCV1,1,	41	1000	Unknown		05/01/2018 15:12	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	42	1000	Unknown		05/01/2018 15:22	Finished	CCB R180418A
51	N030075-010AMS,MS	43	1000	Unknown		05/01/2018 15:31	Finished	MS (1ppb), IWST-180129B,10
52	LCS-2,LCS,1,	1	1000	Unknown		05/01/2018 15:52	Finished	LCS, IWST-180129B
53	MB-2,MBLK,1,	2	1000	Unknown		05/01/2018 16:03	Finished	MB R180409B
54	N030073-001A,SAMF	3	1000	Unknown		05/01/2018 16:13	Finished	SAMP,1>10mL
55	N030073-008A,SAMF	4	1000	Unknown		05/01/2018 16:22	Finished	SAMP,2>10mL
56	N030073-002A,SAMF	5	1000	Unknown		05/01/2018 16:32	Finished	SAMP,0.5>10mL
57	N030073-003A,SAMF	6	1000	Unknown		05/01/2018 16:41	Finished	SAMP,10mL
58	N030073-001AMS,MS	7	1000	Unknown		05/01/2018 16:50	Finished	MS (5ppb), IWST-180129B,1>1
59	N030073-001AMSD,M	8	1000	Unknown		05/01/2018 17:00	Finished	MSD (5ppb), IWST-180129B,1>
60	N030073-002A,SAMF	9	1000	Unknown		05/01/2018 17:09	Finished	SAMP,2>10mL

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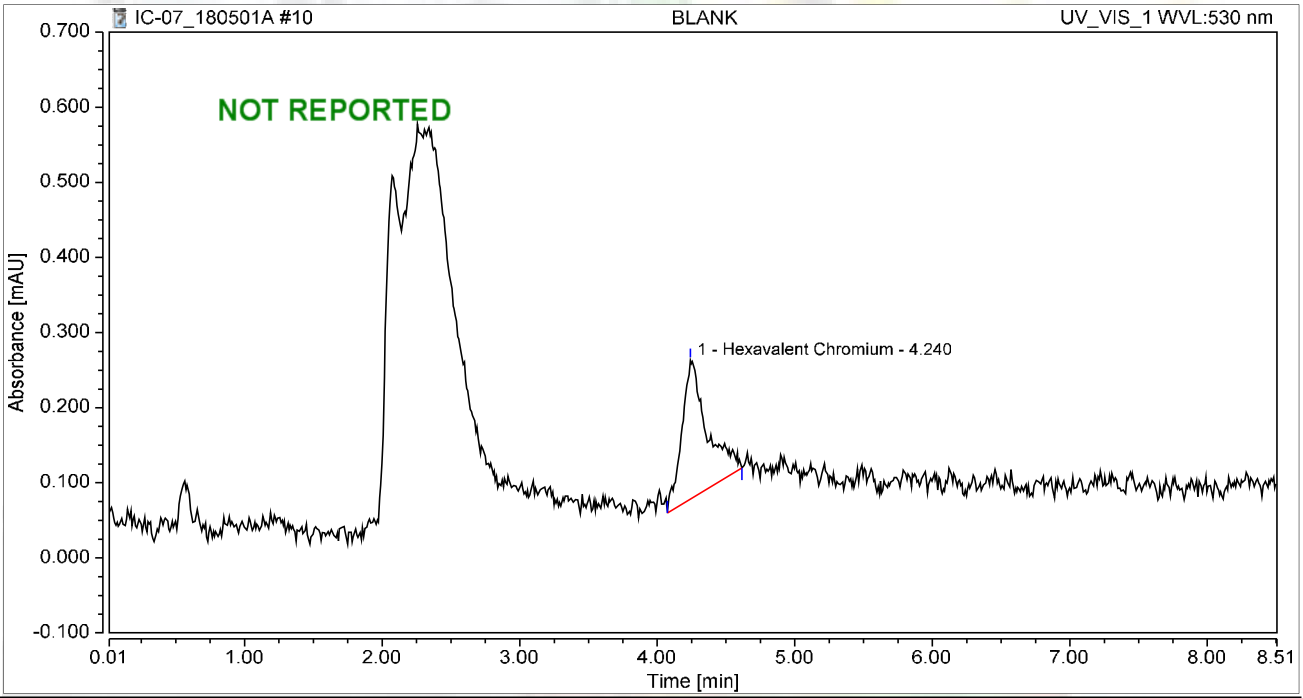
61	CCV-5,CCV,1,	10	1000	Unknown		05/01/2018 17:19	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	11	1000	Unknown		05/01/2018 17:28	Finished	CCB R180409B
63	N030073-003ADUP,D	12	1000	Unknown		05/01/2018 17:38	Finished	SAMP,0.5>10mL
64	N030073-004A,SAMF	13	1000	Unknown		05/01/2018 17:47	Finished	SAMP,10mL
65	N030073-009A,SAMF	14	1000	Unknown		05/01/2018 17:57	Finished	SAMP,0.5>10mL
66	N030073-006A,SAMF	15	1000	Unknown		05/01/2018 18:06	Finished	SAMP,0.5>10mL
67	N030073-007A,SAMF	16	1000	Unknown		05/01/2018 18:16	Finished	SAMP,10mL
68	N030073-010A,SAMF	17	1000	Unknown		05/01/2018 18:25	Finished	SAMP,10mL
69	N030073-011A,SAMF	18	1000	Unknown		05/01/2018 18:35	Finished	SAMP,10mL
70	N030073-012A,SAMF	19	1000	Unknown		05/01/2018 18:44	Finished	SAMP,10mL
71	N030073-013A,SAMF	20	1000	Unknown		05/01/2018 18:53	Finished	SAMP,10mL
72	N030073-005A,SAMF	21	1000	Unknown		05/01/2018 19:03	Finished	SAMP,0.5>10mL
73	CCV-6,CCV1,1,	22	1000	Unknown		05/01/2018 19:12	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	23	1000	Unknown		05/01/2018 19:22	Finished	CCB R180409B
75	N030073-002AMS,MS	24	1000	Unknown		05/01/2018 19:31	Finished	MS (5ppb), IWST-180129B,2>1
76	CCV-7,CCV,1,	25	1000	Unknown		05/01/2018 19:41	Finished	CCV @5ppb, IWST-180129A
77	CCB-7,CCB,1,	26	1000	Unknown		05/01/2018 19:50	Finished	CCB R180409B
78	SHUTDOWN	27	1000	Unknown		05/01/2018 20:00	Finished	
79	Eluent: R180430A	28	1000	Unknown		n.a.	Finished	Eluent
80	PCR: R180430B	29	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 08:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

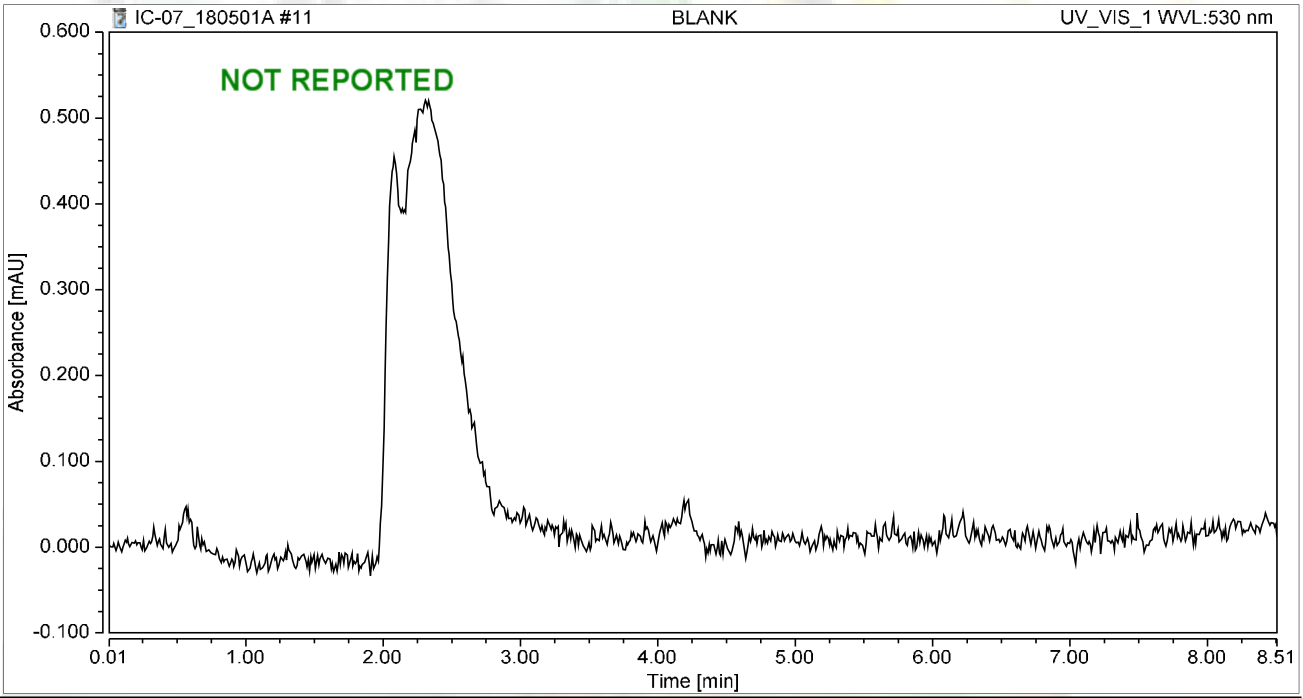
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.039	0.185	100.00	100.00	0.1521
Total:			**0.039**	**0.185**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 08:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

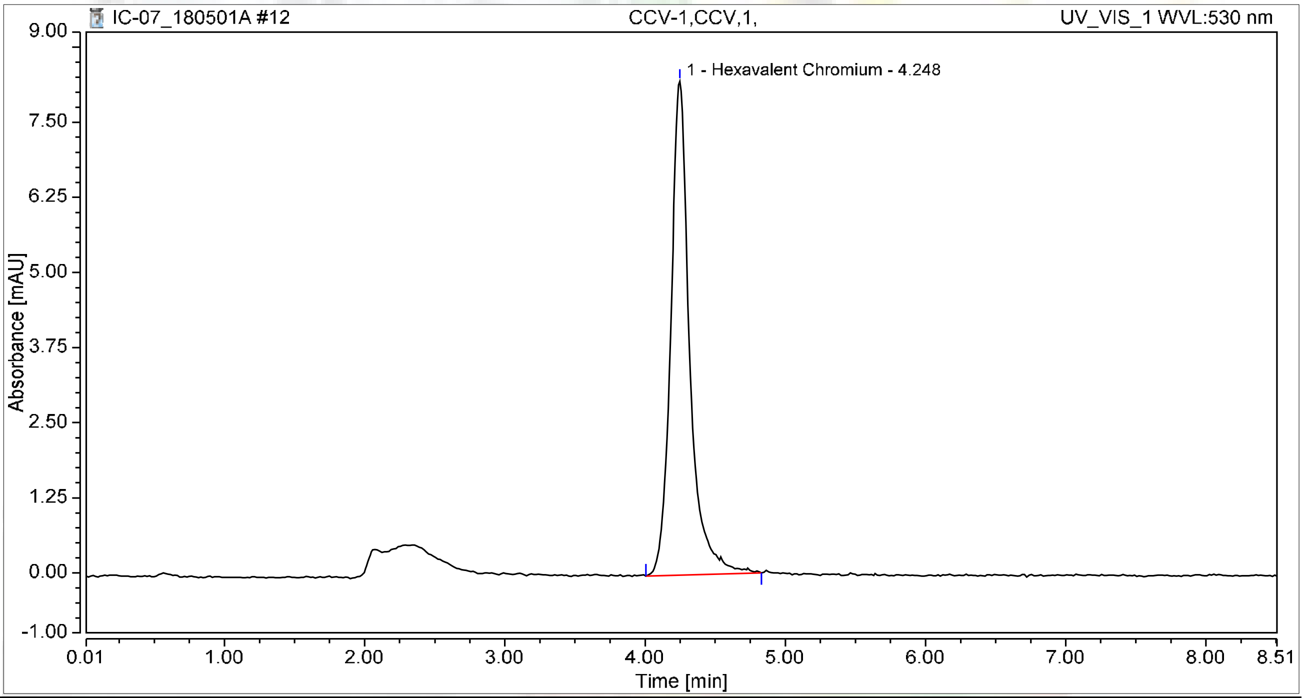
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 08:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

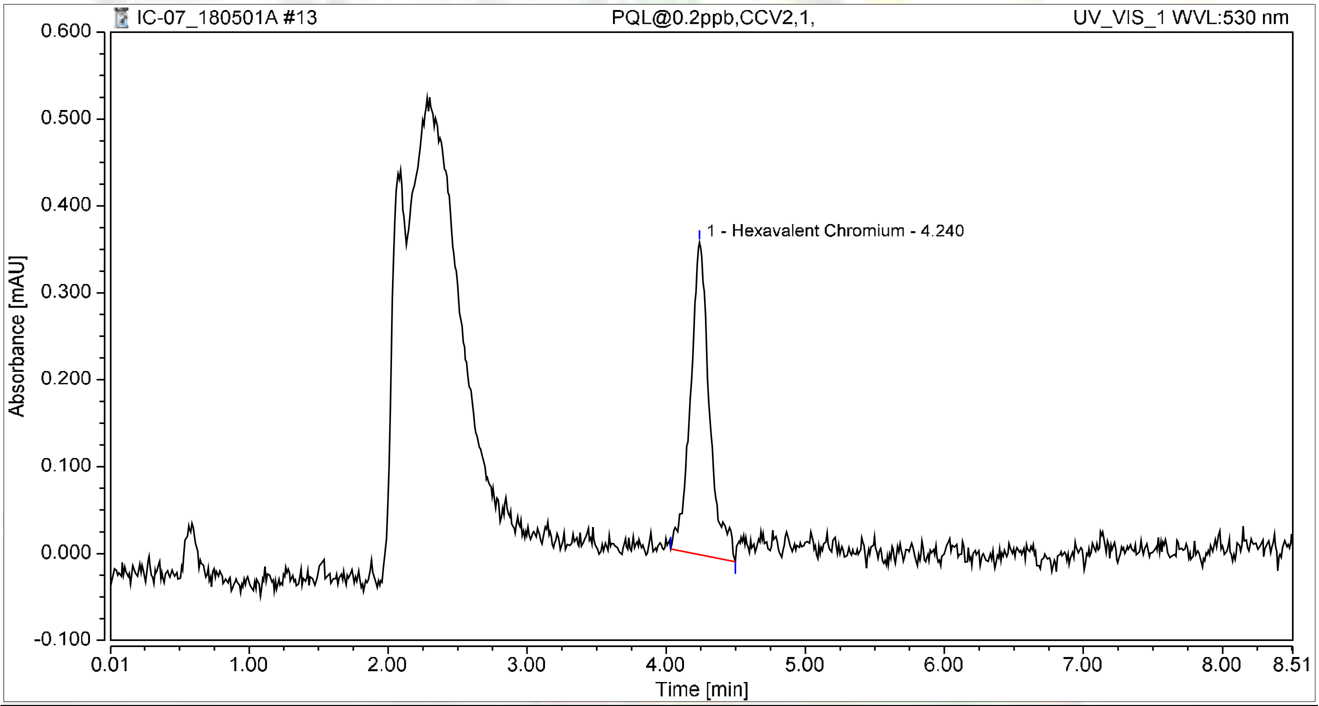
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.284	8.220	100.00	100.00	5.0040
Total:			**1.284**	**8.220**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 08:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

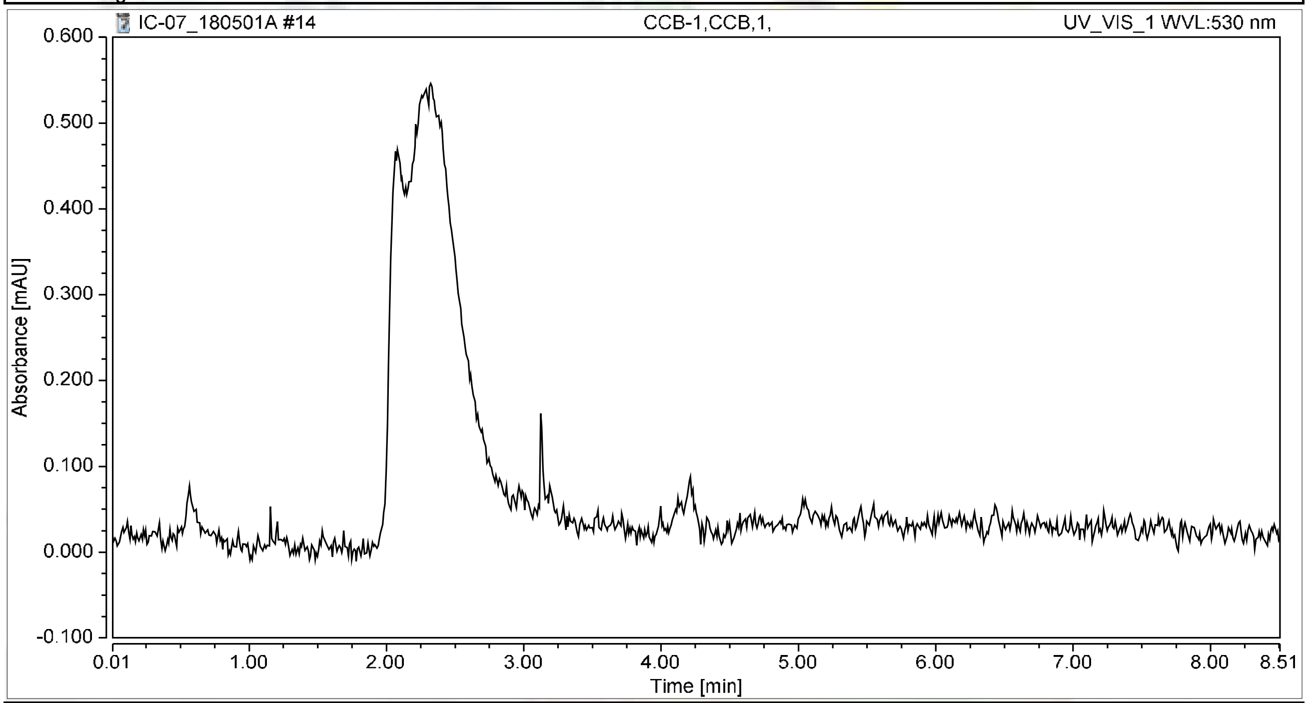
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.057	0.360	100.00	100.00	0.2222
Total:			**0.057**	**0.360**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 08:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

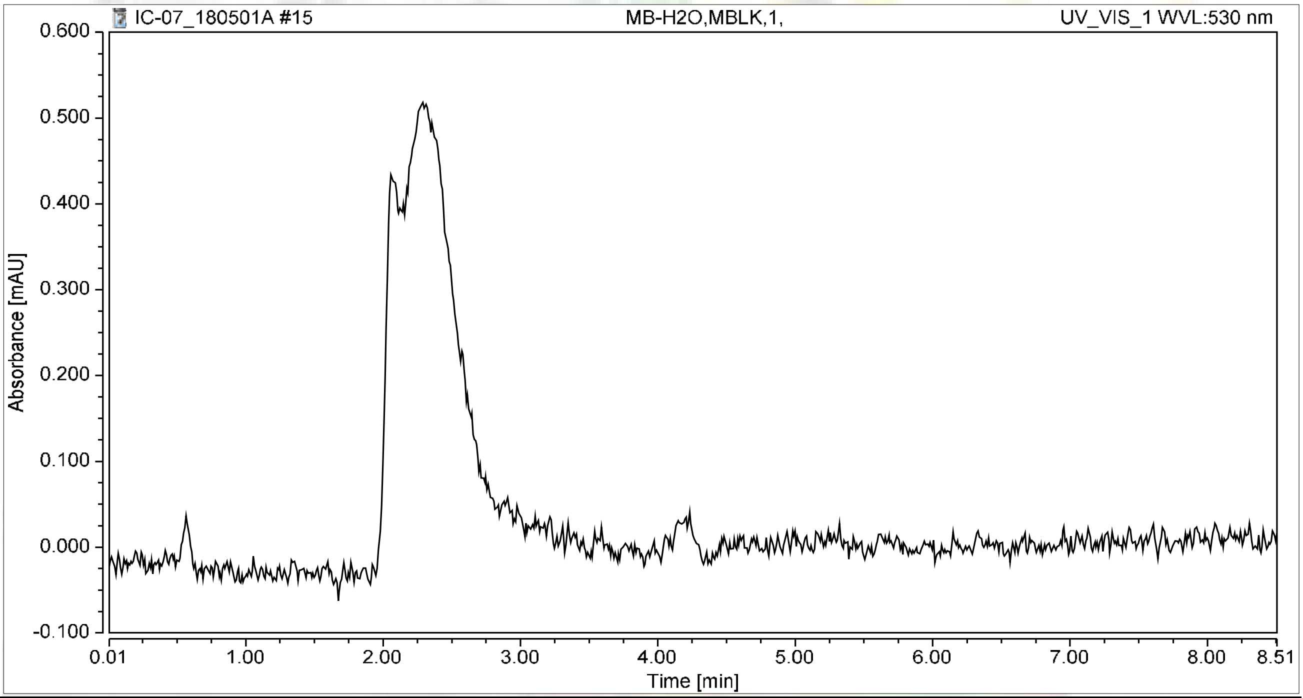
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 08:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

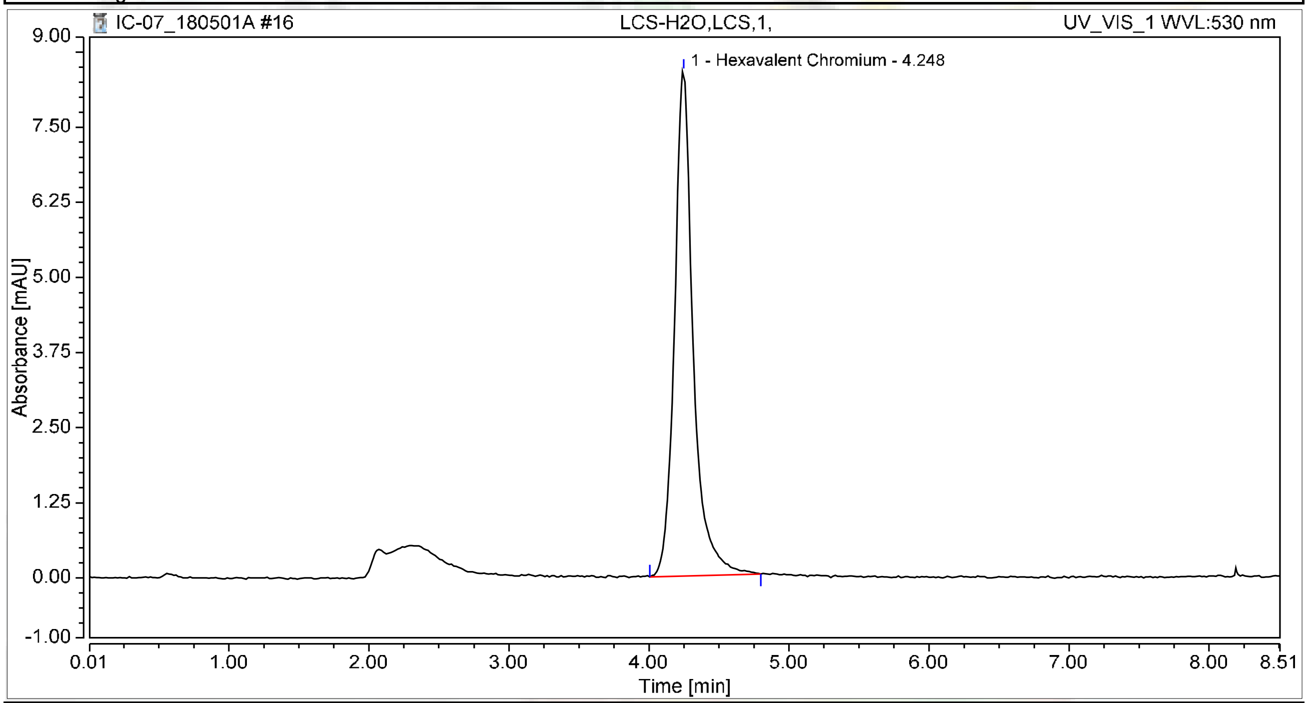
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 09:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

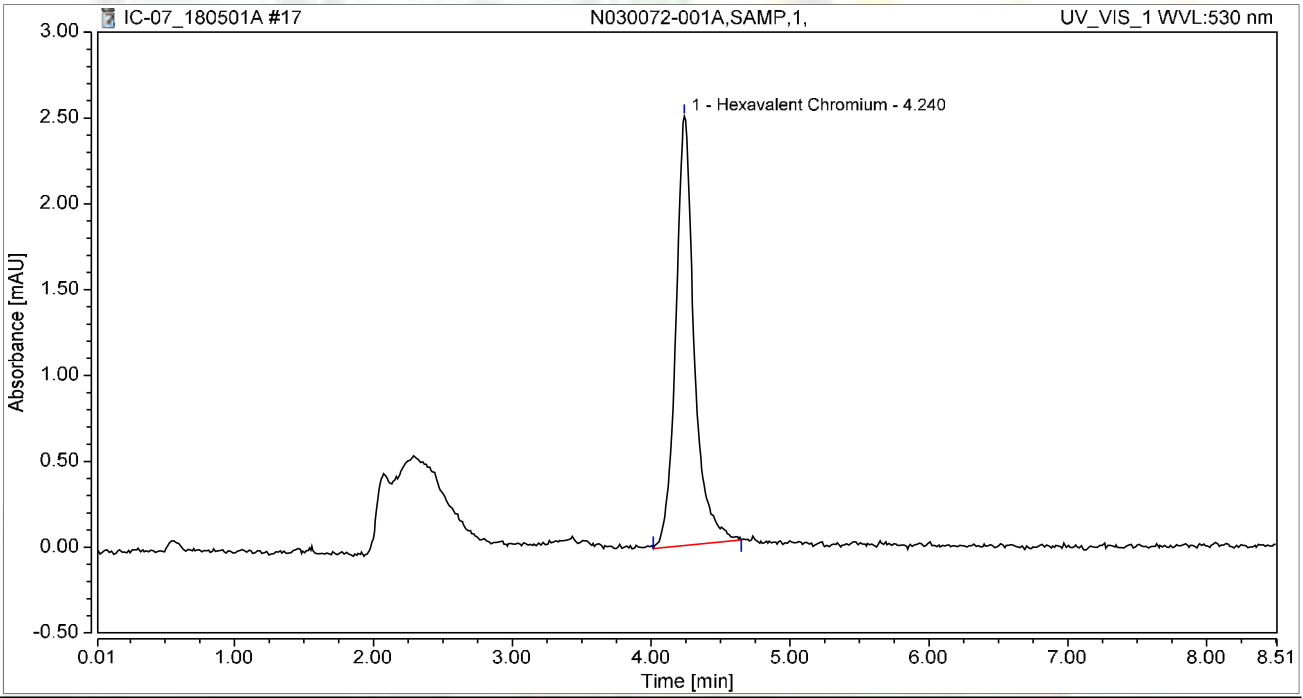
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.305	8.398	100.00	100.00	5.0840
Total:			**1.305**	**8.398**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030072-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 10:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

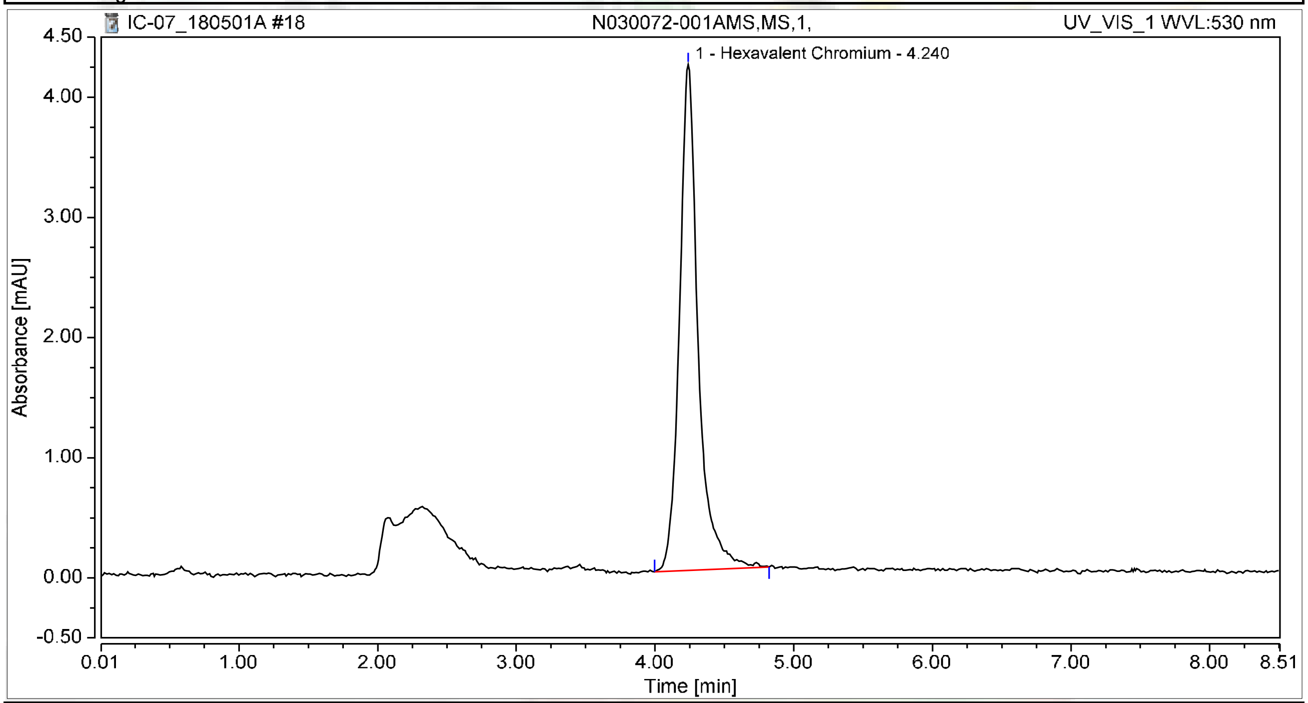
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.385	2.500	100.00	100.00	1.4998
Total:			**0.385**	**2.500**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030072-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 10:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

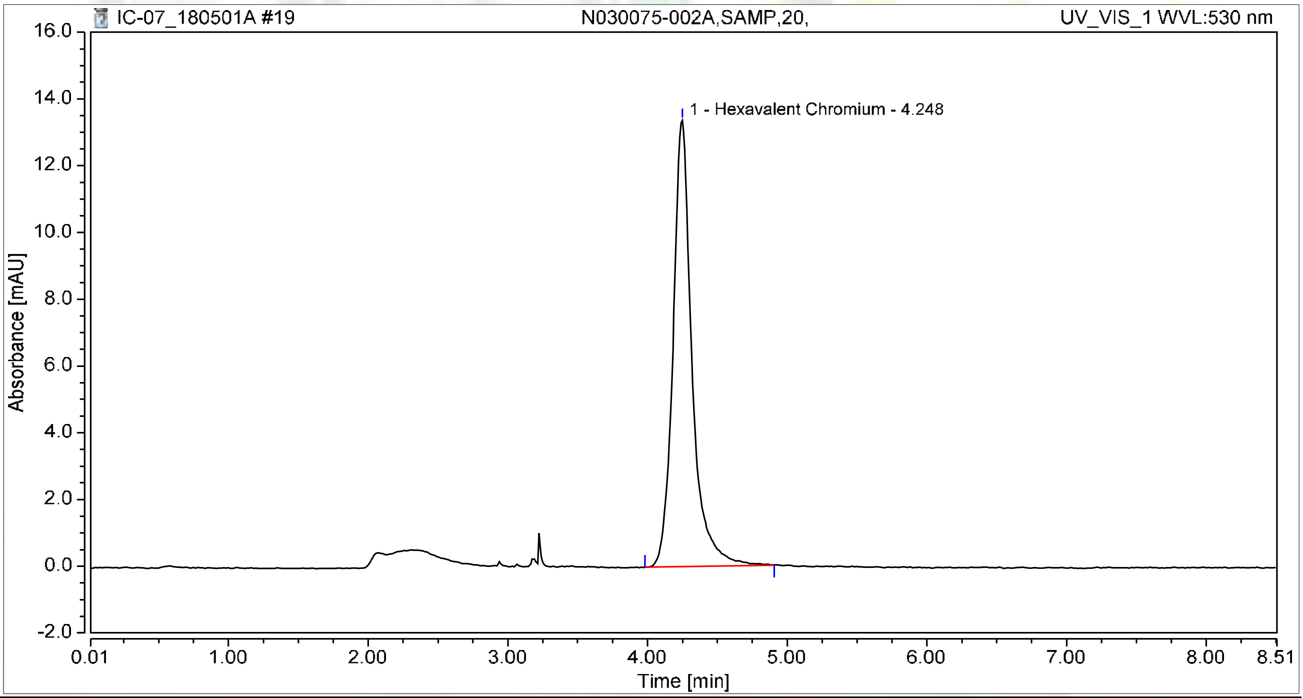
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.657	4.207	100.00	100.00	2.5610
Total:			**0.657**	**4.207**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-002A,SAMP,20,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 10:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

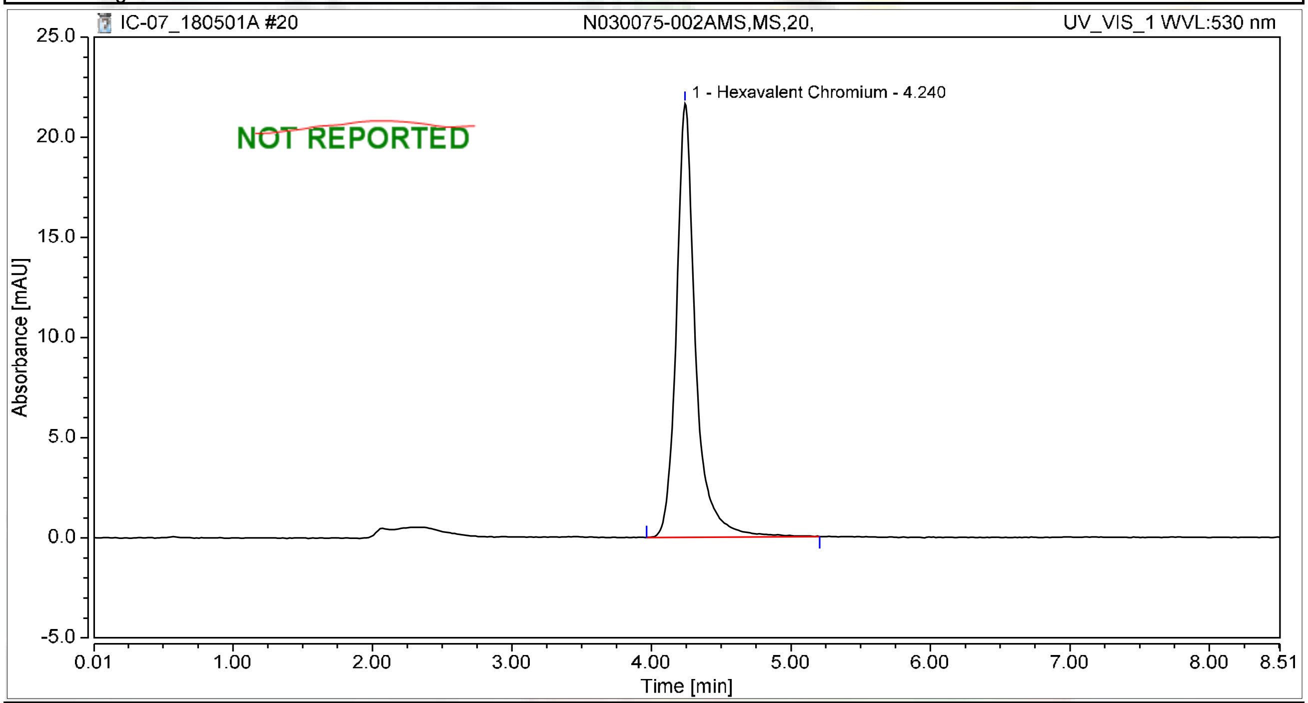
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.101	13.365	100.00	100.00	8.1878
Total:			**2.101**	**13.365**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-002AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 10:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	3.461	21.665	100.00	100.00	13.4863
Total:			**3.461**	**21.665**	**100.00**	**100.00**	

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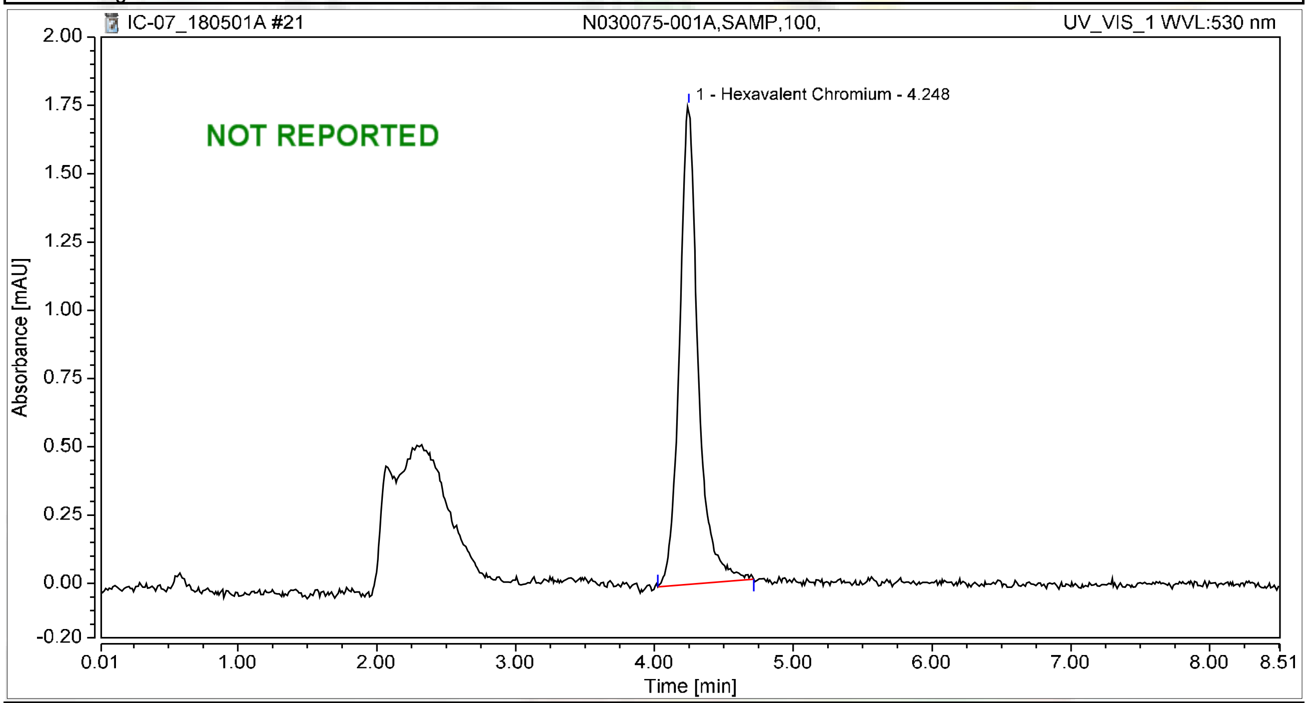
Chromatogram and Results

Injection Details

Injection Name:	**N030075-001A,SAMP,100,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 10:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

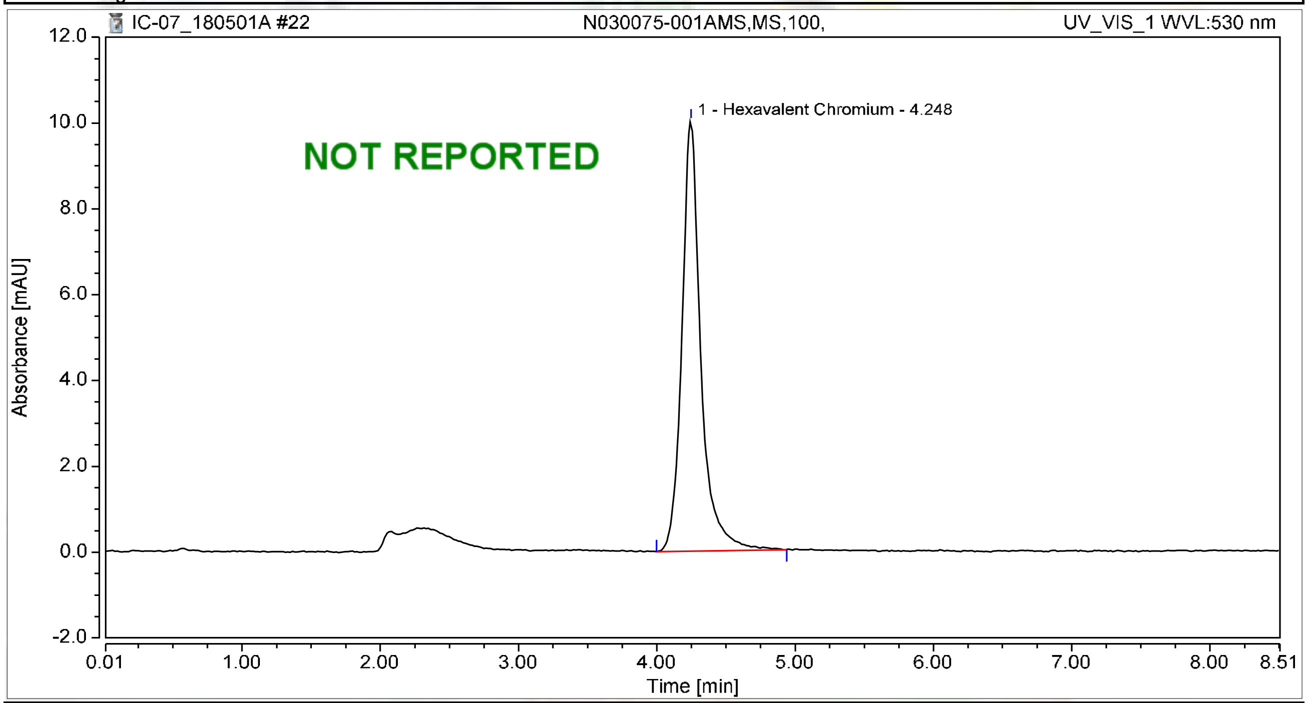
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.273	1.753	100.00	100.00	1.0638
Total:			**0.273**	**1.753**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-001AMS,MS,100,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

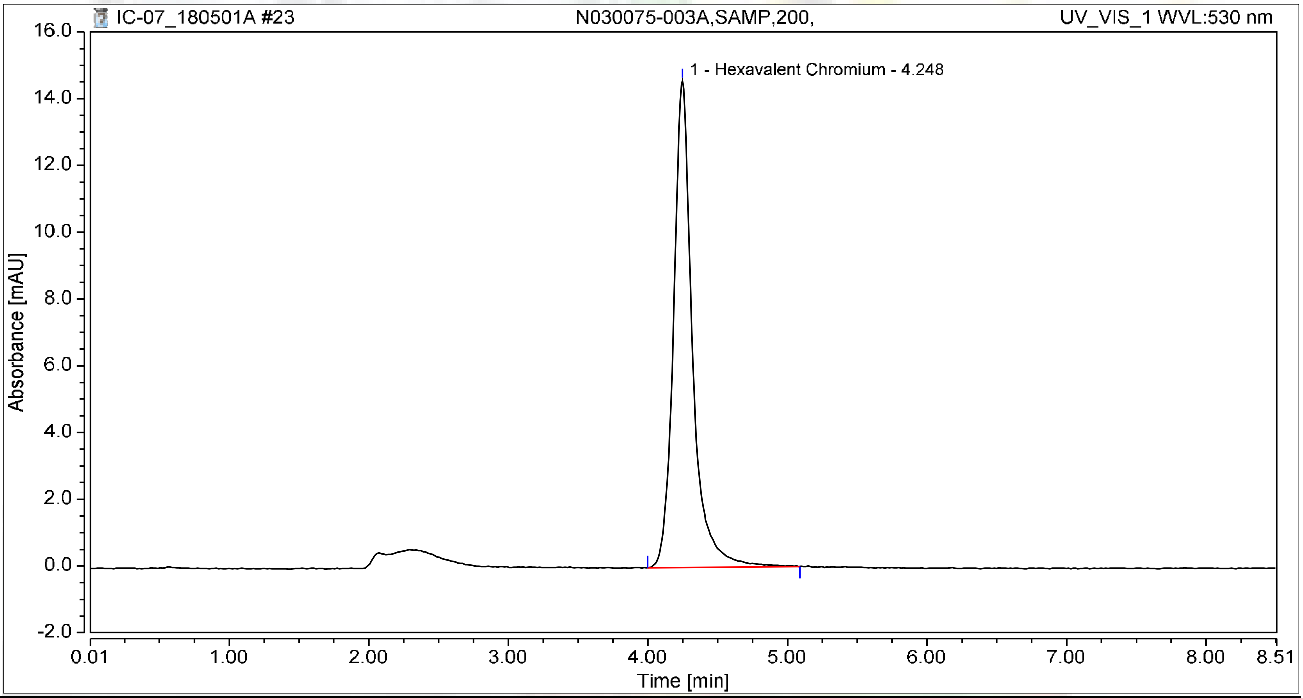
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.595	10.027	100.00	100.00	6.2134
Total:			**1.595**	**10.027**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-003A,SAMP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

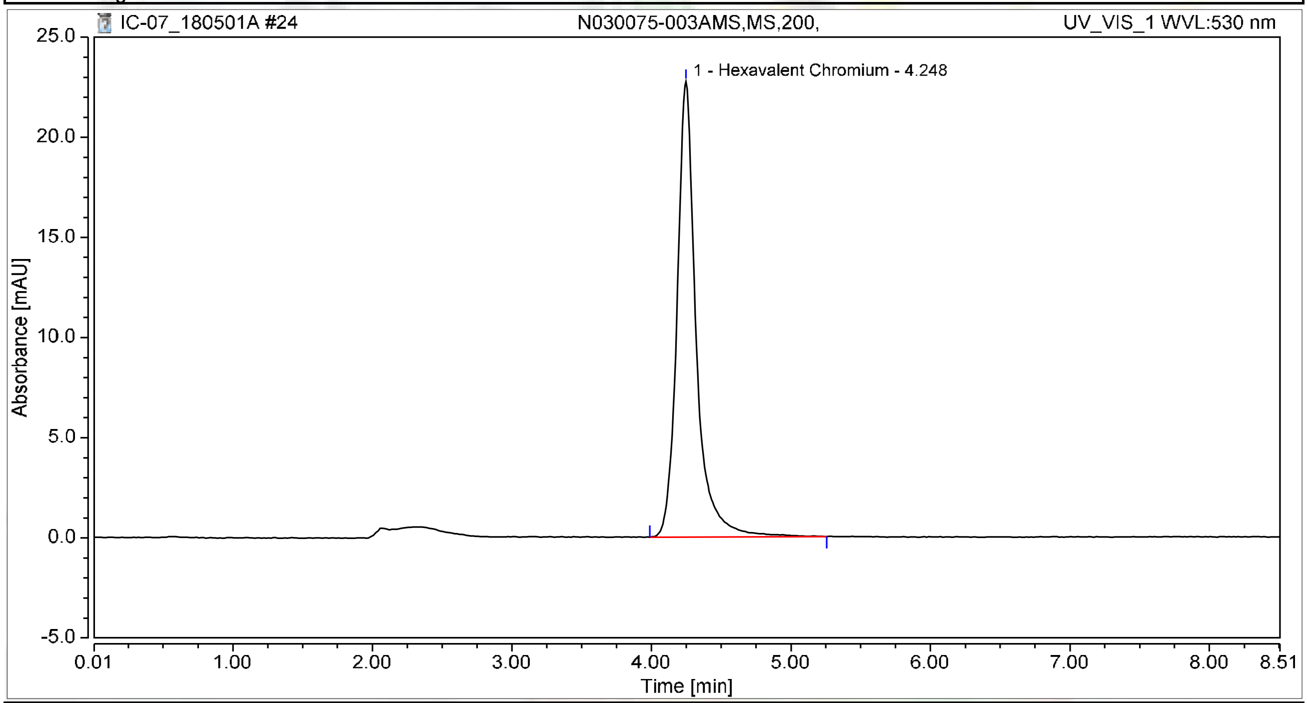
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.303	14.582	100.00	100.00	8.9747
Total:			**2.303**	**14.582**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-003AMS,MS,200,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

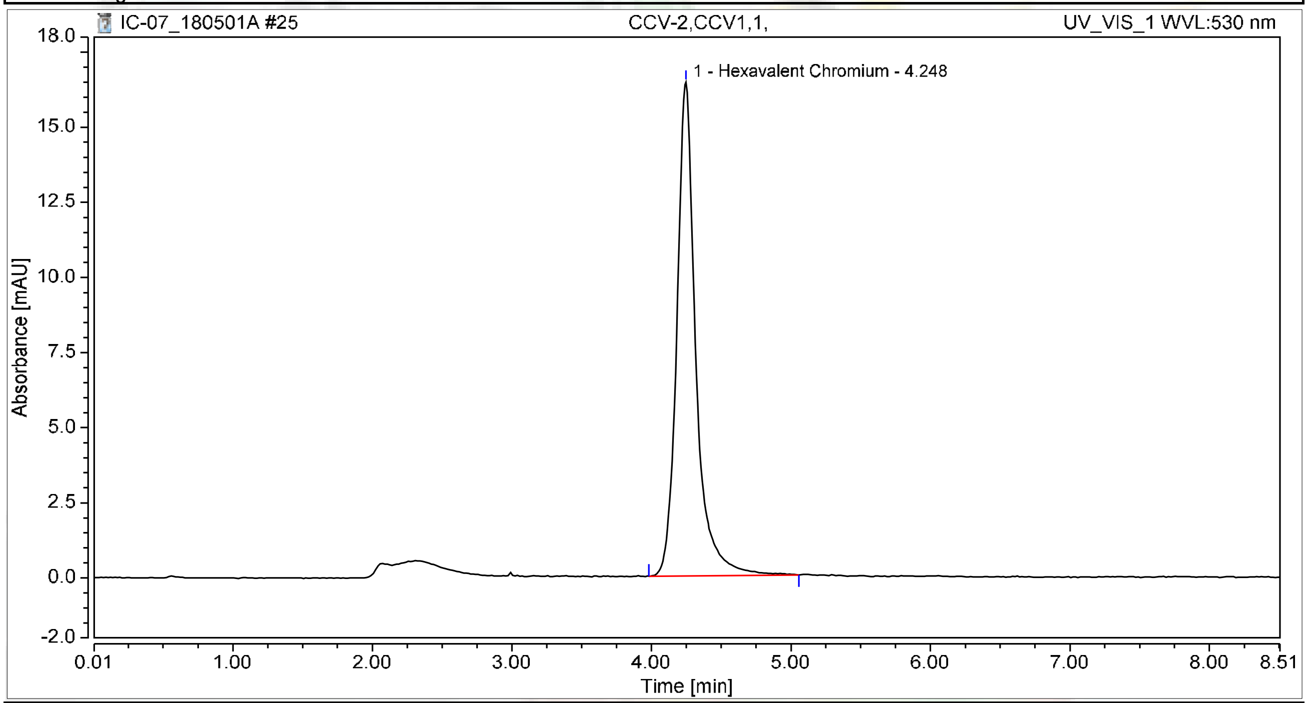
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.615	22.746	100.00	100.00	14.0872
Total:			**3.615**	**22.746**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 11:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

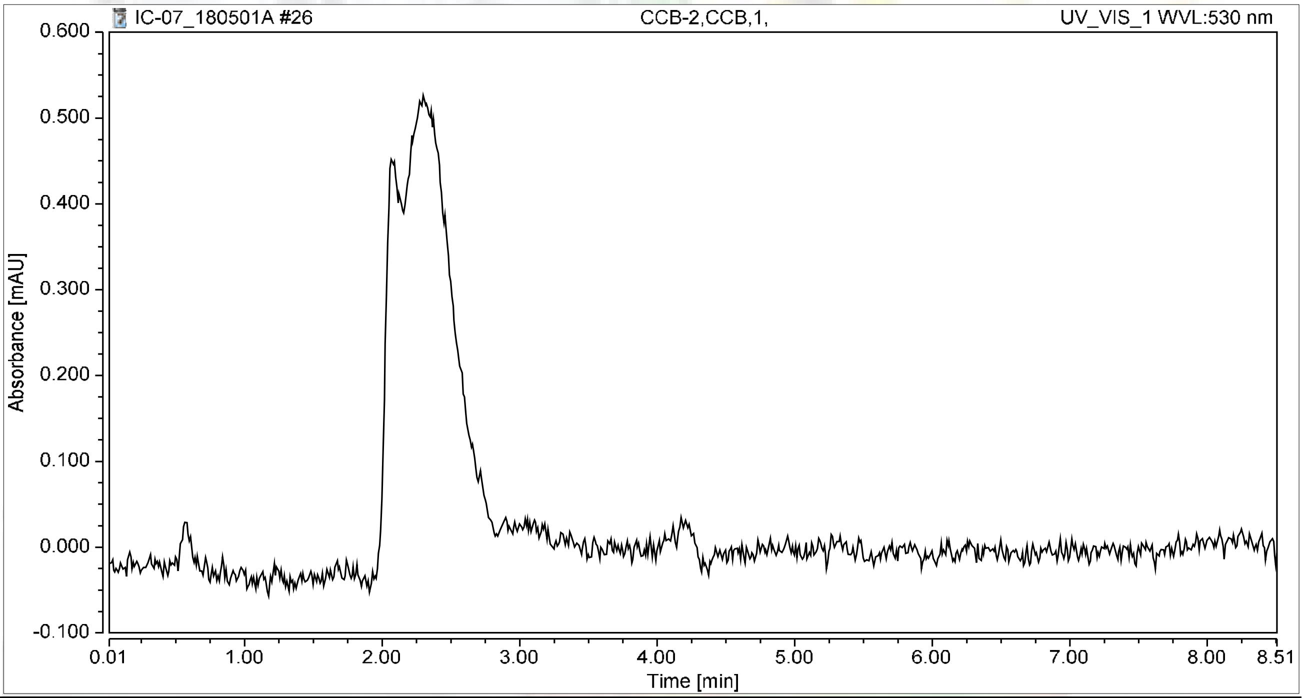
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.592	16.431	100.00	100.00	10.1013
Total:			**2.592**	**16.431**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 11:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

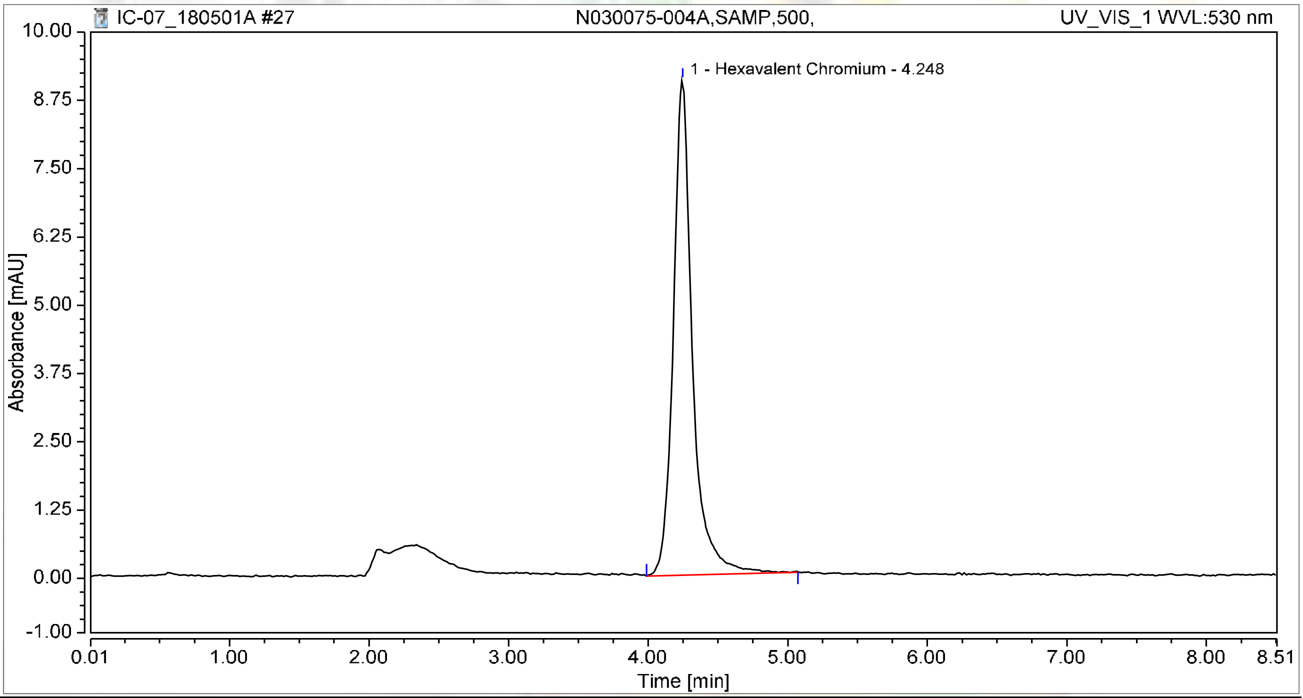
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-004A,SAMP,500,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 11:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

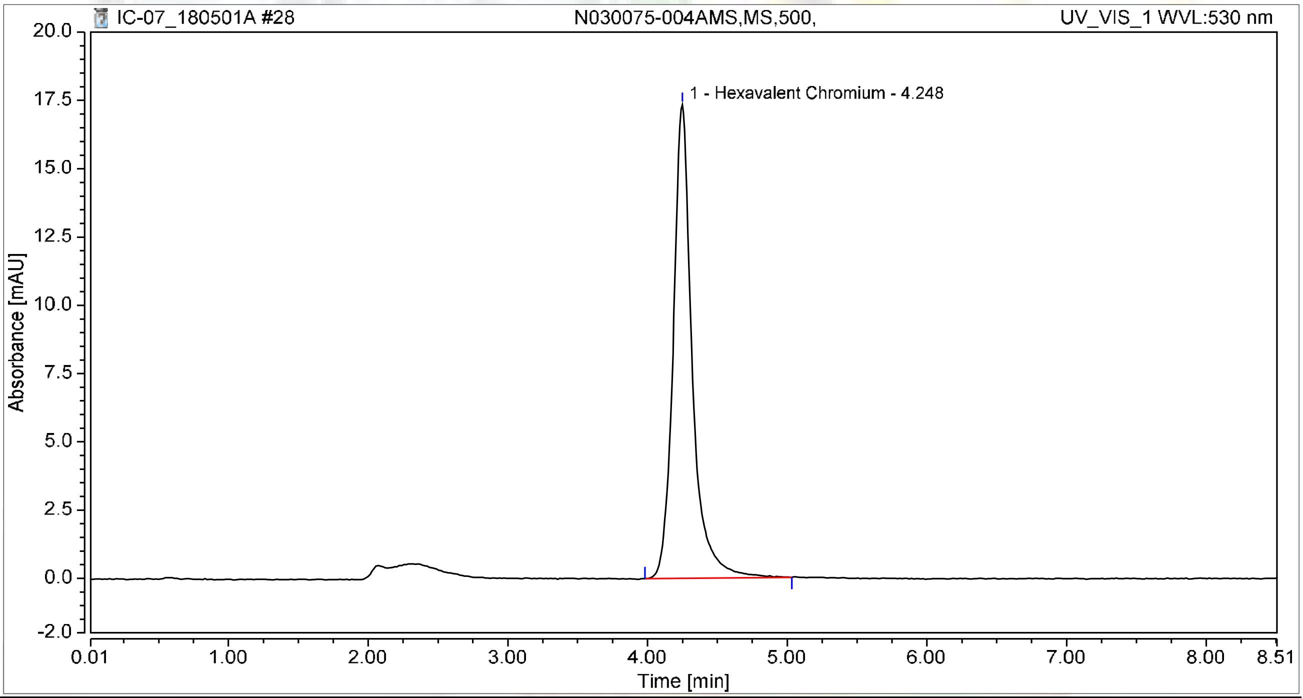
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.441	9.059	100.00	100.00	5.6155
Total:			**1.441**	**9.059**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-004AMS,MS,500,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 11:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

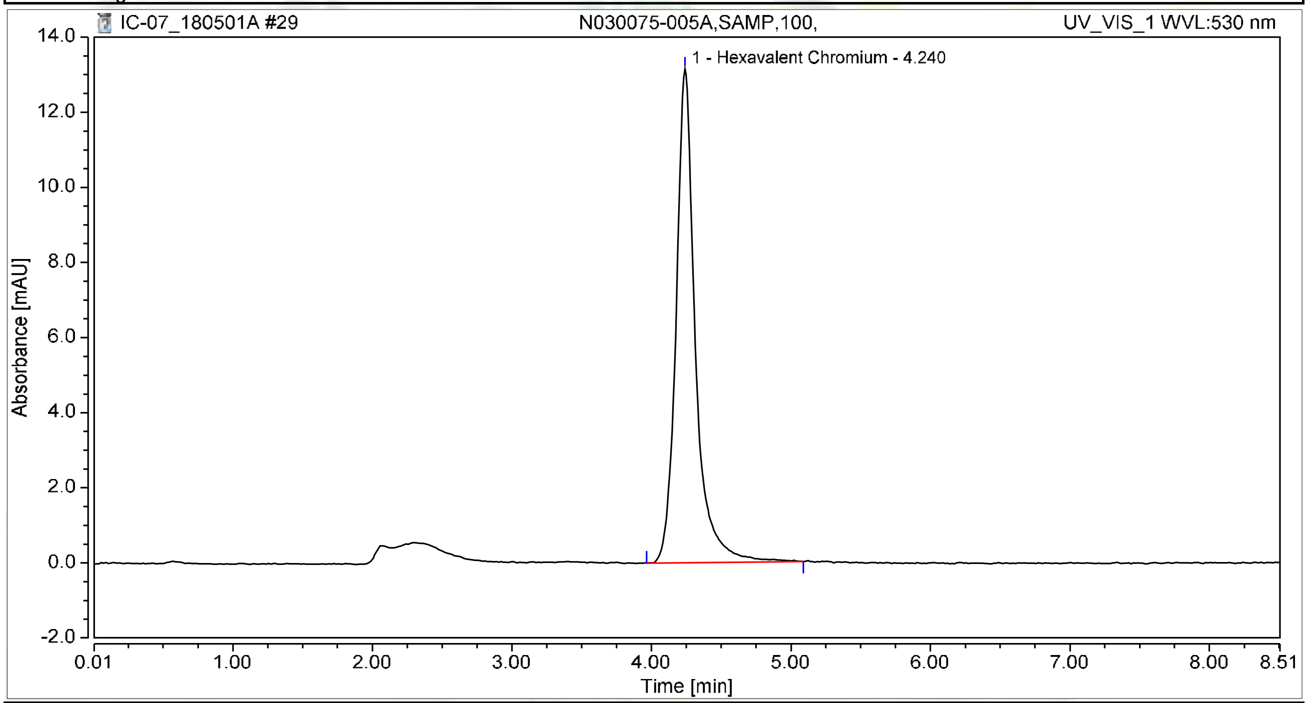
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.728	17.347	100.00	100.00	10.6303
Total:			**2.728**	**17.347**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-005A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

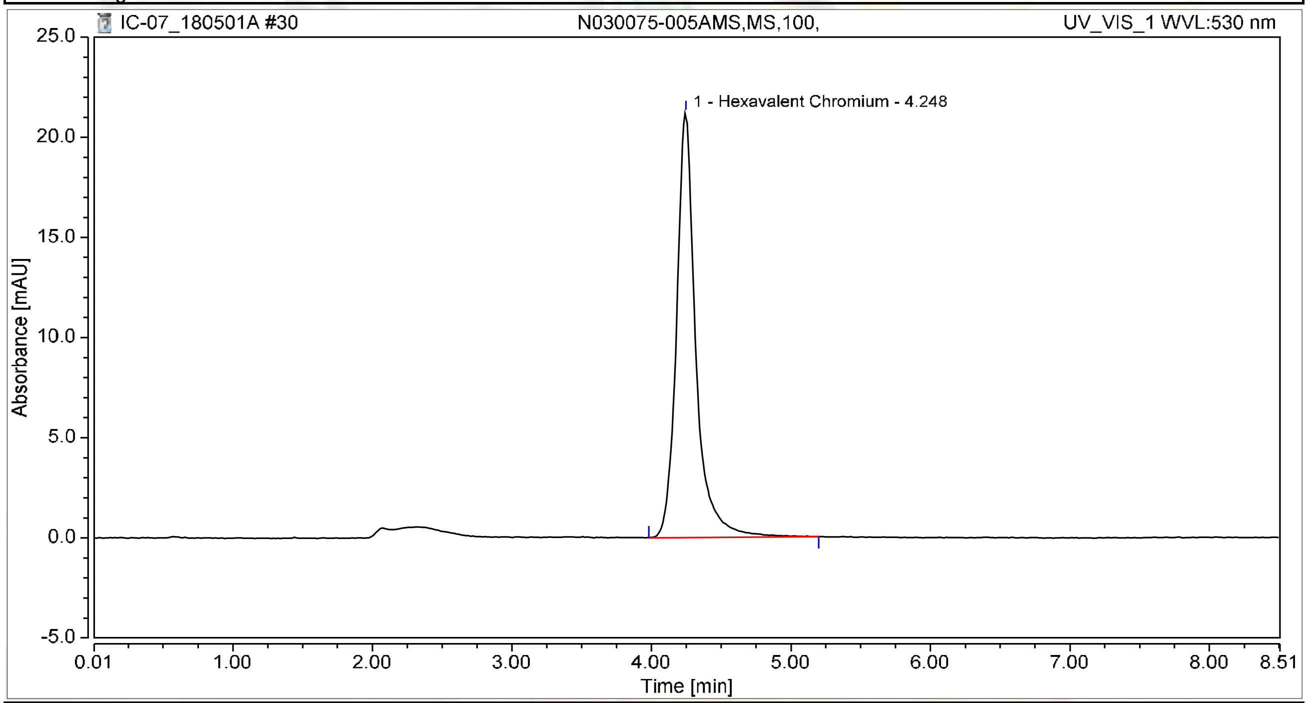
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	2.105	13.150	100.00	100.00	8.2018
Total:			**2.105**	**13.150**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-005AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

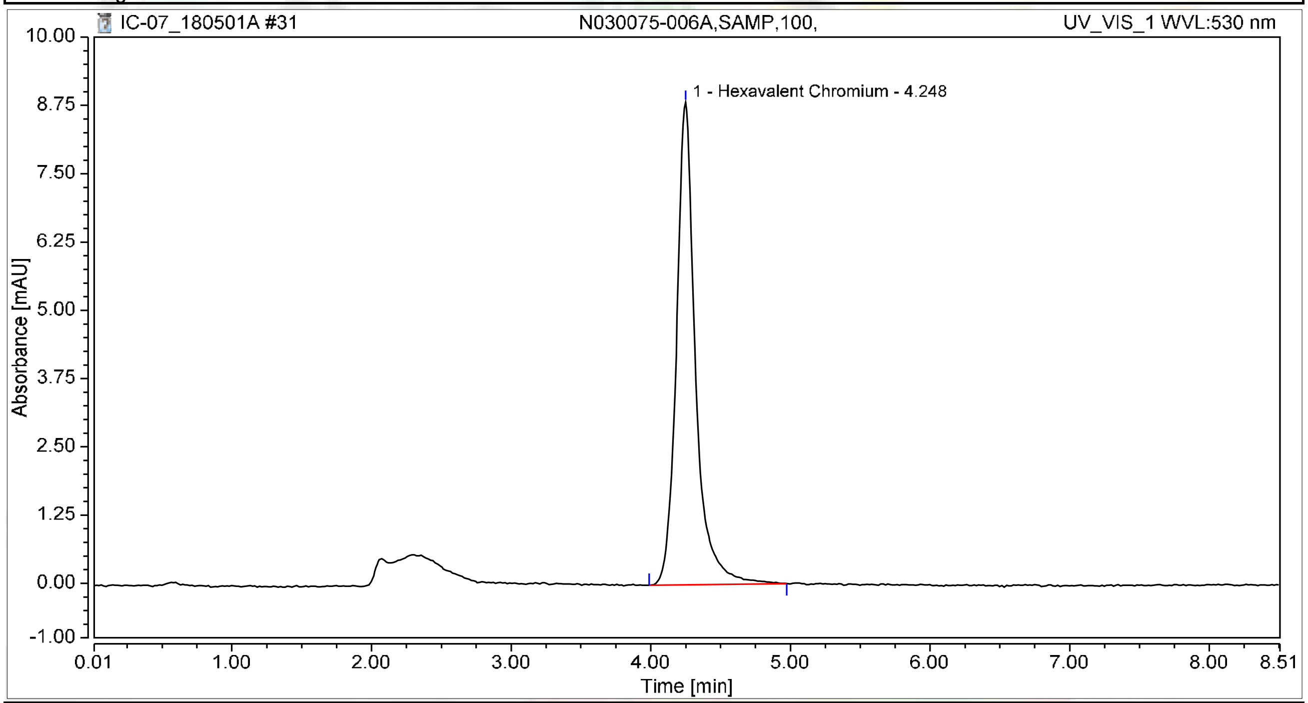
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.408	21.209	100.00	100.00	13.2801
Total:			**3.408**	**21.209**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-006A,SAMP,100,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 12:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

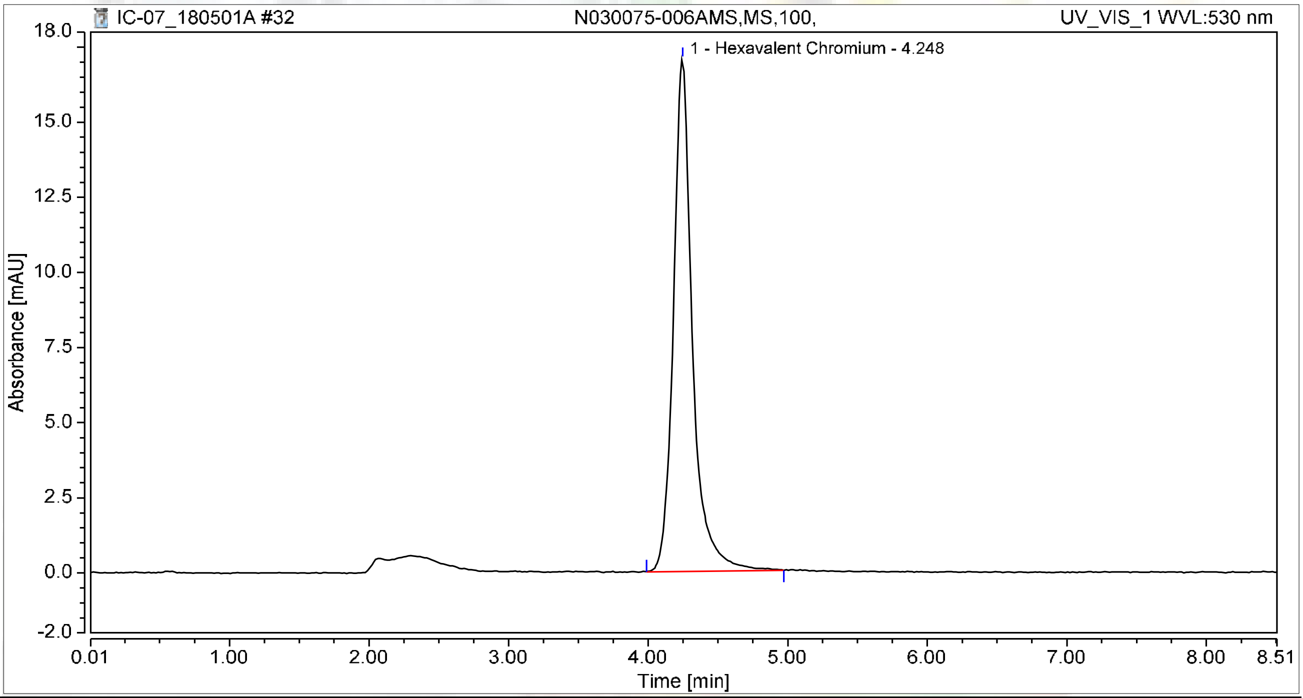
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.395	8.828	100.00	100.00	5.4358
Total:			**1.395**	**8.828**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-006AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 12:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

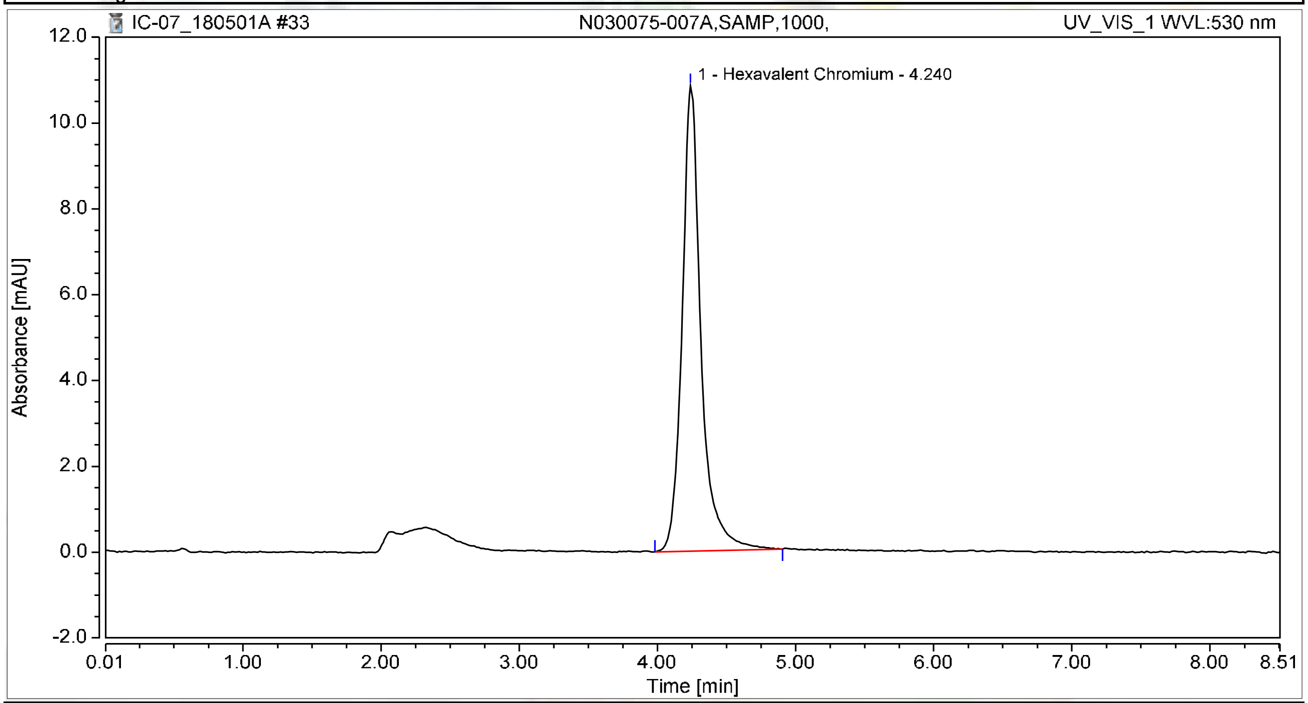
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.700	17.041	100.00	100.00	10.5206
Total:			**2.700**	**17.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-007A,SAMP,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 12:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

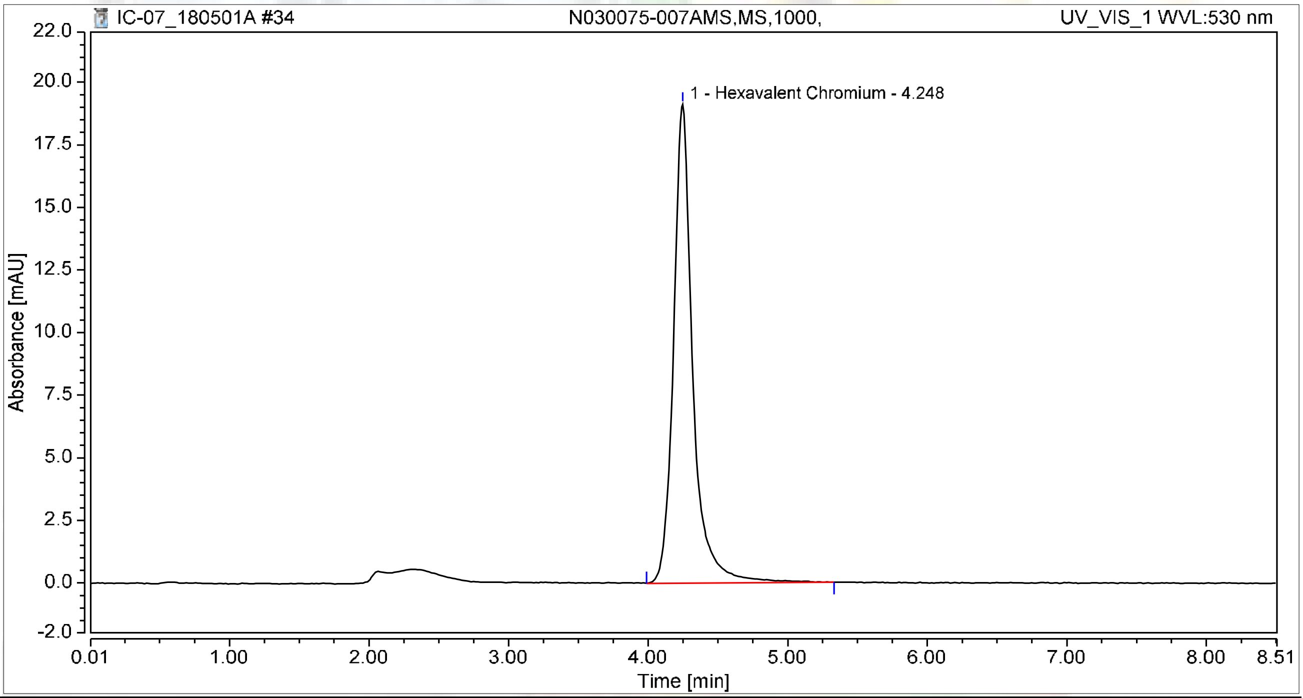
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	1.717	10.851	100.00	100.00	6.6922
Total:			**1.717**	**10.851**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-007AMS,MS,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 12:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

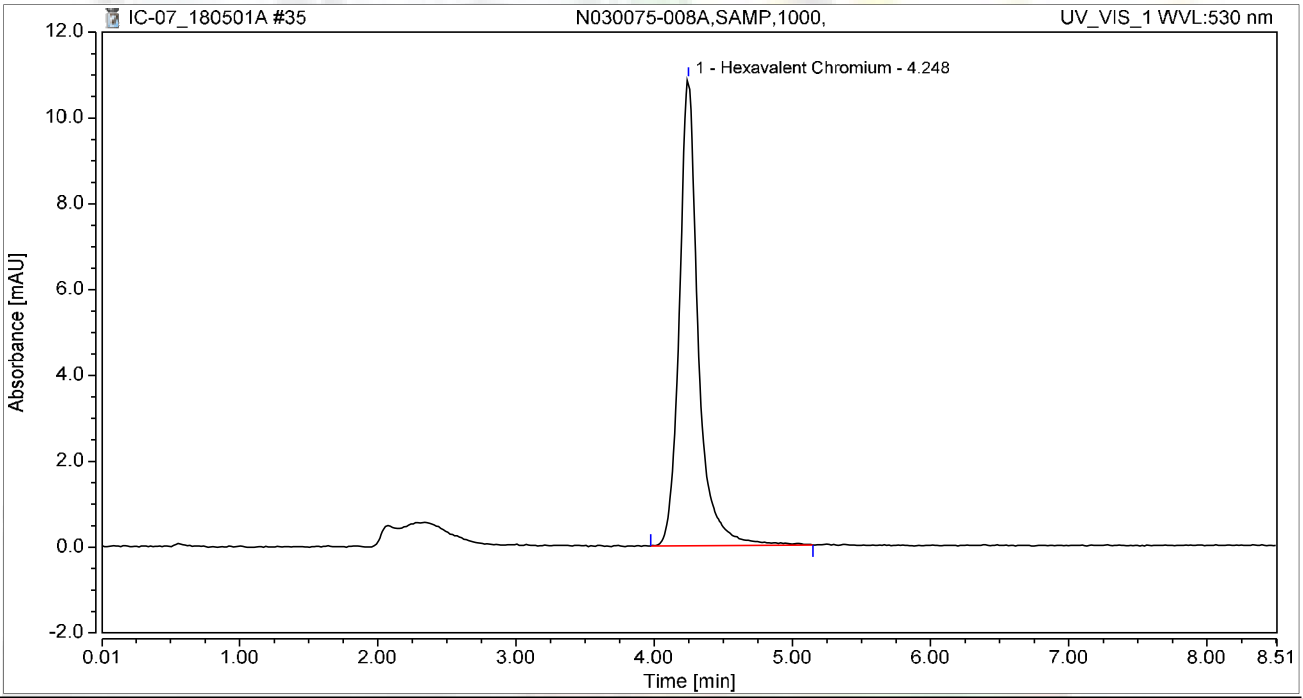
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.070	19.128	100.00	100.00	11.9631
Total:			**3.070**	**19.128**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-008A,SAMP,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

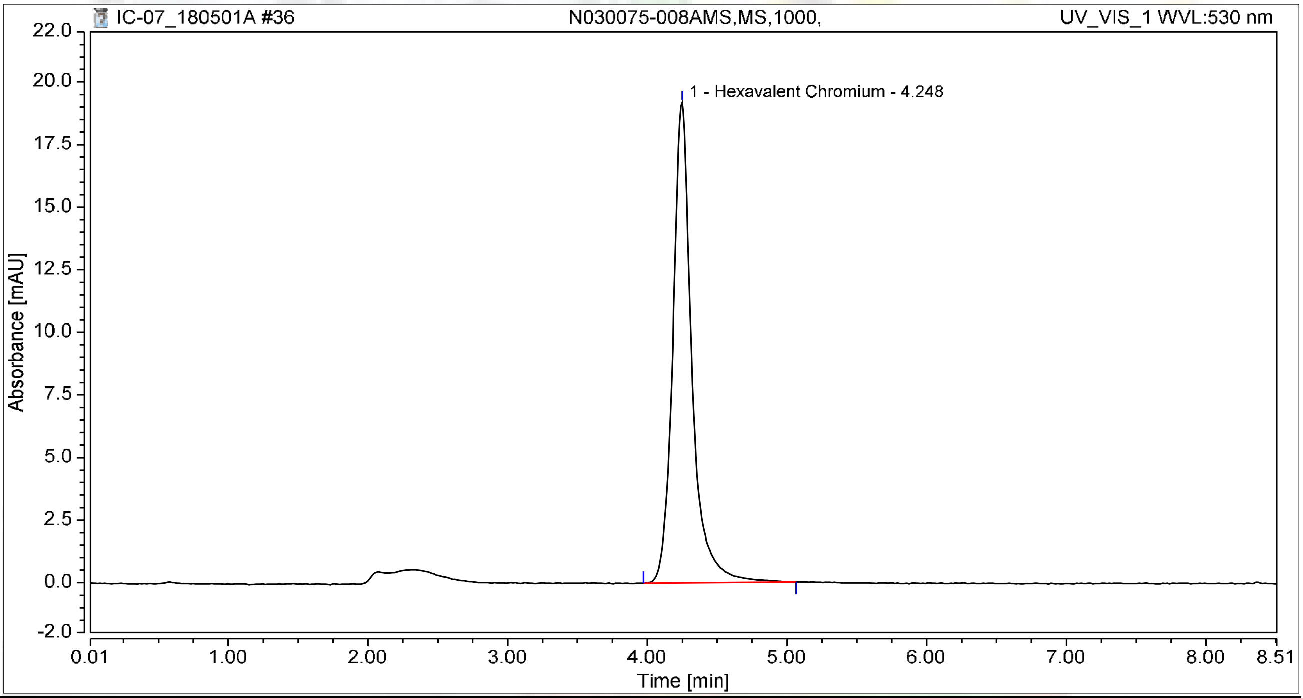
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.732	10.875	100.00	100.00	6.7506
Total:			**1.732**	**10.875**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-008AMS,MS,1000,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 13:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

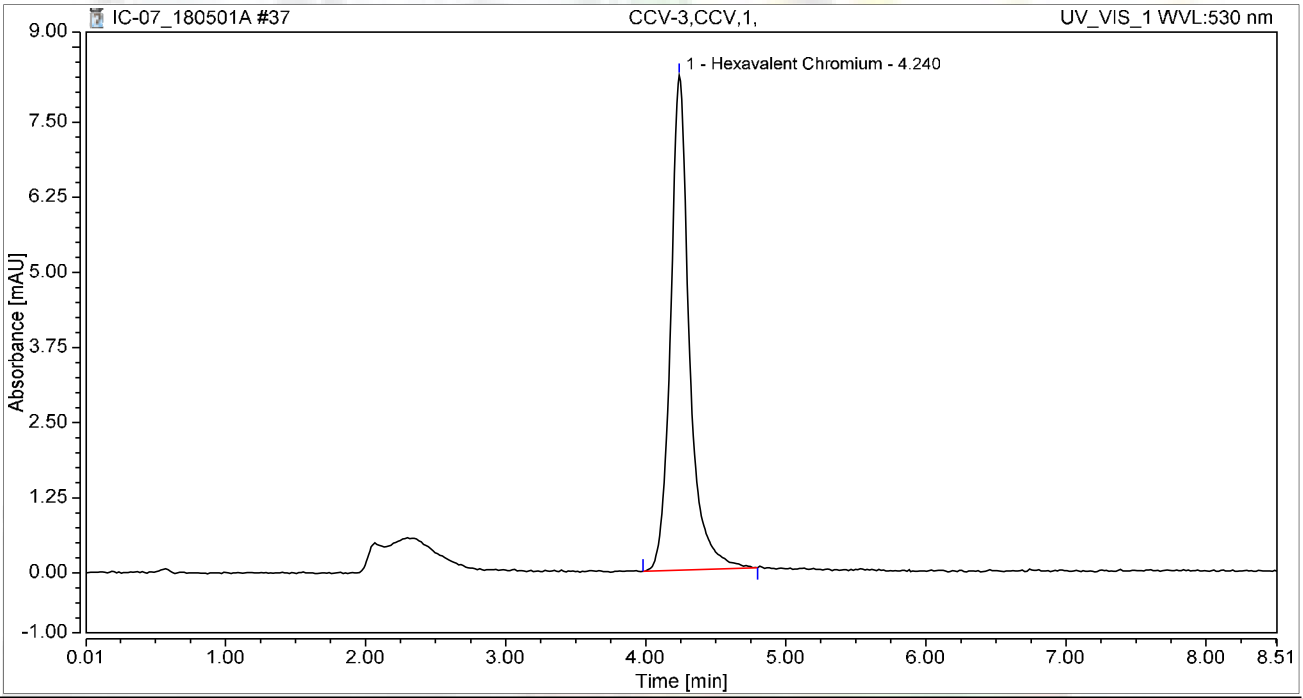
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.044	19.187	100.00	100.00	11.8596
Total:			**3.044**	**19.187**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 13:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

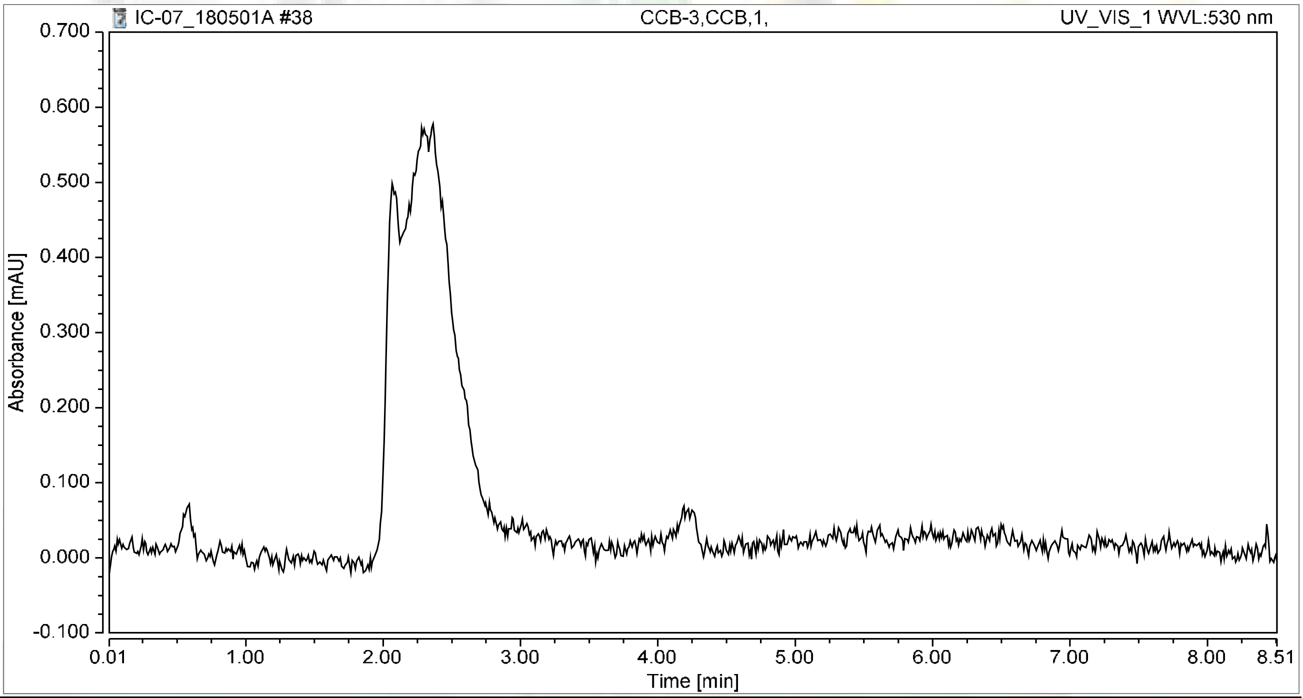
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	1.286	8.237	100.00	100.00	5.0116
Total:			**1.286**	**8.237**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 13:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

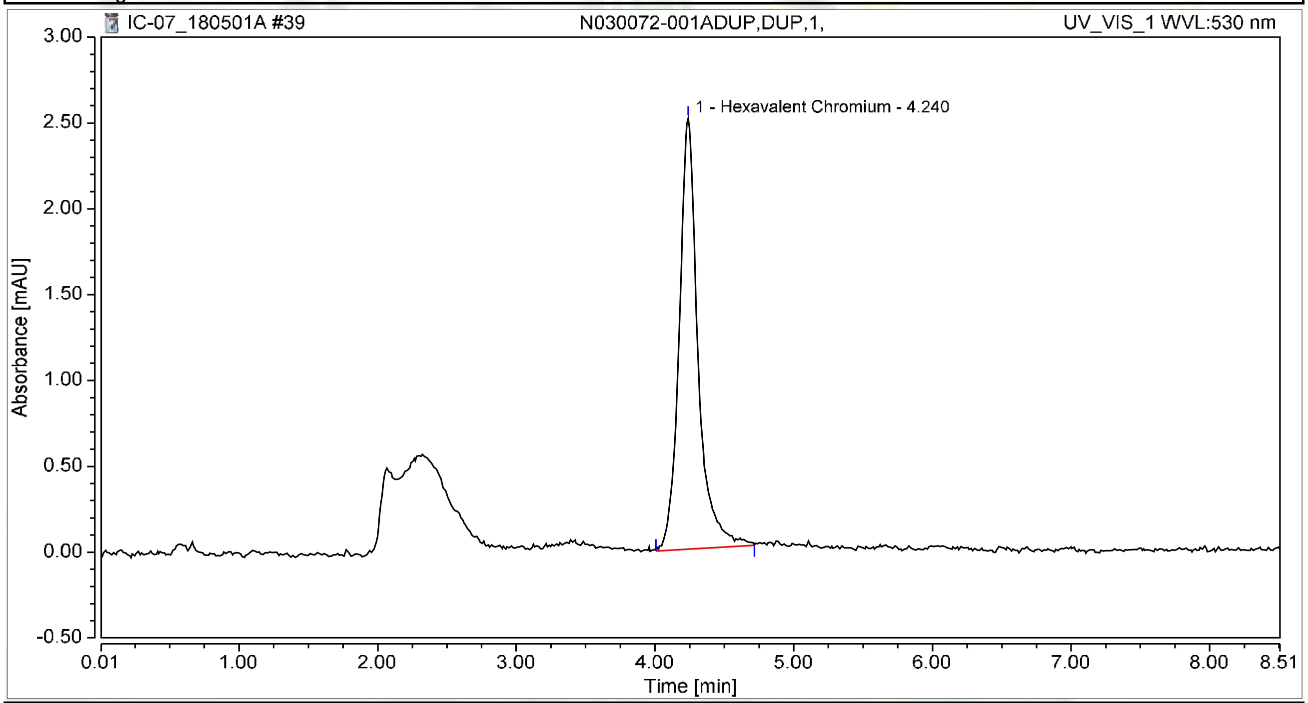
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030072-001ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

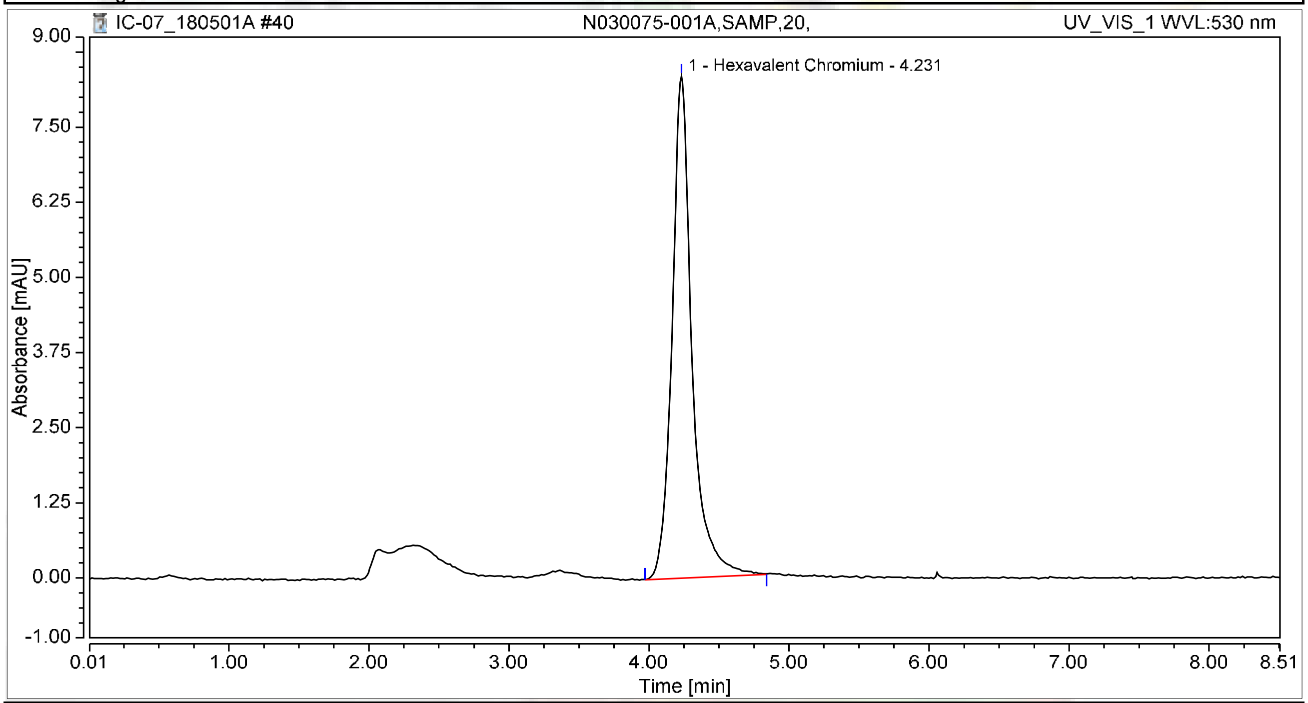
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.395	2.509	100.00	100.00	1.5403
Total:			**0.395**	**2.509**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-001A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 13:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

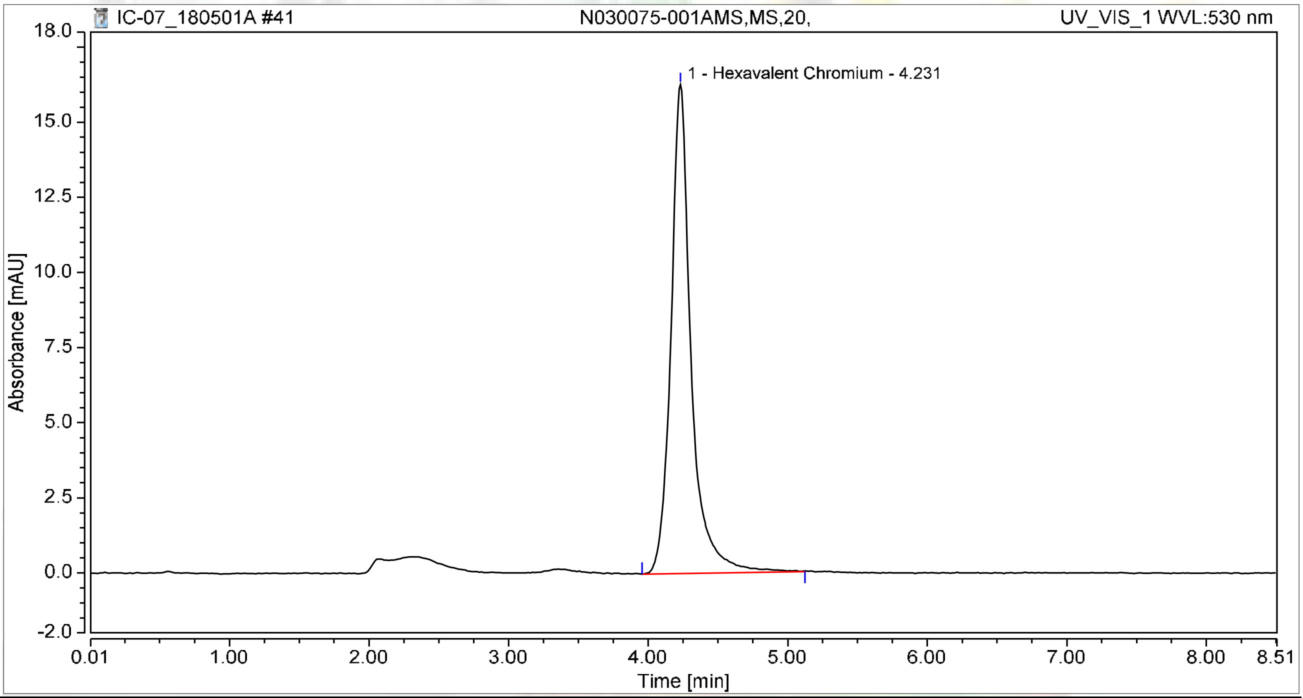
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.382	8.356	100.00	100.00	5.3855
Total:			**1.382**	**8.356**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-001AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 13:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

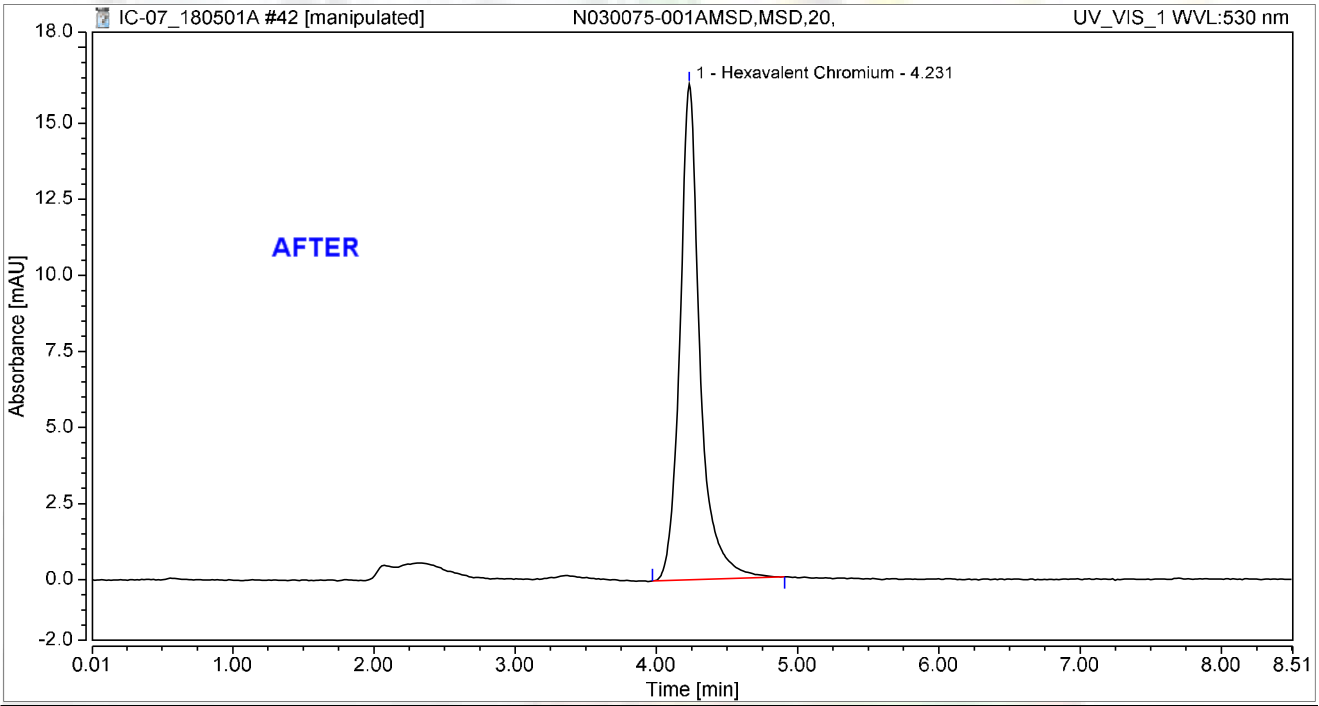
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.726	16.278	100.00	100.00	10.6229
Total:			**2.726**	**16.278**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-001AMSD,MSD,20,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 14:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.687	16.302	100.00	100.00	10.4681
Total:			**2.687**	**16.302**	**100.00**	**100.00**	

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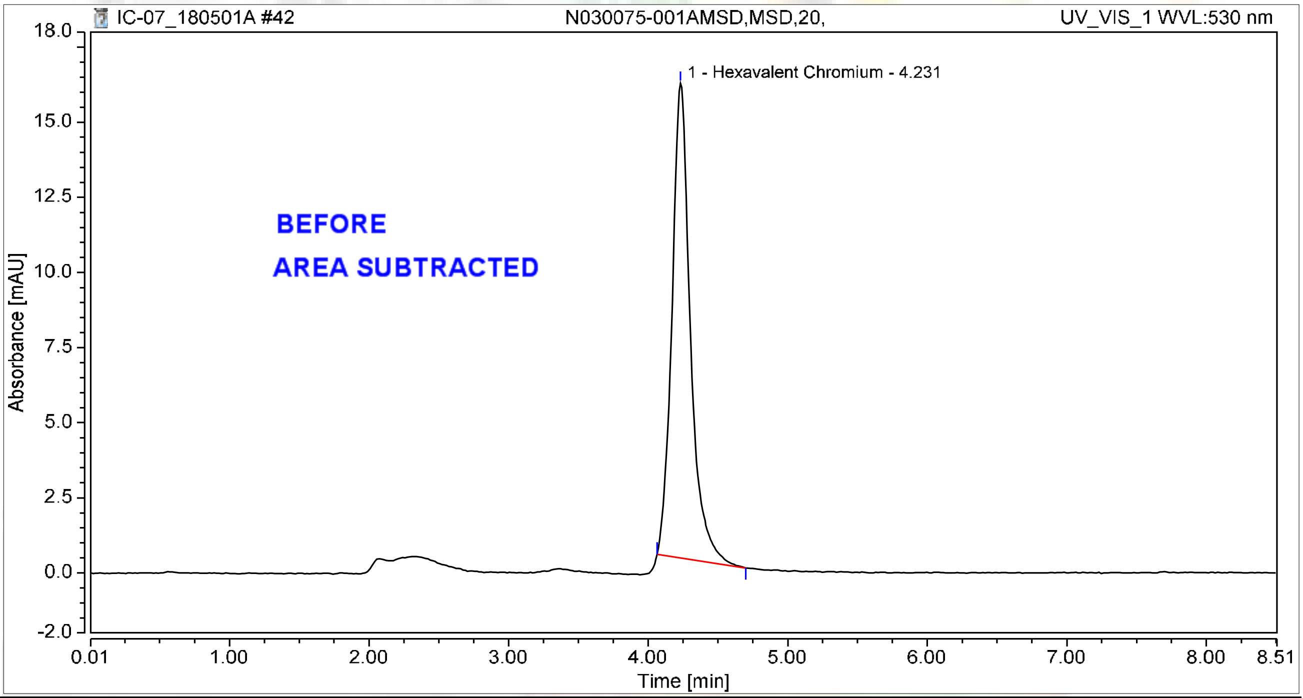
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030075-001AMSD,MSD,20,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 14:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.419	15.787	100.00	100.00	9.4243
Total:			**2.419**	**15.787**	**100.00**	**100.00**	

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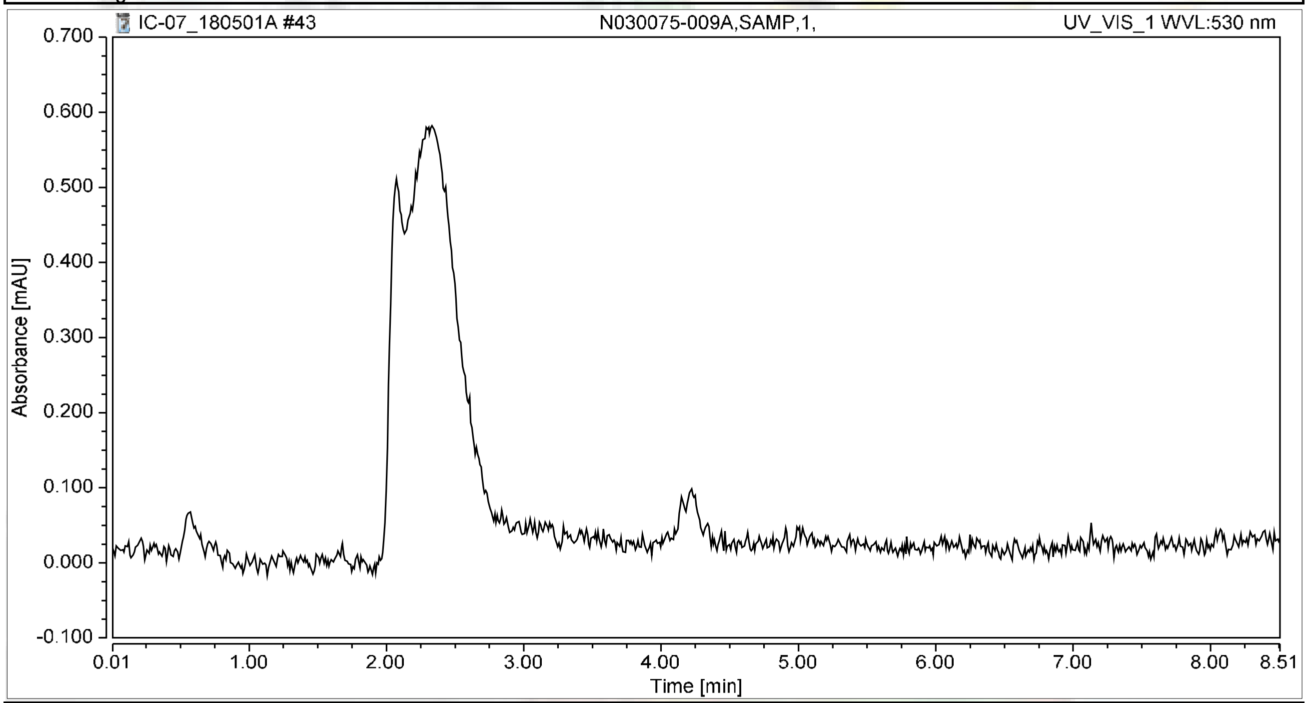
Chromatogram and Results

Injection Details

Injection Name:	**N030075-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

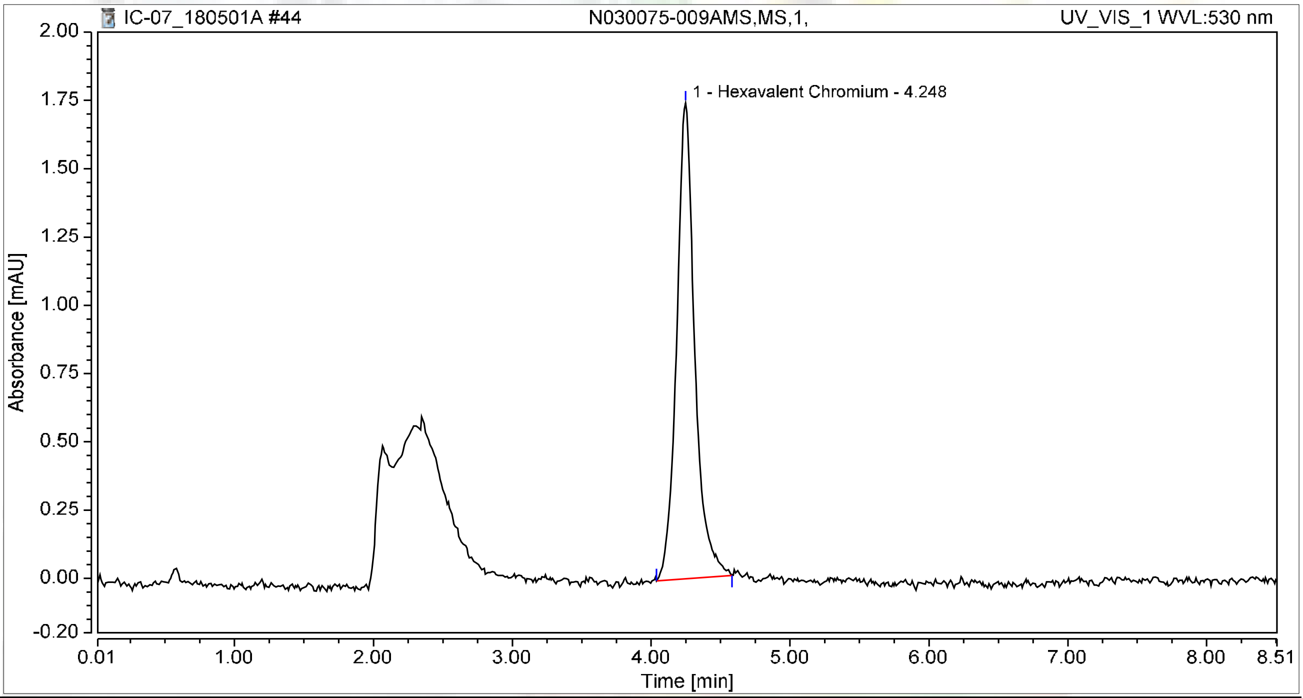
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-009AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 14:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

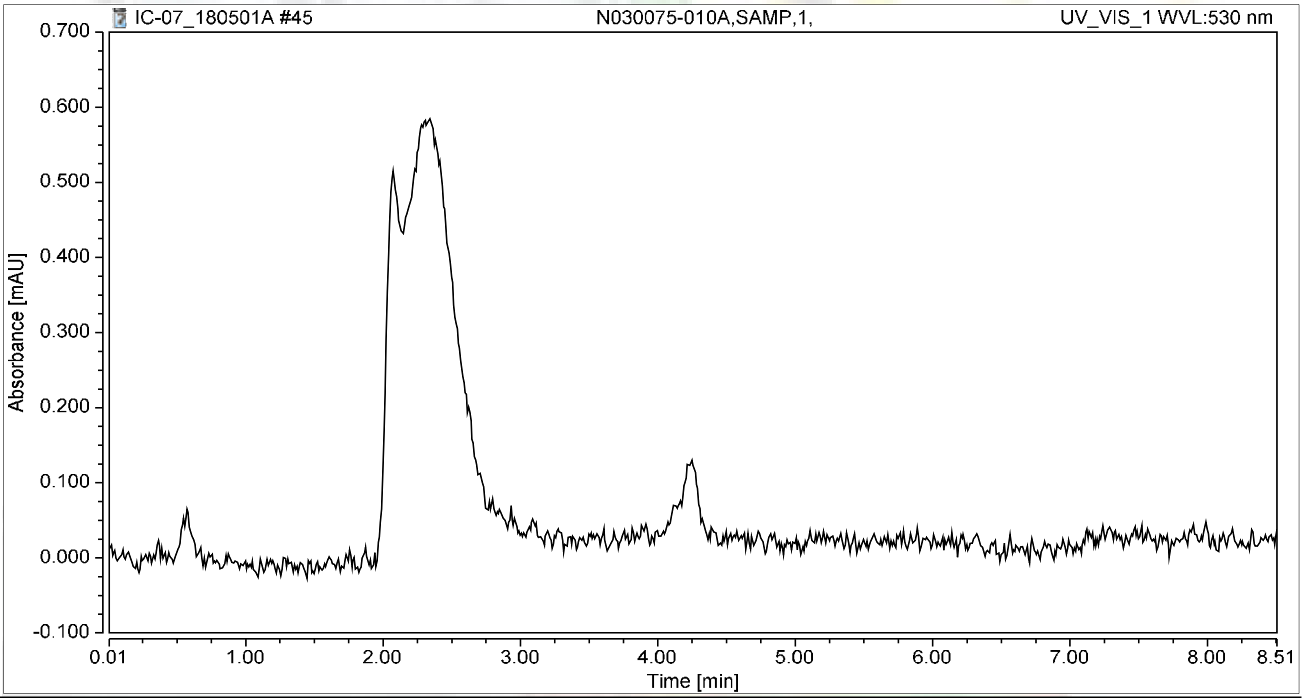
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.263	1.742	100.00	100.00	1.0259
Total:			**0.263**	**1.742**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 14:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

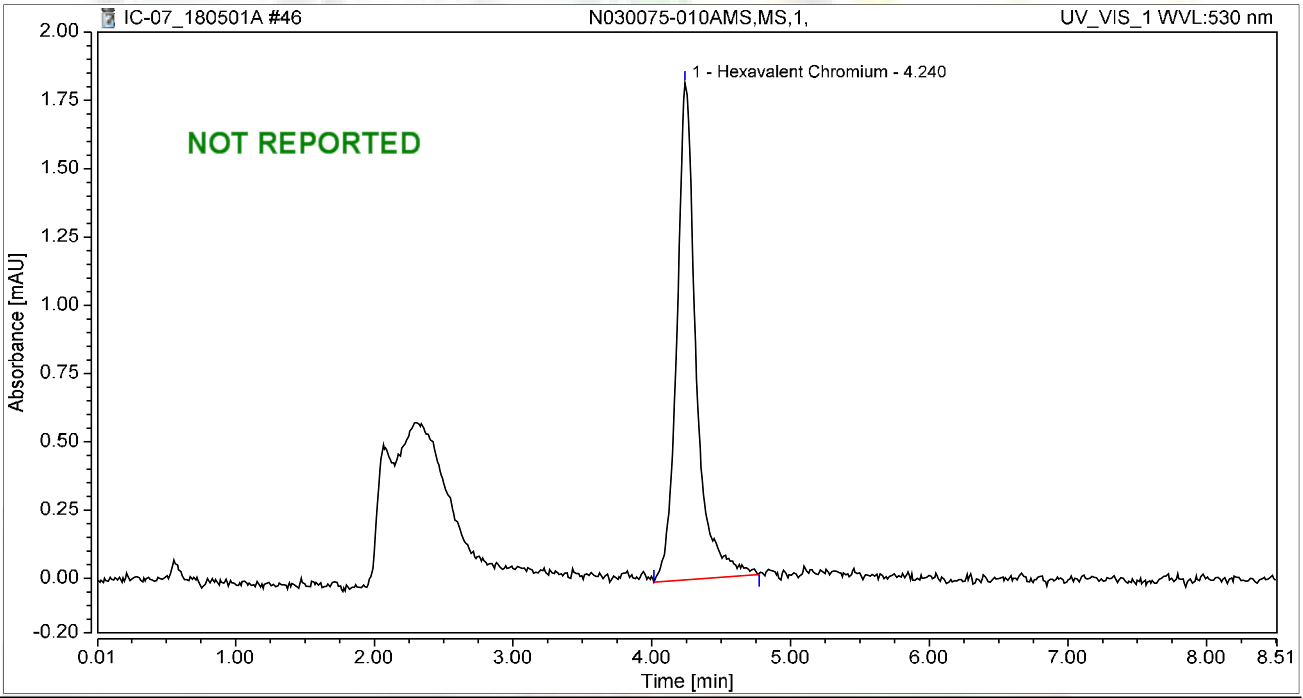
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

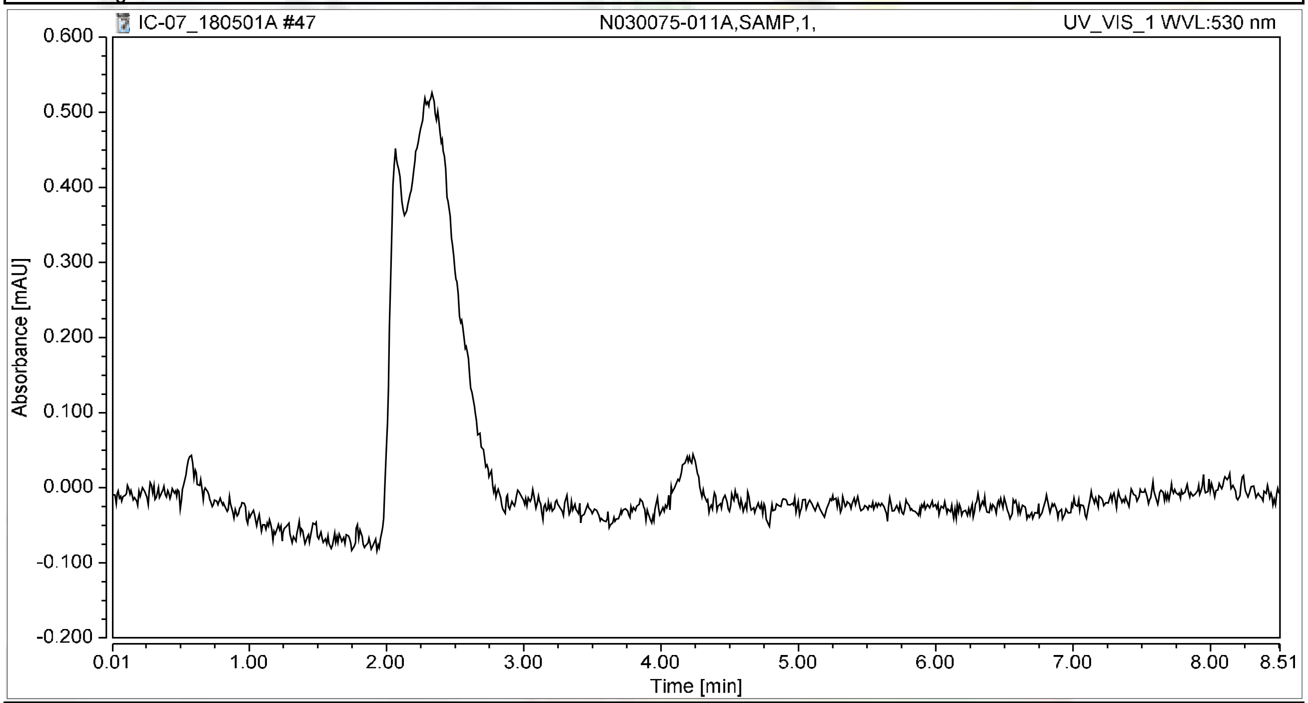
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.294	1.819	100.00	100.00	1.1458
Total:			**0.294**	**1.819**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 14:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

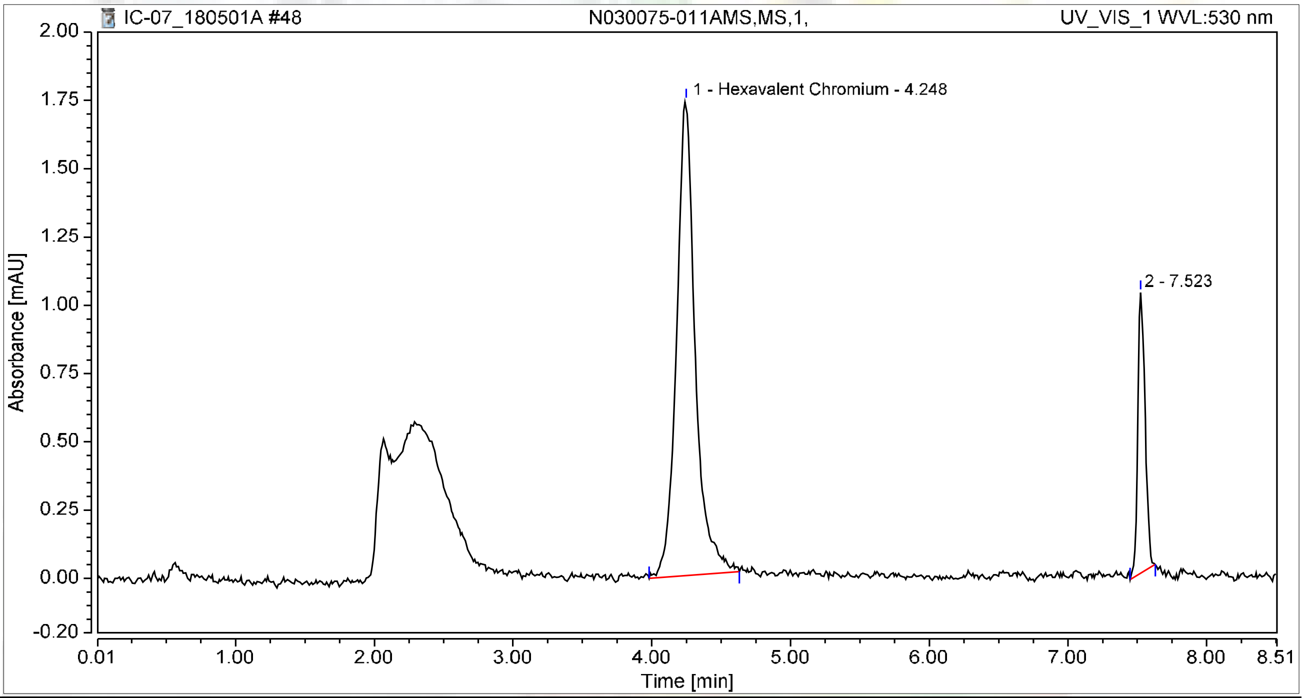
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 15:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

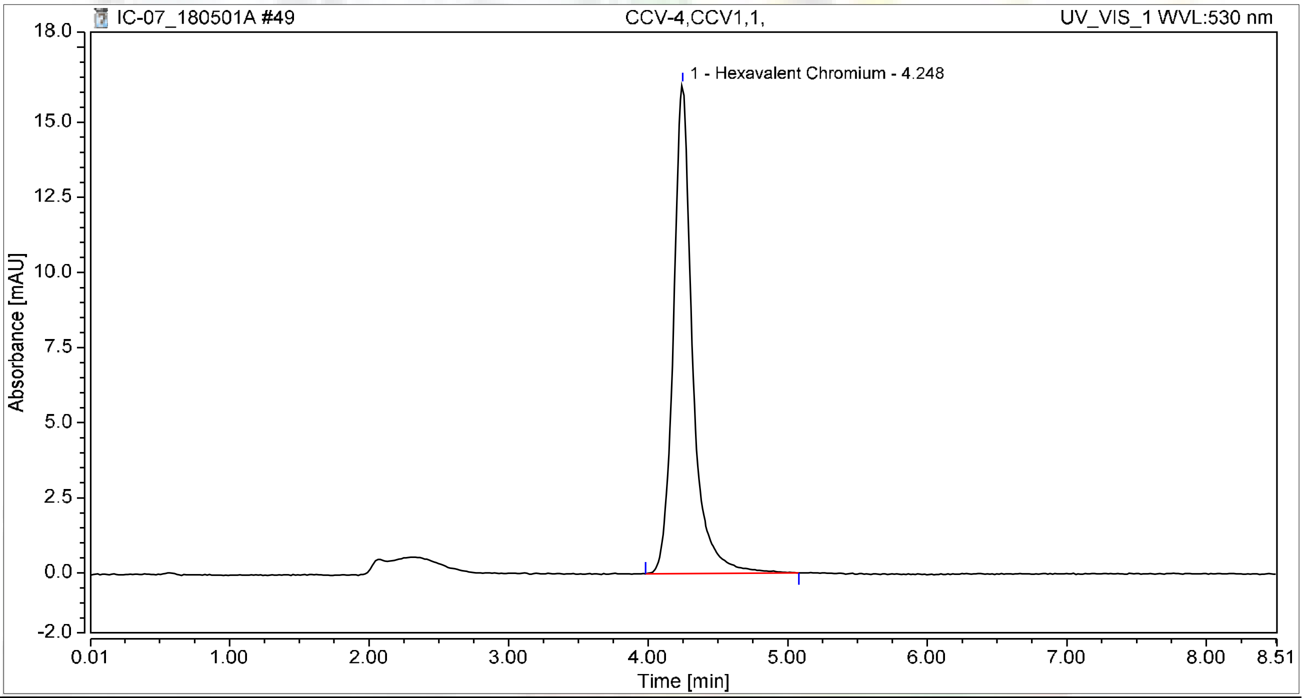
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.273	1.739	81.29	62.82	1.0621
2		7.523	0.063	1.029	18.71	37.18	n.a.
Total:			**0.335**	**2.768**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 15:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

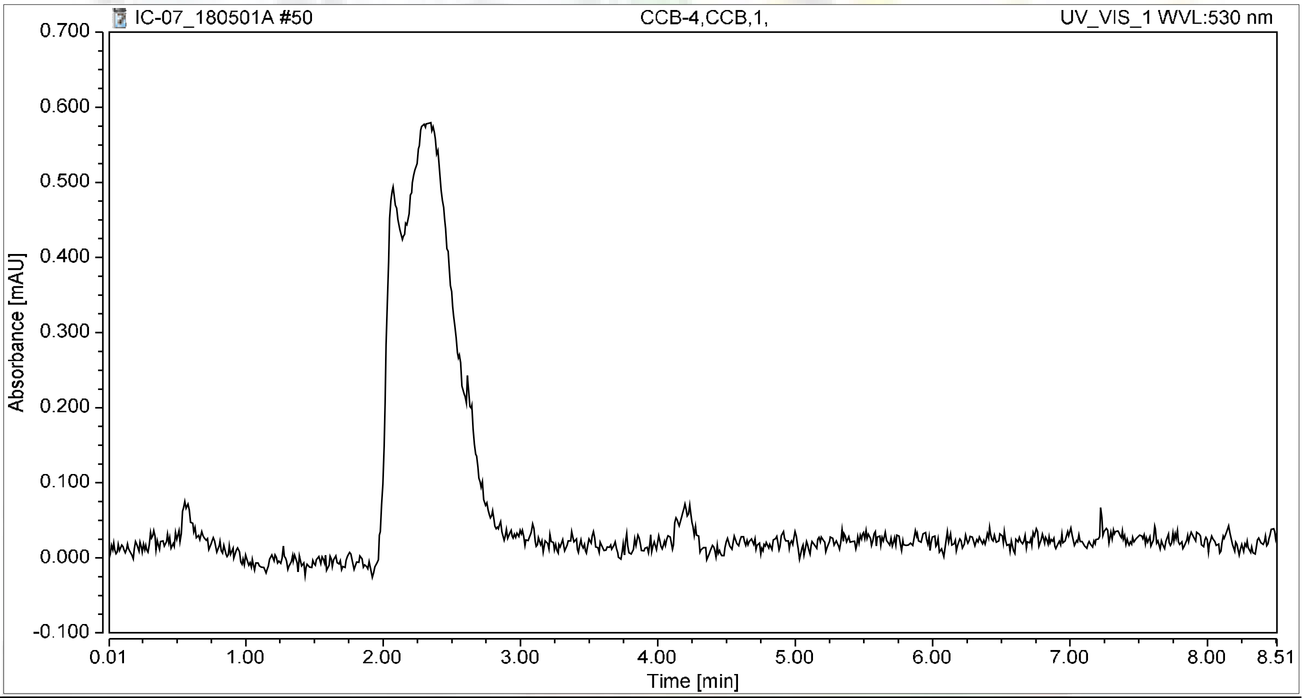
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.593	16.284	100.00	100.00	10.1056
Total:			**2.593**	**16.284**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 15:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

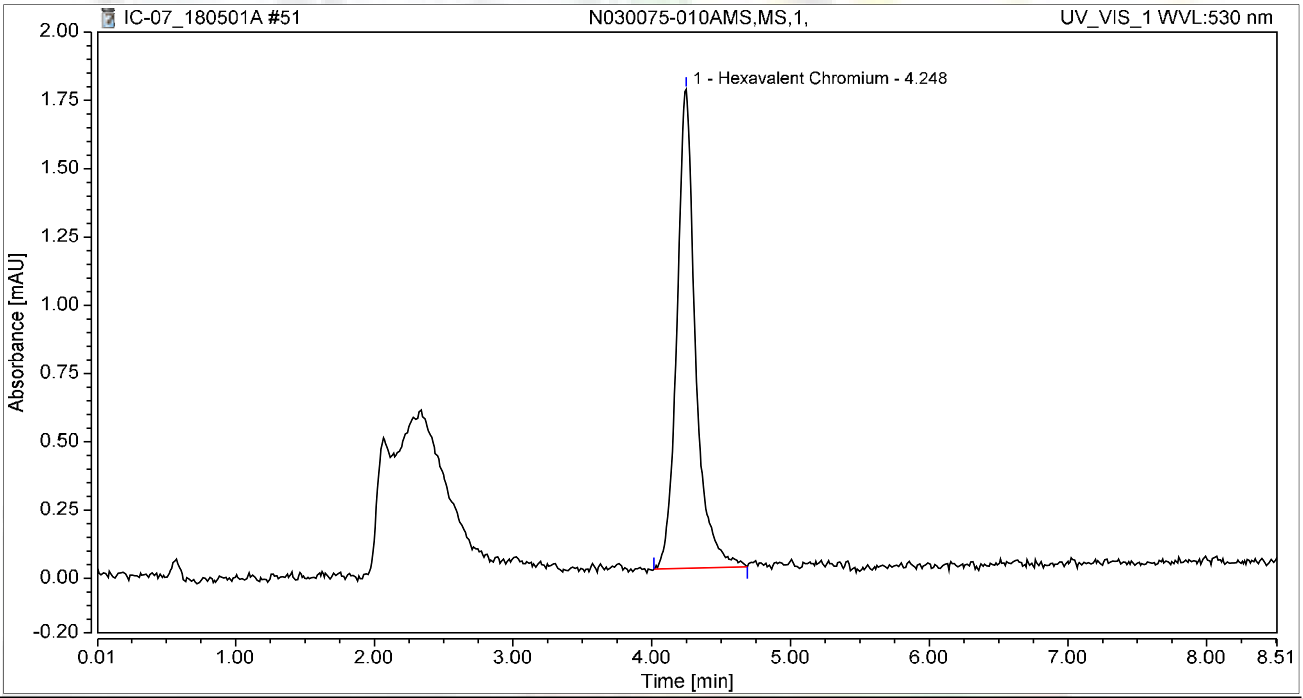
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030075-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 15:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

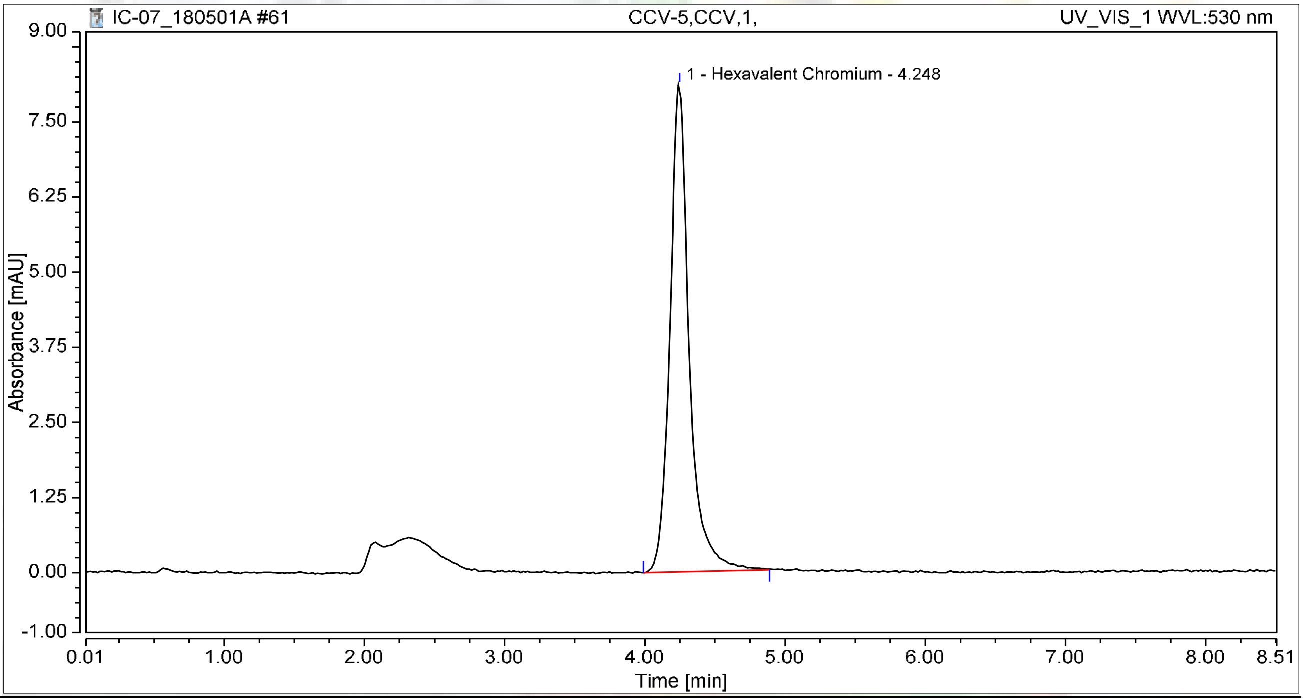
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.273	1.754	100.00	100.00	1.0638
Total:			**0.273**	**1.754**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 17:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

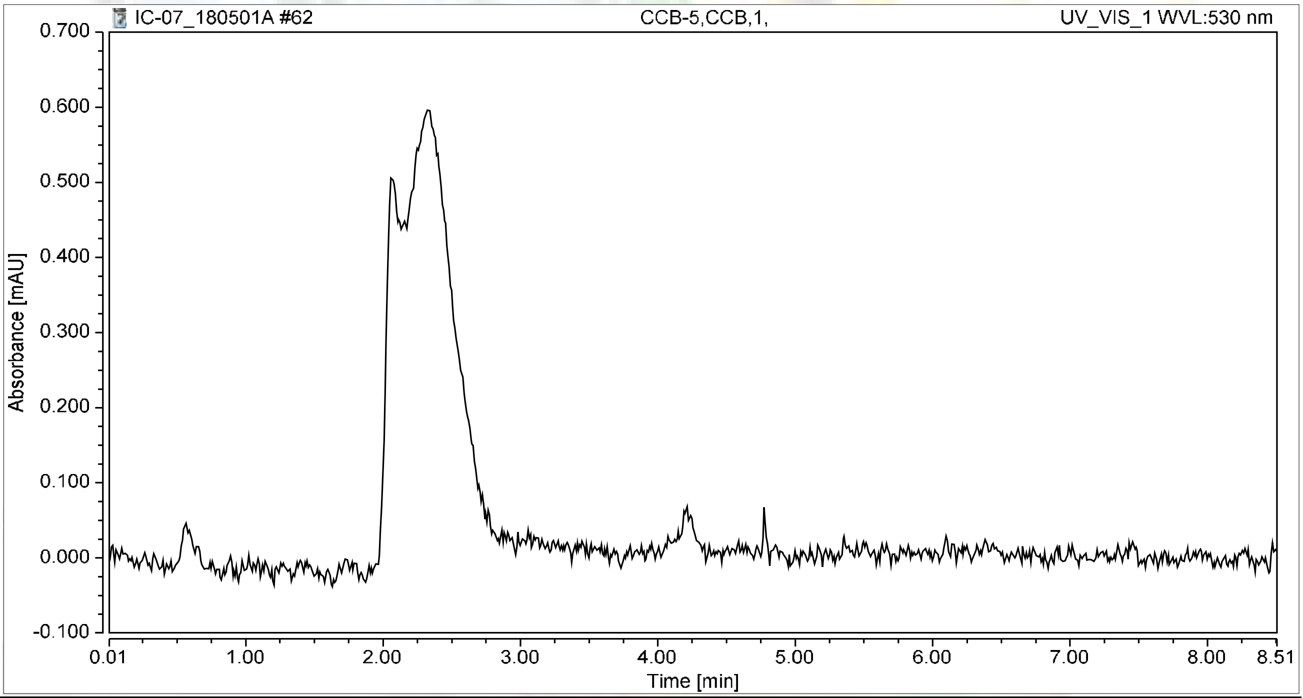
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.294	8.103	100.00	100.00	5.0432
Total:			**1.294**	**8.103**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**01/May/18 17:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123927 **Analyst:** QBM

ASSET #: N030006, N030075 **Date Analyzed:** 5/8/2018

Method: **4500_NO3**

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.		X				
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

Nitrate/Nitrite as N is OLR in N030006-001C @1x. Sample is for dilution.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 5/14/2018

2nd Level Reviewer RJB 05/14/2018 Date:

SAMPLE CALCULATION

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N030075-001C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.9395	*	2
	=	1.879	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 1.9 mg/L

RJB 05/14/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

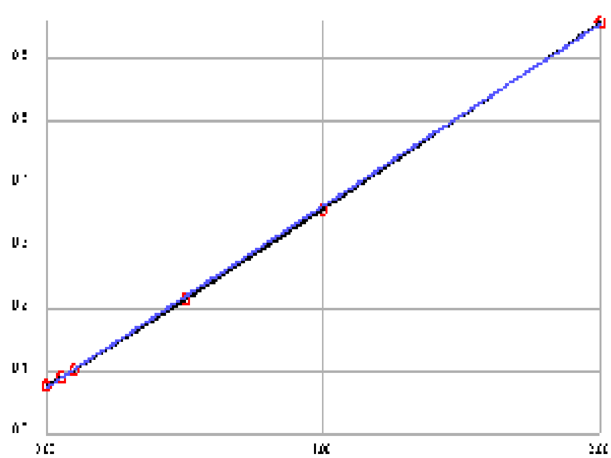
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.291x + 0.0738
Correlation	.999902

Calibrant	Energy	Set	Conc
1	0.0757	0.0000	0.0066
2	0.0914	0.0500	0.0605
3	0.1026	0.1000	0.0990
4	0.2159	0.5000	0.4884
5	0.3606	1.0000	0.9856
6	0.6587	2.0000	2.0099



Notes:

05/14/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

ASSET Laboratories

Date: *09-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **ICV** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.534	0.050	0.5000	0	107	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **CCV** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.535	0.050	0.5000	0	107	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **CCV** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.451	0.050	0.5000	0	90.2	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **CCV** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.468	0.050	0.5000	0	93.6	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **ICB** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **CCB** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.033	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **CCB** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **123927**
Client ID: **CCB** Batch ID: **R123927** TestNo: **SM4500-NO3** Analysis Date: **5/8/2018** SeqNo: **3020585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 05-08-2018 17:02
Time end: 05-08-2018 19:53

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	19:13:39	0.0104		0.0768
2	<BLANK>	19:14:32	0.0131		0.0776
3	<CAL1>	19:15:33	0.0066	[0]	0.0757
4	<CAL2>	19:16:29	0.0605	[0.05]	0.0914
5	<CAL3>	19:17:24	0.0990	[0.1]	0.1026
6	<CAL4>	19:18:24	0.4884	[0.5]	0.2159
7	<CAL5>	19:19:20	0.9856	[1]	0.3606
8	<CAL6>	19:20:16	2.0099	[2]	0.6587
9	,BLANK,BLANK,1, NOT REPORTED	19:21:16	0.0605		0.0914
10	,ICV,ICV,1,	19:22:11	0.5344		0.2293
11	,ICB,ICB,1,	19:23:07	0.0093		0.0765
12	,MB-H2O,MBLK,1,	19:24:08	0.0052		0.0753
13	,LCS-H2O,LCS,1,	19:25:02	0.4894		0.2162
14	,N030006-001C,SAMP,1, NOT REPORTED	19:25:58	2.7112		0.8628
15	,N030006-002C,SAMP,1, NOT REPORTED	19:27:00	0.6488		0.2626
16	,N030006-004C,SAMP,10,	19:27:54	1.4223		0.4877
17	,N030006-004CDUP,DUP,10,	19:28:49	1.4553		0.4973
18	,N030006-003C,SAMP,10,	19:29:51	0.9474		0.3495
19	,N030006-003CMS,MS,10,	19:30:47	1.3350		0.4623
20	,N030006-003CMSD,MSD,10,	19:31:41	1.3371		0.4629
21	,BLANK,	19:32:42	0.0592		0.0910
22	,CCV-1,CCV,1,	19:33:38	0.5354		0.2296
23	,CCB-1,CCB,1,	19:34:39	0.0331		0.0834
24	,N030006-011C,SAMP,1,	19:35:33	0.0475		0.0876
25	,N030006-013C,SAMP,1,	19:36:29	0.0502		0.0884
26	,N030006-014C,SAMP,1,	19:37:30	0.0296		0.0824

RB 05/14/2018

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N030006-016C,SAMP,1,	19:38:12	0.0214		0.0800
28	,N030006-018C,SAMP,1,	19:39:02	0.0348		0.0839
29	,N030006-005C,SAMP,1,	19:39:44	1.1241		0.4009
30	,N030006-007C,SAMP,1,	19:40:33	1.3388		0.4634
31	,N030006-008C,SAMP,2,	19:41:17	0.7138		0.2815
32	,N030075-001C,SAMP,2,	19:41:59	0.9395		0.3472
33	,BLANK,	19:42:48	0.0217		0.0801
34	,CCV-2,CCV,1,	19:43:30	0.4509		0.2050
35	,CCB-2,CCB,1,	19:44:14	0.0093		0.0765
36	,N030075-002C,SAMP,20,	19:45:02	0.5698		0.2396
37	,N030075-003C,SAMP,100,	19:45:45	0.7701		0.2979
38	,N030075-004C,SAMP,50,	19:46:27	0.5358		0.2297
39	,N030075-005C,SAMP,1,	19:47:17	0.4602		0.2077
40	,N030075-006C,SAMP,20,	19:48:00	1.2185		0.4284
41	,N030075-007C,SAMP,20,	19:48:42	1.0928		0.3918
42	,N030075-008C,SAMP,20,	19:49:32	1.1732		0.4152
43	,BLANK,	19:50:14	0.0296		0.0824
44	,CCV-3,CCV,1,	19:50:57	0.4681		0.2100
45	,CCB-3,CCB,1,	19:51:45	0.0038		0.0749

RJB 05/14/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Reagent ID #
Ammonium Chloride reagent/Buffer: R180504F
Color reagent: R180425A
2% Copper Sulfate: R180504E
Ammonium Hydroxide: CINV-180423A

Date Analyzed: 5/8/2018
Time Analyzed: 5:02 PM
Analyzed By: QBM

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N030006-001C		8.48							
N030006-002C		7.55							
N030006-003C		7.79							
N030006-004C		7.90							
N030006-005C		7.52							
N030006-007C		8.15							
N030006-008C		7.87							
N030006-011C		7.34							
N030006-013C		7.41							
N030006-014C		7.8							
N030006-016C		7.83							
N030006-018C		8.05							
N030075-001C		7.88							
N030075-002C		6.84							
N030075-003C		8.82							
N030075-004C		8.81							
N030075-005C		8.37							
N030075-006C		7.1							
N030075-007C		7.74							
N030075-008C		8.08							

Advanced Technology Laboratories, Inc.
Book # 1

RB 05/14/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Ave**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05

Method Blank

Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67912 **Instrument ID:** ICPMS-02
ASSET #: N030075 **Analyst:** CEI
Method: **Date Analyzed:** 5/12/2018

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X		X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments: & Se
%RSD of As in LLCCV-1 failed. However, %Rec of As passed criteria.
%RSD of Se in LLICV failed. However, %Rec of Se passed criteria.
and LLCCV2

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 5/15/18
2nd Level Reviewer 5/15/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N030075-001D** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 99.9166 * 1 * (25/25)

Chromium , ug/L = 99.9166

Reporting results in two significant figures,

Chromium , ug/L = 100

% RSD SUMMARY

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

PERCENT RSD SUMMARY: 180512B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.055	18.54	15	<PQL	0.068	15.54	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.46	5.17	15	PASS	0.46	10.66	15	PASS
Std3-5/50 ppb	ICAL	1	5.056	4.021	15	PASS	5.089	2.59	15	PASS
Std4-10/100 ppb	ICAL	1	10.0081	0.93	15	PASS	9.82	1.54	15	PASS
Std5-20/200 ppb	ICAL	1	20.3	1.55	15	PASS	20.02	0.31	15	PASS
Std6-40/400 ppb	ICAL	1	40.22	0.93	15	PASS	40.49	0.65	15	PASS
Std7-100/1000 ppb	ICAL	1	101.11	1.083	15	PASS	100.089	0.64	15	PASS
Std8-200/2000 ppb	ICAL	1	199.37	0.36	15	PASS	199.86	0.41	15	PASS
ICV	ICV	1	10.56	0.61	15	PASS	105.43	0.22	15	PASS
ICB	ICB	1	0.099	14.05	15	PASS	0.14	25.11	15	<PQL
LLICV	CCV1	1	1.035	3.12	20	PASS	0.56	1.16	20	PASS
ICSA1	ICSA	1	0.026	89.92	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.69	1.82	15	PASS	17.82	0.87	15	PASS
MB-67912	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-67912	LCS	1	10.61	0.21	15	PASS	105.53	0.83	15	PASS
N030073-002B	SAMP	1	35.19	0.16	15	PASS	<0.000	N/A	15	<PQL
N030073-002B	SAMP	5	7.38	1.54	15	PASS	<0.000	N/A	15	<PQL
N030073-002B	SAMP	25	1.44	2.79	15	PASS	<0.000	N/A	15	<PQL
N030073-002B-PS	PS	1	45.13	2.22	15	PASS	100.63	2.34	15	PASS
N030073-002B-PS	PS	5	9.56	1.69	15	PASS	21.18	0.55	15	PASS
N030073-002B-MS	MS	1	45.0088	0.68	15	PASS	99.61	0.55	15	PASS
N030073-002B-MS	MS	5	9.35	1.038	15	PASS	20.76	0.66	15	PASS
N030073-002B-MSD	MSD	1	45.42	1.64	15	PASS	99.33	1.4	15	PASS
CCV1	CCV	1	20.096	1.063	15	PASS	20.39	1.51	15	PASS
CCB1	CCB	1	0.00023	2922.62	15	<PQL	<0.000	N/A	15	<PQL
N030073-002B-MSD	MSD	5	9.47	2.01	15	PASS	20.84	1.04	15	PASS
N030073-003B	SAMP	1	3.79	0.36	15	PASS	<0.000	N/A	15	<PQL
N030073-003B	SAMP	5	0.78	2.23	15	PASS	<0.000	N/A	15	<PQL
N030073-004B	SAMP	1	0.72	2.72	15	PASS	<0.000	N/A	15	<PQL
N030073-004B	SAMP	5	0.11	8.07	15	PASS	<0.000	N/A	15	<PQL
N030073-005B	SAMP	1	185.97	0.82	15	PASS	<0.000	N/A	15	<PQL
N030073-005B	SAMP	5	39.27	1.3	15	PASS	<0.000	N/A	15	<PQL
N030073-006B	SAMP	1	191.91	0.59	15	PASS	<0.000	N/A	15	<PQL
N030073-006B	SAMP	5	40.0085	0.26	15	PASS	<0.000	N/A	15	<PQL
N030073-007B	SAMP	1	1.12	2.84	15	PASS	0.23	5.61	15	PASS
CCV2	CCV	1	20.099	0.32	15	PASS	20.26	0.98	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0057	79.82	15	<PQL
N030073-007B	SAMP	5	0.19	2.061	15	PASS	<0.000	N/A	15	<PQL
N030073-008B	SAMP	1	73.76	0.75	15	PASS	14.28	0.52	15	PASS
N030073-008B	SAMP	5	14.89	1.41	15	PASS	2.85	2.96	15	PASS

PERCENT RSD SUMMARY: 180512B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030073-009B	SAMP	1	267.053	2.5	15	PASS	<0.000	N/A	15	<PQL
N030073-009B	SAMP	5	55.45	0.69	15	PASS	<0.000	N/A	15	<PQL
N030075-001D	SAMP	1	99.92	1.31	15	PASS	56.4	1.65	15	PASS
N030075-001D	SAMP	5	21.27	1.58	15	PASS	11.8	2.45	15	PASS
N030075-002D	SAMP	1	172.0076	0.27	15	PASS	20.59	0.63	15	PASS
N030075-002D	SAMP	5	35.54	1.27	15	PASS	4.15	3.24	15	PASS
N030075-003D	SAMP	1	1660.071	0.43	15	PASS	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.058	1.073	15	PASS	19.95	0.58	15	PASS
CCB3	CCB	1	0.053	30.65	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.97	3.042	20	PASS	0.55	2.95	20	PASS
ICSA2	ICSA	1	0.037	18.76	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.48	0.83	15	PASS	17.91	1.49	15	PASS
N030075-003D	SAMP	5	348.99	1.069	15	PASS	<0.000	N/A	15	<PQL
N030075-003D	SAMP	25	69.85	0.72	15	PASS	<0.000	N/A	15	<PQL
N030075-004D	SAMP	1	2707.33	1.16	15	PASS	7.45	1.35	15	PASS
N030075-004D	SAMP	5	577.17	1.66	15	PASS	1.52	5.88	15	PASS
N030075-004D	SAMP	25	113.19	0.97	15	PASS	0.3	3.049	15	PASS
N030075-005D	SAMP	1	811.42	0.49	15	PASS	133.99	0.72	15	PASS
N030075-005D	SAMP	5	166.12	1.039	15	PASS	27.87	1.53	15	PASS
N030075-005D	SAMP	10	85.029	1.019	15	PASS	14.23	1.79	15	PASS
N030075-006D	SAMP	1	527.1	1.22	15	PASS	<0.000	N/A	15	<PQL
N030075-006D	SAMP	5	107.92	1.13	15	PASS	0.024	186.037	15	<PQL
CCV4	CCV	1	19.91	1.34	15	PASS	20.27	1.73	15	PASS
CCB4	CCB	1	0.098	3.6	15	PASS	0.046	15.26	15	<PQL
N030075-007D	SAMP	1	6243.22	1.85	15	PASS	4.51	1.95	15	PASS
N030075-007D	SAMP	5	1319.48	0.76	15	PASS	0.93	2.026	15	PASS
N030075-007D	SAMP	50	138.68	0.18	15	PASS	0.099	0.34	15	PASS
N030075-008D	SAMP	1	6169.54	2.68	15	PASS	4.35	2.82	15	PASS
N030075-008D	SAMP	5	1307.69	0.2	15	PASS	0.9	2.89	15	PASS
N030075-008D	SAMP	50	137.64	1.0029	15	PASS	0.1	24.66	15	<PQL
N030090-001B	SAMP	1	1.038	2.49	15	PASS	2566.84	0.38	15	PASS
N030090-001B	SAMP	5	0.21	1.41	15	PASS	527.3	2.41	15	PASS
N030090-002B	SAMP	1	2.63	2.64	15	PASS	2.84	3.41	15	PASS
N030090-002B	SAMP	5	0.67	1.53	15	PASS	0.56	7.64	15	PASS
CCV5	CCV	1	19.91	0.44	15	PASS	19.94	0.72	15	PASS
CCB5	CCB	1	0.15	14.022	15	PASS	0.019	39.97	15	<PQL
N030090-003B	SAMP	1	2.78	4.027	15	PASS	2.7	6.096	15	PASS
N030090-003B	SAMP	5	0.63	0.28	15	PASS	0.53	7.24	15	PASS
CCV6	CCV	1	19.92	1.28	15	PASS	19.97	1.25	15	PASS
CCB6	CCB	1	0.091	15.73	15	<PQL	0.017	98.035	15	<PQL
LLCCV2	CCV2	1	1.012	5.26	20	PASS	0.53	11.02	20	PASS

PERCENT RSD SUMMARY: 180512B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSA3	ICSA	1	0.078	6.69	15	PASS	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.57	2.035	15	PASS	18.28	1.87	15	PASS

PERCENT RSD SUMMARY: 180512B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.088	14.91	15	PASS	0.076	78.85	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.54	4.98	15	PASS	0.52	26.33	15	NR!
Std3-5/50 ppb	ICAL	1	4.98	5.041	15	PASS	4.55	1.63	15	PASS
Std4-10/100 ppb	ICAL	1	10.28	1.11	15	PASS	9.55	10.02	15	PASS
Std5-20/200 ppb	ICAL	1	20.44	1.97	15	PASS	19.28	3.57	15	PASS
Std6-40/400 ppb	ICAL	1	40.072	1.37	15	PASS	40.67	3.16	15	PASS
Std7-100/1000 ppb	ICAL	1	100.55	1.35	15	PASS	99.21	0.9	15	PASS
Std8-200/2000 ppb	ICAL	1	199.65	0.8	15	PASS	200.37	2.34	15	PASS
ICV	ICV	1	10.29	2.17	15	PASS	10.3	7.025	15	PASS
ICB	ICB	1	0.025	126.69	15	<PQL	0.014	231.9	15	<PQL
LLICV	CCV1	1	0.094	12.19	20	PASS	0.51	37.34	20	NR!
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.056	42.79	15	<PQL
ICSAB1	ICSAB	1	21.59	1.92	15	PASS	20.72	4.77	15	PASS
MB-67912	MBLK	1	0.037	51.84	15	<PQL	<0.000	N/A	15	<PQL
LCS-67912	LCS	1	10.66	1.52	15	PASS	10.14	3.56	15	PASS
N030073-002B	SAMP	1	0.99	6.092	15	PASS	0.19	31.89	15	<PQL
N030073-002B	SAMP	5	0.18	14.89	15	PASS	0.033	74.26	15	<PQL
N030073-002B	SAMP	25	0.015	97.86	15	<PQL	0.0084	276.15	15	<PQL
N030073-002B-PS	PS	1	11.41	2.32	15	PASS	10.3	1.65	15	PASS
N030073-002B-PS	PS	5	2.38	3.17	15	PASS	2	8.3	15	PASS
N030073-002B-MS	MS	1	11.28	2.18	15	PASS	9.66	3.87	15	PASS
N030073-002B-MS	MS	5	2.37	4.74	15	PASS	2.14	21.34	15	NR!
N030073-002B-MSD	MSD	1	11.46	2.37	15	PASS	9.81	5.75	15	PASS
CCV1	CCV	1	20.26	0.27	15	PASS	19.48	1.32	15	PASS
CCB1	CCB	1	0.023	88	15	<PQL	0.0003	4349.12	15	<PQL
N030073-002B-MSD	MSD	5	2.26	3.31	15	PASS	2.38	9.55	15	PASS
N030073-003B	SAMP	1	1.32	7.069	15	PASS	0.44	49.97	15	<PQL
N030073-003B	SAMP	5	0.29	6.56	15	PASS	0.046	124.91	15	<PQL
N030073-004B	SAMP	1	1.87	8.1	15	PASS	0.22	50.46	15	<PQL
N030073-004B	SAMP	5	0.39	15.78	15	NR!	0.047	74.38	15	<PQL
N030073-005B	SAMP	1	0.83	7.14	15	PASS	0.46	26.62	15	<PQL
N030073-005B	SAMP	5	0.16	24.24	15	NR!	0.09	38.54	15	<PQL
N030073-006B	SAMP	1	0.83	6.7	15	PASS	0.49	4	15	PASS
N030073-006B	SAMP	5	0.15	7.99	15	PASS	0.24	35.063	15	<PQL
N030073-007B	SAMP	1	2.0061	4.096	15	PASS	0.22	22.69	15	<PQL
CCV2	CCV	1	20.018	3.089	15	PASS	19.036	1.27	15	PASS
CCB2	CCB	1	0.0041	342.062	15	<PQL	0.022	151.41	15	<PQL
N030073-007B	SAMP	5	0.39	10.043	15	PASS	0.085	15.98	15	<PQL
N030073-008B	SAMP	1	1.62	8.79	15	PASS	1.32	9.13	15	PASS
N030073-008B	SAMP	5	0.34	1.81	15	PASS	0.29	21.84	15	<PQL

PERCENT RSD SUMMARY: 180512B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030073-009B	SAMP	1	0.69	8.83	15	PASS	0.86	9.054	15	PASS
N030073-009B	SAMP	5	0.13	19.61	15	NR!	0.14	56.038	15	<PQL
N030075-001D	SAMP	1	2.93	1.81	15	PASS	1.43	12.98	15	PASS
N030075-001D	SAMP	5	0.57	10.53	15	PASS	0.39	25.88	15	<PQL
N030075-002D	SAMP	1	0.85	3.7	15	PASS	8.54	7.36	15	PASS
N030075-002D	SAMP	5	0.18	18.19	15	NR!	1.58	1.95	15	PASS
N030075-003D	SAMP	1	0.96	11.35	15	PASS	342.12	0.19	15	PASS
CCV3	CCV	1	19.98	2.24	15	PASS	20	2.0071	15	PASS
CCB3	CCB	1	0.0086	203.64	15	<PQL	0.049	91.043	15	<PQL
LLCCV1	CCV2	1	0.12	24.049	20	~~NR!~~ Failed	0.42	30.87	20	<PQL
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.059	109.18	15	<PQL
ICSAB2	ICSAB	1	21.55	2.42	15	PASS	19.3	1.91	15	PASS
N030075-003D	SAMP	5	0.2	17.73	15	NR!	70.2	2.11	15	PASS
N030075-003D	SAMP	25	0.03	23.88	15	<PQL	14.81	5.082	15	PASS
N030075-004D	SAMP	1	3.48	2.028	15	PASS	88.87	2.7	15	PASS
N030075-004D	SAMP	5	0.7	3.84	15	PASS	17.35	7.58	15	PASS
N030075-004D	SAMP	25	0.13	5.25	15	PASS	3.32	11.83	15	PASS
N030075-005D	SAMP	1	9.1	3.42	15	PASS	0.96	13.59	15	PASS
N030075-005D	SAMP	5	2.0086	1.27	15	PASS	0.16	65.93	15	<PQL
N030075-005D	SAMP	10	0.96	5.17	15	PASS	0.091	13.76	15	PASS
N030075-006D	SAMP	1	1.21	7.43	15	PASS	30.82	7.36	15	PASS
N030075-006D	SAMP	5	0.24	15.1	15	NR!	5.72	9.87	15	PASS
CCV4	CCV	1	20.64	1.69	15	PASS	18.84	3.34	15	PASS
CCB4	CCB	1	0.021	78.25	15	<PQL	<0.000	N/A	15	<PQL
N030075-007D	SAMP	1	6.38	4.52	15	PASS	17.09	2.16	15	PASS
N030075-007D	SAMP	5	1.32	4.38	15	PASS	3.06	3.32	15	PASS
N030075-007D	SAMP	50	0.14	9.92	15	PASS	0.27	45.16	15	<PQL
N030075-008D	SAMP	1	5.98	3.57	15	PASS	17.19	3.25	15	PASS
N030075-008D	SAMP	5	1.24	2.34	15	PASS	3.52	15.17	15	NR!
N030075-008D	SAMP	50	0.1	22.42	15	NR!	0.32	38.53	15	<PQL
N030090-001B	SAMP	1	2.31	3.66	15	PASS	0.0083	279.59	15	<PQL
N030090-001B	SAMP	5	0.48	8.67	15	PASS	<0.000	N/A	15	<PQL
N030090-002B	SAMP	1	0.9	10.54	15	PASS	0.27	19.33	15	<PQL
N030090-002B	SAMP	5	0.16	4.59	15	PASS	0.043	77.71	15	<PQL
CCV5	CCV	1	20.23	0.65	15	PASS	18.71	1.87	15	PASS
CCB5	CCB	1	0.0021	314.27	15	<PQL	<0.000	N/A	15	<PQL
N030090-003B	SAMP	1	0.84	3.52	15	PASS	0.31	23.92	15	<PQL
N030090-003B	SAMP	5	0.16	12.2	15	PASS	0.098	30.49	15	<PQL
CCV6	CCV	1	20.074	3.55	15	PASS	20.45	1.94	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.12	17.24	20	PASS	0.36	23.74	20	<PQL

Nancy for 5/15/2018

PERCENT RSD SUMMARY: 180512B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.019	162.59	15	<PQL
ICSAB3	ICSAB	1	21.069	1.085	15	PASS	19.61	6.36	15	PASS

PERCENT RSD SUMMARY: 180512B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.068	16.72	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.45	7.53	15	PASS
Std3-5/50 ppb	ICAL	1	4.93	1.43	15	PASS
Std4-10/100 ppb	ICAL	1	9.84	1.11	15	PASS
Std5-20/200 ppb	ICAL	1	19.79	1.32	15	PASS
Std6-40/400 ppb	ICAL	1	39.26	0.33	15	PASS
Std7-100/1000 ppb	ICAL	1	99.72	0.55	15	PASS
Std8-200/2000 ppb	ICAL	1	200.32	0.52	15	PASS
ICV	ICV	1	10.53	0.79	15	PASS
ICB	ICB	1	0.025	57.76	15	<PQL
LLICV	CCV1	1	0.52	3.76	20	PASS
ICSA1	ICSA	1	0.13	6.62	15	PASS
ICSAB1	ICSAB	1	22.83	1.47	15	PASS
MB-67912	MBLK	1	0.11	1.94	15	PASS
LCS-67912	LCS	1	10.13	0.45	15	PASS
N030073-002B	SAMP	1	3.25	2.7	15	PASS
N030073-002B	SAMP	5	0.69	5.4	15	PASS
N030073-002B	SAMP	25	0.14	8.43	15	PASS
N030073-002B-PS	PS	1	14.39	0.64	15	PASS
N030073-002B-PS	PS	5	2.87	0.72	15	PASS
N030073-002B-MS	MS	1	14.57	0.26	15	PASS
N030073-002B-MS	MS	5	2.96	0.41	15	PASS
N030073-002B-MSD	MSD	1	14.46	0.38	15	PASS
CCV1	CCV	1	19.6	2.23	15	PASS
CCB1	CCB	1	0.091	10.55	15	PASS
N030073-002B-MSD	MSD	5	2.9	1.54	15	PASS
N030073-003B	SAMP	1	1.22	2.81	15	PASS
N030073-003B	SAMP	5	0.25	5.66	15	PASS
N030073-004B	SAMP	1	1.46	0.8	15	PASS
N030073-004B	SAMP	5	0.26	8.055	15	PASS
N030073-005B	SAMP	1	2.095	1.18	15	PASS
N030073-005B	SAMP	5	0.39	4.95	15	PASS
N030073-006B	SAMP	1	2.18	1.52	15	PASS
N030073-006B	SAMP	5	0.43	4.48	15	PASS
N030073-007B	SAMP	1	1.13	4.64	15	PASS
CCV2	CCV	1	19.91	0.88	15	PASS
CCB2	CCB	1	0.083	29.72	15	<PQL
N030073-007B	SAMP	5	0.22	3.87	15	PASS
N030073-008B	SAMP	1	3.67	1.25	15	PASS
N030073-008B	SAMP	5	0.69	3.57	15	PASS

PERCENT RSD SUMMARY: 180512B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N030073-009B	SAMP	1	1.18	4.36	15	PASS
N030073-009B	SAMP	5	0.25	7.84	15	PASS
N030075-001D	SAMP	1	55.62	0.44	15	PASS
N030075-001D	SAMP	5	10.85	2.085	15	PASS
N030075-002D	SAMP	1	53.17	1.14	15	PASS
N030075-002D	SAMP	5	10.48	0.71	15	PASS
N030075-003D	SAMP	1	7.59	2.15	15	PASS
CCV3	CCV	1	19.59	0.39	15	PASS
CCB3	CCB	1	0.1	11.21	15	PASS
LLCCV1	CCV2	1	0.5	0.18	20	PASS
ICSA2	ICSA	1	0.068	21.4	15	<PQL
ICSAB2	ICSAB	1	22.6	2.82	15	PASS
N030075-003D	SAMP	5	1.51	3.015	15	PASS
N030075-003D	SAMP	25	0.29	4.49	15	PASS
N030075-004D	SAMP	1	48.48	0.47	15	PASS
N030075-004D	SAMP	5	9.57	1.12	15	PASS
N030075-004D	SAMP	25	1.78	2.95	15	PASS
N030075-005D	SAMP	1	80.22	1.081	15	PASS
N030075-005D	SAMP	5	16.048	1.37	15	PASS
N030075-005D	SAMP	10	8.097	0.98	15	PASS
N030075-006D	SAMP	1	6.93	0.61	15	PASS
N030075-006D	SAMP	5	1.36	0.44	15	PASS
CCV4	CCV	1	19.8	0.4	15	PASS
CCB4	CCB	1	0.12	6.37	15	PASS
N030075-007D	SAMP	1	82.72	0.84	15	PASS
N030075-007D	SAMP	5	16.62	0.8	15	PASS
N030075-007D	SAMP	50	1.52	3.5	15	PASS
N030075-008D	SAMP	1	82.68	0.55	15	PASS
N030075-008D	SAMP	5	16.4	1.48	15	PASS
N030075-008D	SAMP	50	1.5	1.87	15	PASS
N030090-001B	SAMP	1	2.34	1.76	15	PASS
N030090-001B	SAMP	5	0.41	5.8	15	PASS
N030090-002B	SAMP	1	2.2	1.83	15	PASS
N030090-002B	SAMP	5	0.43	3.44	15	PASS
CCV5	CCV	1	19.5	1.23	15	PASS
CCB5	CCB	1	0.09	2.046	15	PASS
N030090-003B	SAMP	1	2.15	1.84	15	PASS
N030090-003B	SAMP	5	0.43	6.26	15	PASS
CCV6	CCV	1	19.28	0.093	15	PASS
CCB6	CCB	1	0.091	23.26	15	<PQL
LLCCV2	CCV2	1	0.48	1.94	20	PASS

PERCENT RSD SUMMARY: 180512B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
ICSA3	ICSA	1	0.065	19.92	15	<PQL
ICSAB3	ICSAB	1	23.15	0.48	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180512B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0512001.D	RINSE	RINSE	1	05/12/18 9:06 PM
B0512002.D	Cal Blank	IBLK	1	05/12/18 9:12 PM
B0512003.D	Std1-0.1/1 ppb	ICAL	1	05/12/18 9:18 PM
B0512004.D	Std2-0.5/5 ppb	ICAL	1	05/12/18 9:23 PM
B0512005.D	Std3-5/50 ppb	ICAL	1	05/12/18 9:29 PM
B0512006.D	Std4-10/100 ppb	ICAL	1	05/12/18 9:34 PM
B0512007.D	Std5-20/200 ppb	ICAL	1	05/12/18 9:40 PM
B0512008.D	Std6-40/400 ppb	ICAL	1	05/12/18 9:46 PM
B0512009.D	Std7-100/1000 ppb	ICAL	1	05/12/18 9:51 PM
B0512010.D	Std8-200/2000 ppb	ICAL	1	05/12/18 9:57 PM
B0512011.D	ICV	ICV	1	05/12/18 10:03 PM
B0512012.D	ICB	ICB	1	05/12/18 10:08 PM
B0512013.D	LLICV	CCV1	1	05/12/18 10:13 PM
B0512014.D	ICSA1	ICSA	1	05/12/18 10:19 PM
B0512015.D	ICSAB1	ICSAB	1	05/12/18 10:25 PM
B0512016.D	MB-67912	MBLK	1	05/12/18 10:30 PM
B0512017.D	LCS-67912	LCS	1	05/12/18 10:36 PM
B0512018.D	N030073-002B	SAMP	1	05/12/18 10:42 PM
B0512019.D	N030073-002B	SAMP	5	05/12/18 10:47 PM
B0512020.D	N030073-002B	SAMP	25	05/12/18 10:53 PM
B0512021.D	N030073-002B-PS	PS	1	05/12/18 10:58 PM
B0512022.D	N030073-002B-PS	PS	5	05/12/18 11:04 PM
B0512023.D	N030073-002B-MS	MS	1	05/12/18 11:10 PM
B0512024.D	N030073-002B-MS	MS	5	05/12/18 11:15 PM
B0512025.D	N030073-002B-MSD	MSD	1	05/12/18 11:21 PM
B0512026.D	CCV1	CCV	1	05/12/18 11:26 PM
B0512027.D	CCB1	CCB	1	05/12/18 11:32 PM
B0512028.D	N030073-002B-MSD	MSD	5	05/12/18 11:38 PM
B0512029.D	N030073-003B	SAMP	1	05/12/18 11:43 PM
B0512030.D	N030073-003B	SAMP	5	05/12/18 11:49 PM
B0512031.D	N030073-004B	SAMP	1	05/12/18 11:54 PM
B0512032.D	N030073-004B	SAMP	5	05/13/18 12:00 AM
B0512033.D	N030073-005B	SAMP	1	05/13/18 12:05 AM
B0512034.D	N030073-005B	SAMP	5	05/13/18 12:11 AM
B0512035.D	N030073-006B	SAMP	1	05/13/18 12:18 AM
B0512036.D	N030073-006B	SAMP	5	05/13/18 12:22 AM
B0512037.D	N030073-007B	SAMP	1	05/13/18 12:28 AM
B0512038.D	CCV2	CCV	1	05/13/18 12:33 AM
B0512039.D	CCB2	CCB	1	05/13/18 12:39 AM
B0512040.D	N030073-007B	SAMP	5	05/13/18 12:45 AM
B0512041.D	N030073-008B	SAMP	1	05/13/18 12:50 AM
B0512042.D	N030073-008B	SAMP	5	05/13/18 12:56 AM

INJECTION LOG: 180512B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0512043.D	N030073-009B	SAMP	1	05/13/18 1:40 AM
B0512044.D	N030073-009B	SAMP	5	05/13/18 1:45 AM
B0512045.D	N030075-001D	SAMP	1	05/13/18 1:51 AM
B0512046.D	N030075-001D	SAMP	5	05/13/18 1:57 AM
B0512047.D	N030075-002D	SAMP	1	05/13/18 2:02 AM
B0512048.D	N030075-002D	SAMP	5	05/13/18 2:08 AM
B0512049.D	N030075-003D	SAMP	1	05/13/18 2:13 AM
B0512050.D	CCV3	CCV	1	05/13/18 2:19 AM
B0512051.D	CCB3	CCB	1	05/13/18 2:24 AM
B0512052.D	LLCCV1	CCV2	1	05/13/18 2:30 AM
B0512053.D	ICSA2	ICSA	1	05/13/18 2:36 AM
B0512054.D	ICSAB2	ICSAB	1	05/13/18 2:41 AM
B0512055.D	N030075-003D	SAMP	5	05/13/18 2:47 AM
B0512056.D	N030075-003D	SAMP	25	05/13/18 2:52 AM
B0512057.D	N030075-004D	SAMP	1	05/13/18 2:58 AM
B0512058.D	N030075-004D	SAMP	5	05/13/18 3:04 AM
B0512059.D	N030075-004D	SAMP	25	05/13/18 3:09 AM
B0512060.D	N030075-005D	SAMP	1	05/13/18 3:15 AM
B0512061.D	N030075-005D	SAMP	5	05/13/18 3:20 AM
B0512062.D	N030075-005D	SAMP	10	05/13/18 3:26 AM
B0512063.D	N030075-006D	SAMP	1	05/13/18 3:32 AM
B0512064.D	N030075-006D	SAMP	5	05/13/18 3:37 AM
B0512065.D	CCV4	CCV	1	05/13/18 3:43 AM
B0512066.D	CCB4	CCB	1	05/13/18 3:49 AM
B0512067.D	N030075-007D	SAMP	1	05/13/18 3:54 AM
B0512068.D	N030075-007D	SAMP	5	05/13/18 4:00 AM
B0512069.D	N030075-007D	SAMP	50	05/13/18 4:05 AM
B0512070.D	N030075-008D	SAMP	1	05/13/18 4:11 AM
B0512071.D	N030075-008D	SAMP	5	05/13/18 4:16 AM
B0512072.D	N030075-008D	SAMP	50	05/13/18 4:21 AM
B0512073.D	N030090-001B	SAMP	1	05/13/18 4:27 AM
B0512074.D	N030090-001B	SAMP	5	05/13/18 4:33 AM
B0512075.D	N030090-002B	SAMP	1	05/13/18 4:38 AM
B0512076.D	N030090-002B	SAMP	5	05/13/18 4:45 AM
B0512077.D	CCV5	CCV	1	05/13/18 4:50 AM
B0512078.D	CCB5	CCB	1	05/13/18 4:56 AM
B0512079.D	N030090-003B	SAMP	1	05/13/18 5:01 AM
B0512080.D	N030090-003B	SAMP	5	05/13/18 5:07 AM
B0512081.D	CCV6	CCV	1	05/13/18 5:13 AM
B0512082.D	CCB6	CCB	1	05/13/18 5:18 AM
B0512083.D	LLCCV2	CCV2	1	05/13/18 5:24 AM
B0512084.D	ICSA3	ICSA	1	05/13/18 5:29 AM

INJECTION LOG: 180512B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0512085.D	ICSAB3	ICSAB	1	05/13/18 5:35 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/2/2018 9:12:27 A**
Prep End Date: **5/2/2018 2:00:00 P**
Prep Batch **67912** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/15/2018
Initials/ Date: 5/15/2018
Technician: **Claire Ignacio**

Prep Factor Units: **mL / mL**
Temp. (°C): **94.8**
Location: **02-28**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67912	Aqueous		25	☐	0	0	25	1.000		
MB-67912	Aqueous		25	☐	0	0	25	1.000		
N030073-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N030073-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030073-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030073-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N030073-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N030073-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N030073-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N030073-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N030073-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N030073-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N030075-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N030075-002D	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/2/2018 9:12:27 A**
Prep End Date: **5/2/2018 2:00:00 P**
Prep Batch **67912** Prep Code: **3010_W_MSDI**

Reviewed/ Date: Nancy 5/15/2018
Initials/ Date: CI 5/15/2018
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-28**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N030075-003D	Groundwater	<2	25	☐	0	0	25	1.000		
N030075-004D	Groundwater	<2	25	☐	0	0	25	1.000		
N030075-005D	Groundwater	<2	25	☐	0	0	25	1.000		
N030075-006D	Groundwater	<2	25	☐	0	0	25	1.000		
N030075-007D	Groundwater	<2	25	☐	0	0	25	1.000		
N030075-008D	Groundwater	<2	25	☐	0	0	25	1.000		
N030090-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N030090-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N030090-003B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 12 May 2018 10:00:14 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	130412.00	0.00	
24	Mg	81575500.00	0.00	
25	Mg	10911600.00	0.00	
26	Mg	12591100.00	0.00	
59	Co	516474.00	0.00	
115	In	865083.00	0.00	
206	Pb	249990.00	0.00	
207	Pb	217798.00	0.00	
208	Pb	534825.00	0.00	

RSD (%)

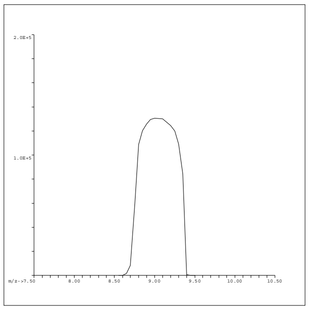
Element		Actual	Required	Flag
9	Be	0.40	5.00	
24	Mg	0.86	5.00	
25	Mg	0.79	5.00	
26	Mg	0.65	5.00	
59	Co	0.79	5.00	
115	In	0.51	5.00	
206	Pb	0.72	5.00	
207	Pb	0.95	5.00	
208	Pb	0.76	5.00	

Ion Ratio

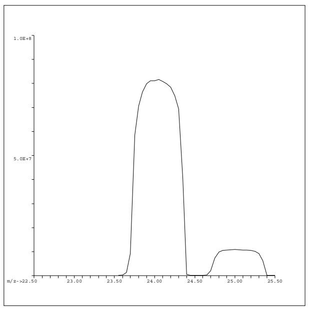
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

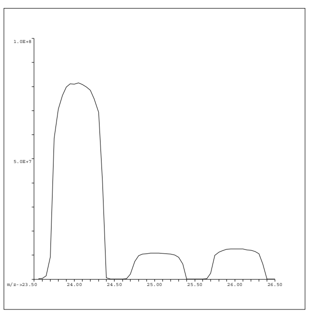
Element	Actual	Required	Flag



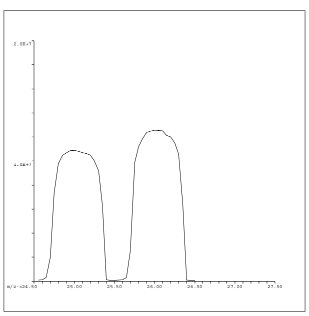
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



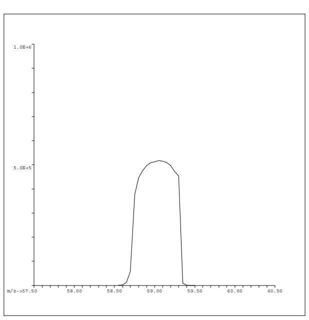
24 Mg
Mass Calib.
Actual: 24.05
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



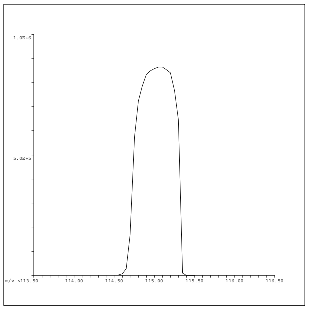
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



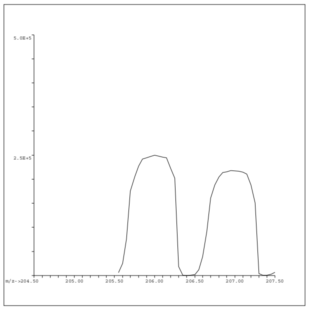
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



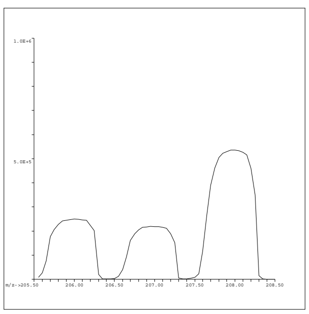
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



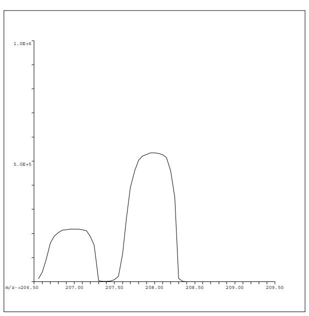
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180512B

Instrument ID: ICPMS-02

Analyte	Data File	B0512002.D	B0512003.D	B0512004.D	B0512005.D	B0512006.D	B0512007.D	B0512008.D	B0512009.D	B0512010.D	
	Acq. Date-Time	05/12/2018 09:12 PM	05/12/2018 09:18 PM	05/12/2018 09:23 PM	05/12/2018 09:29 PM	05/12/2018 09:34 PM	05/12/2018 09:40 PM	05/12/2018 09:46 PM	05/12/2018 09:51 PM	05/12/2018 09:57 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	46414.7		44354.4	43978.1	43609.1	42998.7	42661.1	41969.5	41444.7	
55 Mn [2]	CPS	119.9		937.1	9073.1	17264.8	34581.3	69284.8	168306.3	331788.2	1.0000
52 Cr [2]	CPS	323.1		1985.7	18597.5	36219.9	72139.8	141484	349448.2	680253.7	1.0000
72 Ge (ISTD) [1]	CPS	43198.1		41397.7	40228.2	39930.9	39069.9	38291.3	37778	37472.8	
78 Se [1]	CPS	2.2		77.8	644.5	1339	2645.9	5467.8	13156.9	26348.9	1.0000
72 Ge (ISTD) [2]	CPS	37231.2	35982.8	35011.7	34680.9	33948.5	33294.9	33642.3	33046.6	32879.5	
75 As [2]	CPS	16.4	52	232	1987.3	4003.2	7792.2	15420.7	37983.7	75025.8	1.0000
103 Rh (ISTD) [2]	CPS	1303579.7		1242016.6	1190798	1181104.9	1168769.1	1170017	1148215.6	1128735.2	
95 Mo [2]	CPS	87.8		1332.3	13354.9	26338.1	52345.3	103862.8	258808.9	510990.6	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MWST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICV** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3025120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.289	0.10	10.00	0	103	90	110				
Manganese	105.427	0.50	100.0	0	105	90	110				
Molybdenum	10.533	0.50	10.00	0	105	90	110				
Selenium	10.304	0.50	10.00	0	103	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ZZZZZZ** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3025122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.094	0.10	0.1000	0	94.0	80	120				
Manganese	0.557	0.50	0.5000	0	111	80	120				
Molybdenum	0.518	0.50	0.5000	0	104	80	120				
Selenium	0.514	0.50	0.5000	0	103	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCV** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3025135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.262	0.10	20.00	0	101	90	110				
Manganese	20.385	0.50	20.00	0	102	90	110				
Molybdenum	19.595	0.50	20.00	0	98.0	90	110				
Selenium	19.478	0.50	20.00	0	97.4	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCV** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.018	0.10	20.00	0	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCV** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.263	0.50	20.00	0	101	90	110				
Molybdenum	19.909	0.50	20.00	0	99.5	90	110				
Selenium	19.036	0.50	20.00	0	95.2	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCV** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.984	0.10	20.00	0	99.9	90	110				
Manganese	19.947	0.50	20.00	0	99.7	90	110				
Molybdenum	19.592	0.50	20.00	0	98.0	90	110				
Selenium	19.998	0.50	20.00	0	100	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ZZZZZZ** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.118	0.10	0.1000	0	118	70	130				
Manganese	0.553	0.50	0.5000	0	111	70	130				
Molybdenum	0.505	0.50	0.5000	0	101	70	130				
Selenium	0.425	0.50	0.5000	0	84.9	70	130				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCV** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.640	0.10	20.00	0	103	90	110				
Manganese	20.273	0.50	20.00	0	101	90	110				
Molybdenum	19.796	0.50	20.00	0	99.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCV** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	18.838	0.50	20.00	0	94.2	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCV** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025186**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.227	0.10	20.00	0	101	90	110				
Manganese	19.943	0.50	20.00	0	99.7	90	110				
Molybdenum	19.505	0.50	20.00	0	97.5	90	110				
Selenium	18.708	0.50	20.00	0	93.5	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCV** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.074	0.10	20.00	0	100	90	110				
Manganese	19.971	0.50	20.00	0	99.9	90	110				
Molybdenum	19.278	0.50	20.00	0	96.4	90	110				
Selenium	20.451	0.50	20.00	0	102	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ZZZZZZ** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.123	0.10	0.1000	0	123	70	130				
Manganese	0.534	0.50	0.5000	0	107	70	130				
Molybdenum	0.479	0.50	0.5000	0	95.8	70	130				
Selenium	~~ND~~ 0.36089	0.50	0.5000	0	~~0~~ 72%	70	130				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 5/15/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICV** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3025045**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.556	1.0	10.00	0	106	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ZZZZZZ** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3025047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.035	1.0	1.000	0	103	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCV** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3025060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.096	1.0	20.00	0	100	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCV** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.099	1.0	20.00	0	100	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCV** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.058	1.0	20.00	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ZZZZZZ** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.969	1.0	1.000	0	96.9	70	130				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCV** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.911	1.0	20.00	0	99.6	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCV** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.908	1.0	20.00	0	99.5	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCV** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025115**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.923	1.0	20.00	0	99.6	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ZZZZZZ** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.012	1.0	1.000	0	101	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3025121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3025136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	
Work Order:	N030075	
Project:	PG&E Topock - GMP, RC000753.0801	

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025160**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124028**
Client ID: **CCB**	Batch ID: **R124028**	TestNo: **EPA 6020**		Analysis Date: **5/13/2018**	SeqNo: **3025191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3025046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3025061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.149	1.0									

Sample ID **CCB6** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **CCB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICSA** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3025123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICSAB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3025124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.593	0.10	20.00	0	108	80	120				
Manganese	17.824	0.50	20.00	0	89.1	80	120				
Molybdenum	22.829	0.50	20.00	0	114	80	120				
Selenium	20.718	0.50	20.00	0	104	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICSA** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICSAB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.546	0.10	20.00	0	108	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICSAB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	17.911	0.50	20.00	0	89.6	80	120				
Molybdenum	22.598	0.50	20.00	0	113	80	120				
Selenium	19.296	0.50	20.00	0	96.5	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICSA** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICSAB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.069	0.10	20.00	0	105	80	120				
Manganese	18.283	0.50	20.00	0	91.4	80	120				
Molybdenum	23.155	0.50	20.00	0	116	80	120				
Selenium	19.615	0.50	20.00	0	98.1	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICSA** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3025048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICSAB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/12/2018** SeqNo: **3025049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.691	1.0	20.00	0	103	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICSA** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICSAB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.476	1.0	20.00	0	102	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICSA** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ICSAB** Batch ID: **R124028** TestNo: **EPA 6020** Analysis Date: **5/13/2018** SeqNo: **3025119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.566	1.0	20.00	0	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180512B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	46414.7	46414.7	100	PASS	70-125	37231.2	37231.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	45609	46414.7	98.26	PASS	70-125	35982.8	37231.2	96.65	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	44354.4	46414.7	95.56	PASS	70-125	35011.7	37231.2	94.039	PASS	70-125
Std3-5/50 ppb	ICAL	1	43978.1	46414.7	94.75	PASS	70-125	34680.9	37231.2	93.15	PASS	70-125
Std4-10/100 ppb	ICAL	1	43609.1	46414.7	93.96	PASS	70-125	33948.5	37231.2	91.18	PASS	70-125
Std5-20/200 ppb	ICAL	1	42998.7	46414.7	92.64	PASS	70-125	33294.9	37231.2	89.43	PASS	70-125
Std6-40/400 ppb	ICAL	1	42661.1	46414.7	91.91	PASS	70-125	33642.3	37231.2	90.36	PASS	70-125
Std7-100/1000 ppb	ICAL	1	41969.5	46414.7	90.42	PASS	70-125	33046.6	37231.2	88.76	PASS	70-125
Std8-200/2000 ppb	ICAL	1	41444.7	46414.7	89.29	PASS	70-125	32879.5	37231.2	88.31	PASS	70-125
ICV	ICV	1	48602.1	46414.7	104.71	PASS	70-125	39361.8	37231.2	105.72	PASS	70-125
ICB	ICB	1	50640.1	46414.7	109.1	PASS	70-125	39123.3	37231.2	105.08	PASS	70-125
LLICV	CCV1	1	48042.4	46414.7	103.51	PASS	70-125	37240	37231.2	100.02	PASS	70-125
ICSA1	ICSA	1	46756.5	46414.7	100.74	PASS	70-125	36084.1	37231.2	96.92	PASS	70-125
ICSAB1	ICSAB	1	48480.4	46414.7	104.45	PASS	70-125	37191	37231.2	99.89	PASS	70-125
MB-67912	MBLK	1	49476.6	46414.7	106.6	PASS	70-125	38754.6	37231.2	104.09	PASS	70-125
LCS-67912	LCS	1	54319.4	46414.7	117.03	PASS	70-125	43550.1	37231.2	116.97	PASS	70-125
N030073-002B	SAMP	1	45509.7	46414.7	98.05	PASS	70-125	35572.9	37231.2	95.55	PASS	70-125
N030073-002B	SAMP	5	43304	46414.7	93.3	PASS	70-125	34515.2	37231.2	92.71	PASS	70-125
N030073-002B	SAMP	25	43674.9	46414.7	94.097	PASS	70-125	34826.9	37231.2	93.54	PASS	70-125
N030073-002B-PS	PS	1	44819.2	46414.7	96.56	PASS	70-125	34801.3	37231.2	93.47	PASS	70-125
N030073-002B-PS	PS	5	43813.1	46414.7	94.39	PASS	70-125	35246.7	37231.2	94.67	PASS	70-125
N030073-002B-MS	MS	1	45607.8	46414.7	98.26	PASS	70-125	35677.7	37231.2	95.83	PASS	70-125
N030073-002B-MS	MS	5	44546	46414.7	95.97	PASS	70-125	35270.1	37231.2	94.73	PASS	70-125
N030073-002B-MSD	MSD	1	45760.5	46414.7	98.59	PASS	70-125	35684.2	37231.2	95.84	PASS	70-125
CCV1	CCV	1	44923.7	46414.7	96.79	PASS	70-125	35464.8	37231.2	95.26	PASS	70-125
CCB1	CCB	1	44854.7	46414.7	96.64	PASS	70-125	35386	37231.2	95.044	PASS	70-125
N030073-002B-MSD	MSD	5	43191.3	46414.7	93.055	PASS	70-125	34333.6	37231.2	92.22	PASS	70-125
N030073-003B	SAMP	1	45556.5	46414.7	98.15	PASS	70-125	35239	37231.2	94.65	PASS	70-125
N030073-003B	SAMP	5	44393.5	46414.7	95.65	PASS	70-125	35219	37231.2	94.6	PASS	70-125
N030073-004B	SAMP	1	46318.7	46414.7	99.79	PASS	70-125	36035.3	37231.2	96.79	PASS	70-125
N030073-004B	SAMP	5	44883.7	46414.7	96.7	PASS	70-125	34762.4	37231.2	93.37	PASS	70-125
N030073-005B	SAMP	1	46837.1	46414.7	100.91	PASS	70-125	35609.8	37231.2	95.65	PASS	70-125
N030073-005B	SAMP	5	44555	46414.7	95.99	PASS	70-125	35695.5	37231.2	95.88	PASS	70-125
N030073-006B	SAMP	1	45450.8	46414.7	97.92	PASS	70-125	34710	37231.2	93.23	PASS	70-125
N030073-006B	SAMP	5	44841.2	46414.7	96.61	PASS	70-125	35166.6	37231.2	94.45	PASS	70-125
N030073-007B	SAMP	1	46455.9	46414.7	100.09	PASS	70-125	35696.6	37231.2	95.88	PASS	70-125
CCV2	CCV	1	45226.9	46414.7	97.44	PASS	70-125	36075.2	37231.2	96.9	PASS	70-125
CCB2	CCB	1	44099.4	46414.7	95.012	PASS	70-125	35391.4	37231.2	95.058	PASS	70-125
N030073-007B	SAMP	5	43134.4	46414.7	92.93	PASS	70-125	34323.6	37231.2	92.19	PASS	70-125
N030073-008B	SAMP	1	42926.2	46414.7	92.48	PASS	70-125	33618.8	37231.2	90.3	PASS	70-125
N030073-008B	SAMP	5	43137.9	46414.7	92.94	PASS	70-125	34250.1	37231.2	91.99	PASS	70-125

INTERNAL STANDARD: 180512B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030073-009B	SAMP	1	43371.9	46414.7	93.44	PASS	70-125	33618.7	37231.2	90.3	PASS	70-125
N030073-009B	SAMP	5	44492.7	46414.7	95.86	PASS	70-125	35122	37231.2	94.33	PASS	70-125
N030075-001D	SAMP	1	40589.4	46414.7	87.45	PASS	70-125	28934.2	37231.2	77.71	PASS	70-125
N030075-001D	SAMP	5	49294	46414.7	106.2	PASS	70-125	36740.1	37231.2	98.68	PASS	70-125
N030075-002D	SAMP	1	50476.3	46414.7	108.75	PASS	70-125	39201.4	37231.2	105.29	PASS	70-125
N030075-002D	SAMP	5	53797.8	46414.7	115.91	PASS	70-125	40798.6	37231.2	109.58	PASS	70-125
N030075-003D	SAMP	1	48294.3	46414.7	104.05	PASS	70-125	35953.8	37231.2	96.57	PASS	70-125
CCV3	CCV	1	57118.8	46414.7	123.06	PASS	70-125	43267.1	37231.2	116.21	PASS	70-125
CCB3	CCB	1	55356.3	46414.7	119.26	PASS	70-125	42775.9	37231.2	114.89	PASS	70-125
LLCCV1	CCV2	1	53731.8	46414.7	115.76	PASS	70-125	41106.9	37231.2	110.41	PASS	70-125
ICSA2	ICSA	1	54516.9	46414.7	117.46	PASS	70-125	41877.9	37231.2	112.48	PASS	70-125
ICSAB2	ICSAB	1	55100	46414.7	118.71	PASS	70-125	42174.3	37231.2	113.28	PASS	70-125
N030075-003D	SAMP	5	50754.2	46414.7	109.35	PASS	70-125	38979.9	37231.2	104.7	PASS	70-125
N030075-003D	SAMP	25	52618.4	46414.7	113.37	PASS	70-125	40358.6	37231.2	108.4	PASS	70-125
N030075-004D	SAMP	1	46292.1	46414.7	99.74	PASS	70-125	34421.6	37231.2	92.45	PASS	70-125
N030075-004D	SAMP	5	53298.4	46414.7	114.83	PASS	70-125	40017.9	37231.2	107.48	PASS	70-125
N030075-004D	SAMP	25	53855.7	46414.7	116.03	PASS	70-125	41609.5	37231.2	111.76	PASS	70-125
N030075-005D	SAMP	1	42511.8	46414.7	91.59	PASS	70-125	30563.9	37231.2	82.092	PASS	70-125
N030075-005D	SAMP	5	55022.7	46414.7	118.55	PASS	70-125	39659.2	37231.2	106.52	PASS	70-125
N030075-005D	SAMP	10	57862.3	46414.7	124.66	PASS	70-125	41745.4	37231.2	112.12	PASS	70-125
N030075-006D	SAMP	1	56731.9	46414.7	122.23	PASS	70-125	42004.9	37231.2	112.82	PASS	70-125
N030075-006D	SAMP	5	55370.7	46414.7	119.3	PASS	70-125	40270.6	37231.2	108.16	PASS	70-125
CCV4	CCV	1	56550.5	46414.7	121.84	PASS	70-125	42508.3	37231.2	114.17	PASS	70-125
CCB4	CCB	1	55988.3	46414.7	120.63	PASS	70-125	42312.4	37231.2	113.65	PASS	70-125
N030075-007D	SAMP	1	42709	46414.7	92.016	PASS	70-125	30726.3	37231.2	82.53	PASS	70-125
N030075-007D	SAMP	5	56003.9	46414.7	120.66	PASS	70-125	40823	37231.2	109.65	PASS	70-125
N030075-007D	SAMP	50	48879.2	46414.7	105.31	PASS	70-125	37385.9	37231.2	100.42	PASS	70-125
N030075-008D	SAMP	1	43984.5	46414.7	94.76	PASS	70-125	31313.1	37231.2	84.1	PASS	70-125
N030075-008D	SAMP	5	56181.4	46414.7	121.04	PASS	70-125	40937.8	37231.2	109.96	PASS	70-125
N030075-008D	SAMP	50	49253.6	46414.7	106.12	PASS	70-125	37348	37231.2	100.31	PASS	70-125
N030090-001B	SAMP	1	47790.3	46414.7	102.96	PASS	70-125	36281.1	37231.2	97.45	PASS	70-125
N030090-001B	SAMP	5	49256.1	46414.7	106.12	PASS	70-125	37603.1	37231.2	101	PASS	70-125
N030090-002B	SAMP	1	49381.8	46414.7	106.39	PASS	70-125	38514.1	37231.2	103.45	PASS	70-125
N030090-002B	SAMP	5	57213.6	46414.7	123.27	PASS	70-125	43218.1	37231.2	116.08	PASS	70-125
CCV5	CCV	1	57099.9	46414.7	123.02	PASS	70-125	43406.5	37231.2	116.59	PASS	70-125
CCB5	CCB	1	56909.1	46414.7	122.61	PASS	70-125	43939	37231.2	118.02	PASS	70-125
N030090-003B	SAMP	1	53006.6	46414.7	114.2	PASS	70-125	40944.6	37231.2	109.97	PASS	70-125
N030090-003B	SAMP	5	53448.9	46414.7	115.16	PASS	70-125	40417.7	37231.2	108.56	PASS	70-125
CCV6	CCV	1	53213.7	46414.7	114.65	PASS	70-125	40723	37231.2	109.38	PASS	70-125
CCB6	CCB	1	53386.4	46414.7	115.02	PASS	70-125	41367.9	37231.2	111.11	PASS	70-125
LLCCV2	CCV2	1	52632.8	46414.7	113.4	PASS	70-125	40791.9	37231.2	109.56	PASS	70-125

INTERNAL STANDARD: 180512B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
ICSA3	ICSA	1	53335.3	46414.7	114.91	PASS	70-125	40649.5	37231.2	109.18	PASS	70-125
ICSAB3	ICSAB	1	53385.4	46414.7	115.02	PASS	70-125	41104.9	37231.2	110.4	PASS	70-125

INTERNAL STANDARD: 180512B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	43198.1	43198.1	100	PASS	70-125	1303579.7	1303579.7	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	42031.8	43198.1	97.3	PASS	70-125	1256139.9	1303579.7	96.36	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	41397.7	43198.1	95.83	PASS	70-125	1242016.6	1303579.7	95.28	PASS	70-125
Std3-5/50 ppb	ICAL	1	40228.2	43198.1	93.12	PASS	70-125	1190798	1303579.7	91.35	PASS	70-125
Std4-10/100 ppb	ICAL	1	39930.9	43198.1	92.44	PASS	70-125	1181104.9	1303579.7	90.6	PASS	70-125
Std5-20/200 ppb	ICAL	1	39069.9	43198.1	90.44	PASS	70-125	1168769.1	1303579.7	89.66	PASS	70-125
Std6-40/400 ppb	ICAL	1	38291.3	43198.1	88.64	PASS	70-125	1170017	1303579.7	89.75	PASS	70-125
Std7-100/1000 ppb	ICAL	1	37778	43198.1	87.45	PASS	70-125	1148215.6	1303579.7	88.082	PASS	70-125
Std8-200/2000 ppb	ICAL	1	37472.8	43198.1	86.75	PASS	70-125	1128735.2	1303579.7	86.59	PASS	70-125
ICV	ICV	1	44596.3	43198.1	103.24	PASS	70-125	1433336.2	1303579.7	109.95	PASS	70-125
ICB	ICB	1	44117.2	43198.1	102.13	PASS	70-125	1340884.4	1303579.7	102.86	PASS	70-125
LLICV	CCV1	1	41897	43198.1	96.99	PASS	70-125	1276833.4	1303579.7	97.95	PASS	70-125
ICSA1	ICSA	1	40169.2	43198.1	92.99	PASS	70-125	1130917.3	1303579.7	86.75	PASS	70-125
ICSAB1	ICSAB	1	42521.8	43198.1	98.43	PASS	70-125	1155062.2	1303579.7	88.61	PASS	70-125
MB-67912	MBLK	1	46301.1	43198.1	107.18	PASS	70-125	1360777	1303579.7	104.39	PASS	70-125
LCS-67912	LCS	1	51274.7	43198.1	118.7	PASS	70-125	1528214.3	1303579.7	117.23	PASS	70-125
N030073-002B	SAMP	1	41608.5	43198.1	96.32	PASS	70-125	1134613.8	1303579.7	87.038	PASS	70-125
N030073-002B	SAMP	5	40181.6	43198.1	93.017	PASS	70-125	1136725.6	1303579.7	87.2	PASS	70-125
N030073-002B	SAMP	25	41119.5	43198.1	95.19	PASS	70-125	1164096.4	1303579.7	89.3	PASS	70-125
N030073-002B-PS	PS	1	41133	43198.1	95.22	PASS	70-125	1116698.5	1303579.7	85.66	PASS	70-125
N030073-002B-PS	PS	5	41715.3	43198.1	96.57	PASS	70-125	1148779.3	1303579.7	88.12	PASS	70-125
N030073-002B-MS	MS	1	41959.3	43198.1	97.13	PASS	70-125	1123538	1303579.7	86.19	PASS	70-125
N030073-002B-MS	MS	5	41807.9	43198.1	96.78	PASS	70-125	1151029.5	1303579.7	88.3	PASS	70-125
N030073-002B-MSD	MSD	1	42670	43198.1	98.78	PASS	70-125	1127667.8	1303579.7	86.51	PASS	70-125
CCV1	CCV	1	42493.9	43198.1	98.37	PASS	70-125	1204242.8	1303579.7	92.38	PASS	70-125
CCB1	CCB	1	42128.6	43198.1	97.52	PASS	70-125	1201855	1303579.7	92.2	PASS	70-125
N030073-002B-MSD	MSD	5	40956.8	43198.1	94.81	PASS	70-125	1133038	1303579.7	86.92	PASS	70-125
N030073-003B	SAMP	1	42121	43198.1	97.51	PASS	70-125	1097442.2	1303579.7	84.19	PASS	70-125
N030073-003B	SAMP	5	41805.5	43198.1	96.78	PASS	70-125	1131444.4	1303579.7	86.8	PASS	70-125
N030073-004B	SAMP	1	43230.4	43198.1	100.08	PASS	70-125	1122700.8	1303579.7	86.12	PASS	70-125
N030073-004B	SAMP	5	41086.2	43198.1	95.11	PASS	70-125	1138796.6	1303579.7	87.36	PASS	70-125
N030073-005B	SAMP	1	42387	43198.1	98.12	PASS	70-125	1111886.7	1303579.7	85.29	PASS	70-125
N030073-005B	SAMP	5	42582.1	43198.1	98.57	PASS	70-125	1136808.8	1303579.7	87.21	PASS	70-125
N030073-006B	SAMP	1	38952.9	43198.1	90.17	PASS	70-125	1084099.4	1303579.7	83.16	PASS	70-125
N030073-006B	SAMP	5	42128.7	43198.1	97.52	PASS	70-125	1138491.8	1303579.7	87.34	PASS	70-125
N030073-007B	SAMP	1	42022.9	43198.1	97.28	PASS	70-125	1110571.3	1303579.7	85.19	PASS	70-125
CCV2	CCV	1	43293.9	43198.1	100.22	PASS	70-125	1187458.6	1303579.7	91.092	PASS	70-125
CCB2	CCB	1	43288.3	43198.1	100.21	PASS	70-125	1184328.2	1303579.7	90.85	PASS	70-125
N030073-007B	SAMP	5	41371.1	43198.1	95.77	PASS	70-125	1108078.4	1303579.7	85.003	PASS	70-125
N030073-008B	SAMP	1	40492	43198.1	93.74	PASS	70-125	1029937.6	1303579.7	79.008	PASS	70-125
N030073-008B	SAMP	5	40253.8	43198.1	93.18	PASS	70-125	1095391.9	1303579.7	84.03	PASS	70-125

INTERNAL STANDARD: 180512B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030073-009B	SAMP	1	37466.1	43198.1	86.73	PASS	70-125	1059655.3	1303579.7	81.29	PASS	70-125
N030073-009B	SAMP	5	41960.5	43198.1	97.14	PASS	70-125	1123746.2	1303579.7	86.2	PASS	70-125
N030075-001D	SAMP	1	33257	43198.1	76.99	PASS	70-125	842428	1303579.7	64.62	NR!	70-125
N030075-001D	SAMP	5	42465.1	43198.1	98.3	PASS	70-125	1118768.6	1303579.7	85.82	PASS	70-125
N030075-002D	SAMP	1	43357.4	43198.1	100.37	PASS	70-125	1137199.9	1303579.7	87.24	PASS	70-125
N030075-002D	SAMP	5	47373.1	43198.1	109.66	PASS	70-125	1253865.7	1303579.7	96.19	PASS	70-125
N030075-003D	SAMP	1	39890.8	43198.1	92.34	PASS	70-125	1038259.8	1303579.7	79.65	PASS	70-125
CCV3	CCV	1	49142.5	43198.1	113.76	PASS	70-125	1432408.2	1303579.7	109.88	PASS	70-125
CCB3	CCB	1	50220.3	43198.1	116.26	PASS	70-125	1421279	1303579.7	109.03	PASS	70-125
LLCCV1	CCV2	1	48234.5	43198.1	111.66	PASS	70-125	1391943.9	1303579.7	106.78	PASS	70-125
ICSA2	ICSA	1	47354.1	43198.1	109.62	PASS	70-125	1258791.8	1303579.7	96.56	PASS	70-125
ICSAB2	ICSAB	1	47380.9	43198.1	109.68	PASS	70-125	1277713.8	1303579.7	98.016	PASS	70-125
N030075-003D	SAMP	5	45553.5	43198.1	105.45	PASS	70-125	1182168.5	1303579.7	90.69	PASS	70-125
N030075-003D	SAMP	25	46653.1	43198.1	108	PASS	70-125	1273039.8	1303579.7	97.66	PASS	70-125
N030075-004D	SAMP	1	38934	43198.1	90.13	PASS	70-125	1001922.3	1303579.7	76.86	PASS	70-125
N030075-004D	SAMP	5	45507.7	43198.1	105.35	PASS	70-125	1203294.3	1303579.7	92.31	PASS	70-125
N030075-004D	SAMP	25	49722.3	43198.1	115.1	PASS	70-125	1330476.6	1303579.7	102.06	PASS	70-125
N030075-005D	SAMP	1	33421.7	43198.1	77.37	PASS	70-125	857265.2	1303579.7	65.76	NR!	70-125
N030075-005D	SAMP	5	45113.3	43198.1	104.43	PASS	70-125	1155679.6	1303579.7	88.65	PASS	70-125
N030075-005D	SAMP	10	47812.1	43198.1	110.68	PASS	70-125	1236671.7	1303579.7	94.87	PASS	70-125
N030075-006D	SAMP	1	46707.7	43198.1	108.12	PASS	70-125	1193820.1	1303579.7	91.58	PASS	70-125
N030075-006D	SAMP	5	47922.4	43198.1	110.94	PASS	70-125	1212397	1303579.7	93.005	PASS	70-125
CCV4	CCV	1	52372.7	43198.1	121.24	PASS	70-125	1375553.7	1303579.7	105.52	PASS	70-125
CCB4	CCB	1	51590.4	43198.1	119.43	PASS	70-125	1407956.2	1303579.7	108.01	PASS	70-125
N030075-007D	SAMP	1	33576.5	43198.1	77.73	PASS	70-125	857364.5	1303579.7	65.77	NR!	70-125
N030075-007D	SAMP	5	45513.3	43198.1	105.36	PASS	70-125	1176190.7	1303579.7	90.23	PASS	70-125
N030075-007D	SAMP	50	41804.5	43198.1	96.77	PASS	70-125	1167361.5	1303579.7	89.55	PASS	70-125
N030075-008D	SAMP	1	33459.6	43198.1	77.46	PASS	70-125	871841	1303579.7	66.88	NR!	70-125
N030075-008D	SAMP	5	44756.7	43198.1	103.61	PASS	70-125	1179122.2	1303579.7	90.45	PASS	70-125
N030075-008D	SAMP	50	41697.5	43198.1	96.53	PASS	70-125	1169600.9	1303579.7	89.72	PASS	70-125
N030090-001B	SAMP	1	41874.8	43198.1	96.94	PASS	70-125	1078283.1	1303579.7	82.72	PASS	70-125
N030090-001B	SAMP	5	44628.6	43198.1	103.31	PASS	70-125	1169081.5	1303579.7	89.68	PASS	70-125
N030090-002B	SAMP	1	45428.4	43198.1	105.16	PASS	70-125	1138512.3	1303579.7	87.34	PASS	70-125
N030090-002B	SAMP	5	49449.2	43198.1	114.47	PASS	70-125	1336020.6	1303579.7	102.49	PASS	70-125
CCV5	CCV	1	51044.2	43198.1	118.16	PASS	70-125	1420220	1303579.7	108.95	PASS	70-125
CCB5	CCB	1	51485.6	43198.1	119.18	PASS	70-125	1438878	1303579.7	110.38	PASS	70-125
N030090-003B	SAMP	1	47039.8	43198.1	108.89	PASS	70-125	1234270.3	1303579.7	94.68	PASS	70-125
N030090-003B	SAMP	5	47740.7	43198.1	110.52	PASS	70-125	1296305.3	1303579.7	99.44	PASS	70-125
CCV6	CCV	1	47778.7	43198.1	110.6	PASS	70-125	1357187.7	1303579.7	104.11	PASS	70-125
CCB6	CCB	1	48225.6	43198.1	111.64	PASS	70-125	1367775.5	1303579.7	104.92	PASS	70-125
LLCCV2	CCV2	1	48984.4	43198.1	113.39	PASS	70-125	1378955.1	1303579.7	105.78	PASS	70-125

INTERNAL STANDARD: 180512B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
ICSA3	ICSA	1	47381.8	43198.1	109.68	PASS	70-125	1222304.9	1303579.7	93.77	PASS	70-125
ICSAB3	ICSAB	1	47098.9	43198.1	109.03	PASS	70-125	1212442	1303579.7	93.009	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N030075
Test Method: EPA 6020
Analysis Date: 5/12/2018

Matrix: Groundwater
Batch No.: 67912

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Mn, Mo and Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030073-002B DT 5X	Arsenic	ug/L	0.879786	NA	0.99361	11.46%	10
N030073-002B DT 5X	Chromium	ug/L	36.87916	PASS	35.18523	4.81%	10
N030073-002B DT 5X	Manganese	ug/L	0	NA	0		10
N030073-002B DT 5X	Molybdenum	ug/L	3.447779	NA	3.24625	6.21%	10
N030073-002B DT 5X	Selenium	ug/L	0	NA	0		10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030073-002B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124028**
Client ID: **ZZZZZZ**	Batch ID: **67912**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/12/2018**	SeqNo: **3025130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.406	0.10	10.00	0.9936	104	80	120				
Manganese	100.627	0.50	100.0	0	101	80	120				
Molybdenum	14.389	0.50	10.00	3.246	111	80	120				
Selenium	10.300	0.50	10.00	0	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030075
Project: PG&E Topock - GMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N030073-002B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124028**
Client ID: **ZZZZZZ** Batch ID: **67912** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/12/2018** SeqNo: **3025055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	45.129	1.0	10.00	35.19	99.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8 — **Matrix:** Water

Digestion Method: EPA 3010A — **Units:** ug/L

Date of Analysis: 9/25,10/2,11/3/17

Digestion Date: 9/21, 9/28,10/9/17

Instrument Name: ICPMS2

Analysts: MEI

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

May 17, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661
TEL: (916) 786-3302
FAX:

Workorder No.: N030096

RE: PG&E Topock - GMP, RC000753.801D

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 01, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Libucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.801D
Lab Order:	N030096

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (3100 ug/L) and hexavalent chromium (2400 ug/L) for sample N030096-010 (TW-01-Q218) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N030096-001, -003, -004, -006, -007, -008, -010, -011 and -012 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) is outside recovery criteria for Chromium in QC sample N030096-001D-MS since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Because the results for total dissolved chromium (3100 ug/L) and hexavalent chromium (2400 ug/L) for sample N030096-010 (TW-01-Q218) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 3000 and 2200 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *17-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801D
Lab Order: N030096
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030096-001A	MW-73-080-Q218	Groundwater	5/1/2018 1:07:00 PM	5/1/2018	5/17/2018
N030096-001B	MW-73-080-Q218	Groundwater	5/1/2018 1:07:00 PM	5/1/2018	5/17/2018
N030096-001C	MW-73-080-Q218	Groundwater	5/1/2018 1:07:00 PM	5/1/2018	5/17/2018
N030096-001D	MW-73-080-Q218	Groundwater	5/1/2018 1:07:00 PM	5/1/2018	5/17/2018
N030096-002A	MW-68-180-Q218	Groundwater	5/1/2018 8:58:00 AM	5/1/2018	5/17/2018
N030096-002B	MW-68-180-Q218	Groundwater	5/1/2018 8:58:00 AM	5/1/2018	5/17/2018
N030096-002C	MW-68-180-Q218	Groundwater	5/1/2018 8:58:00 AM	5/1/2018	5/17/2018
N030096-002D	MW-68-180-Q218	Groundwater	5/1/2018 8:58:00 AM	5/1/2018	5/17/2018
N030096-003A	MW-68-240-Q218	Groundwater	5/1/2018 8:43:00 AM	5/1/2018	5/17/2018
N030096-003B	MW-68-240-Q218	Groundwater	5/1/2018 8:43:00 AM	5/1/2018	5/17/2018
N030096-003C	MW-68-240-Q218	Groundwater	5/1/2018 8:43:00 AM	5/1/2018	5/17/2018
N030096-003D	MW-68-240-Q218	Groundwater	5/1/2018 8:43:00 AM	5/1/2018	5/17/2018
N030096-004A	MW-68BR-280-Q218	Groundwater	5/1/2018 10:50:00 AM	5/1/2018	5/17/2018
N030096-004B	MW-68BR-280-Q218	Groundwater	5/1/2018 10:50:00 AM	5/1/2018	5/17/2018
N030096-004C	MW-68BR-280-Q218	Groundwater	5/1/2018 10:50:00 AM	5/1/2018	5/17/2018
N030096-004D	MW-68BR-280-Q218	Groundwater	5/1/2018 10:50:00 AM	5/1/2018	5/17/2018
N030096-005A	MW-69-195-Q218	Groundwater	5/1/2018 9:49:00 AM	5/1/2018	5/17/2018
N030096-005B	MW-69-195-Q218	Groundwater	5/1/2018 9:49:00 AM	5/1/2018	5/17/2018
N030096-005C	MW-69-195-Q218	Groundwater	5/1/2018 9:49:00 AM	5/1/2018	5/17/2018
N030096-005D	MW-69-195-Q218	Groundwater	5/1/2018 9:49:00 AM	5/1/2018	5/17/2018
N030096-006A	MW-62-065-Q218	Groundwater	5/1/2018 3:51:00 PM	5/1/2018	5/17/2018
N030096-006B	MW-62-065-Q218	Groundwater	5/1/2018 3:51:00 PM	5/1/2018	5/17/2018
N030096-006C	MW-62-065-Q218	Groundwater	5/1/2018 3:51:00 PM	5/1/2018	5/17/2018
N030096-006D	MW-62-065-Q218	Groundwater	5/1/2018 3:51:00 PM	5/1/2018	5/17/2018
N030096-007A	TW-05-3V-Q218	Groundwater	5/1/2018 1:28:00 PM	5/1/2018	5/17/2018
N030096-007B	TW-05-3V-Q218	Groundwater	5/1/2018 1:28:00 PM	5/1/2018	5/17/2018
N030096-007C	TW-05-3V-Q218	Groundwater	5/1/2018 1:28:00 PM	5/1/2018	5/17/2018
N030096-008A	TW-05-LF-Q218	Groundwater	5/1/2018 12:17:00 PM	5/1/2018	5/17/2018
N030096-008B	TW-05-LF-Q218	Groundwater	5/1/2018 12:17:00 PM	5/1/2018	5/17/2018

CLIENT:	ARCADIS U.S., Inc. - California	
Project:	PG&E Topock - GMP, RC000753.801D	**Work Order Sample Summary**
Lab Order:	N030096	
Contract No:		

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030096-008C	TW-05-LF-Q218	Groundwater	5/1/2018 12:17:00 PM	5/1/2018	5/17/2018
N030096-009A	MW-715-Q218	Groundwater	5/1/2018 4:05:00 PM	5/1/2018	5/17/2018
N030096-010A	TW-01-Q218	Groundwater	5/1/2018 9:27:00 AM	5/1/2018	5/17/2018
N030096-010B	TW-01-Q218	Groundwater	5/1/2018 9:27:00 AM	5/1/2018	5/17/2018
N030096-010C	TW-01-Q218	Groundwater	5/1/2018 9:27:00 AM	5/1/2018	5/17/2018
N030096-010D	TW-01-Q218	Groundwater	5/1/2018 9:27:00 AM	5/1/2018	5/17/2018
N030096-011A	MW-51-Q218	Groundwater	5/1/2018 2:03:00 PM	5/1/2018	5/17/2018
N030096-011B	MW-51-Q218	Groundwater	5/1/2018 2:03:00 PM	5/1/2018	5/17/2018
N030096-011C	MW-51-Q218	Groundwater	5/1/2018 2:03:00 PM	5/1/2018	5/17/2018
N030096-011D	MW-51-Q218	Groundwater	5/1/2018 2:03:00 PM	5/1/2018	5/17/2018
N030096-012A	MW-12-Q218	Groundwater	5/1/2018 11:27:00 AM	5/1/2018	5/17/2018
N030096-012B	MW-12-Q218	Groundwater	5/1/2018 11:27:00 AM	5/1/2018	5/17/2018
N030096-012C	MW-12-Q218	Groundwater	5/1/2018 11:27:00 AM	5/1/2018	5/17/2018
N030096-012D	MW-12-Q218	Groundwater	5/1/2018 11:27:00 AM	5/1/2018	5/17/2018
N030096-013A	MW-14-Q218	Groundwater	5/1/2018 3:55:00 PM	5/1/2018	5/17/2018
N030096-013B	MW-14-Q218	Groundwater	5/1/2018 3:55:00 PM	5/1/2018	5/17/2018
N030096-013C	MW-14-Q218	Groundwater	5/1/2018 3:55:00 PM	5/1/2018	5/17/2018
N030096-013D	MW-14-Q218	Groundwater	5/1/2018 3:55:00 PM	5/1/2018	5/17/2018
N030096-014A	MW-25-Q218	Groundwater	5/1/2018 2:23:00 PM	5/1/2018	5/17/2018
N030096-014B	MW-25-Q218	Groundwater	5/1/2018 2:23:00 PM	5/1/2018	5/17/2018
N030096-014C	MW-25-Q218	Groundwater	5/1/2018 2:23:00 PM	5/1/2018	5/17/2018
N030096-014D	MW-25-Q218	Groundwater	5/1/2018 2:23:00 PM	5/1/2018	5/17/2018
N030096-015A	MW-26-Q218	Groundwater	5/1/2018 2:47:00 PM	5/1/2018	5/17/2018
N030096-015B	MW-26-Q218	Groundwater	5/1/2018 2:47:00 PM	5/1/2018	5/17/2018
N030096-015C	MW-26-Q218	Groundwater	5/1/2018 2:47:00 PM	5/1/2018	5/17/2018
N030096-015D	MW-26-Q218	Groundwater	5/1/2018 2:47:00 PM	5/1/2018	5/17/2018
N030096-016A	MW-21-EB-Q218	Groundwater	5/1/2018 2:25:00 PM	5/1/2018	5/17/2018
N030096-017A	MW-713-Q218	Groundwater	5/1/2018 4:05:00 PM	5/1/2018	5/17/2018
N030096-018A	MW-714-Q218	Groundwater	5/1/2018 4:04:00 PM	5/1/2018	5/17/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180502B** QC Batch: **R123780** PrepDate							Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 8:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180502B** QC Batch: **R123780** PrepDate							Analyst: **LR**
Specific Conductance	3300	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 8:43:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180502B** QC Batch: **R123780** PrepDate Analyst: **LR**							
Specific Conductance	15000	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 10:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	20000	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 9:49:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	3100	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 3:51:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180502B** QC Batch: **R123780** PrepDate Analyst: **LR**							
Specific Conductance	5900	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-3V-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 1:28:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-LF-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 12:17:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180502B** QC Batch: **R123780** PrepDate							Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-01-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 9:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	7300	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:03:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	6800	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-013		

Analyses	**Result**	**MDL**	**PQL**	**Qual**	**Units**	**DF**	**Date Analyzed**
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	2500	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-25-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:23:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	3700	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030096-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123780**
Client ID: **ZZZZZZ** Batch ID: **R123780** TestNo: **EPA 120.1** Analysis Date: **5/2/2018** SeqNo: **3013426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	10850.000	0.10						10820	0.277	2	

Sample ID **N030096-012BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123780**
Client ID: **ZZZZZZ** Batch ID: **R123780** TestNo: **EPA 120.1** Analysis Date: **5/2/2018** SeqNo: **3013437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	6740.000	0.10						6760	0.296	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

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ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180504A** QC Batch: **R123838**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	57	0.17	1.0		µg/L	5	5/4/2018 09:01 AM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180514B** QC Batch: **67986**				PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	58	0.13	1.0		µg/L	1	5/15/2018 03:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 8:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180504A** QC Batch: **R123838** PrepDate							Analyst: **RAB**
Hexavalent Chromium	5600	33	200		µg/L	1000	5/4/2018 01:26 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180515B** QC Batch: **67986** PrepDate **5/7/2018**							Analyst: **CEI**
Chromium	6100	6.5	50		µg/L	50	5/15/2018 02:09 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 8:43:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180504A** QC Batch: **R123838**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2000	6.6	40		µg/L	200	5/4/2018 09:11 AM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180515B** QC Batch: **67986**				PrepDate	**5/7/2018**		Analyst: **CEI**
Chromium	2100	3.2	25		µg/L	25	5/15/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 10:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/4/2018 10:55 AM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	ND	0.65	5.0		µg/L	5	5/15/2018 05:06 AM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 9:49:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180504A** QC Batch: **R123838**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	210	0.66	4.0		µg/L	20	5/4/2018 10:27 AM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180514B** QC Batch: **67986**				PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	210	0.65	5.0		µg/L	5	5/15/2018 05:17 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 3:51:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	520	3.3	20		µg/L	100	5/4/2018 09:20 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	530	0.65	5.0		µg/L	5	5/15/2018 05:40 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-3V-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 1:28:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180504A** QC Batch: **R123838** PrepDate							Analyst: **RAB**
Hexavalent Chromium	11	0.17	1.0		µg/L	5	5/4/2018 11:14 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018**							Analyst: **CEI**
Chromium	11	0.13	1.0		µg/L	1	5/15/2018 05:45 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-LF-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 12:17:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180504A** QC Batch: **R123838** PrepDate							Analyst: **RAB**
Hexavalent Chromium	8.8	0.17	1.0		µg/L	5	5/4/2018 01:08 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018**							Analyst: **CEI**
Chromium	9.1	0.13	1.0		µg/L	1	5/15/2018 05:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-715-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 4:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180504A** QC Batch: **R123838** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/4/2018 12:49 PM

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ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-01-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 9:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180504A** QC Batch: **R123838** PrepDate Analyst: **RAB**							
Hexavalent Chromium	2400	17	100		µg/L	500	5/4/2018 12:11 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180515B** QC Batch: **67986** PrepDate **5/7/2018** Analyst: **CEI**							
Chromium	3100	3.2	25		µg/L	25	5/15/2018 02:26 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:03:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	3500	17	100		µg/L	500	5/4/2018 12:30 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180515B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	3700	3.2	25		µg/L	25	5/15/2018 02:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180504A** QC Batch: **R123838**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1500	6.6	40		µg/L	200	5/4/2018 02:26 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180515B** QC Batch: **67986**				PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	1600	3.2	25		µg/L	25	5/15/2018 02:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.17	1.0		µg/L	5	5/4/2018 02:46 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	14	0.13	1.0		µg/L	1	5/15/2018 06:52 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-25-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:23:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	68	0.66	4.0		µg/L	20	5/4/2018 03:05 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	65	0.13	1.0		µg/L	1	5/15/2018 07:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2300	17	100		µg/L	500	5/4/2018 03:24 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180515B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	2400	3.2	25		µg/L	25	5/15/2018 02:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-EB-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**		PrepDate				Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/4/2018 04:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-713-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 4:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**		PrepDate				Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/4/2018 04:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-714-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 4:04:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180504A** QC Batch: **R123838** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/4/2018 04:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123838** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **PBW** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123838** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **LCSW** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.236	0.20	5.000	0	105	90	110				

Sample ID **N030143-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.826	0.20						1.806	1.10	20	

Sample ID **N030096-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	83.110	1.0	25.00	56.80	105	90	110				

Sample ID **N030096-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	82.183	1.0	25.00	56.80	102	90	110	83.11	1.12	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030096-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3064.000	40	1000	2010	105	90	110				

Sample ID **N030096-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1048.630	20	500.0	524.3	105	90	110				

Sample ID **N030096-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	311.616	4.0	100.0	205.6	106	90	110				

Sample ID **N030096-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015983**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.905	1.0	5.000	0	98.1	90	110				

Sample ID **N030096-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	35.687	1.0	25.00	10.58	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030096-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4969.150	100	2500	2429	102	90	110				

Sample ID **N030096-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6005.650	100	2500	3494	100	90	110				

Sample ID **N030096-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0.09450	100	90	110				

Sample ID **N030096-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.777	1.0	5.000	8.816	99.2	90	110				

Sample ID **N030096-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10620.800	200	5000	5593	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030096-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016424**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2580.300	40	1000	1537	104	90	110				

Sample ID **N030096-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.762	1.0	25.00	13.44	105	90	110				

Sample ID **N030096-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	172.320	4.0	100.0	67.96	104	90	110				

Sample ID **N030096-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4902.200	100	2500	2292	104	90	110				

Sample ID **N030096-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0.09860	98.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030096-017AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.120	0.20	1.000	0.08600	103	90	110				

Sample ID **N030096-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0.07930	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-67986** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **PBW** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-67986** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **LCSW** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.416	1.0	10.00	0	104	85	115				

Sample ID **N030096-001D-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	63.947	1.0	10.00	57.79	61.6	75	125				S

Sample ID **N030096-001D-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026210**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	65.967	1.0	10.00	57.79	81.8	75	125	63.95	3.11	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180511E** QC Batch: **R124008**			PrepDate				Analyst: **QBM**
Nitrate/Nitrite as N	3.7	0.16	0.25		mg/L	5	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 8:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	11	0.63	1.0		mg/L	20	5/11/2018

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 8:43:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180511E** QC Batch: **R124008**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	4.6	0.16	0.25		mg/L	5	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 10:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 9:49:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	18	0.63	1.0		mg/L	20	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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3151 W. Post Rd., Las Vegas, NV 89118
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ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 3:51:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	4.1	0.16	0.25		mg/L	5	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-01-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 9:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	16	0.63	1.0		mg/L	20	5/11/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:03:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180511E** QC Batch: **R124008**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	8.9	0.32	0.50		mg/L	10	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	16	0.63	1.0		mg/L	20	5/11/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180511E**	QC Batch: **R124008**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	3.8	0.16	0.25		mg/L	5	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-25-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:23:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	12	0.63	1.0		mg/L	20	5/11/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	20	0.63	1.0		mg/L	20	5/11/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124008** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **PBW** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124008** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **LCSW** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.555	0.050	0.5000	0	111	85	115				

Sample ID **N030096-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **ZZZZZZ** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.520	0.25						3.684	4.55	20	

Sample ID **N030096-002CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **ZZZZZZ** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	22.446	1.0	10.00	10.62	118	75	125				

Sample ID **N030096-002CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **ZZZZZZ** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023831**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	20.726	1.0	10.00	10.62	101	75	125	22.45	7.97	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Arsenic	1.5	0.081	0.10		µg/L	1	5/15/2018 03:35 AM
Manganese	24	0.26	0.50		µg/L	1	5/15/2018 03:35 AM
Molybdenum	25	1.1	2.5		µg/L	5	5/15/2018 03:41 AM
Selenium	4.4	0.36	0.50		µg/L	1	5/15/2018 03:35 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 8:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-002		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	3.2	0.081	0.10		µg/L	1	5/15/2018 04:39 AM
Manganese	ND	0.26	0.50		µg/L	1	5/15/2018 04:39 AM
Molybdenum	35	0.21	0.50		µg/L	1	5/15/2018 04:39 AM
Selenium	11	0.36	0.50		µg/L	1	5/15/2018 04:39 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 8:43:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-003		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.9	0.081	0.10		µg/L	1	5/15/2018 04:50 AM
Manganese	28	0.26	0.50		µg/L	1	5/15/2018 04:50 AM
Molybdenum	24	1.1	2.5		µg/L	5	5/15/2018 04:55 AM
Selenium	4.1	1.8	2.5		µg/L	5	5/15/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 10:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180514B** QC Batch: **67986**				PrepDate		**5/7/2018**	Analyst: **CEI**
Arsenic	1.5	0.41	0.50		µg/L	5	5/15/2018 05:06 AM
Manganese	48	1.3	2.5		µg/L	5	5/15/2018 05:06 AM
Molybdenum	55	1.1	2.5		µg/L	5	5/15/2018 05:06 AM
Selenium	ND	1.8	2.5		µg/L	5	5/15/2018 05:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 9:49:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A / **EPA 6020**							
RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018** Analyst: **CEI**							
Arsenic	2.0	0.081	0.10		µg/L	1	5/15/2018 05:12 AM
Manganese	ND	0.26	0.50		µg/L	1	5/15/2018 05:12 AM
Molybdenum	60	0.21	0.50		µg/L	1	5/15/2018 05:12 AM
Selenium	14	0.36	0.50		µg/L	1	5/15/2018 05:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

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Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 3:51:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-006		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.4	0.081	0.10		µg/L	1	5/15/2018 05:34 AM
Manganese	4.3	0.26	0.50		µg/L	1	5/15/2018 05:34 AM
Molybdenum	15	1.1	2.5		µg/L	5	5/15/2018 05:40 AM
Selenium	3.8	0.36	0.50		µg/L	1	5/15/2018 05:34 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-3V-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 1:28:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-007		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Manganese	1.8	0.26	0.50		µg/L	1	5/15/2018 05:45 AM
Molybdenum	31	1.1	2.5		µg/L	5	5/15/2018 05:51 AM
Selenium	ND	1.8	2.5		µg/L	5	5/15/2018 05:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-LF-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 12:17:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-008		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Manganese	5.0	0.26	0.50		µg/L	1	5/15/2018 05:57 AM
Molybdenum	30	1.1	2.5		µg/L	5	5/15/2018 06:02 AM
Selenium	ND	0.36	0.50		µg/L	1	5/15/2018 03:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
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ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Client Sample ID: TW-01-Q218
Lab Order: N030096
Collection Date: 5/1/2018 9:27:00 AM
Project: PG&E Topock - GMP, RC000753.801D
Matrix: GROUNDWATER
Lab ID: N030096-010

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180514B** QC Batch: **67986**				PrepDate **5/7/2018**			Analyst: **CEI**
Molybdenum	15	1.1	2.5		µg/L	5	5/15/2018 06:13 AM
Selenium	14	0.36	0.50		µg/L	1	5/15/2018 06:08 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:03:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate	**5/7/2018**		Analyst: **CEI**
Arsenic	4.0	0.081	0.10		µg/L	1	5/15/2018 06:19 AM
Manganese	4.5	0.26	0.50		µg/L	1	5/15/2018 06:19 AM
Molybdenum	47	1.1	2.5		µg/L	5	5/15/2018 06:25 AM
Selenium	15	1.8	2.5		µg/L	5	5/15/2018 06:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180514B** QC Batch: **67986**				PrepDate		**5/7/2018**	Analyst: **CEI**
Molybdenum	8.0	1.1	2.5		µg/L	5	5/15/2018 06:47 AM
Selenium	29	1.8	2.5		µg/L	5	5/15/2018 06:47 AM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Arsenic	0.73	0.081	0.10		µg/L	1	5/15/2018 06:52 AM
Manganese	ND	0.26	0.50		µg/L	1	5/15/2018 06:52 AM
Molybdenum	12	0.21	0.50		µg/L	1	5/15/2018 06:52 AM
Selenium	2.1	0.36	0.50		µg/L	1	5/15/2018 06:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-25-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:23:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate	**5/7/2018**		Analyst: **CEI**
Arsenic	1.3	0.081	0.10		µg/L	1	5/15/2018 07:04 AM
Manganese	ND	0.26	0.50		µg/L	1	5/15/2018 07:04 AM
Molybdenum	3.3	0.21	0.50		µg/L	1	5/15/2018 07:04 AM
Selenium	8.5	0.36	0.50		µg/L	1	5/15/2018 07:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Arsenic	1.9	0.081	0.10		µg/L	1	5/15/2018 07:16 AM
Manganese	ND	0.26	0.50		µg/L	1	5/15/2018 07:16 AM
Molybdenum	31	0.21	0.50		µg/L	1	5/15/2018 07:16 AM
Selenium	41	0.36	0.50		µg/L	1	5/15/2018 07:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-67986** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **PBW** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-67986** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **LCSW** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.408	0.10	10.00	0	104	85	115				
Manganese	106.552	0.50	100.0	0	107	85	115				
Molybdenum	10.276	0.50	10.00	0	103	85	115				
Selenium	9.759	0.50	10.00	0	97.6	85	115				

Sample ID **N030096-001D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.538	0.10	10.00	1.522	110	75	125				
Manganese	116.869	0.50	100.0	23.69	93.2	75	125				
Selenium	14.614	0.50	10.00	4.442	102	75	125				

Sample ID **N030096-001D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	36.279	2.5	10.00	24.62	117	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030096-001D-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/7/2018**	RunNo: **124054**
Client ID: **ZZZZZZ**	Batch ID: **67986**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/15/2018**	SeqNo: **3026318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.325	0.10	10.00	1.522	108	75	125	12.54	1.72	20	
Manganese	116.915	0.50	100.0	23.69	93.2	75	125	116.9	0.0393	20	

Sample ID **N030096-001D-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/7/2018**	RunNo: **124054**
Client ID: **ZZZZZZ**	Batch ID: **67986**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/15/2018**	SeqNo: **3026319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	36.503	2.5	10.00	24.62	119	75	125	36.28	0.615	20	

Sample ID **N030096-001D-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/7/2018**	RunNo: **124065**
Client ID: **ZZZZZZ**	Batch ID: **67986**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/15/2018**	SeqNo: **3026663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	14.966	0.50	10.00	4.442	105	75	125	14.61	2.38	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ARCUS02 C: 5/15/2018 12:00 AM
FOLDER R: 5/1/2018
N030096-019A 1 of 1

ASSET LABORATORIES
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...Cerritos, CA 90703
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CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: [signature] Date: 5/1/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	
Project Name: PG&E Topock - GMP	Signature: [signature] Date: 5/1/2018	
Project Number: RC000753.801D		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y / N
1. Chilled	✓
2. Headspace	✓
3. Container Intact	✓
4. Seal Present	✓
5. IR number	2
6. Method of Cooling: ICE	
Sample Temp: 3.8°C / 3.5°C	
Courier: ASSET	
Tracking No.: N/A	

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030096-01	MW-73-080-Q218	5/1/2018	13:07		X			X			X	X					E	4	P	BNS	
2	-02	MW-68-180-Q218	5/1/2018	8:58		X			X			X	X					E	4	P	BNS	
3	-03	MW-68-240-Q218	5/1/2018	8:43		X			X			X	X					E	4	P	BNS	
4	-04	MW-68BR-280-Q218	5/1/2018	10:50		X			X			X	X					E	4	P	BNS	
5	-05	MW-69-195-Q218	5/1/2018	9:49		X			X			X	X					E	4	P	BNS	
6	-06	MW-62-065-Q218	5/1/2018	15:51		X			X			X	X					E	4	P	BNS	
7	-07	TW-05-3V-Q218	5/1/2018	13:28			X		X								X	E	4	P	BN	
8	-08	TW-05-LF-Q218	5/1/2018	12:17			X		X								X	E	4	P	BN	
9	-09	MW-715-Q218	5/1/2018	16:05		X												E	1	P	B	
10	-10	TW-01-Q218	5/1/2018	9:27		X			X			X		X				E	4	P	BNS	

Reliquished by (Signature and Printed Name):	Date/Time:	received by (Signature and Printed Name):	Date/Time:
[signature] Gantt Jeffers	5.1.18 4:45	[signature]	5/1/18 4:45PM
Reliquished by (Signature and Printed Name): [signature]	5/1/18 7:00PM	received by (Signature and Printed Name): [signature]	5/1/18 7:00PM
Reliquished by (Signature and Printed Name):	Date/Time:	received by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy   Yellow=Customer's Copy

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P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com, daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: [signature] Date: 5/1/2018	Sampled By: Jason Mahn	
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Project Name: PG&E Topock - GMP	Signature: [signature] Date: 5/1/2018	
Project Number: RC000753.801D		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y/N
1. Chilled	✓
2. Headspace	✓
3. Container Intact	✓
4. Seal Present	✓
5. IR number	2
6. Method of Cooling: ICE	
Sample Temp: 3.5°C	

Courier:
Tracking No.:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030096-11	MW-51-Q218	5/1/2018	14:03		X			X			X	X					E	4	P	BNS	
2	-12	MW-12-Q218	5/1/2018	11:27		X			X			X		X				E	4	P	BNS	
3	-13	MW-14-Q218	5/1/2018	15:55		X			X			X	X					E	4	P	BNS	
4	-14	MW-25-Q218	5/1/2018	14:23		X			X			X	X					E	4	P	BNS	
5	-15	MW-26-Q218	5/1/2018	14:47		X			X			X	X					E	4	P	BNS	
6	-16	MW-21-EB-Q218	5/1/2018	14:25		X												E	1	P	B	
7	-17	MW-713-Q218	5/1/2018	16:05		X												E	1	P	B	
8	-18	MW-714-Q218	5/1/2018	16:04		X												E	1	P	B	
9																						
10																						

Reliquished by (Signature and Printed Name):	Date/Time:	received by (Signature and Printed Name):	Date/Time:
[signature] Gantt Jeffers	5-1-18 4:45	[signature]	5/1/18 4:45 pm
[signature]	5/1/18 7:00 pm	[signature]	5/1/18 7:00 pm

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
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TAT Starts at 8 AM the following day if samples received after 3:00PM.

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6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 5/1/2018 Workorder: N030096

Rep sample Temp (Deg C): 3.8/3.5 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: DA For: YLT 5/9/2018

Reviewed By: [signature] 05/14/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/1/2018 6:08 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>, Kalib Sumter <Kalib.Sumter@critigen.com>, Dan Moore <Daniel.Moore@critigen.com>

Hi Yoandra,
Method 6020 is acceptable.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, April 30, 2018 8:48 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)

Hi Laura,

Please kindly check the attached COCs. Some samples are requested to be analyzed for As, Cr, Mn, Mo and Se by 6010.

Please kindly confirm if they can be analyzed by 6020 instead of 6010, as we have been doing before.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

nancy@assetlaboratories.com

From: nancy@assetlaboratories.com
Sent: Wednesday, May 16, 2018 3:27 PM
To: 'Daniel Moore'
Cc: 'Marlon B. Cartin'
Subject: RE: N030096 for EPA 6020

Thank you Dan!

From: Daniel Moore [mailto:Daniel.Moore@critigen.com]
Sent: Wednesday, May 16, 2018 3:21 PM
To: nancy@assetlaboratories.com
Cc: Marlon B. Cartin
Subject: Re: N030096 for EPA 6020

Report the second one below like you suggested and document the efforts in the case narrative.

Thanks!
Dan

On May 16, 2018, at 5:03 PM, "nancy@assetlaboratories.com" <nancy@assetlaboratories.com> wrote:

> It might be but we don't a 10x.
>
> Thanks,
> Nancy
>
> ---
>
> **From:** Daniel Moore [mailto:Daniel.Moore@critigen.com]
> **Sent:** Wednesday, May 16, 2018 2:51 PM
> **To:** nancy@assetlaboratories.com
> **Cc:** Marlon B. Cartin
> **Subject:** Re: N030096 for EPA 6020
>
> If the sample was run at a 10x would it be diluted below the reporting limit?
>
> On May 16, 2018, at 4:33 PM, "nancy@assetlaboratories.com" <nancy@assetlaboratories.com> wrote:
>
>> Hi Dan,
>>
>> The internal standard of Selenium for sample N030096-003 failed at 1x. Thus we diluted it to 5x however, the RSD of Se at 5x is greater than 15%. We reanalyzed the sample at 5x dilution for 2 more times on a different day and here's the breakdown for all readings:

	On-column reading	% RSD
1st reading	0.822 ug/L	29.1%
2nd reading	0.82	16.5

3rd reading	0.896	24.9

All three reading are comparable so, can we report the 2nd reading which has the lowest RSD?

Please advise.

Thanks,
Nancy

ASSET Laboratories

WORK ORDER Summary

08-May-18

WorkOrder: N030096

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/1/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030096-001A	MW-73-080-Q218	5/1/2018 1:07:00 PM	5/15/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-001B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-001C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-001D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-002A	MW-68-180-Q218	5/1/2018 8:58:00 AM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-002B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-002C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-002D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-003A	MW-68-240-Q218	5/1/2018 8:43:00 AM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-003B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-003C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-003D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-004A	MW-68BR-280-Q218	5/1/2018 10:50:00 AM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-004B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-004C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-May-18

WorkOrder: N030096

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/1/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030096-004D	MW-68BR-280-Q218	5/1/2018 10:50:00 AM	5/15/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-005A	MW-69-195-Q218	5/1/2018 9:49:00 AM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-005B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-005C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-005D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-006A	MW-62-065-Q218	5/1/2018 3:51:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-006B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-006C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-006D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-007A	TW-05-3V-Q218	5/1/2018 1:28:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-007B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-007C			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-008A	TW-05-LF-Q218	5/1/2018 12:17:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-May-18

WorkOrder: N030096

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/1/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030096-008B	TW-05-LF-Q218	5/1/2018 12:17:00 PM	5/15/2018	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-008C			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-009A	MW-715-Q218	5/1/2018 4:05:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-010A	TW-01-Q218	5/1/2018 9:27:00 AM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-010B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-010C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-010D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-011A	MW-51-Q218	5/1/2018 2:03:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-011B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-011C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-011D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-012A	MW-12-Q218	5/1/2018 11:27:00 AM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-012B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-012C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-012D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-May-18

WorkOrder: N030096

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/1/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030096-012D	MW-12-Q218	5/1/2018 11:27:00 AM	5/15/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-013A	MW-14-Q218	5/1/2018 3:55:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-013B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-013C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-013D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-014A	MW-25-Q218	5/1/2018 2:23:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-014B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-014C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-014D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-015A	MW-26-Q218	5/1/2018 2:47:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-015B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-015C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-015D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-016A	MW-21-EB-Q218	5/1/2018 2:25:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-May-18

WorkOrder: N030096

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/1/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030096-017A	MW-713-Q218	5/1/2018 4:05:00 PM	5/15/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-018A	MW-714-Q218	5/1/2018 4:04:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-019A	FOLDER	5/15/2018	5/15/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/15/2018		Folder	Folder	☐	☐	☐	LAB
			5/15/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.801D

ASSET Laboratories Work Order:

N030096

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N030096

May 17, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030096

RE: PG&E Topock - GMP, RC000753.801D

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 01, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Libucao for

Quennie Manimtim
Laboratory Director

ASSET Laboratories **Date:** *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.801D
Lab Order:	N030096

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (3100 ug/L) and hexavalent chromium (2400 ug/L) for sample N030096-010 (TW-01-Q218) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N030096-001, -003, -004, -006, -007, -008, -010, -011 and -012 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) is outside recovery criteria for Chromium in QC sample N030096-001D-MS since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Because the results for total dissolved chromium (3100 ug/L) and hexavalent chromium (2400 ug/L) for sample N030096-010 (TW-01-Q218) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 3000 and 2200 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *17-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801D
Lab Order: N030096
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030096-001A	MW-73-080-Q218	Groundwater	5/1/2018 1:07:00 PM	5/1/2018	5/17/2018
N030096-001B	MW-73-080-Q218	Groundwater	5/1/2018 1:07:00 PM	5/1/2018	5/17/2018
N030096-001C	MW-73-080-Q218	Groundwater	5/1/2018 1:07:00 PM	5/1/2018	5/17/2018
N030096-001D	MW-73-080-Q218	Groundwater	5/1/2018 1:07:00 PM	5/1/2018	5/17/2018
N030096-002A	MW-68-180-Q218	Groundwater	5/1/2018 8:58:00 AM	5/1/2018	5/17/2018
N030096-002B	MW-68-180-Q218	Groundwater	5/1/2018 8:58:00 AM	5/1/2018	5/17/2018
N030096-002C	MW-68-180-Q218	Groundwater	5/1/2018 8:58:00 AM	5/1/2018	5/17/2018
N030096-002D	MW-68-180-Q218	Groundwater	5/1/2018 8:58:00 AM	5/1/2018	5/17/2018
N030096-003A	MW-68-240-Q218	Groundwater	5/1/2018 8:43:00 AM	5/1/2018	5/17/2018
N030096-003B	MW-68-240-Q218	Groundwater	5/1/2018 8:43:00 AM	5/1/2018	5/17/2018
N030096-003C	MW-68-240-Q218	Groundwater	5/1/2018 8:43:00 AM	5/1/2018	5/17/2018
N030096-003D	MW-68-240-Q218	Groundwater	5/1/2018 8:43:00 AM	5/1/2018	5/17/2018
N030096-004A	MW-68BR-280-Q218	Groundwater	5/1/2018 10:50:00 AM	5/1/2018	5/17/2018
N030096-004B	MW-68BR-280-Q218	Groundwater	5/1/2018 10:50:00 AM	5/1/2018	5/17/2018
N030096-004C	MW-68BR-280-Q218	Groundwater	5/1/2018 10:50:00 AM	5/1/2018	5/17/2018
N030096-004D	MW-68BR-280-Q218	Groundwater	5/1/2018 10:50:00 AM	5/1/2018	5/17/2018
N030096-005A	MW-69-195-Q218	Groundwater	5/1/2018 9:49:00 AM	5/1/2018	5/17/2018
N030096-005B	MW-69-195-Q218	Groundwater	5/1/2018 9:49:00 AM	5/1/2018	5/17/2018
N030096-005C	MW-69-195-Q218	Groundwater	5/1/2018 9:49:00 AM	5/1/2018	5/17/2018
N030096-005D	MW-69-195-Q218	Groundwater	5/1/2018 9:49:00 AM	5/1/2018	5/17/2018
N030096-006A	MW-62-065-Q218	Groundwater	5/1/2018 3:51:00 PM	5/1/2018	5/17/2018
N030096-006B	MW-62-065-Q218	Groundwater	5/1/2018 3:51:00 PM	5/1/2018	5/17/2018
N030096-006C	MW-62-065-Q218	Groundwater	5/1/2018 3:51:00 PM	5/1/2018	5/17/2018
N030096-006D	MW-62-065-Q218	Groundwater	5/1/2018 3:51:00 PM	5/1/2018	5/17/2018
N030096-007A	TW-05-3V-Q218	Groundwater	5/1/2018 1:28:00 PM	5/1/2018	5/17/2018
N030096-007B	TW-05-3V-Q218	Groundwater	5/1/2018 1:28:00 PM	5/1/2018	5/17/2018
N030096-007C	TW-05-3V-Q218	Groundwater	5/1/2018 1:28:00 PM	5/1/2018	5/17/2018
N030096-008A	TW-05-LF-Q218	Groundwater	5/1/2018 12:17:00 PM	5/1/2018	5/17/2018
N030096-008B	TW-05-LF-Q218	Groundwater	5/1/2018 12:17:00 PM	5/1/2018	5/17/2018

CLIENT:	ARCADIS U.S., Inc. - California	
Project:	PG&E Topock - GMP, RC000753.801D	**Work Order Sample Summary**
Lab Order:	N030096	
Contract No:		

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030096-008C	TW-05-LF-Q218	Groundwater	5/1/2018 12:17:00 PM	5/1/2018	5/17/2018
N030096-009A	MW-715-Q218	Groundwater	5/1/2018 4:05:00 PM	5/1/2018	5/17/2018
N030096-010A	TW-01-Q218	Groundwater	5/1/2018 9:27:00 AM	5/1/2018	5/17/2018
N030096-010B	TW-01-Q218	Groundwater	5/1/2018 9:27:00 AM	5/1/2018	5/17/2018
N030096-010C	TW-01-Q218	Groundwater	5/1/2018 9:27:00 AM	5/1/2018	5/17/2018
N030096-010D	TW-01-Q218	Groundwater	5/1/2018 9:27:00 AM	5/1/2018	5/17/2018
N030096-011A	MW-51-Q218	Groundwater	5/1/2018 2:03:00 PM	5/1/2018	5/17/2018
N030096-011B	MW-51-Q218	Groundwater	5/1/2018 2:03:00 PM	5/1/2018	5/17/2018
N030096-011C	MW-51-Q218	Groundwater	5/1/2018 2:03:00 PM	5/1/2018	5/17/2018
N030096-011D	MW-51-Q218	Groundwater	5/1/2018 2:03:00 PM	5/1/2018	5/17/2018
N030096-012A	MW-12-Q218	Groundwater	5/1/2018 11:27:00 AM	5/1/2018	5/17/2018
N030096-012B	MW-12-Q218	Groundwater	5/1/2018 11:27:00 AM	5/1/2018	5/17/2018
N030096-012C	MW-12-Q218	Groundwater	5/1/2018 11:27:00 AM	5/1/2018	5/17/2018
N030096-012D	MW-12-Q218	Groundwater	5/1/2018 11:27:00 AM	5/1/2018	5/17/2018
N030096-013A	MW-14-Q218	Groundwater	5/1/2018 3:55:00 PM	5/1/2018	5/17/2018
N030096-013B	MW-14-Q218	Groundwater	5/1/2018 3:55:00 PM	5/1/2018	5/17/2018
N030096-013C	MW-14-Q218	Groundwater	5/1/2018 3:55:00 PM	5/1/2018	5/17/2018
N030096-013D	MW-14-Q218	Groundwater	5/1/2018 3:55:00 PM	5/1/2018	5/17/2018
N030096-014A	MW-25-Q218	Groundwater	5/1/2018 2:23:00 PM	5/1/2018	5/17/2018
N030096-014B	MW-25-Q218	Groundwater	5/1/2018 2:23:00 PM	5/1/2018	5/17/2018
N030096-014C	MW-25-Q218	Groundwater	5/1/2018 2:23:00 PM	5/1/2018	5/17/2018
N030096-014D	MW-25-Q218	Groundwater	5/1/2018 2:23:00 PM	5/1/2018	5/17/2018
N030096-015A	MW-26-Q218	Groundwater	5/1/2018 2:47:00 PM	5/1/2018	5/17/2018
N030096-015B	MW-26-Q218	Groundwater	5/1/2018 2:47:00 PM	5/1/2018	5/17/2018
N030096-015C	MW-26-Q218	Groundwater	5/1/2018 2:47:00 PM	5/1/2018	5/17/2018
N030096-015D	MW-26-Q218	Groundwater	5/1/2018 2:47:00 PM	5/1/2018	5/17/2018
N030096-016A	MW-21-EB-Q218	Groundwater	5/1/2018 2:25:00 PM	5/1/2018	5/17/2018
N030096-017A	MW-713-Q218	Groundwater	5/1/2018 4:05:00 PM	5/1/2018	5/17/2018
N030096-018A	MW-714-Q218	Groundwater	5/1/2018 4:04:00 PM	5/1/2018	5/17/2018

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 8:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	3300	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

- B — Analyte detected in the associated Method Blank
- H — Holding times for preparation or analysis exceeded
- S — Spike/Surrogate outside of limits due to matrix interference
- DO — Surrogate Diluted Out
- E — Value above quantitation range
- ND — Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 8:43:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 10:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	20000	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 9:49:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	3100	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 3:51:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	5900	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-3V-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 1:28:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180502B** QC Batch: **R123780** PrepDate							Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-LF-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 12:17:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-01-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 9:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	7300	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:03:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	6800	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180502B** QC Batch: **R123780** PrepDate							Analyst: **LR**
Specific Conductance	2500	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-25-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:23:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	2000	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180502B**	QC Batch: **R123780**			PrepDate			Analyst: **LR**
Specific Conductance	3700	0.10	0.10		umhos/cm	1	5/2/2018 01:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030096-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123780**
Client ID: **ZZZZZZ** Batch ID: **R123780** TestNo: **EPA 120.1** Analysis Date: **5/2/2018** SeqNo: **3013426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	10850.000	0.10						10820	0.277	2	

Sample ID **N030096-012BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123780**
Client ID: **ZZZZZZ** Batch ID: **R123780** TestNo: **EPA 120.1** Analysis Date: **5/2/2018** SeqNo: **3013437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	6740.000	0.10						6760	0.296	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	57	0.17	1.0		µg/L	5	5/4/2018 09:01 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	58	0.13	1.0		µg/L	1	5/15/2018 03:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 8:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	5600	33	200		µg/L	1000	5/4/2018 01:26 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180515B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	6100	6.5	50		µg/L	50	5/15/2018 02:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Client Sample ID: MW-68-240-Q218
Lab Order: N030096
Collection Date: 5/1/2018 8:43:00 AM
Project: PG&E Topock - GMP, RC000753.801D
Matrix: GROUNDWATER
Lab ID: N030096-003

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A** QC Batch: **R123838**			PrepDate				Analyst: **RAB**
Hexavalent Chromium	2000	6.6	40		µg/L	200	5/4/2018 09:11 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180515B** QC Batch: **67986**			PrepDate			**5/7/2018**	Analyst: **CEI**
Chromium	2100	3.2	25		µg/L	25	5/15/2018 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 10:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/4/2018 10:55 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	ND	0.65	5.0		µg/L	5	5/15/2018 05:06 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 9:49:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	210	0.66	4.0		µg/L	20	5/4/2018 10:27 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	210	0.65	5.0		µg/L	5	5/15/2018 05:17 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 3:51:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180504A** QC Batch: **R123838** PrepDate							Analyst: **RAB**
Hexavalent Chromium	520	3.3	20		µg/L	100	5/4/2018 09:20 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018**							Analyst: **CEI**
Chromium	530	0.65	5.0		µg/L	5	5/15/2018 05:40 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-3V-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 1:28:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	11	0.17	1.0		µg/L	5	5/4/2018 11:14 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	11	0.13	1.0		µg/L	1	5/15/2018 05:45 AM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-LF-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 12:17:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	8.8	0.17	1.0		µg/L	5	5/4/2018 01:08 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	9.1	0.13	1.0		µg/L	1	5/15/2018 05:57 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-715-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 4:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A** QC Batch: **R123838**			PrepDate				Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/4/2018 12:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-01-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 9:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180504A** QC Batch: **R123838** PrepDate							Analyst: **RAB**
Hexavalent Chromium	2400	17	100		µg/L	500	5/4/2018 12:11 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180515B** QC Batch: **67986** PrepDate **5/7/2018**							Analyst: **CEI**
Chromium	3100	3.2	25		µg/L	25	5/15/2018 02:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030096
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030096-011

Client Sample ID: MW-51-Q218
Collection Date: 5/1/2018 2:03:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A** QC Batch: **R123838**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	3500	17	100		µg/L	500	5/4/2018 12:30 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180515B** QC Batch: **67986**				PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	3700	3.2	25		µg/L	25	5/15/2018 02:31 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1500	6.6	40		µg/L	200	5/4/2018 02:26 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180515B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	1600	3.2	25		µg/L	25	5/15/2018 02:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.17	1.0		µg/L	5	5/4/2018 02:46 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	14	0.13	1.0		µg/L	1	5/15/2018 06:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-25-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:23:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180504A** QC Batch: **R123838** PrepDate Analyst: **RAB**							
Hexavalent Chromium	68	0.66	4.0		µg/L	20	5/4/2018 03:05 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018** Analyst: **CEI**							
Chromium	65	0.13	1.0		µg/L	1	5/15/2018 07:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2300	17	100		µg/L	500	5/4/2018 03:24 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180515B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Chromium	2400	3.2	25		µg/L	25	5/15/2018 02:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-EB-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180504A** QC Batch: **R123838** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/4/2018 04:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-713-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 4:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A** QC Batch: **R123838**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/4/2018 04:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-714-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 4:04:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180504A**	QC Batch: **R123838**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/4/2018 04:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123838** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **PBW** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123838** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **LCSW** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.236	0.20	5.000	0	105	90	110				

Sample ID **N030143-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.826	0.20						1.806	1.10	20	

Sample ID **N030096-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	83.110	1.0	25.00	56.80	105	90	110				

Sample ID **N030096-001AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	82.183	1.0	25.00	56.80	102	90	110	83.11	1.12	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030096-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3064.000	40	1000	2010	105	90	110				

Sample ID **N030096-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1048.630	20	500.0	524.3	105	90	110				

Sample ID **N030096-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	311.616	4.0	100.0	205.6	106	90	110				

Sample ID **N030096-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015983**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.905	1.0	5.000	0	98.1	90	110				

Sample ID **N030096-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	35.687	1.0	25.00	10.58	100	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030096-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4969.150	100	2500	2429	102	90	110				

Sample ID **N030096-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6005.650	100	2500	3494	100	90	110				

Sample ID **N030096-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0.09450	100	90	110				

Sample ID **N030096-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	13.777	1.0	5.000	8.816	99.2	90	110				

Sample ID **N030096-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015997**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10620.800	200	5000	5593	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030096-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016424**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2580.300	40	1000	1537	104	90	110				

Sample ID **N030096-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.762	1.0	25.00	13.44	105	90	110				

Sample ID **N030096-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	172.320	4.0	100.0	67.96	104	90	110				

Sample ID **N030096-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4902.200	100	2500	2292	104	90	110				

Sample ID **N030096-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0.09860	98.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030096-017AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.120	0.20	1.000	0.08600	103	90	110				

Sample ID **N030096-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.086	0.20	1.000	0.07930	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-67986** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **PBW** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-67986** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **LCSW** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.416	1.0	10.00	0	104	85	115				

Sample ID **N030096-001D-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	63.947	1.0	10.00	57.79	61.6	75	125				S

Sample ID **N030096-001D-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026210**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	65.967	1.0	10.00	57.79	81.8	75	125	63.95	3.11	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	3.7	0.16	0.25		mg/L	5	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 8:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180511E**	QC Batch: **R124008**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	11	0.63	1.0		mg/L	20	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 8:43:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	4.6	0.16	0.25		mg/L	5	5/11/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
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ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 10:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 9:49:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	18	0.63	1.0		mg/L	20	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 3:51:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180511E**	QC Batch: **R124008**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	4.1	0.16	0.25		mg/L	5	5/11/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-01-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 9:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180511E** QC Batch: **R124008**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	16	0.63	1.0		mg/L	20	5/11/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:03:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180511E** QC Batch: **R124008**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	8.9	0.32	0.50		mg/L	10	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	16	0.63	1.0		mg/L	20	5/11/2018

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	3.8	0.16	0.25		mg/L	5	5/11/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030096
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030096-014

Client Sample ID: MW-25-Q218
Collection Date: 5/1/2018 2:23:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	12	0.63	1.0		mg/L	20	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180511E**	QC Batch: **R124008**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	20	0.63	1.0		mg/L	20	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124008** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **PBW** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124008** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **LCSW** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.555	0.050	0.5000	0	111	85	115				

Sample ID **N030096-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **ZZZZZZ** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.520	0.25						3.684	4.55	20	

Sample ID **N030096-002CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **ZZZZZZ** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	22.446	1.0	10.00	10.62	118	75	125				

Sample ID **N030096-002CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **ZZZZZZ** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023831**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	20.726	1.0	10.00	10.62	101	75	125	22.45	7.97	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 1:07:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-001		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.5	0.081	0.10		µg/L	1	5/15/2018 03:35 AM
Manganese	24	0.26	0.50		µg/L	1	5/15/2018 03:35 AM
Molybdenum	25	1.1	2.5		µg/L	5	5/15/2018 03:41 AM
Selenium	4.4	0.36	0.50		µg/L	1	5/15/2018 03:35 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 8:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-002		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	3.2	0.081	0.10		µg/L	1	5/15/2018 04:39 AM
Manganese	ND	0.26	0.50		µg/L	1	5/15/2018 04:39 AM
Molybdenum	35	0.21	0.50		µg/L	1	5/15/2018 04:39 AM
Selenium	11	0.36	0.50		µg/L	1	5/15/2018 04:39 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 8:43:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate	**5/7/2018**		Analyst: **CEI**
Arsenic	1.9	0.081	0.10		µg/L	1	5/15/2018 04:50 AM
Manganese	28	0.26	0.50		µg/L	1	5/15/2018 04:50 AM
Molybdenum	24	1.1	2.5		µg/L	5	5/15/2018 04:55 AM
Selenium	4.1	1.8	2.5		µg/L	5	5/15/2018 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 10:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-004		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.5	0.41	0.50		µg/L	5	5/15/2018 05:06 AM
Manganese	48	1.3	2.5		µg/L	5	5/15/2018 05:06 AM
Molybdenum	55	1.1	2.5		µg/L	5	5/15/2018 05:06 AM
Selenium	ND	1.8	2.5		µg/L	5	5/15/2018 05:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 9:49:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180514B** QC Batch: **67986**				PrepDate	**5/7/2018**		Analyst: **CEI**
Arsenic	2.0	0.081	0.10		µg/L	1	5/15/2018 05:12 AM
Manganese	ND	0.26	0.50		µg/L	1	5/15/2018 05:12 AM
Molybdenum	60	0.21	0.50		µg/L	1	5/15/2018 05:12 AM
Selenium	14	0.36	0.50		µg/L	1	5/15/2018 05:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030096
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030096-006

Client Sample ID: MW-62-065-Q218
Collection Date: 5/1/2018 3:51:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**			PrepDate		**5/7/2018**	Analyst: **CEI**
Arsenic	1.4	0.081	0.10		µg/L	1	5/15/2018 05:34 AM
Manganese	4.3	0.26	0.50		µg/L	1	5/15/2018 05:34 AM
Molybdenum	15	1.1	2.5		µg/L	5	5/15/2018 05:40 AM
Selenium	3.8	0.36	0.50		µg/L	1	5/15/2018 05:34 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-3V-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 1:28:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-007		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Manganese	1.8	0.26	0.50		µg/L	1	5/15/2018 05:45 AM
Molybdenum	31	1.1	2.5		µg/L	5	5/15/2018 05:51 AM
Selenium	ND	1.8	2.5		µg/L	5	5/15/2018 05:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-05-LF-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 12:17:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180514B** QC Batch: **67986**				PrepDate **5/7/2018**			Analyst: **CEI**
Manganese	5.0	0.26	0.50		µg/L	1	5/15/2018 05:57 AM
Molybdenum	30	1.1	2.5		µg/L	5	5/15/2018 06:02 AM
Selenium	ND	0.36	0.50		µg/L	1	5/15/2018 03:18 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-01-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 9:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180514B** QC Batch: **67986**				PrepDate **5/7/2018**			Analyst: **CEI**
Molybdenum	15	1.1	2.5		µg/L	5	5/15/2018 06:13 AM
Selenium	14	0.36	0.50		µg/L	1	5/15/2018 06:08 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:03:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180514B**	QC Batch: **67986**				PrepDate **5/7/2018**		Analyst: **CEI**
Arsenic	4.0	0.081	0.10		µg/L	1	5/15/2018 06:19 AM
Manganese	4.5	0.26	0.50		µg/L	1	5/15/2018 06:19 AM
Molybdenum	47	1.1	2.5		µg/L	5	5/15/2018 06:25 AM
Selenium	15	1.8	2.5		µg/L	5	5/15/2018 06:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 11:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180514B** QC Batch: **67986**				PrepDate		**5/7/2018**	Analyst: **CEI**
Molybdenum	8.0	1.1	2.5		µg/L	5	5/15/2018 06:47 AM
Selenium	29	1.8	2.5		µg/L	5	5/15/2018 06:47 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 3:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-013		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	0.73	0.081	0.10		µg/L	1	5/15/2018 06:52 AM
Manganese	ND	0.26	0.50		µg/L	1	5/15/2018 06:52 AM
Molybdenum	12	0.21	0.50		µg/L	1	5/15/2018 06:52 AM
Selenium	2.1	0.36	0.50		µg/L	1	5/15/2018 06:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-25-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:23:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-014		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.3	0.081	0.10		µg/L	1	5/15/2018 07:04 AM
Manganese	ND	0.26	0.50		µg/L	1	5/15/2018 07:04 AM
Molybdenum	3.3	0.21	0.50		µg/L	1	5/15/2018 07:04 AM
Selenium	8.5	0.36	0.50		µg/L	1	5/15/2018 07:04 AM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *17-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q218
Lab Order:	N030096	**Collection Date:**	5/1/2018 2:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030096-015		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180514B** QC Batch: **67986** PrepDate **5/7/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.9	0.081	0.10		µg/L	1	5/15/2018 07:16 AM
Manganese	ND	0.26	0.50		µg/L	1	5/15/2018 07:16 AM
Molybdenum	31	0.21	0.50		µg/L	1	5/15/2018 07:16 AM
Selenium	41	0.36	0.50		µg/L	1	5/15/2018 07:16 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-67986** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **PBW** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-67986** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **LCSW** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.408	0.10	10.00	0	104	85	115				
Manganese	106.552	0.50	100.0	0	107	85	115				
Molybdenum	10.276	0.50	10.00	0	103	85	115				
Selenium	9.759	0.50	10.00	0	97.6	85	115				

Sample ID **N030096-001D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.538	0.10	10.00	1.522	110	75	125				
Manganese	116.869	0.50	100.0	23.69	93.2	75	125				
Selenium	14.614	0.50	10.00	4.442	102	75	125				

Sample ID **N030096-001D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	36.279	2.5	10.00	24.62	117	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030096-001D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.325	0.10	10.00	1.522	108	75	125	12.54	1.72	20	
Manganese	116.915	0.50	100.0	23.69	93.2	75	125	116.9	0.0393	20	

Sample ID **N030096-001D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	36.503	2.5	10.00	24.62	119	75	125	36.28	0.615	20	

Sample ID **N030096-001D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/7/2018** RunNo: **124065**
Client ID: **ZZZZZZ** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	14.966	0.50	10.00	4.442	105	75	125	14.61	2.38	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

SAMPLE RECEIVING ITEMS

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

ARCUS02 C: 5/15/2018 12:00 AM
FOLDER R: 5/1/2018
N030096-019A 1 of 1

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

...as, NV 89118
...7.2691
...Cerritos, CA 90703
...9.7436
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CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: [signature] Date: 5/1/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	
Project Name: PG&E Topock - GMP	Signature: [signature] Date: 5/1/2018	
Project Number: RC000753.801D		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y / N
1. Chilled	✓
2. Headspace	✓
3. Container Intact	✓
4. Seal Present	✓
5. IR number	2
6. Method of Cooling: ICE	
Sample Temp: 3.8°C / 3.5°C	
Courier: ASSET	
Tracking No.: N/A	

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030096-01	MW-73-080-Q218	5/1/2018	13:07		X			X			X	X					E	4	P	BNS	
2	-02	MW-68-180-Q218	5/1/2018	8:58		X			X			X	X					E	4	P	BNS	
3	-03	MW-68-240-Q218	5/1/2018	8:43		X			X			X	X					E	4	P	BNS	
4	-04	MW-68BR-280-Q218	5/1/2018	10:50		X			X			X	X					E	4	P	BNS	
5	-05	MW-69-195-Q218	5/1/2018	9:49		X			X			X	X					E	4	P	BNS	
6	-06	MW-62-065-Q218	5/1/2018	15:51		X			X			X	X					E	4	P	BNS	
7	-07	TW-05-3V-Q218	5/1/2018	13:28			X		X								X	E	4	P	BN	
8	-08	TW-05-LF-Q218	5/1/2018	12:17			X		X								X	E	4	P	BN	
9	-09	MW-715-Q218	5/1/2018	16:05		X												E	1	P	B	
10	-10	TW-01-Q218	5/1/2018	9:27		X			X			X		X				E	4	P	BNS	

Reliquished by (Signature and Printed Name):	Date/Time:	received by (Signature and Printed Name):	Date/Time:
[signature] Gantt Jeffers	5.1.18 4:45	[signature]	5/1/18 4:45Pm
[signature]	5/1/18 7:00Pm	[signature]	5/1/18 7:00Pm

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: [signature] Date: 5/1/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	
Project Name: PG&E Topock - GMP	Signature: [signature] Date: 5/1/2018	
Project Number: RC000753.801D		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition (Y / N)
1. Chilled ✓
2. Headspace ✓
3. Container Intact ✓
4. Seal Present ✓
5. IR number 14
6. Method of Cooling: ICE

Sample Temp: 3.5°C

Courier:

Tracking No.:

Matrix: Ground x, Sediment, Potable, Soil, NPDES, Other Solid, Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030096-11	MW-51-Q218	5/1/2018	14:03		X			X			X	X					E	4	P	BNS	
2	-12	MW-12-Q218	5/1/2018	11:27		X			X			X		X				E	4	P	BNS	
3	-13	MW-14-Q218	5/1/2018	15:55		X			X			X	X					E	4	P	BNS	
4	-14	MW-25-Q218	5/1/2018	14:23		X			X			X	X					E	4	P	BNS	
5	-15	MW-26-Q218	5/1/2018	14:47		X			X			X	X					E	4	P	BNS	
6	-16	MW-21-EB-Q218	5/1/2018	14:25		X												E	1	P	B	
7	-17	MW-713-Q218	5/1/2018	16:05		X												E	1	P	B	
8	-18	MW-714-Q218	5/1/2018	16:04		X												E	1	P	B	
9																						
10																						

Reliquished by (Signature and Printed Name):	Date/Time:	received by (Signature and Printed Name):	Date/Time:
[signature] Gantt Jeffers	5-1-18 4:45	[signature]	5/1/18 4:45 pm
[signature]	5/1/18 7:00 pm	[signature]	5/1/18 7:00 pm

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Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 5/1/2018 Workorder: N030096

Rep sample Temp (Deg C): 3.8/3.5 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

	Yes	No	Not Present / NA
1. Shipping container/cooler in good condition?	☑	☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	☐	☐	Not Present ☑
3. Custody seals intact on sample bottles?	☐	☐	Not Present ☑
4. Chain of custody present?	☑	☐	
5. Sampler's name present in COC?	☑	☐	
6. Chain of custody signed when relinquished and received?	☑	☐	
7. Chain of custody agrees with sample labels?	☑	☐	
8. Samples in proper container/bottle?	☑	☐	
9. Sample containers intact?	☑	☐	
10. Sufficient sample volume for indicated test?	☑	☐	
11. All samples received within holding time?	☑	☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	☑	☐	NA ☐
13. Water - VOA vials have zero headspace?	☐	☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	☑	☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	☑	☐	NA ☐
16. Were there Non-Conformance issues at login?	☐	☐	NA ☑
Was Client notified?	☐	☐	NA ☑

Comments:

Checklist Completed By: DA For: YLT 5/9/2018

Reviewed By: HZ 05/14/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/1/2018 6:08 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>, Kalib Sumter <Kalib.Sumter@critigen.com>, Dan Moore <Daniel.Moore@critigen.com>

Hi Yoandra,
Method 6020 is acceptable.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, April 30, 2018 8:48 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)

Hi Laura,

Please kindly check the attached COCs. Some samples are requested to be analyzed for As, Cr, Mn, Mo and Se by 6010.

Please kindly confirm if they can be analyzed by 6020 instead of 6010, as we have been doing before.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

nancy@assetlaboratories.com

From: nancy@assetlaboratories.com
Sent: Wednesday, May 16, 2018 3:27 PM
To: 'Daniel Moore'
Cc: 'Marlon B. Cartin'
Subject: RE: N030096 for EPA 6020

Thank you Dan!

From: Daniel Moore [mailto:Daniel.Moore@critigen.com]
Sent: Wednesday, May 16, 2018 3:21 PM
To: nancy@assetlaboratories.com
Cc: Marlon B. Cartin
Subject: Re: N030096 for EPA 6020

Report the second one below like you suggested and document the efforts in the case narrative.

Thanks!
Dan

On May 16, 2018, at 5:03 PM, "nancy@assetlaboratories.com" <nancy@assetlaboratories.com> wrote:

> It might be but we don't a 10x.
>
> Thanks,
> Nancy
>
> ---
>
> **From:** Daniel Moore [mailto:Daniel.Moore@critigen.com]
> **Sent:** Wednesday, May 16, 2018 2:51 PM
> **To:** nancy@assetlaboratories.com
> **Cc:** Marlon B. Cartin
> **Subject:** Re: N030096 for EPA 6020
>
> If the sample was run at a 10x would it be diluted below the reporting limit?
>
> On May 16, 2018, at 4:33 PM, "nancy@assetlaboratories.com" <nancy@assetlaboratories.com> wrote:
>
>> Hi Dan,
>>
>> The internal standard of Selenium for sample N030096-003 failed at 1x. Thus we diluted it to 5x however, the RSD of Se at 5x is greater than 15%. We reanalyzed the sample at 5x dilution for 2 more times on a different day and here's the breakdown for all readings:

	On-column reading	% RSD
1st reading	0.822 ug/L	29.1%
2nd reading	0.82	16.5

3rd reading	0.896	24.9

All three reading are comparable so, can we report the 2nd reading which has the lowest RSD?

Please advise.

Thanks,
Nancy

ASSET Laboratories

WORK ORDER Summary

08-May-18

WorkOrder: N030096

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/1/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030096-001A	MW-73-080-Q218	5/1/2018 1:07:00 PM	5/15/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-001B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-001C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-001D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-002A	MW-68-180-Q218	5/1/2018 8:58:00 AM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-002B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-002C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-002D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-003A	MW-68-240-Q218	5/1/2018 8:43:00 AM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-003B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-003C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-003D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-004A	MW-68BR-280-Q218	5/1/2018 10:50:00 AM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-004B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-004C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-May-18

WorkOrder: N030096

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/1/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030096-004D	MW-68BR-280-Q218	5/1/2018 10:50:00 AM	5/15/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-005A	MW-69-195-Q218	5/1/2018 9:49:00 AM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-005B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-005C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-005D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-006A	MW-62-065-Q218	5/1/2018 3:51:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-006B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-006C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-006D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-007A	TW-05-3V-Q218	5/1/2018 1:28:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-007B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-007C			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-008A	TW-05-LF-Q218	5/1/2018 12:17:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-May-18

WorkOrder: N030096

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/1/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030096-008B	TW-05-LF-Q218	5/1/2018 12:17:00 PM	5/15/2018	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-008C			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-009A	MW-715-Q218	5/1/2018 4:05:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-010A	TW-01-Q218	5/1/2018 9:27:00 AM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-010B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-010C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-010D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-011A	MW-51-Q218	5/1/2018 2:03:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-011B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-011C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-011D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-012A	MW-12-Q218	5/1/2018 11:27:00 AM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-012B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-012C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-012D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-May-18

WorkOrder: N030096

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/1/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030096-012D	MW-12-Q218	5/1/2018 11:27:00 AM	5/15/2018	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-013A	MW-14-Q218	5/1/2018 3:55:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-013B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-013C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-013D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-014A	MW-25-Q218	5/1/2018 2:23:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-014B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-014C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-014D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-015A	MW-26-Q218	5/1/2018 2:47:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-015B			5/15/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030096-015C			5/15/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030096-015D			5/15/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030096-016A	MW-21-EB-Q218	5/1/2018 2:25:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

08-May-18

WorkOrder: N030096

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/1/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030096-017A	MW-713-Q218	5/1/2018 4:05:00 PM	5/15/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-018A	MW-714-Q218	5/1/2018 4:04:00 PM	5/15/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030096-019A	FOLDER	5/15/2018	5/15/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/15/2018		Folder	Folder	☐	☐	☐	LAB
			5/15/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N030096

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123780 **Analyst:** LSR

ASSET #: N030096 **Date Analyzed:** 5/2/2018

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/9/2018

2nd Level Reviewer: [signature] 5/11/2018 Date: —

LOGBOOK DATA,
QUANTITATION REPORT and/or
SPECTRA

Conductivity Logbook

Date: 5/1/18 1030
Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 us/cm	CINV-180108A	9.89 @ 18.8°C	% Rec: (90-110%)
1412	180131A	1413 @ 18.8°C	
9987	180108B	10060 @ 18.7°C	
99601	180201A	99200 @ 18.8°C	

	Sample ID	Matrix	Reading	Comments
1	N030075-001B	H2O	16780 @ 19.2°C	
2	2B		3660 @ 19.4°C	
3	3B		7260 @ 18.9°C	
4	4B		6860 @ 18.7°C	
5	5B		17650 @ 18.8°C	
6	6B		3880 @ 18.7°C	
7	7B		17460 @ 18.8°C	
8	8B		17490 @ 18.7°C	
9	8B DUP		17510 @ 18.4°C	2% 5/1/18 LSR
10	1413 us/cm	CINV-171121C	1410 @ 18.8°C	Accept: ~~10% water, 20% soil~~
Dup	10000	180108C	10050 @ 18.9°C	
	Std Chk: 99672	171215A	99000 @ 18.9°C	% Rec: (90-110%)

Lidia Ramit 5/9/2018

Date: 5/2/18 1350
Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 us/cm	CINV-180108A	9.70 @ 18.7°C	% Rec: (90-110%)
1412	180131A	1429 @ 18.8°C	
9987	180108B	10030 @ 18.7°C	
99601	180201A	99900 @ 18.8°C	

	Sample ID	Matrix	Reading	Comments
1	N030096-001B	H2O	10820 @ 18.6°C	
2	1B DUP		10850 @ 18.2°C	
3	2B		3280 @ 18.3°C	STD CHK:
4	3B		15470 @ 18.7°C	1413 CINV-171121C
5	4B		19550 @ 18.8°C	= 1433 @ 18.8°C
6	5B		3120 @ 18.6°C	10,000 CINV-180108C
7	6B		5930 @ 18.5°C	= 10010 @ 18.8°C
8	7B		11420 @ 18.6°C	99672 CINV171215A
9	8B		10890 @ 18.6°C	= 97100 @ 18.7°C
10	10B		7310 @ 18.5°C	2%
Dup	11B		12150 @ 18.7°C	Accept: 10% water, 20% soil 5/2/18
	Std Chk:			% Rec: (90-110%)

Logbook # 6

Conductivity Logbook

Date: 5/2/18 1330

Analyst: LSR CONT'D

Standard	Std ID	Reading	Comments
9.65 uS/cm	CIW-180108A	9.70 @ 18.7°C	% Rec: (90-110%)
1412	180131A	1429 @ 18.8°C	
9987	180108B	10030 @ 18.7°C	
99601	180201A	99900 @ 18.8°C	

	Sample ID	Matrix	Reading	Comments
1	N030096-012B	H2O	6760 @ 18.7°C	
2	12B DUP		6740 @ 18.6°C	
3	13B		2510 @ 18.7°C	
4	14B		1981 @ 18.6°C	
5	15B		3720 @ 18.5°C	
6	N030097-001A		753 @ 18.9°C	
7	2A		1176 @ 19.1°C	
8	3A		984 @ 19.~~8~~°C	19.1°C LSR 5/2
9	4A		1661 @ 19.2°C	
10	5A		684 @ 18.9°C	2% LSR 5/2/18
~~Dup~~	6A		669 @ 18.7°C	~~Accept: 10% water, 20% soil~~
	Std Chk:			% Rec: (90-110%)

Date: CONT'D Julia Ramit 5/9/2018

Analyst:

Standard	Std ID	Reading	Comments
1413	CIW-171121C	1446 @ 19.1°C	% Rec: (90-110%)
10000	180108C	10110 @ 19.3°C	
99672	171215A	98800 @ 19.1°C	

	Sample ID	Matrix	Reading	Comments
1	N030097-007A	H2O	918 @ 18.6°C	
2	8A		1196 @ 18.7°C	
3	9A		136200 @ 18.8°C	
4	10A		160400 @ 19.0°C	
5	11A		15150 @ 19.0°C	
6	12A		156400 @ 19.3°C	
7	12A DUP		153900 @ 19.5°C	
8				
9	1413 uS/cm	CIW-171121C	1450 @ 19.1°C	
10	10000	180108C	10150 @ 19.4°C	2% LSR 5/2/18
Dup	99672	171215A	99100 @ 19.2°C	~~Accept: 10% water, 20% soil~~
	Std Chk:			% Rec: (90-110%)

Logbook # 6

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R123838
ASSET #: N030096

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 5/4/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ___________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	~~X~~	X				
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

Dilution was necessary in N030096-004A/008A due to matrix interference.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 5/11/2018

2nd Level Reviewer: RJB 05/17/2018 Date: ________

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}\text{ ,µg/L} = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N030096-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}\text{ ,µg/L} = 11.3592 * 5$$

$$Cr^{+6}\text{ ,µg/L} = 56.7960$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}\text{ ,µg/L} = 57}$$

rba 5/11/2018

RB 05/17/2018

ANALYSIS RUN LOG

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	04/30/18 10:42 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/30/18 10:52 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/30/18 11:01 AM	Reported
13	MB-R123727	MBLK	1	Hexavalent Chromium	04/30/18 11:11 AM	Reported
14	LCS-R123727	LCS	1	Hexavalent Chromium	04/30/18 11:20 AM	Reported
15	N030044-001A	SAMP	5	Hexavalent Chromium	04/30/18 11:30 AM	Reported
16	N030044-001AMS	MS	5	Hexavalent Chromium	04/30/18 11:39 AM	Reported
17	N030044-002A	SAMP	5	Hexavalent Chromium	04/30/18 11:49 AM	Reported
18	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 11:58 AM	Not Reported
19	N030044-003A	SAMP	5	Hexavalent Chromium	04/30/18 12:08 PM	Reported
20	N030044-003AMS	MS	5	Hexavalent Chromium	04/30/18 12:17 PM	Reported
21	N030044-004A	SAMP	1000	Hexavalent Chromium	04/30/18 12:26 PM	Reported
22	N030044-004AMS	MS	1000	Hexavalent Chromium	04/30/18 12:36 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/30/18 12:45 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/30/18 12:55 PM	Reported
25	N030044-005A	SAMP	50	Hexavalent Chromium	04/30/18 1:04 PM	Reported
26	N030044-005AMS	MS	50	Hexavalent Chromium	04/30/18 1:14 PM	Reported
27	N030044-006A	SAMP	200	Hexavalent Chromium	04/30/18 1:23 PM	Reported
28	N030044-006AMS	MS	200	Hexavalent Chromium	04/30/18 1:33 PM	Reported
29	N030044-007A	SAMP	200	Hexavalent Chromium	04/30/18 1:42 PM	Reported
30	N030044-007AMS	MS	200	Hexavalent Chromium	04/30/18 1:52 PM	Reported
31	N030044-008A	SAMP	1000	Hexavalent Chromium	04/30/18 2:01 PM	Reported
32	N030044-008AMS	MS	1000	Hexavalent Chromium	04/30/18 2:10 PM	Reported
33	N030044-009A	SAMP	50	Hexavalent Chromium	04/30/18 2:20 PM	Reported
34	N030044-009AMS	MS	50	Hexavalent Chromium	04/30/18 2:29 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/30/18 2:39 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/30/18 2:48 PM	Reported
37	N030044-010A	SAMP	1	Hexavalent Chromium	04/30/18 2:58 PM	Reported
38	N030044-010AMS	MS	1	Hexavalent Chromium	04/30/18 3:07 PM	Reported
39	N030044-011A	SAMP	1	Hexavalent Chromium	04/30/18 3:17 PM	Reported
40	N030044-011AMS	MS	1	Hexavalent Chromium	04/30/18 3:26 PM	Reported
41	N030044-001ADUP	DUP	5	Hexavalent Chromium	04/30/18 3:36 PM	Reported
42	N030044-004AMSD	MSD	1000	Hexavalent Chromium	04/30/18 3:45 PM	Reported

rba 5/6/2018

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 3:55 PM	Reported
44	N029859-008A	SAMP	1	Hexavalent Chromium	04/30/18 4:06 PM	Not Reported
45	N029859-008AMS	MS	1	Hexavalent Chromium	04/30/18 4:17 PM	Not Reported
46	N029859-009A	SAMP	1	Hexavalent Chromium	04/30/18 4:26 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/30/18 4:36 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/30/18 4:45 PM	Reported
49	N029859-009AMS	MS	1	Hexavalent Chromium	04/30/18 4:55 PM	Not Reported
50	N029859-011A	SAMP	1	Hexavalent Chromium	04/30/18 5:04 PM	Not Reported
51	N029859-011AMS	MS	1	Hexavalent Chromium	04/30/18 5:14 PM	Not Reported
52	CCV-4	CCV	1	Hexavalent Chromium	04/30/18 5:23 PM	Reported
53	CCB-4	CCB	1	Hexavalent Chromium	04/30/18 5:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180430A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**30/Apr/18 18:19:59**
No. of Injections:	**56**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		04/30/2018 10:42	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/30/2018 10:52	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/30/2018 11:01	Finished	ICB R180418A
13	MB-H2O,MBLK,1,	13	1000	Unknown		04/30/2018 11:11	Finished	MB R180418A
14	LCS-H2O,LCS,1,	14	1000	Unknown		04/30/2018 11:20	Finished	LCS, IWST-180129B
15	N030044-001A,SAMF	15	1000	Unknown		04/30/2018 11:30	Finished	SAMP,2>10mL
16	N030044-001AMS,MS	16	1000	Unknown		04/30/2018 11:39	Finished	MS (5ppb), IWST-180129B,2>1
17	N030044-002A,SAMF	17	1000	Unknown		04/30/2018 11:49	Finished	SAMP,2>10mL
18	N030044-002AMS,MS	18	1000	Unknown		04/30/2018 11:58	Finished	MS (5ppb), IWST-180129B,2>1
19	N030044-003A,SAMF	19	1000	Unknown		04/30/2018 12:08	Finished	SAMP,2>10mL
20	N030044-003AMS,MS	20	1000	Unknown		04/30/2018 12:17	Finished	MS (5ppb), IWST-180129B,2>1
21	N030044-004A,SAMF	21	1000	Unknown		04/30/2018 12:26	Finished	SAMP,0.01>10mL
22	N030044-004AMS,MS	22	1000	Unknown		04/30/2018 12:36	Finished	MS (5ppb), IWST-180129B,0.0
23	CCV-1,CCV1,1,	23	1000	Unknown		04/30/2018 12:45	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	24	1000	Unknown		04/30/2018 12:55	Finished	CCB R180418A
25	N030044-005A,SAMF	25	1000	Unknown		04/30/2018 13:04	Finished	SAMP,0.2>10mL
26	N030044-005AMS,MS	26	1000	Unknown		04/30/2018 13:14	Finished	MS (5ppb), IWST-180129B,0.2
27	N030044-006A,SAMF	27	1000	Unknown		04/30/2018 13:23	Finished	SAMP,0.05>10mL
28	N030044-006AMS,MS	28	1000	Unknown		04/30/2018 13:33	Finished	MS (5ppb), IWST-180129B,0.0
29	N030044-007A,SAMF	29	1000	Unknown		04/30/2018 13:42	Finished	SAMP,0.05>10mL
30	N030044-007AMS,MS	30	1000	Unknown		04/30/2018 13:52	Finished	MS (5ppb), IWST-180129B,0.0
31	N030044-008A,SAMF	31	1000	Unknown		04/30/2018 14:01	Finished	SAMP,0.01>10mL
32	N030044-008AMS,MS	32	1000	Unknown		04/30/2018 14:10	Finished	MS (5ppb), IWST-180129B,0.0
33	N030044-009A,SAMF	33	1000	Unknown		04/30/2018 14:20	Finished	SAMP,0.2>10mL
34	N030044-009AMS,MS	34	1000	Unknown		04/30/2018 14:29	Finished	MS (5ppb), IWST-180129B,0.2
35	CCV-2,CCV,1,	35	1000	Unknown		04/30/2018 14:39	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	36	1000	Unknown		04/30/2018 14:48	Finished	CCB R180418A
37	N030044-010A,SAMF	37	1000	Unknown		04/30/2018 14:58	Finished	SAMP,10mL
38	N030044-010AMS,MS	38	1000	Unknown		04/30/2018 15:07	Finished	MS (1ppb), IWST-180129B,10
39	N030044-011A,SAMF	39	1000	Unknown		04/30/2018 15:17	Finished	SAMP,10mL
40	N030044-011AMS,MS	40	1000	Unknown		04/30/2018 15:26	Finished	MS (1ppb), IWST-180129B,10
41	N030044-001ADUP,D	41	1000	Unknown		04/30/2018 15:36	Finished	DUP,2>10mL
42	N030044-004AMSD,M	42	1000	Unknown		04/30/2018 15:45	Finished	MSD (5ppb), IWST-180129B,0.
43	N030044-002AMS,MS	43	1000	Unknown		04/30/2018 15:55	Finished	MS (5ppb), IWST-180129B,2>1
44	N029859-008A,SAMF	1	1000	Unknown		04/30/2018 16:06	Finished	SAMP,10mL
45	N029859-008AMS,MS	2	1000	Unknown		04/30/2018 16:17	Finished	MS (1ppb), IWST-180129B,10
46	N029859-009A,SAMF	3	1000	Unknown		04/30/2018 16:26	Finished	SAMP,10mL
47	CCV-3,CCV1,1,	4	1000	Unknown		04/30/2018 16:36	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	5	1000	Unknown		04/30/2018 16:45	Finished	CCB R180418A
49	N029859-009AMS,MS	6	1000	Unknown		04/30/2018 16:55	Finished	MS (1ppb), IWST-180129B,10
50	N029859-011A,SAMF	7	1000	Unknown		04/30/2018 17:04	Finished	SAMP,10mL
51	N029859-011AMS,MS	8	1000	Unknown		04/30/2018 17:14	Finished	MS (1ppb), IWST-180129B,10
52	CCV-4,CCV,1,	9	1000	Unknown		04/30/2018 17:23	Finished	CCV @5ppb, IWST-180129A
53	CCB-4,CCB,1,	10	1000	Unknown		04/30/2018 17:33	Finished	CCB R180418A
54	SHUTDOWN	11	1000	Unknown		04/30/2018 17:42	Finished	
55	Eluent: R180430A	12	1000	Unknown		n.a.	Finished	Eluent
56	PCR: R180430B	13	1000	Unknown		n.a.	Finished	Post-Column Reagent

jba 5/6/2018

INJECTION LOG: 180504A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/04/18 7:31 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/04/18 7:41 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/04/18 7:51 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/04/18 8:00 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/04/18 8:09 AM	Reported
15	MB-R123838	MBLK	1	Hexavalent Chromium	05/04/18 8:18 AM	Reported
16	LCS-R123838	LCS	1	Hexavalent Chromium	05/04/18 8:28 AM	Reported
17	N030143-001A	SAMP	1	Hexavalent Chromium	05/04/18 8:41 AM	Reported
18	N030143-001ADUP	DUP	1	Hexavalent Chromium	05/04/18 8:52 AM	Reported
19	N030096-001A	SAMP	5	Hexavalent Chromium	05/04/18 9:01 AM	Reported
20	N030096-003A	SAMP	200	Hexavalent Chromium	05/04/18 9:11 AM	Reported
21	N030096-006A	SAMP	100	Hexavalent Chromium	05/04/18 9:20 AM	Reported
22	N030096-001AMS	MS	5	Hexavalent Chromium	05/04/18 9:30 AM	Reported
23	N030096-001AMSD	MSD	5	Hexavalent Chromium	05/04/18 9:39 AM	Reported
24	N030096-003AMS	MS	200	Hexavalent Chromium	05/04/18 9:49 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/04/18 9:58 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/04/18 10:08 AM	Reported
27	N030096-006AMS	MS	100	Hexavalent Chromium	05/04/18 10:17 AM	Reported
28	N030096-005A	SAMP	20	Hexavalent Chromium	05/04/18 10:27 AM	Reported
29	N030096-005AMS	MS	20	Hexavalent Chromium	05/04/18 10:36 AM	Reported
30	N030096-002A	SAMP	2000	Hexavalent Chromium	05/04/18 10:46 AM	Not Reported
31	N030096-004A	SAMP	5	Hexavalent Chromium	05/04/18 10:55 AM	Reported
32	N030096-004AMS	MS	5	Hexavalent Chromium	05/04/18 11:05 AM	Reported
33	N030096-007A	SAMP	5	Hexavalent Chromium	05/04/18 11:14 AM	Reported
34	N030096-007AMS	MS	5	Hexavalent Chromium	05/04/18 11:23 AM	Reported
35	N030096-008A	SAMP	1	Hexavalent Chromium	05/04/18 11:33 AM	Not Reported
36	N030096-008AMS	MS	1	Hexavalent Chromium	05/04/18 11:42 AM	Not Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/04/18 11:52 AM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/04/18 12:01 PM	Reported
39	N030096-010A	SAMP	500	Hexavalent Chromium	05/04/18 12:11 PM	Reported
40	N030096-010AMS	MS	500	Hexavalent Chromium	05/04/18 12:20 PM	Reported
41	N030096-011A	SAMP	500	Hexavalent Chromium	05/04/18 12:30 PM	Reported
42	N030096-011AMS	MS	500	Hexavalent Chromium	05/04/18 12:39 PM	Reported

INJECTION LOG: 180504A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030096-009A	SAMP	1	Hexavalent Chromium	05/04/18 12:49 PM	Reported
44	N030096-009AMS	MS	1	Hexavalent Chromium	05/04/18 12:58 PM	Reported
45	N030096-008A	SAMP	5	Hexavalent Chromium	05/04/18 1:08 PM	Reported
46	N030096-008AMS	MS	5	Hexavalent Chromium	05/04/18 1:17 PM	Reported
47	N030096-002A	SAMP	1000	Hexavalent Chromium	05/04/18 1:26 PM	Reported
48	N030096-002AMS	MS	1000	Hexavalent Chromium	05/04/18 1:36 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/04/18 1:45 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	05/04/18 1:55 PM	Reported
51	N030096-012A	SAMP	200	Hexavalent Chromium	05/04/18 2:26 PM	Reported
52	N030096-012AMS	MS	200	Hexavalent Chromium	05/04/18 2:37 PM	Reported
53	N030096-013A	SAMP	5	Hexavalent Chromium	05/04/18 2:46 PM	Reported
54	N030096-013AMS	MS	5	Hexavalent Chromium	05/04/18 2:56 PM	Reported
55	N030096-014A	SAMP	20	Hexavalent Chromium	05/04/18 3:05 PM	Reported
56	N030096-014AMS	MS	20	Hexavalent Chromium	05/04/18 3:15 PM	Reported
57	N030096-015A	SAMP	500	Hexavalent Chromium	05/04/18 3:24 PM	Reported
58	N030096-015AMS	MS	500	Hexavalent Chromium	05/04/18 3:34 PM	Reported
59	N030096-004A	SAMP	1	Hexavalent Chromium	05/04/18 3:43 PM	Not Reported
60	N030096-004AMS	MS	1	Hexavalent Chromium	05/04/18 3:53 PM	Not Reported
61	CCV-5	CCV	1	Hexavalent Chromium	05/04/18 4:02 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	05/04/18 4:11 PM	Reported
63	N030096-016A	SAMP	1	Hexavalent Chromium	05/04/18 4:21 PM	Reported
64	N030096-016AMS	MS	1	Hexavalent Chromium	05/04/18 4:30 PM	Reported
65	N030096-017A	SAMP	1	Hexavalent Chromium	05/04/18 4:40 PM	Reported
66	N030096-017AMS	MS	1	Hexavalent Chromium	05/04/18 4:49 PM	Reported
67	N030096-018A	SAMP	1	Hexavalent Chromium	05/04/18 4:59 PM	Reported
68	N030096-018AMS	MS	1	Hexavalent Chromium	05/04/18 5:08 PM	Reported
69	N029878-014A	SAMP	1	Hexavalent Chromium	05/04/18 5:18 PM	Not Reported
70	N029878-014AMS	MS	1	Hexavalent Chromium	05/04/18 5:27 PM	Not Reported
71	N030188-007C	SAMP	25	Hexavalent Chromium	05/04/18 5:37 PM	Not Reported
72	N030188-007CMS	MS	25	Hexavalent Chromium	05/04/18 5:46 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	05/04/18 5:56 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	05/04/18 6:05 PM	Reported
75	N030188-007C	SAMP	125	Hexavalent Chromium	05/04/18 6:14 PM	Not Reported
76	N030188-007CMS	MS	125	Hexavalent Chromium	05/04/18 6:24 PM	Not Reported
77	N030188-007CMS	MS	625	Hexavalent Chromium	05/04/18 6:44 PM	Reported
78	N030188-007CMS	MS	3125	Hexavalent Chromium	05/04/18 6:55 PM	Not Reported
79	N030188-007C	SAMP	625	Hexavalent Chromium	05/04/18 7:09 PM	Reported
80	N030188-007CREP	DUP	625	Hexavalent Chromium	05/04/18 7:21 PM	Reported
81	CCV-7	CCV	1	Hexavalent Chromium	05/04/18 7:31 PM	Reported
82	CCB-7	CCB	1	Hexavalent Chromium	05/04/18 7:40 PM	Reported
83	BLANK	BLANK	1	Hexavalent Chromium	05/04/18 7:49 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180504A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**05/May/18 09:43:57**
No. of Injections:	**86**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/04/2018 07:31	Finished	BLANK
11	BLANK	2	1000	Unknown		05/04/2018 07:41	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		05/04/2018 07:51	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/04/2018 08:00	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		05/04/2018 08:09	Finished	CCB R180418A
15	MB-H2O,MBLK,1,	6	1000	Unknown		05/04/2018 08:18	Finished	MB R180418A
16	LCS-H2O,LCS,1,	7	1000	Unknown		05/04/2018 08:28	Finished	LCS, IWST-180129B
17	N030143-001A,SAMF	9	1000	Unknown		05/04/2018 08:41	Finished	SAMP,10mL
18	N030143-001ADUP,D	10	1000	Unknown		05/04/2018 08:52	Finished	DUP,10mL
19	N030096-001A,SAMF	11	1000	Unknown		05/04/2018 09:01	Finished	SAMP,2>10mL
20	N030096-003A,SAMF	12	1000	Unknown		05/04/2018 09:11	Finished	SAMP,0.05>10mL
21	N030096-006A,SAMF	13	1000	Unknown		05/04/2018 09:20	Finished	SAMP,0.1>10mL
22	N030096-001AMS,MS	14	1000	Unknown		05/04/2018 09:30	Finished	MS (5ppb), IWST-180129B,2>1
23	N030096-001AMSD,M	15	1000	Unknown		05/04/2018 09:39	Finished	MSD (5ppb), IWST-180129B,2>
24	N030096-003AMS,MS	16	1000	Unknown		05/04/2018 09:49	Finished	MS (5ppb), IWST-180129B,0.0
25	CCV-2,CCV1,1,	17	1000	Unknown		05/04/2018 09:58	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	18	1000	Unknown		05/04/2018 10:08	Finished	CCB R180409B
27	N030096-006AMS,MS	19	1000	Unknown		05/04/2018 10:17	Finished	MS (5ppb), IWST-180129B,0.1
28	N030096-005A,SAMF	20	1000	Unknown		05/04/2018 10:27	Finished	SAMP,0.5>10mL
29	N030096-005AMS,MS	21	1000	Unknown		05/04/2018 10:36	Finished	MS (5ppb), IWST-180129B,0.5
30	N030096-002A,SAMF	22	1000	Unknown		05/04/2018 10:46	Finished	SAMP,1>10mL
31	N030096-004A,SAMF	23	1000	Unknown		05/04/2018 10:55	Finished	SAMP,2>10mL
32	N030096-004AMS,MS	24	1000	Unknown		05/04/2018 11:05	Finished	MS (1ppb), IWST-180129B,2>1
33	N030096-007A,SAMF	25	1000	Unknown		05/04/2018 11:14	Finished	SAMP,2>10mL
34	N030096-007AMS,MS	26	1000	Unknown		05/04/2018 11:23	Finished	MS (5ppb), IWST-180129B,2>1
35	N030096-008A,SAMF	27	1000	Unknown		05/04/2018 11:33	Finished	SAMP,10mL
36	N030096-008AMS,MS	28	1000	Unknown		05/04/2018 11:42	Finished	MS (5ppb), IWST-180129B,10
37	CCV-3,CCV,1,	29	1000	Unknown		05/04/2018 11:52	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	30	1000	Unknown		05/04/2018 12:01	Finished	CCB R180418A
39	N030096-010A,SAMF	31	1000	Unknown		05/04/2018 12:11	Finished	SAMP,0.02>10mL
40	N030096-010AMS,MS	32	1000	Unknown		05/04/2018 12:20	Finished	MS (5ppb), IWST-180129B,0.0
41	N030096-011A,SAMF	33	1000	Unknown		05/04/2018 12:30	Finished	SAMP,0.02>10mL
42	N030096-011AMS,MS	34	1000	Unknown		05/04/2018 12:39	Finished	MS (5ppb), IWST-180129B,0.0
43	N030096-009A,SAMF	35	1000	Unknown		05/04/2018 12:49	Finished	SAMP,10mL
44	N030096-009AMS,MS	36	1000	Unknown		05/04/2018 12:58	Finished	MS (1ppb), IWST-180129B,10
45	N030096-008A,SAMF	37	1000	Unknown		05/04/2018 13:08	Finished	SAMP,2>10mL
46	N030096-008AMS,MS	38	1000	Unknown		05/04/2018 13:17	Finished	SAMP,0.01>10mL
47	N030096-002A,SAMF	39	1000	Unknown		05/04/2018 13:26	Finished	MS (5ppb), IWST-180129B,0.0
48	N030096-002AMS,MS	40	1000	Unknown		05/04/2018 13:36	Finished	MS (5ppb), IWST-180129B,10
49	CCV-4,CCV1,1,	41	1000	Unknown		05/04/2018 13:45	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	42	1000	Unknown		05/04/2018 13:55	Finished	CCB R180418A
51	N030096-012A,SAMF	1	1000	Unknown		05/04/2018 14:26	Finished	SAMP,0.05>10mL
52	N030096-012AMS,MS	2	1000	Unknown		05/04/2018 14:37	Finished	MS (5ppb), IWST-180129B,0.0
53	N030096-013A,SAMF	3	1000	Unknown		05/04/2018 14:46	Finished	SAMP,2>10mL
54	N030096-013AMS,MS	4	1000	Unknown		05/04/2018 14:56	Finished	MS (5ppb), IWST-180129B,2>1
55	N030096-014A,SAMF	5	1000	Unknown		05/04/2018 15:05	Finished	SAMP,0.5>10mL
56	N030096-014AMS,MS	6	1000	Unknown		05/04/2018 15:15	Finished	MS (5ppb), IWST-180129B,0.5
57	N030096-015A,SAMF	7	1000	Unknown		05/04/2018 15:24	Finished	SAMP,0.02>10mL
58	N030096-015AMS,MS	8	1000	Unknown		05/04/2018 15:34	Finished	MS (5ppb), IWST-180129B,0.0
59	N030096-004A,SAMF	9	1000	Unknown		05/04/2018 15:43	Finished	SAMP,10mL
60	N030096-004AMS,MS	10	1000	Unknown		05/04/2018 15:53	Finished	MS (1ppb), IWST-180129B,10

61	CCV-5,CCV,1,	11	1000	Unknown		05/04/2018 16:02	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	12	1000	Unknown		05/04/2018 16:11	Finished	CCB R180409B
63	N030096-016A,SAMF	13	1000	Unknown		05/04/2018 16:21	Finished	SAMP,10mL
64	N030096-016AMS,MS	14	1000	Unknown		05/04/2018 16:30	Finished	MS (1ppb), IWST-180129B,10
65	N030096-017A,SAMF	15	1000	Unknown		05/04/2018 16:40	Finished	SAMP,10mL
66	N030096-017AMS,MS	16	1000	Unknown		05/04/2018 16:49	Finished	MS (1ppb), IWST-180129B,10
67	N030096-018A,SAMF	17	1000	Unknown		05/04/2018 16:59	Finished	SAMP,10mL
68	N030096-018AMS,MS	18	1000	Unknown		05/04/2018 17:08	Finished	MS (1ppb), IWST-180129B,10
69	N029878-014A,SAMF	19	1000	Unknown		05/04/2018 17:18	Finished	SAMP,10mL
70	N029878-014AMS,MS	20	1000	Unknown		05/04/2018 17:27	Finished	MS (1ppb), IWST-180129B,10
71	N030188-007C,SAMF	21	1000	Unknown		05/04/2018 17:37	Finished	SAMP,0.4>10mL
72	N030188-007CMS,MS	22	1000	Unknown		05/04/2018 17:46	Finished	MS (1ppb), IWST-180129B,0.4
73	CCV-6,CCV1,1,	23	1000	Unknown		05/04/2018 17:56	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	24	1000	Unknown		05/04/2018 18:05	Finished	CCB R180409B
75	N030188-007C,SAMF	26	1000	Unknown		05/04/2018 18:14	Finished	SAMP,0.016>10mL
76	N030188-007CMS,MS	27	1000	Unknown		05/04/2018 18:24	Finished	MS (1ppb), IWST-180129B,0.0
77	N030188-007CMS,MS	29	1000	Unknown		05/04/2018 18:44	Finished	MS (1ppb), IWST-180129B,0.0
78	N030188-007CMS,MS	30	1000	Unknown		05/04/2018 18:55	Finished	MS (1ppb), IWST-180129B,0.0
79	N030188-007C,SAMF	32	1000	Unknown		05/04/2018 19:09	Finished	SAMP,0.016>10mL
80	N030188-007CREP,D	33	1000	Unknown		05/04/2018 19:21	Finished	REP,0.016>10mL
81	CCV-7,CCV,1,	34	1000	Unknown		05/04/2018 19:31	Finished	CCV @5ppb, IWST-180129A
82	CCB-7,CCB,1,	35	1000	Unknown		05/04/2018 19:40	Finished	CCB R180418A
83	BLANK	36	1000	Unknown		05/04/2018 19:49	Finished	BLANK
84	SHUTDOWN	37	1000	Unknown		05/04/2018 19:59	Finished	
85	Eluent: R180504A	38	1000	Unknown		n.a.	Finished	Eluent
86	PCR: R180502B	39	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 5/2/18
Time Prepared: 1645H
Prepared By: LSR

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CHN-171116A
NH4OH + NH4SO4 eluent: R180502A
NH4OH + NH4SO4 buffer: R180409B / R180418A

6N NaOH: 1471229A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030091-018A	9.48	–	~250mL	~250 mL	–	R180409B
2)	19A	9.33	–			–	
3)	20A	8.96	9.35			+5 drops NaOH	
4)	21A	8.90	9.32			+5	
5)	N030096-001A	9.31	–			–	R180418A
6)	2A	9.34	–			–	
7)	3A	9.41	–			–	
8)	4A	9.55	–			–	
9)	5A	9.16	9.38			+3 drops NaOH	
10)	6A	9.30	–			–	
11)	7A	9.50	–			–	1 of 2
12)	7A	9.50	–			–	2 of 2
13)	8A	9.51	–			–	1 of 2
14)	8A	9.46	–			–	2 of 2
15)	9A	9.54	–			–	
	10A	9.35				–	

Sample Preparation

Date Prepared: 5/2/18
Time Prepared: 1645H
Prepared By: LSR

LCS: 7.01 @ 25.0°C

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CHN-171116A
NH4OH + NH4SO4 eluent: R180502A
NH4OH + NH4SO4 buffer: R180418A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030091-011A	9.39	–	~250 mL	~250mL	–	R180418A
2)	12A	9.42	–			–	
3)	13A	9.41	–			–	
4)	14A	9.32	–			–	
5)	15A	9.31	–			–	
6)	16A	9.49	–			–	
7)	17A	9.52	–			–	
8)	18A	9.48	–			–	
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 14

rba 5/11/2018

05/17/2018

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

INITIAL CALIBRATION
DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/30/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0607	0.2618	1.2924	2.5813	3.8731	5.1050	0.9999

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RB 05/17/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ICV** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3015961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.194	0.20	5.000	0	104	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3015962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **CCV** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.224	0.20	5.000	0	104	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.205	0.20	0.2000	0	102	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.028	0.20	10.00	0	100	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **CCV** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.929	0.20	5.000	0	98.6	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015998**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.913	0.20	10.00	0	99.1	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **CCV** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.986	0.20	5.000	0	99.7	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ZZZZZZ** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.042	0.20	10.00	0	100	95	105				

Sample ID **CCV-7** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **CCV** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016444**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.983	0.20	5.000	0	99.7	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

ASSET Laboratories

Date: *06-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **ICB** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3015963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **CCB** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **CCB** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **CCB** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015987**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **CCB** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3015999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **CCB** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **CCB** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016440**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123838**
Client ID: **CCB** Batch ID: **R123838** TestNo: **EPA 218.6** Analysis Date: **5/4/2018** SeqNo: **3016445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/4/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.223		
CCV-2	4.231		
CCV-3	4.231		
CCV-4	4.231		
CCV-5	4.231		
CCV-6	4.231		
CCV-7	4.231		
Average	4.230		
Actual RT Window	4.150 -	4.310	
Applied RT Window	4.030 -	4.430	
MB-R123838	N.A.		N.A.
LCS-R123838	4.223		PASS
N030143-001A	4.215		PASS
N030143-001ADUP	4.215		PASS
N030096-001A	4.190		PASS
N030096-003A	4.231		PASS
N030096-006A	4.223		PASS
N030096-001AMS	4.190		PASS
N030096-001AMSD	4.173		PASS
N030096-003AMS	4.231		PASS
N030096-006AMS	4.223		PASS
N030096-005A	4.231		PASS
N030096-005AMS	4.231		PASS
N030096-002A	4.223		PASS
N030096-004A	N.A.		N.A.
N030096-004AMS	4.140		PASS
N030096-007A	4.181		PASS
N030096-007AMS	4.190		PASS
N030096-008A	3.956		FAIL
N030096-008AMS	3.965		FAIL

rba 5/11/2018

RB 05/17/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/4/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.223		
CCV-2	4.231		
CCV-3	4.231		
CCV-4	4.231		
CCV-5	4.231		
CCV-6	4.231		
CCV-7	4.231		
Average	4.230		
Actual RT Window	4.150 -	4.310	
Applied RT Window	4.030 -	4.430	
N030096-010A	4.231		PASS
N030096-010AMS	4.231		PASS
N030096-011A	4.231		PASS
N030096-011AMS	4.231		PASS
N030096-009A	4.215		PASS
N030096-009AMS	4.223		PASS
N030096-008A	4.190		PASS
N030096-008AMS	4.190		PASS
N030096-002A	4.231		PASS
N030096-002AMS	4.231		PASS
N030096-012A	4.231		PASS
N030096-012AMS	4.231		PASS
N030096-013A	4.223		PASS
N030096-013AMS	4.223		PASS
N030096-014A	4.231		PASS
N030096-014AMS	4.231		PASS
N030096-015A	4.231		PASS
N030096-015AMS	4.231		PASS
N030096-004A	N.A.		N.A.
N030096-004AMS	N.A.		N.A.
N030096-016A	4.231		PASS

RB 05/17/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/4/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.223		
CCV-2	4.231		
CCV-3	4.231		
CCV-4	4.231		
CCV-5	4.231		
CCV-6	4.231		
CCV-7	4.231		
Average	4.230		
Actual RT Window	4.150 -	4.310	
Applied RT Window	4.030 -	4.430	
N030096-016AMS	4.231		PASS
N030096-017A	4.215		PASS
N030096-017AMS	4.231		PASS
N030096-018A	4.223		PASS
N030096-018AMS	4.231		PASS
N029878-014A	4.223		PASS
N029878-014AMS	4.231		PASS
N030188-007C	N.A.		N.A.
N030188-007CMS	N.A.		N.A.
N030188-007C	N.A.		N.A.
N030188-007CMS	4.223		PASS
N030188-007CMS	4.231		PASS
N030188-007CMS	4.231		PASS
N030188-007C	N.A.		N.A.
N030188-007CREP	N.A.		N.A.

RB 05/17/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2018 (1st Quarter)

Method Name:	**Hexavalent Chromium by IC**	Matrix:	**WATER**
Method Number:	EPA Method 218.6/7199	Unit:	µg/L
Analysis Date(s):	3/21/2018		
Analyst:	Ria Abes		
Instrument Name:	**IC-07**		

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.116

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.201	**100**

RAW DATA

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	04/30/18 10:42 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/30/18 10:52 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/30/18 11:01 AM	Reported
13	MB-R123727	MBLK	1	Hexavalent Chromium	04/30/18 11:11 AM	Reported
14	LCS-R123727	LCS	1	Hexavalent Chromium	04/30/18 11:20 AM	Reported
15	N030044-001A	SAMP	5	Hexavalent Chromium	04/30/18 11:30 AM	Reported
16	N030044-001AMS	MS	5	Hexavalent Chromium	04/30/18 11:39 AM	Reported
17	N030044-002A	SAMP	5	Hexavalent Chromium	04/30/18 11:49 AM	Reported
18	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 11:58 AM	Not Reported
19	N030044-003A	SAMP	5	Hexavalent Chromium	04/30/18 12:08 PM	Reported
20	N030044-003AMS	MS	5	Hexavalent Chromium	04/30/18 12:17 PM	Reported
21	N030044-004A	SAMP	1000	Hexavalent Chromium	04/30/18 12:26 PM	Reported
22	N030044-004AMS	MS	1000	Hexavalent Chromium	04/30/18 12:36 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/30/18 12:45 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/30/18 12:55 PM	Reported
25	N030044-005A	SAMP	50	Hexavalent Chromium	04/30/18 1:04 PM	Reported
26	N030044-005AMS	MS	50	Hexavalent Chromium	04/30/18 1:14 PM	Reported
27	N030044-006A	SAMP	200	Hexavalent Chromium	04/30/18 1:23 PM	Reported
28	N030044-006AMS	MS	200	Hexavalent Chromium	04/30/18 1:33 PM	Reported
29	N030044-007A	SAMP	200	Hexavalent Chromium	04/30/18 1:42 PM	Reported
30	N030044-007AMS	MS	200	Hexavalent Chromium	04/30/18 1:52 PM	Reported
31	N030044-008A	SAMP	1000	Hexavalent Chromium	04/30/18 2:01 PM	Reported
32	N030044-008AMS	MS	1000	Hexavalent Chromium	04/30/18 2:10 PM	Reported
33	N030044-009A	SAMP	50	Hexavalent Chromium	04/30/18 2:20 PM	Reported
34	N030044-009AMS	MS	50	Hexavalent Chromium	04/30/18 2:29 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/30/18 2:39 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/30/18 2:48 PM	Reported
37	N030044-010A	SAMP	1	Hexavalent Chromium	04/30/18 2:58 PM	Reported
38	N030044-010AMS	MS	1	Hexavalent Chromium	04/30/18 3:07 PM	Reported
39	N030044-011A	SAMP	1	Hexavalent Chromium	04/30/18 3:17 PM	Reported
40	N030044-011AMS	MS	1	Hexavalent Chromium	04/30/18 3:26 PM	Reported
41	N030044-001ADUP	DUP	5	Hexavalent Chromium	04/30/18 3:36 PM	Reported
42	N030044-004AMSD	MSD	1000	Hexavalent Chromium	04/30/18 3:45 PM	Reported

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INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 3:55 PM	Reported
44	N029859-008A	SAMP	1	Hexavalent Chromium	04/30/18 4:06 PM	Not Reported
45	N029859-008AMS	MS	1	Hexavalent Chromium	04/30/18 4:17 PM	Not Reported
46	N029859-009A	SAMP	1	Hexavalent Chromium	04/30/18 4:26 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/30/18 4:36 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/30/18 4:45 PM	Reported
49	N029859-009AMS	MS	1	Hexavalent Chromium	04/30/18 4:55 PM	Not Reported
50	N029859-011A	SAMP	1	Hexavalent Chromium	04/30/18 5:04 PM	Not Reported
51	N029859-011AMS	MS	1	Hexavalent Chromium	04/30/18 5:14 PM	Not Reported
52	CCV-4	CCV	1	Hexavalent Chromium	04/30/18 5:23 PM	Reported
53	CCB-4	CCB	1	Hexavalent Chromium	04/30/18 5:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180430A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**30/Apr/18 18:19:59**
No. of Injections:	**56**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		04/30/2018 10:42	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/30/2018 10:52	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/30/2018 11:01	Finished	ICB R180418A
13	MB-H2O,MBLK,1,	13	1000	Unknown		04/30/2018 11:11	Finished	MB R180418A
14	LCS-H2O,LCS,1,	14	1000	Unknown		04/30/2018 11:20	Finished	LCS, IWST-180129B
15	N030044-001A,SAMP	15	1000	Unknown		04/30/2018 11:30	Finished	SAMP,2>10mL
16	N030044-001AMS,MS	16	1000	Unknown		04/30/2018 11:39	Finished	MS (5ppb), IWST-180129B,2>1
17	N030044-002A,SAMP	17	1000	Unknown		04/30/2018 11:49	Finished	SAMP,2>10mL
18	N030044-002AMS,MS	18	1000	Unknown		04/30/2018 11:58	Finished	MS (5ppb), IWST-180129B,2>1
19	N030044-003A,SAMP	19	1000	Unknown		04/30/2018 12:08	Finished	SAMP,2>10mL
20	N030044-003AMS,MS	20	1000	Unknown		04/30/2018 12:17	Finished	MS (5ppb), IWST-180129B,2>1
21	N030044-004A,SAMP	21	1000	Unknown		04/30/2018 12:26	Finished	SAMP,0.01>10mL
22	N030044-004AMS,MS	22	1000	Unknown		04/30/2018 12:36	Finished	MS (5ppb), IWST-180129B,0.0
23	CCV-1,CCV1,1,	23	1000	Unknown		04/30/2018 12:45	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	24	1000	Unknown		04/30/2018 12:55	Finished	CCB R180418A
25	N030044-005A,SAMP	25	1000	Unknown		04/30/2018 13:04	Finished	SAMP,0.2>10mL
26	N030044-005AMS,MS	26	1000	Unknown		04/30/2018 13:14	Finished	MS (5ppb), IWST-180129B,0.2
27	N030044-006A,SAMP	27	1000	Unknown		04/30/2018 13:23	Finished	SAMP,0.05>10mL
28	N030044-006AMS,MS	28	1000	Unknown		04/30/2018 13:33	Finished	MS (5ppb), IWST-180129B,0.0
29	N030044-007A,SAMP	29	1000	Unknown		04/30/2018 13:42	Finished	SAMP,0.05>10mL
30	N030044-007AMS,MS	30	1000	Unknown		04/30/2018 13:52	Finished	MS (5ppb), IWST-180129B,0.0
31	N030044-008A,SAMP	31	1000	Unknown		04/30/2018 14:01	Finished	SAMP,0.01>10mL
32	N030044-008AMS,MS	32	1000	Unknown		04/30/2018 14:10	Finished	MS (5ppb), IWST-180129B,0.0
33	N030044-009A,SAMP	33	1000	Unknown		04/30/2018 14:20	Finished	SAMP,0.2>10mL
34	N030044-009AMS,MS	34	1000	Unknown		04/30/2018 14:29	Finished	MS (5ppb), IWST-180129B,0.2
35	CCV-2,CCV,1,	35	1000	Unknown		04/30/2018 14:39	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	36	1000	Unknown		04/30/2018 14:48	Finished	CCB R180418A
37	N030044-010A,SAMP	37	1000	Unknown		04/30/2018 14:58	Finished	SAMP,10mL
38	N030044-010AMS,MS	38	1000	Unknown		04/30/2018 15:07	Finished	MS (1ppb), IWST-180129B,10
39	N030044-011A,SAMP	39	1000	Unknown		04/30/2018 15:17	Finished	SAMP,10mL
40	N030044-011AMS,MS	40	1000	Unknown		04/30/2018 15:26	Finished	MS (1ppb), IWST-180129B,10
41	N030044-001ADUP,D	41	1000	Unknown		04/30/2018 15:36	Finished	DUP,2>10mL
42	N030044-004AMSD,M	42	1000	Unknown		04/30/2018 15:45	Finished	MSD (5ppb), IWST-180129B,0.
43	N030044-002AMS,MS	43	1000	Unknown		04/30/2018 15:55	Finished	MS (5ppb), IWST-180129B,2>1
44	N029859-008A,SAMP	1	1000	Unknown		04/30/2018 16:06	Finished	SAMP,10mL
45	N029859-008AMS,MS	2	1000	Unknown		04/30/2018 16:17	Finished	MS (1ppb), IWST-180129B,10
46	N029859-009A,SAMP	3	1000	Unknown		04/30/2018 16:26	Finished	SAMP,10mL
47	CCV-3,CCV1,1,	4	1000	Unknown		04/30/2018 16:36	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	5	1000	Unknown		04/30/2018 16:45	Finished	CCB R180418A
49	N029859-009AMS,MS	6	1000	Unknown		04/30/2018 16:55	Finished	MS (1ppb), IWST-180129B,10
50	N029859-011A,SAMP	7	1000	Unknown		04/30/2018 17:04	Finished	SAMP,10mL
51	N029859-011AMS,MS	8	1000	Unknown		04/30/2018 17:14	Finished	MS (1ppb), IWST-180129B,10
52	CCV-4,CCV,1,	9	1000	Unknown		04/30/2018 17:23	Finished	CCV @5ppb, IWST-180129A
53	CCB-4,CCB,1,	10	1000	Unknown		04/30/2018 17:33	Finished	CCB R180418A
54	SHUTDOWN	11	1000	Unknown		04/30/2018 17:42	Finished	
55	Eluent: R180430A	12	1000	Unknown		n.a.	Finished	Eluent
56	PCR: R180430B	13	1000	Unknown		n.a.	Finished	Post-Column Reagent

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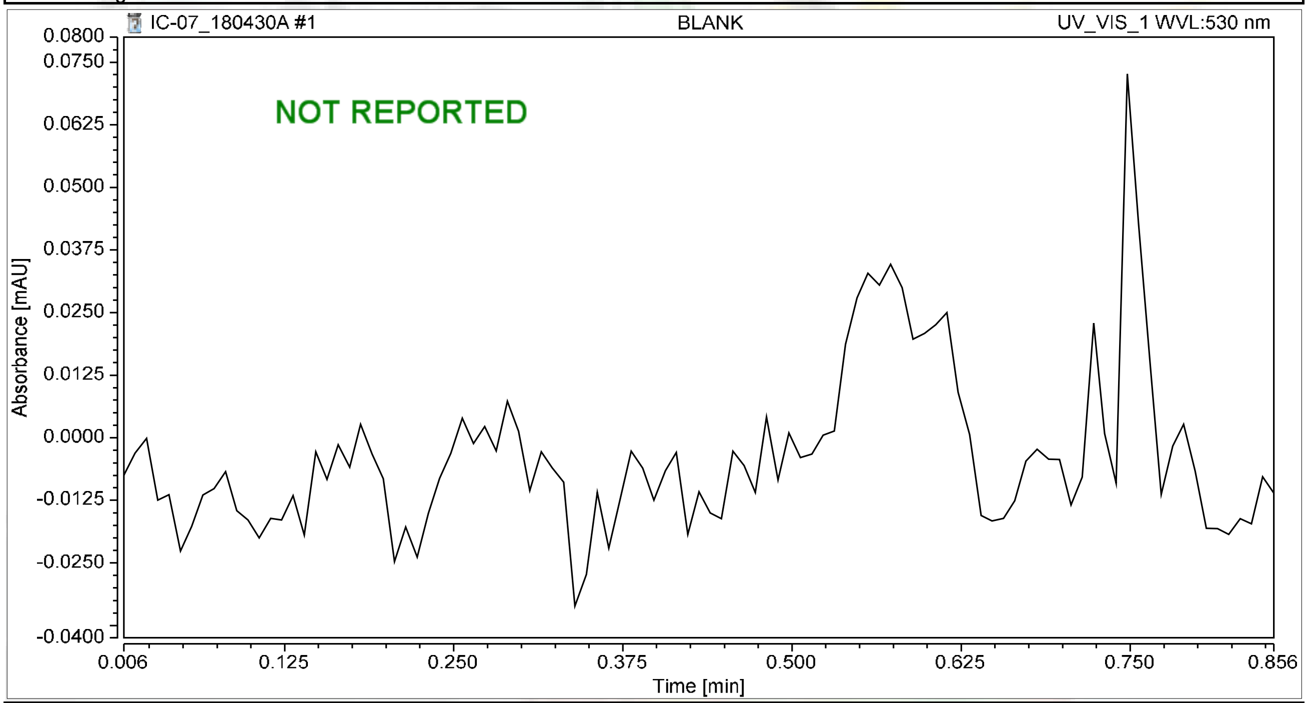
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.85**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

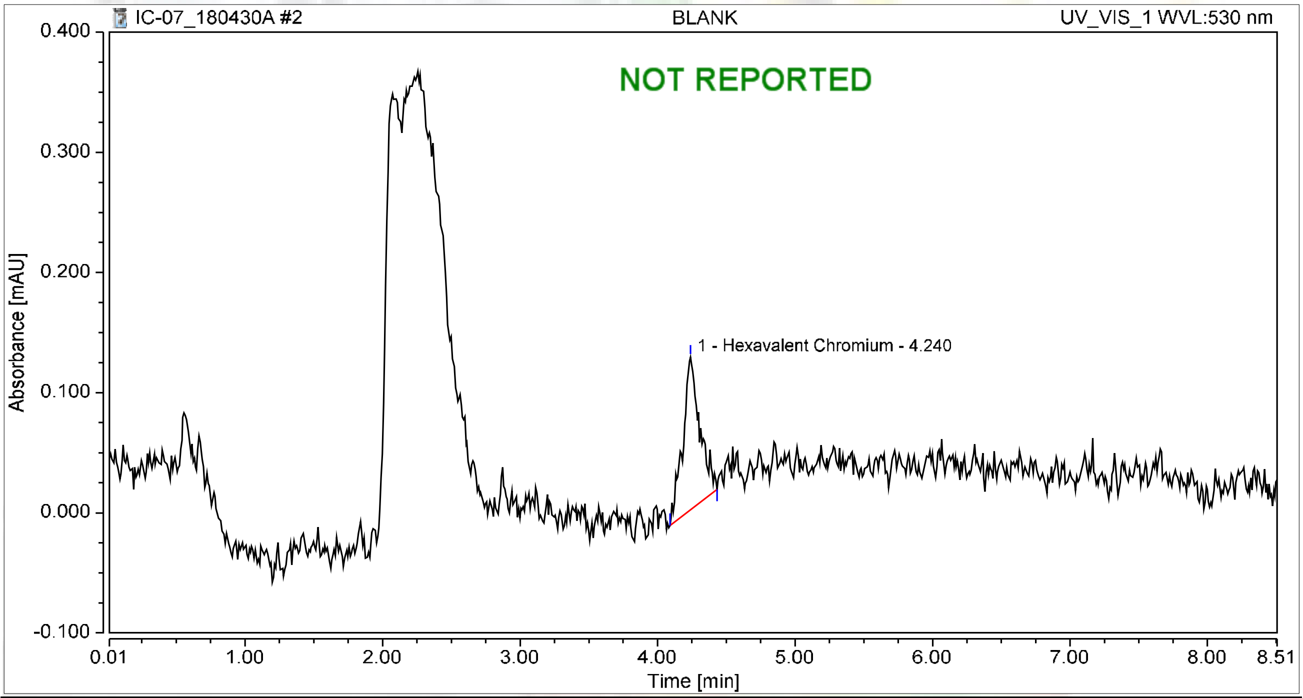
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

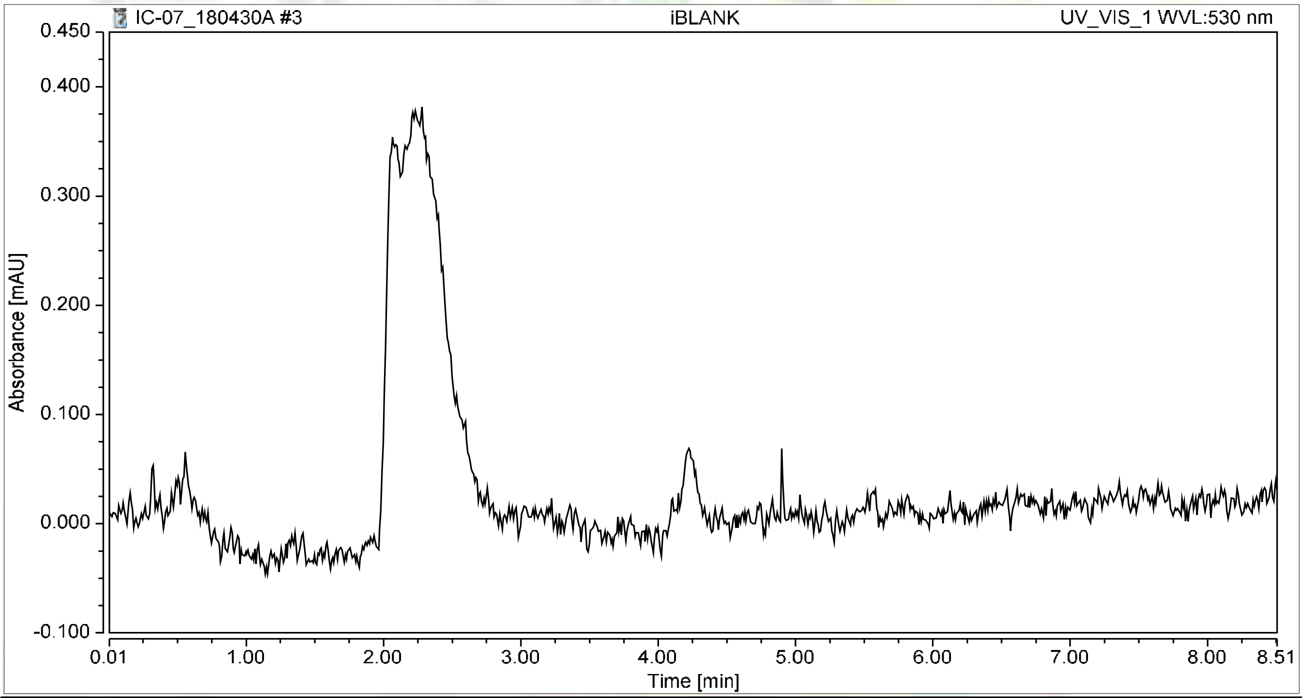
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.018	0.127	100.00	100.00	0.0705
Total:			**0.018**	**0.127**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

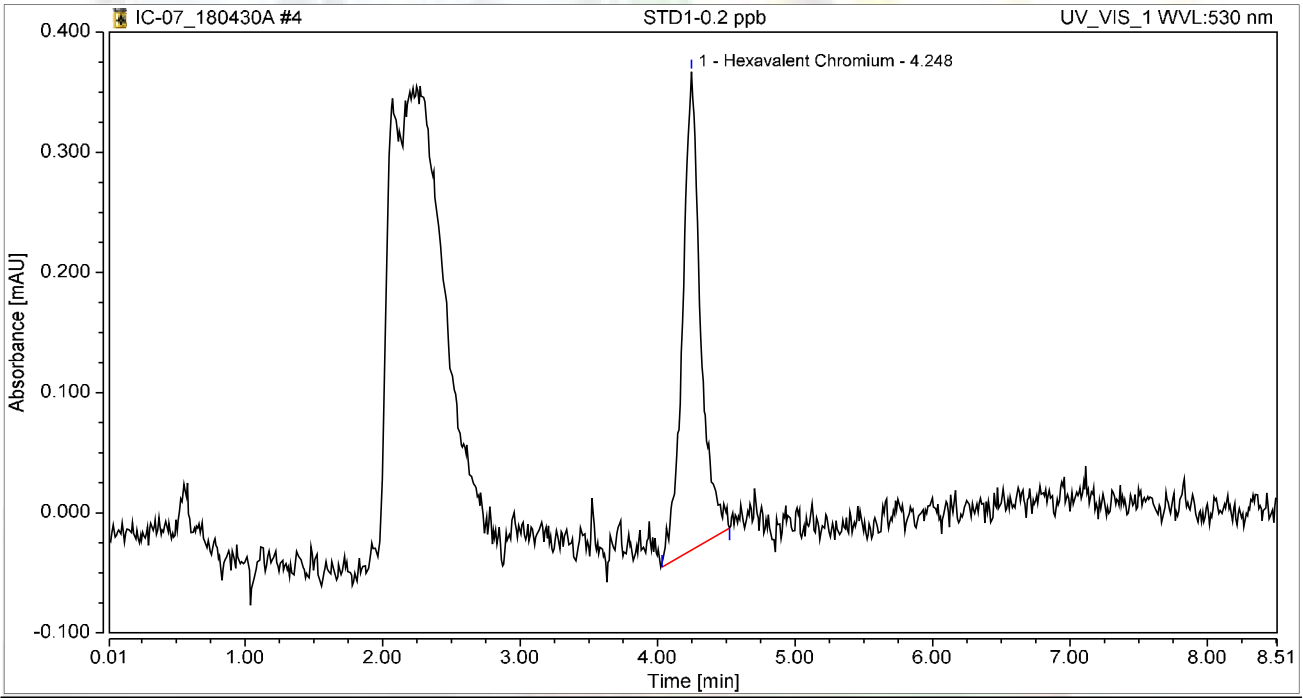
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

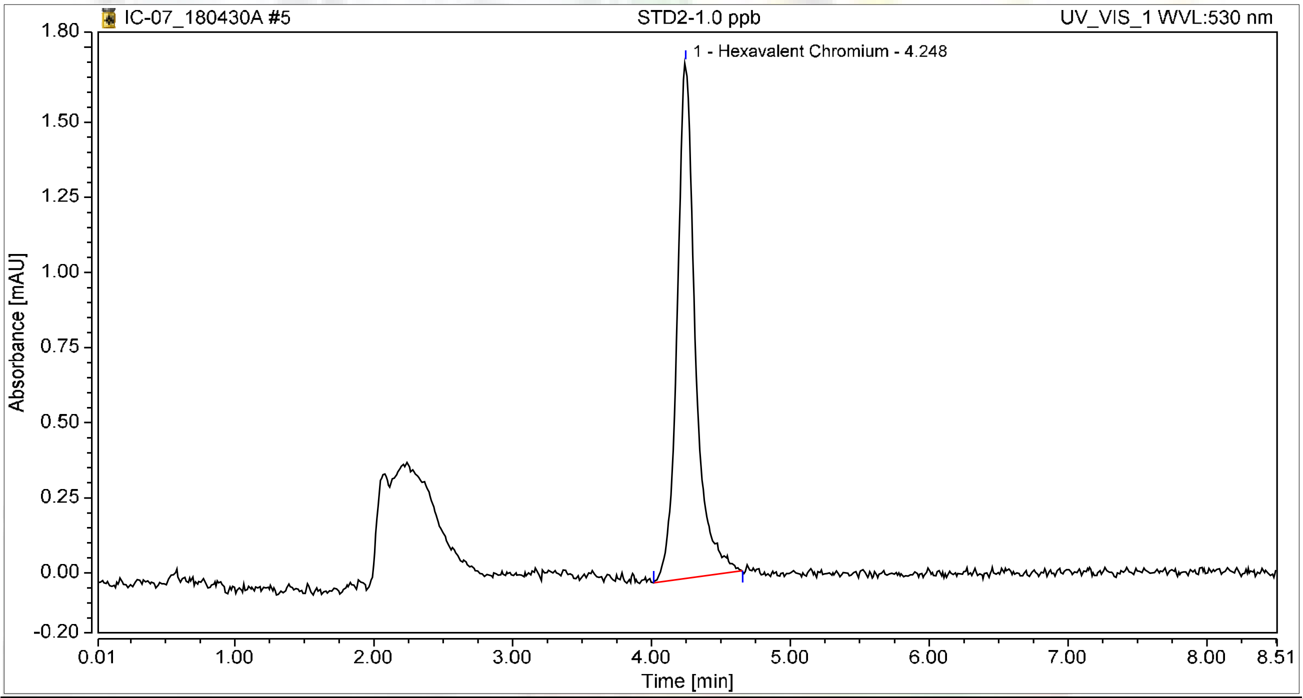
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.061	0.398	100.00	100.00	0.2363
Total:			**0.061**	**0.398**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

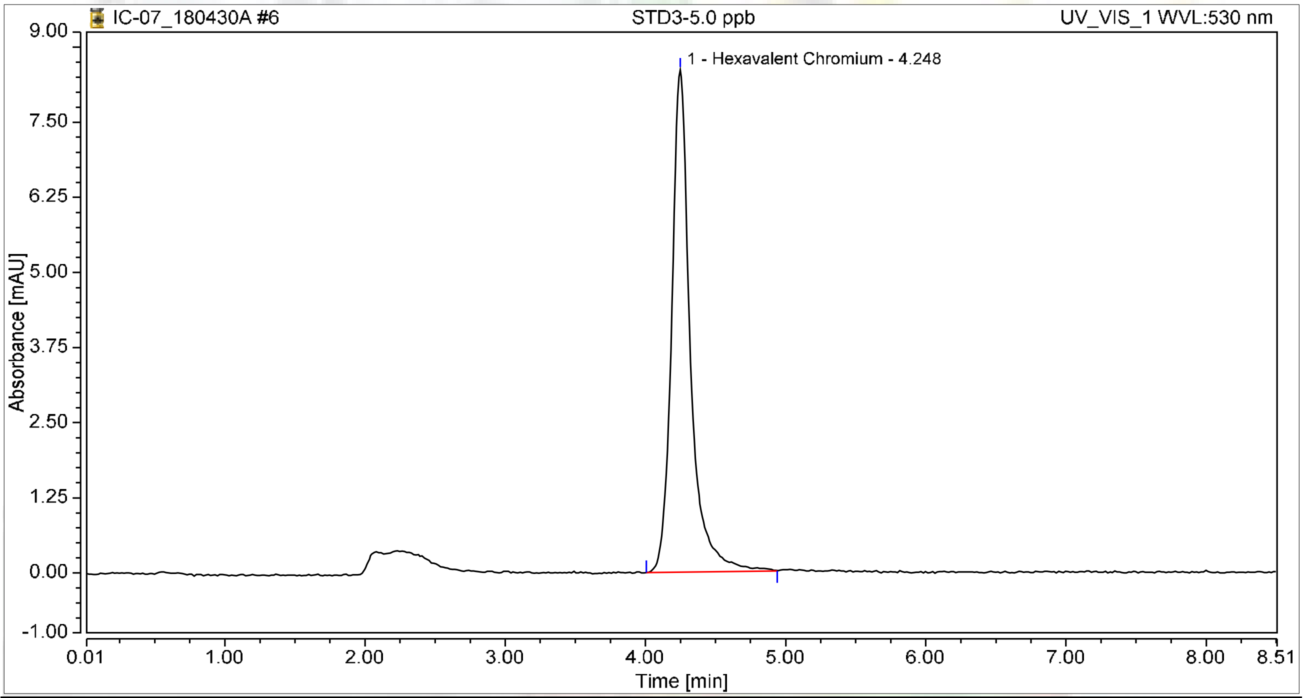
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.262	1.718	100.00	100.00	1.0201
Total:			**0.262**	**1.718**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

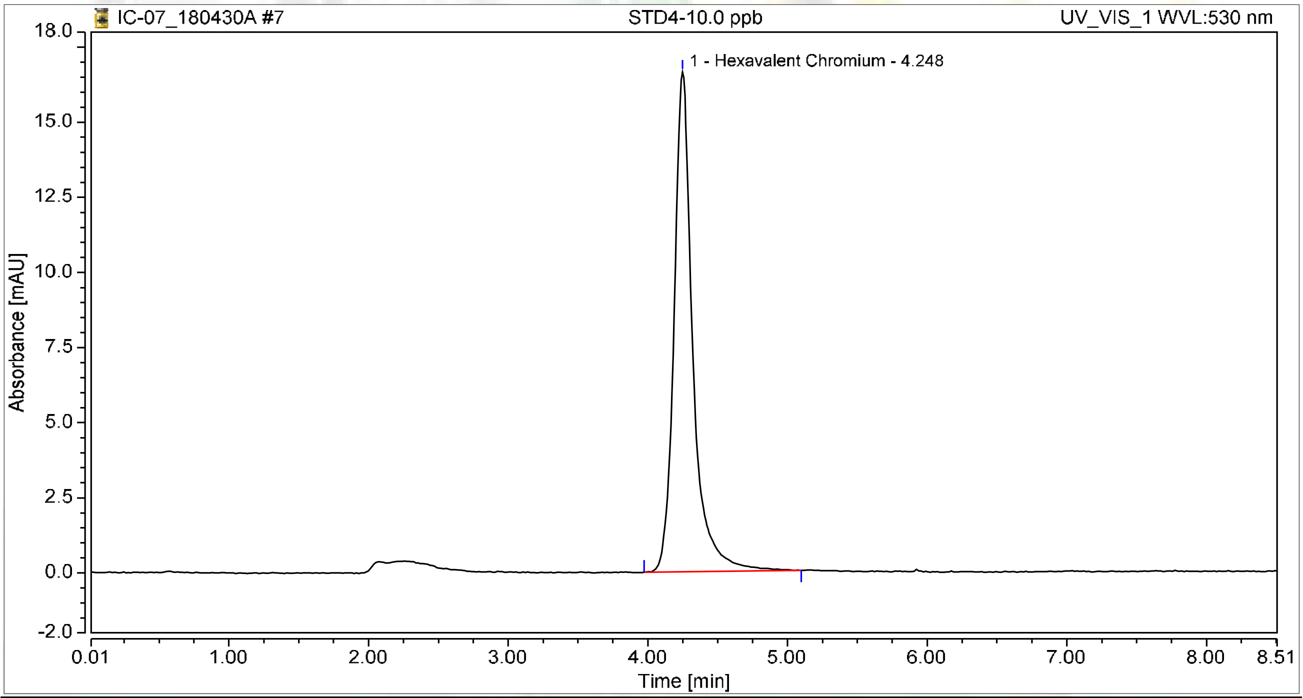
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.292	8.359	100.00	100.00	5.0360
Total:			**1.292**	**8.359**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

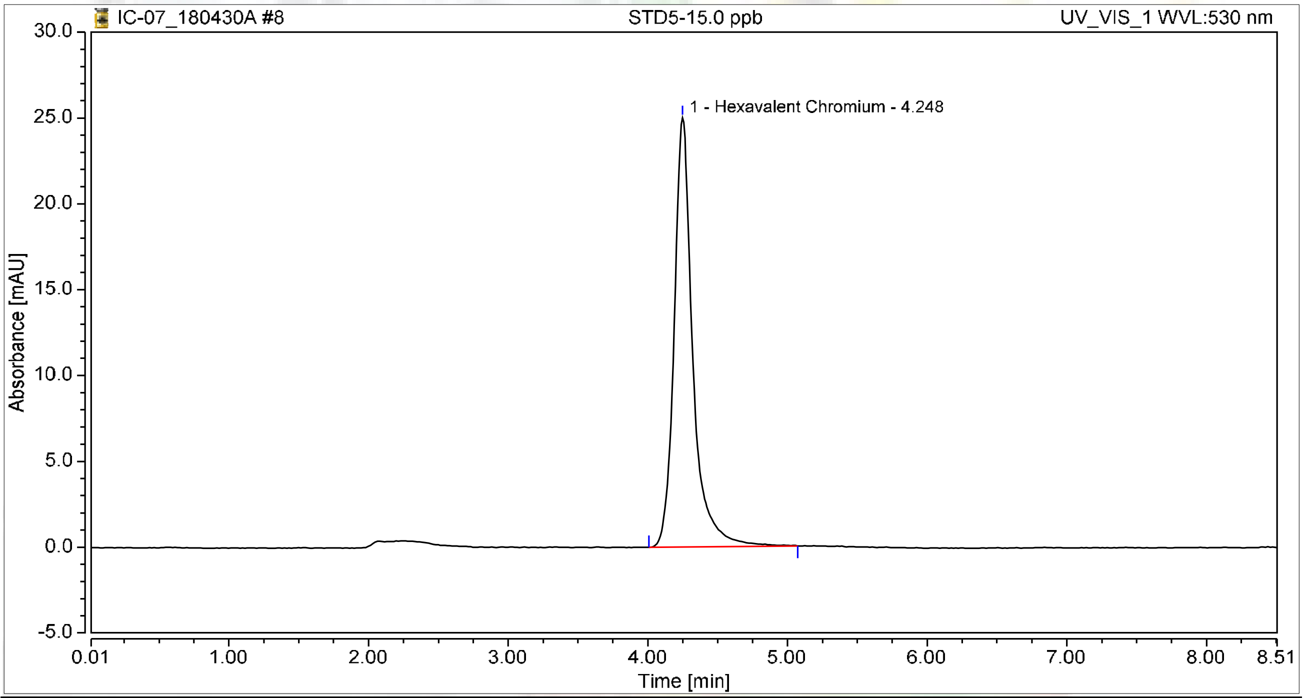
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.581	16.640	100.00	100.00	10.0583
Total:			**2.581**	**16.640**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

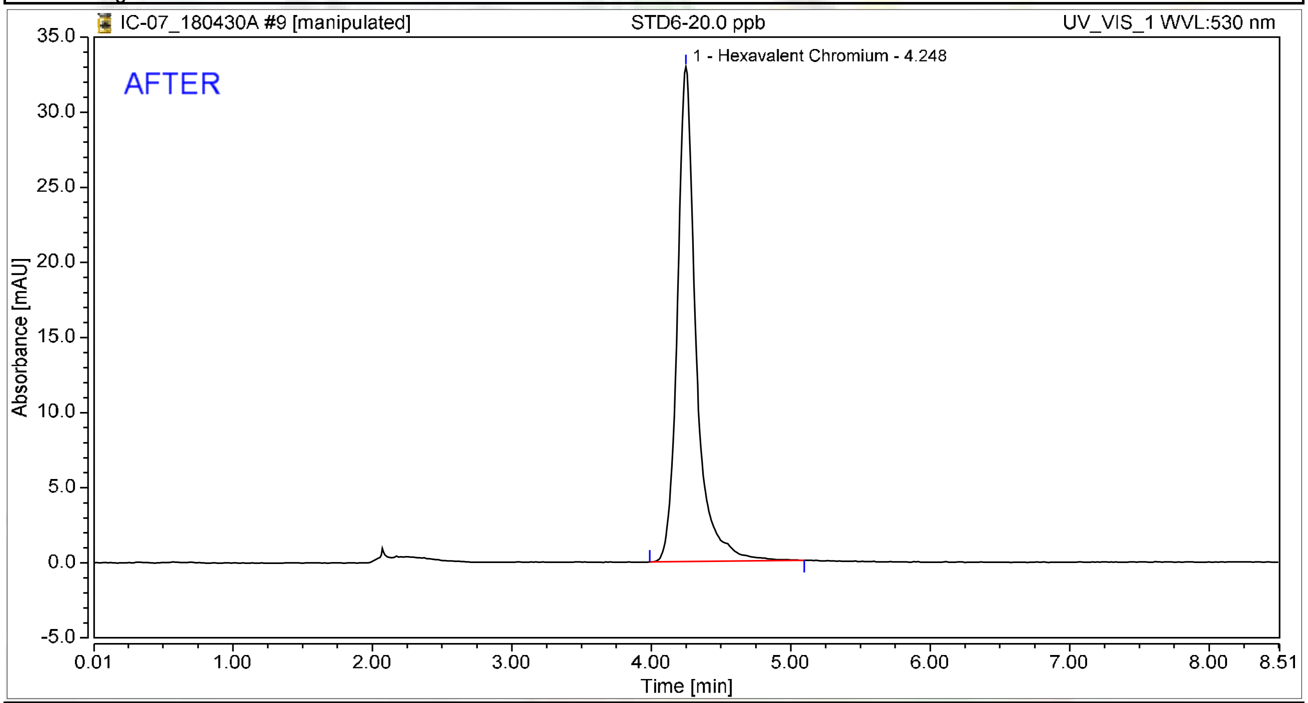
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.873	25.002	100.00	100.00	15.0915
Total:			**3.873**	**25.002**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.105	32.932	100.00	100.00	19.8919
Total:			**5.105**	**32.932**	**100.00**	**100.00**	

rba 5/6/2018

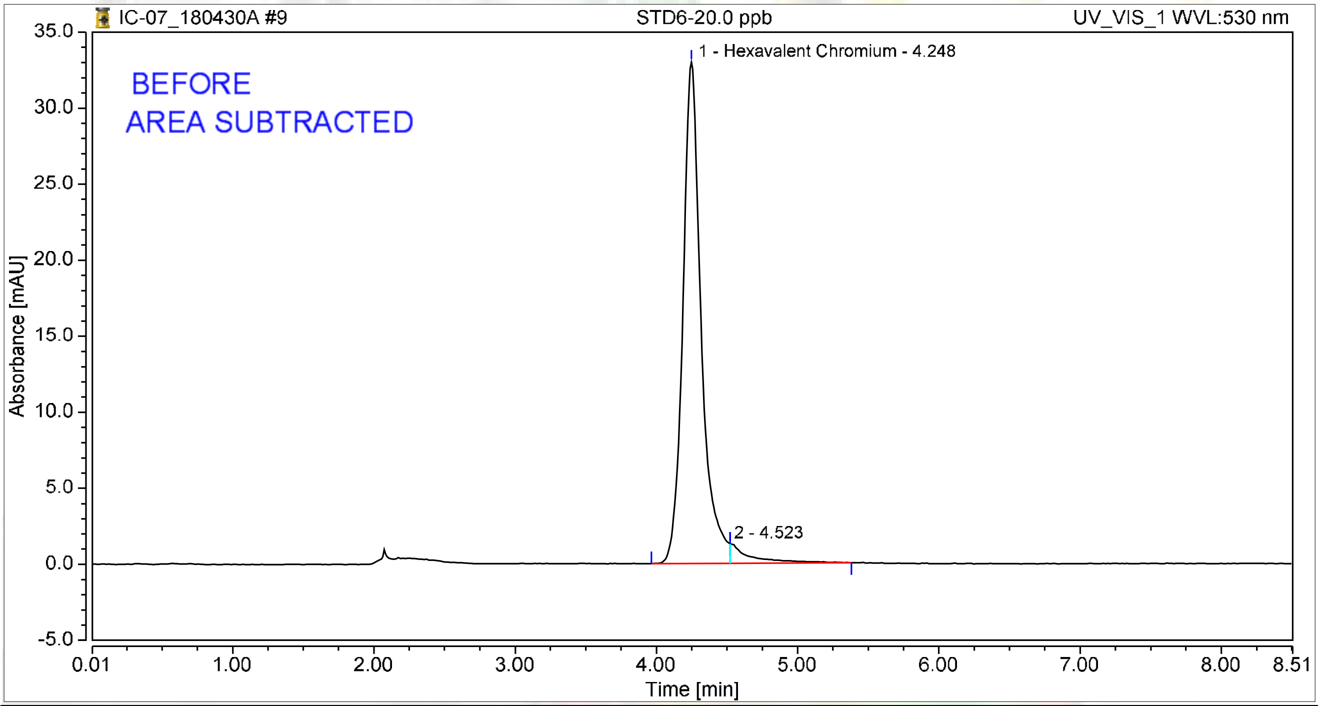
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	4.957	32.968	95.88	96.27	19.6162
2		4.523	0.213	1.278	4.12	3.73	n.a.
Total:			**5.170**	**34.246**	**100.00**	**100.00**	

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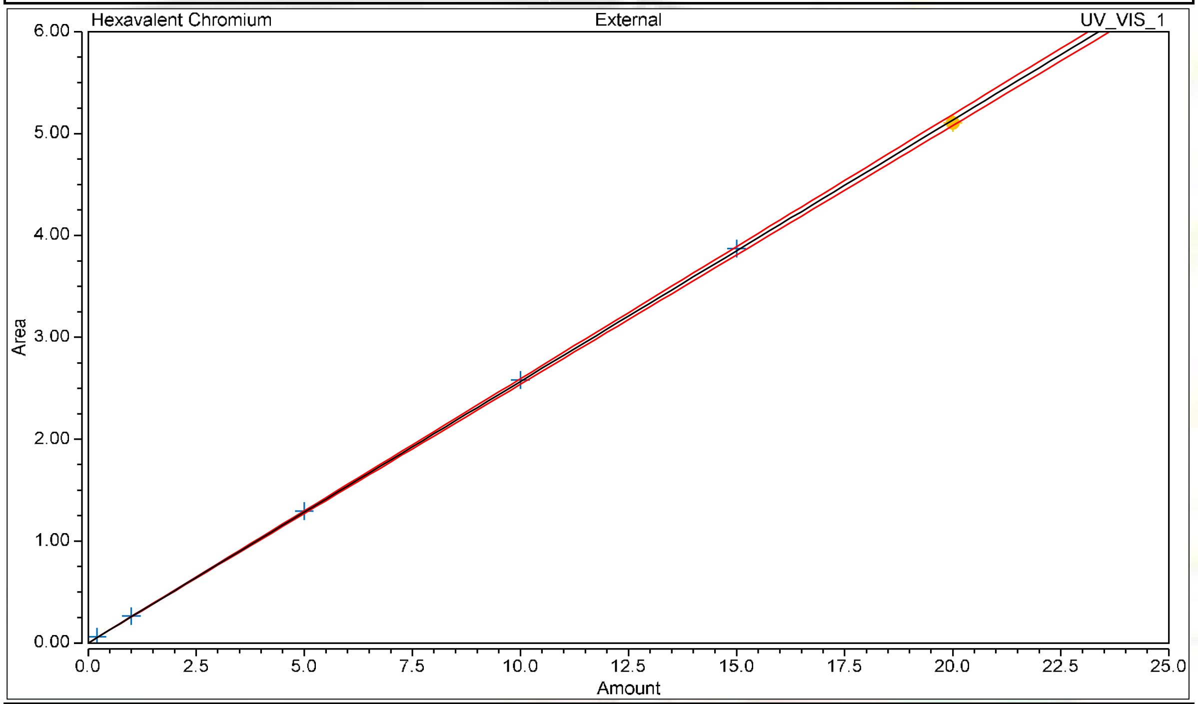
Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2566
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99992

Calibration Plot   Hexavalent Chromium



Calibration Results   Hexavalent Chromium

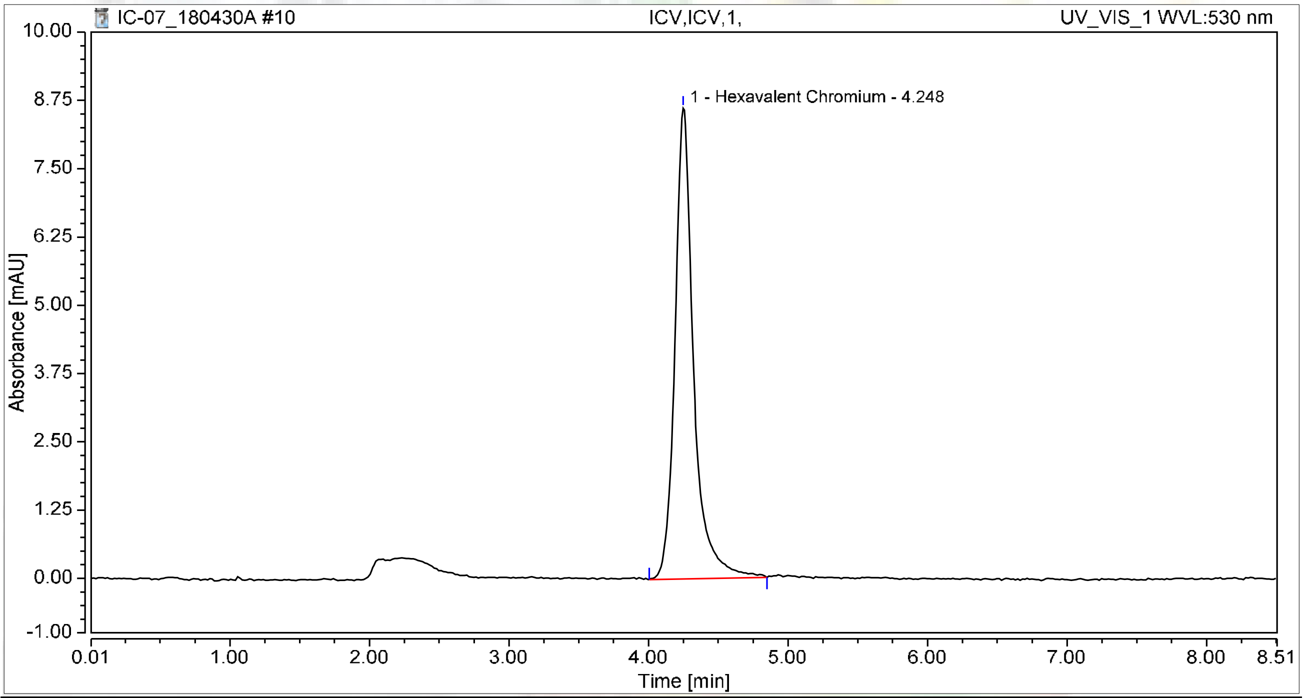
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0607	0.061	0.398
5	STD2-1.0 ppb	02	1.0000	0.2618	0.262	1.718
6	STD3-5.0 ppb	03	5.0000	1.2924	1.292	8.359
7	STD4-10.0 ppb	04	10.0000	2.5813	2.581	16.640
8	STD5-15.0 ppb	05	15.0000	3.8731	3.873	25.002
9	STD6-20.0 ppb	06	20.0000	5.1050	5.105	32.932

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

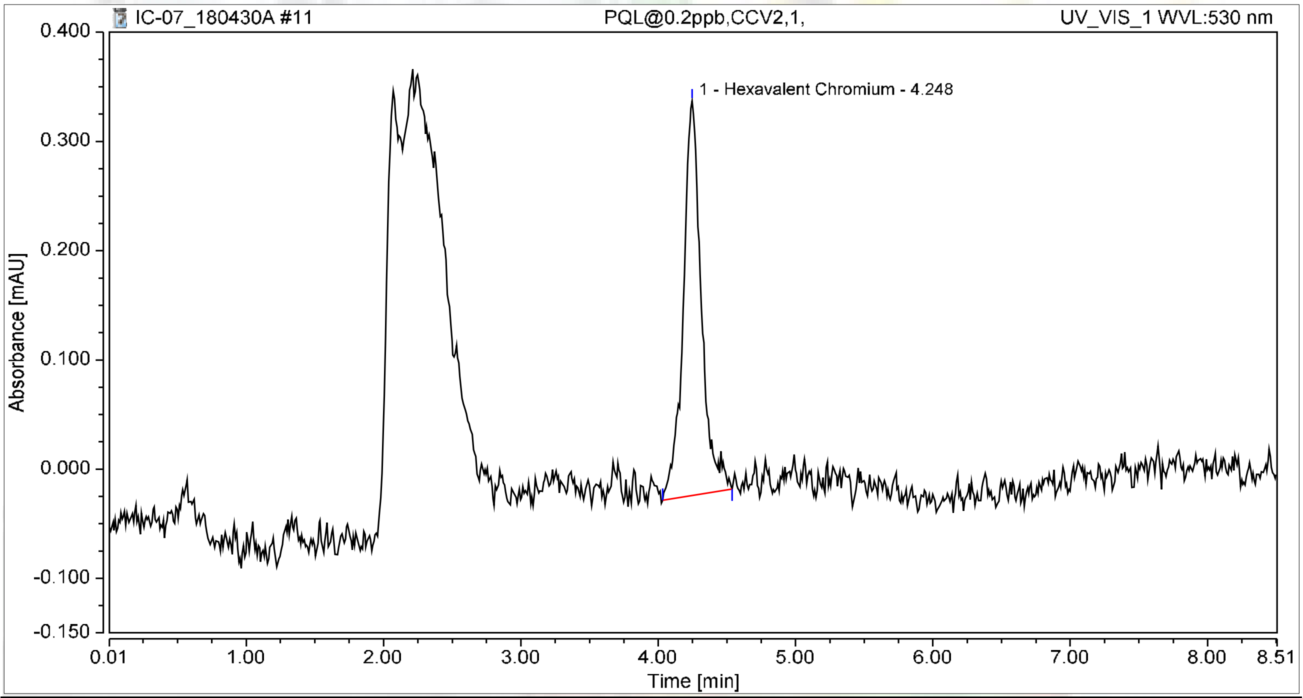
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.333	8.618	100.00	100.00	5.1938
Total:			**1.333**	**8.618**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

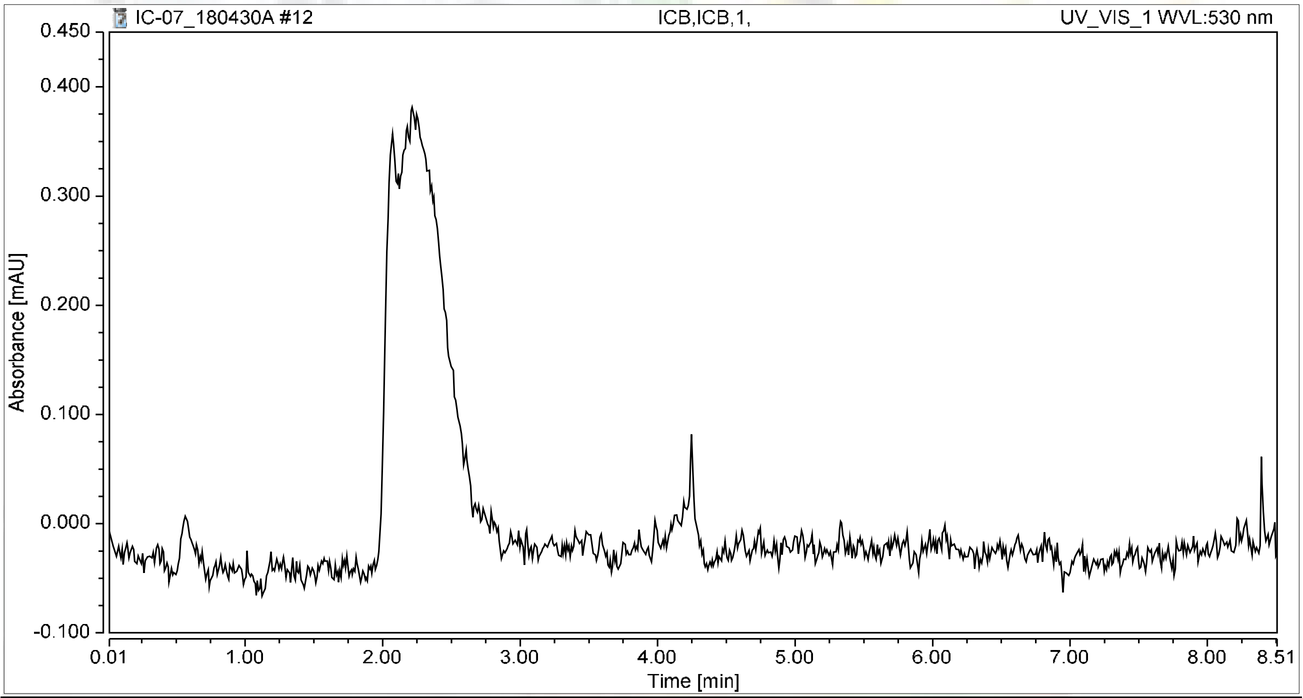
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.055	0.361	100.00	100.00	0.2153
Total:			**0.055**	**0.361**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180504A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/04/18 7:31 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/04/18 7:41 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/04/18 7:51 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/04/18 8:00 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/04/18 8:09 AM	Reported
15	MB-R123838	MBLK	1	Hexavalent Chromium	05/04/18 8:18 AM	Reported
16	LCS-R123838	LCS	1	Hexavalent Chromium	05/04/18 8:28 AM	Reported
17	N030143-001A	SAMP	1	Hexavalent Chromium	05/04/18 8:41 AM	Reported
18	N030143-001ADUP	DUP	1	Hexavalent Chromium	05/04/18 8:52 AM	Reported
19	N030096-001A	SAMP	5	Hexavalent Chromium	05/04/18 9:01 AM	Reported
20	N030096-003A	SAMP	200	Hexavalent Chromium	05/04/18 9:11 AM	Reported
21	N030096-006A	SAMP	100	Hexavalent Chromium	05/04/18 9:20 AM	Reported
22	N030096-001AMS	MS	5	Hexavalent Chromium	05/04/18 9:30 AM	Reported
23	N030096-001AMSD	MSD	5	Hexavalent Chromium	05/04/18 9:39 AM	Reported
24	N030096-003AMS	MS	200	Hexavalent Chromium	05/04/18 9:49 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/04/18 9:58 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/04/18 10:08 AM	Reported
27	N030096-006AMS	MS	100	Hexavalent Chromium	05/04/18 10:17 AM	Reported
28	N030096-005A	SAMP	20	Hexavalent Chromium	05/04/18 10:27 AM	Reported
29	N030096-005AMS	MS	20	Hexavalent Chromium	05/04/18 10:36 AM	Reported
30	N030096-002A	SAMP	2000	Hexavalent Chromium	05/04/18 10:46 AM	Not Reported
31	N030096-004A	SAMP	5	Hexavalent Chromium	05/04/18 10:55 AM	Reported
32	N030096-004AMS	MS	5	Hexavalent Chromium	05/04/18 11:05 AM	Reported
33	N030096-007A	SAMP	5	Hexavalent Chromium	05/04/18 11:14 AM	Reported
34	N030096-007AMS	MS	5	Hexavalent Chromium	05/04/18 11:23 AM	Reported
35	N030096-008A	SAMP	1	Hexavalent Chromium	05/04/18 11:33 AM	Not Reported
36	N030096-008AMS	MS	1	Hexavalent Chromium	05/04/18 11:42 AM	Not Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/04/18 11:52 AM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/04/18 12:01 PM	Reported
39	N030096-010A	SAMP	500	Hexavalent Chromium	05/04/18 12:11 PM	Reported
40	N030096-010AMS	MS	500	Hexavalent Chromium	05/04/18 12:20 PM	Reported
41	N030096-011A	SAMP	500	Hexavalent Chromium	05/04/18 12:30 PM	Reported
42	N030096-011AMS	MS	500	Hexavalent Chromium	05/04/18 12:39 PM	Reported

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INJECTION LOG: 180504A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030096-009A	SAMP	1	Hexavalent Chromium	05/04/18 12:49 PM	Reported
44	N030096-009AMS	MS	1	Hexavalent Chromium	05/04/18 12:58 PM	Reported
45	N030096-008A	SAMP	5	Hexavalent Chromium	05/04/18 1:08 PM	Reported
46	N030096-008AMS	MS	5	Hexavalent Chromium	05/04/18 1:17 PM	Reported
47	N030096-002A	SAMP	1000	Hexavalent Chromium	05/04/18 1:26 PM	Reported
48	N030096-002AMS	MS	1000	Hexavalent Chromium	05/04/18 1:36 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/04/18 1:45 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	05/04/18 1:55 PM	Reported
51	N030096-012A	SAMP	200	Hexavalent Chromium	05/04/18 2:26 PM	Reported
52	N030096-012AMS	MS	200	Hexavalent Chromium	05/04/18 2:37 PM	Reported
53	N030096-013A	SAMP	5	Hexavalent Chromium	05/04/18 2:46 PM	Reported
54	N030096-013AMS	MS	5	Hexavalent Chromium	05/04/18 2:56 PM	Reported
55	N030096-014A	SAMP	20	Hexavalent Chromium	05/04/18 3:05 PM	Reported
56	N030096-014AMS	MS	20	Hexavalent Chromium	05/04/18 3:15 PM	Reported
57	N030096-015A	SAMP	500	Hexavalent Chromium	05/04/18 3:24 PM	Reported
58	N030096-015AMS	MS	500	Hexavalent Chromium	05/04/18 3:34 PM	Reported
59	N030096-004A	SAMP	1	Hexavalent Chromium	05/04/18 3:43 PM	Not Reported
60	N030096-004AMS	MS	1	Hexavalent Chromium	05/04/18 3:53 PM	Not Reported
61	CCV-5	CCV	1	Hexavalent Chromium	05/04/18 4:02 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	05/04/18 4:11 PM	Reported
63	N030096-016A	SAMP	1	Hexavalent Chromium	05/04/18 4:21 PM	Reported
64	N030096-016AMS	MS	1	Hexavalent Chromium	05/04/18 4:30 PM	Reported
65	N030096-017A	SAMP	1	Hexavalent Chromium	05/04/18 4:40 PM	Reported
66	N030096-017AMS	MS	1	Hexavalent Chromium	05/04/18 4:49 PM	Reported
67	N030096-018A	SAMP	1	Hexavalent Chromium	05/04/18 4:59 PM	Reported
68	N030096-018AMS	MS	1	Hexavalent Chromium	05/04/18 5:08 PM	Reported
69	N029878-014A	SAMP	1	Hexavalent Chromium	05/04/18 5:18 PM	Not Reported
70	N029878-014AMS	MS	1	Hexavalent Chromium	05/04/18 5:27 PM	Not Reported
71	N030188-007C	SAMP	25	Hexavalent Chromium	05/04/18 5:37 PM	Not Reported
72	N030188-007CMS	MS	25	Hexavalent Chromium	05/04/18 5:46 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	05/04/18 5:56 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	05/04/18 6:05 PM	Reported
75	N030188-007C	SAMP	125	Hexavalent Chromium	05/04/18 6:14 PM	Not Reported
76	N030188-007CMS	MS	125	Hexavalent Chromium	05/04/18 6:24 PM	Not Reported
77	N030188-007CMS	MS	625	Hexavalent Chromium	05/04/18 6:44 PM	Reported
78	N030188-007CMS	MS	3125	Hexavalent Chromium	05/04/18 6:55 PM	Not Reported
79	N030188-007C	SAMP	625	Hexavalent Chromium	05/04/18 7:09 PM	Reported
80	N030188-007CREP	DUP	625	Hexavalent Chromium	05/04/18 7:21 PM	Reported
81	CCV-7	CCV	1	Hexavalent Chromium	05/04/18 7:31 PM	Reported
82	CCB-7	CCB	1	Hexavalent Chromium	05/04/18 7:40 PM	Reported
83	BLANK	BLANK	1	Hexavalent Chromium	05/04/18 7:49 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180504A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**05/May/18 09:43:57**
No. of Injections:	**86**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/04/2018 07:31	Finished	BLANK
11	BLANK	2	1000	Unknown		05/04/2018 07:41	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		05/04/2018 07:51	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/04/2018 08:00	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		05/04/2018 08:09	Finished	CCB R180418A
15	MB-H2O,MBLK,1,	6	1000	Unknown		05/04/2018 08:18	Finished	MB R180418A
16	LCS-H2O,LCS,1,	7	1000	Unknown		05/04/2018 08:28	Finished	LCS, IWST-180129B
17	N030143-001A,SAMP	9	1000	Unknown		05/04/2018 08:41	Finished	SAMP,10mL
18	N030143-001ADUP,D	10	1000	Unknown		05/04/2018 08:52	Finished	DUP,10mL
19	N030096-001A,SAMP	11	1000	Unknown		05/04/2018 09:01	Finished	SAMP,2>10mL
20	N030096-003A,SAMP	12	1000	Unknown		05/04/2018 09:11	Finished	SAMP,0.05>10mL
21	N030096-006A,SAMP	13	1000	Unknown		05/04/2018 09:20	Finished	SAMP,0.1>10mL
22	N030096-001AMS,MS	14	1000	Unknown		05/04/2018 09:30	Finished	MS (5ppb), IWST-180129B,2>1
23	N030096-001AMSD,M	15	1000	Unknown		05/04/2018 09:39	Finished	MSD (5ppb), IWST-180129B,2>
24	N030096-003AMS,MS	16	1000	Unknown		05/04/2018 09:49	Finished	MS (5ppb), IWST-180129B,0.0
25	CCV-2,CCV1,1,	17	1000	Unknown		05/04/2018 09:58	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	18	1000	Unknown		05/04/2018 10:08	Finished	CCB R180409B
27	N030096-006AMS,MS	19	1000	Unknown		05/04/2018 10:17	Finished	MS (5ppb), IWST-180129B,0.1
28	N030096-005A,SAMP	20	1000	Unknown		05/04/2018 10:27	Finished	SAMP,0.5>10mL
29	N030096-005AMS,MS	21	1000	Unknown		05/04/2018 10:36	Finished	MS (5ppb), IWST-180129B,0.5
30	N030096-002A,SAMP	22	1000	Unknown		05/04/2018 10:46	Finished	SAMP,1>10mL
31	N030096-004A,SAMP	23	1000	Unknown		05/04/2018 10:55	Finished	SAMP,2>10mL
32	N030096-004AMS,MS	24	1000	Unknown		05/04/2018 11:05	Finished	MS (1ppb), IWST-180129B,2>1
33	N030096-007A,SAMP	25	1000	Unknown		05/04/2018 11:14	Finished	SAMP,2>10mL
34	N030096-007AMS,MS	26	1000	Unknown		05/04/2018 11:23	Finished	MS (5ppb), IWST-180129B,2>1
35	N030096-008A,SAMP	27	1000	Unknown		05/04/2018 11:33	Finished	SAMP,10mL
36	N030096-008AMS,MS	28	1000	Unknown		05/04/2018 11:42	Finished	MS (5ppb), IWST-180129B,10
37	CCV-3,CCV,1,	29	1000	Unknown		05/04/2018 11:52	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	30	1000	Unknown		05/04/2018 12:01	Finished	CCB R180418A
39	N030096-010A,SAMP	31	1000	Unknown		05/04/2018 12:11	Finished	SAMP,0.02>10mL
40	N030096-010AMS,MS	32	1000	Unknown		05/04/2018 12:20	Finished	MS (5ppb), IWST-180129B,0.0
41	N030096-011A,SAMP	33	1000	Unknown		05/04/2018 12:30	Finished	SAMP,0.02>10mL
42	N030096-011AMS,MS	34	1000	Unknown		05/04/2018 12:39	Finished	MS (5ppb), IWST-180129B,0.0
43	N030096-009A,SAMP	35	1000	Unknown		05/04/2018 12:49	Finished	SAMP,10mL
44	N030096-009AMS,MS	36	1000	Unknown		05/04/2018 12:58	Finished	MS (1ppb), IWST-180129B,10
45	N030096-008A,SAMP	37	1000	Unknown		05/04/2018 13:08	Finished	SAMP,2>10mL
46	N030096-008AMS,MS	38	1000	Unknown		05/04/2018 13:17	Finished	SAMP,0.01>10mL
47	N030096-002A,SAMP	39	1000	Unknown		05/04/2018 13:26	Finished	MS (5ppb), IWST-180129B,0.0
48	N030096-002AMS,MS	40	1000	Unknown		05/04/2018 13:36	Finished	MS (5ppb), IWST-180129B,10
49	CCV-4,CCV1,1,	41	1000	Unknown		05/04/2018 13:45	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	42	1000	Unknown		05/04/2018 13:55	Finished	CCB R180418A
51	N030096-012A,SAMP	1	1000	Unknown		05/04/2018 14:26	Finished	SAMP,0.05>10mL
52	N030096-012AMS,MS	2	1000	Unknown		05/04/2018 14:37	Finished	MS (5ppb), IWST-180129B,0.0
53	N030096-013A,SAMP	3	1000	Unknown		05/04/2018 14:46	Finished	SAMP,2>10mL
54	N030096-013AMS,MS	4	1000	Unknown		05/04/2018 14:56	Finished	MS (5ppb), IWST-180129B,2>1
55	N030096-014A,SAMP	5	1000	Unknown		05/04/2018 15:05	Finished	SAMP,0.5>10mL
56	N030096-014AMS,MS	6	1000	Unknown		05/04/2018 15:15	Finished	MS (5ppb), IWST-180129B,0.5
57	N030096-015A,SAMP	7	1000	Unknown		05/04/2018 15:24	Finished	SAMP,0.02>10mL
58	N030096-015AMS,MS	8	1000	Unknown		05/04/2018 15:34	Finished	MS (5ppb), IWST-180129B,0.0
59	N030096-004A,SAMP	9	1000	Unknown		05/04/2018 15:43	Finished	SAMP,10mL
60	N030096-004AMS,MS	10	1000	Unknown		05/04/2018 15:53	Finished	MS (1ppb), IWST-180129B,10

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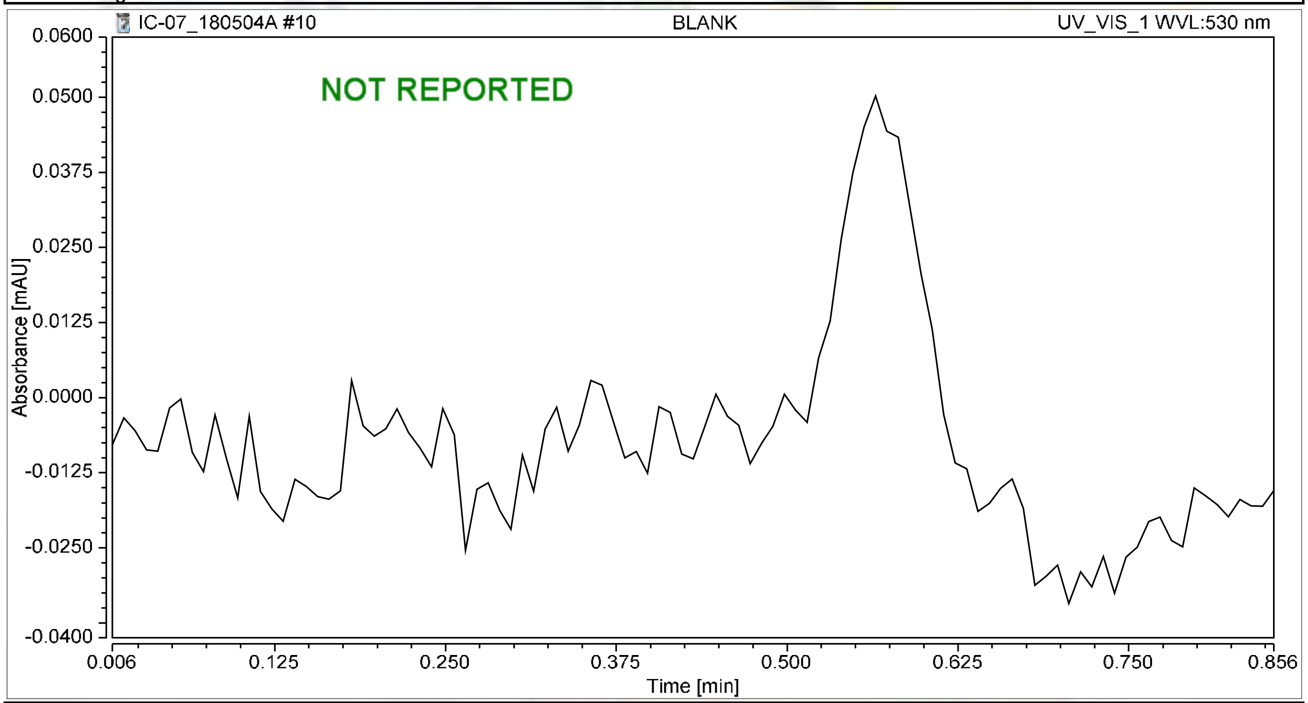
61	CCV-5,CCV,1,	11	1000	Unknown		05/04/2018 16:02	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	12	1000	Unknown		05/04/2018 16:11	Finished	CCB R180409B
63	N030096-016A,SAMF	13	1000	Unknown		05/04/2018 16:21	Finished	SAMP,10mL
64	N030096-016AMS,MS	14	1000	Unknown		05/04/2018 16:30	Finished	MS (1ppb), IWST-180129B,10
65	N030096-017A,SAMF	15	1000	Unknown		05/04/2018 16:40	Finished	SAMP,10mL
66	N030096-017AMS,MS	16	1000	Unknown		05/04/2018 16:49	Finished	MS (1ppb), IWST-180129B,10
67	N030096-018A,SAMF	17	1000	Unknown		05/04/2018 16:59	Finished	SAMP,10mL
68	N030096-018AMS,MS	18	1000	Unknown		05/04/2018 17:08	Finished	MS (1ppb), IWST-180129B,10
69	N029878-014A,SAMF	19	1000	Unknown		05/04/2018 17:18	Finished	SAMP,10mL
70	N029878-014AMS,MS	20	1000	Unknown		05/04/2018 17:27	Finished	MS (1ppb), IWST-180129B,10
71	N030188-007C,SAMF	21	1000	Unknown		05/04/2018 17:37	Finished	SAMP,0.4>10mL
72	N030188-007CMS,MS	22	1000	Unknown		05/04/2018 17:46	Finished	MS (1ppb), IWST-180129B,0.4
73	CCV-6,CCV1,1,	23	1000	Unknown		05/04/2018 17:56	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	24	1000	Unknown		05/04/2018 18:05	Finished	CCB R180409B
75	N030188-007C,SAMF	26	1000	Unknown		05/04/2018 18:14	Finished	SAMP,0.016>10mL
76	N030188-007CMS,MS	27	1000	Unknown		05/04/2018 18:24	Finished	MS (1ppb), IWST-180129B,0.0
77	N030188-007CMS,MS	29	1000	Unknown		05/04/2018 18:44	Finished	MS (1ppb), IWST-180129B,0.0
78	N030188-007CMS,MS	30	1000	Unknown		05/04/2018 18:55	Finished	MS (1ppb), IWST-180129B,0.0
79	N030188-007C,SAMF	32	1000	Unknown		05/04/2018 19:09	Finished	SAMP,0.016>10mL
80	N030188-007CREP,D	33	1000	Unknown		05/04/2018 19:21	Finished	REP,0.016>10mL
81	CCV-7,CCV,1,	34	1000	Unknown		05/04/2018 19:31	Finished	CCV @5ppb, IWST-180129A
82	CCB-7,CCB,1,	35	1000	Unknown		05/04/2018 19:40	Finished	CCB R180418A
83	BLANK	36	1000	Unknown		05/04/2018 19:49	Finished	BLANK
84	SHUTDOWN	37	1000	Unknown		05/04/2018 19:59	Finished	
85	Eluent: R180504A	38	1000	Unknown		n.a.	Finished	Eluent
86	PCR: R180502B	39	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.85**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 07:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

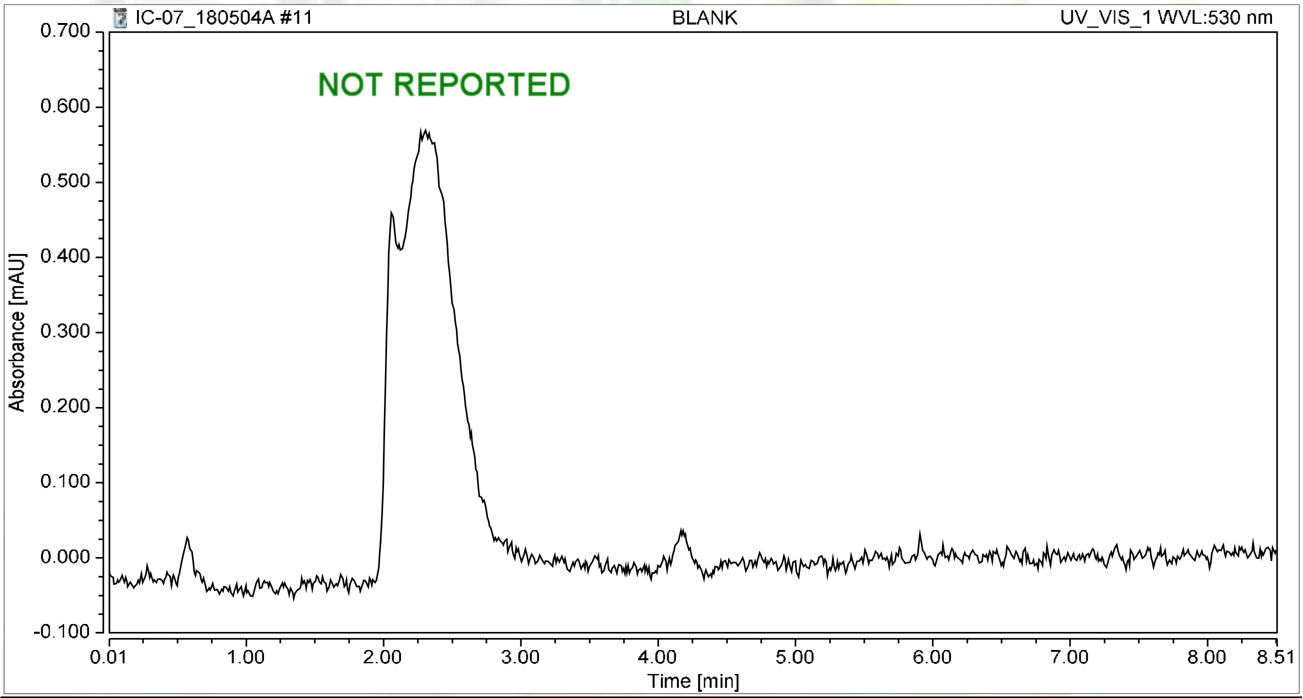
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 07:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

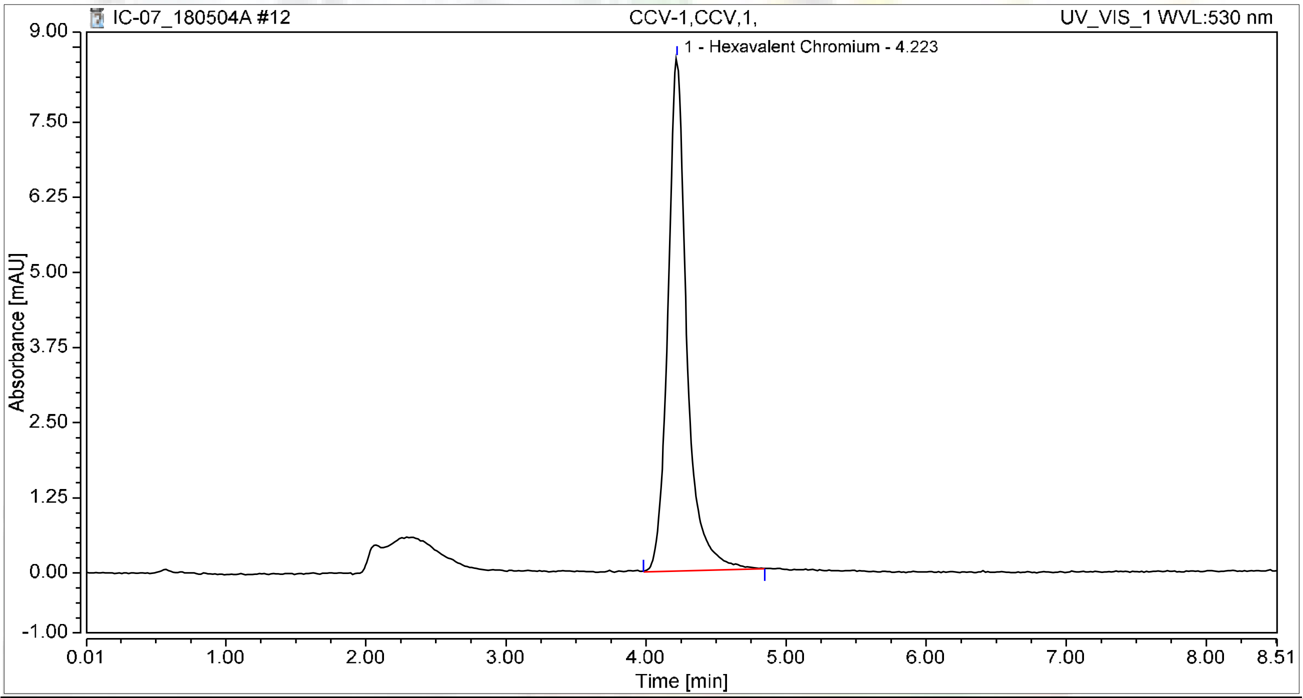
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 07:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

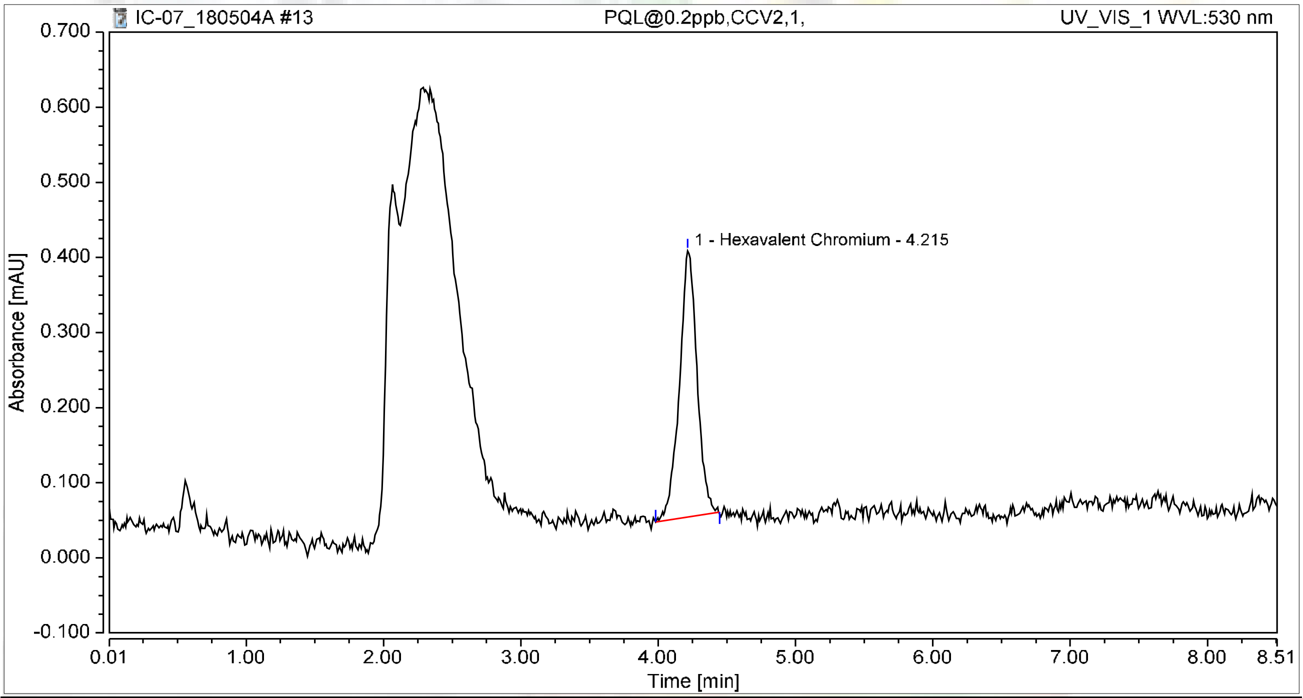
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	1.341	8.533	100.00	100.00	5.2243
Total:			**1.341**	**8.533**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 08:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

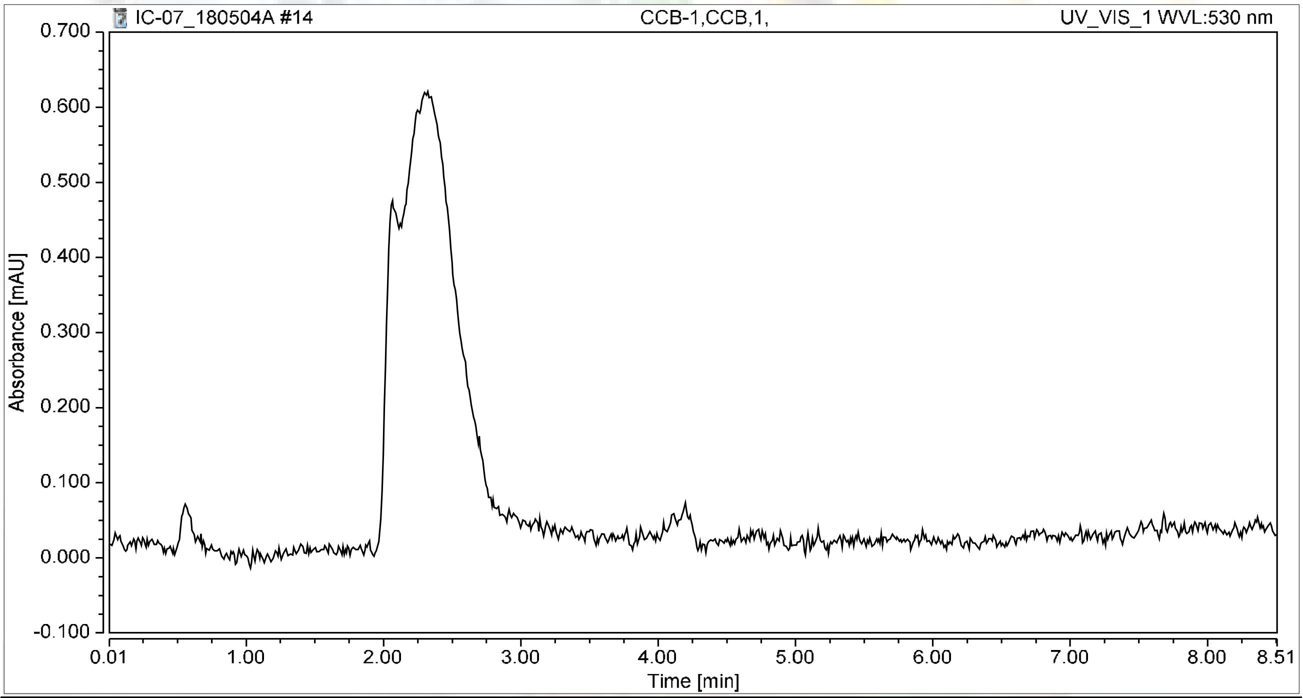
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.053	0.354	100.00	100.00	0.2048
Total:			**0.053**	**0.354**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 08:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

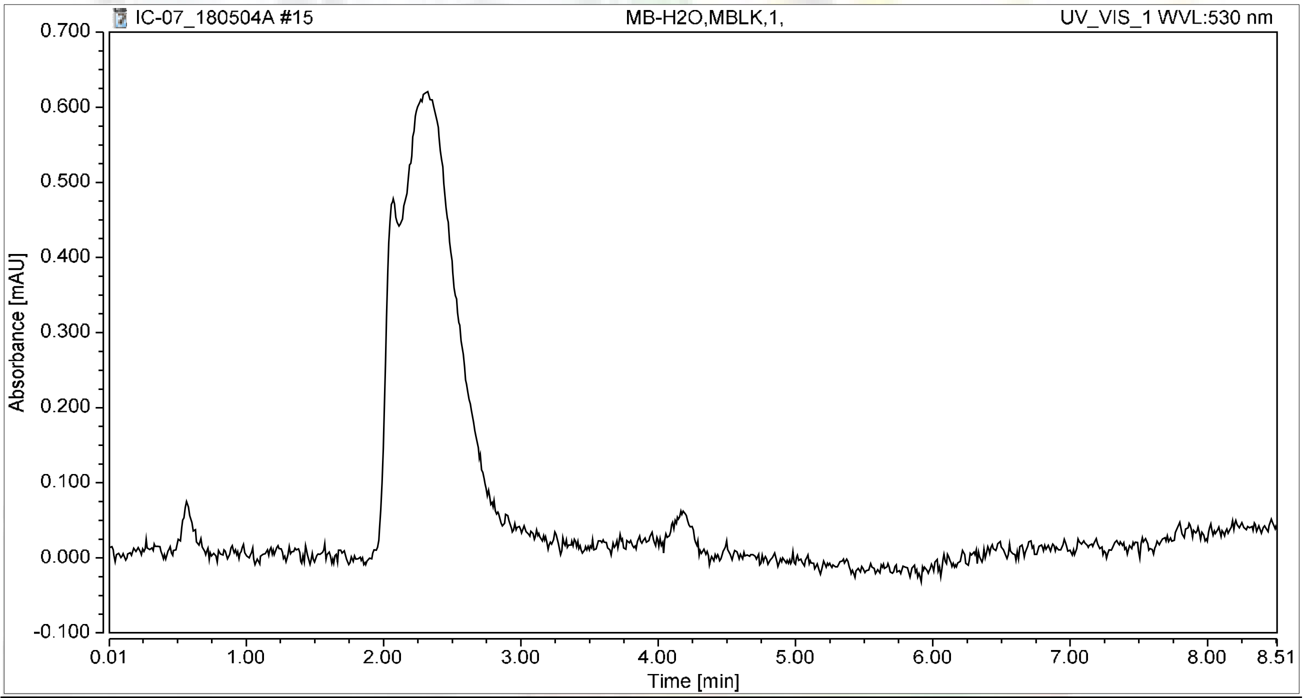
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 08:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

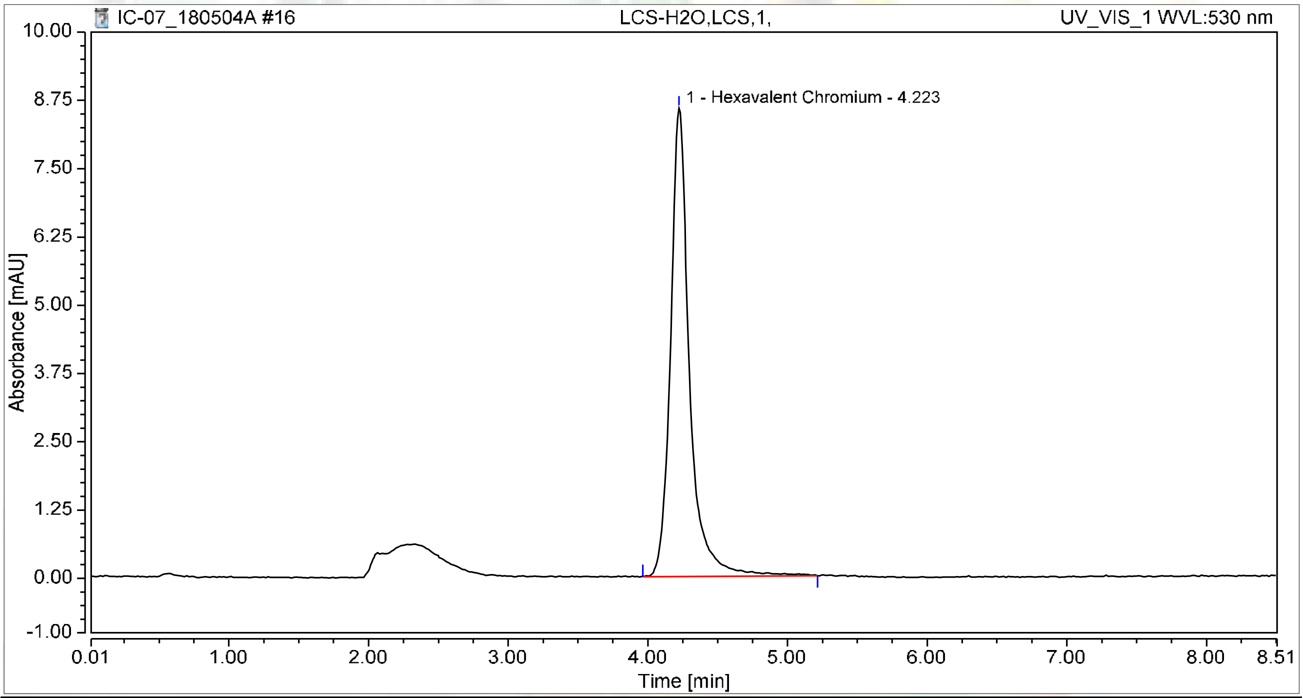
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 08:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

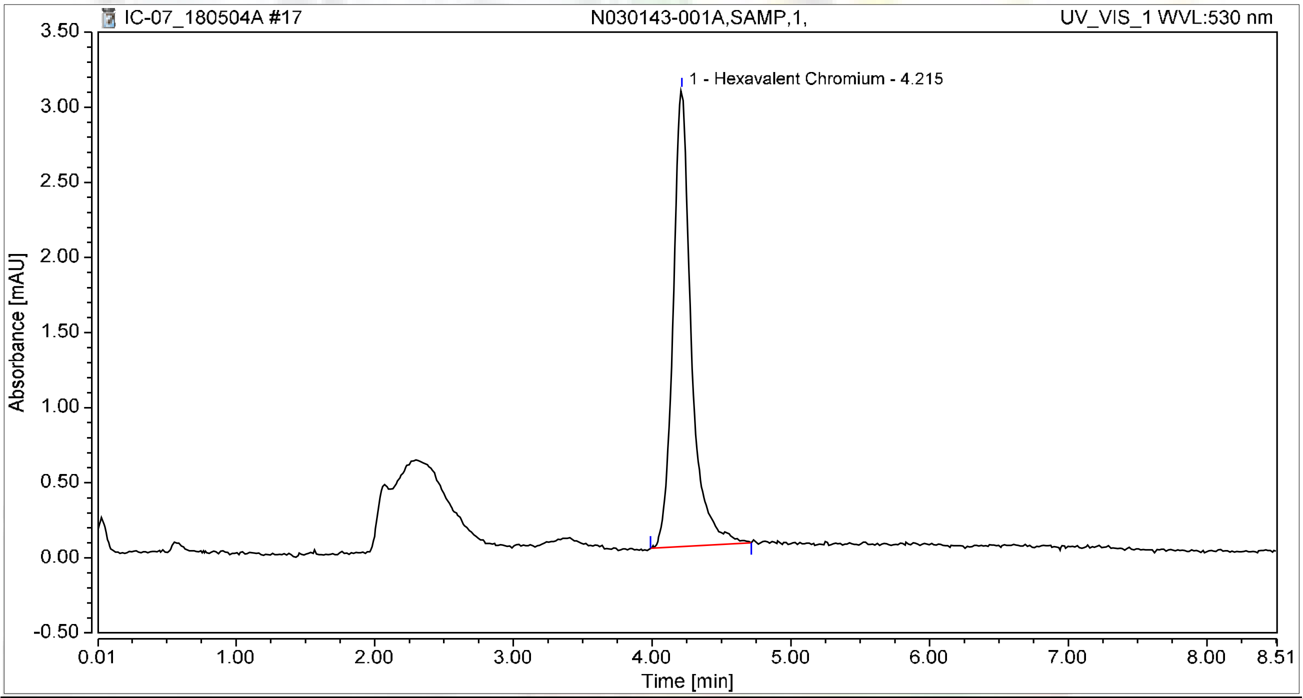
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	1.344	8.570	100.00	100.00	5.2362
Total:			**1.344**	**8.570**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030143-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 08:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

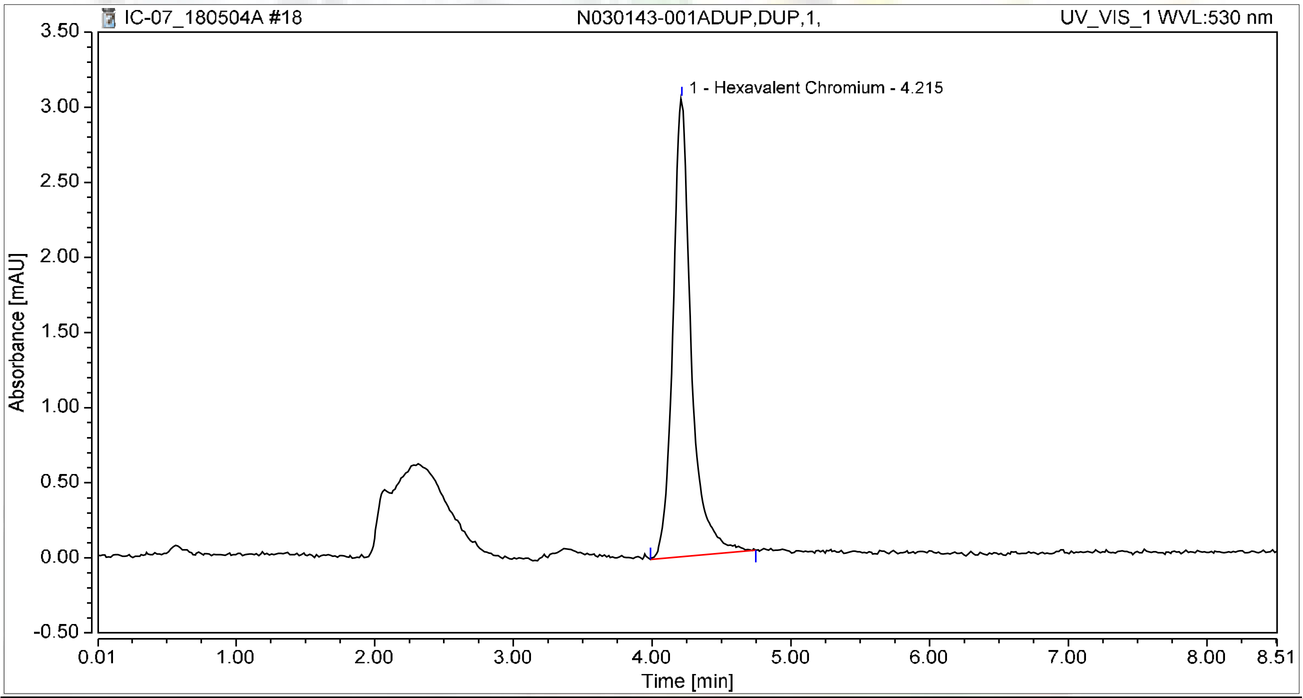
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.464	3.040	100.00	100.00	1.8061
Total:			**0.464**	**3.040**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030143-001ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 08:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

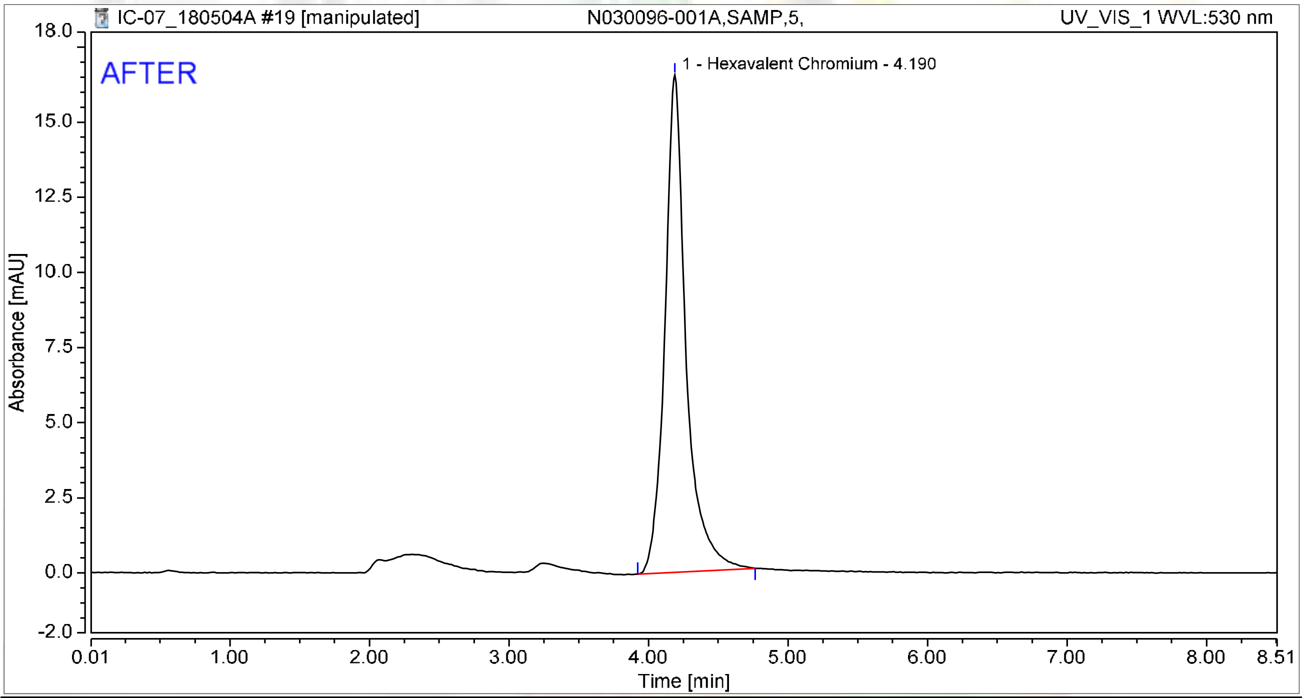
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.469	3.050	100.00	100.00	1.8260
Total:			**0.469**	**3.050**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 09:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.915	16.559	100.00	100.00	11.3592
Total:			**2.915**	**16.559**	**100.00**	**100.00**	

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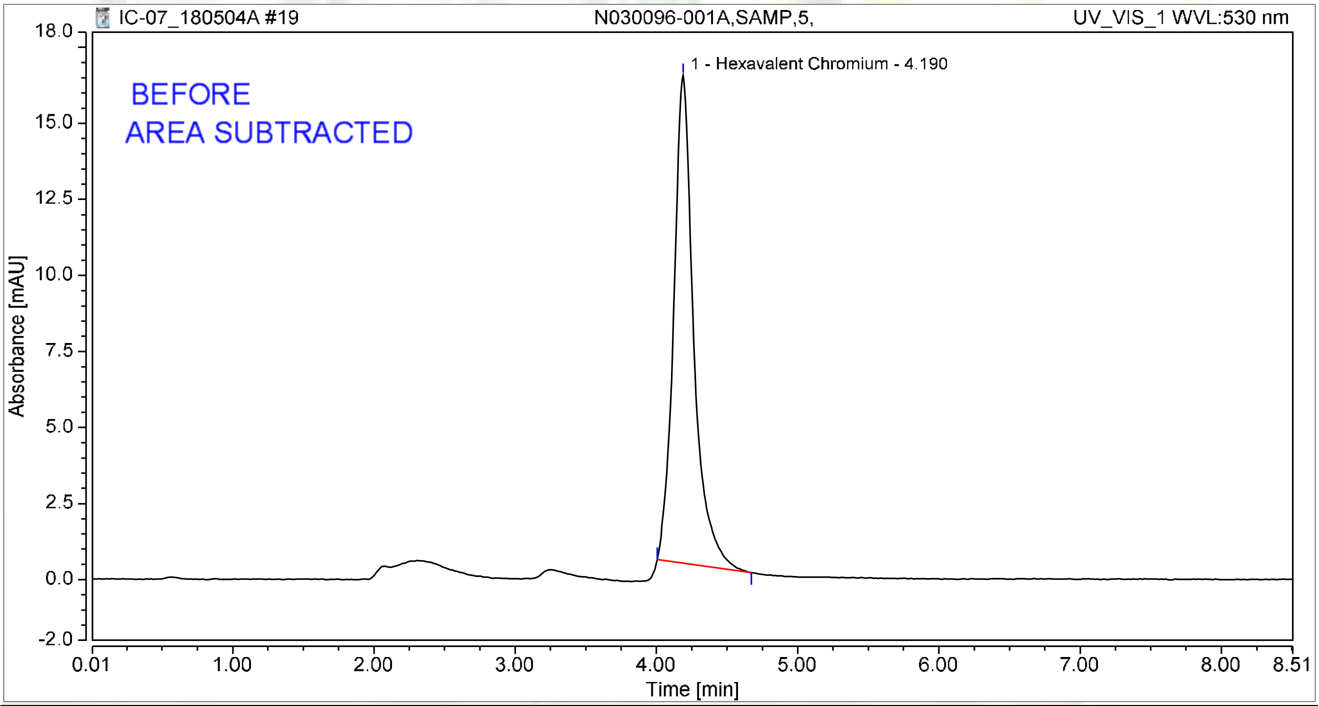
Nancy 5/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030096-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 09:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.637	16.036	100.00	100.00	10.2734
Total:			**2.637**	**16.036**	**100.00**	**100.00**	

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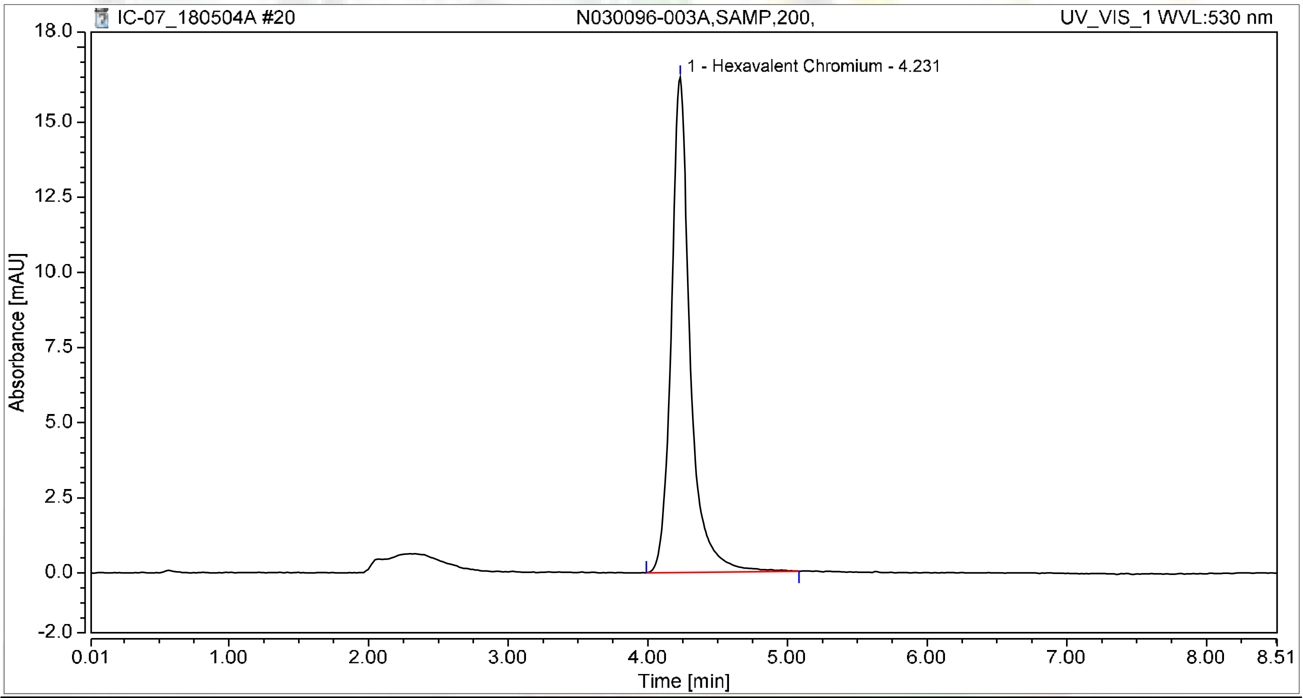
Chromatogram and Results

Injection Details

Injection Name:	**N030096-003A,SAMP,200,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 09:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

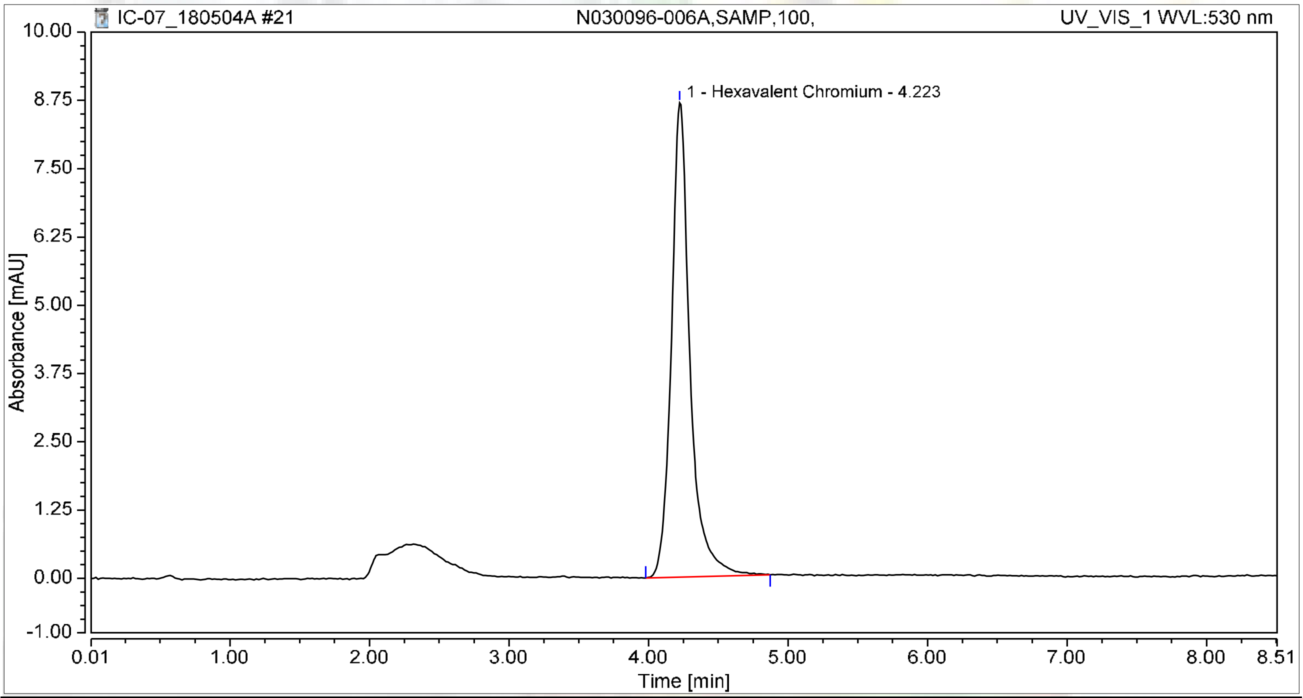
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.579	16.482	100.00	100.00	10.0488
Total:			**2.579**	**16.482**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-006A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 09:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

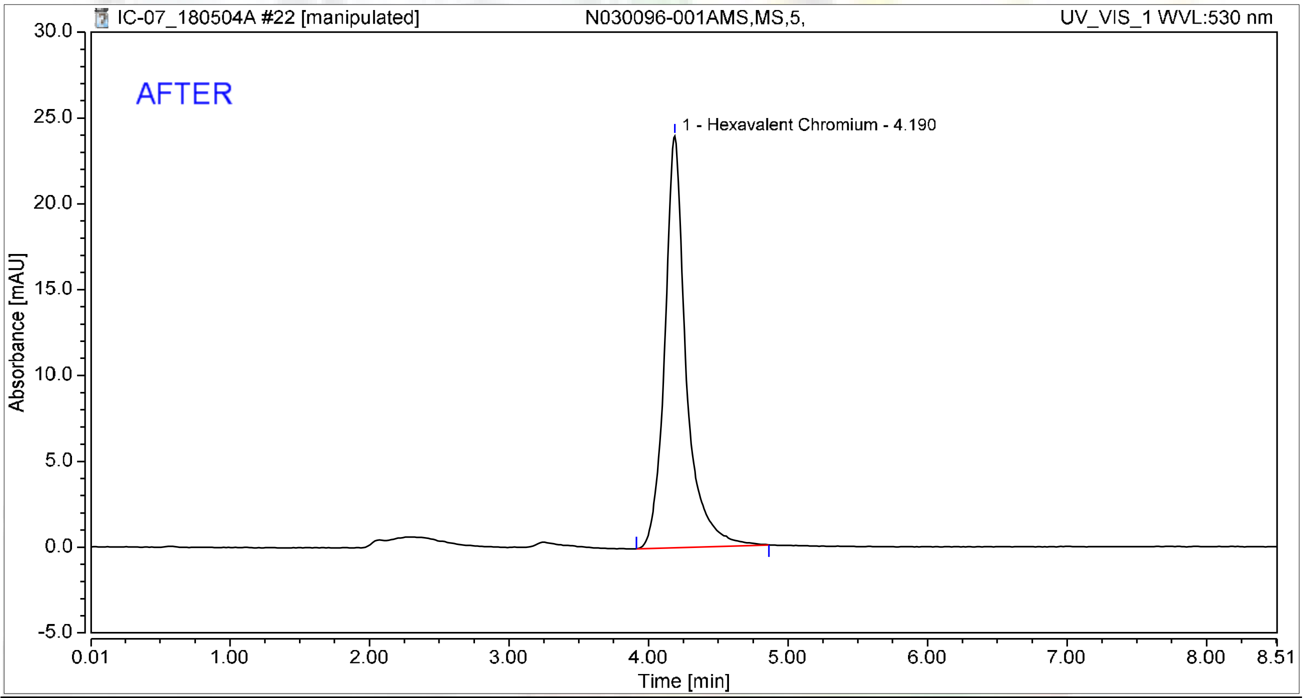
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	1.346	8.685	100.00	100.00	5.2433
Total:			**1.346**	**8.685**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 09:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	4.266	23.979	100.00	100.00	16.6219
Total:			**4.266**	**23.979**	**100.00**	**100.00**	

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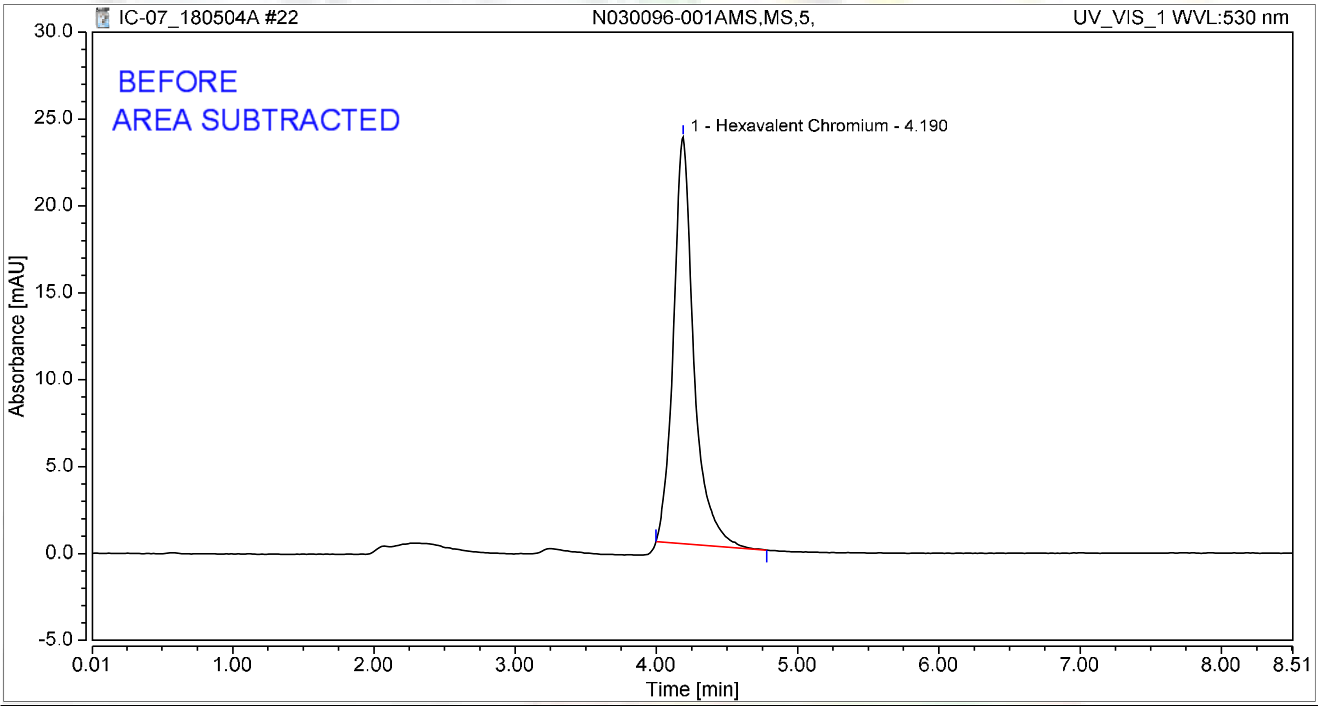
Chromatogram and Results

Injection Details

Injection Name:	**N030096-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 09:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	3.920	23.387	100.00	100.00	15.2761
Total:			**3.920**	**23.387**	**100.00**	**100.00**	

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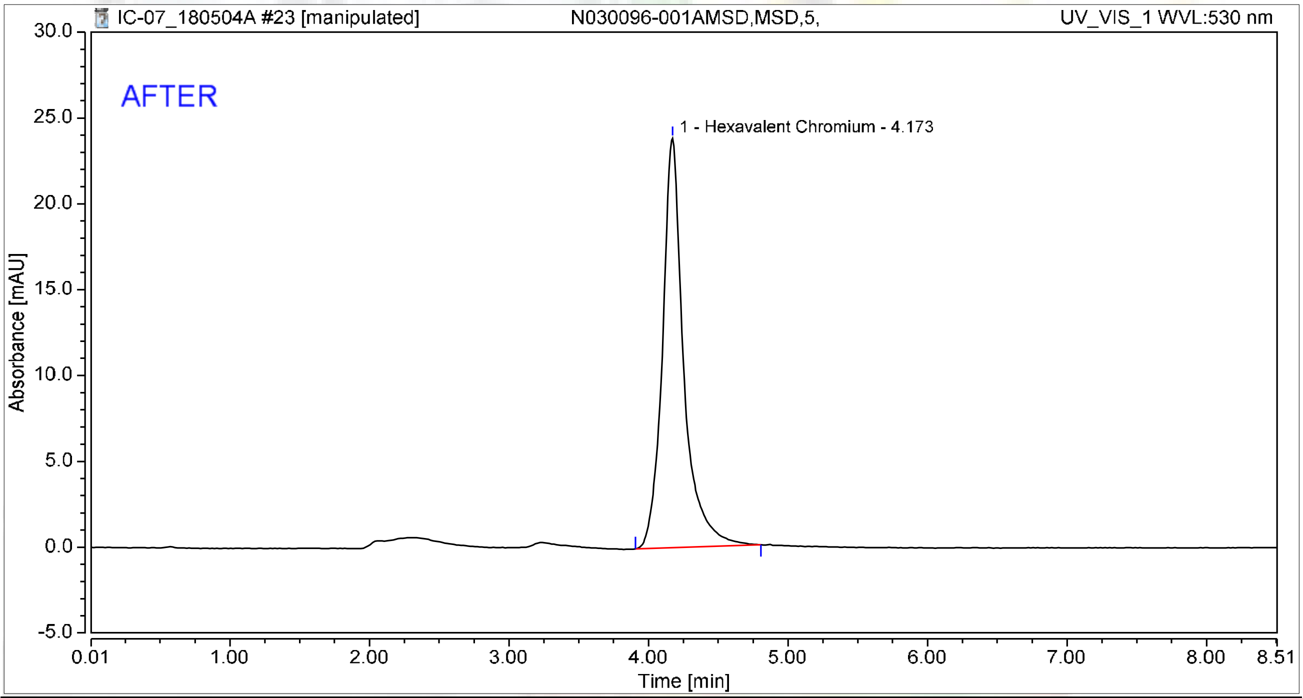
Chromatogram and Results

Injection Details

Injection Name:	**N030096-001AMSD,MSD,5,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 09:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.218	23.845	100.00	100.00	16.4365
Total:			**4.218**	**23.845**	**100.00**	**100.00**	

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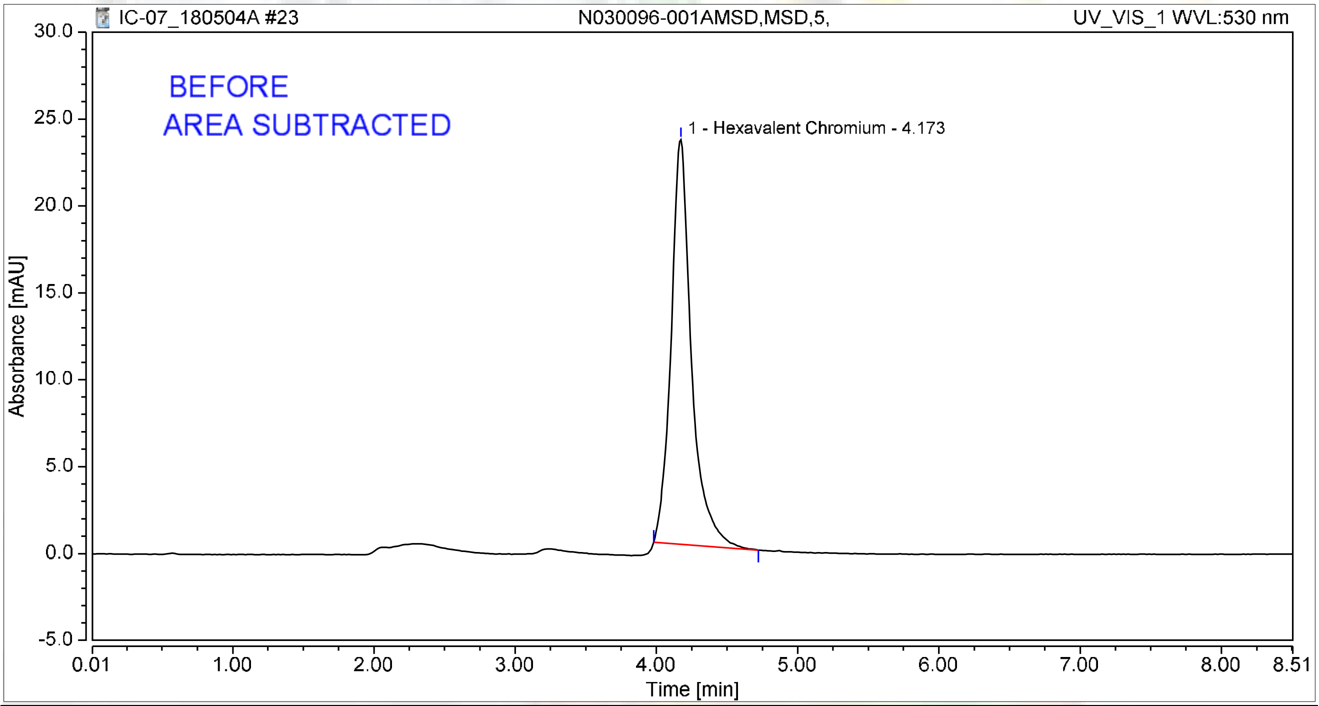
Chromatogram and Results

Injection Details

Injection Name:	**N030096-001AMSD,MSD,5,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 09:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.900	23.281	100.00	100.00	15.1976
Total:			**3.900**	**23.281**	**100.00**	**100.00**	

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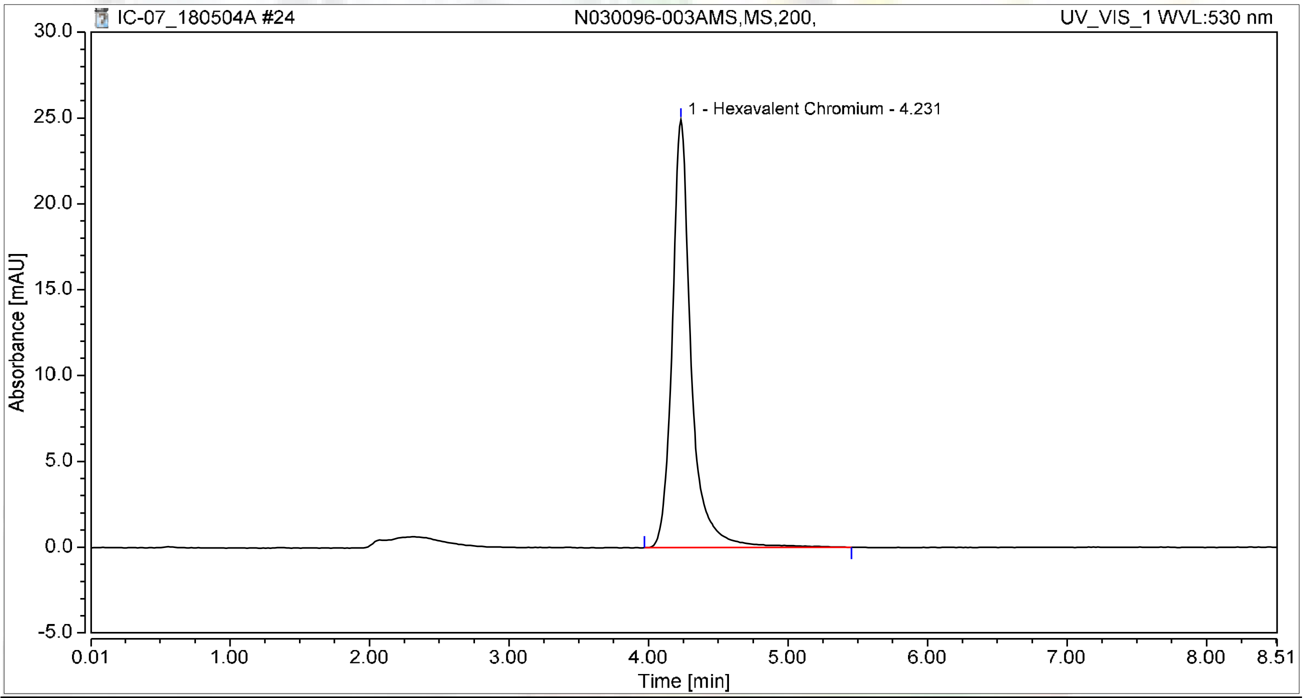
Chromatogram and Results

Injection Details

Injection Name:	**N030096-003AMS,MS,200,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 09:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

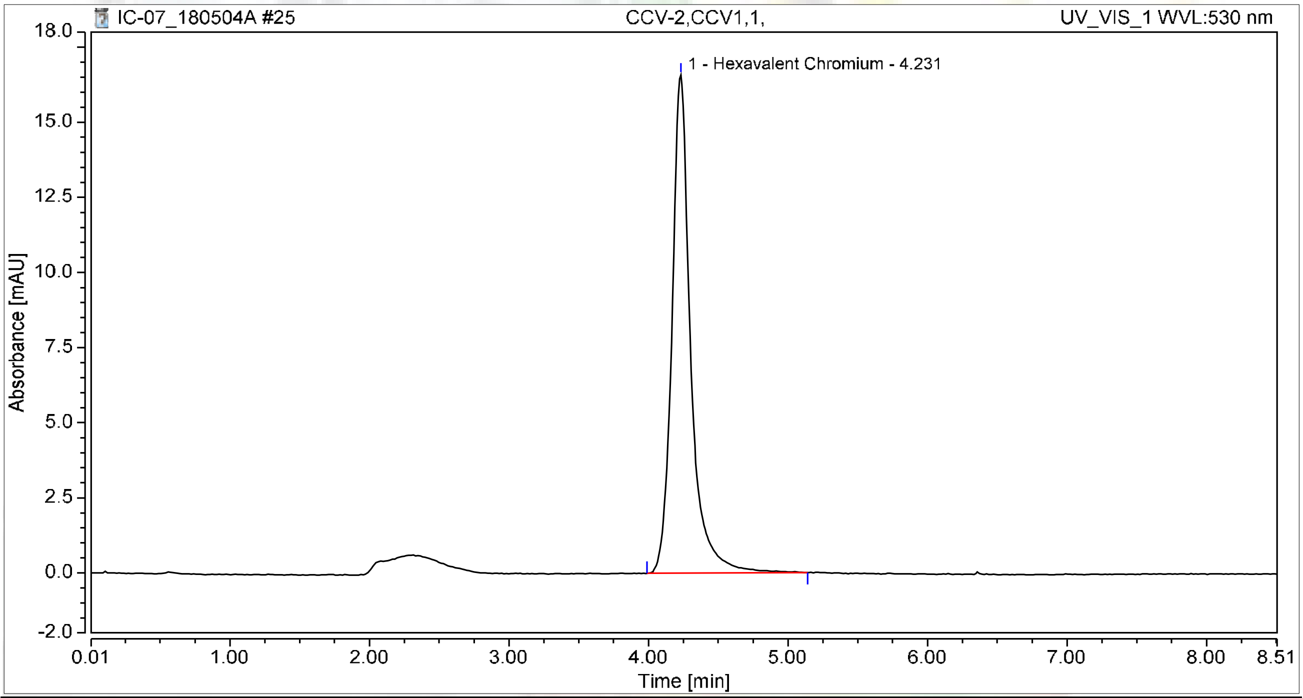
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	3.932	24.914	100.00	100.00	15.3200
Total:			**3.932**	**24.914**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 09:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

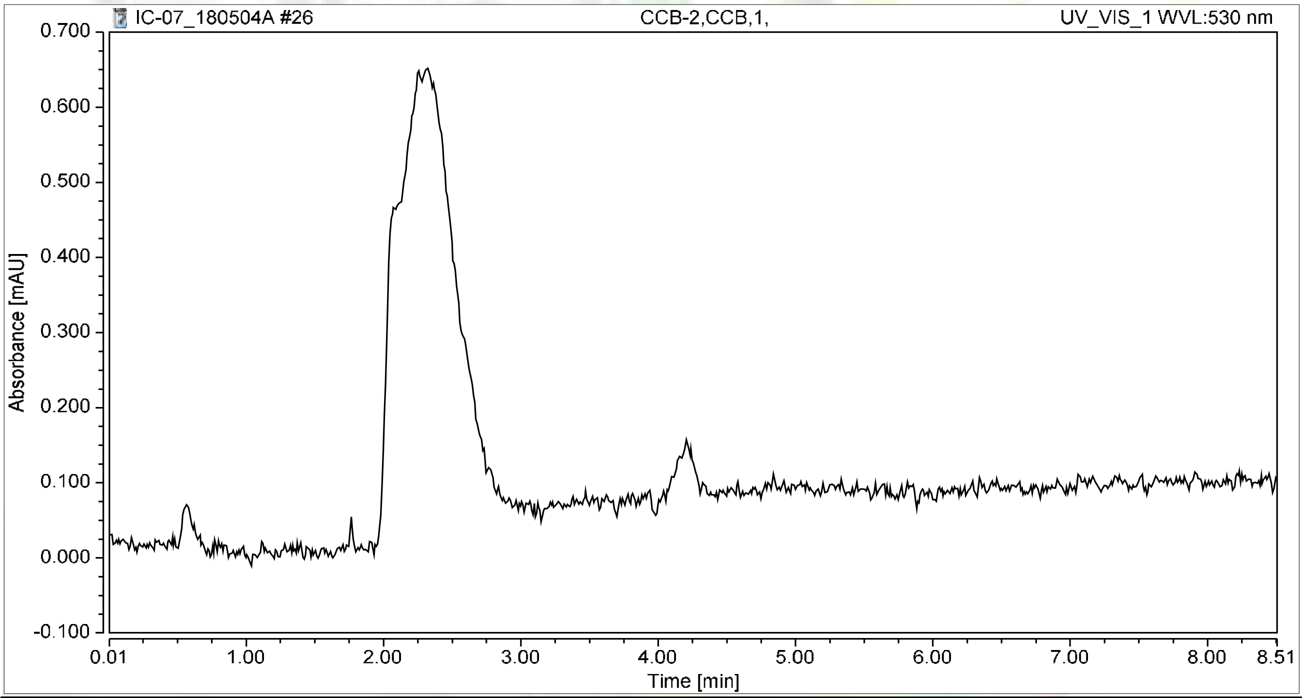
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.574	16.581	100.00	100.00	10.0280
Total:			**2.574**	**16.581**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 10:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

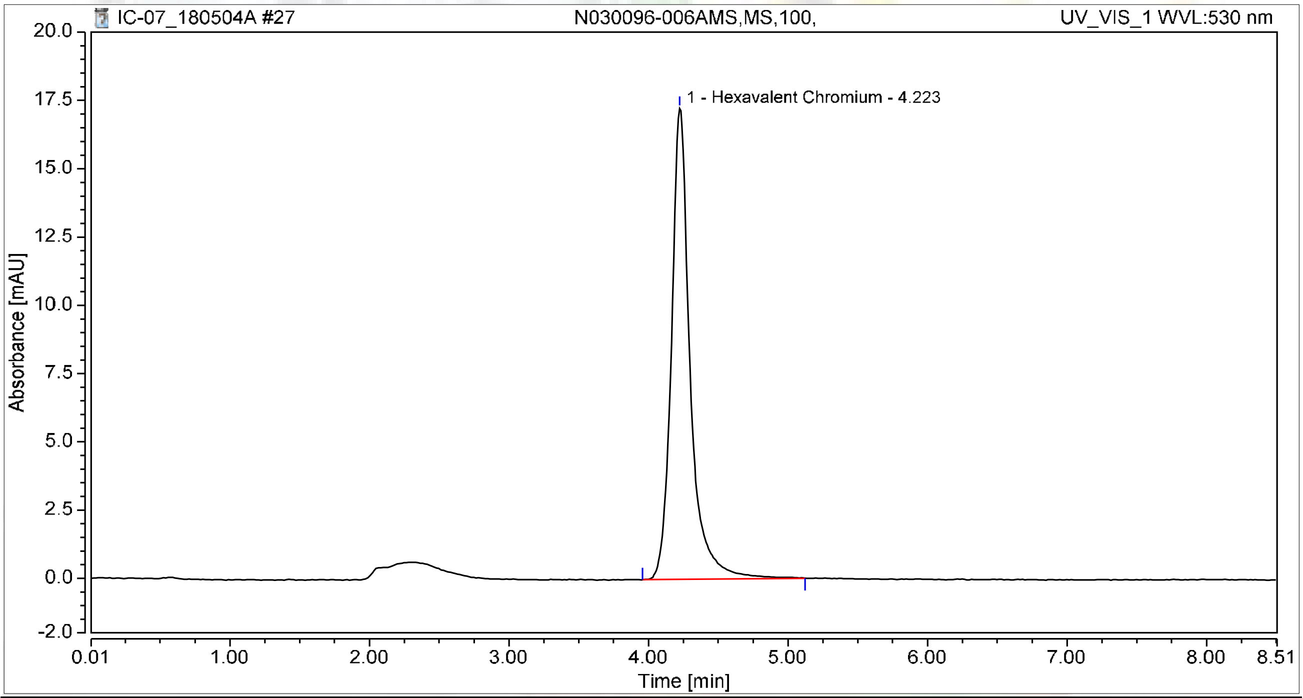
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-006AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 10:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

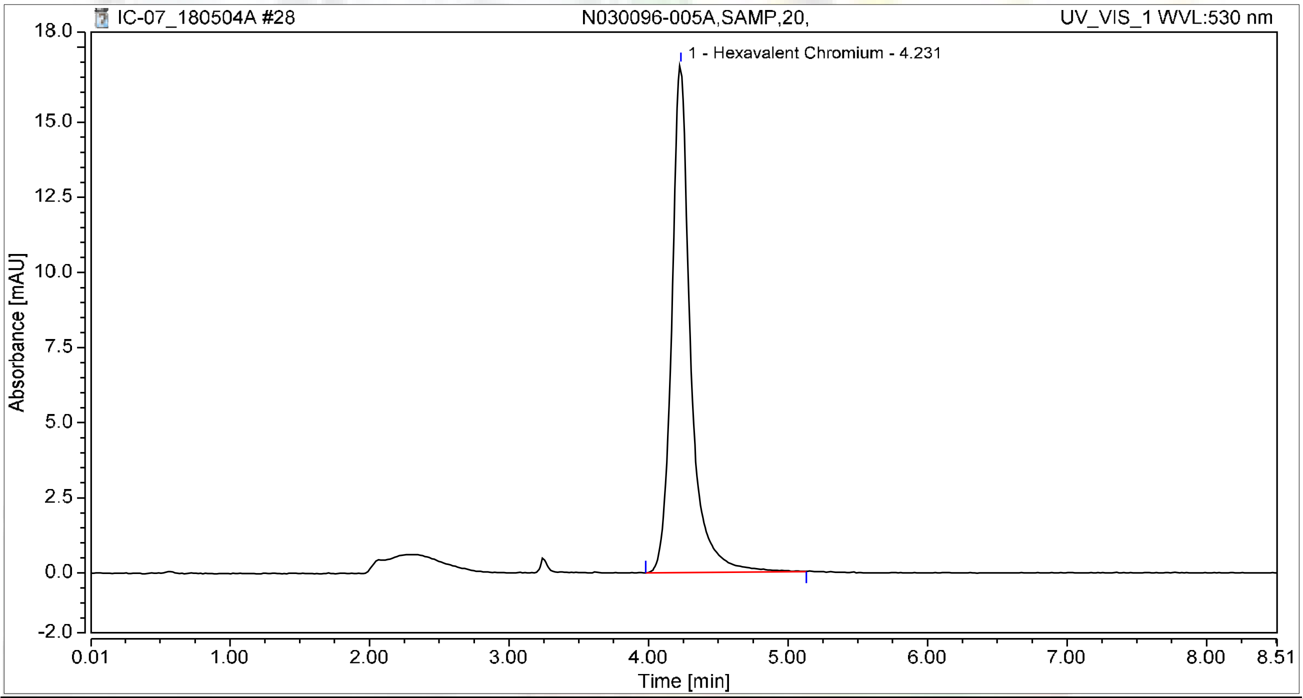
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	2.691	17.241	100.00	100.00	10.4863
Total:			**2.691**	**17.241**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-005A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 10:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

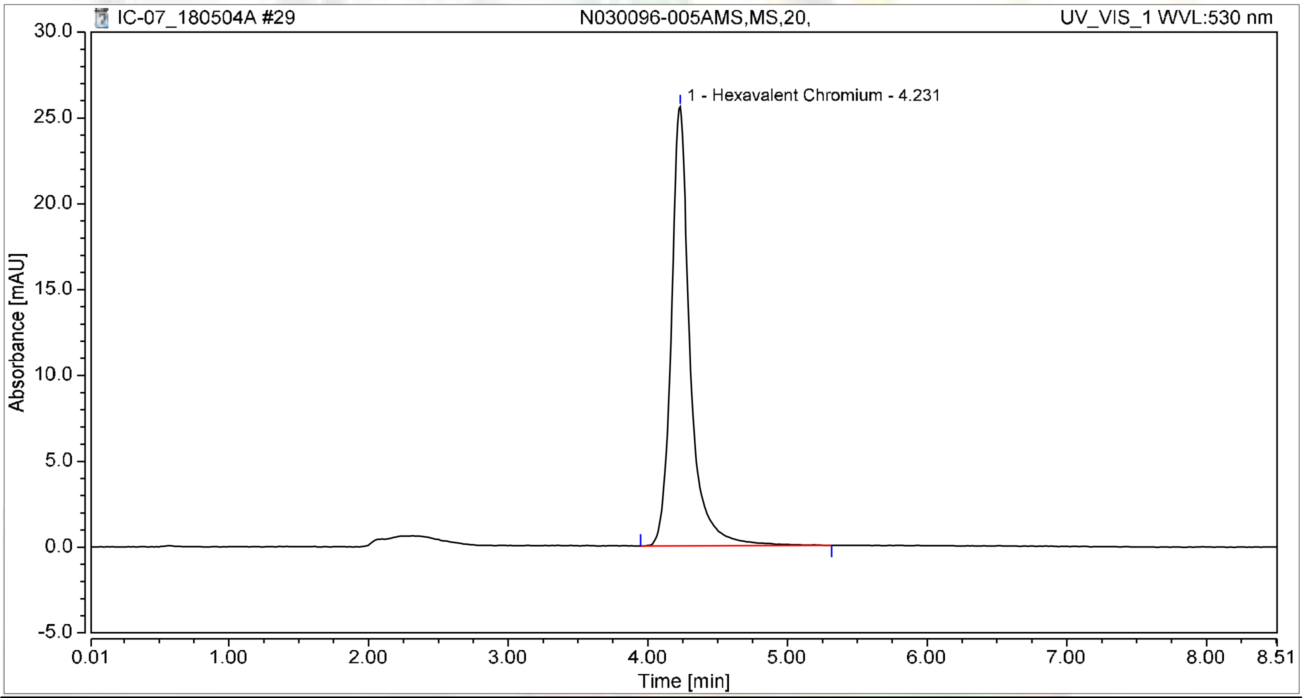
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.638	16.911	100.00	100.00	10.2785
Total:			**2.638**	**16.911**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-005AMS,MS,20,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 10:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

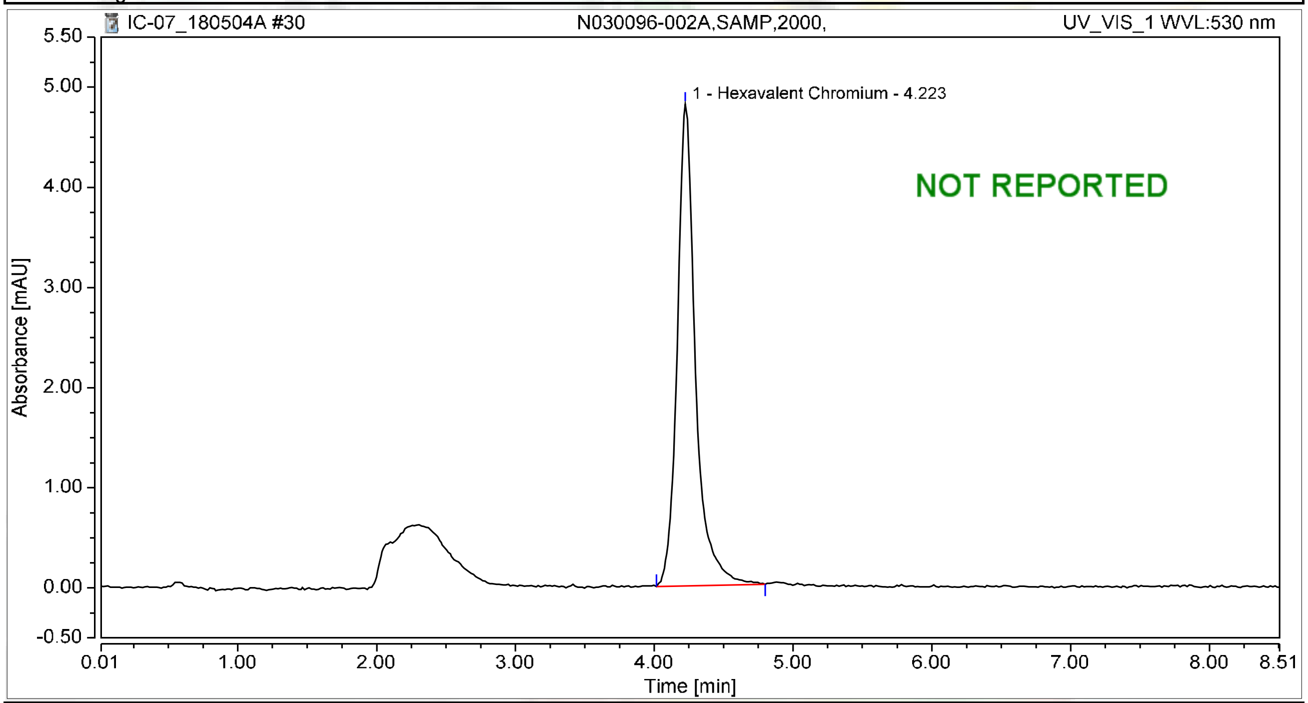
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	3.999	25.598	100.00	100.00	15.5808
Total:			**3.999**	**25.598**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-002A,SAMP,2000,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 10:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

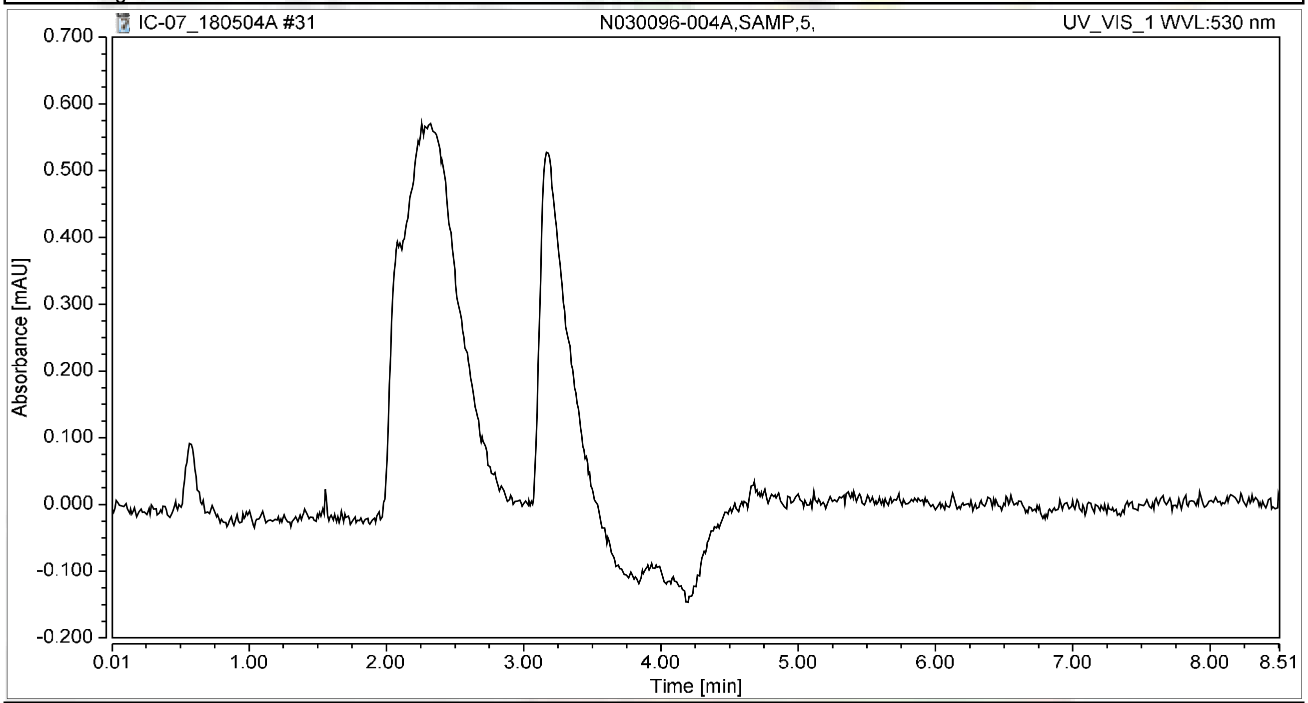
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.734	4.810	100.00	100.00	2.8606
Total:			**0.734**	**4.810**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 10:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

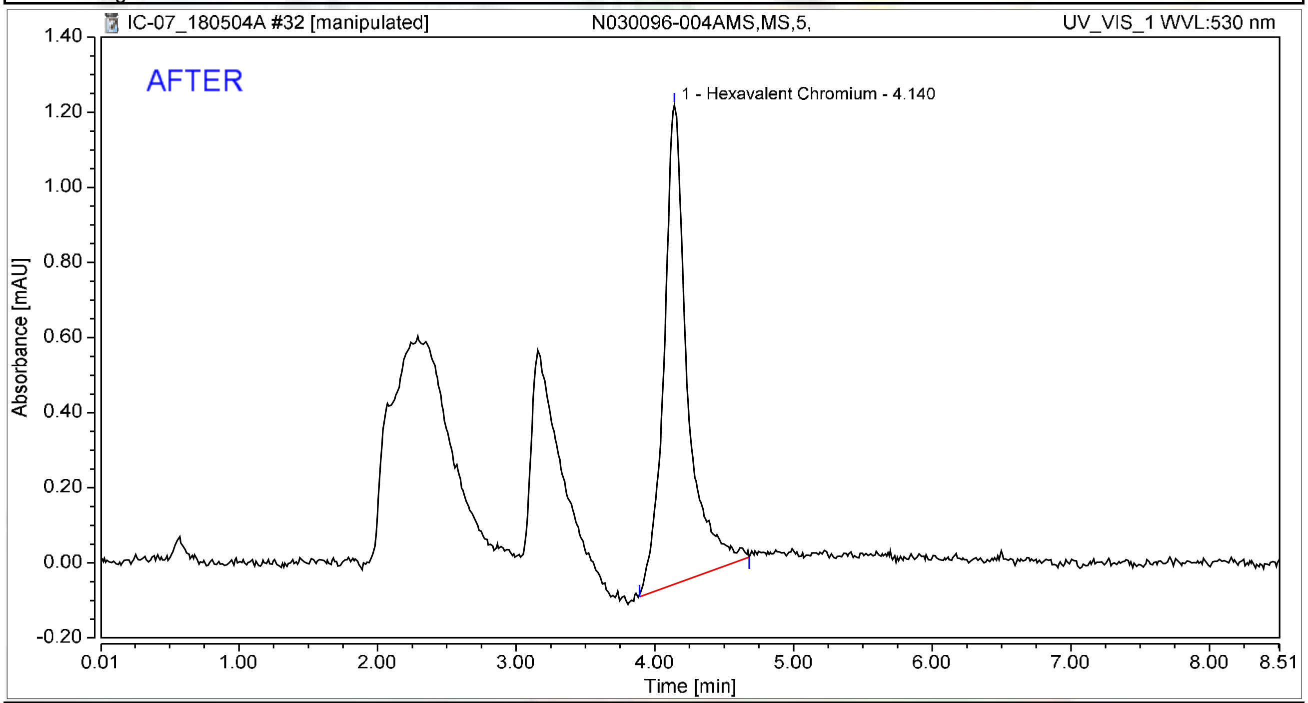
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 11:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.252	1.276	100.00	100.00	0.9810
Total:			**0.252**	**1.276**	**100.00**	**100.00**	

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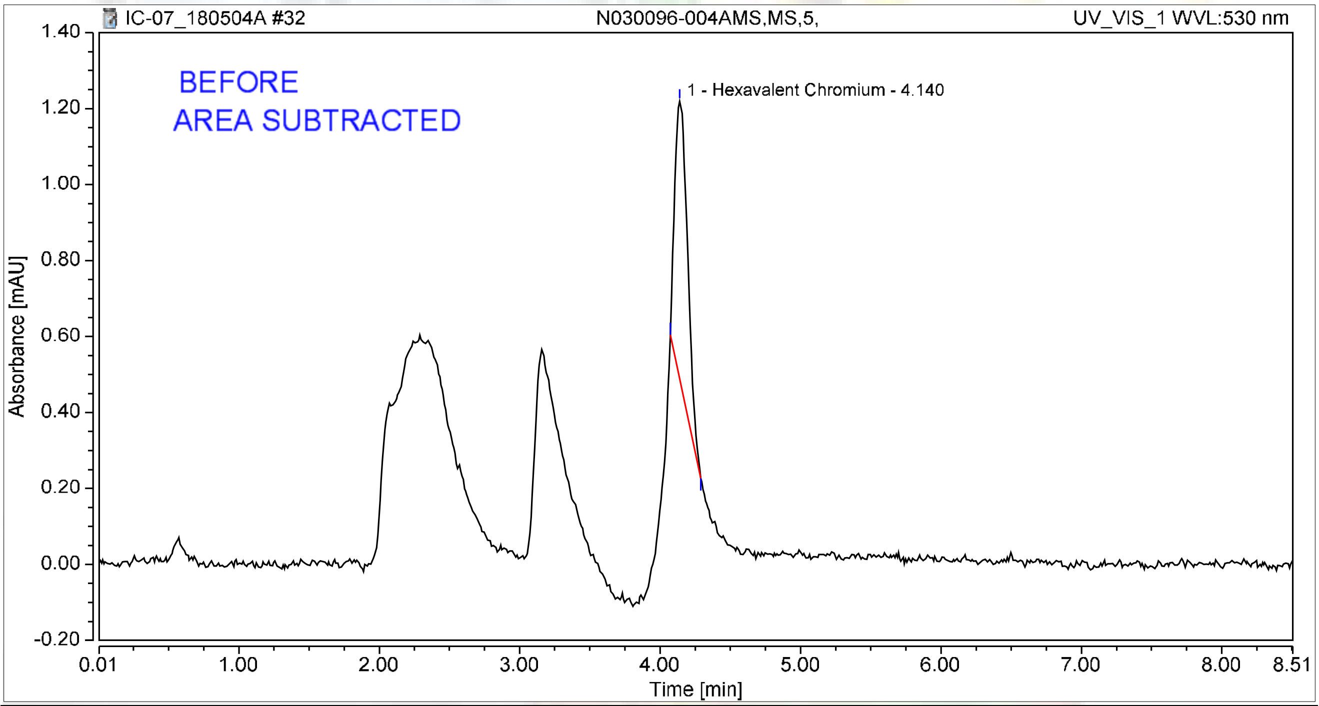
Chromatogram and Results

Injection Details

Injection Name:	**N030096-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 11:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.078	0.731	100.00	100.00	0.3037
Total:			**0.078**	**0.731**	**100.00**	**100.00**	

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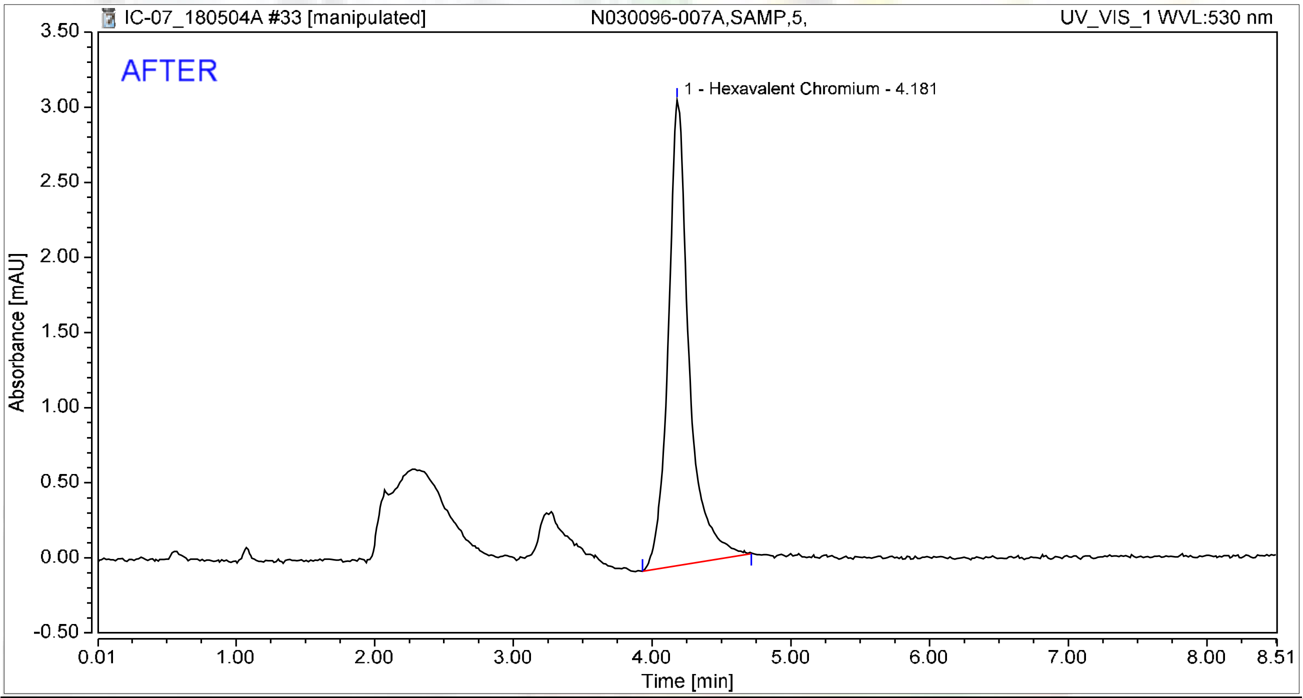
Chromatogram and Results

Injection Details

Injection Name:	**N030096-007A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 11:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.543	3.099	100.00	100.00	2.1151
Total:			**0.543**	**3.099**	**100.00**	**100.00**	

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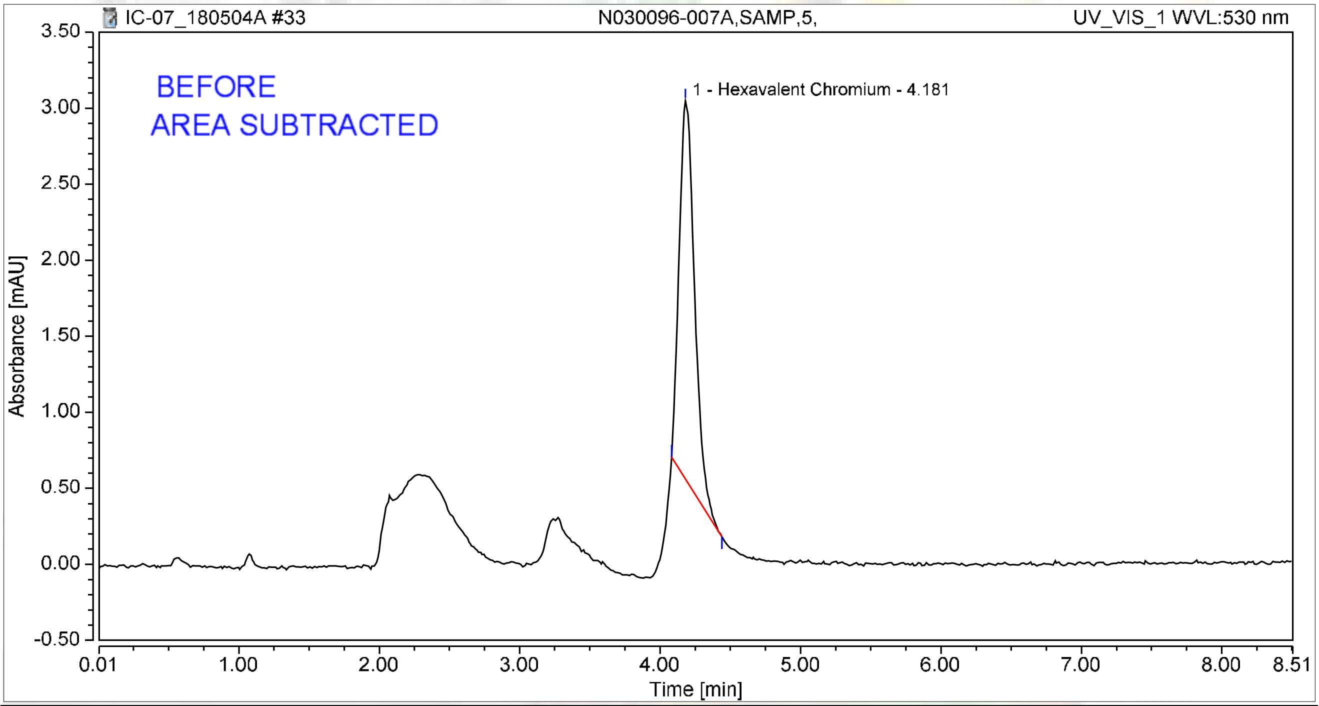
Chromatogram and Results

Injection Details

Injection Name:	**N030096-007A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 11:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.317	2.489	100.00	100.00	1.2356
Total:			**0.317**	**2.489**	**100.00**	**100.00**	

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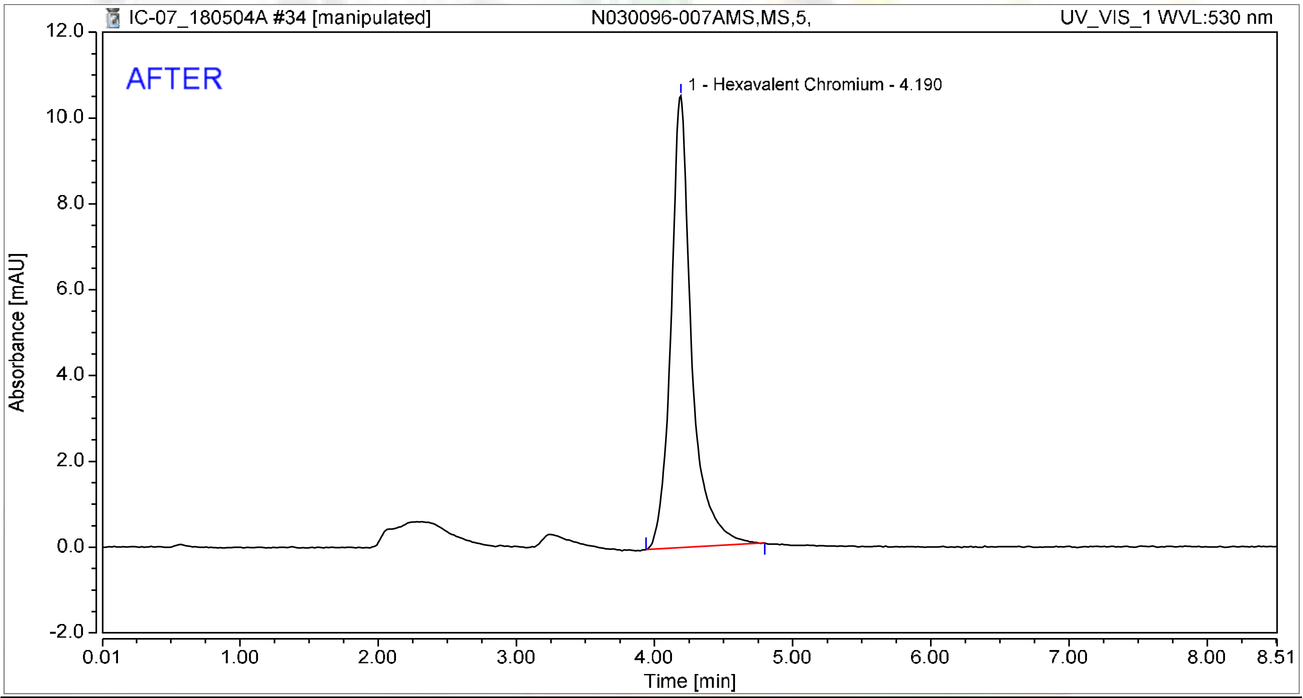
Chromatogram and Results

Injection Details

Injection Name:	**N030096-007AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 11:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.832	10.525	100.00	100.00	7.1373
Total:			**1.832**	**10.525**	**100.00**	**100.00**	

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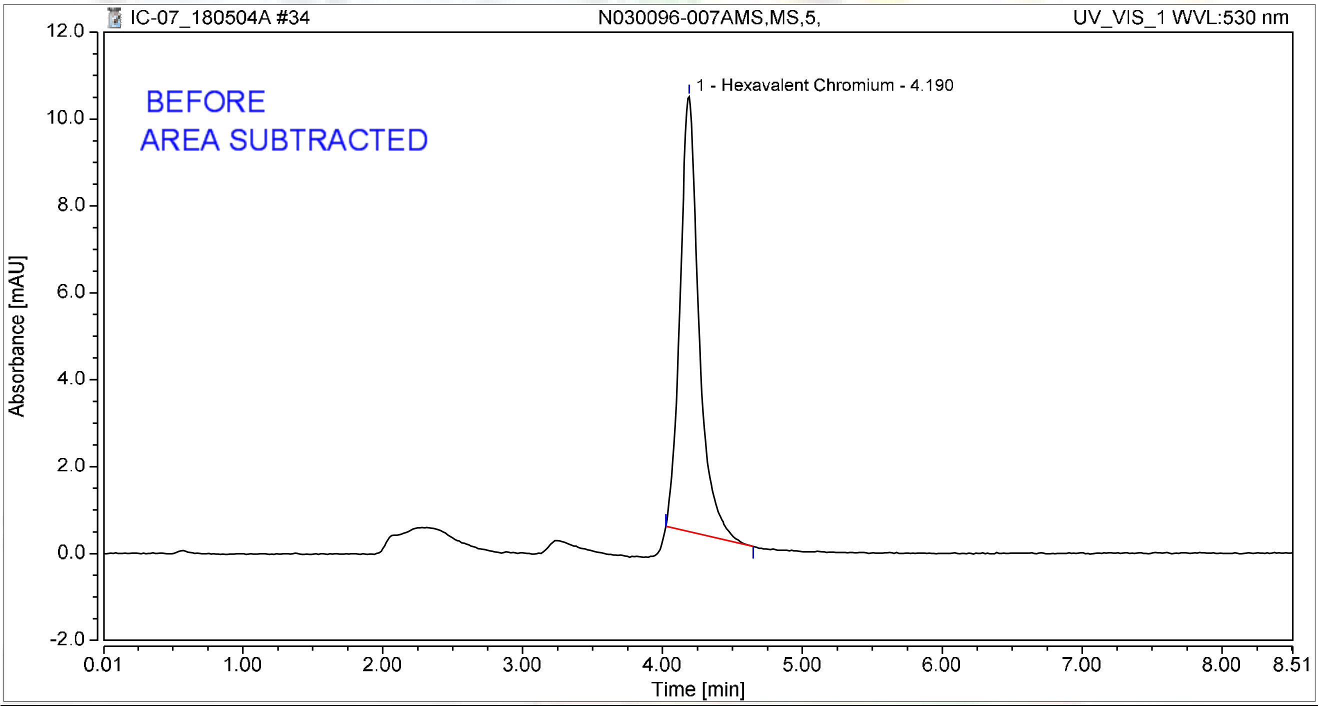
Chromatogram and Results

Injection Details

Injection Name:	**N030096-007AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 11:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.572	10.010	100.00	100.00	6.1269
Total:			**1.572**	**10.010**	**100.00**	**100.00**	

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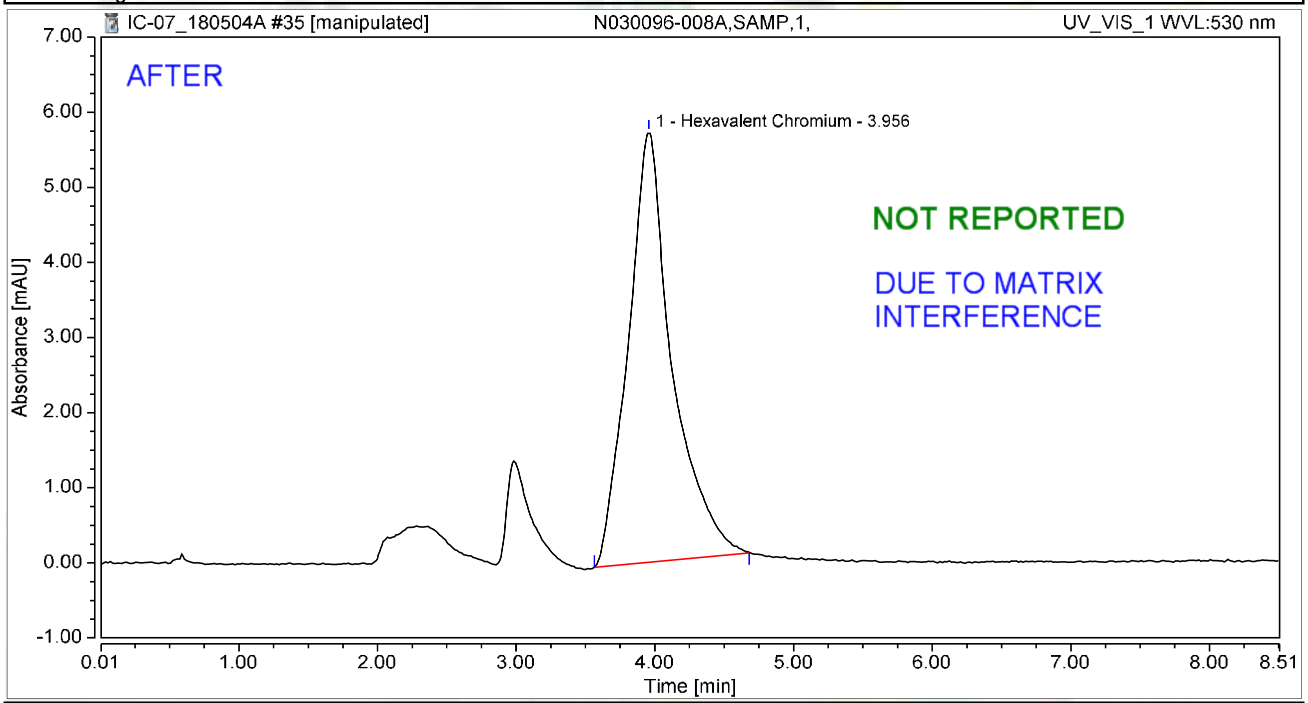
Chromatogram and Results

Injection Details			
Injection Name:	**N030096-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.956	2.097	5.727	100.00	100.00	8.1692
Total:			**2.097**	**5.727**	**100.00**	**100.00**	

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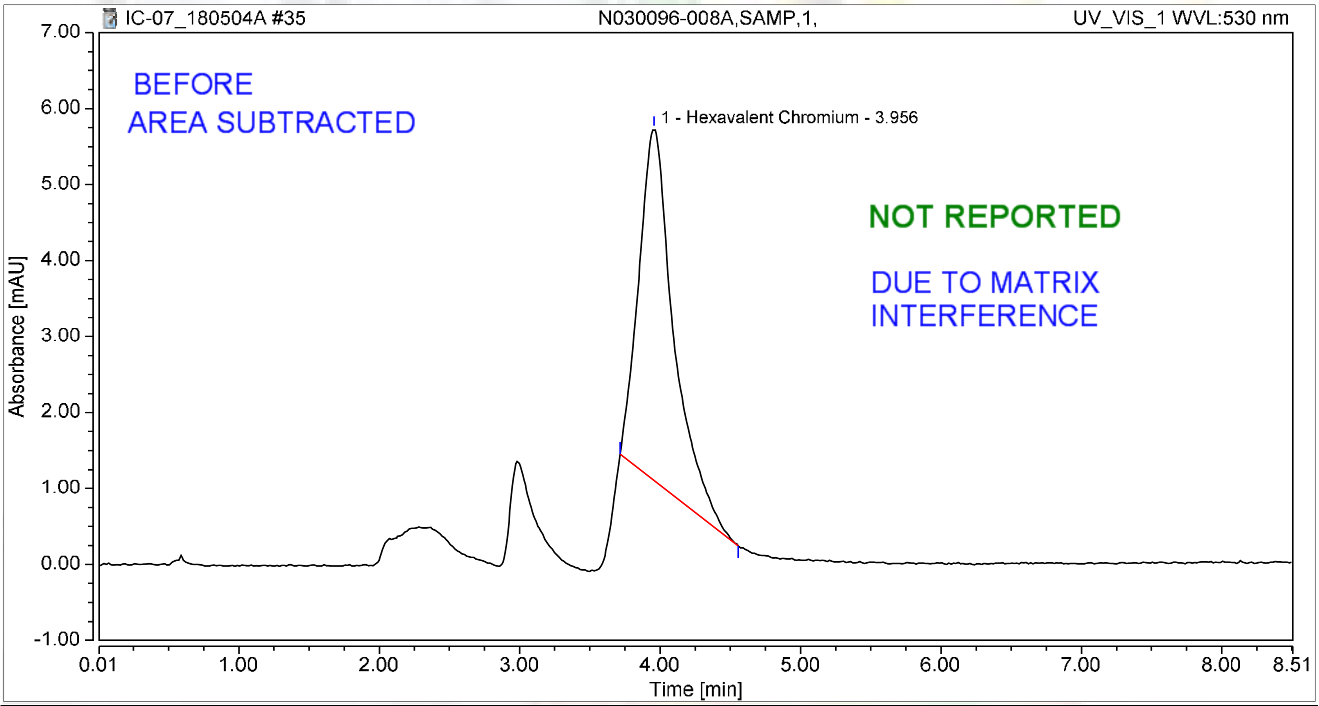
Chromatogram and Results

Injection Details

Injection Name:	**N030096-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.956	1.322	4.630	100.00	100.00	5.1510
Total:			**1.322**	**4.630**	**100.00**	**100.00**	

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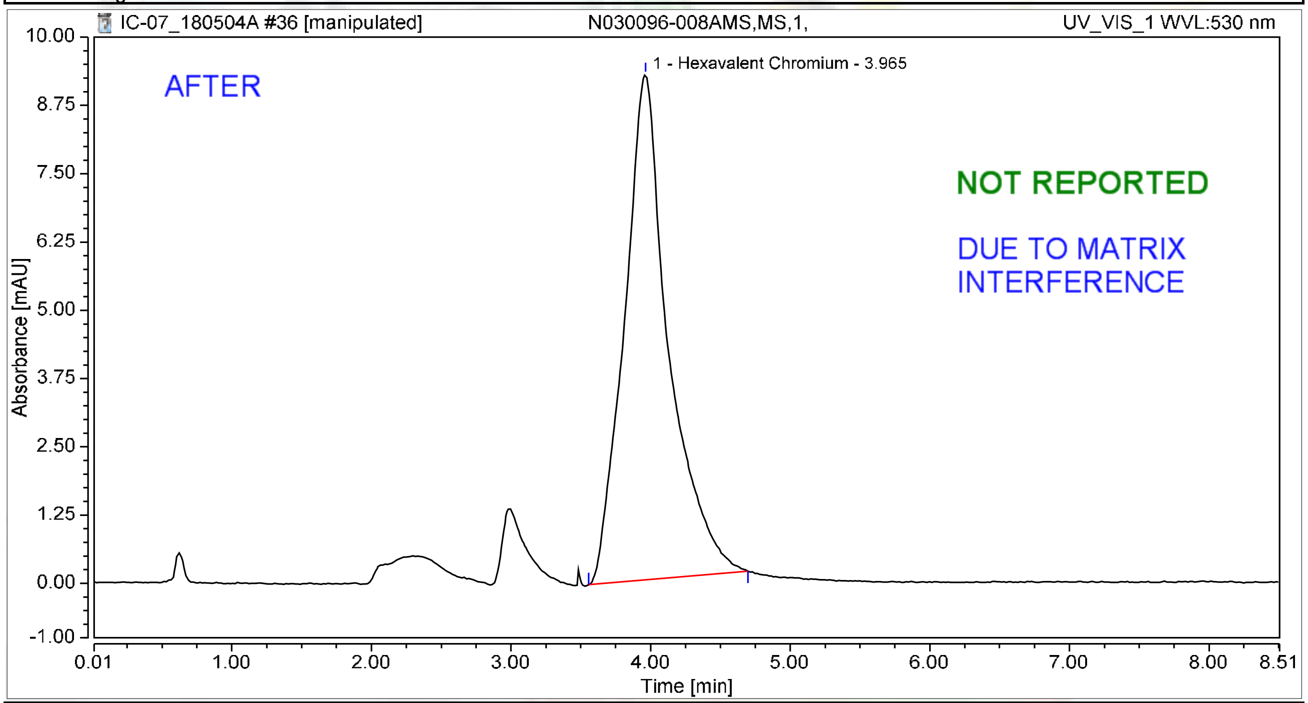
Chromatogram and Results

Injection Details

Injection Name:	**N030096-008AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.965	3.394	9.248	100.00	100.00	13.2264
Total:			**3.394**	**9.248**	**100.00**	**100.00**	

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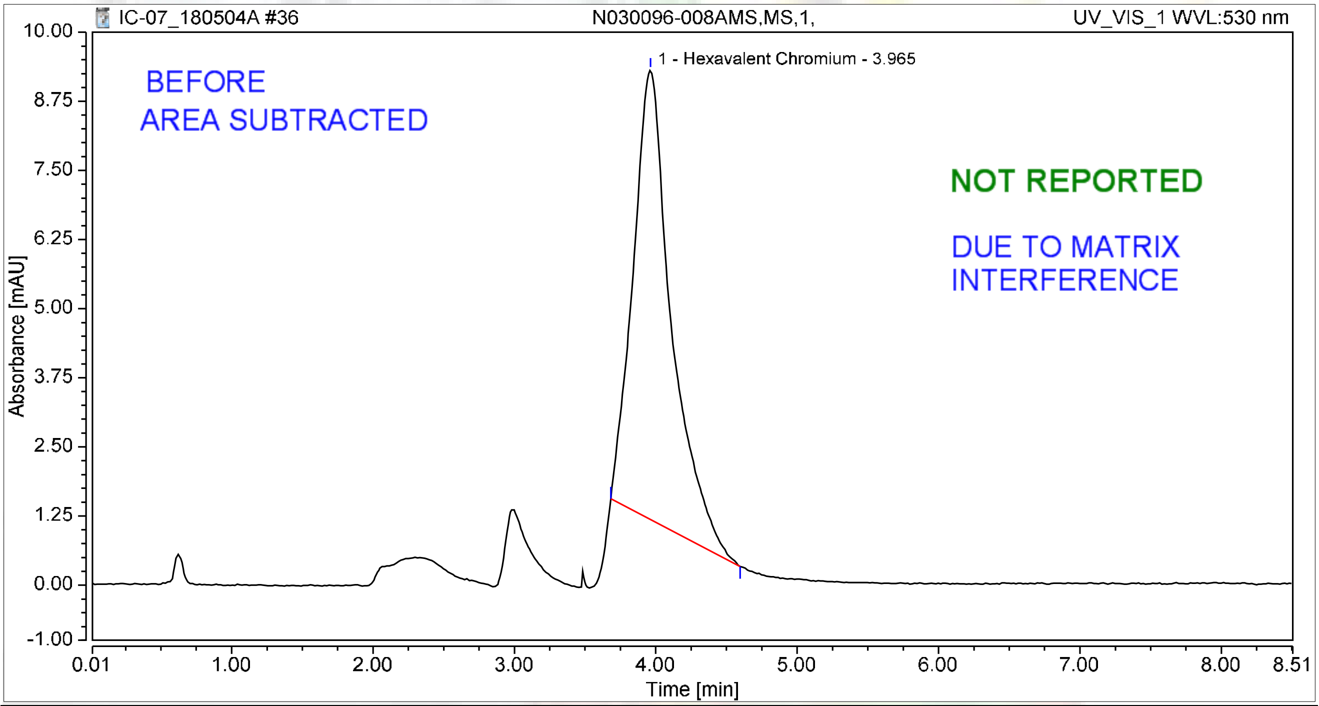
Chromatogram and Results

Injection Details

Injection Name:	**N030096-008AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.965	2.551	8.134	100.00	100.00	9.9392
Total:			**2.551**	**8.134**	**100.00**	**100.00**	

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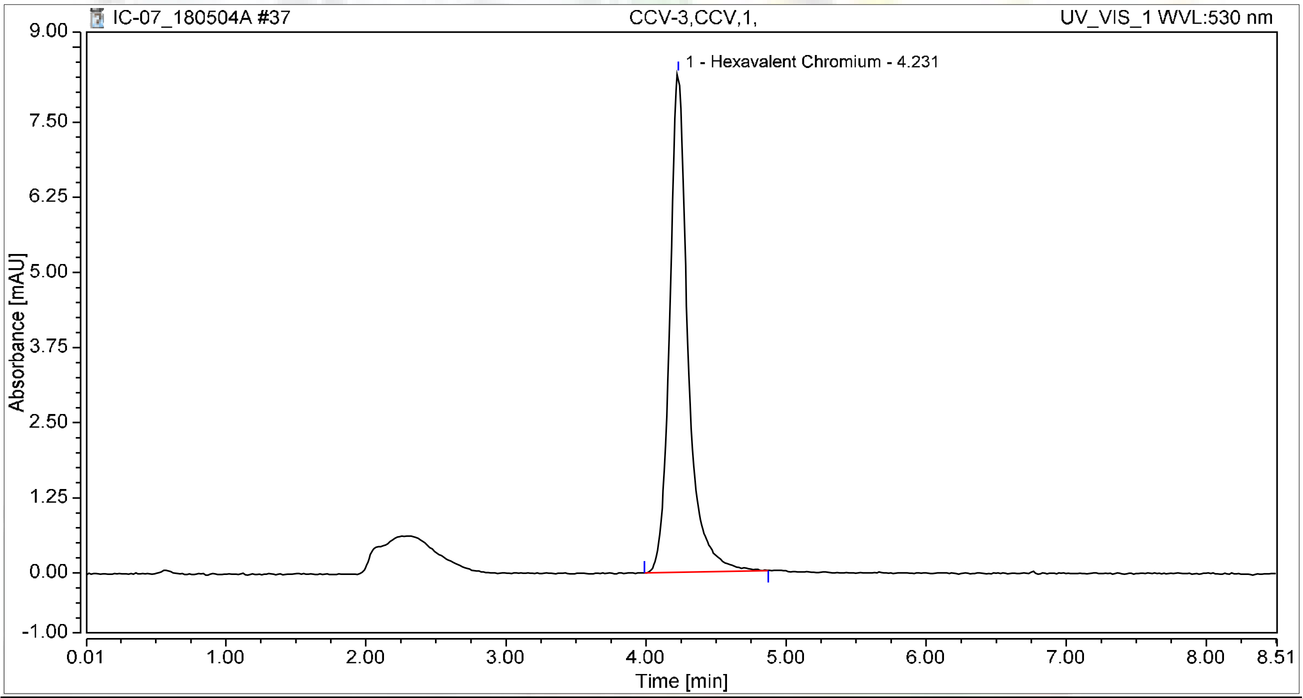
Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 11:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

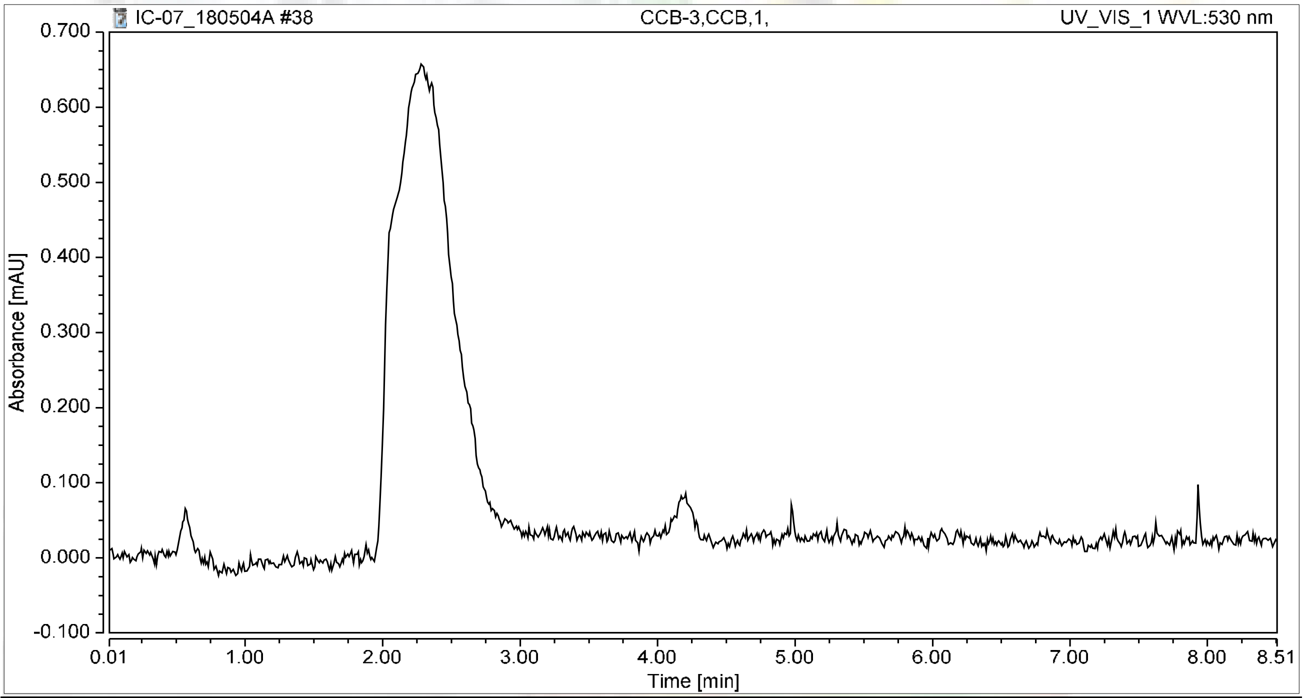
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.265	8.303	100.00	100.00	4.9290
Total:			**1.265**	**8.303**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 12:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

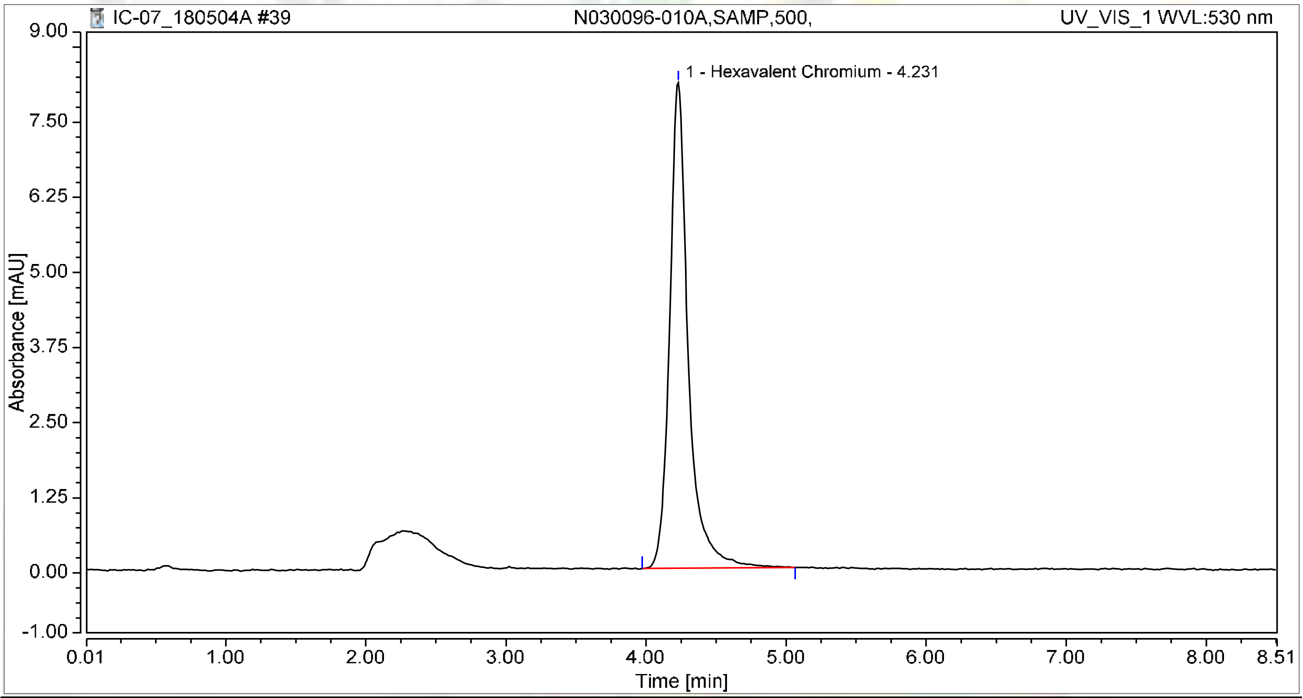
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-010A,SAMP,500,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 12:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

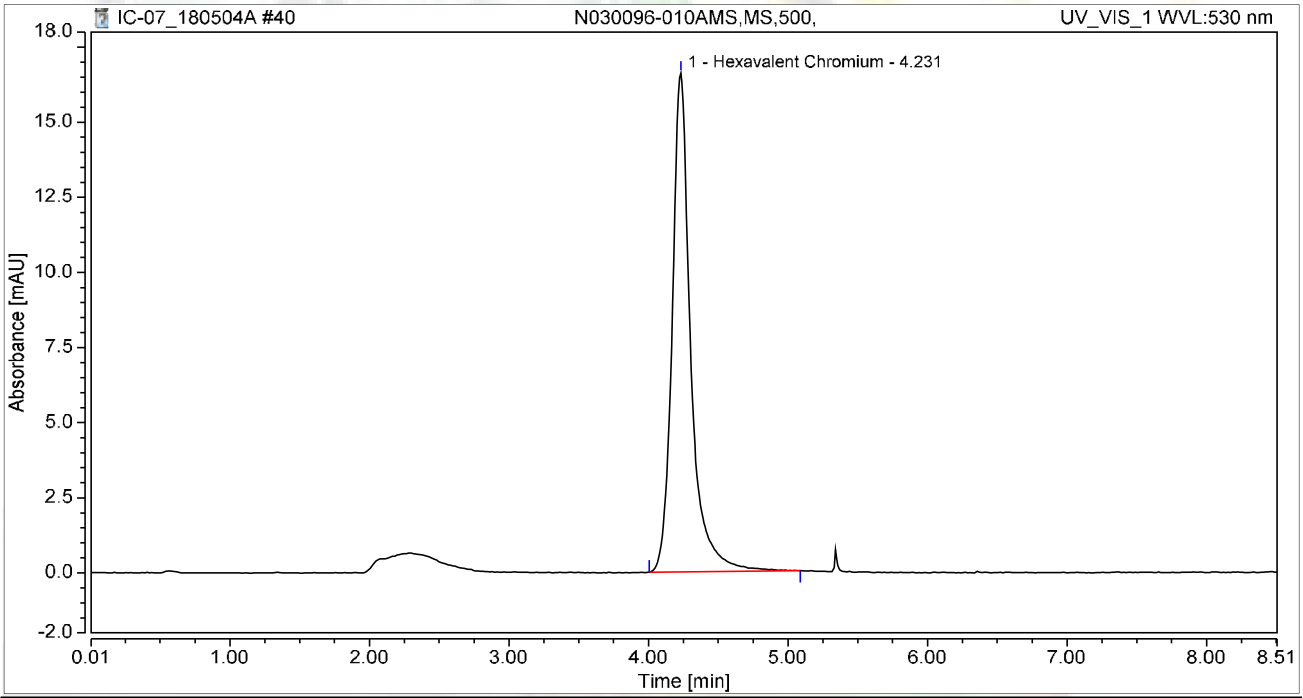
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.247	8.079	100.00	100.00	4.8579
Total:			**1.247**	**8.079**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-010AMS,MS,500,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 12:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

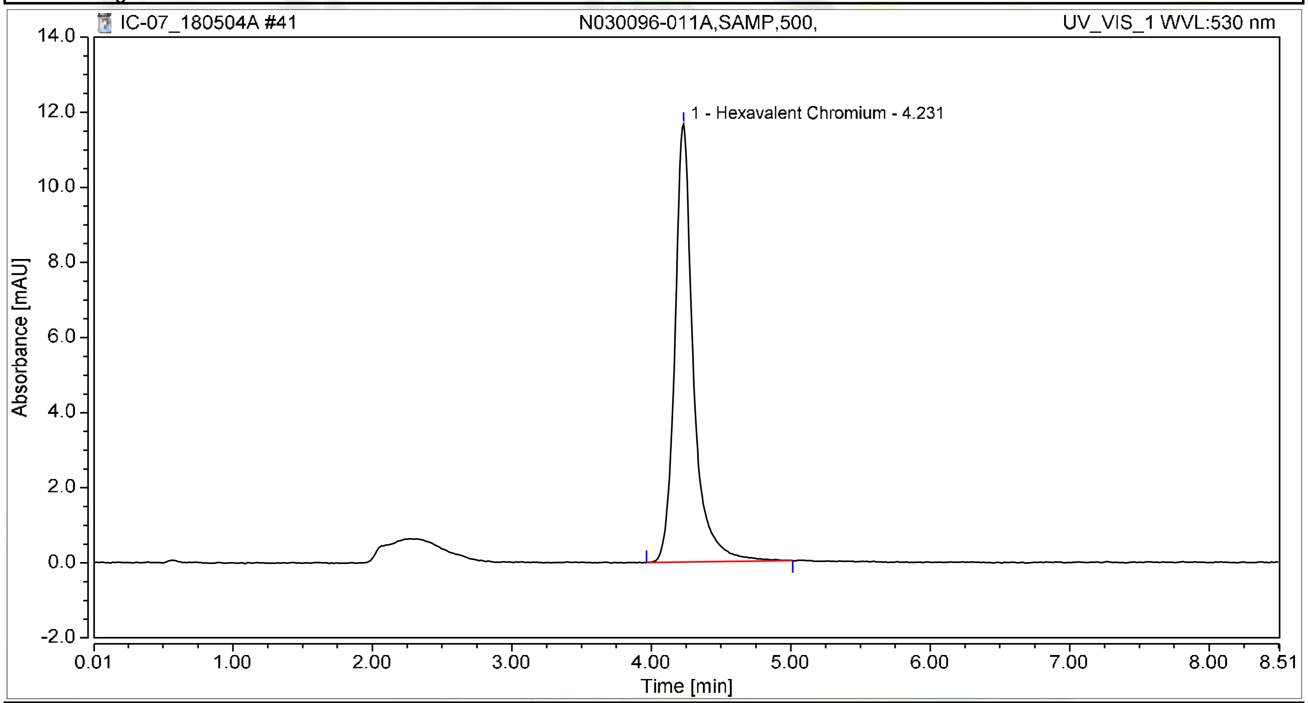
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.551	16.599	100.00	100.00	9.9383
Total:			**2.551**	**16.599**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-011A,SAMP,500,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 12:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

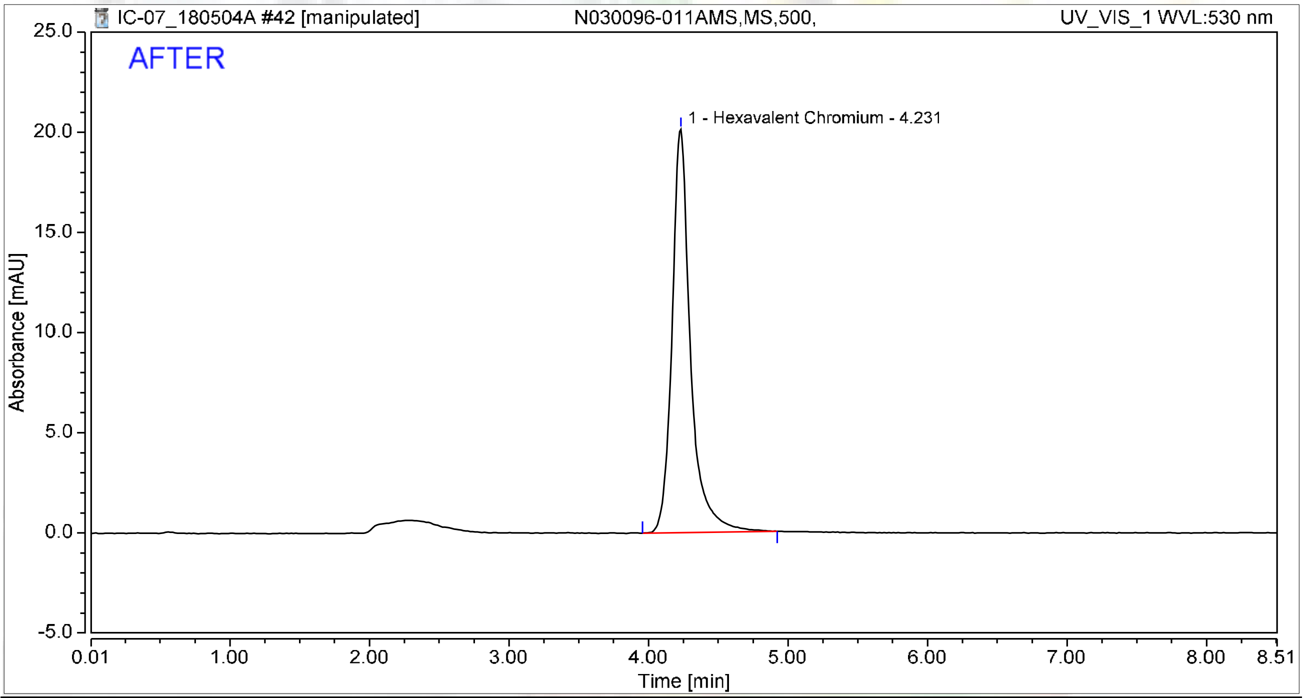
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.794	11.661	100.00	100.00	6.9885
Total:			**1.794**	**11.661**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-011AMS,MS,500,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 12:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	3.083	20.133	100.00	100.00	12.0113
Total:			**3.083**	**20.133**	**100.00**	**100.00**	

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My Arial report/integration

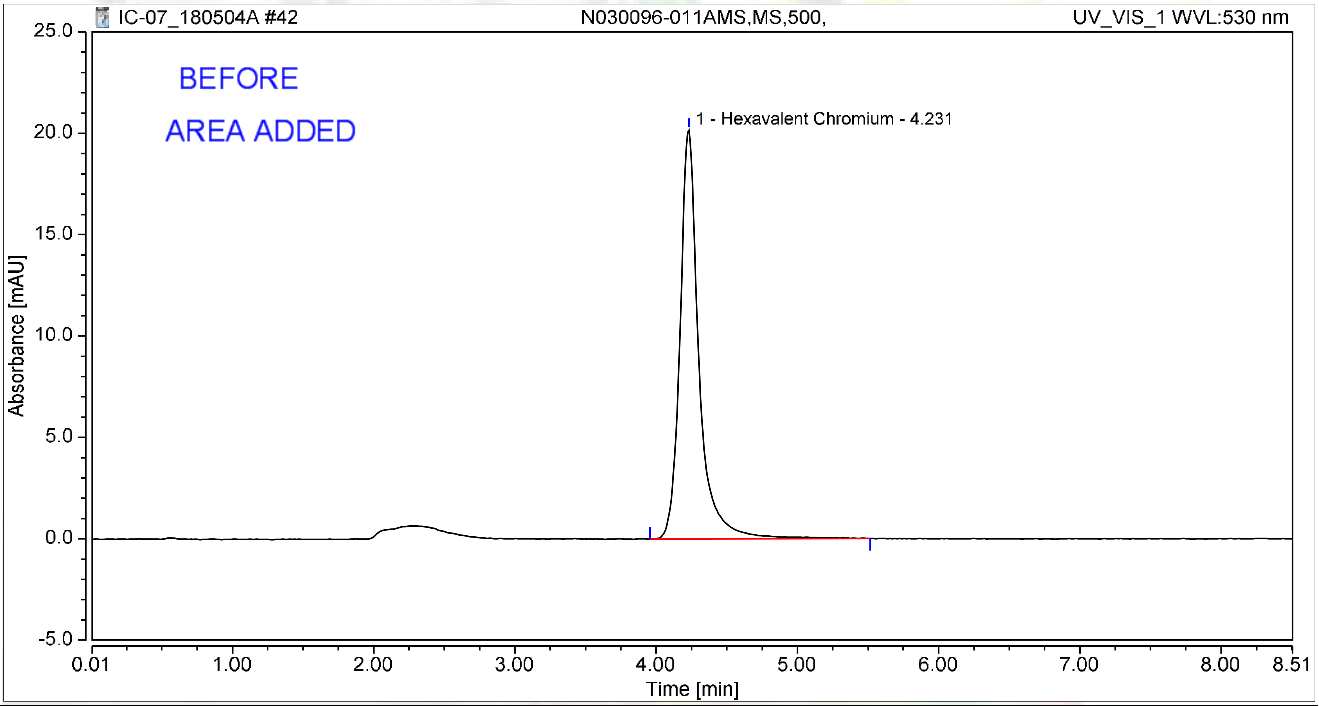
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N030096-011AMS,MS,500,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 12:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	3.153	20.160	100.00	100.00	12.2839
Total:			**3.153**	**20.160**	**100.00**	**100.00**	

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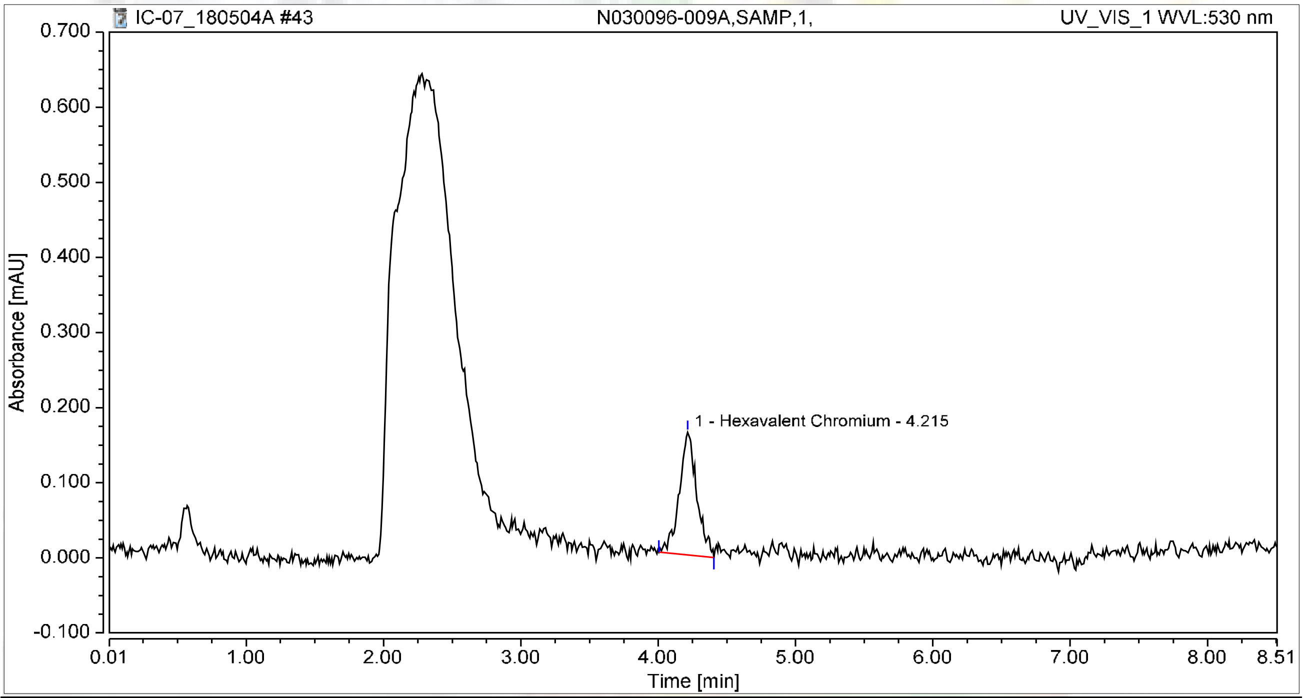
Chromatogram and Results

Injection Details

Injection Name:	**N030096-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 12:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

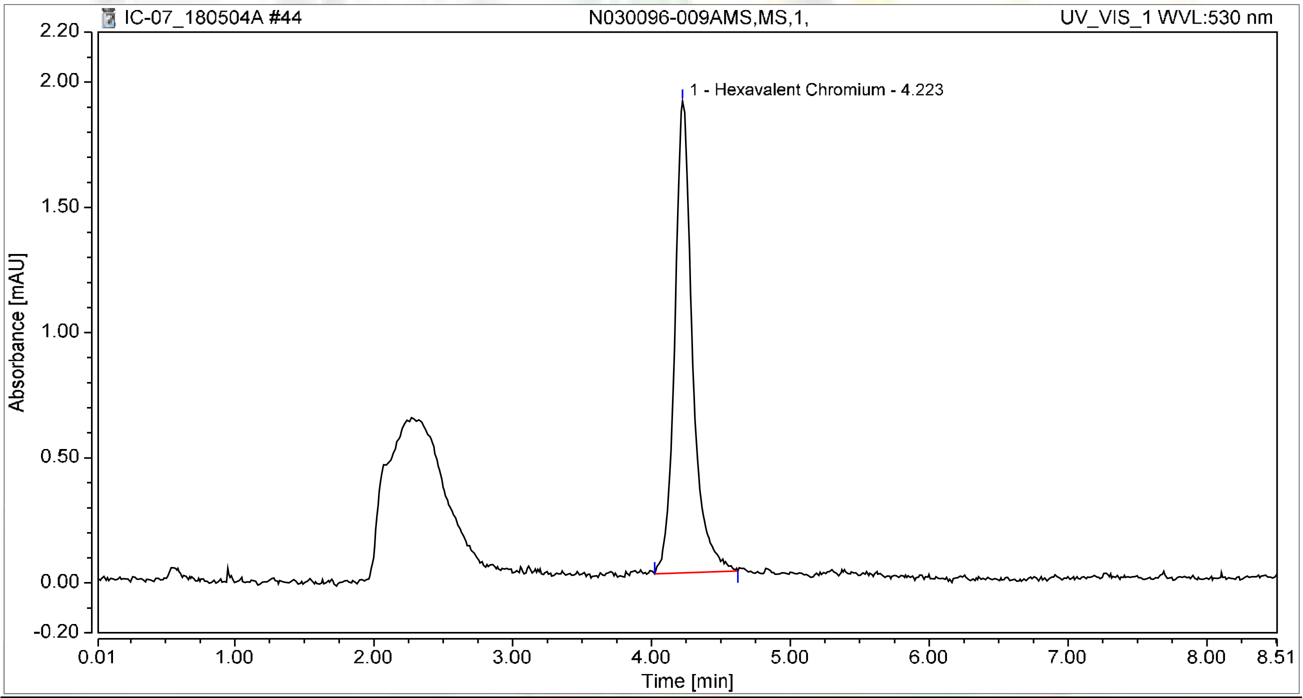
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.024	0.163	100.00	100.00	0.0945
Total:			**0.024**	**0.163**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-009AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 12:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

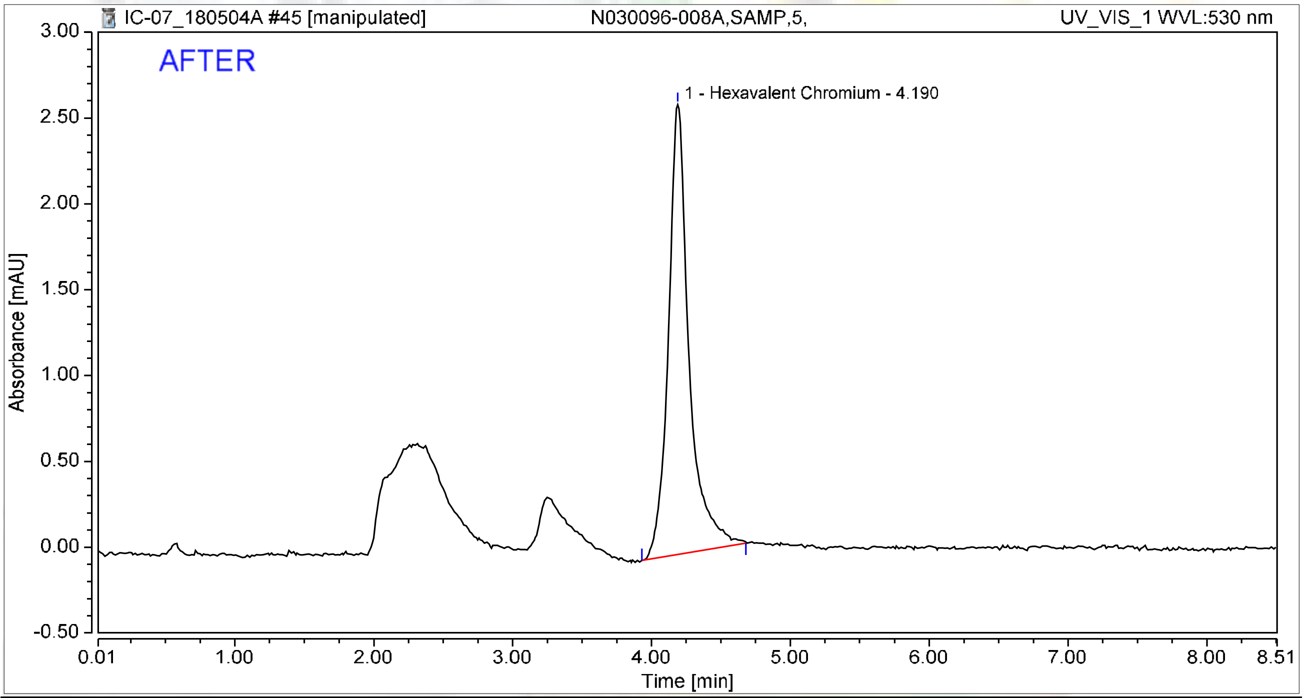
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.281	1.884	100.00	100.00	1.0941
Total:			**0.281**	**1.884**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-008A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 13:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.453	2.621	100.00	100.00	1.7632
Total:			**0.453**	**2.621**	**100.00**	**100.00**	

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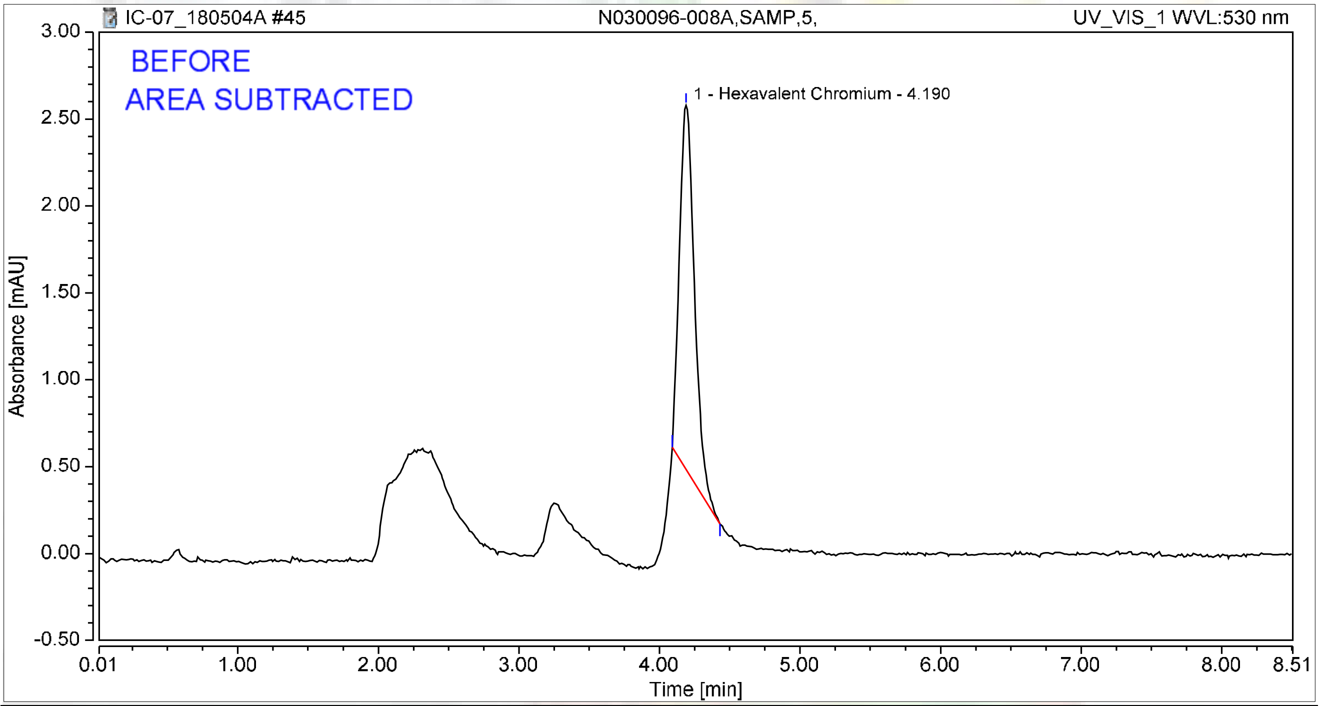
Chromatogram and Results

Injection Details

Injection Name:	**N030096-008A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 13:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.261	2.096	100.00	100.00	1.0187
Total:			**0.261**	**2.096**	**100.00**	**100.00**	

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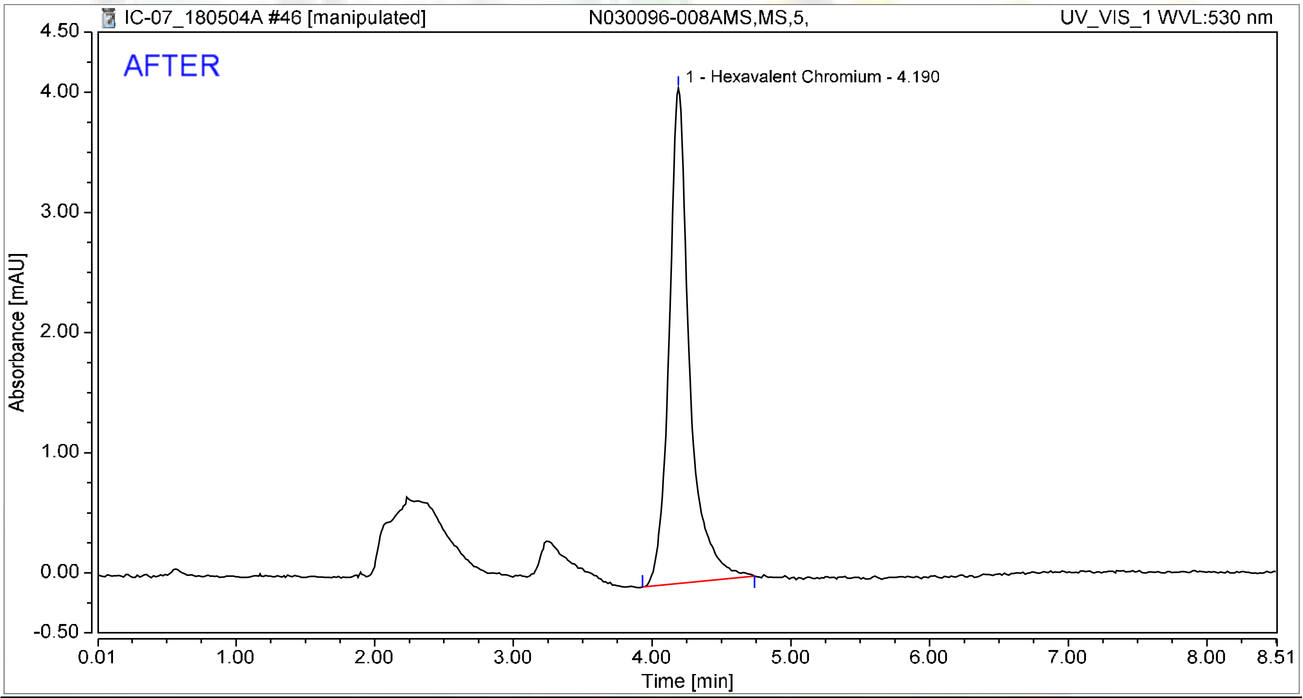
Chromatogram and Results

Injection Details

Injection Name:	**N030096-008AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 13:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.707	4.124	100.00	100.00	2.7553
Total:			**0.707**	**4.124**	**100.00**	**100.00**	

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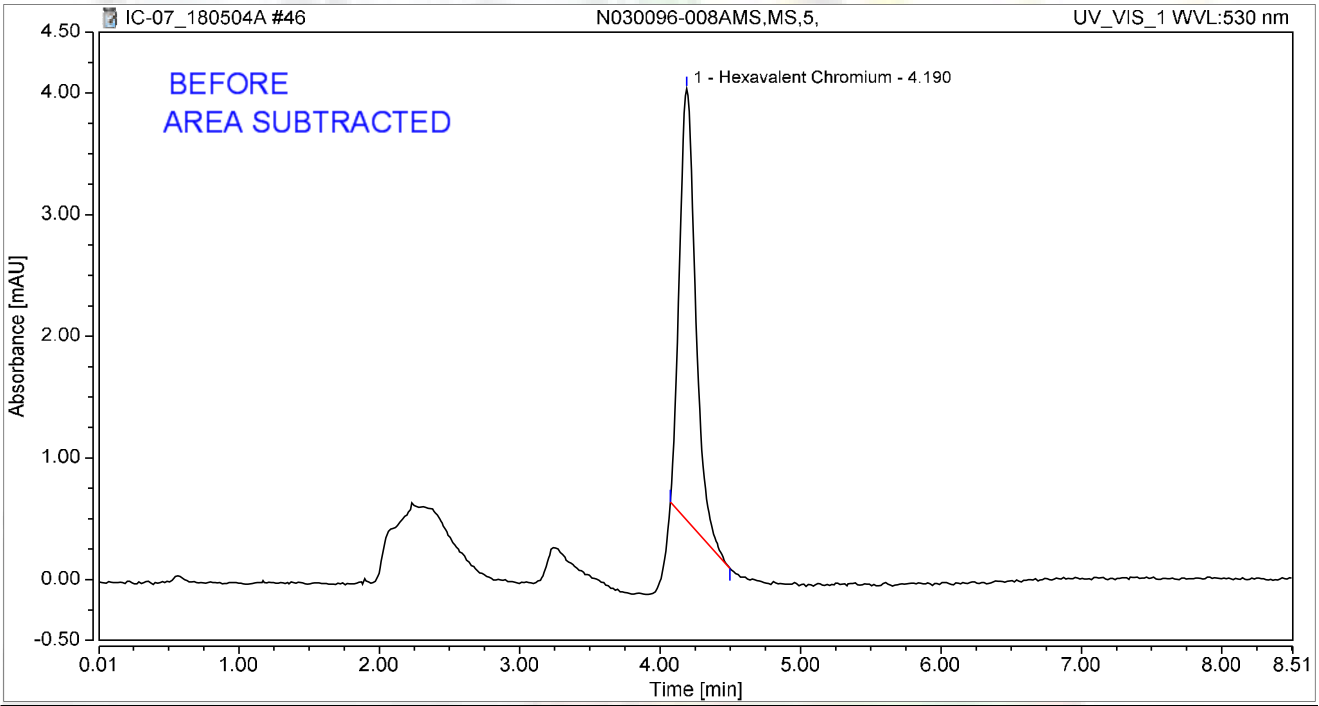
Chromatogram and Results

Injection Details

Injection Name:	**N030096-008AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 13:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.478	3.548	100.00	100.00	1.8633
Total:			**0.478**	**3.548**	**100.00**	**100.00**	

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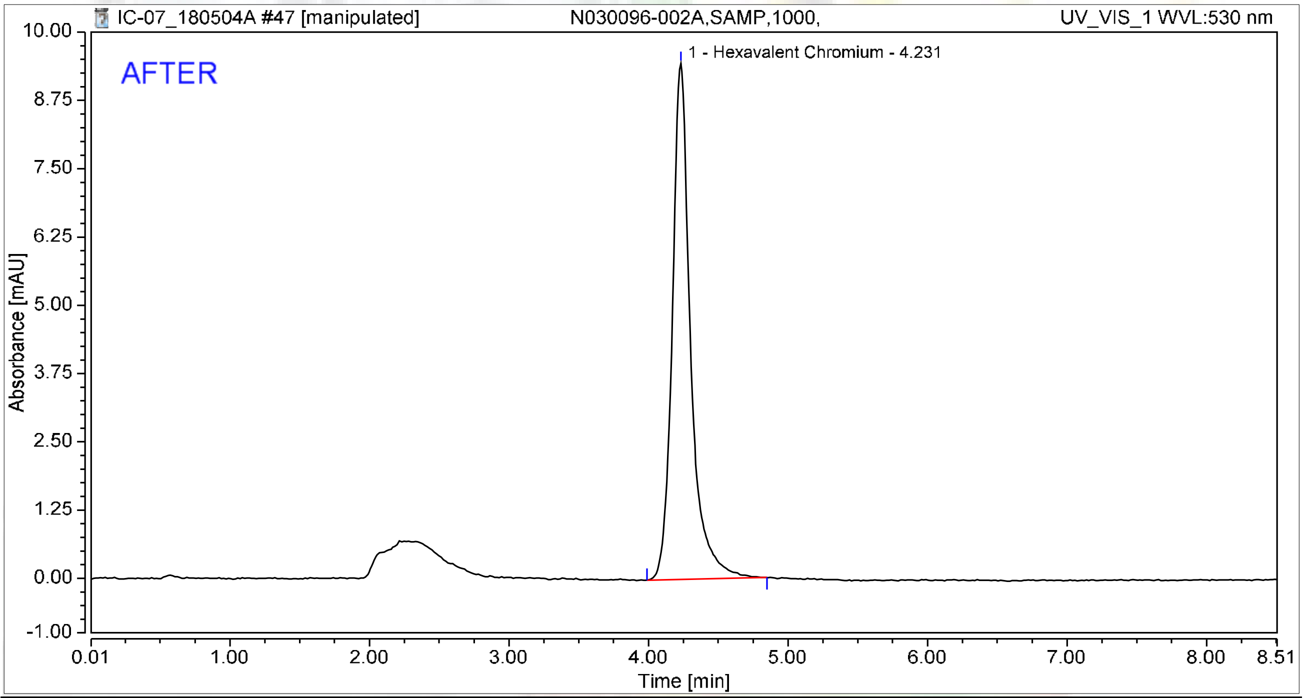
Chromatogram and Results

Injection Details

Injection Name:	**N030096-002A,SAMP,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 13:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.435	9.445	100.00	100.00	5.5934
Total:			**1.435**	**9.445**	**100.00**	**100.00**	

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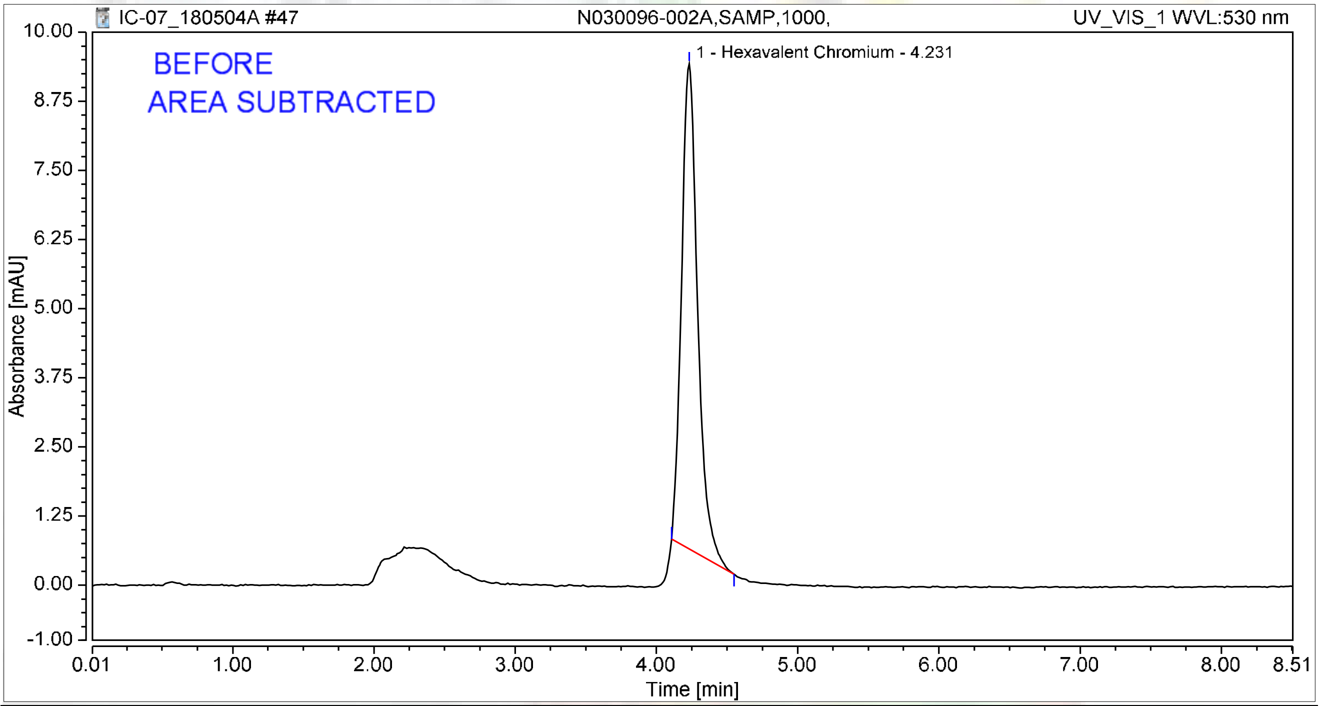
IC-07 RBA 5/5/2018 8:31:16 PM

Chromatogram and Results

Injection Details

Injection Name:	**N030096-002A,SAMP,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 13:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.160	8.774	100.00	100.00	4.5213
Total:			**1.160**	**8.774**	**100.00**	**100.00**	

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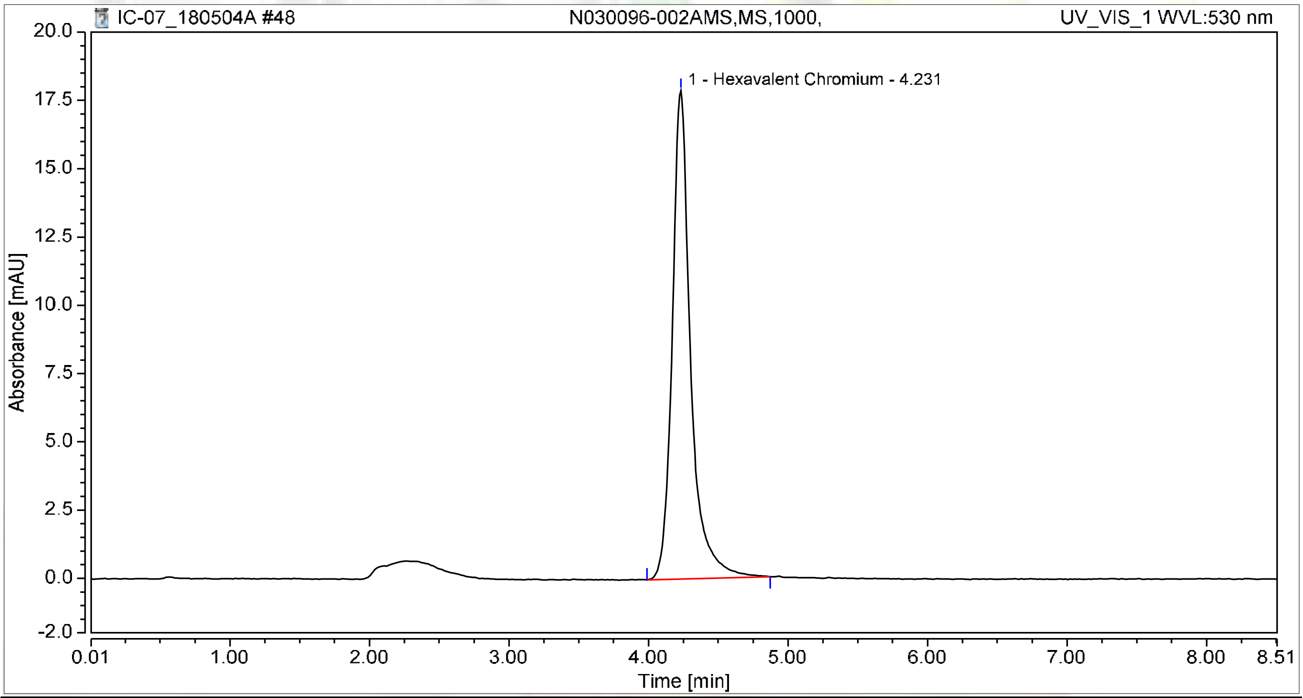
Chromatogram and Results

Injection Details

Injection Name:	**N030096-002AMS,MS,1000,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 13:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

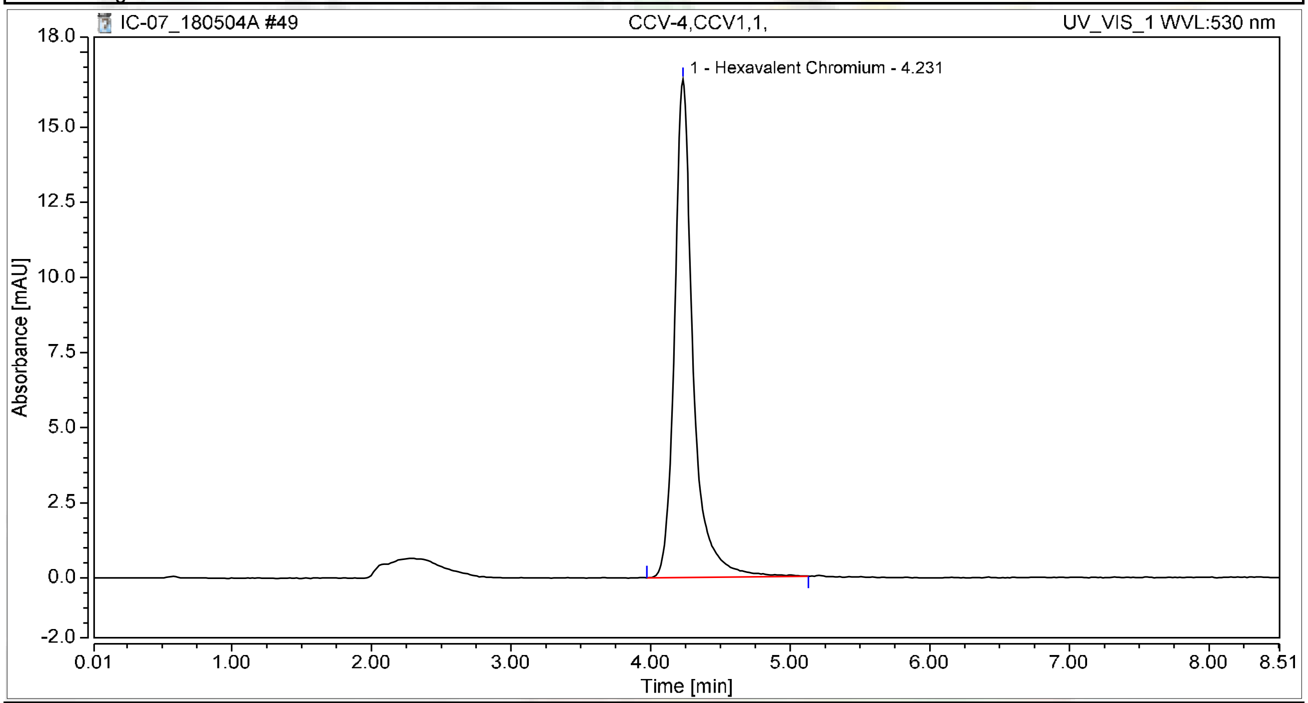
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.726	17.883	100.00	100.00	10.6208
Total:			**2.726**	**17.883**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



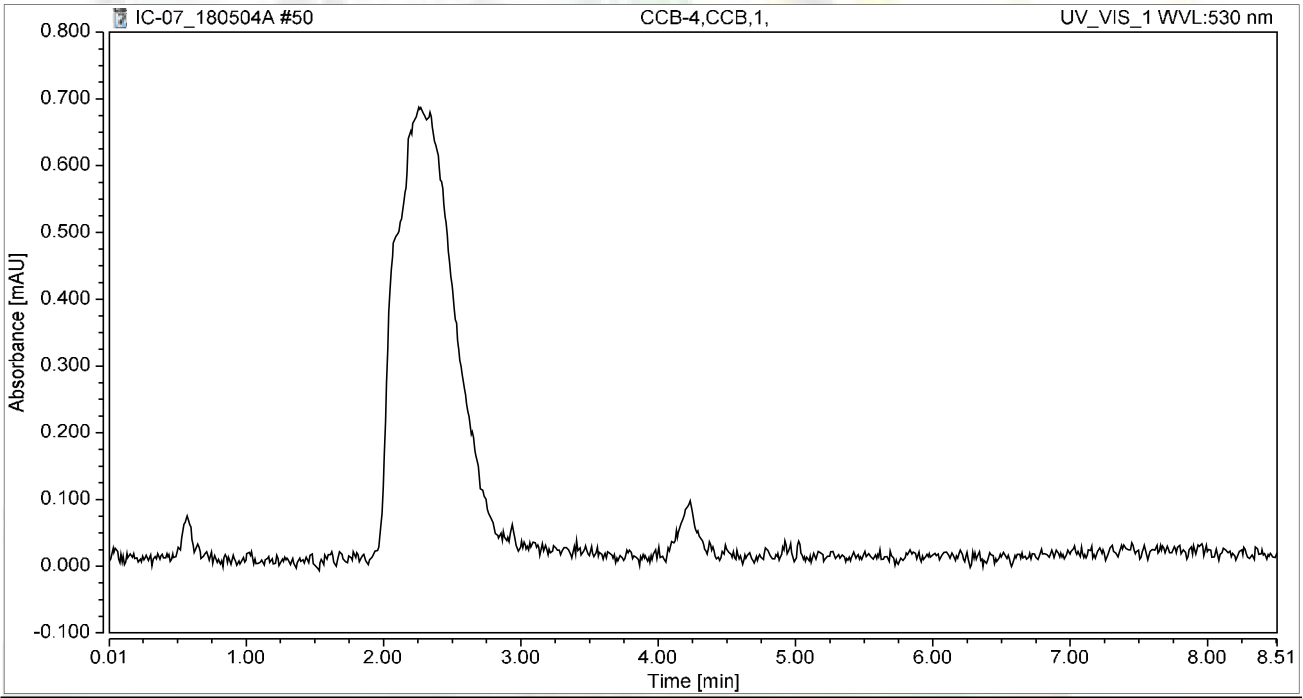
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.544	16.579	100.00	100.00	9.9133
Total:			**2.544**	**16.579**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details			
Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 13:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

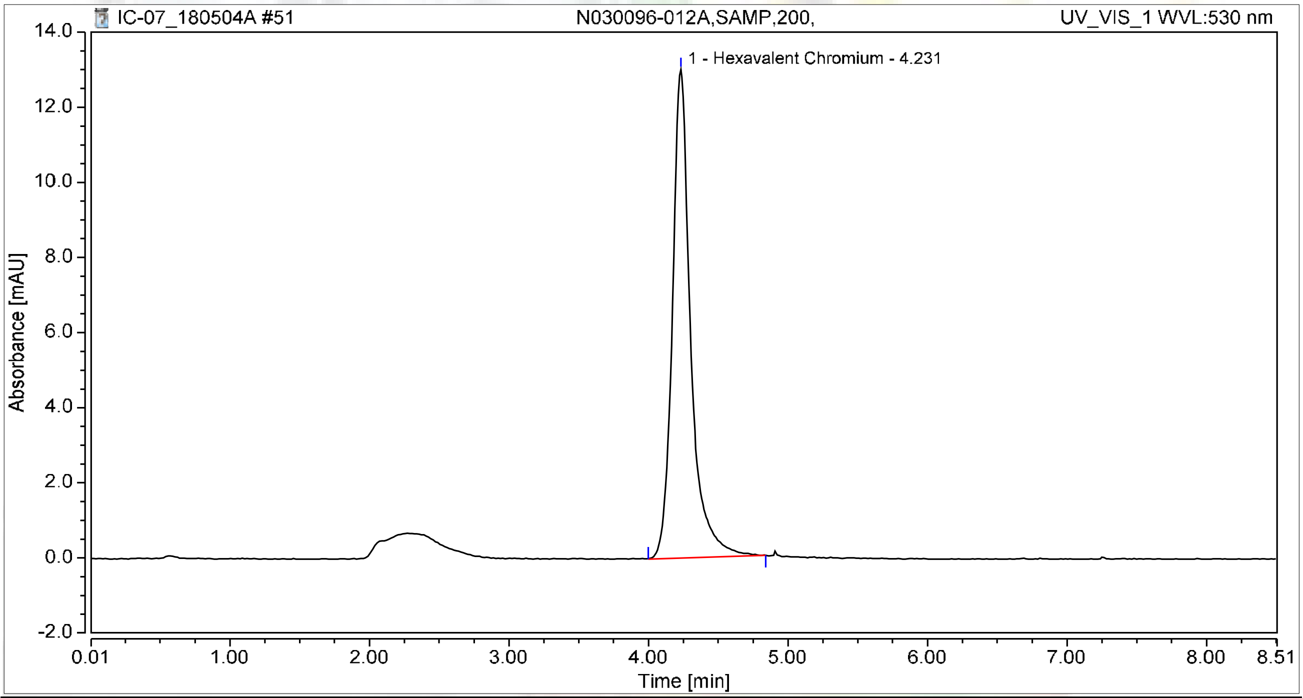
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-012A,SAMP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 14:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

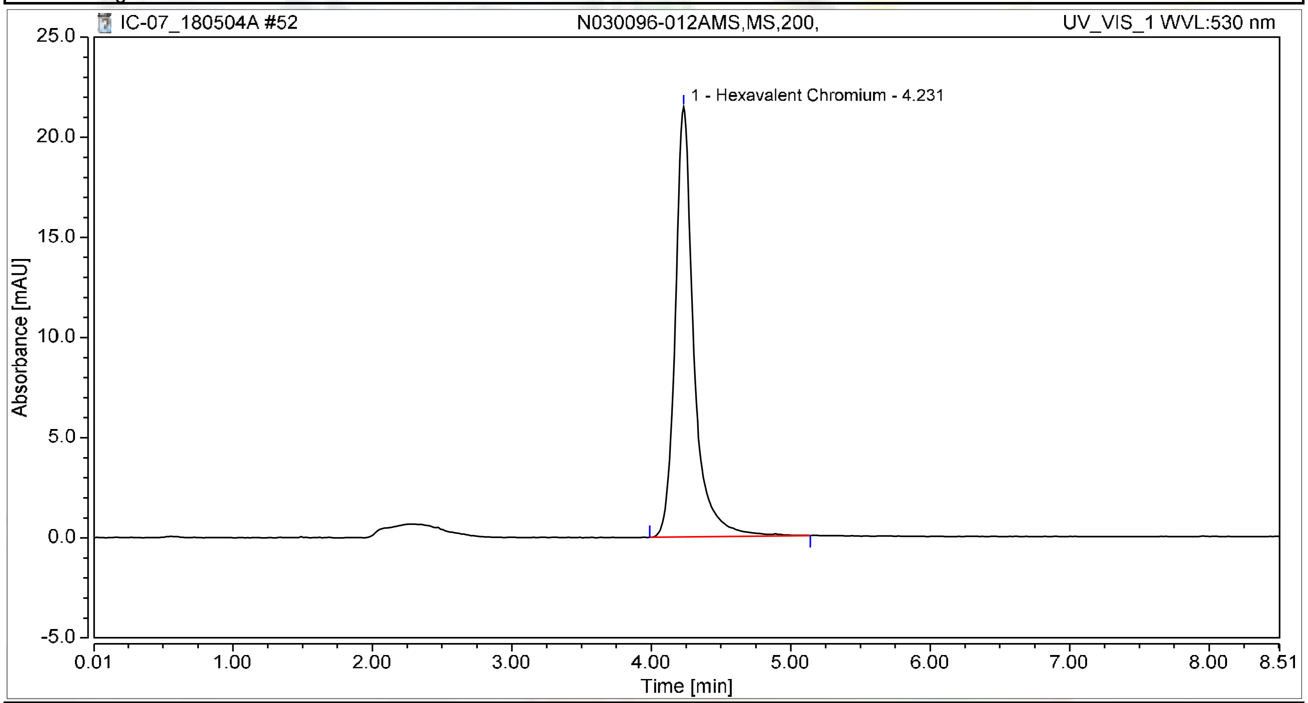
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.972	13.004	100.00	100.00	7.6850
Total:			**1.972**	**13.004**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-012AMS,MS,200,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 14:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

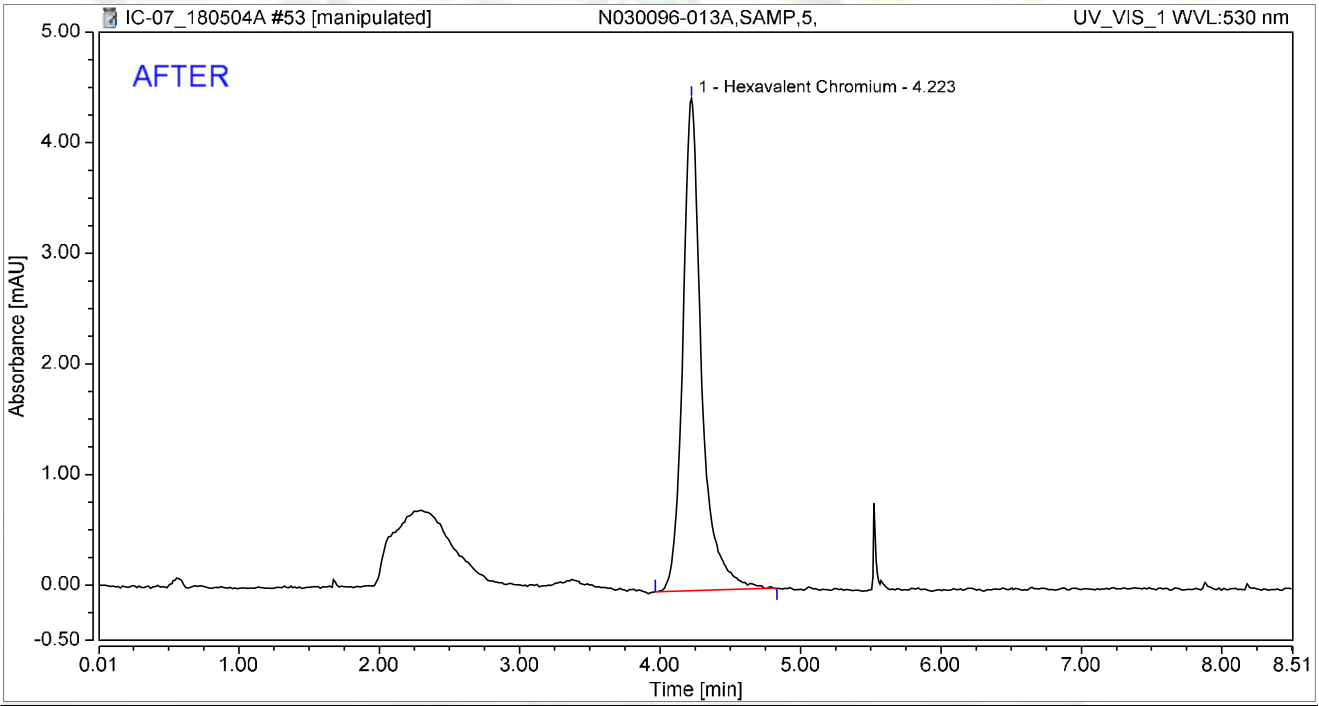
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	3.311	21.484	100.00	100.00	12.9015
Total:			**3.311**	**21.484**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-013A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 14:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.690	4.450	100.00	100.00	2.6882
Total:			**0.690**	**4.450**	**100.00**	**100.00**	

rba 5/8/2018

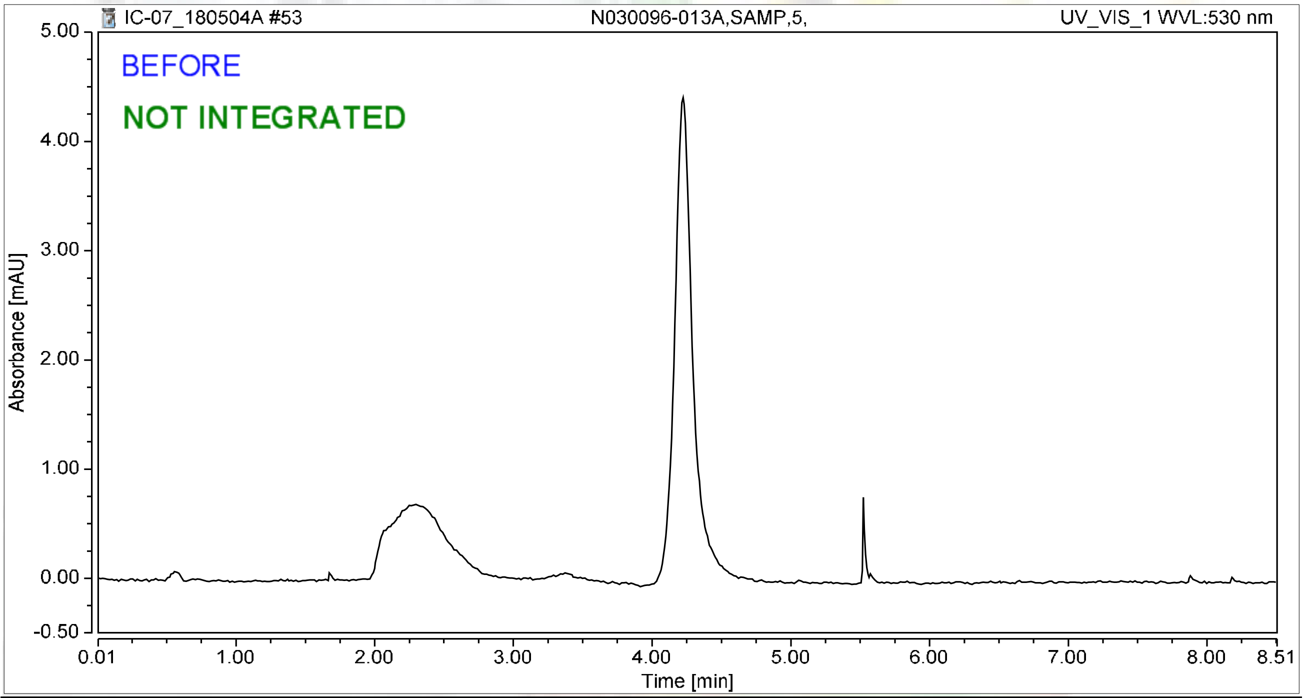
Reviewed by:
Nancy 5/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030096-013A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 14:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

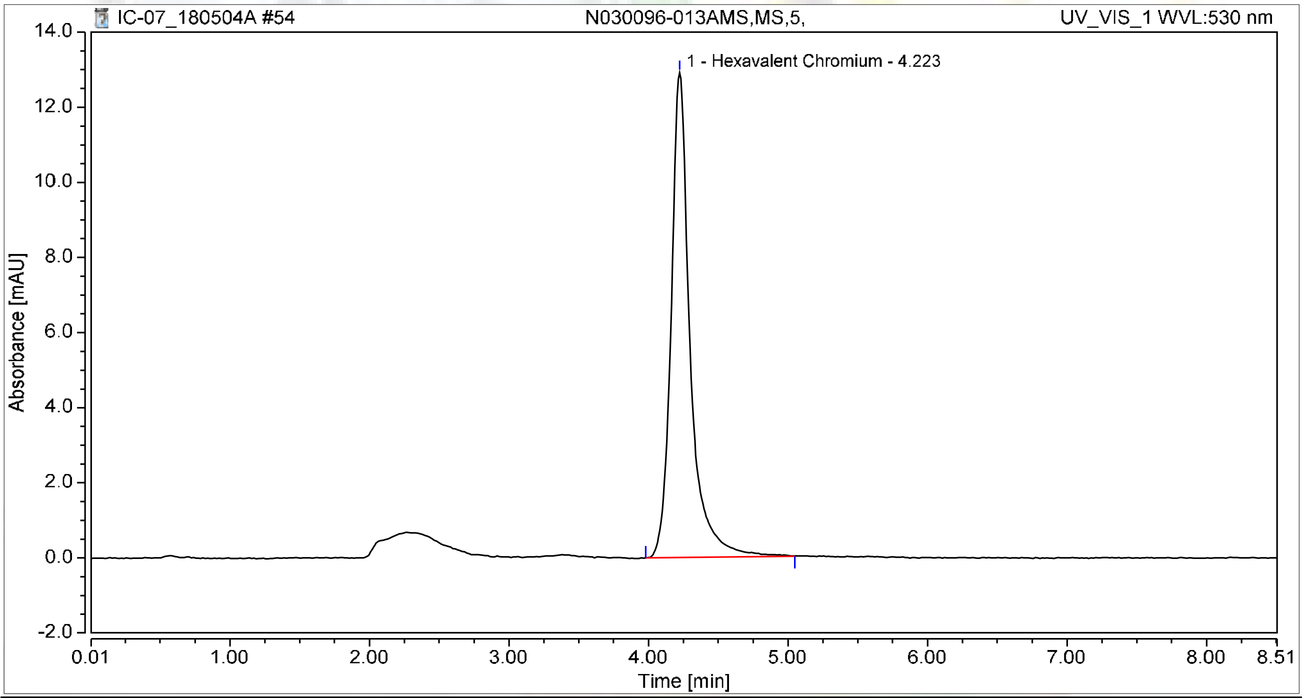
rba 5/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030096-013AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 14:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

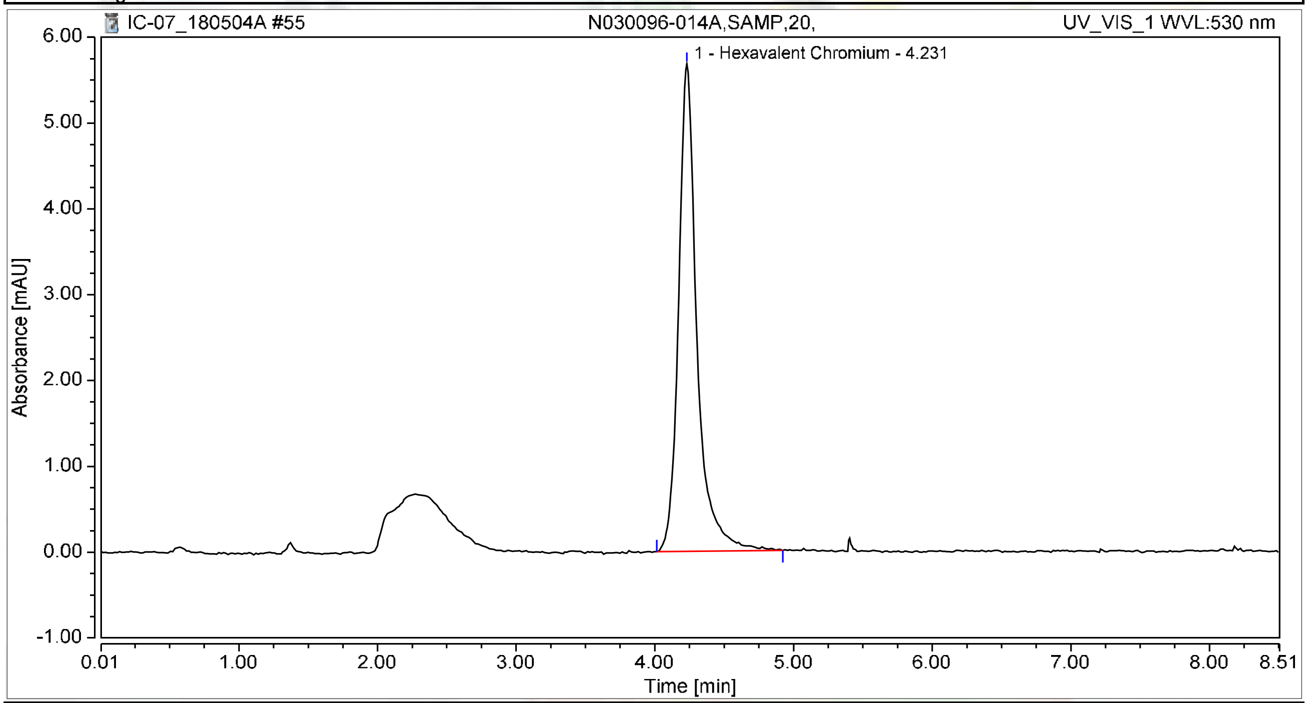
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	2.041	12.916	100.00	100.00	7.9524
Total:			**2.041**	**12.916**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-014A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 15:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

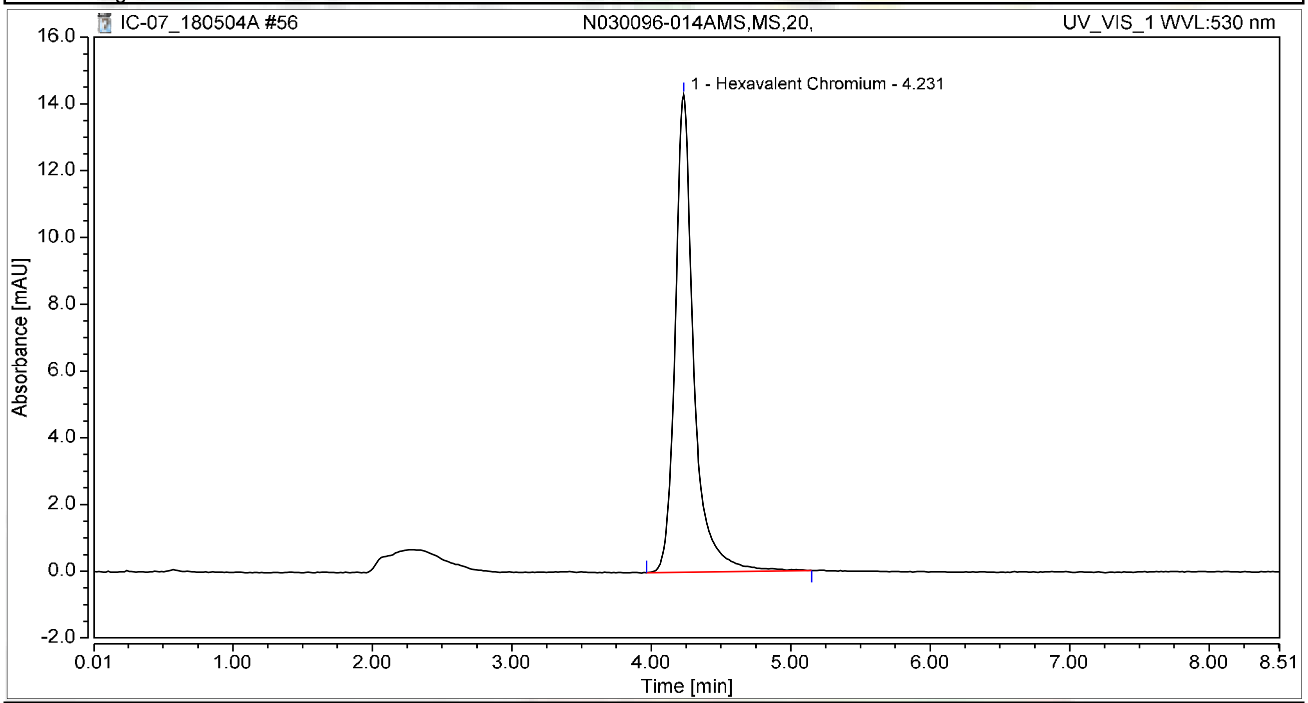
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.872	5.676	100.00	100.00	3.3980
Total:			**0.872**	**5.676**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-014AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 15:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

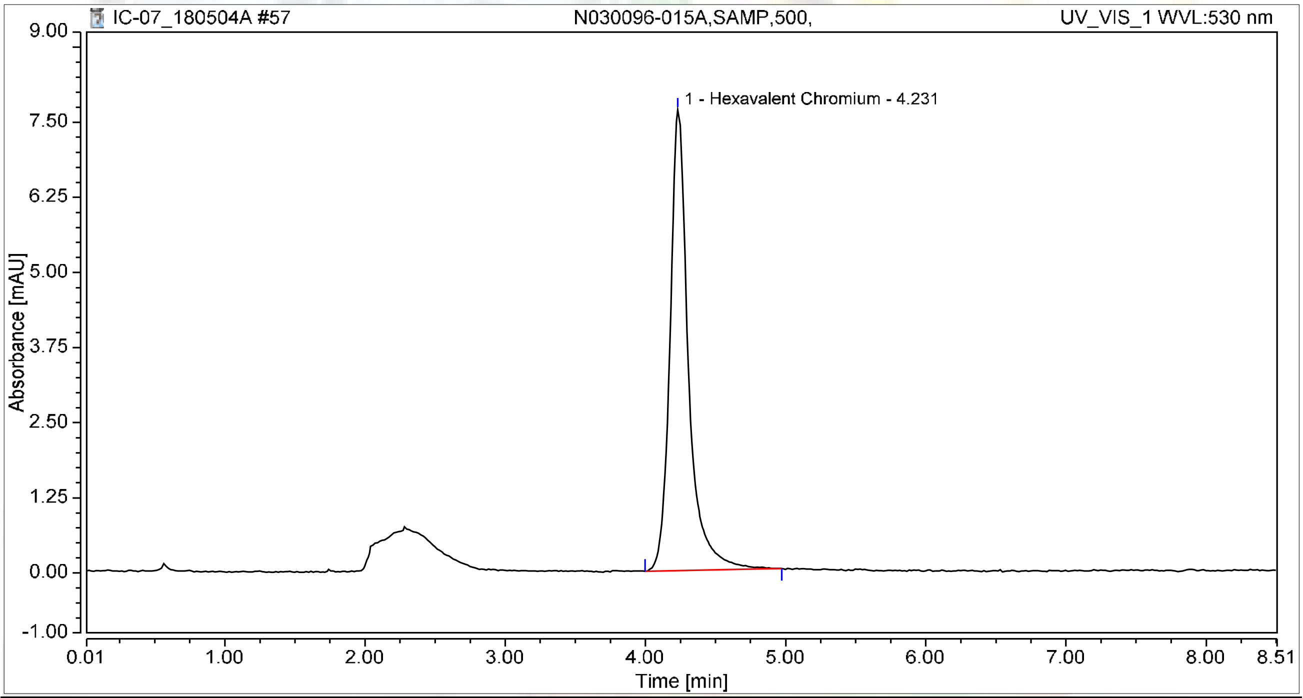
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.211	14.302	100.00	100.00	8.6160
Total:			**2.211**	**14.302**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-015A,SAMP,500,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 15:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

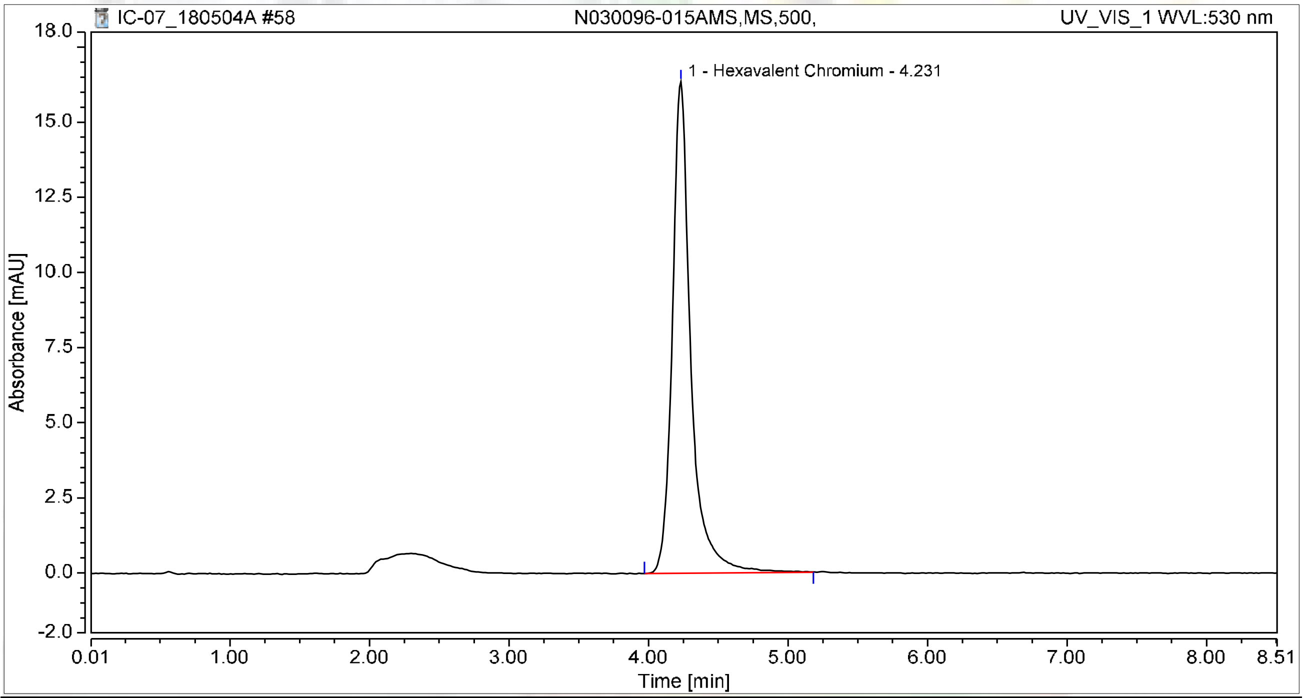
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.176	7.667	100.00	100.00	4.5839
Total:			**1.176**	**7.667**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-015AMS,MS,500,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 15:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

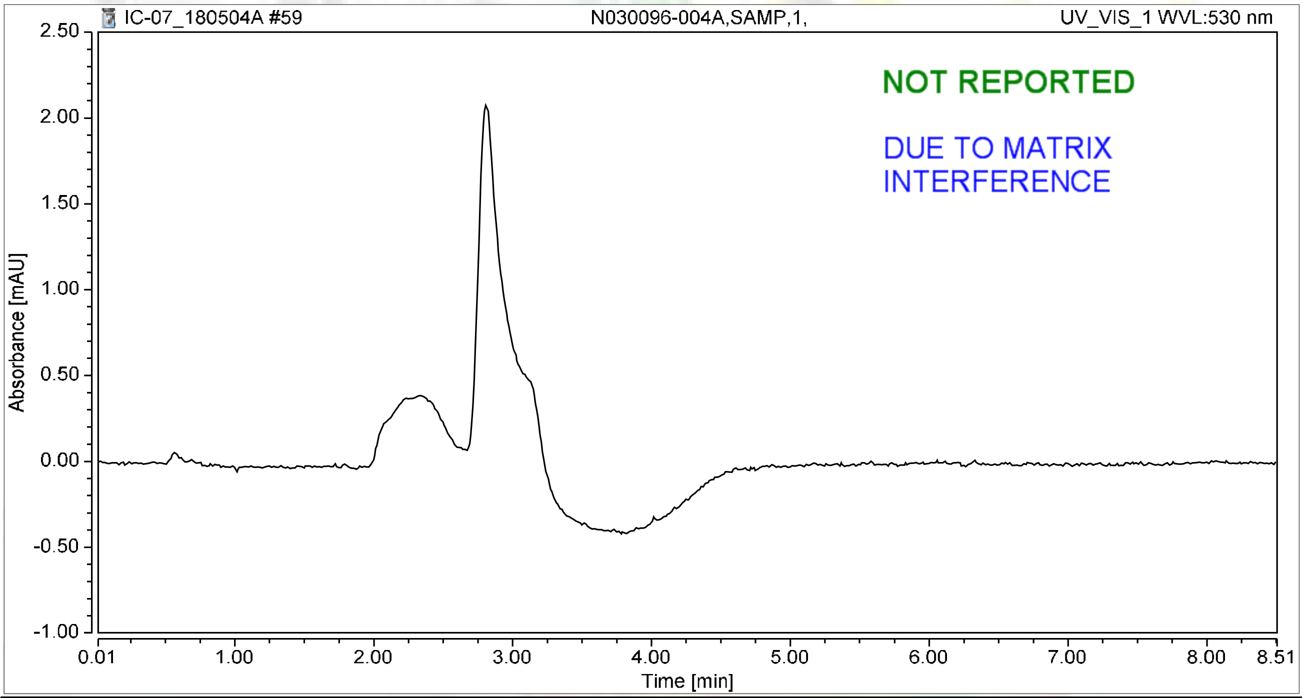
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.516	16.359	100.00	100.00	9.8044
Total:			**2.516**	**16.359**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-004A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 15:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

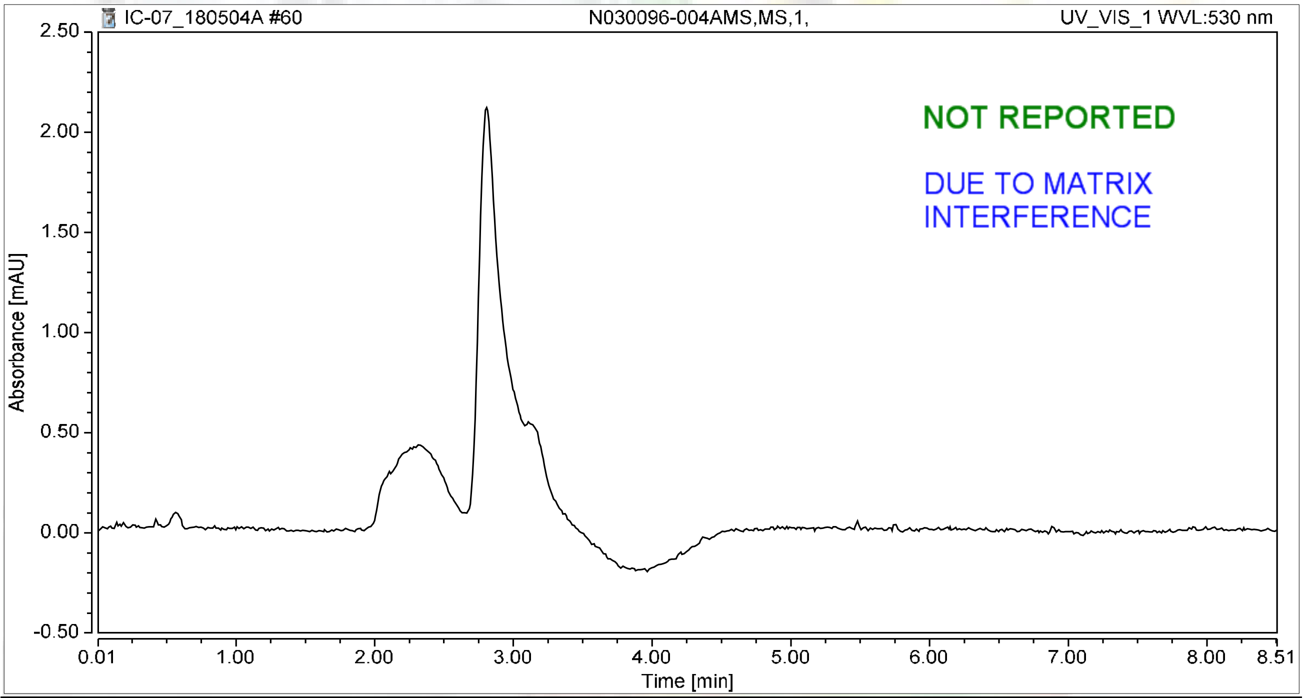
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 15:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

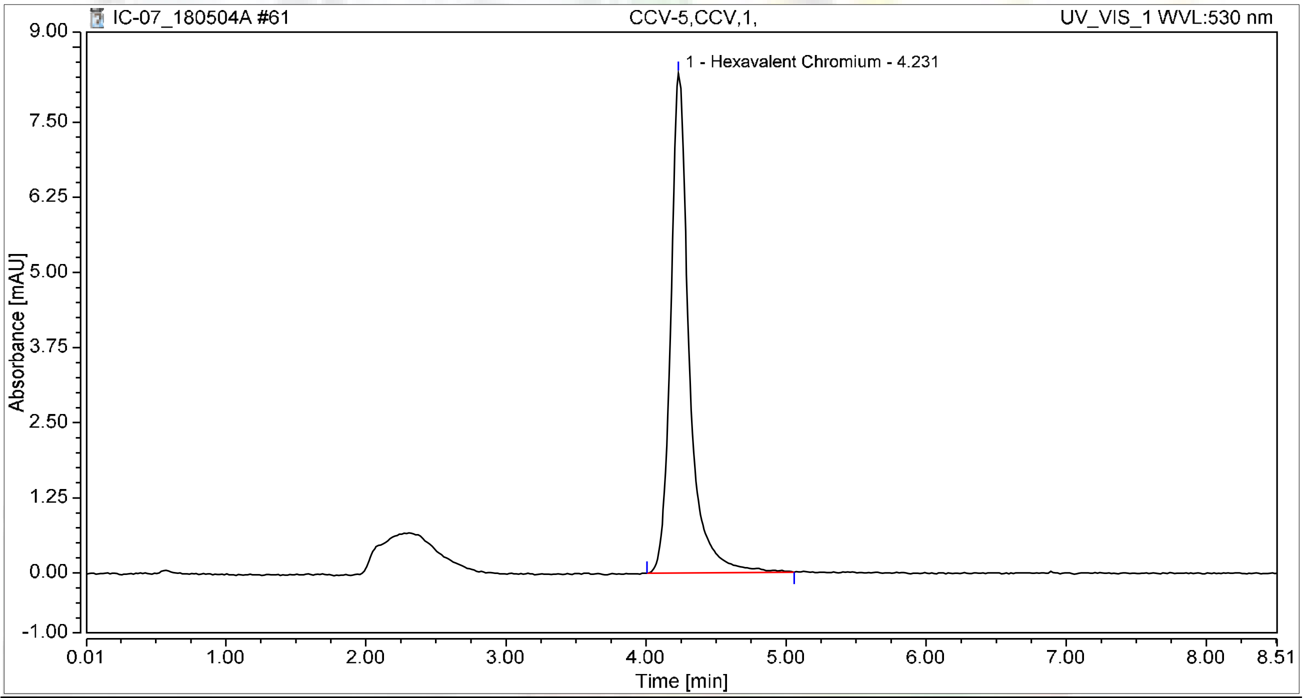
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 16:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

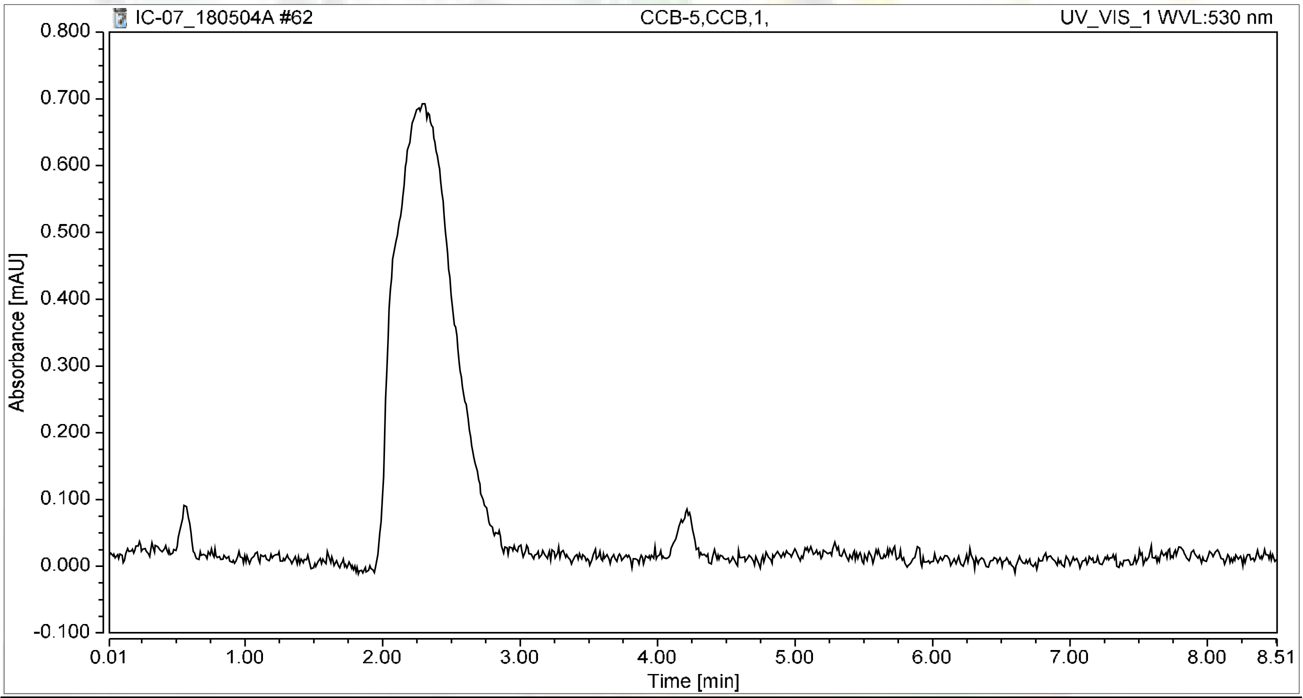
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.280	8.314	100.00	100.00	4.9857
Total:			**1.280**	**8.314**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 16:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

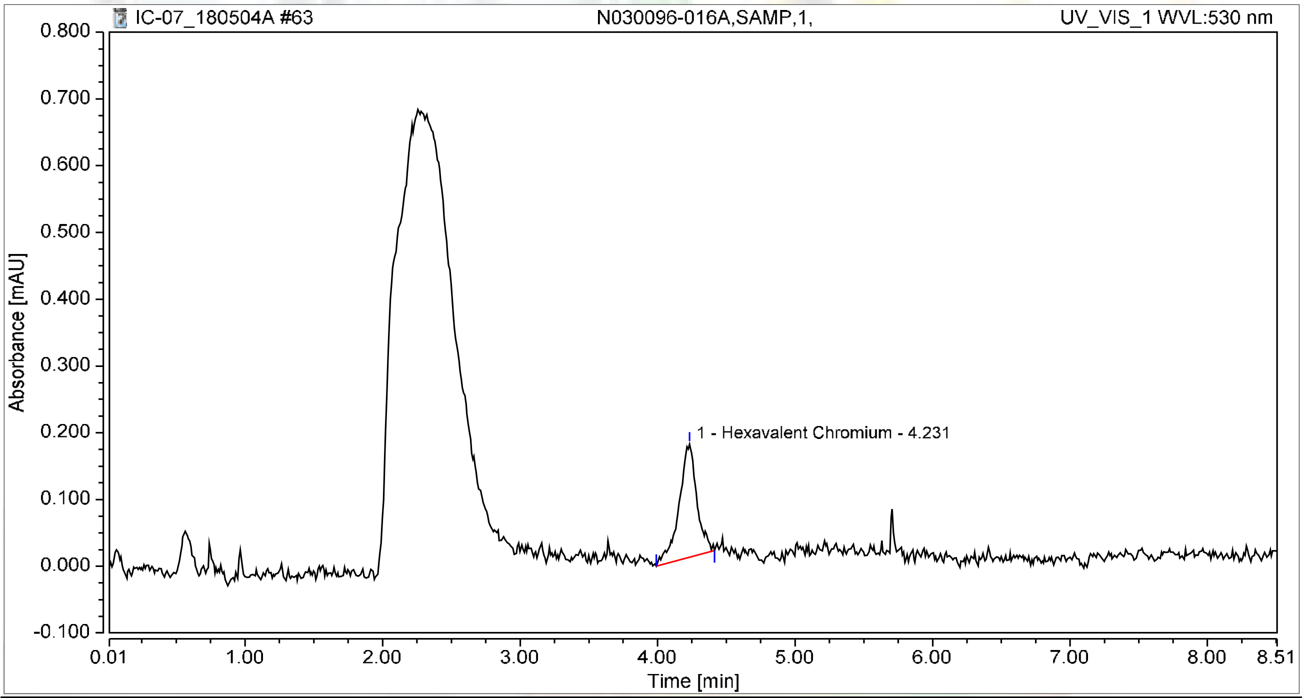
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-016A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 16:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

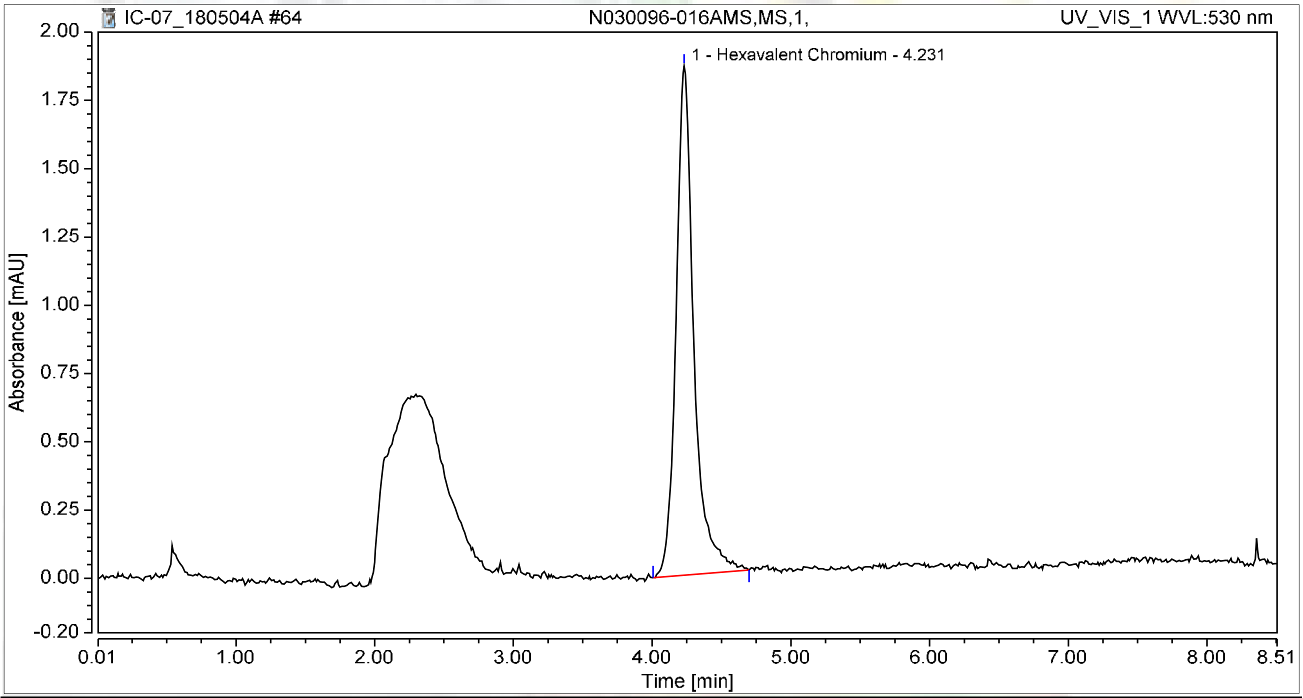
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.025	0.170	100.00	100.00	0.0986
Total:			**0.025**	**0.170**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-016AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 16:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

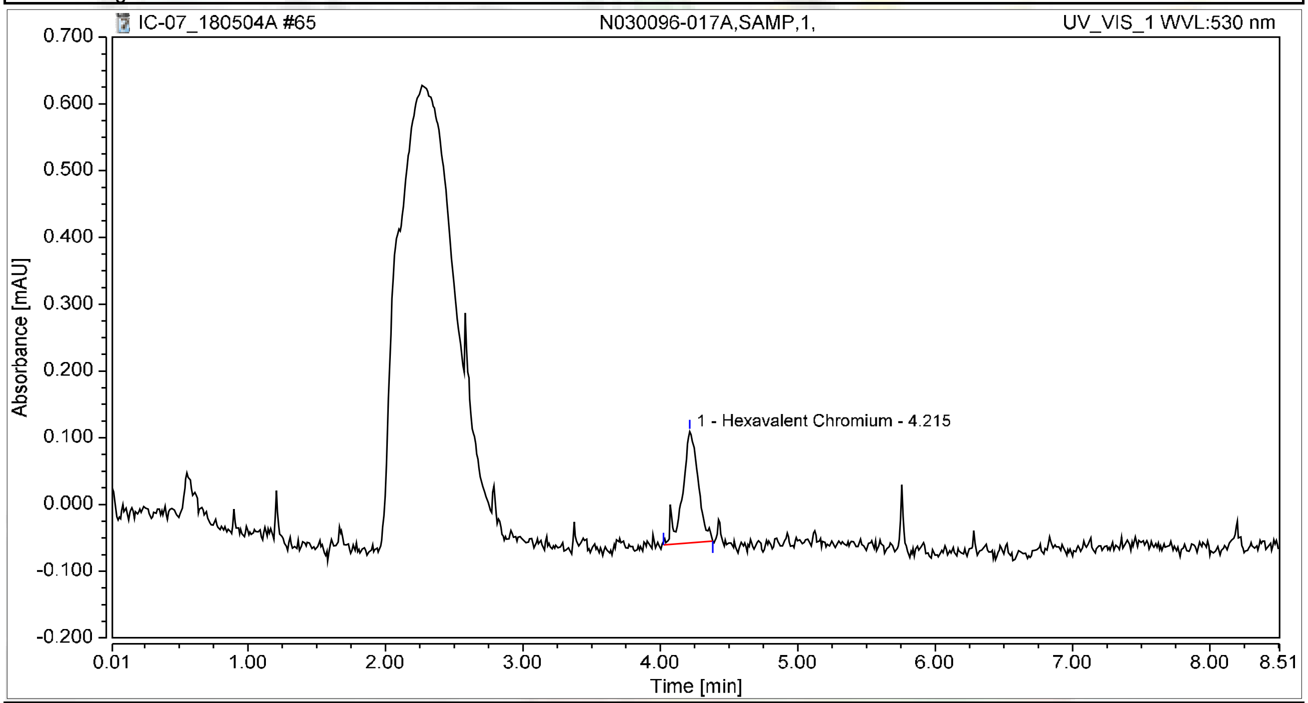
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.278	1.865	100.00	100.00	1.0823
Total:			**0.278**	**1.865**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-017A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 16:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

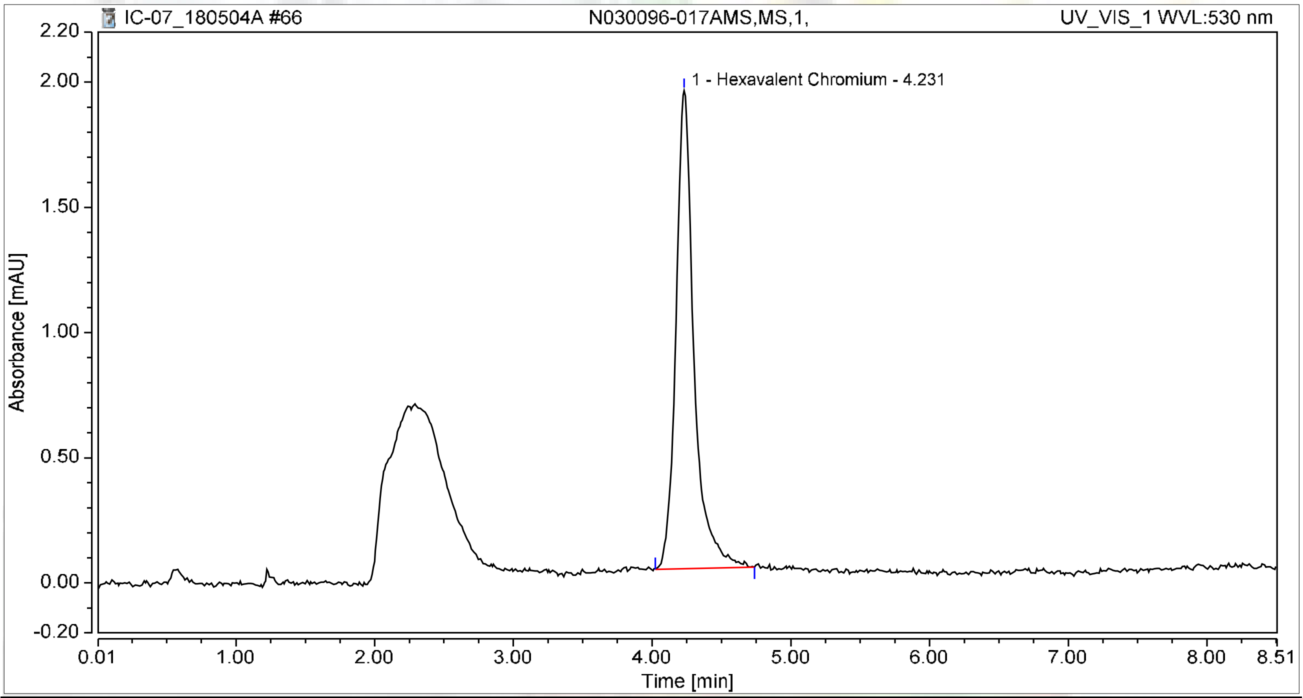
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.022	0.166	100.00	100.00	0.0860
Total:			**0.022**	**0.166**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-017AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 16:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

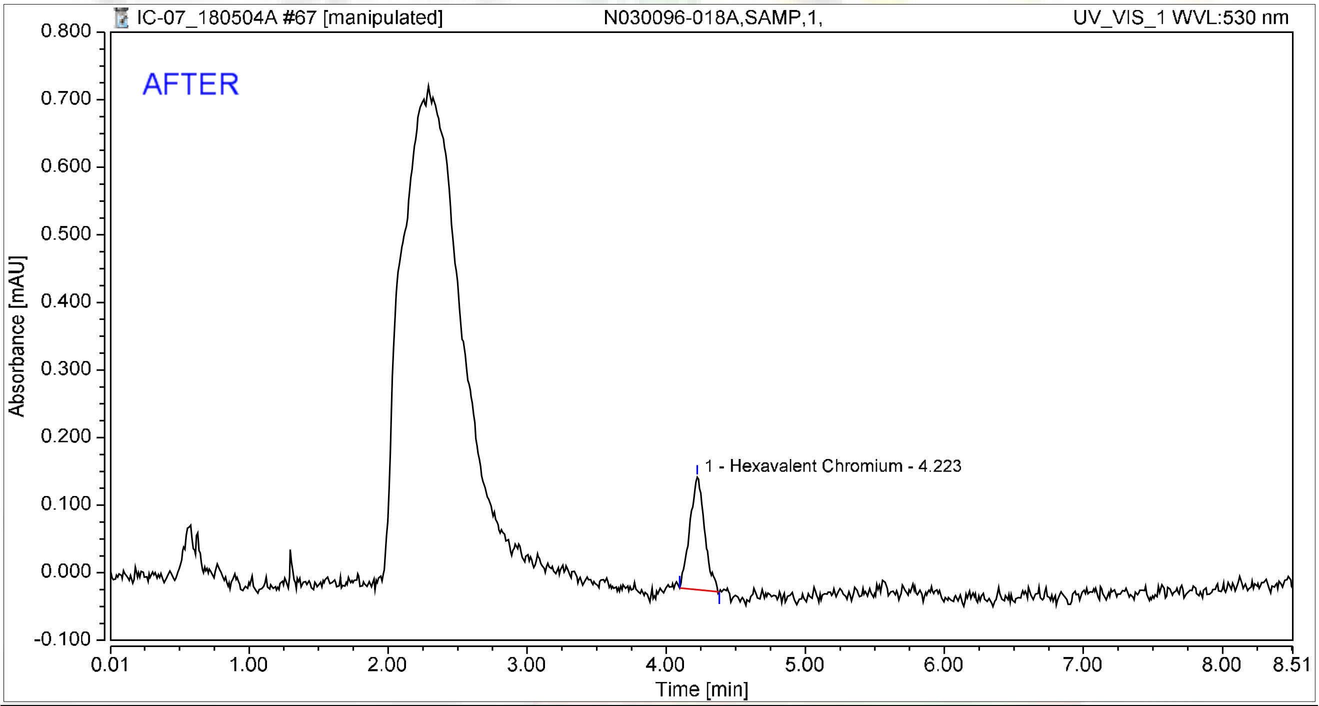
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.287	1.910	100.00	100.00	1.1198
Total:			**0.287**	**1.910**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-018A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 16:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.020	0.166	100.00	100.00	0.0793
Total:			**0.020**	**0.166**	**100.00**	**100.00**	

rba 5/8/2018

Reviewed by:

My first report/Integration Nancy 5/8/2018

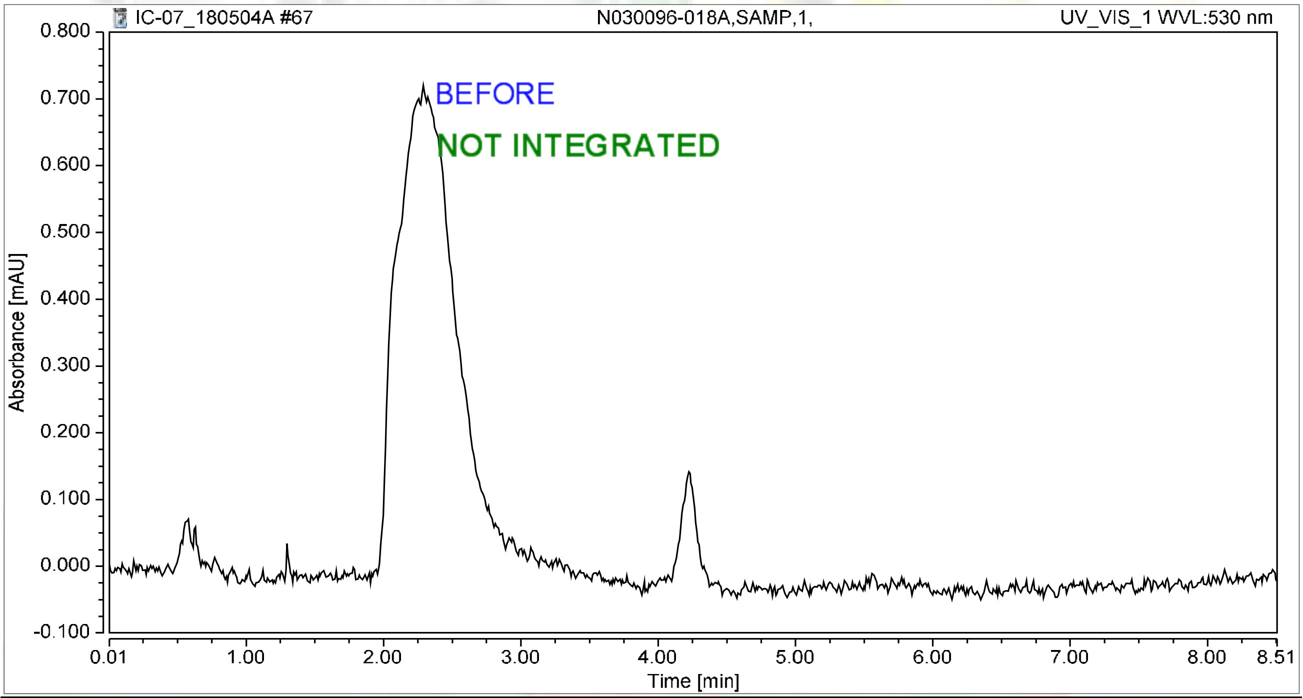
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N030096-018A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 16:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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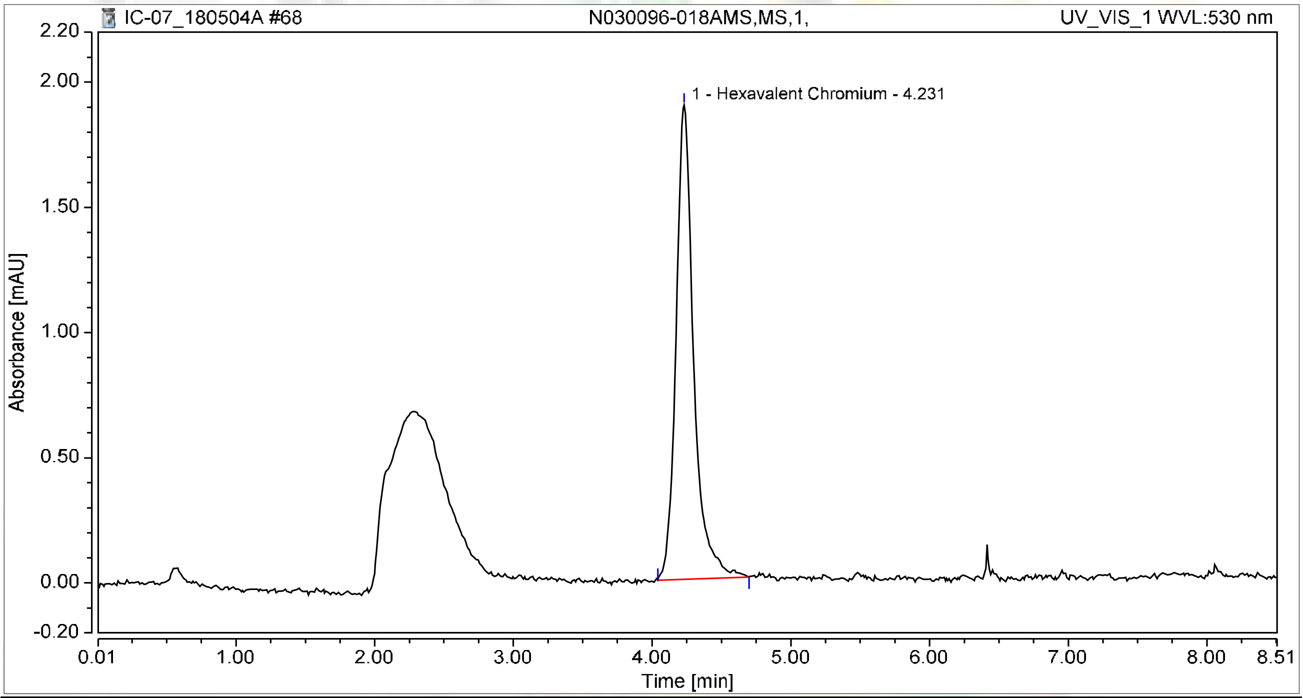
Chromatogram and Results

Injection Details

Injection Name:	**N030096-018AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 17:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

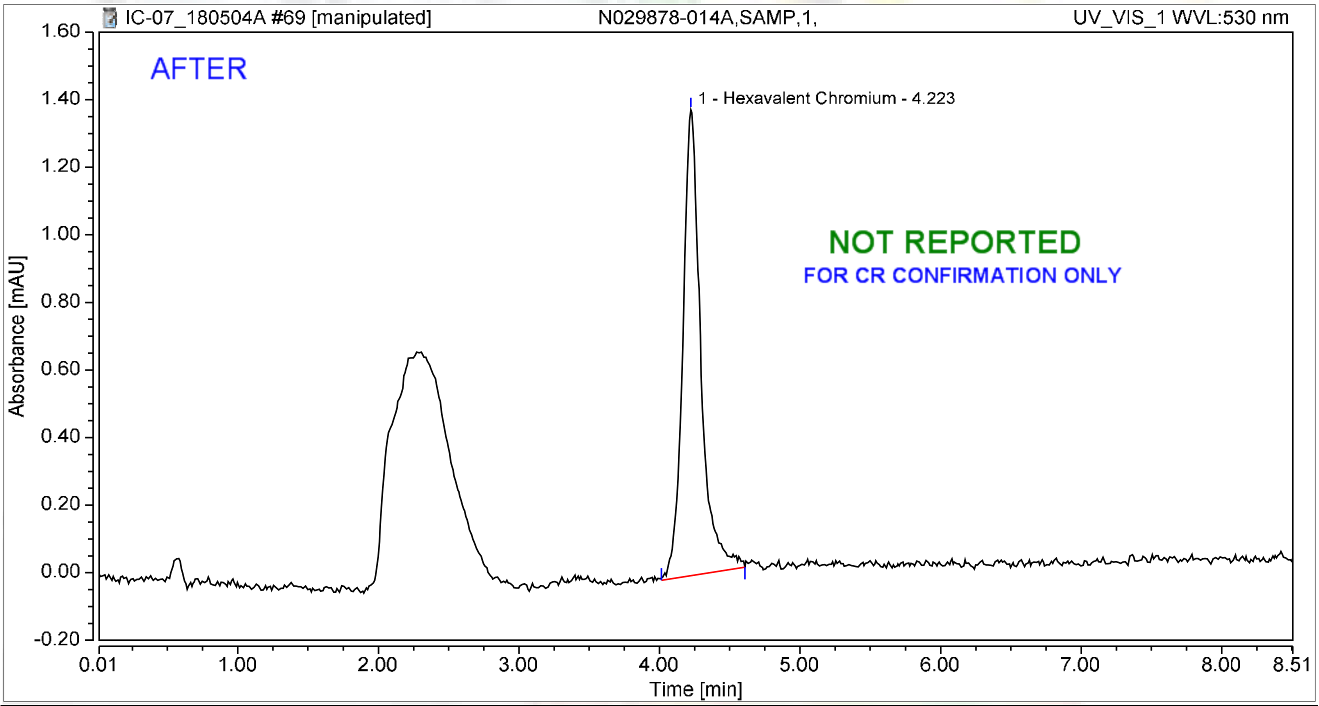
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.279	1.894	100.00	100.00	1.0859
Total:			**0.279**	**1.894**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029878-014A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 17:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.206	1.378	100.00	100.00	0.8010
Total:			**0.206**	**1.378**	**100.00**	**100.00**	

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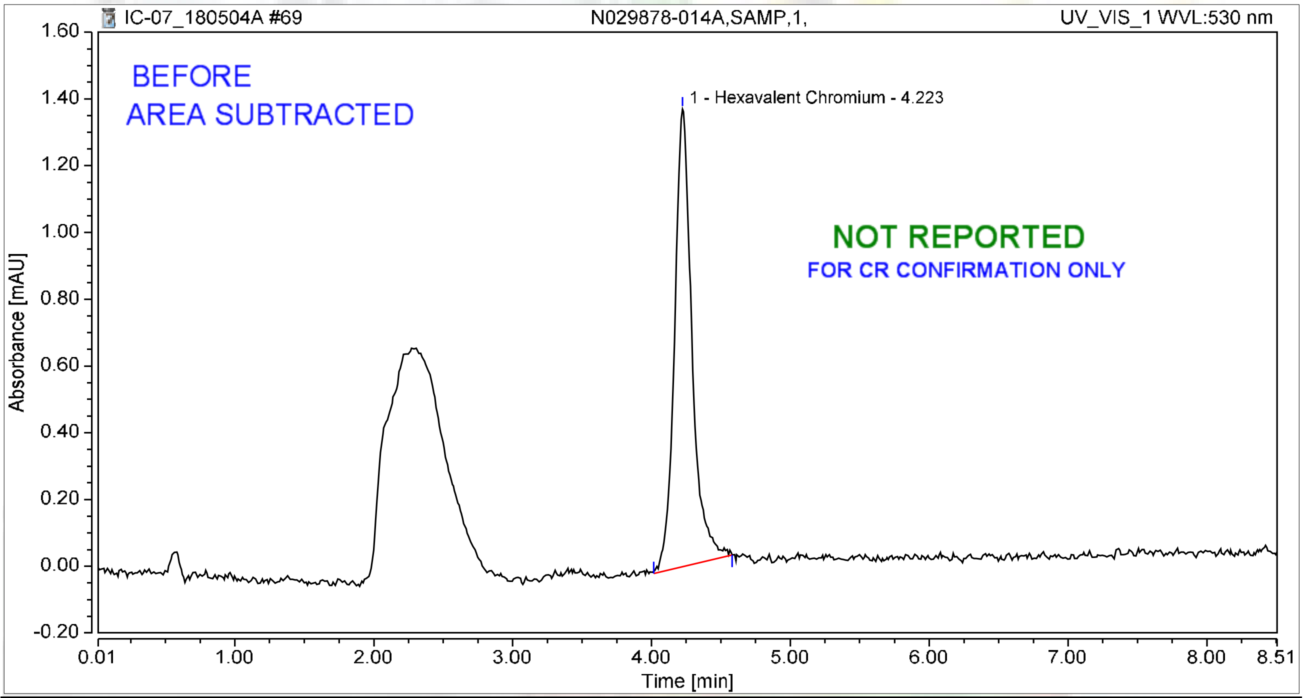
Chromatogram and Results

Injection Details

Injection Name:	**N029878-014A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 17:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.200	1.371	100.00	100.00	0.7787
Total:			**0.200**	**1.371**	**100.00**	**100.00**	

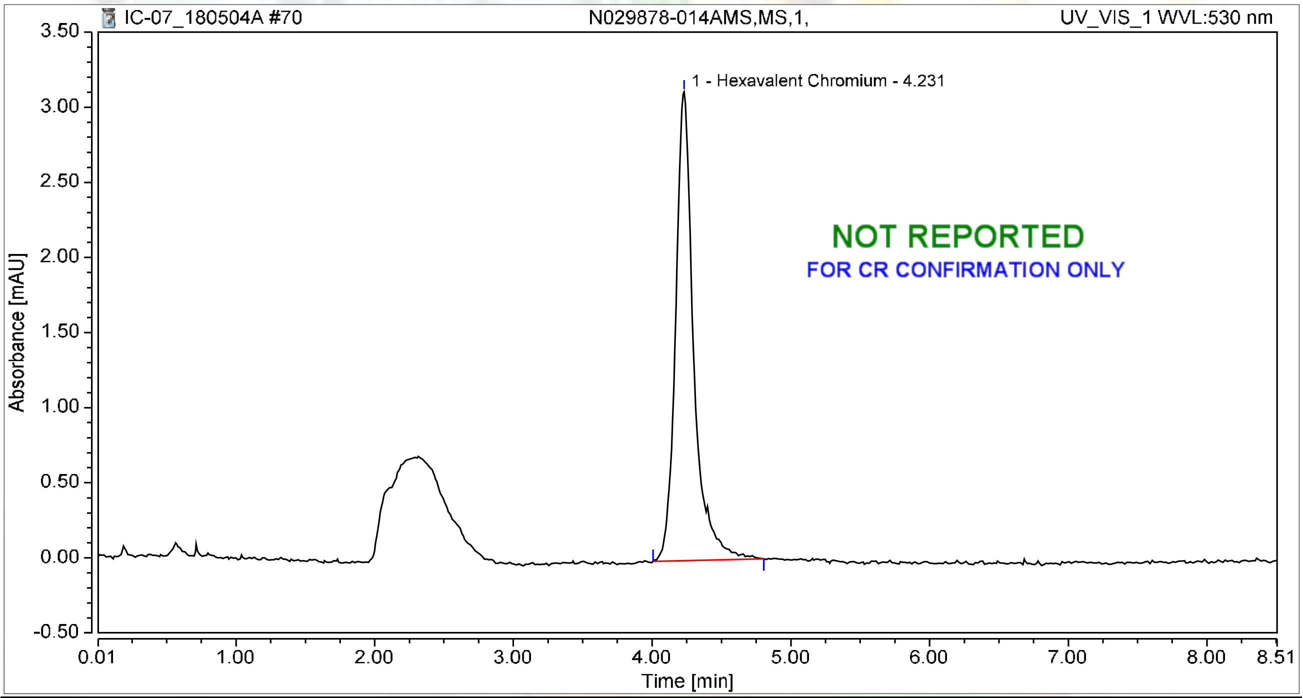
rba 5/8/2018

Chromatogram and Results

Injection Details

Injection Name:	**N029878-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 17:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

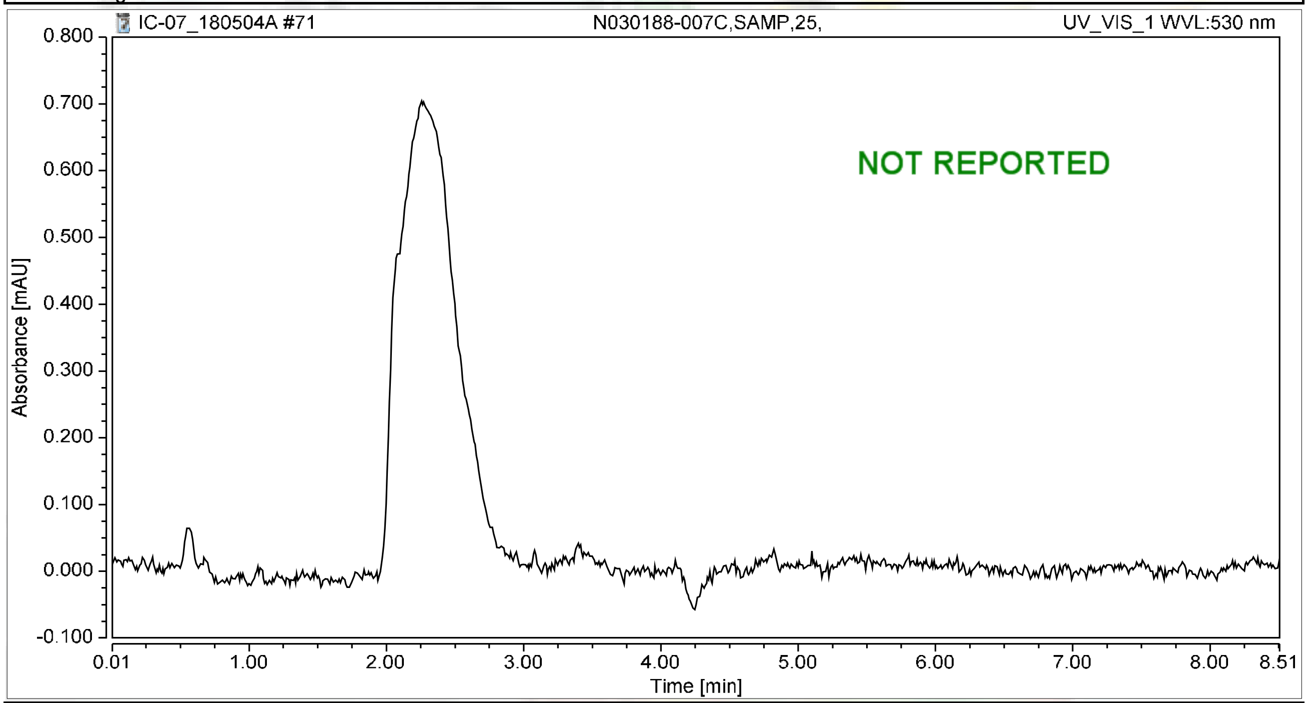
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.470	3.119	100.00	100.00	1.8332
Total:			**0.470**	**3.119**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030188-007C,SAMP,25,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 17:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

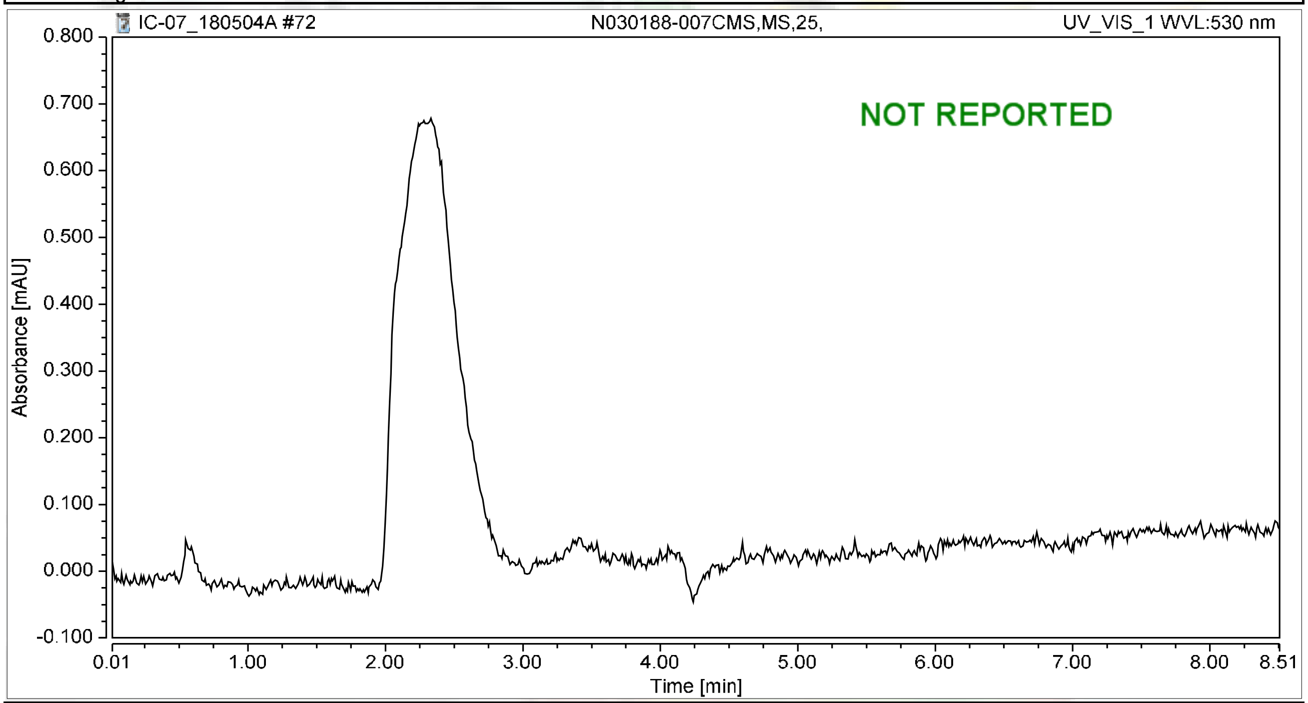
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030188-007CMS,MS,25,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 17:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

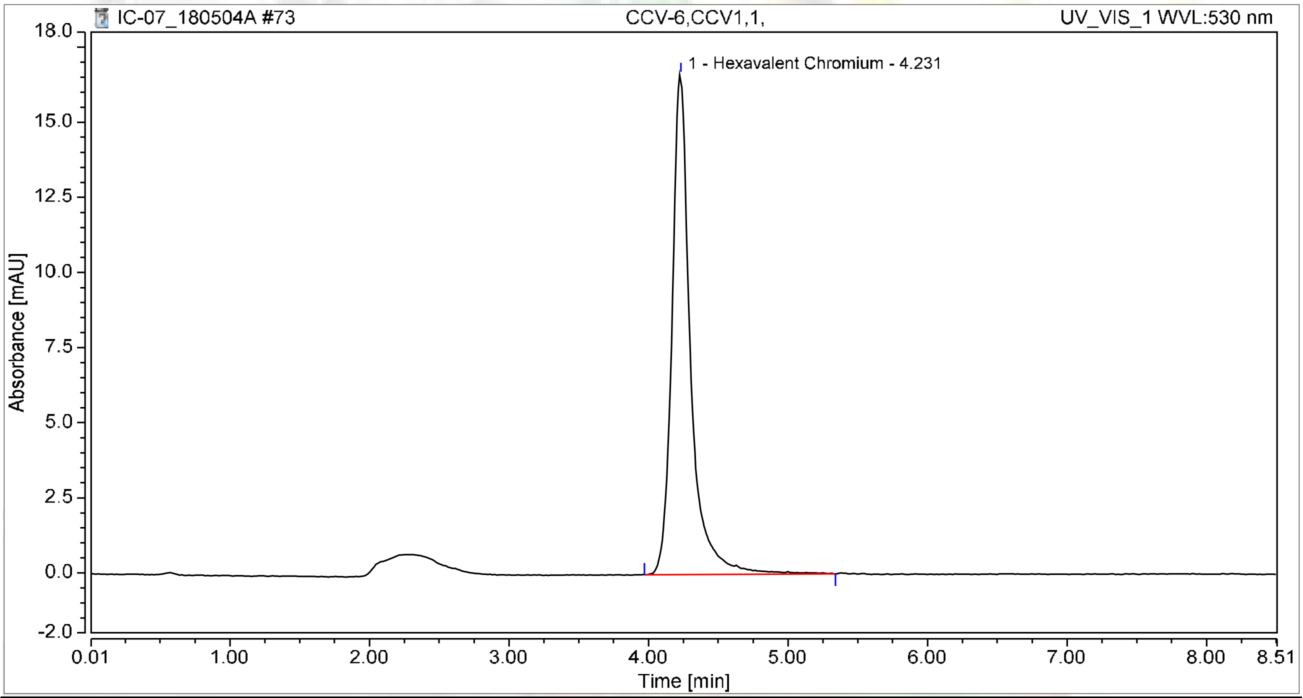
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 17:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

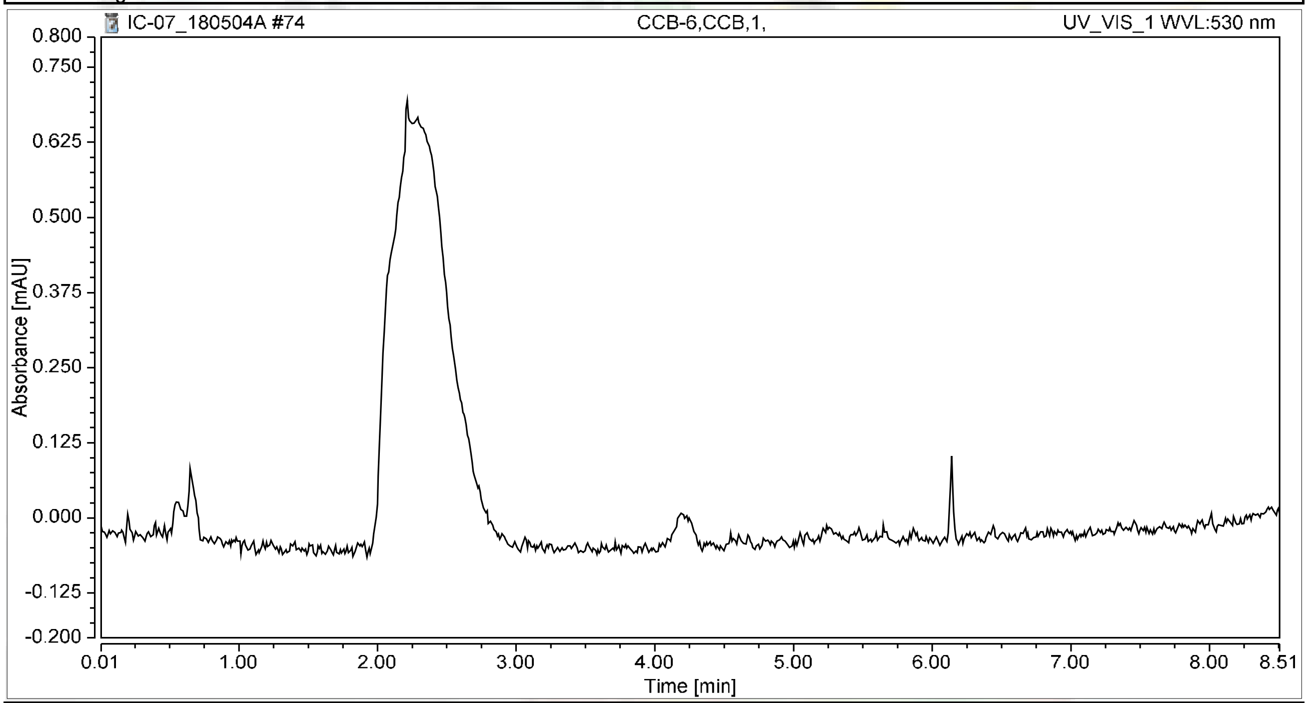
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	2.577	16.643	100.00	100.00	10.0422
Total:			**2.577**	**16.643**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 18:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

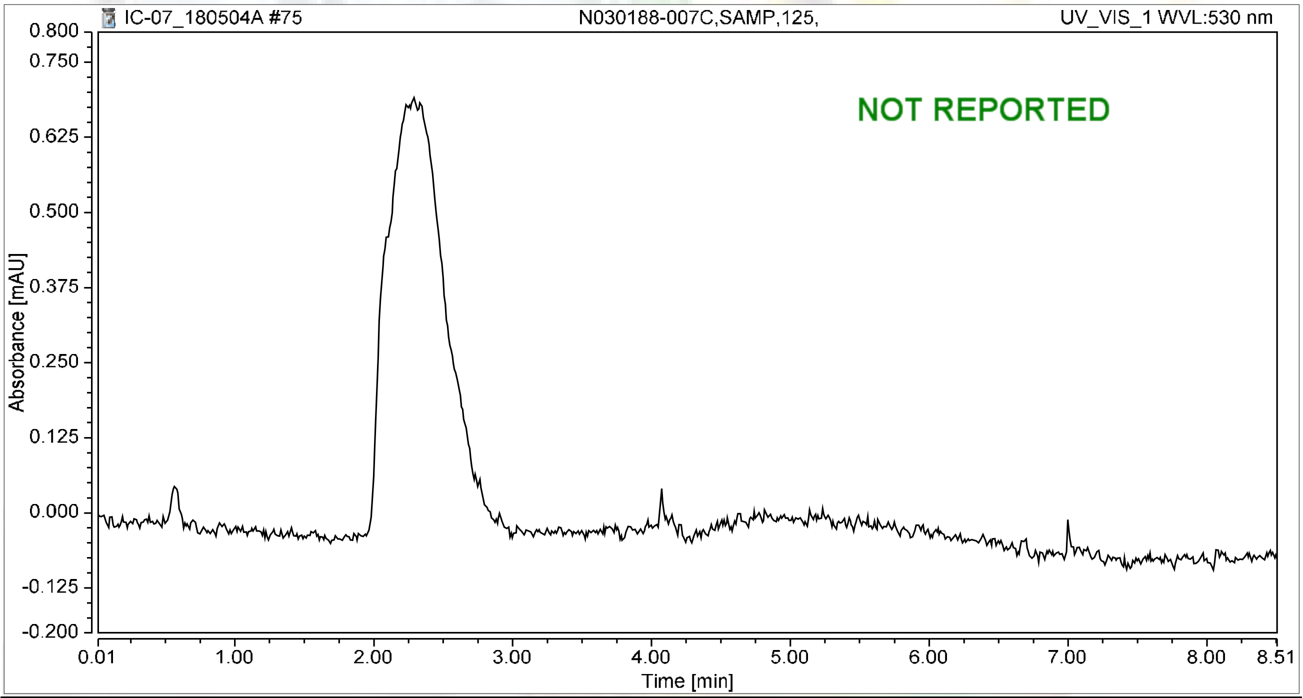
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030188-007C,SAMP,125,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 18:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

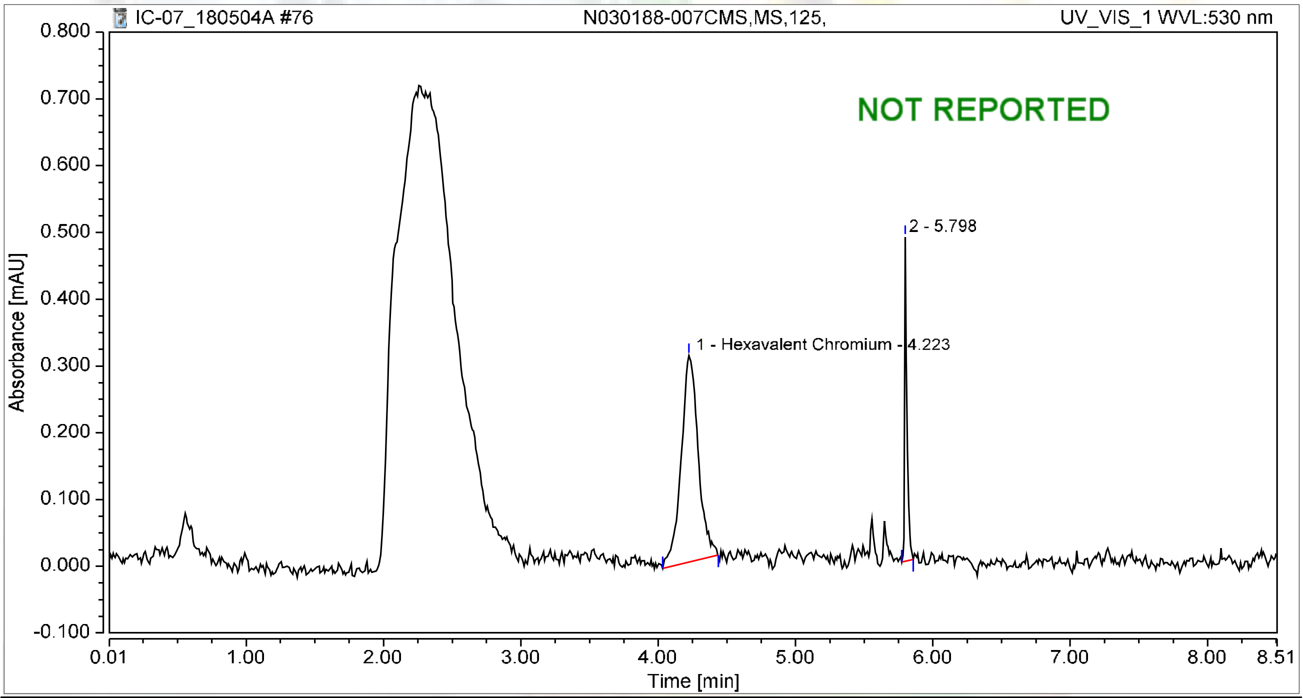
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030188-007CMS,MS,125,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 18:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

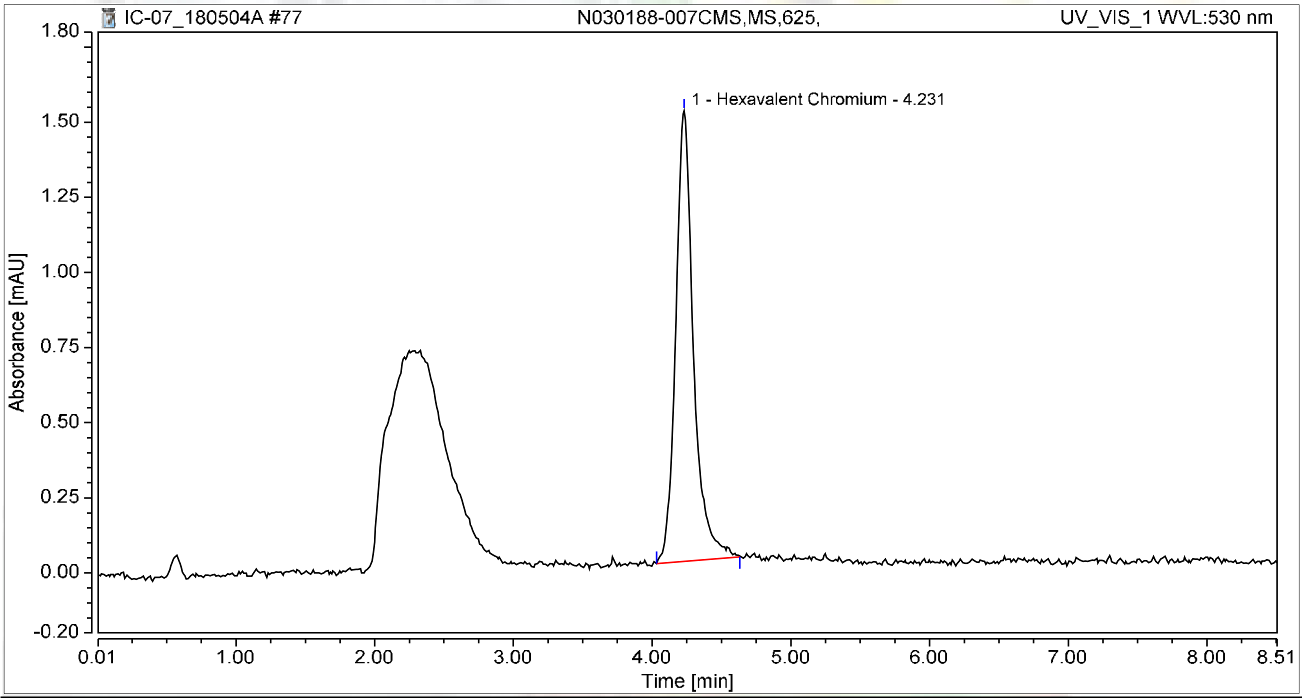
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.045	0.309	82.39	38.93	0.1740
2		5.798	0.010	0.485	17.61	61.07	n.a.
Total:			**0.054**	**0.794**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030188-007CMS,MS,625,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

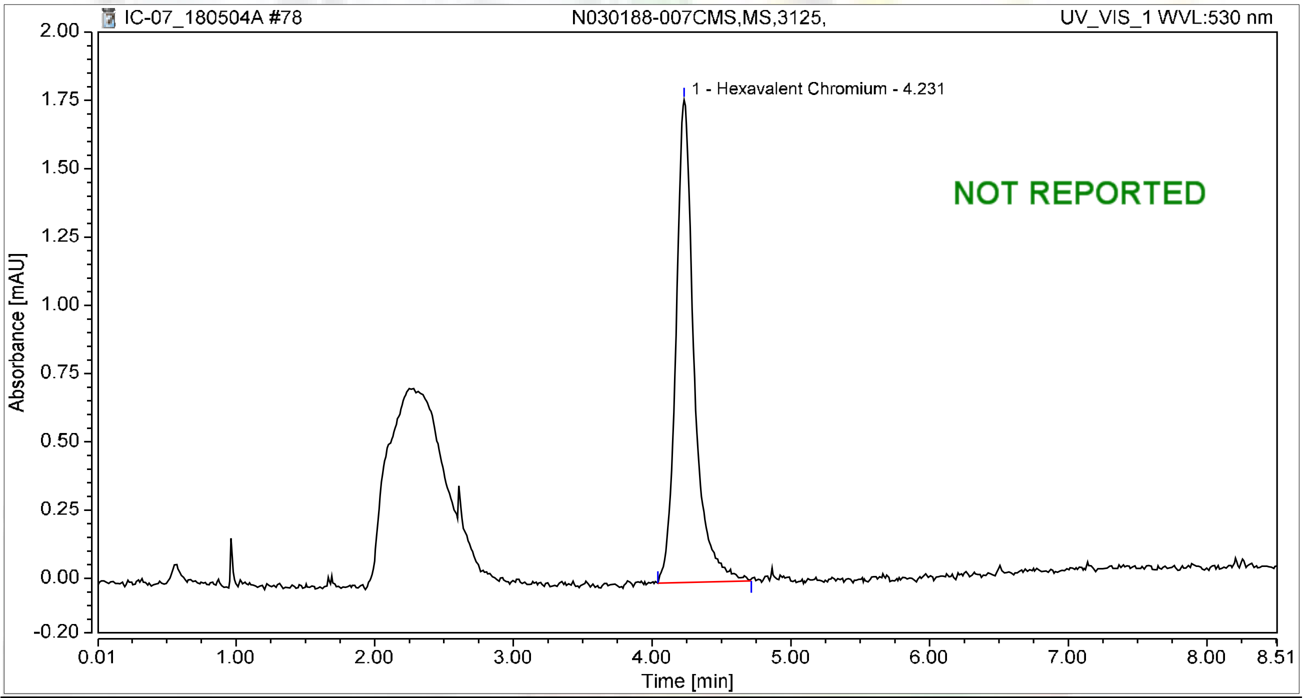
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.222	1.500	100.00	100.00	0.8662
Total:			**0.222**	**1.500**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030188-007CMS,MS,3125,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 18:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

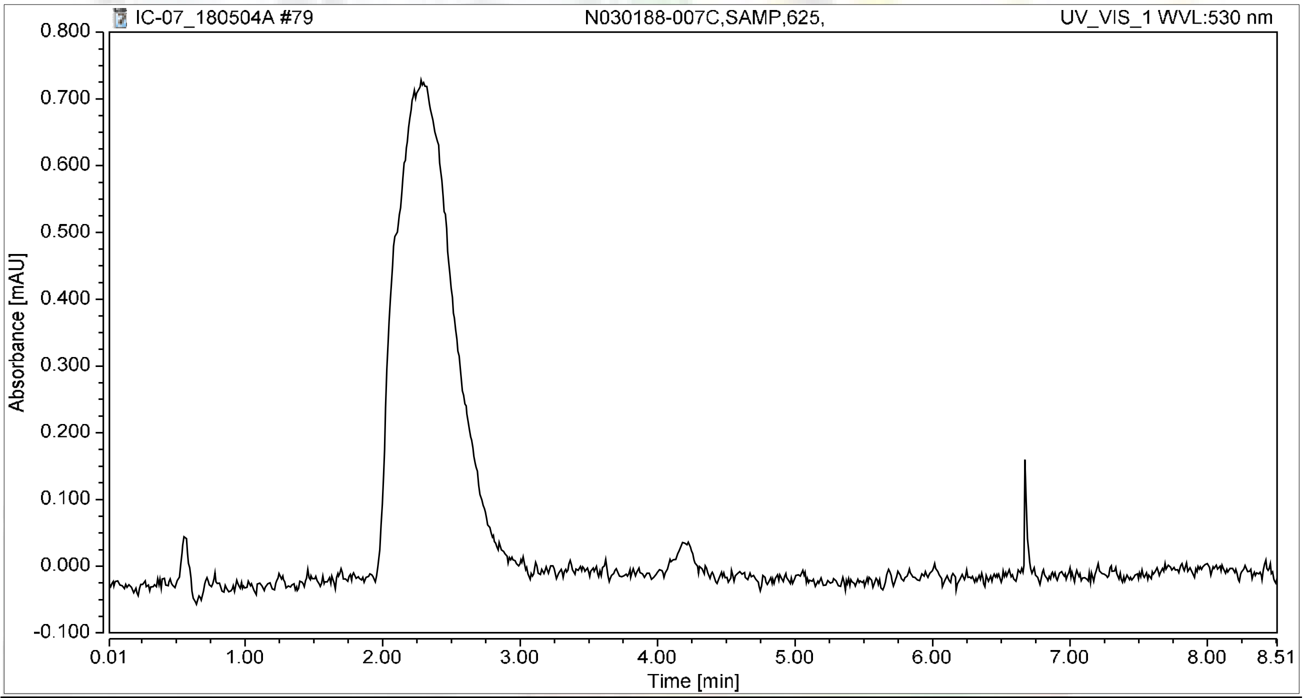
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.269	1.768	100.00	100.00	1.0489
Total:			**0.269**	**1.768**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030188-007C,SAMP,625,**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 19:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

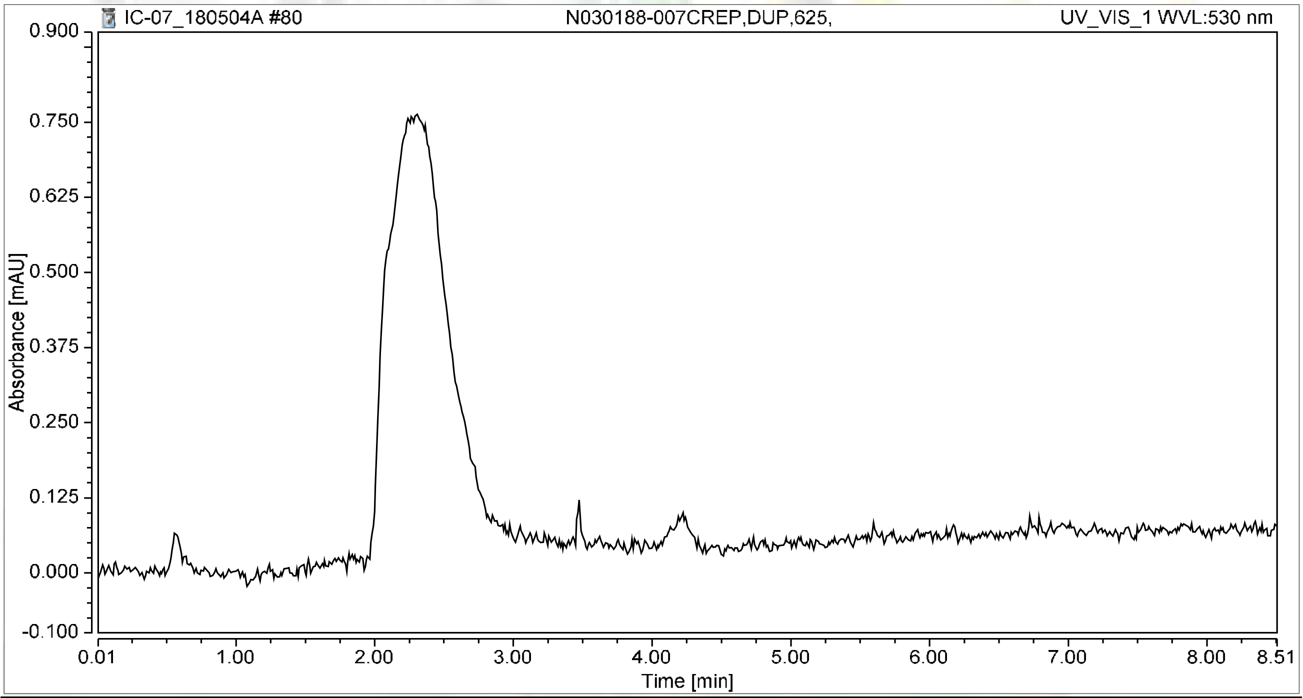
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030188-007CREP,DUP,625,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 19:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

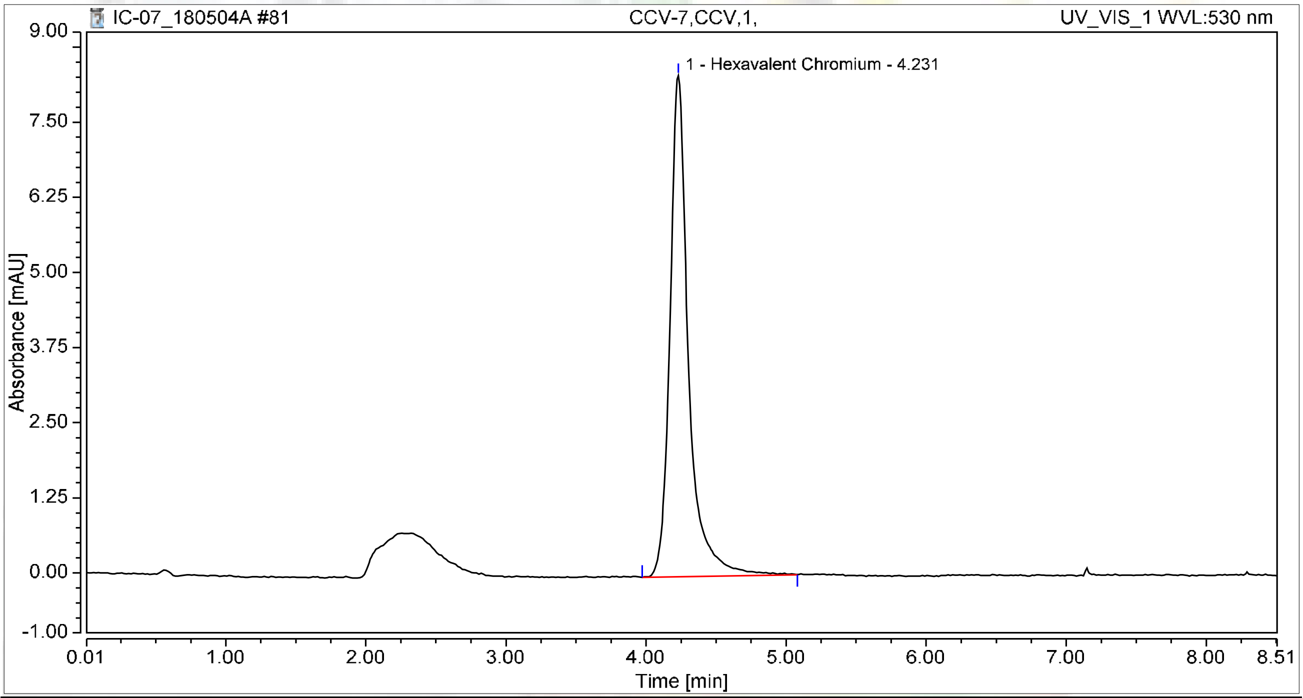
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 19:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

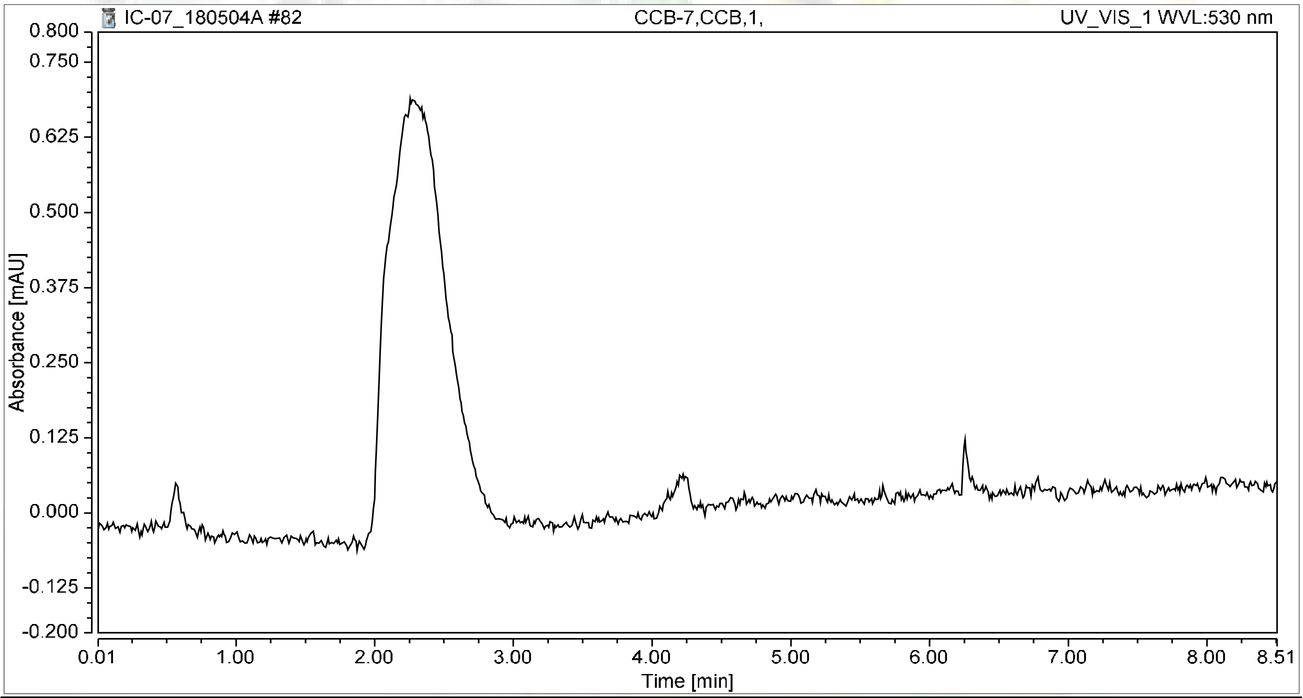
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	1.279	8.340	100.00	100.00	4.9832
Total:			**1.279**	**8.340**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 19:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

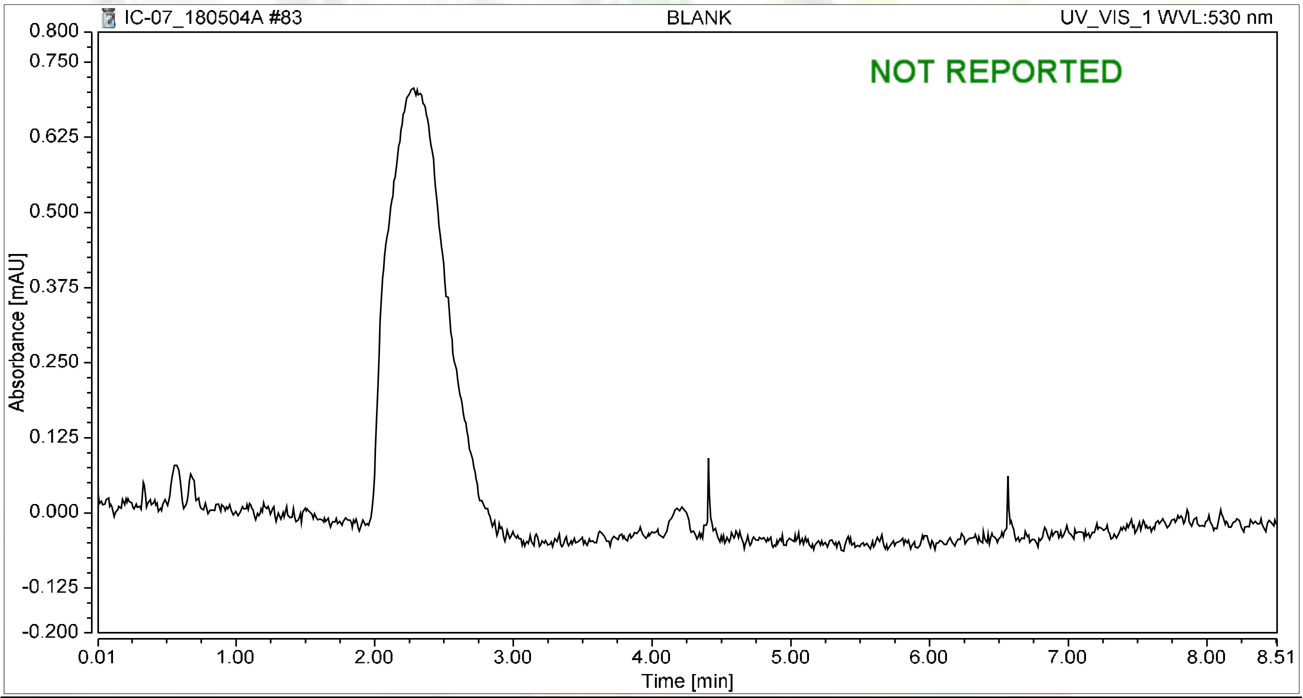
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/18 19:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

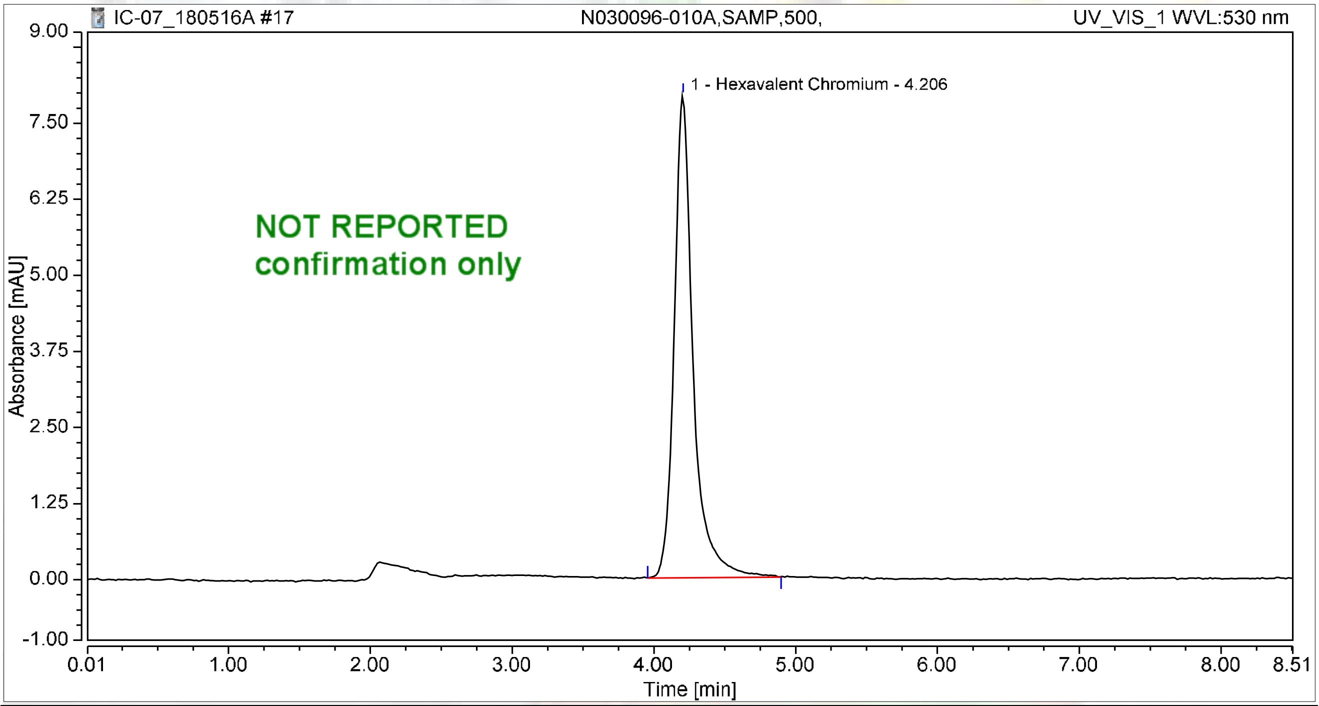
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-010A,SAMP,500,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/18 14:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

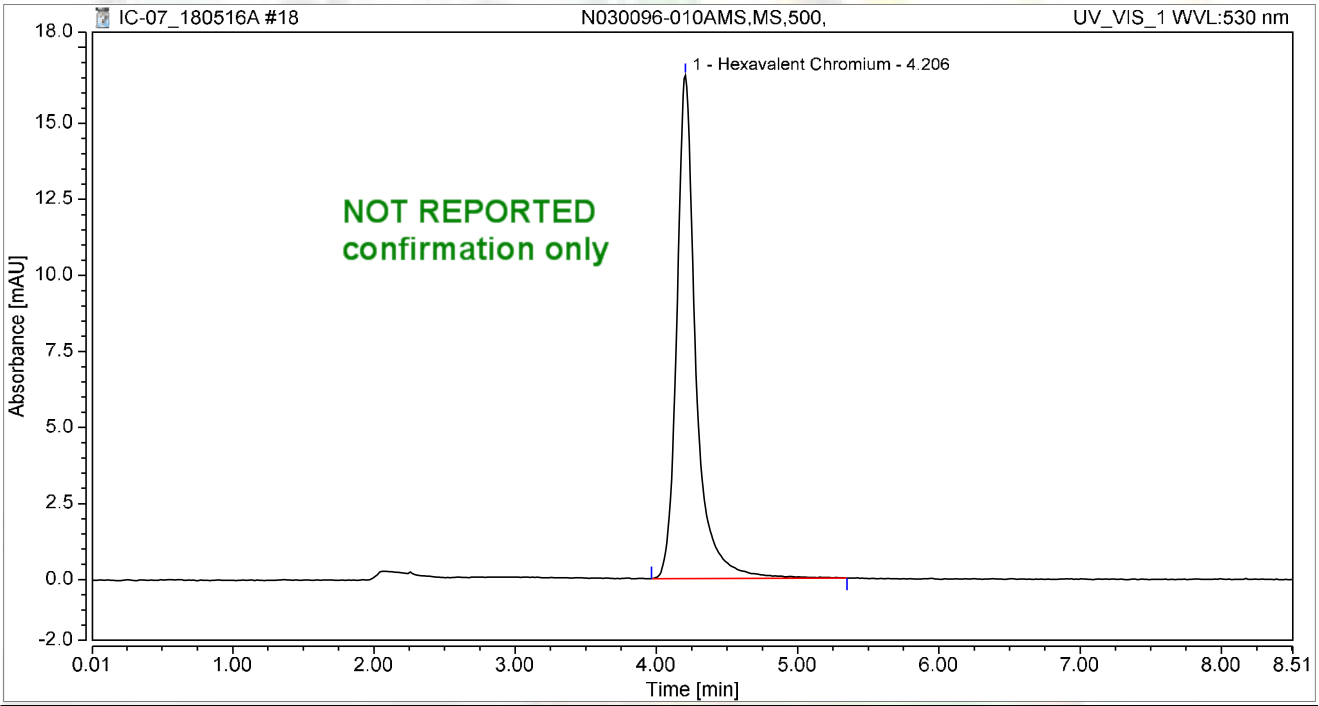
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.228	7.928	100.00	100.00	4.7832
Total:			**1.228**	**7.928**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030096-010AMS,MS,500,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**16/May/18 14:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.595	16.544	100.00	100.00	10.1109
Total:			**2.595**	**16.544**	**100.00**	**100.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R124008 **Analyst:** QBM

ASSET #: N030096, N030121, N030123 **Date Analyzed:** 5/11/2018

Method: **4500_NO3**

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.		X				
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec of Nitrate/Nitrite as N in CCV-3 failed, low bias. However, reanalysis passed criteria. CAR# 2308

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 5/15/2018

2nd Level Reviewer [signature] 05/15/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N030096-001C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.7367	*	5
	=	3.6835	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 3.7 mg/L

RB 05/15/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

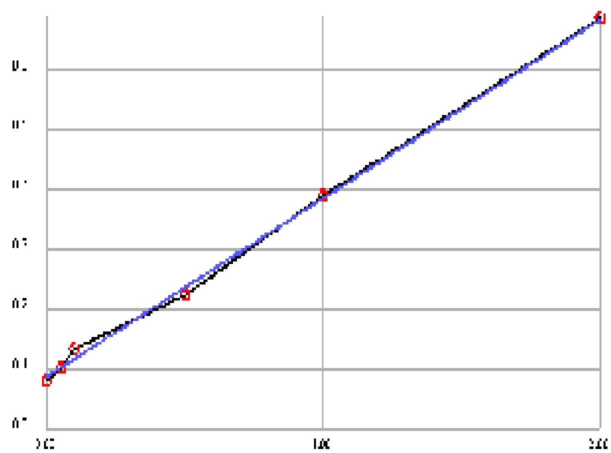
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2988x + 0.0873
Correlation	.999216

Calibrant	Energy	Set	Conc
1	0.0804	0.0000	-0.0231
2	0.1026	0.0500	0.0512
3	0.1324	0.1000	0.1509
4	0.2248	0.5000	0.4602
5	0.3881	1.0000	1.0068
6	0.6860	2.0000	2.0040



Notes:

RB 05/15/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **ICV** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.494	0.050	0.5000	0	98.8	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **CCV** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.468	0.050	0.5000	0	93.6	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **CCV** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.515	0.050	0.5000	0	103	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **CCV** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023856**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.471	0.050	0.5000	0	94.1	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **ICB** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **CCB** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **CCB** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **CCB** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 05-11-2018 14:23
Time end: 05-11-2018 17:22

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	16:40:22	0.0472		0.1014
2	<BLANK>	16:41:22	0.0040		0.0885
3	<CAL1>	16:42:17	-0.0231	[0]	0.0804
4	<CAL2>	16:43:12	0.0512	[0.05]	0.1026
5	<CAL3>	16:44:13	0.1509	[0.1]	0.1324
6	<CAL4>	16:45:08	0.4602	[0.5]	0.2248
7	<CAL5>	16:46:04	1.0068	[1]	0.3881
8	<CAL6>	16:47:05	2.0040	[2]	0.6860
9	,BLANK,BLANK,1, NOT REPORTED	16:47:59	0.0706		0.1084
10	,ICV,ICV,1,	16:48:55	0.4940		0.2349
11	,ICB,ICB,1,	16:49:56	0.0247		0.0947
12	,MB-H2O,MBLK,1,	16:50:51	0.0107		0.0905
13	,LCS-H2O,LCS,1,	16:51:52	0.5549		0.2531
14	,N030096-001C,SAMP,5,	16:52:48	0.7367		0.3074
15	,N030096-001CDUP,DUP,5,	16:53:43	0.7039		0.2976
16	,N030096-002C,SAMP,20,	16:54:43	0.5308		0.2459
17	,N030096-002CMS,MS,20,	16:55:39	1.1223		0.4226
18	,N030096-002CMSD,MSD,20,	16:56:35	1.0363		0.3969
19	,N030096-003C,SAMP,5,	16:57:36	0.9141		0.3604
20	,N030096-005C,SAMP,20,	16:58:30	0.9057		0.3579
21	,BLANK, NOT REPORTED	16:59:26	-0.0077		0.0850
22	,CCV-1,CCV,1,	17:00:27	0.4679		0.2271
23	,CCB-1,CCB,1,	17:01:22	-0.0305		0.0782
24	,N030096-004C,SAMP,1,	17:02:17	0.0355		0.0979
25	,N030096-006C,SAMP,5,	17:03:18	0.8210		0.3326
26	,N030096-010C,SAMP,20,	17:04:14	0.7996		0.3262

RJB 05/15/2018

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N030096-011C,SAMP,10,	17:05:14	0.8883		0.3527
28	,N030096-012C,SAMP,20,	17:06:10	0.8020		0.3269
29	,N030096-013C,SAMP,5,	17:06:53	0.7618		0.3149
30	,N030096-014C,SAMP,20,	17:07:41	0.5777		0.2599
31	,N030096-015C,SAMP,20,	17:08:25	0.9998		0.3860
32	,N030121-002D,SAMP,5,	17:09:13	0.5777		0.2599
33	,BLANK, NOT REPORTED	17:09:56	0.0231		0.0942
34	,CCV-2,CCV,1,	17:10:44	0.5148		0.2411
35	,CCV-2,CCV,1, NOT REPORTED	17:11:28	0.4579		0.2241
36	,CCB-2,CCB,1,	17:12:11	-0.0020		0.0867
37	,N030123-002C,SAMP,1,	17:12:59	0.0197		0.0932
38	,N030123-003C,SAMP,1,	17:13:43	0.0629		0.1061
39	,N030123-004C,SAMP,1,	17:14:25	0.1573		0.1343
40	,N030123-001C,SAMP,5,	17:15:14	0.5988		0.2662
41	,N030123-005C,SAMP,10,	17:15:56	1.0577		0.4033
42	,N030123-006C,SAMP,10,	17:16:40	1.0299		0.3950
43	,N030123-007C,SAMP,10,	17:17:29	0.5037		0.2378
44	,BLANK, NOT REPORTED	17:18:11	-0.0278		0.0790
45	,CCV-3,CCV,1, NOT REPORTED	17:18:54	0.4365		0.2177
46	,CCV-3,CCV,1,	17:19:42	0.4706		0.2279
47	,CCB-3,CCB,1,	17:20:26	-0.0225		0.0806

RB 05/15/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Reagent ID #
Ammonium Chloride reagent/Buffer: R180504F
Color reagent: R180509C
2% Copper Sulfate: R180504E
Ammonium Hydroxide: CINV-180423A

Date Analyzed: 5/11/2018
Time Analyzed: 2:23 PM
Analyzed By: QBM

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N030096-001C		8.10							
N030096-002C		7.48							
N030096-003C		8.96							
N030096-004C		6.94							
N030096-005C		7.82							
N030096-006C		7.38							
N030096-010C		8.31							
N030096-011C		7.45							
N030096-012C		7.63							
N030096-013C		7.55							
N030096-014C		8.96							
N030096-015C		8.41							
N030121-002D		8.51							
N030123-001C		8.04							
N030123-002C		7.74							
N030123-003C		7.81							
N030123-004C		8.18							
N030123-005C		7.51							
N030123-006C		7.41							
N030123-007C		7.92							

Advanced Technology Laboratories, Inc.
Book # 1

05/15/2018

CORRECTIVE ACTION DOCUMENTATION

ASSET Laboratories

Corrective Action Report (CAR)

Date Initiated: 16-May-18 **Corrective Action Report ID:** 2308

Initiated By: Quennie Manimtim **Department:** 1WC

Corrective Action Description

CAR Summary: Closing CCV failed, low bias.

Description of Nonconformance: Closing CCV failed, low bias.

Description of Corrective Action: Reanalysis of closing CCV passed criteria.

Performed By: Quennie Manimtim **Completion Date:** 16-May-18

Client Notification

Client Notification Required: ~~No~~ **Notified By:**

Comment:

Quality Assurance Review

Corrective Action: Deficiency

Further Action required by QA: NONE

Approval and Closure

CAR Closed By: Close Date:

QA Reviewed By: 05/16/2018 QA Date:

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Ave**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05

Method Blank

Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67986

ASSET #: N030096

Instrument ID: ICPMS-02

Analyst: CEI

Date Analyzed: 5/14/2018

Method:

- [ ] EPA 6010B / 200.7
- [x] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.		X			X	
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			~~X~~	x	
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X	x		~~X~~
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			~~X~~	X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments: with confirmation for sample N030096-010

Cr in N030096-002D/3D/10D/11D/12D/15D is OLR. For dilution.

N030096-001D-MS for Cr failed however, LCS passed criteria.

RSD of As & Se on LLCCV1/ LLCCV2 failed however, recovery passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct	/		
3. Does batch meet QC requirements?	/		
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)	/		
5. Is first level review correct and complete?	/		

1st Level Reviewer CEI Date: 5/17/18

2nd Level Reviewer [illegible signature] 5/17/2018 Date: —

METALS ARCUS
REV 1.0
071116

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67986
ASSET #: N030096
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/15/2018

Method:

- [ ] EPA 6010B / 200.7
- [X] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			~~X~~		✓
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X	~~X~~		X
24. LCS compounds within control limits.	X			~~X~~		X
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X	X		~~X~~
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For dilution of Cr in N030096-002D/3D/10D/11D/12D/15D run only.
For Se rerun. for N030096-003 and N030096-001DMSD
~~N030096-003 for Se has RSD @ 16.5%~~ CAR 2323

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct	✓		
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: CEI Date: 5/17/18
2nd Level Reviewer: [signature] 5/17/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N030096-001D** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 57.7885 * 1 * (25/25)

Chromium , ug/L = 57.7885

Reporting results in two significant figures,

Chromium , ug/L = 58

% RSD SUMMARY

PERCENT RSD SUMMARY: 180514B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.097	11.79	15	PASS	0.11	3.87	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	5.53	15	PASS	0.52	9.21	15	PASS
Std3-5/50 ppb	ICAL	1	5.081	0.59	15	PASS	5.15	1.78	15	PASS
Std4-10/100 ppb	ICAL	1	10.13	1.53	15	PASS	10.00028	2.67	15	PASS
Std5-20/200 ppb	ICAL	1	20.34	0.5	15	PASS	20.37	0.55	15	PASS
Std6-40/400 ppb	ICAL	1	40.71	0.58	15	PASS	41.22	0.99	15	PASS
Std7-100/1000 ppb	ICAL	1	100.51	0.61	15	PASS	101.029	0.23	15	PASS
Std8-200/2000 ppb	ICAL	1	199.56	1.45	15	PASS	199.2	0.92	15	PASS
ICV	ICV	1	10.38	0.47	15	PASS	105.024	0.44	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.15	2.64	20	PASS	0.65	5.84	20	PASS
ICSA1	ICSA	1	0.038	26.48	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.44	0.6	15	PASS	16.45	0.85	15	PASS
LLICV	CCV1	1	1.073	1.34	20	PASS	0.57	3.047	20	PASS
CCV1	CCV	1	20.15	0.46	15	PASS	20.28	1.51	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.017	82.032	15	<PQL
CCV2	CCV	1	20.052	0.38	15	PASS	20.58	1.62	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.01	66.59	15	<PQL
CCV3	CCV	1	20.21	0.96	15	PASS	20.62	1.11	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.004	152.64	15	<PQL
CCV4	CCV	1	20.041	1.95	15	PASS	20.72	2.36	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.019	52.3	15	<PQL
LLCCV1	CCV2	1	1.038	3.14	20	PASS	0.63	2.45	20	PASS
ICSA2	ICSA	1	0.045	23.24	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.48	0.96	15	PASS	17.53	2.98	15	PASS
MB-67986	MBLK	1	<0.000	N/A	15	<PQL	0.014	46.08	15	<PQL
LCS-67986	LCS	1	10.42	1.34	15	PASS	106.55	0.94	15	PASS
N030096-001D	SAMP	1	57.79	0.87	15	PASS	23.69	1.3	15	PASS
N030096-001D	SAMP	5	12.084	1.058	15	PASS	4.76	3.56	15	PASS
N030096-001D	SAMP	25	2.42	2.7	15	PASS	0.88	3.44	15	PASS
N030096-001D-PS	PS	1	66.41	1.48	15	PASS	119.44	0.63	15	PASS
N030096-001D-PS	PS	5	14.088	0.88	15	PASS	25.44	1.065	15	PASS
N030096-001D-MS	MS	1	63.95	0.71	15	PASS	116.87	0.61	15	PASS
N030096-001D-MS	MS	5	13.71	1.92	15	PASS	24.99	1.86	15	PASS
CCV5	CCV	1	20.0017	0.57	15	PASS	20.35	1.012	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.015	89.42	15	<PQL
N030096-001D-MSD	MSD	1	65.97	1.38	15	PASS	116.92	1.41	15	PASS
N030096-001D-MSD	MSD	5	13.66	1.046	15	PASS	24.82	0.67	15	PASS
N030096-002D	SAMP	1	5434.97	0.8	15	PASS	<0.000	N/A	15	<PQL
N030096-002D	SAMP	5	1148.26	0.46	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180514B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030096-003D	SAMP	1	1892.24	1.025	15	PASS	28.27	1.31	15	PASS
N030096-003D	SAMP	5	420.15	1.5	15	PASS	6.31	1.24	15	PASS
N030096-004D	SAMP	1	<0.000	N/A	15	<PQL	45.85	0.48	15	PASS
N030096-004D	SAMP	5	0.06	26.68	15	<PQL	9.59	1.75	15	PASS
N030096-005D	SAMP	1	205.086	0.57	15	PASS	<0.000	N/A	15	<PQL
N030096-005D	SAMP	5	42.067	1.098	15	PASS	0.024	39.82	15	<PQL
CCV6	CCV	1	20.12	1.54	15	PASS	20.16	1.028	15	PASS
CCB6	CCB	1	0.095	18.28	15	<PQL	0.023	38.45	15	<PQL
N030096-006D	SAMP	1	521.26	1.65	15	PASS	4.27	4.27	15	PASS
N030096-006D	SAMP	5	105.27	0.54	15	PASS	1.023	0.74	15	PASS
N030096-007C	SAMP	1	10.92	1.65	15	PASS	1.83	2.85	15	PASS
N030096-007C	SAMP	5	2.22	0.2	15	PASS	0.38	3.86	15	PASS
N030096-008C	SAMP	1	9.1	0.52	15	PASS	4.97	2.19	15	PASS
N030096-008C	SAMP	5	1.94	1.44	15	PASS	1.083	2.28	15	PASS
N030096-010D	SAMP	1	2856.86	1.43	15	PASS	0.61	5.89	15	PASS
N030096-010D	SAMP	5	601.93	1.34	15	PASS	0.15	2.3	15	PASS
N030096-011D	SAMP	1	3381.037	0.33	15	PASS	4.45	1.49	15	PASS
N030096-011D	SAMP	5	736.29	1.33	15	PASS	0.99	5.62	15	PASS
CCV7	CCV	1	20.26	0.32	15	PASS	20.27	1.39	15	PASS
CCB7	CCB	1	0.23	8.91	15	PASS	0.029	45.65	15	<PQL
N030096-012D	SAMP	1	1527.12	0.82	15	PASS	1.69	0.35	15	PASS
N030096-012D	SAMP	5	308.53	0.53	15	PASS	0.32	3.91	15	PASS
N030096-013D	SAMP	1	13.81	0.45	15	PASS	<0.000	N/A	15	<PQL
N030096-013D	SAMP	5	2.98	1.95	15	PASS	<0.000	N/A	15	<PQL
N030096-014D	SAMP	1	65.14	2.55	15	PASS	<0.000	N/A	15	<PQL
N030096-014D	SAMP	5	13.6	0.77	15	PASS	<0.000	N/A	15	<PQL
N030096-015D	SAMP	1	2221.43	0.37	15	PASS	<0.000	N/A	15	<PQL
N030096-015D	SAMP	5	459.93	0.41	15	PASS	<0.000	N/A	15	<PQL
N030119-001B	SAMP	1	53.44	0.95	15	PASS	0.3	28.78	15	<PQL
N030119-001B	SAMP	5	11.058	0.66	15	PASS	0.044	53.88	15	<PQL
CCV7	CCV	1	20.26	0.42	15	PASS	20.47	1.69	15	PASS
CCB7	CCB	1	0.14	13.2	15	PASS	0.0064	202.68	15	<PQL
LLCCV2	CCV2	1	1.12	1.93	20	PASS	0.59	8.25	20	PASS
ICSA3	ICSA	1	0.053	38.5	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.73	0.92	15	PASS	17.6	0.24	15	PASS

PERCENT RSD SUMMARY: 180514B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	12.94	15	PASS	0.092	75.36	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.53	1.82	15	PASS	0.56	13.052	15	PASS
Std3-5/50 ppb	ICAL	1	5.15	1.017	15	PASS	4.87	5.86	15	PASS
Std4-10/100 ppb	ICAL	1	10.46	0.89	15	PASS	9.78	3.65	15	PASS
Std5-20/200 ppb	ICAL	1	20.013	1.64	15	PASS	19.68	2.17	15	PASS
Std6-40/400 ppb	ICAL	1	40.4	1.41	15	PASS	38.98	2.58	15	PASS
Std7-100/1000 ppb	ICAL	1	100.59	1.98	15	PASS	100.47	2.92	15	PASS
Std8-200/2000 ppb	ICAL	1	199.6	0.92	15	PASS	200.013	1.14	15	PASS
ICV	ICV	1	10.95	2.23	15	PASS	10.64	2.88	15	PASS
ICB	ICB	1	0.014	68.11	15	<PQL	0.056	24.37	15	<PQL
LLICV	CCV1	1	0.09	34.95	20	<PQL	0.65	19.53	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.023	0.87	15	PASS
ICSAB1	ICSAB	1	21.72	0.49	15	PASS	19.78	4.036	15	PASS
LLICV	CCV1	1	0.13	21.39	20	NR!	0.47	44.36	20	<PQL
CCV1	CCV	1	20.18	0.53	15	PASS	19.042	3.67	15	PASS
CCB1	CCB	1	0.0029	670.68	15	<PQL	0.023	1.97	15	PASS
CCV2	CCV	1	20.3	1.063	15	PASS	19.32	4.51	15	PASS
CCB2	CCB	1	0.0089	97.77	15	<PQL	0.031	86.6	15	<PQL
CCV3	CCV	1	20.011	0.8	15	PASS	19.82	6.35	15	PASS
CCB3	CCB	1	0.004	314.043	15	<PQL	0.031	43.85	15	<PQL
CCV4	CCV	1	20.88	0.56	15	PASS	19.28	8.34	15	PASS
CCB4	CCB	1	0.0013	849.83	15	<PQL	0.0076	173.21	15	<PQL
LLCCV1	CCV2	1	0.12	48.44	20	Failed ~~NR!~~	0.49	25.17	20	<PQL
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.03	173.21	15	<PQL
ICSAB2	ICSAB	1	21.71	1.63	15	PASS	19.57	1.12	15	PASS
MB-67986	MBLK	1	0.0011	1664.97	15	<PQL	0	N/A	15	<PQL
LCS-67986	LCS	1	10.41	1	15	PASS	9.76	11.83	15	PASS
N030096-001D	SAMP	1	1.52	4.32	15	PASS	4.44	7.71	15	PASS
N030096-001D	SAMP	5	0.29	13.58	15	PASS	0.87	28.59	15	NR!
N030096-001D	SAMP	25	0.052	31.48	15	<PQL	0.16	25.32	15	<PQL
N030096-001D-PS	PS	1	12.27	0.97	15	PASS	14.6	6.27	15	PASS
N030096-001D-PS	PS	5	2.45	4.27	15	PASS	2.53	18.051	15	NR!
N030096-001D-MS	MS	1	12.54	2.13	15	PASS	14.61	5.76	15	PASS
N030096-001D-MS	MS	5	2.56	4.28	15	PASS	3.2	9.41	15	PASS
CCV5	CCV	1	20.29	0.95	15	PASS	19.23	1.9	15	PASS
CCB5	CCB	1	0.011	80.25	15	<PQL	0.0068	173.21	15	<PQL
N030096-001D-MSD	MSD	1	12.33	1.036	15	PASS	13.92	4.23	15	PASS
N030096-001D-MSD	MSD	5	2.47	3.18	15	PASS	3.11	11.53	15	PASS
N030096-002D	SAMP	1	3.2	3.32	15	PASS	10.72	3.23	15	PASS
N030096-002D	SAMP	5	0.59	13.61	15	PASS	2.15	3.93	15	PASS

PERCENT RSD SUMMARY: 180514B

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030096-003D	SAMP	1	1.85	3.11	15	PASS	4.022	10.39	15	PASS
N030096-003D	SAMP	5	0.36	11.28	15	PASS	0.82	29.15	15	NR!
N030096-004D	SAMP	1	1.47	2.87	15	PASS	0.14	129.36	15	<PQL
N030096-004D	SAMP	5	0.29	7.82	15	PASS	0.034	113.61	15	<PQL
N030096-005D	SAMP	1	2.023	5.14	15	PASS	13.94	5.44	15	PASS
N030096-005D	SAMP	5	0.41	13.13	15	PASS	2.84	14.54	15	PASS
CCV6	CCV	1	20.021	3.79	15	PASS	20.63	6.82	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.037	34.64	15	<PQL
N030096-006D	SAMP	1	1.44	4.59	15	PASS	3.84	11.71	15	PASS
N030096-006D	SAMP	5	0.29	4.29	15	PASS	0.74	7.46	15	PASS
N030096-007C	SAMP	1	3.38	2.98	15	PASS	0.67	10.67	15	PASS
N030096-007C	SAMP	5	0.64	1.89	15	PASS	0.16	45.34	15	<PQL
N030096-008C	SAMP	1	3.27	2.33	15	PASS	0.53	18.26	15	NR!
N030096-008C	SAMP	5	0.7	1.54	15	PASS	0.18	20.38	15	<PQL
N030096-010D	SAMP	1	1.76	3.85	15	PASS	14.24	6.64	15	PASS
N030096-010D	SAMP	5	0.32	18.099	15	NR!	2.6	7.32	15	PASS
N030096-011D	SAMP	1	4.019	0.49	15	PASS	14.28	1.51	15	PASS
N030096-011D	SAMP	5	0.8	3.8	15	PASS	3.023	11.94	15	PASS
CCV7	CCV	1	20.037	1.78	15	PASS	19.88	5.13	15	PASS
CCB7	CCB	1	0.0019	561.98	15	<PQL	0	N/A	15	<PQL
N030096-012D	SAMP	1	34.35	1.19	15	PASS	29.22	2.74	15	PASS
N030096-012D	SAMP	5	6.8	0.38	15	PASS	5.73	8.68	15	PASS
N030096-013D	SAMP	1	0.73	7.61	15	PASS	2.13	4.68	15	PASS
N030096-013D	SAMP	5	0.16	17.19	15	NR!	0.45	4.55	15	PASS
N030096-014D	SAMP	1	1.29	12.88	15	PASS	8.55	7.16	15	PASS
N030096-014D	SAMP	5	0.24	8.17	15	PASS	1.79	8	15	PASS
N030096-015D	SAMP	1	1.86	0.86	15	PASS	40.64	0.97	15	PASS
N030096-015D	SAMP	5	0.35	12.83	15	PASS	7.76	4.049	15	PASS
N030119-001B	SAMP	1	1.52	5.27	15	PASS	0.07	21.46	15	<PQL
N030119-001B	SAMP	5	0.28	12.6	15	PASS	0.0087	173.21	15	<PQL
CCV7	CCV	1	20	0.41	15	PASS	20.29	5.16	15	PASS
CCB7	CCB	1	0.0046	104.13	15	<PQL	0.017	86.6	15	<PQL
LLCCV2	CCV2	1	0.1	31.071	20	Failed ~~NR!~~	0.59	21.54	20	Failed ~~NR!~~
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.021	2.47	15	PASS
ICSAB3	ICSAB	1	21.27	2.042	15	PASS	20.059	5.83	15	PASS

PERCENT RSD SUMMARY: 180514B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.089	23.92	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.48	1.92	15	PASS
Std3-5/50 ppb	ICAL	1	5.052	3.035	15	PASS
Std4-10/100 ppb	ICAL	1	9.92	2.74	15	PASS
Std5-20/200 ppb	ICAL	1	19.93	0.28	15	PASS
Std6-40/400 ppb	ICAL	1	39.41	2.45	15	PASS
Std7-100/1000 ppb	ICAL	1	99.4	0.93	15	PASS
Std8-200/2000 ppb	ICAL	1	200.43	0.46	15	PASS
ICV	ICV	1	10.76	1.34	15	PASS
ICB	ICB	1	0.2	6.93	15	PASS
LLICV	CCV1	1	0.54	3.89	20	PASS
ICSA1	ICSA	1	0.12	22.097	15	<PQL
ICSAB1	ICSAB	1	22.74	0.38	15	PASS
LLICV	CCV1	1	0.6	6.93	20	PASS
CCV1	CCV	1	19.78	0.34	15	PASS
CCB1	CCB	1	0.094	8.15	15	PASS
CCV2	CCV	1	19.91	0.62	15	PASS
CCB2	CCB	1	0.06	11.41	15	PASS
CCV3	CCV	1	19.88	0.83	15	PASS
CCB3	CCB	1	0.075	20.27	15	<PQL
CCV4	CCV	1	20.068	0.46	15	PASS
CCB4	CCB	1	0.068	20.85	15	<PQL
LLCCV1	CCV2	1	0.53	6.37	20	PASS
ICSA2	ICSA	1	0.077	23.62	15	<PQL
ICSAB2	ICSAB	1	22.93	0.88	15	PASS
MB-67986	MBLK	1	0.017	11.22	15	PASS
LCS-67986	LCS	1	10.28	0.05	15	PASS
N030096-001D	SAMP	1	24.55	1.2	15	PASS
N030096-001D	SAMP	5	4.92	1.18	15	PASS
N030096-001D	SAMP	25	0.97	5.52	15	PASS
N030096-001D-PS	PS	1	36.5	1.63	15	PASS
N030096-001D-PS	PS	5	7.32	2.4	15	PASS
N030096-001D-MS	MS	1	35.6	1.0048	15	PASS
N030096-001D-MS	MS	5	7.26	1.97	15	PASS
CCV5	CCV	1	19.76	0.49	15	PASS
CCB5	CCB	1	0.094	14.12	15	PASS
N030096-001D-MSD	MSD	1	35.38	1.2	15	PASS
N030096-001D-MSD	MSD	5	7.3	1.67	15	PASS
N030096-002D	SAMP	1	34.88	0.4	15	PASS
N030096-002D	SAMP	5	7.075	1.25	15	PASS

PERCENT RSD SUMMARY: 180514B

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N030096-003D	SAMP	1	22.99	1.22	15	PASS
N030096-003D	SAMP	5	4.83	3.22	15	PASS
N030096-004D	SAMP	1	55.87	1.084	15	PASS
N030096-004D	SAMP	5	11.036	1.29	15	PASS
N030096-005D	SAMP	1	60.24	1.52	15	PASS
N030096-005D	SAMP	5	11.69	2.79	15	PASS
CCV6	CCV	1	20.25	0.18	15	PASS
CCB6	CCB	1	0.13	12.68	15	PASS
N030096-006D	SAMP	1	15.072	0.83	15	PASS
N030096-006D	SAMP	5	2.95	2.71	15	PASS
N030096-007C	SAMP	1	31.06	0.28	15	PASS
N030096-007C	SAMP	5	6.13	0.38	15	PASS
N030096-008C	SAMP	1	31.082	1.7	15	PASS
N030096-008C	SAMP	5	6.098	0.34	15	PASS
N030096-010D	SAMP	1	15.12	0.82	15	PASS
N030096-010D	SAMP	5	3.0023	2.75	15	PASS
N030096-011D	SAMP	1	47.26	0.32	15	PASS
N030096-011D	SAMP	5	9.49	1.89	15	PASS
CCV7	CCV	1	20.22	1.37	15	PASS
CCB7	CCB	1	0.094	6.94	15	PASS
N030096-012D	SAMP	1	8.42	2.16	15	PASS
N030096-012D	SAMP	5	1.61	4.75	15	PASS
N030096-013D	SAMP	1	12.39	0.4	15	PASS
N030096-013D	SAMP	5	2.47	0.91	15	PASS
N030096-014D	SAMP	1	3.29	4.77	15	PASS
N030096-014D	SAMP	5	0.66	3.93	15	PASS
N030096-015D	SAMP	1	30.63	0.97	15	PASS
N030096-015D	SAMP	5	5.99	1.034	15	PASS
N030119-001B	SAMP	1	2.99	2.17	15	PASS
N030119-001B	SAMP	5	0.56	4.16	15	PASS
CCV7	CCV	1	19.98	0.93	15	PASS
CCB7	CCB	1	0.068	25.29	15	<PQL
LLCCV2	CCV2	1	0.54	7.13	20	PASS
ICSA3	ICSA	1	0.038	6.14	15	PASS
ICSAB3	ICSAB	1	22.85	0.85	15	PASS

PERCENT RSD SUMMARY: 180515A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.091	34.69	15	<PQL	0.12	40.36	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	3.6	15	PASS	0.61	40.58	15	NR!
Std3-5/50 ppb	ICAL	1	5.039	1.19	15	PASS	5.15	7.79	15	PASS
Std4-10/100 ppb	ICAL	1	10.24	1.74	15	PASS	10.095	1.64	15	PASS
Std5-20/200 ppb	ICAL	1	20.49	1.43	15	PASS	20.36	6.77	15	PASS
Std6-40/400 ppb	ICAL	1	41.34	0.58	15	PASS	40.61	2.4	15	PASS
Std7-100/1000 ppb	ICAL	1	101.14	1.87	15	PASS	99.84	1.75	15	PASS
Std8-200/2000 ppb	ICAL	1	199.099	0.17	15	PASS	199.91	1.89	15	PASS
ICV	ICV	1	10.26	0.21	15	PASS	10.48	4.74	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.053	99.7	15	<PQL
LLICV	CCV1	1	0.89	5.19	20	PASS	0.4	9.96	20	PASS
ICSA1	ICSA	1	0.0037	451.48	15	<PQL	0.0083	173.21	15	<PQL
ICSAB1	ICSAB	1	20.48	0.87	15	PASS	20.028	4.81	15	PASS
LLICV	CCV1	1	0.88	4.31	20	PASS	0.54	9.82	20	PASS
N030096-001D	SAMP	5	12.21	1.9	15	PASS	0.84	2.83	15	PASS
CCV1	CCV	1	20.2	0.62	15	PASS	20	2.61	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0087	173.21	15	<PQL
N030096-001D-MS	MS	1	64.66	1.52	15	PASS	14.08	3.95	15	PASS
N030096-001D-MSD	MSD	1	64.7	0.79	15	PASS	14.97	4.82	15	PASS
N030096-002D	SAMP	50	121.44	1.065	15	PASS	0.22	70.021	15	<PQL
N030096-003D	SAMP	5	424.28	2.59	15	PASS	0.82	16.47	15	Failed ~~NR!~~
N030096-003D	SAMP	25	83.76	0.25	15	PASS	0.29	22.59	15	<PQL
N030096-010D	SAMP	25	125.036	0.96	15	PASS	0.57	28.19	15	NR!
N030096-011D	SAMP	25	148.88	1.44	15	PASS	0.62	8.88	15	PASS
N030096-012D	SAMP	25	62.98	0.27	15	PASS	1.15	18.089	15	NR!
N030096-015D	SAMP	25	94.99	1.49	15	PASS	1.44	15.36	15	NR!
N030096-003D	SAMP	1	1928.6	0.65	15	PASS	3.92	8.2	15	PASS
CCV2	CCV	1	20.8	1.34	15	PASS	20.96	3.051	15	PASS
CCB2	CCB	1	0.16	21.93	15	<PQL	0.033	43.94	15	<PQL
N030096-003D	SAMP	5	404.94	0.65	15	PASS	0.9	24.86	15	NR!
N030096-008C	SAMP	1	9.23	0.54	15	PASS	0.48	55.56	15	<PQL
CCV3	CCV	1	20.48	0.22	15	PASS	19.9	4.22	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.017	173.21	15	<PQL
LLCCV1	CCV2	1	0.89	3.38	20	PASS	0.38	30.7	20	<PQL
ICSA2	ICSA	1	0.011	229.28	15	<PQL	0.023	99.66	15	<PQL
ICSAB2	ICSAB	1	20.7	2.22	15	PASS	19.56	3.33	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180514B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0514001.D	RINSE	RINSE	1	05/14/18 8:59 PM
B0514002.D	Cal Blank	IBLK	1	05/14/18 9:05 PM
B0514003.D	Std1-0.1/1 ppb	ICAL	1	05/14/18 9:10 PM
B0514004.D	Std2-0.5/5 ppb	ICAL	1	05/14/18 9:20 PM
B0514005.D	Std3-5/50 ppb	ICAL	1	05/14/18 9:26 PM
B0514006.D	Std4-10/100 ppb	ICAL	1	05/14/18 9:32 PM
B0514007.D	Std5-20/200 ppb	ICAL	1	05/14/18 9:37 PM
B0514008.D	Std6-40/400 ppb	ICAL	1	05/14/18 9:43 PM
B0514009.D	Std7-100/1000 ppb	ICAL	1	05/14/18 9:48 PM
B0514010.D	Std8-200/2000 ppb	ICAL	1	05/14/18 9:54 PM
B0514011.D	ICV	ICV	1	05/14/18 10:00 PM
B0514012.D	ICB	ICB	1	05/14/18 10:05 PM
B0514013.D	LLICV	CCV1	1	05/14/18 10:12 PM
B0514014.D	ICSA1	ICSA	1	05/14/18 10:16 PM
B0514015.D	ICSAB1	ICSAB	1	05/14/18 10:22 PM
B0514016.D	LLICV	CCV1	1	05/14/18 10:27 PM
B0514017.D	MB-67985	MBLK	1	05/14/18 10:33 PM
B0514018.D	LCS-67985	LCS	1	05/14/18 10:38 PM
B0514019.D	N030091-001B	SAMP	1	05/14/18 10:44 PM
B0514020.D	N030091-001B	SAMP	5	05/14/18 10:50 PM
B0514021.D	N030091-001B	SAMP	25	05/14/18 10:55 PM
B0514022.D	N030091-001B-PS	PS	1	05/14/18 11:01 PM
B0514023.D	N030091-001B-PS	PS	5	05/14/18 11:06 PM
B0514024.D	N030091-001B-MS	MS	1	05/14/18 11:12 PM
B0514025.D	N030091-001B-MS	MS	5	05/14/18 11:18 PM
B0514026.D	N030091-001B-MSD	MSD	1	05/14/18 11:23 PM
B0514027.D	CCV1	CCV	1	05/14/18 11:29 PM
B0514028.D	CCB1	CCB	1	05/14/18 11:34 PM
B0514029.D	N030091-001B-MSD	MSD	5	05/14/18 11:40 PM
B0514030.D	N030091-002B	SAMP	1	05/14/18 11:45 PM
B0514031.D	N030091-002B	SAMP	5	05/14/18 11:51 PM
B0514032.D	N030091-003B	SAMP	1	05/14/18 11:57 PM
B0514033.D	N030091-003B	SAMP	5	05/15/18 12:02 AM
B0514034.D	N030091-004B	SAMP	1	05/15/18 12:09 AM
B0514035.D	N030091-004B	SAMP	5	05/15/18 12:15 AM
B0514036.D	N030091-005B	SAMP	1	05/15/18 12:20 AM
B0514037.D	N030091-005B	SAMP	5	05/15/18 12:26 AM
B0514038.D	N030091-006B	SAMP	1	05/15/18 12:32 AM
B0514039.D	CCV2	CCV	1	05/15/18 12:37 AM
B0514040.D	CCB2	CCB	1	05/15/18 12:43 AM
B0514041.D	N030091-006B	SAMP	5	05/15/18 12:48 AM
B0514042.D	N030091-007B	SAMP	1	05/15/18 12:54 AM

INJECTION LOG: 180514B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0514043.D	N030091-007B	SAMP	5	05/15/18 12:59 AM
B0514044.D	N030091-008B	SAMP	1	05/15/18 1:05 AM
B0514045.D	N030091-008B	SAMP	5	05/15/18 1:10 AM
B0514046.D	N030091-009B	SAMP	1	05/15/18 1:16 AM
B0514047.D	N030091-009B	SAMP	5	05/15/18 1:22 AM
B0514048.D	N030091-010B	SAMP	1	05/15/18 1:27 AM
B0514049.D	N030091-010B	SAMP	5	05/15/18 1:33 AM
B0514050.D	N030091-012B	SAMP	1	05/15/18 1:38 AM
B0514051.D	CCV3	CCV	1	05/15/18 1:44 AM
B0514052.D	CCB3	CCB	1	05/15/18 1:50 AM
B0514053.D	N030091-012B	SAMP	5	05/15/18 1:55 AM
B0514054.D	N030091-013B	SAMP	1	05/15/18 2:01 AM
B0514055.D	N030091-013B	SAMP	5	05/15/18 2:06 AM
B0514056.D	N030091-014B	SAMP	1	05/15/18 2:12 AM
B0514057.D	N030091-014B	SAMP	5	05/15/18 2:17 AM
B0514058.D	N030091-019B	SAMP	1	05/15/18 2:23 AM
B0514059.D	N030091-019B	SAMP	5	05/15/18 2:29 AM
B0514060.D	N030091-020B	SAMP	1	05/15/18 2:34 AM
B0514061.D	N030091-020B	SAMP	5	05/15/18 2:40 AM
B0514062.D	N030091-021B	SAMP	1	05/15/18 2:45 AM
B0514063.D	CCV4	CCV	1	05/15/18 2:51 AM
B0514064.D	CCB4	CCB	1	05/15/18 2:56 AM
B0514065.D	LLCCV1	CCV2	1	05/15/18 3:02 AM
B0514066.D	ICSA2	ICSA	1	05/15/18 3:08 AM
B0514067.D	ICSAB2	ICSAB	1	05/15/18 3:13 AM
B0514068.D	N030091-021B	SAMP	5	05/15/18 3:19 AM
B0514069.D	MB-67986	MBLK	1	05/15/18 3:24 AM
B0514070.D	LCS-67986	LCS	1	05/15/18 3:30 AM
B0514071.D	N030096-001D	SAMP	1	05/15/18 3:35 AM
B0514072.D	N030096-001D	SAMP	5	05/15/18 3:41 AM
B0514073.D	N030096-001D	SAMP	25	05/15/18 3:47 AM
B0514074.D	N030096-001D-PS	PS	1	05/15/18 3:52 AM
B0514075.D	N030096-001D-PS	PS	5	05/15/18 3:58 AM
B0514076.D	N030096-001D-MS	MS	1	05/15/18 4:03 AM
B0514077.D	N030096-001D-MS	MS	5	05/15/18 4:09 AM
B0514078.D	CCV5	CCV	1	05/15/18 4:15 AM
B0514079.D	CCB5	CCB	1	05/15/18 4:20 AM
B0514080.D	N030096-001D-MSD	MSD	1	05/15/18 4:27 AM
B0514081.D	N030096-001D-MSD	MSD	5	05/15/18 4:33 AM
B0514082.D	N030096-002D	SAMP	1	05/15/18 4:39 AM
B0514083.D	N030096-002D	SAMP	5	05/15/18 4:44 AM
B0514084.D	N030096-003D	SAMP	1	05/15/18 4:50 AM

INJECTION LOG: 180514B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0514085.D	N030096-003D	SAMP	5	05/15/18 4:55 AM
B0514086.D	N030096-004D	SAMP	1	05/15/18 5:01 AM
B0514087.D	N030096-004D	SAMP	5	05/15/18 5:06 AM
B0514088.D	N030096-005D	SAMP	1	05/15/18 5:12 AM
B0514089.D	N030096-005D	SAMP	5	05/15/18 5:17 AM
B0514090.D	CCV6	CCV	1	05/15/18 5:23 AM
B0514091.D	CCB6	CCB	1	05/15/18 5:29 AM
B0514092.D	N030096-006D	SAMP	1	05/15/18 5:34 AM
B0514093.D	N030096-006D	SAMP	5	05/15/18 5:40 AM
B0514094.D	N030096-007C	SAMP	1	05/15/18 5:45 AM
B0514095.D	N030096-007C	SAMP	5	05/15/18 5:51 AM
B0514096.D	N030096-008C	SAMP	1	05/15/18 5:57 AM
B0514097.D	N030096-008C	SAMP	5	05/15/18 6:02 AM
B0514098.D	N030096-010D	SAMP	1	05/15/18 6:08 AM
B0514099.D	N030096-010D	SAMP	5	05/15/18 6:13 AM
B0514100.D	N030096-011D	SAMP	1	05/15/18 6:19 AM
B0514101.D	N030096-011D	SAMP	5	05/15/18 6:25 AM
B0514102.D	CCV7	CCV	1	05/15/18 6:30 AM
B0514103.D	CCB7	CCB	1	05/15/18 6:36 AM
B0514104.D	N030096-012D	SAMP	1	05/15/18 6:41 AM
B0514105.D	N030096-012D	SAMP	5	05/15/18 6:47 AM
B0514106.D	N030096-013D	SAMP	1	05/15/18 6:52 AM
B0514107.D	N030096-013D	SAMP	5	05/15/18 6:58 AM
B0514108.D	N030096-014D	SAMP	1	05/15/18 7:04 AM
B0514109.D	N030096-014D	SAMP	5	05/15/18 7:10 AM
B0514110.D	N030096-015D	SAMP	1	05/15/18 7:16 AM
B0514111.D	N030096-015D	SAMP	5	05/15/18 7:21 AM
B0514112.D	N030119-001B	SAMP	1	05/15/18 7:27 AM
B0514113.D	N030119-001B	SAMP	5	05/15/18 7:33 AM
B0514114.D	CCV7	CCV	1	05/15/18 7:38 AM
B0514115.D	CCB7	CCB	1	05/15/18 7:44 AM
B0514116.D	LLCCV2	CCV2	1	05/15/18 7:49 AM
B0514117.D	ICSA3	ICSA	1	05/15/18 7:56 AM
B0514118.D	ICSAB3	ICSAB	1	05/15/18 8:01 AM

INJECTION LOG: 180515A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0515001.D	RINSE	RINSE	1	05/15/18 11:19 AM
A0515002.D	Cal Blank	IBLK	1	05/15/18 11:24 AM
A0515003.D	Std1-0.1/1 ppb	ICAL	1	05/15/18 11:31 AM
A0515004.D	Std2-0.5/5 ppb	ICAL	1	05/15/18 11:37 AM
A0515005.D	Std3-5/50 ppb	ICAL	1	05/15/18 11:42 AM
A0515006.D	Std4-10/100 ppb	ICAL	1	05/15/18 11:48 AM
A0515007.D	Std5-20/200 ppb	ICAL	1	05/15/18 11:53 AM
A0515008.D	Std6-40/400 ppb	ICAL	1	05/15/18 12:00 PM
A0515009.D	Std7-100/1000 ppb	ICAL	1	05/15/18 12:04 PM
A0515010.D	Std8-200/2000 ppb	ICAL	1	05/15/18 12:10 PM
A0515011.D	ICV	ICV	1	05/15/18 12:16 PM
A0515012.D	ICB	ICB	1	05/15/18 12:21 PM
A0515013.D	LLICV	CCV1	1	05/15/18 12:27 PM
A0515014.D	ICSA1	ICSA	1	05/15/18 12:32 PM
A0515015.D	ICSAB1	ICSAB	1	05/15/18 12:38 PM
A0515016.D	LLICV	CCV1	1	05/15/18 12:44 PM
A0515017.D	N030148-001B	SAMP	1	05/15/18 12:49 PM
A0515018.D	N030148-001B	SAMP	5	05/15/18 12:55 PM
A0515019.D	N030006-008D	SAMP	5	05/15/18 1:01 PM
A0515020.D	N030017-005D	SAMP	1	05/15/18 1:07 PM
A0515021.D	N030091-001B	SAMP	125	05/15/18 1:13 PM
A0515022.D	N030091-001B-PS	PS	25	05/15/18 1:18 PM
A0515023.D	N030091-001B-MS	MS	25	05/15/18 1:24 PM
A0515024.D	N030091-001B-MSD	MSD	25	05/15/18 1:30 PM
A0515025.D	N030091-021B	SAMP	10	05/15/18 1:35 PM
A0515026.D	N030096-001D	SAMP	5	05/15/18 1:41 PM
A0515027.D	CCV1	CCV	1	05/15/18 1:46 PM
A0515028.D	CCB1	CCB	1	05/15/18 1:52 PM
A0515029.D	N030096-001D-MS	MS	1	05/15/18 1:58 PM
A0515030.D	N030096-001D-MSD	MSD	1	05/15/18 2:03 PM
A0515031.D	N030096-002D	SAMP	50	05/15/18 2:09 PM
A0515032.D	N030096-003D	SAMP	5	05/15/18 2:15 PM
A0515033.D	N030096-003D	SAMP	25	05/15/18 2:20 PM
A0515034.D	N030096-010D	SAMP	25	05/15/18 2:26 PM
A0515035.D	N030096-011D	SAMP	25	05/15/18 2:31 PM
A0515036.D	N030096-012D	SAMP	25	05/15/18 2:37 PM
A0515037.D	N030096-015D	SAMP	25	05/15/18 2:43 PM
A0515038.D	N030096-003D	SAMP	1	05/15/18 2:56 PM
A0515039.D	CCV2	CCV	1	05/15/18 3:01 PM
A0515040.D	CCB2	CCB	1	05/15/18 3:07 PM
A0515041.D	N030096-003D	SAMP	5	05/15/18 3:13 PM
A0515042.D	N030096-008C	SAMP	1	05/15/18 3:18 PM

INJECTION LOG: 180515A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0515043.D	MB-68076	MBLK	1	05/15/18 3:24 PM
A0515044.D	LCS-68076	LCS	1	05/15/18 3:30 PM
A0515045.D	N030345-001A	SAMP	1	05/15/18 3:35 PM
A0515046.D	N030345-001A	SAMP	5	05/15/18 3:41 PM
A0515047.D	N030345-001A-PS	PS	1	05/15/18 3:47 PM
A0515048.D	N030345-001A-MS	MS	1	05/15/18 3:52 PM
A0515049.D	N030345-001A-MSD	MSD	1	05/15/18 3:58 PM
A0515050.D	N030239-001A	SAMP	1	05/15/18 4:04 PM
A0515051.D	CCV3	CCV	1	05/15/18 4:10 PM
A0515052.D	CCB3	CCB	1	05/15/18 4:16 PM
A0515053.D	LLCCV1	CCV2	1	05/15/18 4:21 PM
A0515054.D	ICSA2	ICSA	1	05/15/18 4:27 PM
A0515055.D	ICSAB2	ICSAB	1	05/15/18 4:33 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/7/2018 2:19:27 P**
Prep End Date: **5/7/2018 7:00:00 P**
Prep Batch **67986** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/17/2018
Initials/ Date: 5/17/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	94.8	01-22

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67986	Aqueous		25	☐	0	0	25	1.000		
MB-67986	Aqueous		25	☐	0	0	25	1.000		
N030096-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N030096-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030096-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030096-002D	Groundwater	<2	25	☐	0	0	25	1.000		
N030096-003D	Groundwater	<2	25	☐	0	0	25	1.000		
N030096-004D	Groundwater	<2	25	☐	0	0	25	1.000		
N030096-005D	Groundwater	<2	25	☐	0	0	25	1.000		
N030096-006D	Groundwater	<2	25	☐	0	0	25	1.000		
N030096-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N030096-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N030096-010D	Groundwater	<2	25	☐	0	0	25	1.000		
N030096-011D	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/7/2018 2:19:27 P**
Prep End Date: **5/7/2018 7:00:00 P**
Prep Batch **67986** Prep Code: **3010_W_MSDI**

Reviewed/ Date: Nancy 5/17/2018
Initials/ Date: 5/17/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**01-22**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N030096-012D	Groundwater	<2	25	☐	0	0	25	1.000		
N030096-013D	Groundwater	<2	25	☐	0	0	25	1.000		
N030096-014D ~~1290~~	Groundwater	<2	25	☐	0	0	25	1.000		
N030096-015D	Groundwater	<2	25	☐	0	0	25	1.000		
N030119-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N030148-001B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 14 May 2018 01:19:48 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	126241.00	0.00	
24	Mg	75855200.00	0.00	
25	Mg	10092000.00	0.00	
26	Mg	11651300.00	0.00	
59	Co	441758.00	0.00	
115	In	727804.00	0.00	
206	Pb	204637.00	0.00	
207	Pb	180191.00	0.00	
208	Pb	443567.00	0.00	

RSD (%)

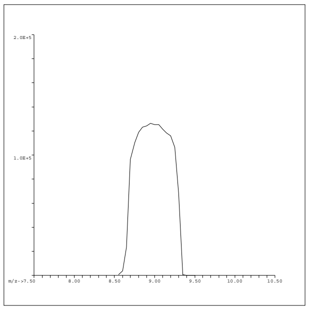
Element		Actual	Required	Flag
9	Be	1.26	5.00	
24	Mg	0.82	5.00	
25	Mg	1.01	5.00	
26	Mg	0.74	5.00	
59	Co	0.36	5.00	
115	In	0.76	5.00	
206	Pb	0.90	5.00	
207	Pb	1.07	5.00	
208	Pb	0.74	5.00	

Ion Ratio

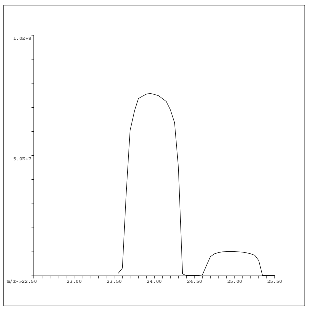
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

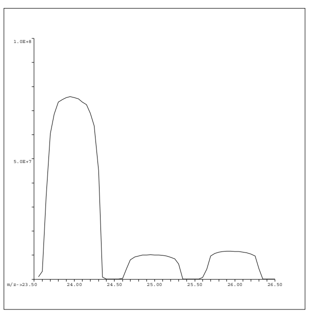
Element	Actual	Required	Flag



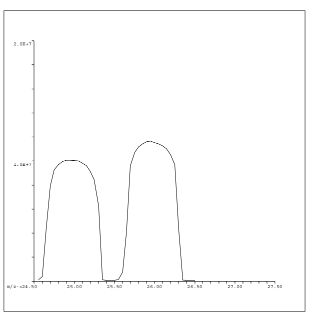
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



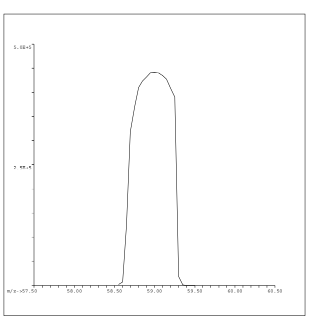
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



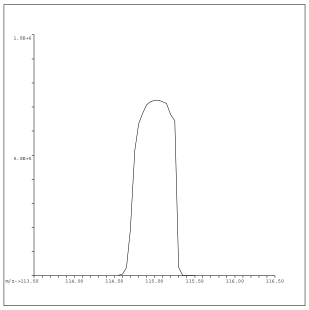
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



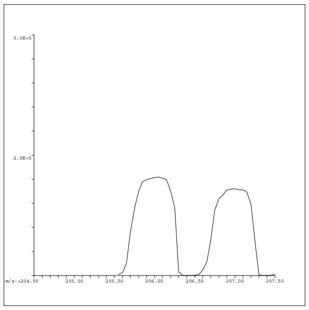
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



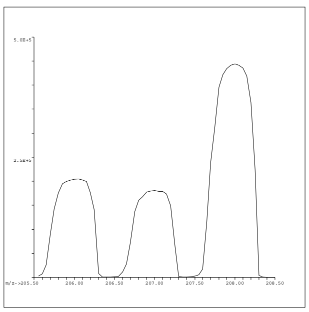
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



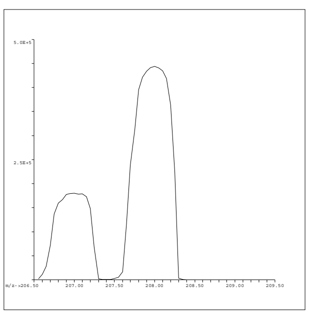
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 15 May 2018 10:38:32 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	72491.20	0.00	
24	Mg	56079300.00	0.00	
25	Mg	7514940.00	0.00	
26	Mg	8787920.00	0.00	
59	Co	366882.00	0.00	
115	In	729395.00	0.00	
206	Pb	202820.00	0.00	
207	Pb	176844.00	0.00	
208	Pb	430573.00	0.00	

RSD (%)

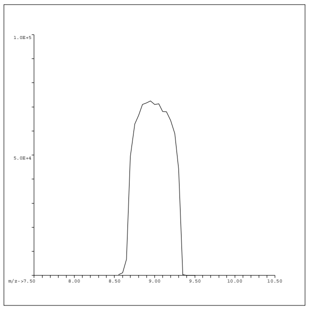
Element		Actual	Required	Flag
9	Be	1.87	5.00	
24	Mg	0.73	5.00	
25	Mg	0.68	5.00	
26	Mg	0.94	5.00	
59	Co	0.86	5.00	
115	In	0.55	5.00	
206	Pb	0.48	5.00	
207	Pb	0.91	5.00	
208	Pb	0.57	5.00	

Ion Ratio

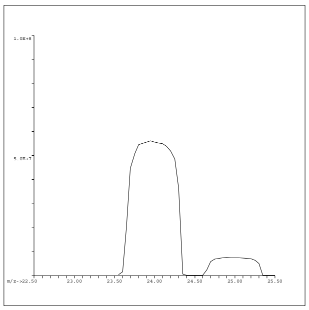
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

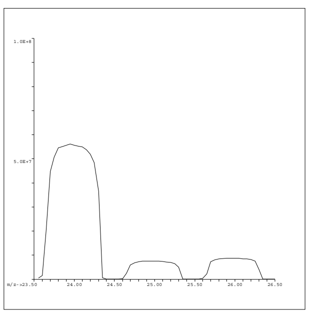
Element	Actual	Required	Flag



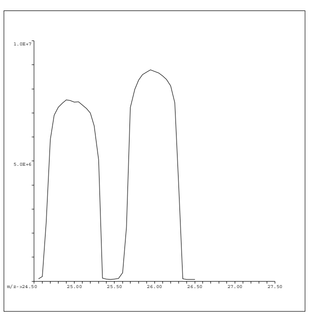
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



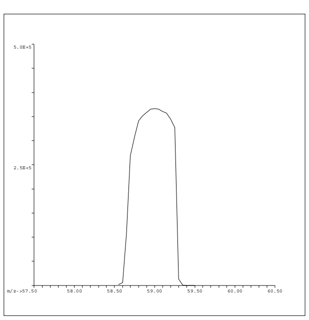
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



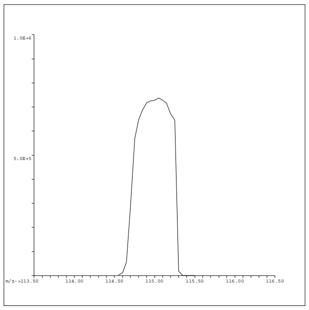
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



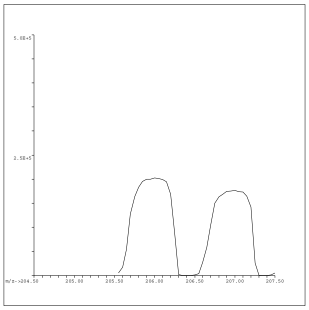
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



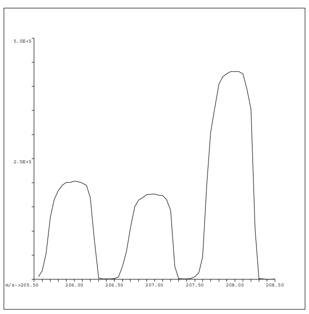
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



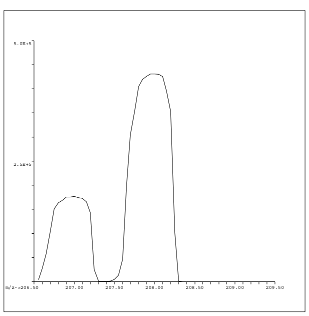
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180514B

Instrument ID: ICPMS-02

Analyte	Data File	B0514002.D	B0514003.D	B0514004.D	B0514005.D	B0514006.D	B0514007.D	B0514008.D	B0514009.D	B0514010.D	
	Acq. Date-Time	05/14/2018 09:05 PM	05/14/2018 09:10 PM	05/14/2018 09:20 PM	05/14/2018 09:26 PM	05/14/2018 09:32 PM	05/14/2018 09:37 PM	05/14/2018 09:43 PM	05/14/2018 09:48 PM	05/14/2018 09:54 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	63537.1		65133.2	62744.5	62422.1	61425	61027.9	59856.8	58937	
55 Mn [2]	CPS	87.6		1361.4	12304.7	23664.7	47360.9	95131.3	228562.7	443623	1.0000
52 Cr [2]	CPS	177.5		2645.6	24723.1	48878.7	96356.3	191448.5	463411.7	905700.8	1.0000
72 Ge (ISTD) [1]	CPS	46558.3		47600.2	45699.1	44729.9	43896.6	44629.6	42164	41619.4	
78 Se [1]	CPS	0		93.3	778.9	1529	3022.6	6084.7	14816.1	29114.6	1.0000
72 Ge (ISTD) [2]	CPS	44541.5	44045.9	45552.1	44642.8	43784.1	42760.1	43469.9	42310.2	41550.2	
75 As [2]	CPS	14.2	74.2	287.6	2620.2	5208.4	9719	19934	48270.8	94072	1.0000
103 Rh (ISTD) [2]	CPS	1360181.5		1365613.6	1340920.9	1329147.4	1291142.2	1321912.5	1265084.1	1240212.8	
95 Mo [2]	CPS	36.7		1573.5	15813.9	30738	59954.6	121319.4	292901.5	578912.1	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MWST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180515A

Instrument ID: ICPMS-02

Analyte	Data File	A0515002.D	A0515004.D	A0515005.D	A0515006.D	A0515007.D	A0515008.D	A0515009.D	A0515010.D	
	Acq. Date-Time	05/15/2018 11:24 AM	05/15/2018 11:37 AM	05/15/2018 11:42 AM	05/15/2018 11:48 AM	05/15/2018 11:53 AM	05/15/2018 12:00 PM	05/15/2018 12:04 PM	05/15/2018 12:10 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	50814.9	51060.1	50600	50703.5	49954.5	50142.9	49353.9	49521	
52 Cr [2]	CPS	354.1	2311	20087.8	40521.8	79563.7	160807.1	386642.1	763488.8	1.0000
72 Ge (ISTD) [1]	CPS	37440.2	38058.5	38175.5	38631.1	37929.3	34455	36754.4	36684.2	
78 Se [1]	CPS	0	82.2	695.6	1380.1	2734.8	4952.1	12987.8	25953.7	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MWST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ICV** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/14/2018** SeqNo: **3026249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.949	0.10	10.00	0	109	90	110				
Manganese	105.024	0.50	100.0	0	105	90	110				
Molybdenum	10.762	0.50	10.00	0	108	90	110				
Selenium	10.644	0.50	10.00	0	106	90	110				

Sample ID: **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/14/2018** SeqNo: **3026251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.090	0.10	0.1000	0	89.7	80	120				
Molybdenum	0.545	0.50	0.5000	0	109	80	120				

Sample ID: **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/14/2018** SeqNo: **3026254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.571	0.50	0.5000	0	114	80	120				
Selenium	0.474	0.50	0.5000	0	94.9	80	120				

Sample ID: **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCV** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/14/2018** SeqNo: **3026265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.176	0.10	20.00	0	101	90	110				
Manganese	20.278	0.50	20.00	0	101	90	110				
Molybdenum	19.783	0.50	20.00	0	98.9	90	110				
Selenium	19.042	0.50	20.00	0	95.2	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCV** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.304	0.10	20.00	0	102	90	110				
Manganese	20.584	0.50	20.00	0	103	90	110				
Molybdenum	19.911	0.50	20.00	0	99.6	90	110				
Selenium	19.319	0.50	20.00	0	96.6	90	110				

Sample ID: **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCV** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.011	0.10	20.00	0	100	90	110				
Manganese	20.624	0.50	20.00	0	103	90	110				
Molybdenum	19.880	0.50	20.00	0	99.4	90	110				
Selenium	19.816	0.50	20.00	0	99.1	90	110				

Sample ID: **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCV** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.878	0.10	20.00	0	104	90	110				
Manganese	20.725	0.50	20.00	0	104	90	110				
Molybdenum	20.068	0.50	20.00	0	100	90	110				
Selenium	19.285	0.50	20.00	0	96.4	90	110				

Sample ID: **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.122	0.10	0.1000	0	122	70	130				
Manganese	0.627	0.50	0.5000	0	125	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.525	0.50	0.5000	0	105	70	130				
Selenium	0.487	0.50	0.5000	0	97.4	70	130				

Sample ID: **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCV** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.289	0.10	20.00	0	101	90	110				
Manganese	20.352	0.50	20.00	0	102	90	110				
Molybdenum	19.760	0.50	20.00	0	98.8	90	110				
Selenium	19.228	0.50	20.00	0	96.1	90	110				

Sample ID: **CCV6** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCV** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.021	0.10	20.00	0	100	90	110				
Manganese	20.165	0.50	20.00	0	101	90	110				
Molybdenum	20.251	0.50	20.00	0	101	90	110				
Selenium	20.628	0.50	20.00	0	103	90	110				

Sample ID: **CCV7** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCV** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.037	0.10	20.00	0	100	90	110				
Manganese	20.269	0.50	20.00	0	101	90	110				
Molybdenum	20.223	0.50	20.00	0	101	90	110				
Selenium	19.882	0.50	20.00	0	99.4	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **CCV8**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124054**
Client ID: **CCV**	Batch ID: **R124054**	TestNo: **EPA 6020**		Analysis Date: **5/15/2018**	SeqNo: **3026352**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.996	0.10	20.00	0	100	90	110				
Manganese	20.470	0.50	20.00	0	102	90	110				
Molybdenum	19.979	0.50	20.00	0	99.9	90	110				
Selenium	20.294	0.50	20.00	0	101	90	110				

Sample ID: **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124054**
Client ID: **ZZZZZZ**	Batch ID: **R124054**	TestNo: **EPA 6020**		Analysis Date: **5/15/2018**	SeqNo: **3026354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.105	0.10	0.1000	0	105	70	130				
Manganese	0.587	0.50	0.5000	0	117	70	130				
Molybdenum	0.543	0.50	0.5000	0	109	70	130				
Selenium	0.594	0.50	0.5000	0	119	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **ICV** | SampType: **ICV** | TestCode: **6020_DIS** | Units: **µg/L** | Prep Date: | RunNo: **124065**
Client ID: **ICV** | Batch ID: **R124065** | TestNo: **EPA 6020** | Analysis Date: **5/15/2018** | SeqNo: **3026644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.766	0.10	10.00	0	97.7	90	110				
Manganese	108.664	0.50	100.0	0	109	90	110				
Selenium	10.485	0.50	10.00	0	105	90	110				

Sample ID: **LLICV** | SampType: **CCV1** | TestCode: **6020_DIS** | Units: **µg/L** | Prep Date: | RunNo: **124065**
Client ID: **ZZZZZZ** | Batch ID: **R124065** | TestNo: **EPA 6020** | Analysis Date: **5/15/2018** | SeqNo: **3026649**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.095	0.10	0.1000	0	95.1	80	120				
Manganese	0.467	0.50	0.5000	0	93.4	80	120				
Selenium	0.541	0.50	0.5000	0	108	80	120				

Sample ID: **CCV1** | SampType: **CCV** | TestCode: **6020_DIS** | Units: **µg/L** | Prep Date: | RunNo: **124065**
Client ID: **CCV** | Batch ID: **R124065** | TestNo: **EPA 6020** | Analysis Date: **5/15/2018** | SeqNo: **3026660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.811	0.10	20.00	0	99.1	90	110				
Manganese	19.971	0.50	20.00	0	99.9	90	110				
Selenium	20.000	0.50	20.00	0	100	90	110				

Sample ID: **CCV2** | SampType: **CCV** | TestCode: **6020_DIS** | Units: **µg/L** | Prep Date: | RunNo: **124065**
Client ID: **CCV** | Batch ID: **R124065** | TestNo: **EPA 6020** | Analysis Date: **5/15/2018** | SeqNo: **3026672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.956	0.10	20.00	0	99.8	90	110				
Manganese	20.297	0.50	20.00	0	101	90	110				
Selenium	20.959	0.50	20.00	0	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Reported Se only in this run.

Nancy 5/17/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **CCV** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.125	0.10	20.00	0	101	90	110				
Manganese	20.561	0.50	20.00	0	103	90	110				
Selenium	19.898	0.50	20.00	0	99.5	90	110				

Sample ID: **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ZZZZZZ** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	~~ND~~ 0.07736	0.10	0.1000	0	~~0~~ 77.4%	70	130				~~S~~
Manganese	0.514	0.50	0.5000	0	103	70	130				
Selenium	0.383	0.50	0.5000	0	76.6	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

Nancy 5/17/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **ICV** | SampType: **ICV** | TestCode: **6020DIS_CrP** | Units: **µg/L** | Prep Date: | RunNo: **124054**
Client ID: **ICV** | Batch ID: **R124054** | TestNo: **EPA 6020** | Analysis Date: **5/14/2018** | SeqNo: **3026141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.384	1.0	10.00	0	104	90	110				

Sample ID: **LLICV** | SampType: **CCV1** | TestCode: **6020DIS_CrP** | Units: **µg/L** | Prep Date: | RunNo: **124054**
Client ID: **ZZZZZZ** | Batch ID: **R124054** | TestNo: **EPA 6020** | Analysis Date: **5/14/2018** | SeqNo: **3026143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.147	1.0	1.000	0	115	80	120				

Sample ID: **CCV1** | SampType: **CCV** | TestCode: **6020DIS_CrP** | Units: **µg/L** | Prep Date: | RunNo: **124054**
Client ID: **CCV** | Batch ID: **R124054** | TestNo: **EPA 6020** | Analysis Date: **5/14/2018** | SeqNo: **3026157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.151	1.0	20.00	0	101	90	110				

Sample ID: **CCV2** | SampType: **CCV** | TestCode: **6020DIS_CrP** | Units: **µg/L** | Prep Date: | RunNo: **124054**
Client ID: **CCV** | Batch ID: **R124054** | TestNo: **EPA 6020** | Analysis Date: **5/15/2018** | SeqNo: **3026169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.052	1.0	20.00	0	100	90	110				

Sample ID: **CCV3** | SampType: **CCV** | TestCode: **6020DIS_CrP** | Units: **µg/L** | Prep Date: | RunNo: **124054**
Client ID: **CCV** | Batch ID: **R124054** | TestNo: **EPA 6020** | Analysis Date: **5/15/2018** | SeqNo: **3026181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.208	1.0	20.00	0	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCV** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.041	1.0	20.00	0	100	90	110				

Sample ID: **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.038	1.0	1.000	0	104	70	130				

Sample ID: **CCV5** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCV** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.002	1.0	20.00	0	100	90	110				

Sample ID: **CCV6** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCV** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.115	1.0	20.00	0	101	90	110				

Sample ID: **CCV7** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCV** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.261	1.0	20.00	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **CCV8** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCV** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.260	1.0	20.00	0	101	90	110				

Sample ID: **LLCCV2** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.119	1.0	1.000	0	112	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124066**
Client ID: **ICV** Batch ID: **R124066** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.263	1.0	10.00	0	103	90	110				

Sample ID: **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124066**
Client ID: **ZZZZZZ** Batch ID: **R124066** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.883	1.0	1.000	0	88.3	80	120				

Sample ID: **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124066**
Client ID: **CCV** Batch ID: **R124066** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.203	1.0	20.00	0	101	90	110				

Sample ID: **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124066**
Client ID: **CCV** Batch ID: **R124066** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026719**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.799	1.0	20.00	0	104	90	110				

Sample ID: **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124066**
Client ID: **CCV** Batch ID: **R124066** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3027003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.484	1.0	20.00	0	102	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124066**
Client ID: **ZZZZZZ** Batch ID: **R124066** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3027005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.885	1.0	1.000	0	88.5	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

ASSET Laboratories

Date: *16-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ICB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/14/2018** SeqNo: **3026250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/14/2018** SeqNo: **3026266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030096
Project:	PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **CCB4** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **CCB5** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID: **CCB7** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **CCB8** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026353**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124065**
Client ID: **ICB**	Batch ID: **R124065**	TestNo: **EPA 6020**		Analysis Date: **5/15/2018**	SeqNo: **3026645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID: **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124065**
Client ID: **CCB**	Batch ID: **R124065**	TestNo: **EPA 6020**		Analysis Date: **5/15/2018**	SeqNo: **3026661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID: **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124065**
Client ID: **CCB**	Batch ID: **R124065**	TestNo: **EPA 6020**		Analysis Date: **5/15/2018**	SeqNo: **3026673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID: **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124065**
Client ID: **CCB**	Batch ID: **R124065**	TestNo: **EPA 6020**		Analysis Date: **5/15/2018**	SeqNo: **3026956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Reported Se only in this run.

Nancy 5/17/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ICB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/14/2018** SeqNo: **3026142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/14/2018** SeqNo: **3026158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **CCB5** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **CCB6** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026221**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **CCB7** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.234	1.0									

Sample ID: **CCB8** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **CCB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.136	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124066**
Client ID: **ICB** Batch ID: **R124066** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124066**
Client ID: **CCB** Batch ID: **R124066** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124066**
Client ID: **CCB** Batch ID: **R124066** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026720**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.160	1.0									

Sample ID: **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124066**
Client ID: **CCB** Batch ID: **R124066** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3027004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ICSA** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/14/2018** SeqNo: **3026252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ICSAB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/14/2018** SeqNo: **3026253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.721	0.10	20.00	0	109	80	120				
Chromium	20.439	1.0	20.00	0	102	80	120				
Manganese	16.449	0.50	20.00	0	82.2	80	120				
Molybdenum	22.736	0.50	20.00	0	114	80	120				
Selenium	19.784	0.50	20.00	0	98.9	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ICSA** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ICSAB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.712	0.10	20.00	0	109	80	120				
Chromium	20.481	1.0	20.00	0	102	80	120				
Manganese	17.525	0.50	20.00	0	87.6	80	120				
Molybdenum	22.930	0.50	20.00	0	115	80	120				
Selenium	19.569	0.50	20.00	0	97.8	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ICSA** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Chromium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ICSAB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.274	0.10	20.00	0	106	80	120				
Chromium	20.730	1.0	20.00	0	104	80	120				
Manganese	17.600	0.50	20.00	0	88.0	80	120				
Molybdenum	22.853	0.50	20.00	0	114	80	120				
Selenium	20.059	0.50	20.00	0	100	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ICSA** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ICSAB** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.712	0.10	20.00	0	109	80	120				
Manganese	17.338	0.50	20.00	0	86.7	80	120				
Selenium	20.028	0.50	20.00	0	100	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ICSA** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124065**
Client ID: **ICSAB** Batch ID: **R124065** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.273	0.10	20.00	0	106	80	120				
Manganese	17.690	0.50	20.00	0	88.5	80	120				
Selenium	19.562	0.50	20.00	0	97.8	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Reported Se only in this run.

Nancy 5/17/20

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ICSA** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/14/2018** SeqNo: **3026144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ICSAB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/14/2018** SeqNo: **3026145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.439	1.0	20.00	0	102	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ICSA** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ICSAB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.481	1.0	20.00	0	102	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ICSA** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ICSAB** Batch ID: **R124054** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.730	1.0	20.00	0	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124066**
Client ID: **ICSA** Batch ID: **R124066** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026694**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124066**
Client ID: **ICSAB** Batch ID: **R124066** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3026695**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.479	1.0	20.00	0	102	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124066**
Client ID: **ICSA** Batch ID: **R124066** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3027006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124066**
Client ID: **ICSAB** Batch ID: **R124066** TestNo: **EPA 6020** Analysis Date: **5/15/2018** SeqNo: **3027007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.701	1.0	20.00	0	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180514B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	63537.1	63537.1	100	PASS	70-125	44541.5	44541.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	62476.7	63537.1	98.33	PASS	70-125	44045.9	44541.5	98.89	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	65133.2	63537.1	102.51	PASS	70-125	45552.1	44541.5	102.27	PASS	70-125
Std3-5/50 ppb	ICAL	1	62744.5	63537.1	98.75	PASS	70-125	44642.8	44541.5	100.23	PASS	70-125
Std4-10/100 ppb	ICAL	1	62422.1	63537.1	98.25	PASS	70-125	43784.1	44541.5	98.3	PASS	70-125
Std5-20/200 ppb	ICAL	1	61425	63537.1	96.68	PASS	70-125	42760.1	44541.5	96.001	PASS	70-125
Std6-40/400 ppb	ICAL	1	61027.9	63537.1	96.051	PASS	70-125	43469.9	44541.5	97.59	PASS	70-125
Std7-100/1000 ppb	ICAL	1	59856.8	63537.1	94.21	PASS	70-125	42310.2	44541.5	94.99	PASS	70-125
Std8-200/2000 ppb	ICAL	1	58937	63537.1	92.76	PASS	70-125	41550.2	44541.5	93.28	PASS	70-125
ICV	ICV	1	71075.3	63537.1	111.86	PASS	70-125	50380.6	44541.5	113.11	PASS	70-125
ICB	ICB	1	56971.4	63537.1	89.67	PASS	70-125	40288.3	44541.5	90.45	PASS	70-125
LLICV	CCV1	1	47290.2	63537.1	74.43	PASS	70-125	34644.1	44541.5	77.78	PASS	70-125
ICSA1	ICSA	1	62303.5	63537.1	98.058	PASS	70-125	42357.9	44541.5	95.098	PASS	70-125
ICSAB1	ICSAB	1	63221.4	63537.1	99.5	PASS	70-125	42127.3	44541.5	94.58	PASS	70-125
LLICV	CCV1	1	63105.7	63537.1	99.32	PASS	70-125	44258.7	44541.5	99.37	PASS	70-125
CCV1	CCV	1	58307.2	63537.1	91.77	PASS	70-125	40757.3	44541.5	91.5	PASS	70-125
CCB1	CCB	1	56026.9	63537.1	88.18	PASS	70-125	39403.9	44541.5	88.47	PASS	70-125
CCV2	CCV	1	55745	63537.1	87.74	PASS	70-125	39044.1	44541.5	87.66	PASS	70-125
CCB2	CCB	1	54032.8	63537.1	85.041	PASS	70-125	38211.1	44541.5	85.79	PASS	70-125
CCV3	CCV	1	55226.6	63537.1	86.92	PASS	70-125	39566.6	44541.5	88.83	PASS	70-125
CCB3	CCB	1	53486.6	63537.1	84.18	PASS	70-125	37895.8	44541.5	85.08	PASS	70-125
CCV4	CCV	1	55234.5	63537.1	86.93	PASS	70-125	38593.1	44541.5	86.65	PASS	70-125
CCB4	CCB	1	53093.1	63537.1	83.56	PASS	70-125	38603	44541.5	86.67	PASS	70-125
LLCCV1	CCV2	1	55556.5	63537.1	87.44	PASS	70-125	40212.6	44541.5	90.28	PASS	70-125
ICSA2	ICSA	1	58497.8	63537.1	92.069	PASS	70-125	41084.7	44541.5	92.24	PASS	70-125
ICSAB2	ICSAB	1	61897.9	63537.1	97.42	PASS	70-125	42961.9	44541.5	96.45	PASS	70-125
MB-67986	MBLK	1	55506.5	63537.1	87.36	PASS	70-125	39406.2	44541.5	88.47	PASS	70-125
LCS-67986	LCS	1	69846.7	63537.1	109.93	PASS	70-125	50509.9	44541.5	113.4	PASS	70-125
N030096-001D	SAMP	1	48733.2	63537.1	76.7	PASS	70-125	32997.6	44541.5	74.083	PASS	70-125
N030096-001D	SAMP	5	55336	63537.1	87.092	PASS	70-125	38094.1	44541.5	85.52	PASS	70-125
N030096-001D	SAMP	25	57828.7	63537.1	91.016	PASS	70-125	40435.3	44541.5	90.78	PASS	70-125
N030096-001D-PS	PS	1	52029.8	63537.1	81.89	PASS	70-125	34513.9	44541.5	77.49	PASS	70-125
N030096-001D-PS	PS	5	58641.7	63537.1	92.3	PASS	70-125	40288.3	44541.5	90.45	PASS	70-125
N030096-001D-MS	MS	1	54476.6	63537.1	85.74	PASS	70-125	35437	44541.5	79.56	PASS	70-125
N030096-001D-MS	MS	5	61707.1	63537.1	97.12	PASS	70-125	41393.3	44541.5	92.93	PASS	70-125
CCV5	CCV	1	68551.2	63537.1	107.89	PASS	70-125	47099.7	44541.5	105.74	PASS	70-125
CCB5	CCB	1	66411.8	63537.1	104.52	PASS	70-125	45616.7	44541.5	102.41	PASS	70-125
N030096-001D-MSD	MSD	1	48779.9	63537.1	76.77	PASS	70-125	32060	44541.5	71.98	PASS	70-125
N030096-001D-MSD	MSD	5	60076.5	63537.1	94.55	PASS	70-125	39857.3	44541.5	89.48	PASS	70-125
N030096-002D	SAMP	1	60852.6	63537.1	95.77	PASS	70-125	41509	44541.5	93.19	PASS	70-125
N030096-002D	SAMP	5	61987	63537.1	97.56	PASS	70-125	42459.5	44541.5	95.33	PASS	70-125

INTERNAL STANDARD: 180514B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030096-003D	SAMP	1	46847.7	63537.1	73.73	PASS	70-125	31256.3	44541.5	70.17	PASS	70-125
N030096-003D	SAMP	5	54821	63537.1	86.28	PASS	70-125	37897	44541.5	85.082	PASS	70-125
N030096-004D	SAMP	1	40116	63537.1	63.14	NR!	70-125	25647.5	44541.5	57.58	NR!	70-125
N030096-004D	SAMP	5	54178.6	63537.1	85.27	PASS	70-125	36087.4	44541.5	81.02	PASS	70-125
N030096-005D	SAMP	1	57641.6	63537.1	90.72	PASS	70-125	39599.8	44541.5	88.91	PASS	70-125
N030096-005D	SAMP	5	59249.5	63537.1	93.25	PASS	70-125	40547.7	44541.5	91.034	PASS	70-125
CCV6	CCV	1	63999.1	63537.1	100.73	PASS	70-125	44726.5	44541.5	100.42	PASS	70-125
CCB6	CCB	1	61546.4	63537.1	96.87	PASS	70-125	42732.3	44541.5	95.94	PASS	70-125
N030096-006D	SAMP	1	52819.1	63537.1	83.13	PASS	70-125	35250	44541.5	79.14	PASS	70-125
N030096-006D	SAMP	5	58619.5	63537.1	92.26	PASS	70-125	40106.7	44541.5	90.043	PASS	70-125
N030096-007C	SAMP	1	48415.6	63537.1	76.2	PASS	70-125	31715	44541.5	71.2	PASS	70-125
N030096-007C	SAMP	5	57842.2	63537.1	91.037	PASS	70-125	38632.1	44541.5	86.73	PASS	70-125
N030096-008C	SAMP	1	50309	63537.1	79.18	PASS	70-125	32927.4	44541.5	73.93	PASS	70-125
N030096-008C	SAMP	5	58285.8	63537.1	91.74	PASS	70-125	39543.2	44541.5	88.78	PASS	70-125
N030096-010D	SAMP	1	53665.9	63537.1	84.46	PASS	70-125	36036	44541.5	80.9	PASS	70-125
N030096-010D	SAMP	5	56406.1	63537.1	88.78	PASS	70-125	38222.2	44541.5	85.81	PASS	70-125
N030096-011D	SAMP	1	48358.7	63537.1	76.11	PASS	70-125	32450.8	44541.5	72.86	PASS	70-125
N030096-011D	SAMP	5	53741.8	63537.1	84.58	PASS	70-125	37369.1	44541.5	83.9	PASS	70-125
CCV7	CCV	1	60241.7	63537.1	94.81	PASS	70-125	42058.3	44541.5	94.42	PASS	70-125
CCB7	CCB	1	57864.5	63537.1	91.072	PASS	70-125	40442	44541.5	90.8	PASS	70-125
N030096-012D	SAMP	1	47718.9	63537.1	75.1	PASS	70-125	32605.5	44541.5	73.2	PASS	70-125
N030096-012D	SAMP	5	53793	63537.1	84.66	PASS	70-125	37358	44541.5	83.87	PASS	70-125
N030096-013D	SAMP	1	52975	63537.1	83.38	PASS	70-125	37022.7	44541.5	83.12	PASS	70-125
N030096-013D	SAMP	5	54424	63537.1	85.66	PASS	70-125	38360.2	44541.5	86.12	PASS	70-125
N030096-014D	SAMP	1	52188	63537.1	82.14	PASS	70-125	36084.1	44541.5	81.012	PASS	70-125
N030096-014D	SAMP	5	53202.3	63537.1	83.73	PASS	70-125	37878	44541.5	85.04	PASS	70-125
N030096-015D	SAMP	1	50972	63537.1	80.22	PASS	70-125	34328	44541.5	77.07	PASS	70-125
N030096-015D	SAMP	5	52409.8	63537.1	82.49	PASS	70-125	36938.1	44541.5	82.93	PASS	70-125
N030119-001B	SAMP	1	51561.6	63537.1	81.15	PASS	70-125	36490.5	44541.5	81.92	PASS	70-125
N030119-001B	SAMP	5	50641	63537.1	79.7	PASS	70-125	36136.2	44541.5	81.13	PASS	70-125
CCV7	CCV	1	54050.6	63537.1	85.069	PASS	70-125	38376	44541.5	86.16	PASS	70-125
CCB7	CCB	1	51317.6	63537.1	80.77	PASS	70-125	37144.2	44541.5	83.39	PASS	70-125
LLCCV2	CCV2	1	52218.1	63537.1	82.19	PASS	70-125	38048.3	44541.5	85.42	PASS	70-125
ICSA3	ICSA	1	68713	63537.1	108.15	PASS	70-125	47256.8	44541.5	106.1	PASS	70-125
ICSAB3	ICSAB	1	50436.1	63537.1	79.38	PASS	70-125	35057.3	44541.5	78.71	PASS	70-125

INTERNAL STANDARD: 180514B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	46558.3	46558.3	100	PASS	70-125	1360181.5	1360181.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	44903.7	46558.3	96.45	PASS	70-125	1343467.4	1360181.5	98.77	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	47600.2	46558.3	102.24	PASS	70-125	1365613.6	1360181.5	100.4	PASS	70-125
Std3-5/50 ppb	ICAL	1	45699.1	46558.3	98.15	PASS	70-125	1340920.9	1360181.5	98.58	PASS	70-125
Std4-10/100 ppb	ICAL	1	44729.9	46558.3	96.073	PASS	70-125	1329147.4	1360181.5	97.72	PASS	70-125
Std5-20/200 ppb	ICAL	1	43896.6	46558.3	94.28	PASS	70-125	1291142.2	1360181.5	94.92	PASS	70-125
Std6-40/400 ppb	ICAL	1	44629.6	46558.3	95.86	PASS	70-125	1321912.5	1360181.5	97.19	PASS	70-125
Std7-100/1000 ppb	ICAL	1	42164	46558.3	90.56	PASS	70-125	1265084.1	1360181.5	93.009	PASS	70-125
Std8-200/2000 ppb	ICAL	1	41619.4	46558.3	89.39	PASS	70-125	1240212.8	1360181.5	91.18	PASS	70-125
ICV	ICV	1	51160.9	46558.3	109.89	PASS	70-125	1599924.1	1360181.5	117.63	PASS	70-125
ICB	ICB	1	39712.4	46558.3	85.3	PASS	70-125	1221979.5	1360181.5	89.84	PASS	70-125
LLICV	CCV1	1	33575.3	46558.3	72.11	PASS	70-125	1099814.4	1360181.5	80.86	PASS	70-125
ICSA1	ICSA	1	41989.4	46558.3	90.19	PASS	70-125	1194164.8	1360181.5	87.79	PASS	70-125
ICSAB1	ICSAB	1	43094.4	46558.3	92.56	PASS	70-125	1202969.7	1360181.5	88.44	PASS	70-125
LLICV	CCV1	1	45643.4	46558.3	98.035	PASS	70-125	1384969.1	1360181.5	101.82	PASS	70-125
CCV1	CCV	1	42155.2	46558.3	90.54	PASS	70-125	1233249.5	1360181.5	90.67	PASS	70-125
CCB1	CCB	1	41407.7	46558.3	88.94	PASS	70-125	1207422.2	1360181.5	88.77	PASS	70-125
CCV2	CCV	1	41717.6	46558.3	89.6	PASS	70-125	1196493	1360181.5	87.97	PASS	70-125
CCB2	CCB	1	40320.6	46558.3	86.6	PASS	70-125	1171042.4	1360181.5	86.095	PASS	70-125
CCV3	CCV	1	42048.3	46558.3	90.31	PASS	70-125	1203447.6	1360181.5	88.48	PASS	70-125
CCB3	CCB	1	41025.6	46558.3	88.12	PASS	70-125	1180278.3	1360181.5	86.77	PASS	70-125
CCV4	CCV	1	42100.6	46558.3	90.43	PASS	70-125	1197943.4	1360181.5	88.072	PASS	70-125
CCB4	CCB	1	41725.1	46558.3	89.62	PASS	70-125	1179473.2	1360181.5	86.71	PASS	70-125
LLCCV1	CCV2	1	43132.2	46558.3	92.64	PASS	70-125	1234740.1	1360181.5	90.78	PASS	70-125
ICSA2	ICSA	1	43085.5	46558.3	92.54	PASS	70-125	1154048.9	1360181.5	84.85	PASS	70-125
ICSAB2	ICSAB	1	44913.8	46558.3	96.47	PASS	70-125	1193907.2	1360181.5	87.78	PASS	70-125
MB-67986	MBLK	1	42361.3	46558.3	90.99	PASS	70-125	1201132.4	1360181.5	88.31	PASS	70-125
LCS-67986	LCS	1	52764.8	46558.3	113.33	PASS	70-125	1563616.2	1360181.5	114.96	PASS	70-125
N030096-001D	SAMP	1	33665.5	46558.3	72.31	PASS	70-125	876626.9	1360181.5	64.45	NR!	70-125
N030096-001D	SAMP	5	38094.1	46558.3	81.82	PASS	70-125	1060758.5	1360181.5	77.99	PASS	70-125
N030096-001D	SAMP	25	42176.5	46558.3	90.59	PASS	70-125	1146659.3	1360181.5	84.3	PASS	70-125
N030096-001D-PS	PS	1	34020.6	46558.3	73.071	PASS	70-125	919535.6	1360181.5	67.6	NR!	70-125
N030096-001D-PS	PS	5	39846.1	46558.3	85.58	PASS	70-125	1107243.3	1360181.5	81.4	PASS	70-125
N030096-001D-MS	MS	1	34719.9	46558.3	74.57	PASS	70-125	934250.9	1360181.5	68.69	NR!	70-125
N030096-001D-MS	MS	5	42260.9	46558.3	90.77	PASS	70-125	1141063.4	1360181.5	83.89	PASS	70-125
CCV5	CCV	1	49154.7	46558.3	105.58	PASS	70-125	1406334.5	1360181.5	103.39	PASS	70-125
CCB5	CCB	1	46983.9	46558.3	100.91	PASS	70-125	1378730.9	1360181.5	101.36	PASS	70-125
N030096-001D-MSD	MSD	1	28720.4	46558.3	61.69	NR!	70-125	856604.4	1360181.5	62.98	NR!	70-125
N030096-001D-MSD	MSD	5	39721.3	46558.3	85.32	PASS	70-125	1099002.6	1360181.5	80.8	PASS	70-125
N030096-002D	SAMP	1	41676.3	46558.3	89.51	PASS	70-125	1105121.1	1360181.5	81.25	PASS	70-125
N030096-002D	SAMP	5	43042.1	46558.3	92.45	PASS	70-125	1166883.2	1360181.5	85.79	PASS	70-125

INTERNAL STANDARD: 180514B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030096-003D	SAMP	1	29839.1	46558.3	64.09	NR!	70-125	798440.5	1360181.5	58.7	NR!	70-125
N030096-003D	SAMP	5	36709.8	46558.3	78.85	PASS	70-125	1011044.7	1360181.5	74.33	PASS	70-125
N030096-004D	SAMP	1	25511.7	46558.3	54.8	NR!	70-125	662501.6	1360181.5	48.71	NR!	70-125
N030096-004D	SAMP	5	36352.3	46558.3	78.079	PASS	70-125	979457.9	1360181.5	72.009	PASS	70-125
N030096-005D	SAMP	1	39529.8	46558.3	84.9	PASS	70-125	1046489.5	1360181.5	76.94	PASS	70-125
N030096-005D	SAMP	5	41266.3	46558.3	88.63	PASS	70-125	1121262.7	1360181.5	82.43	PASS	70-125
CCV6	CCV	1	44947	46558.3	96.54	PASS	70-125	1292511.6	1360181.5	95.025	PASS	70-125
CCB6	CCB	1	43508.8	46558.3	93.45	PASS	70-125	1250458.7	1360181.5	91.93	PASS	70-125
N030096-006D	SAMP	1	35408	46558.3	76.051	PASS	70-125	945065.9	1360181.5	69.48	NR!	70-125
N030096-006D	SAMP	5	40520	46558.3	87.031	PASS	70-125	1093404.5	1360181.5	80.39	PASS	70-125
N030096-007C	SAMP	1	31867.4	46558.3	68.45	NR!	70-125	839634.7	1360181.5	61.73	NR!	70-125
N030096-007C	SAMP	5	38418.3	46558.3	82.52	PASS	70-125	1056556.8	1360181.5	77.68	PASS	70-125
N030096-008C	SAMP	1	32932.9	46558.3	70.73	PASS	70-125	873501.9	1360181.5	64.22	NR!	70-125
N030096-008C	SAMP	5	40119.1	46558.3	86.17	PASS	70-125	1089553.3	1360181.5	80.1	PASS	70-125
N030096-010D	SAMP	1	36115.1	46558.3	77.57	PASS	70-125	951959.3	1360181.5	69.99	NR!	70-125
N030096-010D	SAMP	5	39040.8	46558.3	83.85	PASS	70-125	1053122.5	1360181.5	77.43	PASS	70-125
N030096-011D	SAMP	1	31545.8	46558.3	67.76	NR!	70-125	842833	1360181.5	61.96	NR!	70-125
N030096-011D	SAMP	5	36585	46558.3	78.58	PASS	70-125	1020539.4	1360181.5	75.03	PASS	70-125
CCV7	CCV	1	43029.7	46558.3	92.42	PASS	70-125	1239937.8	1360181.5	91.16	PASS	70-125
CCB7	CCB	1	41323.1	46558.3	88.76	PASS	70-125	1202050	1360181.5	88.37	PASS	70-125
N030096-012D	SAMP	1	32243.7	46558.3	69.25	NR!	70-125	877133.7	1360181.5	64.49	NR!	70-125
N030096-012D	SAMP	5	37053.9	46558.3	79.59	PASS	70-125	1036722.4	1360181.5	76.22	PASS	70-125
N030096-013D	SAMP	1	36657.4	46558.3	78.73	PASS	70-125	1011088	1360181.5	74.33	PASS	70-125
N030096-013D	SAMP	5	38590.9	46558.3	82.89	PASS	70-125	1071089.9	1360181.5	78.75	PASS	70-125
N030096-014D	SAMP	1	36026.1	46558.3	77.38	PASS	70-125	1005956.5	1360181.5	73.96	PASS	70-125
N030096-014D	SAMP	5	37973.8	46558.3	81.56	PASS	70-125	1061379.5	1360181.5	78.032	PASS	70-125
N030096-015D	SAMP	1	35003.9	46558.3	75.18	PASS	70-125	957252.1	1360181.5	70.38	PASS	70-125
N030096-015D	SAMP	5	36645.2	46558.3	78.71	PASS	70-125	1032426	1360181.5	75.9	PASS	70-125
N030119-001B	SAMP	1	36068.4	46558.3	77.47	PASS	70-125	1019566.7	1360181.5	74.96	PASS	70-125
N030119-001B	SAMP	5	36335.7	46558.3	78.043	PASS	70-125	1056880.7	1360181.5	77.7	PASS	70-125
CCV7	CCV	1	38634.3	46558.3	82.98	PASS	70-125	1148458.9	1360181.5	84.43	PASS	70-125
CCB7	CCB	1	37205.4	46558.3	79.91	PASS	70-125	1120854.2	1360181.5	82.4	PASS	70-125
LLCCV2	CCV2	1	38471.8	46558.3	82.63	PASS	70-125	1150201.7	1360181.5	84.56	PASS	70-125
ICSA3	ICSA	1	45703.6	46558.3	98.16	PASS	70-125	1458683.3	1360181.5	107.24	PASS	70-125
ICSAB3	ICSAB	1	35046.1	46558.3	75.27	PASS	70-125	1011372.8	1360181.5	74.36	PASS	70-125

INTERNAL STANDARD: 180515A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	50814.9	50814.9	100	PASS	70-125	37440.2	37440.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	53527.5	50814.9	105.34	PASS	70-125	39989.7	37440.2	106.81	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	51060.1	50814.9	100.48	PASS	70-125	38058.5	37440.2	101.65	PASS	70-125
Std3-5/50 ppb	ICAL	1	50600	50814.9	99.58	PASS	70-125	38175.5	37440.2	101.96	PASS	70-125
Std4-10/100 ppb	ICAL	1	50703.5	50814.9	99.78	PASS	70-125	38631.1	37440.2	103.18	PASS	70-125
Std5-20/200 ppb	ICAL	1	49954.5	50814.9	98.31	PASS	70-125	37929.3	37440.2	101.31	PASS	70-125
Std6-40/400 ppb	ICAL	1	50142.9	50814.9	98.68	PASS	70-125	34455	37440.2	92.027	PASS	70-125
Std7-100/1000 ppb	ICAL	1	49353.9	50814.9	97.12	PASS	70-125	36754.4	37440.2	98.17	PASS	70-125
Std8-200/2000 ppb	ICAL	1	49521	50814.9	97.45	PASS	70-125	36684.2	37440.2	97.98	PASS	70-125
ICV	ICV	1	42527.4	50814.9	83.69	PASS	70-125	28917.4	37440.2	77.24	PASS	70-125
ICB	ICB	1	47716.7	50814.9	93.9	PASS	70-125	35998.2	37440.2	96.15	PASS	70-125
LLICV	CCV1	1	48464.7	50814.9	95.37	PASS	70-125	37226.6	37440.2	99.43	PASS	70-125
ICSA1	ICSA	1	55856.5	50814.9	109.92	PASS	70-125	37374.6	37440.2	99.82	PASS	70-125
ICSAB1	ICSAB	1	51956.2	50814.9	102.25	PASS	70-125	37090.8	37440.2	99.067	PASS	70-125
LLICV	CCV1	1	50843.8	50814.9	100.06	PASS	70-125	38295.7	37440.2	102.28	PASS	70-125
N030096-001D	SAMP	5	43784	50814.9	86.16	PASS	70-125	31969.8	37440.2	85.39	PASS	70-125
CCV1	CCV	1	50260.1	50814.9	98.91	PASS	70-125	37350.2	37440.2	99.76	PASS	70-125
CCB1	CCB	1	48059	50814.9	94.58	PASS	70-125	36179.7	37440.2	96.63	PASS	70-125
N030096-001D-MS	MS	1	42390.2	50814.9	83.42	PASS	70-125	28559	37440.2	76.28	PASS	70-125
N030096-001D-MSD	MSD	1	43605.6	50814.9	85.81	PASS	70-125	28841.7	37440.2	77.034	PASS	70-125
N030096-002D	SAMP	50	48819.1	50814.9	96.072	PASS	70-125	35697.5	37440.2	95.35	PASS	70-125
N030096-003D	SAMP	5	46062.3	50814.9	90.65	PASS	70-125	29891.4	37440.2	79.84	PASS	70-125
N030096-003D	SAMP	25	50274.3	50814.9	98.94	PASS	70-125	35458.2	37440.2	94.71	PASS	70-125
N030096-010D	SAMP	25	48924.9	50814.9	96.28	PASS	70-125	35557.1	37440.2	94.97	PASS	70-125
N030096-011D	SAMP	25	49541.1	50814.9	97.49	PASS	70-125	35371.4	37440.2	94.47	PASS	70-125
N030096-012D	SAMP	25	49509.9	50814.9	97.43	PASS	70-125	36083.1	37440.2	96.38	PASS	70-125
N030096-015D	SAMP	25	48458.1	50814.9	95.36	PASS	70-125	35262.2	37440.2	94.18	PASS	70-125
N030096-003D	SAMP	1	40715.2	50814.9	80.12	PASS	70-125	23085.9	37440.2	61.66	NR!	70-125
CCV2	CCV	1	52540	50814.9	103.39	PASS	70-125	37374.7	37440.2	99.83	PASS	70-125
CCB2	CCB	1	52607.2	50814.9	103.53	PASS	70-125	37623	37440.2	100.49	PASS	70-125
N030096-003D	SAMP	5	47793.8	50814.9	94.055	PASS	70-125	32608.8	37440.2	87.096	PASS	70-125
N030096-008C	SAMP	1	45362.4	50814.9	89.27	PASS	70-125	29962.7	37440.2	80.028	PASS	70-125
CCV3	CCV	1	51412.2	50814.9	101.18	PASS	70-125	39646.7	37440.2	105.89	PASS	70-125
CCB3	CCB	1	48417.8	50814.9	95.28	PASS	70-125	37050.6	37440.2	98.96	PASS	70-125
LLCCV1	CCV2	1	48686.3	50814.9	95.81	PASS	70-125	37669.8	37440.2	100.61	PASS	70-125
ICSA2	ICSA	1	56567.6	50814.9	111.32	PASS	70-125	41348.7	37440.2	110.44	PASS	70-125
ICSAB2	ICSAB	1	49625.9	50814.9	97.66	PASS	70-125	36088.5	37440.2	96.39	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.:	N030096
Test Method:	EPA 6020
Analysis Date:	5/14/2018
Matrix:	Groundwater
Batch No.:	67986

Instrument ID:	ICP-MS #2
Instrument Description:	Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As and Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030096-001D DT 5X	Arsenic	ug/L	1.4525 ~~24.61674~~	NA	1.521916	~~1517.48%~~ 4.5%	10
N030096-001D DT 5X	Chromium	ug/L	60.41869	PASS	57.78852	4.55%	10
N030096-001D DT 5X	Manganese	ug/L	23.80336	PASS	23.68812	0.49%	10
N030096-001D DT 25X	Molybdenum	ug/L	24.19646	PASS	24.61674	1.71%	10
N030096-001D DT 5X	Selenium	ug/L	4.333788	NA	4.441796	2.43%	10

Note: NA - Not applicable

5/17/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030096-001D-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.266	0.10	10.00	1.522	107	80	120				
Manganese	119.439	0.50	100.0	23.69	95.8	80	120				
Selenium	14.602	0.50	10.00	4.442	102	80	120				

Sample ID **N030096-001D-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124054**
Client ID: **ZZZZZZ** Batch ID: **67986** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/15/2018** SeqNo: **3026313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	36.601	2.5	10.00	24.62	120	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030096
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N030096-001D-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124054**
Client ID: **ZZZZZZ**	Batch ID: **67986**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/15/2018**	SeqNo: **3026204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	66.413	1.0	10.00	57.79	86.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CORRECTIVE ACTION DOCUMENTATION

ASSET Laboratories

Corrective Action Report (CAR)

Date Initiated: 17-May-18 | **Corrective Action Report ID:** 2323

Initiated By: Claire Ignacio | **Department:** ME-3(ICPMS)

Corrective Action Description

CAR Summary: RSD failed criteria

Description of Nonconformance: RSD of Selenium for N030096-003 is greater than 15% criteria.

Description of Corrective Action: Informed client. As per Daniel Moore (client), sample with the lowest RSD of 16.5% can be reported. The sample was injected/analyzed for three times and all has failing RSDs but with comparable readings.

Performed By: Claire Ignacio | **Completion Date:** 17-May-18

Client Notification

Client Notification Required: ~~No~~ | **Notified By:**

Comment:

Quality Assurance Review

Corrective Action: Deficiency

Further Action required by QA: none

Approval and Closure

CAR Closed By: | Close Date:

QA Reviewed By: Nancy 5/17/2018 | QA Date:

MDL STUDY

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

May 21, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030123

RE: PG&E Topock - GMP, RC000753.801D

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 02, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.801D
Lab Order:	N030123

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Since the actual result of total dissolved chromium (1.0 ug/L) differs with hexavalent chromium (0.52 ug/L) by no more 0.7 ug/L for sample N030123-015 (MW-21-Q218), reanalysis of the sample was not necessary.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for most of the samples due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N030123-001D-MS and N030123-001D-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Since the actual result of total dissolved chromium (1.0 ug/L) differs with hexavalent chromium (0.52 ug/L) by no more 0.7 ug/L for sample N030123-015 (MW-21-Q218), reanalysis of the sample was not necessary.

ASSET Laboratories

Date: *21-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801D
Lab Order: N030123
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030123-001A	MW-60-125-Q218	Groundwater	5/2/2018 9:51:00 AM	5/2/2018	5/21/2018
N030123-001B	MW-60-125-Q218	Groundwater	5/2/2018 9:51:00 AM	5/2/2018	5/21/2018
N030123-001C	MW-60-125-Q218	Groundwater	5/2/2018 9:51:00 AM	5/2/2018	5/21/2018
N030123-001D	MW-60-125-Q218	Groundwater	5/2/2018 9:51:00 AM	5/2/2018	5/21/2018
N030123-002A	MW-60BR-245-LF_D-Q218	Groundwater	5/2/2018 12:24:00 PM	5/2/2018	5/21/2018
N030123-002B	MW-60BR-245-LF_D-Q218	Groundwater	5/2/2018 12:24:00 PM	5/2/2018	5/21/2018
N030123-002C	MW-60BR-245-LF_D-Q218	Groundwater	5/2/2018 12:24:00 PM	5/2/2018	5/21/2018
N030123-002D	MW-60BR-245-LF_D-Q218	Groundwater	5/2/2018 12:24:00 PM	5/2/2018	5/21/2018
N030123-003A	MW-60BR-245-LF_S-Q218	Groundwater	5/2/2018 11:35:00 AM	5/2/2018	5/21/2018
N030123-003B	MW-60BR-245-LF_S-Q218	Groundwater	5/2/2018 11:35:00 AM	5/2/2018	5/21/2018
N030123-003C	MW-60BR-245-LF_S-Q218	Groundwater	5/2/2018 11:35:00 AM	5/2/2018	5/21/2018
N030123-003D	MW-60BR-245-LF_S-Q218	Groundwater	5/2/2018 11:35:00 AM	5/2/2018	5/21/2018
N030123-004A	MW-60BR-245-3V-Q218	Groundwater	5/2/2018 3:41:00 PM	5/2/2018	5/21/2018
N030123-004B	MW-60BR-245-3V-Q218	Groundwater	5/2/2018 3:41:00 PM	5/2/2018	5/21/2018
N030123-004C	MW-60BR-245-3V-Q218	Groundwater	5/2/2018 3:41:00 PM	5/2/2018	5/21/2018
N030123-004D	MW-60BR-245-3V-Q218	Groundwater	5/2/2018 3:41:00 PM	5/2/2018	5/21/2018
N030123-005A	MW-09-Q218	Groundwater	5/2/2018 11:51:00 AM	5/2/2018	5/21/2018
N030123-005B	MW-09-Q218	Groundwater	5/2/2018 11:51:00 AM	5/2/2018	5/21/2018
N030123-005C	MW-09-Q218	Groundwater	5/2/2018 11:51:00 AM	5/2/2018	5/21/2018
N030123-005D	MW-09-Q218	Groundwater	5/2/2018 11:51:00 AM	5/2/2018	5/21/2018
N030123-006A	MW-10-Q218	Groundwater	5/2/2018 10:48:00 AM	5/2/2018	5/21/2018
N030123-006B	MW-10-Q218	Groundwater	5/2/2018 10:48:00 AM	5/2/2018	5/21/2018
N030123-006C	MW-10-Q218	Groundwater	5/2/2018 10:48:00 AM	5/2/2018	5/21/2018
N030123-006D	MW-10-Q218	Groundwater	5/2/2018 10:48:00 AM	5/2/2018	5/21/2018
N030123-007A	MW-11-Q218	Groundwater	5/2/2018 9:43:00 AM	5/2/2018	5/21/2018
N030123-007B	MW-11-Q218	Groundwater	5/2/2018 9:43:00 AM	5/2/2018	5/21/2018
N030123-007C	MW-11-Q218	Groundwater	5/2/2018 9:43:00 AM	5/2/2018	5/21/2018
N030123-007D	MW-11-Q218	Groundwater	5/2/2018 9:43:00 AM	5/2/2018	5/21/2018
N030123-008A	MW-904-Q218	Groundwater	5/2/2018 9:48:00 AM	5/2/2018	5/21/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801D
Lab Order: N030123
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030123-008B	MW-904-Q218	Groundwater	5/2/2018 9:48:00 AM	5/2/2018	5/21/2018
N030123-008C	MW-904-Q218	Groundwater	5/2/2018 9:48:00 AM	5/2/2018	5/21/2018
N030123-008D	MW-904-Q218	Groundwater	5/2/2018 9:48:00 AM	5/2/2018	5/21/2018
N030123-009A	MW-38D-Q218	Groundwater	5/2/2018 11:44:00 AM	5/2/2018	5/21/2018
N030123-009B	MW-38D-Q218	Groundwater	5/2/2018 11:44:00 AM	5/2/2018	5/21/2018
N030123-009C	MW-38D-Q218	Groundwater	5/2/2018 11:44:00 AM	5/2/2018	5/21/2018
N030123-009D	MW-38D-Q218	Groundwater	5/2/2018 11:44:00 AM	5/2/2018	5/21/2018
N030123-010A	MW-38D-SMT-Q218	Groundwater	5/2/2018 11:09:00 AM	5/2/2018	5/21/2018
N030123-010B	MW-38D-SMT-Q218	Groundwater	5/2/2018 11:09:00 AM	5/2/2018	5/21/2018
N030123-010C	MW-38D-SMT-Q218	Groundwater	5/2/2018 11:09:00 AM	5/2/2018	5/21/2018
N030123-010D	MW-38D-SMT-Q218	Groundwater	5/2/2018 11:09:00 AM	5/2/2018	5/21/2018
N030123-011A	MW-38S-Q218	Groundwater	5/2/2018 1:06:00 PM	5/2/2018	5/21/2018
N030123-011B	MW-38S-Q218	Groundwater	5/2/2018 1:06:00 PM	5/2/2018	5/21/2018
N030123-011C	MW-38S-Q218	Groundwater	5/2/2018 1:06:00 PM	5/2/2018	5/21/2018
N030123-011D	MW-38S-Q218	Groundwater	5/2/2018 1:06:00 PM	5/2/2018	5/21/2018
N030123-012A	MW-38S-SMT-Q218	Groundwater	5/2/2018 12:45:00 PM	5/2/2018	5/21/2018
N030123-012B	MW-38S-SMT-Q218	Groundwater	5/2/2018 12:45:00 PM	5/2/2018	5/21/2018
N030123-012C	MW-38S-SMT-Q218	Groundwater	5/2/2018 12:45:00 PM	5/2/2018	5/21/2018
N030123-012D	MW-38S-SMT-Q218	Groundwater	5/2/2018 12:45:00 PM	5/2/2018	5/21/2018
N030123-013A	MW-24A-Q218	Groundwater	5/2/2018 10:00:00 AM	5/2/2018	5/21/2018
N030123-013B	MW-24A-Q218	Groundwater	5/2/2018 10:00:00 AM	5/2/2018	5/21/2018
N030123-013C	MW-24A-Q218	Groundwater	5/2/2018 10:00:00 AM	5/2/2018	5/21/2018
N030123-013D	MW-24A-Q218	Groundwater	5/2/2018 10:00:00 AM	5/2/2018	5/21/2018
N030123-014A	MW-24B-Q218	Groundwater	5/2/2018 9:08:00 AM	5/2/2018	5/21/2018
N030123-014B	MW-24B-Q218	Groundwater	5/2/2018 9:08:00 AM	5/2/2018	5/21/2018
N030123-014C	MW-24B-Q218	Groundwater	5/2/2018 9:08:00 AM	5/2/2018	5/21/2018
N030123-014D	MW-24B-Q218	Groundwater	5/2/2018 9:08:00 AM	5/2/2018	5/21/2018
N030123-015A	MW-21-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018
N030123-015B	MW-21-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018
N030123-015C	MW-21-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018

CLIENT:	ARCADIS U.S., Inc. - California		
Project:	PG&E Topock - GMP, RC000753.801D		**Work Order Sample Summary**
Lab Order:	N030123		
Contract No:			

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030123-015D	MW-21-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018
N030123-016A	MW-71-035-Q218	Groundwater	5/2/2018 3:40:00 PM	5/2/2018	5/21/2018
N030123-016B	MW-71-035-Q218	Groundwater	5/2/2018 3:40:00 PM	5/2/2018	5/21/2018
N030123-016C	MW-71-035-Q218	Groundwater	5/2/2018 3:40:00 PM	5/2/2018	5/21/2018
N030123-016D	MW-71-035-Q218	Groundwater	5/2/2018 3:40:00 PM	5/2/2018	5/21/2018
N030123-017A	MW-66BR-270-Q218	Groundwater	5/2/2018 1:50:00 PM	5/2/2018	5/21/2018
N030123-017B	MW-66BR-270-Q218	Groundwater	5/2/2018 1:50:00 PM	5/2/2018	5/21/2018
N030123-017C	MW-66BR-270-Q218	Groundwater	5/2/2018 1:50:00 PM	5/2/2018	5/21/2018
N030123-017D	MW-66BR-270-Q218	Groundwater	5/2/2018 1:50:00 PM	5/2/2018	5/21/2018
N030123-018A	MW-74-240-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018
N030123-018B	MW-74-240-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018
N030123-018C	MW-74-240-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018
N030123-018D	MW-74-240-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018
N030123-019A	MW-905-Q218	Groundwater	5/2/2018 4:10:00 PM	5/2/2018	5/21/2018
N030123-019B	MW-905-Q218	Groundwater	5/2/2018 4:10:00 PM	5/2/2018	5/21/2018
N030123-019C	MW-905-Q218	Groundwater	5/2/2018 4:10:00 PM	5/2/2018	5/21/2018
N030123-019D	MW-905-Q218	Groundwater	5/2/2018 4:10:00 PM	5/2/2018	5/21/2018
N030123-020A	MW-716-Q218	Groundwater	5/2/2018 4:30:00 PM	5/2/2018	5/21/2018
N030123-021A	MW-717-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018
N030123-022A	MW-718-Q218	Groundwater	5/2/2018 4:30:00 PM	5/2/2018	5/21/2018
N030123-023A	MW-64BR-Q218	Groundwater	5/2/2018 1:08:00 PM	5/2/2018	5/21/2018
N030123-023B	MW-64BR-Q218	Groundwater	5/2/2018 1:08:00 PM	5/2/2018	5/21/2018
N030123-023C	MW-64BR-Q218	Groundwater	5/2/2018 1:08:00 PM	5/2/2018	5/21/2018
N030123-023D	MW-64BR-Q218	Groundwater	5/2/2018 1:08:00 PM	5/2/2018	5/21/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180503E** QC Batch: **R123829** PrepDate Analyst: **LR**							
Specific Conductance	8400	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 12:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 3:41:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180503E** QC Batch: **R123829** PrepDate							Analyst: **LR**
Specific Conductance	3000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	2700	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:43:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180503E** QC Batch: **R123829** PrepDate Analyst: **LR**							
Specific Conductance	2200	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	2200	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	21000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030123
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030123-010

Client Sample ID: MW-38D-SMT-Q218
Collection Date: 5/2/2018 11:09:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
				EPA 120.1			
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	22000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:06:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	1700	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 12:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	1700	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24A-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180503E** QC Batch: **R123829** PrepDate Analyst: **LR**							
Specific Conductance	1700	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180503E** QC Batch: **R123829** PrepDate							Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180503E** QC Batch: **R123829** PrepDate							Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180503F** QC Batch: **R123830** PrepDate							Analyst: **LR**
Specific Conductance	860	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
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ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503F**	QC Batch: **R123830**			PrepDate			Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030123
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030123-023

Client Sample ID: MW-64BR-Q218
Collection Date: 5/2/2018 1:08:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180503F** QC Batch: **R123830** PrepDate							Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030123-003BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123829**
Client ID: **ZZZZZZ** Batch ID: **R123829** TestNo: **EPA 120.1** Analysis Date: **5/3/2018** SeqNo: **3015754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	16470.000	0.10						16420	0.304	2	

Sample ID **N030123-010BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123829**
Client ID: **ZZZZZZ** Batch ID: **R123829** TestNo: **EPA 120.1** Analysis Date: **5/3/2018** SeqNo: **3015762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	21400.000	0.10						21500	0.466	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030123-023BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123830**
Client ID: **ZZZZZZ** Batch ID: **R123830** TestNo: **EPA 120.1** Analysis Date: **5/3/2018** SeqNo: **3015774**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13200.000	0.10						13100	0.760	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180507A** QC Batch: **R123917** PrepDate Analyst: **RAB**							
Hexavalent Chromium	510	3.3	20		µg/L	100	5/7/2018 12:03 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**							
Chromium	470	0.65	5.0		µg/L	5	5/16/2018 08:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 12:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180507A**	QC Batch: **R123917**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.2	0.17	1.0		µg/L	5	5/7/2018 12:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	1.7	0.13	1.0		µg/L	1	5/16/2018 09:57 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180507A** QC Batch: **R123917** PrepDate							Analyst: **RAB**
Hexavalent Chromium	1.1	0.17	1.0		µg/L	5	5/7/2018 12:41 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018**							Analyst: **CEI**
Chromium	1.5	0.13	1.0		µg/L	1	5/16/2018 10:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 3:41:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180507A**	QC Batch: **R123917**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	73	0.33	2.0		µg/L	10	5/7/2018 01:00 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	67	0.13	1.0		µg/L	1	5/16/2018 10:19 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180507A**	QC Batch: **R123917**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	150	0.66	4.0		µg/L	20	5/7/2018 01:37 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	140	0.13	1.0		µg/L	1	5/16/2018 10:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180507A** QC Batch: **R123917** PrepDate							Analyst: **RAB**
Hexavalent Chromium	170	0.66	4.0		µg/L	20	5/7/2018 01:56 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018**							Analyst: **CEI**
Chromium	160	0.13	1.0		µg/L	1	5/16/2018 10:41 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:43:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180507A**	QC Batch: **R123917**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	57	0.33	2.0		µg/L	10	5/7/2018 02:37 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	53	0.13	1.0		µg/L	1	5/16/2018 11:03 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180507A** QC Batch: **R123917**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	58	0.33	2.0		µg/L	10	5/7/2018 02:56 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	55	0.13	1.0		µg/L	1	5/16/2018 11:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180507A** QC Batch: **R123917**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	15	0.17	1.0		µg/L	5	5/7/2018 03:34 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	14	0.13	1.0		µg/L	1	5/16/2018 11:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:09:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180507A**	QC Batch: **R123917**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	15	0.17	1.0		µg/L	5	5/7/2018 03:53 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	14	0.13	1.0		µg/L	1	5/16/2018 11:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:06:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180507A** QC Batch: **R123917**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.1	0.033	0.20		µg/L	1	5/7/2018 04:11 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	1.3	0.13	1.0		µg/L	1	5/16/2018 11:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 12:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180507A** QC Batch: **R123917**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.8	0.033	0.20		µg/L	1	5/7/2018 04:30 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	2.0	0.13	1.0		µg/L	1	5/17/2018 12:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24A-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180507A**	QC Batch: **R123917**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/7/2018 04:49 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate	**5/8/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 12:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180507A** QC Batch: **R123917**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	200	1.7	10		µg/L	50	5/7/2018 05:27 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	200	0.65	5.0		µg/L	5	5/17/2018 12:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180508A** QC Batch: **R123962** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/8/2018 01:32 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018**							Analyst: **CEI**
Chromium	1.0	0.13	1.0		µg/L	1	5/17/2018 12:43 AM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180508A**	QC Batch: **R123962**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/8/2018 01:51 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 12:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180508A** QC Batch: **R123962** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/8/2018 04:30 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 01:17 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180508A** QC Batch: **R123962** PrepDate							Analyst: **RAB**
Hexavalent Chromium	0.46	0.033	0.20		µg/L	1	5/8/2018 11:37 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 01:28 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180508A** QC Batch: **R123962**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/8/2018 04:51 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 01:39 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-716-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180508A**	QC Batch: **R123962**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/8/2018 05:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-717-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-021		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180508A** QC Batch: **R123962** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/8/2018 05:50 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-718-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-022		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180509A**	QC Batch: **R123964**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/9/2018 08:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-023		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180509A** QC Batch: **R123964**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/9/2018 09:06 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 01:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123917** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **PBW** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020230**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123917** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **LCSW** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020231**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.144	0.20	5.000	0	103	90	110				

Sample ID **N030123-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1029.810	20	500.0	510.9	104	90	110				

Sample ID **N030123-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.149	1.0	5.000	1.173	99.5	90	110				

Sample ID **N030123-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.024	1.0	5.000	1.072	99.0	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030123-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	122.985	2.0	50.00	72.82	100	90	110				

Sample ID **N030123-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	250.858	4.0	100.0	145.2	106	90	110				

Sample ID **N030123-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	278.160	4.0	100.0	172.9	105	90	110				

Sample ID **N030121-001BDUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	467.550	20						476.1	1.81	20	

Sample ID **N030123-004AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	124.708	2.0	50.00	72.82	104	90	110	123.0	1.39	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030123-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	107.305	2.0	50.00	56.91	101	90	110				

Sample ID **N030123-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	109.518	2.0	50.00	58.18	103	90	110				

Sample ID **N030123-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.635	1.0	25.00	14.66	99.9	90	110				

Sample ID **N030123-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.618	1.0	25.00	14.51	100	90	110				

Sample ID **N030123-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.109	0.20	1.000	1.100	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030123-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.860	0.20	1.000	1.800	106	90	110				

Sample ID **N030123-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0.08640	100	90	110				

Sample ID **N030123-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020276**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	453.260	10	250.0	196.7	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123962** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **PBW** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123962** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **LCSW** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.175	0.20	5.000	0	104	90	110				

Sample ID **N030123-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.514	0.20	1.000	0.4578	106	90	110				

Sample ID **N030123-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.534	1.0	5.000	0.5225	100	90	110				

Sample ID **N030123-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.678	1.0	5.000	0	93.6	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030185-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	857.510	20	500.0	330.2	105	90	110				

Sample ID **N030185-004AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	853.570	20	500.0	330.2	105	90	110	857.5	0.461	20	

Sample ID **N030185-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	259.550	4.0	100.0	154.3	105	90	110				

Sample ID **N030148-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.763	0.20						5.765	0.0278	20	

Sample ID **N030185-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	258.758	4.0	100.0	152.8	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030123-017AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.905	1.0	5.000	0	98.1	90	110				

Sample ID **N030123-019AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.737	1.0	5.000	0.7380	100	90	110				

Sample ID **N030123-020AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.160	0.20	1.000	0.1266	103	90	110				

Sample ID **N030123-021AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.187	0.20	1.000	0.1096	108	90	110				

Sample ID **N030185-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.569	1.0	5.000	0	91.4	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030185-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.147	0.20	1.000	0.1216	103	90	110				

Sample ID **N030185-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0	108	90	110				

Sample ID **N030185-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.177	0.20	1.000	0.1164	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123964** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **PBW** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123964** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **LCSW** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.213	0.20	5.000	0	104	90	110				

Sample ID **N030186-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.131	0.20	1.000	0.07100	106	90	110				

Sample ID **N030186-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1019.430	20	500.0	489.2	106	90	110				

Sample ID **N030186-002AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1013.550	20	500.0	489.2	105	90	110	1019	0.578	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030256-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N030123-022AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.034	0.20	1.000	0	103	90	110				

Sample ID **N030123-023AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.968	1.0	5.000	0	99.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-68011** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124102**
Client ID: **PBW** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3028849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-68011** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124102**
Client ID: **LCSW** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3028850**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.638	1.0	10.00	0	96.4	85	115				

Sample ID **N030123-001D-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3028857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	488.643	5.0	10.00	474.3	144	75	125				S

Sample ID **N030123-001D-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3028864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	490.666	5.0	10.00	474.3	164	75	125	488.6	0.413	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	3.0	0.16	0.25		mg/L	5	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 12:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/11/2018

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.063	0.032	0.050		mg/L	1	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 3:41:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.16	0.032	0.050		mg/L	1	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180511E** QC Batch: **R124008**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	11	0.32	0.50		mg/L	10	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	10	0.32	0.50		mg/L	10	5/11/2018

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:43:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180511E**	QC Batch: **R124008**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	5.0	0.32	0.50		mg/L	10	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180517B**	QC Batch: **R124118**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	5.5	0.32	0.50		mg/L	10	5/17/2018

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:09:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:06:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180517B**	QC Batch: **R124118**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	4.7	0.16	0.25		mg/L	5	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 12:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	4.5	0.16	0.25		mg/L	5	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24A-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180517B**	QC Batch: **R124118**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.051	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180517B**	QC Batch: **R124118**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	1.4	0.063	0.10		mg/L	2	5/17/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	1.5	0.063	0.10		mg/L	2	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	2.2	0.063	0.10		mg/L	2	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

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Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	1.6	0.063	0.10		mg/L	2	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-023		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180517B**	QC Batch: **R124118**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124008** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **PBW** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124008** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **LCSW** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.555	0.050	0.5000	0	111	85	115				

Sample ID **N030096-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **ZZZZZZ** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.520	0.25						3.684	4.55	20	

Sample ID **N030096-002CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **ZZZZZZ** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	22.446	1.0	10.00	10.62	118	75	125				

Sample ID **N030096-002CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **ZZZZZZ** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023831**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	20.726	1.0	10.00	10.62	101	75	125	22.45	7.97	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124118** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **PBW** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124118** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **LCSW** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.463	0.050	0.5000	0	92.7	85	115				

Sample ID **N030123-012CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **ZZZZZZ** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	4.464	0.25						4.492	0.636	20	

Sample ID **N030123-008CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **ZZZZZZ** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.933	0.50	5.000	5.532	88.0	75	125				

Sample ID **N030123-008CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **ZZZZZZ** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	11.116	0.50	5.000	5.532	112	75	125	9.933	11.2	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate	**5/8/2018**		Analyst: **CEI**
Arsenic	1.7	0.081	0.10		µg/L	1	5/16/2018 08:39 PM
Manganese	2.9	0.26	0.50		µg/L	1	5/16/2018 08:39 PM
Molybdenum	21	1.1	2.5		µg/L	5	5/16/2018 08:45 PM
Selenium	4.4	0.36	0.50		µg/L	1	5/16/2018 08:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030123
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030123-002

Client Sample ID: MW-60BR-245-LF_D-Q218
Collection Date: 5/2/2018 12:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate	**5/8/2018**		Analyst: **CEI**
Arsenic	5.2	0.081	0.10		µg/L	1	5/16/2018 09:57 PM
Manganese	21	0.26	0.50		µg/L	1	5/16/2018 09:57 PM
Molybdenum	60	1.1	2.5		µg/L	5	5/16/2018 10:02 PM
Selenium	2.0	0.36	0.50		µg/L	1	5/16/2018 09:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030123
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030123-003

Client Sample ID: MW-60BR-245-LF_S-Q218
Collection Date: 5/2/2018 11:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate	**5/8/2018**		Analyst: **CEI**
Arsenic	4.9	0.081	0.10		µg/L	1	5/16/2018 10:08 PM
Manganese	20	0.26	0.50		µg/L	1	5/16/2018 10:08 PM
Molybdenum	61	1.1	2.5		µg/L	5	5/16/2018 10:13 PM
Selenium	2.3	0.36	0.50		µg/L	1	5/16/2018 10:08 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 3:41:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-004		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	8.2	0.081	0.10		µg/L	1	5/16/2018 10:19 PM
Manganese	9.6	0.26	0.50		µg/L	1	5/16/2018 10:19 PM
Molybdenum	57	1.1	2.5		µg/L	5	5/16/2018 10:25 PM
Selenium	2.6	0.36	0.50		µg/L	1	5/16/2018 10:19 PM

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate		**5/8/2018**	Analyst: **CEI**
Arsenic	1.7	0.081	0.10		µg/L	1	5/16/2018 10:30 PM
Manganese	ND	0.26	0.50		µg/L	1	5/16/2018 10:30 PM
Molybdenum	4.3	0.21	0.50		µg/L	1	5/16/2018 10:30 PM
Selenium	5.0	0.36	0.50		µg/L	1	5/16/2018 10:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate		**5/8/2018**	Analyst: **CEI**
Molybdenum	21	0.21	0.50		µg/L	1	5/16/2018 10:41 PM
Selenium	6.1	0.36	0.50		µg/L	1	5/16/2018 10:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030123
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030123-007

Client Sample ID: MW-11-Q218
Collection Date: 5/2/2018 9:43:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate **5/8/2018**			Analyst: **CEI**
Arsenic	1.3	0.081	0.10		µg/L	1	5/16/2018 11:03 PM
Manganese	ND	0.26	0.50		µg/L	1	5/16/2018 11:03 PM
Molybdenum	5.2	0.21	0.50		µg/L	1	5/16/2018 11:03 PM
Selenium	4.6	0.36	0.50		µg/L	1	5/16/2018 11:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

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Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate	**5/8/2018**		Analyst: **CEI**
Arsenic	1.3	0.081	0.10		µg/L	1	5/16/2018 11:15 PM
Manganese	ND	0.26	0.50		µg/L	1	5/16/2018 11:15 PM
Molybdenum	5.3	0.21	0.50		µg/L	1	5/16/2018 11:15 PM
Selenium	4.7	0.36	0.50		µg/L	1	5/16/2018 11:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate		**5/8/2018**	Analyst: **CEI**
Arsenic	7.4	0.081	0.10		µg/L	1	5/16/2018 11:26 PM
Manganese	38	0.26	0.50		µg/L	1	5/16/2018 11:26 PM
Molybdenum	88	1.1	2.5		µg/L	5	5/16/2018 11:31 PM
Selenium	ND	0.36	0.50		µg/L	1	5/16/2018 11:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Client Sample ID: MW-38D-SMT-Q218
Lab Order: N030123
Collection Date: 5/2/2018 11:09:00 AM
Project: PG&E Topock - GMP, RC000753.801D
Matrix: GROUNDWATER
Lab ID: N030123-010

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate **5/8/2018**			Analyst: **CEI**
Arsenic	7.2	0.081	0.10		µg/L	1	5/16/2018 11:37 PM
Manganese	29	0.26	0.50		µg/L	1	5/16/2018 11:37 PM
Molybdenum	85	1.1	2.5		µg/L	5	5/16/2018 11:42 PM
Selenium	ND	0.36	0.50		µg/L	1	5/16/2018 11:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:06:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate **5/8/2018**			Analyst: **CEI**
Arsenic	6.4	0.081	0.10		µg/L	1	5/16/2018 11:48 PM
Manganese	46	0.26	0.50		µg/L	1	5/16/2018 11:48 PM
Molybdenum	32	0.21	0.50		µg/L	1	5/16/2018 11:48 PM
Selenium	3.2	0.36	0.50		µg/L	1	5/16/2018 11:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 12:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-012		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	6.3	0.081	0.10		µg/L	1	5/17/2018 12:10 AM
Manganese	37	0.26	0.50		µg/L	1	5/17/2018 12:10 AM
Molybdenum	31	0.21	0.50		µg/L	1	5/17/2018 12:10 AM
Selenium	3.7	0.36	0.50		µg/L	1	5/17/2018 12:10 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24A-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-013		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.081	0.10		µg/L	1	5/17/2018 12:21 AM
Manganese	16	0.26	0.50		µg/L	1	5/17/2018 12:21 AM
Molybdenum	140	0.21	0.50		µg/L	1	5/17/2018 12:21 AM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 12:21 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-014		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	3.1	0.081	0.10		µg/L	1	5/17/2018 12:32 AM
Manganese	100	0.26	0.50		µg/L	1	5/17/2018 12:32 AM
Molybdenum	62	1.1	2.5		µg/L	5	5/17/2018 12:38 AM
Selenium	2.0	0.36	0.50		µg/L	1	5/17/2018 12:32 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate		**5/8/2018**	Analyst: **CEI**
Molybdenum	59	0.21	0.50		µg/L	1	5/17/2018 12:43 AM
Selenium	25	0.36	0.50		µg/L	1	5/17/2018 12:43 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030123
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030123-016

Client Sample ID: MW-71-035-Q218
Collection Date: 5/2/2018 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate **5/8/2018**			Analyst: **CEI**
Arsenic	2.7	0.081	0.10		µg/L	1	5/17/2018 12:55 AM
Manganese	1800	6.4	12		µg/L	25	5/17/2018 04:51 PM
Molybdenum	21	1.1	2.5		µg/L	5	5/17/2018 01:11 AM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 12:55 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030123
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030123-017

Client Sample ID: MW-66BR-270-Q218
Collection Date: 5/2/2018 1:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate	**5/8/2018**		Analyst: **CEI**
Arsenic	ND	0.081	0.10		µg/L	1	5/17/2018 01:17 AM
Manganese	620	1.3	2.5		µg/L	5	5/17/2018 01:22 AM
Molybdenum	3.1	1.1	2.5		µg/L	5	5/17/2018 01:22 AM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 01:17 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-018		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	8.1	0.081	0.10		µg/L	1	5/17/2018 01:28 AM
Manganese	4.3	0.26	0.50		µg/L	1	5/17/2018 01:28 AM
Molybdenum	23	0.21	0.50		µg/L	1	5/17/2018 01:28 AM
Selenium	2.3	0.36	0.50		µg/L	1	5/17/2018 01:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-019		

DISSOLVED METALS BY ICP-MS EPA 3010A EPA 6020

RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Molybdenum	59	1.1	2.5		µg/L	5	5/17/2018 01:45 AM
Selenium	22	0.36	0.50		µg/L	1	5/17/2018 01:39 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-023		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	3.5	0.081	0.10		µg/L	1	5/17/2018 01:50 AM
Manganese	850	1.3	2.5		µg/L	5	5/17/2018 01:56 AM
Molybdenum	65	1.1	2.5		µg/L	5	5/17/2018 01:56 AM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 01:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-68011** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124102**
Client ID: **PBW** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3028994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-68011** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124102**
Client ID: **LCSW** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3028995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.015	0.10	10.00	0	100	85	115				
Manganese	106.409	0.50	100.0	0	106	85	115				
Molybdenum	10.775	0.50	10.00	0	108	85	115				
Selenium	10.066	0.50	10.00	0	101	85	115				

Sample ID **N030123-001D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3029001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.554	0.10	10.00	1.665	98.9	75	125				
Manganese	95.780	0.50	100.0	2.928	92.9	75	125				
Selenium	13.846	0.50	10.00	4.429	94.2	75	125				

Sample ID **N030123-001D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3029002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	32.990	2.5	10.00	21.21	118	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030123-001D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3029003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.826	0.10	10.00	1.665	102	75	125	11.55	2.33	20	
Manganese	95.216	0.50	100.0	2.928	92.3	75	125	95.78	0.591	20	
Selenium	13.974	0.50	10.00	4.429	95.4	75	125	13.85	0.917	20	

Sample ID **N030123-001D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3029009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	33.181	2.5	10.00	21.21	120	75	125	32.99	0.577	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

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Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client:	Arcadis
Address:	1410 Rocky Ridge Dr # 330
Address:	Roseville, CA 95661
Phone:	916-786-3302
Fax:	
Submitted By:	Gantt Jeffers
Title:	Geologist II
Signature:	[signature]
Date:	5/2/2018

I hereby authorize ASSET Labs to perform the tests indicated below.

Project Name:	PG&E Topock - GMP
Project Number:	RC000753.801D

Report to:	Dan Bush
Company:	Arcadis
Email:	dan.bush@arcadis.com; daniel.moore@critigen.com
Address:	1410 Rocky Ridge Dr # 330, Roseville, CA 95661
Phone:	916-786-3302
Fax:	
Sampled By:	Jason Mahn

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Signature:	[signature]
Date:	5/2/2018

Bill to:	Marty Bloes
Address:	
Address:	
Email to:	mbloes@pivox.com
P.O.#	
Phone:	949-727-1400, ext 200
Fax:	

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		✓
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	7	
6. Method of Cooling: ICE		
Sample Temp: 3.1°C / 2.5°C / 2.1°C		
Courier:		
Tracking No.:		

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030123-01	MW-60-125-Q218	5/2/2018	9:51		X			X			X	X					E	4	P	BNS	
2	-02	MW-60BR-245-LF_D-Q218	5/2/2018	12:24		X			X			X	X					E	4	P	BNS	
3	-03	MW-60BR-245-LF_S-Q218	5/2/2018	11:35		X			X			X	X					E	4	P	BNS	
4	-04	MW-60BR-245-3V-Q218	5/2/2018	15:41		X			X			X	X					E	4	P	BNS	
5	-05 ✓	MW-09-Q218	5/2/2018	11:51		X			X			X	X					E	4	P	BNS	
6	-06 ✓	MW-10-Q218	5/2/2018	10:48		X			X			X		X				E	4	P	BNS	
7	-07 ✓	MW-11-Q218	5/2/2018	9:43		X			X			X	X					E	4	P	BNS	
8	-08 ✓	MW-904-Q218	5/2/2018	9:48		X			X			X	X					E	4	P	BNS	
9	-09 ✓	MW-38D-Q218	5/2/2018	11:44		X			X			X	X					E	4	P	BNS	
10	-10 ✓	MW-38D-SMT-Q218	5/2/2018	11:09		X			X			X	X					E	4	P	BNS	

Reliquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
[signature] Gantt Jeffers	5.2.18 1730	[signature]	5/2/18 17:30
[signature]	5/2/18 19:15	[signature]	5/2/18 19:15

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy   Yellow=Customer's Copy

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: Date: 5/2/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*	
Project Name: PG&E Topock - GMP	Signature: Date: 5/2/2018	
Project Number: RC000753.801D		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace	✓	
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	2	
6. Method of Cooling: ICE		
Sample Temp: 3.1°C / 2.5°C / 2.1°C		
Courier:		
Tracking No.:		

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030123-11 ✓	MW-38S-Q218	5/2/2018	13:06		X			X			X	X					E	4	P	BNS	
2	-12 ✓	MW-38S-SMT-Q218	5/2/2018	12:45		X			X			X	X					E	4	P	BNS	
3	-13 ✓	MW-24A-Q218	5/2/2018	10:00		X			X			X	X					E	4	P	BNS	
4	-14 ✓	MW-24B-Q218	5/2/2018	9:08		X			X			X	X					E	4	P	BNS	
5	-15 ✓	MW-21-Q218	5/2/2018	16:00			X		X			X		X				E	5	P	BNS	
6	-16 ✓	MW-71-035-Q218	5/2/2018	15:40		X			X			X	X					E	4	P	BNS	
7	-17 ✓	MW-66BR-270-Q218	5/2/2018	13:50		X			X			X	X					E	4	P	BNS	
8	-18 ✓	MW-74-240-Q218	5/2/2018	16:00		X			X			X	X					E	4	P	BNS	
9	-19 ✓	MW-905-Q218	5/2/2018	16:10			X		X			X		X				E	5	P	BNS	
10	-20	MW-716-Q218	5/2/2018	16:30		X												E	1	P	B	

Reliquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
Gantt Jeffers	5.2.18 1730		5/2/18 17:30
	5/2/18 19:15		5/2/18 19:15

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TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
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Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

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CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com, daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#:
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: [signature] Date: 5/2/2018	Sampled By: Jason Mahn	
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Project Name: PG&E Topock - GMP	Signature: [signature] Date: 5/2/2018	
Project Number: RC000753.801D		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		✓
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	2	
6. Method of Cooling: ICE		
Sample Temp: 3.1°C / 2.5°C / 2.1°C		
Courier:		
Tracking No.:		

Matrix: Ground (x), Sediment, Potable, Soil, NPDES, Other Solid, Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly	Specific Conductance (EPA 120.1) — 1 liter poly	Total Dissolved Solids (SM92540) — 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 — 125 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030123-21	MW-717-Q218	5/2/2018	16:00		X												E	1	P	B	
2	-22	MW-718-Q218	5/2/2018	16:30		X												E	1	P	B	
3	-23	MW-64BR-Q218	5/2/2018	13:08		X			X			X	X					E	4	P	BNS	
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
[signature] Gantt Jeffers	5.2.18 1730	[signature]	5/2/18 17:30
[signature]	5/2/18 19:15	[signature]	5/2/18 19:15

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Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 5/2/2018 Workorder: N030123

Rep sample Temp (Deg C): 3.1/2.5/2.1 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

	Yes	No	Not Present / NA
1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

For:

Checklist Completed By: DA YLT 5/9/2018

Reviewed By: [signature] 05/15/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/1/2018 6:08 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>, Kalib Sumter <Kalib.Sumter@critigen.com>, Dan Moore <Daniel.Moore@critigen.com>

Hi Yoandra,
Method 6020 is acceptable.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, April 30, 2018 8:48 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)

Hi Laura,

Please kindly check the attached COCs. Some samples are requested to be analyzed for As, Cr, Mn, Mo and Se by 6010.

Please kindly confirm if they can be analyzed by 6020 instead of 6010, as we have been doing before.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

ASSET Laboratories

WORK ORDER Summary

03-May-18

WorkOrder: N030123

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/2/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030123-001A	MW-60-125-Q218	5/2/2018 9:51:00 AM	5/16/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-001B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-001C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-001D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-002A	MW-60BR-245-LF_D-Q218	5/2/2018 12:24:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-002B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-002C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-002D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-003A	MW-60BR-245-LF_S-Q218	5/2/2018 11:35:00 AM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-003B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-003C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-003D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-004A	MW-60BR-245-3V-Q218	5/2/2018 3:41:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-004B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-004C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

03-May-18

WorkOrder: N030123

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/2/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030123-004D	MW-60BR-245-3V-Q218	5/2/2018 3:41:00 PM	5/16/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-005A	MW-09-Q218	5/2/2018 11:51:00 AM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-005B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-005C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-005D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-006A	MW-10-Q218	5/2/2018 10:48:00 AM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-006B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-006C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-006D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-007A	MW-11-Q218	5/2/2018 9:43:00 AM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-007B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-007C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-007D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

03-May-18

WorkOrder: N030123

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/2/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030123-008A	MW-904-Q218	5/2/2018 9:48:00 AM	5/16/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-008B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-008C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-008D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-009A	MW-38D-Q218	5/2/2018 11:44:00 AM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-009B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-009C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-009D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-010A	MW-38D-SMT-Q218	5/2/2018 11:09:00 AM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-010B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-010C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-010D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-011A	MW-38S-Q218	5/2/2018 1:06:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-011B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-011C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

03-May-18

WorkOrder: N030123

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/2/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030123-011D	MW-38S-Q218	5/2/2018 1:06:00 PM	5/16/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-012A	MW-38S-SMT-Q218	5/2/2018 12:45:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-012B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-012C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-012D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-013A	MW-24A-Q218	5/2/2018 10:00:00 AM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-013B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-013C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-013D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-014A	MW-24B-Q218	5/2/2018 9:08:00 AM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-014B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-014C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-014D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

03-May-18

WorkOrder: N030123

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/2/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030123-015A	MW-21-Q218	5/2/2018 4:00:00 PM	5/16/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-015B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-015C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-015D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-016A	MW-71-035-Q218	5/2/2018 3:40:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-016B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-016C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-016D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-017A	MW-66BR-270-Q218	5/2/2018 1:50:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-017B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-017C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-017D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-018A	MW-74-240-Q218	5/2/2018 4:00:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-018B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-018C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

03-May-18

WorkOrder: N030123

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/2/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030123-018D	MW-74-240-Q218	5/2/2018 4:00:00 PM	5/16/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-019A	MW-905-Q218	5/2/2018 4:10:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-019B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-019C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-019D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-020A	MW-716-Q218	5/2/2018 4:30:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-021A	MW-717-Q218	5/2/2018 4:00:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-022A	MW-718-Q218	5/2/2018 4:30:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-023A	MW-64BR-Q218	5/2/2018 1:08:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-023B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-023C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-023D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-024A	FOLDER	5/16/2018	5/16/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/16/2018		Folder	Folder	☐	☐	☐	LAB
			5/16/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP
Project No.: RC000753.801D

ASSET Laboratories Work Order:
N030123

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N030123

May 21, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030123

RE: PG&E Topock - GMP, RC000753.801D

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 02, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.801D
Lab Order:	N030123

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Since the actual result of total dissolved chromium (1.0 ug/L) differs with hexavalent chromium (0.52 ug/L) by no more 0.7 ug/L for sample N030123-015 (MW-21-Q218), reanalysis of the sample was not necessary.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for most of the samples due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N030123-001D-MS and N030123-001D-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Since the actual result of total dissolved chromium (1.0 ug/L) differs with hexavalent chromium (0.52 ug/L) by no more 0.7 ug/L for sample N030123-015 (MW-21-Q218), reanalysis of the sample was not necessary.

ASSET Laboratories

Date: *21-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801D
Lab Order: N030123
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030123-001A	MW-60-125-Q218	Groundwater	5/2/2018 9:51:00 AM	5/2/2018	5/21/2018
N030123-001B	MW-60-125-Q218	Groundwater	5/2/2018 9:51:00 AM	5/2/2018	5/21/2018
N030123-001C	MW-60-125-Q218	Groundwater	5/2/2018 9:51:00 AM	5/2/2018	5/21/2018
N030123-001D	MW-60-125-Q218	Groundwater	5/2/2018 9:51:00 AM	5/2/2018	5/21/2018
N030123-002A	MW-60BR-245-LF_D-Q218	Groundwater	5/2/2018 12:24:00 PM	5/2/2018	5/21/2018
N030123-002B	MW-60BR-245-LF_D-Q218	Groundwater	5/2/2018 12:24:00 PM	5/2/2018	5/21/2018
N030123-002C	MW-60BR-245-LF_D-Q218	Groundwater	5/2/2018 12:24:00 PM	5/2/2018	5/21/2018
N030123-002D	MW-60BR-245-LF_D-Q218	Groundwater	5/2/2018 12:24:00 PM	5/2/2018	5/21/2018
N030123-003A	MW-60BR-245-LF_S-Q218	Groundwater	5/2/2018 11:35:00 AM	5/2/2018	5/21/2018
N030123-003B	MW-60BR-245-LF_S-Q218	Groundwater	5/2/2018 11:35:00 AM	5/2/2018	5/21/2018
N030123-003C	MW-60BR-245-LF_S-Q218	Groundwater	5/2/2018 11:35:00 AM	5/2/2018	5/21/2018
N030123-003D	MW-60BR-245-LF_S-Q218	Groundwater	5/2/2018 11:35:00 AM	5/2/2018	5/21/2018
N030123-004A	MW-60BR-245-3V-Q218	Groundwater	5/2/2018 3:41:00 PM	5/2/2018	5/21/2018
N030123-004B	MW-60BR-245-3V-Q218	Groundwater	5/2/2018 3:41:00 PM	5/2/2018	5/21/2018
N030123-004C	MW-60BR-245-3V-Q218	Groundwater	5/2/2018 3:41:00 PM	5/2/2018	5/21/2018
N030123-004D	MW-60BR-245-3V-Q218	Groundwater	5/2/2018 3:41:00 PM	5/2/2018	5/21/2018
N030123-005A	MW-09-Q218	Groundwater	5/2/2018 11:51:00 AM	5/2/2018	5/21/2018
N030123-005B	MW-09-Q218	Groundwater	5/2/2018 11:51:00 AM	5/2/2018	5/21/2018
N030123-005C	MW-09-Q218	Groundwater	5/2/2018 11:51:00 AM	5/2/2018	5/21/2018
N030123-005D	MW-09-Q218	Groundwater	5/2/2018 11:51:00 AM	5/2/2018	5/21/2018
N030123-006A	MW-10-Q218	Groundwater	5/2/2018 10:48:00 AM	5/2/2018	5/21/2018
N030123-006B	MW-10-Q218	Groundwater	5/2/2018 10:48:00 AM	5/2/2018	5/21/2018
N030123-006C	MW-10-Q218	Groundwater	5/2/2018 10:48:00 AM	5/2/2018	5/21/2018
N030123-006D	MW-10-Q218	Groundwater	5/2/2018 10:48:00 AM	5/2/2018	5/21/2018
N030123-007A	MW-11-Q218	Groundwater	5/2/2018 9:43:00 AM	5/2/2018	5/21/2018
N030123-007B	MW-11-Q218	Groundwater	5/2/2018 9:43:00 AM	5/2/2018	5/21/2018
N030123-007C	MW-11-Q218	Groundwater	5/2/2018 9:43:00 AM	5/2/2018	5/21/2018
N030123-007D	MW-11-Q218	Groundwater	5/2/2018 9:43:00 AM	5/2/2018	5/21/2018
N030123-008A	MW-904-Q218	Groundwater	5/2/2018 9:48:00 AM	5/2/2018	5/21/2018

CLIENT:	ARCADIS U.S., Inc. - California		
Project:	PG&E Topock - GMP, RC000753.801D		**Work Order Sample Summary**
Lab Order:	N030123		
Contract No:			

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030123-008B	MW-904-Q218	Groundwater	5/2/2018 9:48:00 AM	5/2/2018	5/21/2018
N030123-008C	MW-904-Q218	Groundwater	5/2/2018 9:48:00 AM	5/2/2018	5/21/2018
N030123-008D	MW-904-Q218	Groundwater	5/2/2018 9:48:00 AM	5/2/2018	5/21/2018
N030123-009A	MW-38D-Q218	Groundwater	5/2/2018 11:44:00 AM	5/2/2018	5/21/2018
N030123-009B	MW-38D-Q218	Groundwater	5/2/2018 11:44:00 AM	5/2/2018	5/21/2018
N030123-009C	MW-38D-Q218	Groundwater	5/2/2018 11:44:00 AM	5/2/2018	5/21/2018
N030123-009D	MW-38D-Q218	Groundwater	5/2/2018 11:44:00 AM	5/2/2018	5/21/2018
N030123-010A	MW-38D-SMT-Q218	Groundwater	5/2/2018 11:09:00 AM	5/2/2018	5/21/2018
N030123-010B	MW-38D-SMT-Q218	Groundwater	5/2/2018 11:09:00 AM	5/2/2018	5/21/2018
N030123-010C	MW-38D-SMT-Q218	Groundwater	5/2/2018 11:09:00 AM	5/2/2018	5/21/2018
N030123-010D	MW-38D-SMT-Q218	Groundwater	5/2/2018 11:09:00 AM	5/2/2018	5/21/2018
N030123-011A	MW-38S-Q218	Groundwater	5/2/2018 1:06:00 PM	5/2/2018	5/21/2018
N030123-011B	MW-38S-Q218	Groundwater	5/2/2018 1:06:00 PM	5/2/2018	5/21/2018
N030123-011C	MW-38S-Q218	Groundwater	5/2/2018 1:06:00 PM	5/2/2018	5/21/2018
N030123-011D	MW-38S-Q218	Groundwater	5/2/2018 1:06:00 PM	5/2/2018	5/21/2018
N030123-012A	MW-38S-SMT-Q218	Groundwater	5/2/2018 12:45:00 PM	5/2/2018	5/21/2018
N030123-012B	MW-38S-SMT-Q218	Groundwater	5/2/2018 12:45:00 PM	5/2/2018	5/21/2018
N030123-012C	MW-38S-SMT-Q218	Groundwater	5/2/2018 12:45:00 PM	5/2/2018	5/21/2018
N030123-012D	MW-38S-SMT-Q218	Groundwater	5/2/2018 12:45:00 PM	5/2/2018	5/21/2018
N030123-013A	MW-24A-Q218	Groundwater	5/2/2018 10:00:00 AM	5/2/2018	5/21/2018
N030123-013B	MW-24A-Q218	Groundwater	5/2/2018 10:00:00 AM	5/2/2018	5/21/2018
N030123-013C	MW-24A-Q218	Groundwater	5/2/2018 10:00:00 AM	5/2/2018	5/21/2018
N030123-013D	MW-24A-Q218	Groundwater	5/2/2018 10:00:00 AM	5/2/2018	5/21/2018
N030123-014A	MW-24B-Q218	Groundwater	5/2/2018 9:08:00 AM	5/2/2018	5/21/2018
N030123-014B	MW-24B-Q218	Groundwater	5/2/2018 9:08:00 AM	5/2/2018	5/21/2018
N030123-014C	MW-24B-Q218	Groundwater	5/2/2018 9:08:00 AM	5/2/2018	5/21/2018
N030123-014D	MW-24B-Q218	Groundwater	5/2/2018 9:08:00 AM	5/2/2018	5/21/2018
N030123-015A	MW-21-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018
N030123-015B	MW-21-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018
N030123-015C	MW-21-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018

CLIENT:	ARCADIS U.S., Inc. - California	
Project:	PG&E Topock - GMP, RC000753.801D	**Work Order Sample Summary**
Lab Order:	N030123	
Contract No:		

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030123-015D	MW-21-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018
N030123-016A	MW-71-035-Q218	Groundwater	5/2/2018 3:40:00 PM	5/2/2018	5/21/2018
N030123-016B	MW-71-035-Q218	Groundwater	5/2/2018 3:40:00 PM	5/2/2018	5/21/2018
N030123-016C	MW-71-035-Q218	Groundwater	5/2/2018 3:40:00 PM	5/2/2018	5/21/2018
N030123-016D	MW-71-035-Q218	Groundwater	5/2/2018 3:40:00 PM	5/2/2018	5/21/2018
N030123-017A	MW-66BR-270-Q218	Groundwater	5/2/2018 1:50:00 PM	5/2/2018	5/21/2018
N030123-017B	MW-66BR-270-Q218	Groundwater	5/2/2018 1:50:00 PM	5/2/2018	5/21/2018
N030123-017C	MW-66BR-270-Q218	Groundwater	5/2/2018 1:50:00 PM	5/2/2018	5/21/2018
N030123-017D	MW-66BR-270-Q218	Groundwater	5/2/2018 1:50:00 PM	5/2/2018	5/21/2018
N030123-018A	MW-74-240-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018
N030123-018B	MW-74-240-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018
N030123-018C	MW-74-240-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018
N030123-018D	MW-74-240-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018
N030123-019A	MW-905-Q218	Groundwater	5/2/2018 4:10:00 PM	5/2/2018	5/21/2018
N030123-019B	MW-905-Q218	Groundwater	5/2/2018 4:10:00 PM	5/2/2018	5/21/2018
N030123-019C	MW-905-Q218	Groundwater	5/2/2018 4:10:00 PM	5/2/2018	5/21/2018
N030123-019D	MW-905-Q218	Groundwater	5/2/2018 4:10:00 PM	5/2/2018	5/21/2018
N030123-020A	MW-716-Q218	Groundwater	5/2/2018 4:30:00 PM	5/2/2018	5/21/2018
N030123-021A	MW-717-Q218	Groundwater	5/2/2018 4:00:00 PM	5/2/2018	5/21/2018
N030123-022A	MW-718-Q218	Groundwater	5/2/2018 4:30:00 PM	5/2/2018	5/21/2018
N030123-023A	MW-64BR-Q218	Groundwater	5/2/2018 1:08:00 PM	5/2/2018	5/21/2018
N030123-023B	MW-64BR-Q218	Groundwater	5/2/2018 1:08:00 PM	5/2/2018	5/21/2018
N030123-023C	MW-64BR-Q218	Groundwater	5/2/2018 1:08:00 PM	5/2/2018	5/21/2018
N030123-023D	MW-64BR-Q218	Groundwater	5/2/2018 1:08:00 PM	5/2/2018	5/21/2018

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	8400	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 12:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180503E** QC Batch: **R123829** PrepDate							Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 3:41:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	3000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	2700	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030123
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030123-007

Client Sample ID: MW-11-Q218
Collection Date: 5/2/2018 9:43:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180503E** QC Batch: **R123829** PrepDate							Analyst: **LR**
Specific Conductance	2200	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	2200	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180503E** QC Batch: **R123829** PrepDate							Analyst: **LR**
Specific Conductance	21000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:09:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	22000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:06:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180503E** QC Batch: **R123829** PrepDate							Analyst: **LR**
Specific Conductance	1700	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 12:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	1700	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24A-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	1700	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E** QC Batch: **R123829**				PrepDate			Analyst: **LR**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	16000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503E**	QC Batch: **R123829**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503F**	QC Batch: **R123830**			PrepDate			Analyst: **LR**
Specific Conductance	860	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503F**	QC Batch: **R123830**			PrepDate			Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-023		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180503F** QC Batch: **R123830**				PrepDate			Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	5/3/2018 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030123-003BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123829**
Client ID: **ZZZZZZ** Batch ID: **R123829** TestNo: **EPA 120.1** Analysis Date: **5/3/2018** SeqNo: **3015754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	16470.000	0.10						16420	0.304	2	

Sample ID **N030123-010BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123829**
Client ID: **ZZZZZZ** Batch ID: **R123829** TestNo: **EPA 120.1** Analysis Date: **5/3/2018** SeqNo: **3015762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	21400.000	0.10						21500	0.466	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030123-023BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123830**
Client ID: **ZZZZZZ** Batch ID: **R123830** TestNo: **EPA 120.1** Analysis Date: **5/3/2018** SeqNo: **3015774**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	13200.000	0.10						13100	0.760	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180507A**	QC Batch: **R123917**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	510	3.3	20		µg/L	100	5/7/2018 12:03 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	470	0.65	5.0		µg/L	5	5/16/2018 08:45 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 12:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180507A** QC Batch: **R123917**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.2	0.17	1.0		µg/L	5	5/7/2018 12:22 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	1.7	0.13	1.0		µg/L	1	5/16/2018 09:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180507A** QC Batch: **R123917** PrepDate Analyst: **RAB**							
Hexavalent Chromium	1.1	0.17	1.0		µg/L	5	5/7/2018 12:41 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**							
Chromium	1.5	0.13	1.0		µg/L	1	5/16/2018 10:08 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 3:41:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180507A** QC Batch: **R123917** PrepDate							Analyst: **RAB**
Hexavalent Chromium	73	0.33	2.0		µg/L	10	5/7/2018 01:00 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018**							Analyst: **CEI**
Chromium	67	0.13	1.0		µg/L	1	5/16/2018 10:19 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180507A** QC Batch: **R123917**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	150	0.66	4.0		µg/L	20	5/7/2018 01:37 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	140	0.13	1.0		µg/L	1	5/16/2018 10:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180507A** QC Batch: **R123917**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	170	0.66	4.0		µg/L	20	5/7/2018 01:56 PM
DISSOLVED METALS BY ICP-MS **EPA 3010A**			**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	160	0.13	1.0		µg/L	1	5/16/2018 10:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:43:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180507A** QC Batch: **R123917**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	57	0.33	2.0		µg/L	10	5/7/2018 02:37 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	53	0.13	1.0		µg/L	1	5/16/2018 11:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180507A** QC Batch: **R123917** PrepDate Analyst: **RAB**							
Hexavalent Chromium	58	0.33	2.0		µg/L	10	5/7/2018 02:56 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**							
Chromium	55	0.13	1.0		µg/L	1	5/16/2018 11:15 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180507A** QC Batch: **R123917**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	15	0.17	1.0		µg/L	5	5/7/2018 03:34 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	14	0.13	1.0		µg/L	1	5/16/2018 11:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:09:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180507A** QC Batch: **R123917**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	15	0.17	1.0		µg/L	5	5/7/2018 03:53 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	14	0.13	1.0		µg/L	1	5/16/2018 11:37 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:06:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180507A** QC Batch: **R123917**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.1	0.033	0.20		µg/L	1	5/7/2018 04:11 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	1.3	0.13	1.0		µg/L	1	5/16/2018 11:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 12:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180507A**	QC Batch: **R123917**		PrepDate				Analyst: **RAB**
Hexavalent Chromium	1.8	0.033	0.20		µg/L	1	5/7/2018 04:30 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**		PrepDate			**5/8/2018**	Analyst: **CEI**
Chromium	2.0	0.13	1.0		µg/L	1	5/17/2018 12:10 AM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24A-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180507A** QC Batch: **R123917**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/7/2018 04:49 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 12:21 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180507A** QC Batch: **R123917** PrepDate							Analyst: **RAB**
Hexavalent Chromium	200	1.7	10		µg/L	50	5/7/2018 05:27 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018**							Analyst: **CEI**
Chromium	200	0.65	5.0		µg/L	5	5/17/2018 12:38 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180508A** QC Batch: **R123962**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/8/2018 01:32 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate	**5/8/2018**		Analyst: **CEI**
Chromium	1.0	0.13	1.0		µg/L	1	5/17/2018 12:43 AM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030123
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030123-016

Client Sample ID: MW-71-035-Q218
Collection Date: 5/2/2018 3:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180508A**	QC Batch: **R123962**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/8/2018 01:51 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 12:55 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180508A** QC Batch: **R123962** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/8/2018 04:30 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**							
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 01:17 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180508A**	QC Batch: **R123962**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	0.46	0.033	0.20		µg/L	1	5/8/2018 11:37 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 01:28 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180508A** QC Batch: **R123962** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/8/2018 04:51 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**							
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 01:39 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-716-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-020		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180508A** QC Batch: **R123962** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/8/2018 05:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-717-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-021		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180508A** QC Batch: **R123962** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/8/2018 05:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-718-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-022		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180509A** QC Batch: **R123964** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/9/2018 08:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-023		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180509A**	QC Batch: **R123964**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/9/2018 09:06 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 01:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123917** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **PBW** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020230**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123917** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **LCSW** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020231**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.144	0.20	5.000	0	103	90	110				

Sample ID **N030123-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1029.810	20	500.0	510.9	104	90	110				

Sample ID **N030123-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.149	1.0	5.000	1.173	99.5	90	110				

Sample ID **N030123-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.024	1.0	5.000	1.072	99.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030123-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	122.985	2.0	50.00	72.82	100	90	110				

Sample ID **N030123-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	250.858	4.0	100.0	145.2	106	90	110				

Sample ID **N030123-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	278.160	4.0	100.0	172.9	105	90	110				

Sample ID **N030121-001BDUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	467.550	20						476.1	1.81	20	

Sample ID **N030123-004AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	124.708	2.0	50.00	72.82	104	90	110	123.0	1.39	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030123-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	107.305	2.0	50.00	56.91	101	90	110				

Sample ID **N030123-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	109.518	2.0	50.00	58.18	103	90	110				

Sample ID **N030123-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.635	1.0	25.00	14.66	99.9	90	110				

Sample ID **N030123-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	39.618	1.0	25.00	14.51	100	90	110				

Sample ID **N030123-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.109	0.20	1.000	1.100	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030123-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.860	0.20	1.000	1.800	106	90	110				

Sample ID **N030123-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0.08640	100	90	110				

Sample ID **N030123-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020276**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	453.260	10	250.0	196.7	103	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123962** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **PBW** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123962** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **LCSW** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.175	0.20	5.000	0	104	90	110				

Sample ID **N030123-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.514	0.20	1.000	0.4578	106	90	110				

Sample ID **N030123-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.534	1.0	5.000	0.5225	100	90	110				

Sample ID **N030123-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.678	1.0	5.000	0	93.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030185-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	857.510	20	500.0	330.2	105	90	110				

Sample ID **N030185-004AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	853.570	20	500.0	330.2	105	90	110	857.5	0.461	20	

Sample ID **N030185-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	259.550	4.0	100.0	154.3	105	90	110				

Sample ID **N030148-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.763	0.20						5.765	0.0278	20	

Sample ID **N030185-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	258.758	4.0	100.0	152.8	106	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030123-017AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.905	1.0	5.000	0	98.1	90	110				

Sample ID **N030123-019AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.737	1.0	5.000	0.7380	100	90	110				

Sample ID **N030123-020AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.160	0.20	1.000	0.1266	103	90	110				

Sample ID **N030123-021AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.187	0.20	1.000	0.1096	108	90	110				

Sample ID **N030185-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.569	1.0	5.000	0	91.4	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030185-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.147	0.20	1.000	0.1216	103	90	110				

Sample ID **N030185-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0	108	90	110				

Sample ID **N030185-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.177	0.20	1.000	0.1164	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123964** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **PBW** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123964** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **LCSW** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.213	0.20	5.000	0	104	90	110				

Sample ID **N030186-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.131	0.20	1.000	0.07100	106	90	110				

Sample ID **N030186-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1019.430	20	500.0	489.2	106	90	110				

Sample ID **N030186-002AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1013.550	20	500.0	489.2	105	90	110	1019	0.578	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030256-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N030123-022AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.034	0.20	1.000	0	103	90	110				

Sample ID **N030123-023AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.968	1.0	5.000	0	99.4	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
E Value above quantitation range
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike/Surrogate outside of limits due to matrix interference
Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-68011**	SampType: **MBLK**	TestCode: **6020DIS_CrP** Units: **µg/L**	Prep Date: **5/8/2018**	RunNo: **124102**
Client ID: **PBW**	Batch ID: **68011**	TestNo: **EPA 6020 EPA 3010A**	Analysis Date: **5/16/2018**	SeqNo: **3028849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-68011**	SampType: **LCS**	TestCode: **6020DIS_CrP** Units: **µg/L**	Prep Date: **5/8/2018**	RunNo: **124102**
Client ID: **LCSW**	Batch ID: **68011**	TestNo: **EPA 6020 EPA 3010A**	Analysis Date: **5/16/2018**	SeqNo: **3028850**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.638	1.0	10.00	0	96.4	85	115				

Sample ID **N030123-001D-MS**	SampType: **MS**	TestCode: **6020DIS_CrP** Units: **µg/L**	Prep Date: **5/8/2018**	RunNo: **124102**
Client ID: **ZZZZZZ**	Batch ID: **68011**	TestNo: **EPA 6020 EPA 3010A**	Analysis Date: **5/16/2018**	SeqNo: **3028857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	488.643	5.0	10.00	474.3	144	75	125				S

Sample ID **N030123-001D-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP** Units: **µg/L**	Prep Date: **5/8/2018**	RunNo: **124102**
Client ID: **ZZZZZZ**	Batch ID: **68011**	TestNo: **EPA 6020 EPA 3010A**	Analysis Date: **5/16/2018**	SeqNo: **3028864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	490.666	5.0	10.00	474.3	164	75	125	488.6	0.413	20	S

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180511E**	QC Batch: **R124008**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	3.0	0.16	0.25		mg/L	5	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 12:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_S-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:35:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180511E**	QC Batch: **R124008**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.063	0.032	0.050		mg/L	1	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 3:41:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.16	0.032	0.050		mg/L	1	5/11/2018

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	11	0.32	0.50		mg/L	10	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180511E** QC Batch: **R124008**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	10	0.32	0.50		mg/L	10	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:43:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180511E** QC Batch: **R124008** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	5.0	0.32	0.50		mg/L	10	5/11/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180517B**	QC Batch: **R124118**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	5.5	0.32	0.50		mg/L	10	5/17/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:09:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:06:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180517B** QC Batch: **R124118**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	4.7	0.16	0.25		mg/L	5	5/17/2018

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 12:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180517B**	QC Batch: **R124118**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	4.5	0.16	0.25		mg/L	5	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24A-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 10:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.051	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180517B** QC Batch: **R124118**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	1.4	0.063	0.10		mg/L	2	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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ANALYTICAL RESULTS

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Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180517B**	QC Batch: **R124118**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	1.5	0.063	0.10		mg/L	2	5/17/2018

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	2.2	0.063	0.10		mg/L	2	5/17/2018

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	1.6	0.063	0.10		mg/L	2	5/17/2018

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-023		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124008** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **PBW** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124008** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **LCSW** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.555	0.050	0.5000	0	111	85	115				

Sample ID **N030096-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **ZZZZZZ** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.520	0.25						3.684	4.55	20	

Sample ID **N030096-002CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **ZZZZZZ** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	22.446	1.0	10.00	10.62	118	75	125				

Sample ID **N030096-002CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **ZZZZZZ** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023831**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	20.726	1.0	10.00	10.62	101	75	125	22.45	7.97	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124118** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **PBW** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124118** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **LCSW** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.463	0.050	0.5000	0	92.7	85	115				

Sample ID **N030123-012CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **ZZZZZZ** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	4.464	0.25						4.492	0.636	20	

Sample ID **N030123-008CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **ZZZZZZ** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.933	0.50	5.000	5.532	88.0	75	125				

Sample ID **N030123-008CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **ZZZZZZ** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	11.116	0.50	5.000	5.532	112	75	125	9.933	11.2	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate **5/8/2018**			Analyst: **CEI**
Arsenic	1.7	0.081	0.10		µg/L	1	5/16/2018 08:39 PM
Manganese	2.9	0.26	0.50		µg/L	1	5/16/2018 08:39 PM
Molybdenum	21	1.1	2.5		µg/L	5	5/16/2018 08:45 PM
Selenium	4.4	0.36	0.50		µg/L	1	5/16/2018 08:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-LF_D-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 12:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate	**5/8/2018**		Analyst: **CEI**
Arsenic	5.2	0.081	0.10		µg/L	1	5/16/2018 09:57 PM
Manganese	21	0.26	0.50		µg/L	1	5/16/2018 09:57 PM
Molybdenum	60	1.1	2.5		µg/L	5	5/16/2018 10:02 PM
Selenium	2.0	0.36	0.50		µg/L	1	5/16/2018 09:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030123
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030123-003

Client Sample ID: MW-60BR-245-LF_S-Q218
Collection Date: 5/2/2018 11:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate		**5/8/2018**	Analyst: **CEI**
Arsenic	4.9	0.081	0.10		µg/L	1	5/16/2018 10:08 PM
Manganese	20	0.26	0.50		µg/L	1	5/16/2018 10:08 PM
Molybdenum	61	1.1	2.5		µg/L	5	5/16/2018 10:13 PM
Selenium	2.3	0.36	0.50		µg/L	1	5/16/2018 10:08 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-3V-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 3:41:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-004		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	8.2	0.081	0.10		µg/L	1	5/16/2018 10:19 PM
Manganese	9.6	0.26	0.50		µg/L	1	5/16/2018 10:19 PM
Molybdenum	57	1.1	2.5		µg/L	5	5/16/2018 10:25 PM
Selenium	2.6	0.36	0.50		µg/L	1	5/16/2018 10:19 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:51:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-005		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.7	0.081	0.10		µg/L	1	5/16/2018 10:30 PM
Manganese	ND	0.26	0.50		µg/L	1	5/16/2018 10:30 PM
Molybdenum	4.3	0.21	0.50		µg/L	1	5/16/2018 10:30 PM
Selenium	5.0	0.36	0.50		µg/L	1	5/16/2018 10:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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3151 W. Post Rd., Las Vegas, NV 89118
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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 10:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate **5/8/2018**			Analyst: **CEI**
Molybdenum	21	0.21	0.50		µg/L	1	5/16/2018 10:41 PM
Selenium	6.1	0.36	0.50		µg/L	1	5/16/2018 10:41 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:43:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate **5/8/2018**			Analyst: **CEI**
Arsenic	1.3	0.081	0.10		µg/L	1	5/16/2018 11:03 PM
Manganese	ND	0.26	0.50		µg/L	1	5/16/2018 11:03 PM
Molybdenum	5.2	0.21	0.50		µg/L	1	5/16/2018 11:03 PM
Selenium	4.6	0.36	0.50		µg/L	1	5/16/2018 11:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:48:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-008		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.3	0.081	0.10		µg/L	1	5/16/2018 11:15 PM
Manganese	ND	0.26	0.50		µg/L	1	5/16/2018 11:15 PM
Molybdenum	5.3	0.21	0.50		µg/L	1	5/16/2018 11:15 PM
Selenium	4.7	0.36	0.50		µg/L	1	5/16/2018 11:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:44:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-009		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	7.4	0.081	0.10		µg/L	1	5/16/2018 11:26 PM
Manganese	38	0.26	0.50		µg/L	1	5/16/2018 11:26 PM
Molybdenum	88	1.1	2.5		µg/L	5	5/16/2018 11:31 PM
Selenium	ND	0.36	0.50		µg/L	1	5/16/2018 11:26 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 11:09:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-010		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180516A** QC Batch: **68011** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	7.2	0.081	0.10		µg/L	1	5/16/2018 11:37 PM
Manganese	29	0.26	0.50		µg/L	1	5/16/2018 11:37 PM
Molybdenum	85	1.1	2.5		µg/L	5	5/16/2018 11:42 PM
Selenium	ND	0.36	0.50		µg/L	1	5/16/2018 11:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:06:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate	**5/8/2018**		Analyst: **CEI**
Arsenic	6.4	0.081	0.10		µg/L	1	5/16/2018 11:48 PM
Manganese	46	0.26	0.50		µg/L	1	5/16/2018 11:48 PM
Molybdenum	32	0.21	0.50		µg/L	1	5/16/2018 11:48 PM
Selenium	3.2	0.36	0.50		µg/L	1	5/16/2018 11:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 12:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate **5/8/2018**			Analyst: **CEI**
Arsenic	6.3	0.081	0.10		µg/L	1	5/17/2018 12:10 AM
Manganese	37	0.26	0.50		µg/L	1	5/17/2018 12:10 AM
Molybdenum	31	0.21	0.50		µg/L	1	5/17/2018 12:10 AM
Selenium	3.7	0.36	0.50		µg/L	1	5/17/2018 12:10 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030123
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030123-013

Client Sample ID: MW-24A-Q218
Collection Date: 5/2/2018 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate		**5/8/2018**	Analyst: **CEI**
Arsenic	ND	0.081	0.10		µg/L	1	5/17/2018 12:21 AM
Manganese	16	0.26	0.50		µg/L	1	5/17/2018 12:21 AM
Molybdenum	140	0.21	0.50		µg/L	1	5/17/2018 12:21 AM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 12:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 9:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**				PrepDate **5/8/2018**		Analyst: **CEI**
Arsenic	3.1	0.081	0.10		µg/L	1	5/17/2018 12:32 AM
Manganese	100	0.26	0.50		µg/L	1	5/17/2018 12:32 AM
Molybdenum	62	1.1	2.5		µg/L	5	5/17/2018 12:38 AM
Selenium	2.0	0.36	0.50		µg/L	1	5/17/2018 12:32 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate	**5/8/2018**		Analyst: **CEI**
Molybdenum	59	0.21	0.50		µg/L	1	5/17/2018 12:43 AM
Selenium	25	0.36	0.50		µg/L	1	5/17/2018 12:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate	**5/8/2018**		Analyst: **CEI**
Arsenic	2.7	0.081	0.10		µg/L	1	5/17/2018 12:55 AM
Manganese	1800	6.4	12		µg/L	25	5/17/2018 04:51 PM
Molybdenum	21	1.1	2.5		µg/L	5	5/17/2018 01:11 AM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 12:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-017		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**			PrepDate	**5/8/2018**		Analyst: **CEI**
Arsenic	ND	0.081	0.10		µg/L	1	5/17/2018 01:17 AM
Manganese	620	1.3	2.5		µg/L	5	5/17/2018 01:22 AM
Molybdenum	3.1	1.1	2.5		µg/L	5	5/17/2018 01:22 AM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 01:17 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-018		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A**	QC Batch: **68011**				PrepDate **5/8/2018**		Analyst: **CEI**
Arsenic	8.1	0.081	0.10		µg/L	1	5/17/2018 01:28 AM
Manganese	4.3	0.26	0.50		µg/L	1	5/17/2018 01:28 AM
Molybdenum	23	0.21	0.50		µg/L	1	5/17/2018 01:28 AM
Selenium	2.3	0.36	0.50		µg/L	1	5/17/2018 01:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-019		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate **5/8/2018**			Analyst: **CEI**
Molybdenum	59	1.1	2.5		µg/L	5	5/17/2018 01:45 AM
Selenium	22	0.36	0.50		µg/L	1	5/17/2018 01:39 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *21-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q218
Lab Order:	N030123	**Collection Date:**	5/2/2018 1:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030123-023		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180516A** QC Batch: **68011**				PrepDate **5/8/2018**			Analyst: **CEI**
Arsenic	3.5	0.081	0.10		µg/L	1	5/17/2018 01:50 AM
Manganese	850	1.3	2.5		µg/L	5	5/17/2018 01:56 AM
Molybdenum	65	1.1	2.5		µg/L	5	5/17/2018 01:56 AM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 01:50 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-68011** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124102**
Client ID: **PBW** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3028994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-68011** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124102**
Client ID: **LCSW** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3028995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.015	0.10	10.00	0	100	85	115				
Manganese	106.409	0.50	100.0	0	106	85	115				
Molybdenum	10.775	0.50	10.00	0	108	85	115				
Selenium	10.066	0.50	10.00	0	101	85	115				

Sample ID **N030123-001D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3029001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.554	0.10	10.00	1.665	98.9	75	125				
Manganese	95.780	0.50	100.0	2.928	92.9	75	125				
Selenium	13.846	0.50	10.00	4.429	94.2	75	125				

Sample ID **N030123-001D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3029002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	32.990	2.5	10.00	21.21	118	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030123-001D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3029003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.826	0.10	10.00	1.665	102	75	125	11.55	2.33	20	
Manganese	95.216	0.50	100.0	2.928	92.3	75	125	95.78	0.591	20	
Selenium	13.974	0.50	10.00	4.429	95.4	75	125	13.85	0.917	20	

Sample ID **N030123-001D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3029009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	33.181	2.5	10.00	21.21	120	75	125	32.99	0.577	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: [signature] Date: 5/2/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	
Project Name: PG&E Topock - GMP	Signature: [signature] Date: 5/2/2018	
Project Number: RC000753.801D		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		✓
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	2	
6. Method of Cooling: ICE		
Sample Temp: 3.1°C / 2.5°C / 2.1°C		
Courier:		
Tracking No.:		

Matrix: Ground, x Sediment, Potable, Soil, NPDES, Other Solid, Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030123-01	MW-60-125-Q218	5/2/2018	9:51		X			X			X	X					E	4	P	BNS	
2	-02	MW-60BR-245-LF_D-Q218	5/2/2018	12:24		X			X			X	X					E	4	P	BNS	
3	-03	MW-60BR-245-LF_S-Q218	5/2/2018	11:35		X			X			X	X					E	4	P	BNS	
4	-04	MW-60BR-245-3V-Q218	5/2/2018	15:41		X			X			X	X					E	4	P	BNS	
5	-05	MW-09-Q218	5/2/2018	11:51		X			X			X	X					E	4	P	BNS	
6	-06	MW-10-Q218	5/2/2018	10:48		X			X			X		X				E	4	P	BNS	
7	-07	MW-11-Q218	5/2/2018	9:43		X			X			X	X					E	4	P	BNS	
8	-08	MW-904-Q218	5/2/2018	9:48		X			X			X	X					E	4	P	BNS	
9	-09	MW-38D-Q218	5/2/2018	11:44		X			X			X	X					E	4	P	BNS	
10	-10	MW-38D-SMT-Q218	5/2/2018	11:09		X			X			X	X					E	4	P	BNS	

Relinquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
[signature] Gantt Jeffers	5.2.18 1730	[signature]	5/2/18 17:30
[signature]	5/2/18 19:15	[signature]	5/2/18 19:15

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

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Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: Date: 5/2/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	
Project Name: PG&E Topock - GMP	Signature: Date: 5/2/2018	
Project Number: RC000753.801D		

Matrix: Ground x Sediment; Potable; Soil; NPDES; Other Solid; Surface

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
Global ID:		Regulatory	
		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace	✓	
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	2	
6. Method of Cooling: ICE		
Sample Temp: 3.1°C / 2.5°C / 2.1°C		

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030123-11 ✓	MW-38S-Q218	5/2/2018	13:06		X			X			X	X					E	4	P	BNS	
2	-12 ✓	MW-38S-SMT-Q218	5/2/2018	12:45		X			X			X	X					E	4	P	BNS	
3	-13 ✓	MW-24A-Q218	5/2/2018	10:00		X			X			X	X					E	4	P	BNS	
4	-14 ✓	MW-24B-Q218	5/2/2018	9:08		X			X			X	X					E	4	P	BNS	
5	-15 ✓	MW-21-Q218	5/2/2018	16:00			X		X			X		X				E	5	P	BNS	
6	-16 ✓	MW-71-035-Q218	5/2/2018	15:40		X			X			X	X					E	4	P	BNS	
7	-17 ✓	MW-66BR-270-Q218	5/2/2018	13:50		X			X			X	X					E	4	P	BNS	
8	-18 ✓	MW-74-240-Q218	5/2/2018	16:00		X			X			X	X					E	4	P	BNS	
9	-19 ✓	MW-905-Q218	5/2/2018	16:10			X		X			X		X				E	5	P	BNS	
10	-20	MW-716-Q218	5/2/2018	16:30		X												E	1	P	B	

Reliquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
Gantt Jeffers	5.2.18 1730		5/2/18 17:30
	5/2/18 19:15		5/2/18 19:15

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy   Yellow=Customer's Copy

ASSET LABORATORIES

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: Date: 5/2/2018 *I hereby authorize ASSET Labs to perform the tests indicated below.*	Sampled By: Jason Mahn *I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*	
Project Name: PG&E Topock - GMP	Signature: Date: 5/2/2018	
Project Number: RC000753.801D		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		✓
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	2	
6. Method of Cooling: ICE		
Sample Temp: 3.1°C / 2.5°C / 2.1°C		
Courier:		
Tracking No.:		

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly	Specific Conductance (EPA 120.1) — 1 liter poly	Total Dissolved Solids (SM92540) — 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 — 125 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030123-21	MW-717-Q218	5/2/2018	16:00		X												E	1	P	B	
2	-22	MW-718-Q218	5/2/2018	16:30		X												E	1	P	B	
3	-23	MW-64BR-Q218	5/2/2018	13:08		X			X			X	X					E	4	P	BNS	
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
Gantt Jeffers	5.2.18 1730		5/2/18 17:30
	5/2/18 19:15		5/2/18 19:15

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Z=Zn$(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/2/2018	Workorder:	N030123
Rep sample Temp (Deg C):	3.1/2.5/2.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

	Yes	No	Not Present / NA
1. Shipping container/cooler in good condition?	☑	☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	☐	☐	Not Present ☑
3. Custody seals intact on sample bottles?	☐	☐	Not Present ☑
4. Chain of custody present?	☑	☐	
5. Sampler's name present in COC?	☑	☐	
6. Chain of custody signed when relinquished and received?	☑	☐	
7. Chain of custody agrees with sample labels?	☑	☐	
8. Samples in proper container/bottle?	☑	☐	
9. Sample containers intact?	☑	☐	
10. Sufficient sample volume for indicated test?	☑	☐	
11. All samples received within holding time?	☑	☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	☑	☐	NA ☐
13. Water - VOA vials have zero headspace?	☐	☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	☑	☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	☑	☐	NA ☐
16. Were there Non-Conformance issues at login?	☐	☐	NA ☑
Was Client notified?	☐	☐	NA ☑

Comments:

For:

Checklist Completed By: DA YLT 5/9/2018

Reviewed By: HLA 05/15/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/1/2018 6:08 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>, Kalib Sumter <Kalib.Sumter@critigen.com>, Dan Moore <Daniel.Moore@critigen.com>

Hi Yoandra,
Method 6020 is acceptable.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, April 30, 2018 8:48 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)

Hi Laura,

Please kindly check the attached COCs. Some samples are requested to be analyzed for As, Cr, Mn, Mo and Se by 6010.

Please kindly confirm if they can be analyzed by 6020 instead of 6010, as we have been doing before.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

ASSET Laboratories

WORK ORDER Summary

03-May-18

WorkOrder: N030123

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/2/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030123-001A	MW-60-125-Q218	5/2/2018 9:51:00 AM	5/16/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-001B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-001C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-001D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-002A	MW-60BR-245-LF_D-Q218	5/2/2018 12:24:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-002B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-002C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-002D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-003A	MW-60BR-245-LF_S-Q218	5/2/2018 11:35:00 AM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-003B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-003C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-003D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-004A	MW-60BR-245-3V-Q218	5/2/2018 3:41:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-004B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-004C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

03-May-18

WorkOrder: N030123

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/2/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030123-004D	MW-60BR-245-3V-Q218	5/2/2018 3:41:00 PM	5/16/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-005A	MW-09-Q218	5/2/2018 11:51:00 AM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-005B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-005C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-005D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-006A	MW-10-Q218	5/2/2018 10:48:00 AM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-006B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-006C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-006D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-007A	MW-11-Q218	5/2/2018 9:43:00 AM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-007B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-007C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-007D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

03-May-18

WorkOrder: N030123

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/2/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030123-008A	MW-904-Q218	5/2/2018 9:48:00 AM	5/16/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-008B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-008C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-008D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-009A	MW-38D-Q218	5/2/2018 11:44:00 AM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-009B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-009C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-009D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-010A	MW-38D-SMT-Q218	5/2/2018 11:09:00 AM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-010B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-010C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-010D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-011A	MW-38S-Q218	5/2/2018 1:06:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-011B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-011C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

03-May-18

WorkOrder: N030123

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/2/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030123-011D	MW-38S-Q218	5/2/2018 1:06:00 PM	5/16/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-012A	MW-38S-SMT-Q218	5/2/2018 12:45:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-012B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-012C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-012D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-013A	MW-24A-Q218	5/2/2018 10:00:00 AM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-013B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-013C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-013D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-014A	MW-24B-Q218	5/2/2018 9:08:00 AM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-014B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-014C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-014D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

03-May-18

WorkOrder: N030123

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/2/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030123-015A	MW-21-Q218	5/2/2018 4:00:00 PM	5/16/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-015B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-015C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-015D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-016A	MW-71-035-Q218	5/2/2018 3:40:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-016B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-016C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-016D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-017A	MW-66BR-270-Q218	5/2/2018 1:50:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-017B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-017C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-017D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-018A	MW-74-240-Q218	5/2/2018 4:00:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-018B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-018C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

03-May-18

WorkOrder: N030123

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/2/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030123-018D	MW-74-240-Q218	5/2/2018 4:00:00 PM	5/16/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-019A	MW-905-Q218	5/2/2018 4:10:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-019B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-019C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-019D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-020A	MW-716-Q218	5/2/2018 4:30:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-021A	MW-717-Q218	5/2/2018 4:00:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-022A	MW-718-Q218	5/2/2018 4:30:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-023A	MW-64BR-Q218	5/2/2018 1:08:00 PM	5/16/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030123-023B			5/16/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030123-023C			5/16/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030123-023D			5/16/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030123-024A	FOLDER	5/16/2018	5/16/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/16/2018		Folder	Folder	☐	☐	☐	LAB
			5/16/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N030123

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123829 /3830 **Analyst:** LSR

ASSET #: N030123 **Date Analyzed:** 5/3/2018

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 5/9/2018

2nd Level Reviewer RB 05/18/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 5/3/18 1400
Analyst: LSR

Standard	Std ID	Reading	Comments
965 uS/cm	CINV-180102A	9.93 @ 23.1°C	% Rec: (90-110%)
1412	180131A	1415 @ 23.1°C	
9987	180108B	10220 @ 23.0°C	
99601	180201A	99500 @ 23.0°C	

	Sample ID	Matrix	Reading	Comments
1	N030124-001A	H_2O	56.3 @ 21.7°C	
2	N030121 ~~A~~-001A		7160 @ 21.6°C	
3	2B		6990 @ 21.8°C	
4	N030123-001B		8360 @ 21.6°C	
5	2B		16160 @ 20.9°C	
6	3B		16420 @ 20.8°C	
7	3BDUP		16470 @ 20.8°C	
8	4B		16240 @ 20.2°C	
9	5B		3010 @ 20.5°C	
10	6B		2720 @ 20.5°C	2% LSR 5/3/18
~~Dup~~	7B		2200 @ 20.9°C	Accept: ~~10% water, 20% soil~~
	Std Chk:			% Rec (90-110%)

Date: CONT'D
Analyst:

Lilia Ramit 5/9/2018

RB 05/18/2018

Standard	Std ID	Reading	Comments
1413 uS/cm	CINV-171121C	1469 @ 21.4°C	% Rec: (90-110%)
10000	180108C	10470 @ 21.6°C	
99672	171215A	99700 @ 22.0°C	

	Sample ID	Matrix	Reading	Comments
1	N030123-008B	H_2O	2220 @ 21.1°C	2220
2	9B		21100 @ 21.1°C	
3	10B		21500 @ 20.6°C	STD CHK:
4	10BDUP		21400 @ 20.2°C	1413 CINV171121C
5	11B		1671 @ 20.0°C	= 1475 @ 20.8°C
6	12B		1665 @ 20.7°C	10000 CINV180108C
7	13B		1668 @ 20.5°C	= 10490 @ 21.1°C
8	14B		18990 @ 20.5°C	99672 CINV171215A
9	15B		12540 @ 20.7°C	= 98600 @ 21.1°C
10	16B		15770 @ 20.7°C	2% LR 5/4/18
~~Dup~~	17B		16680 @ 20.7°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 6

Conductivity Logbook

Date: 5/3/18 1400
Analyst: LSR CONT'D

Standard	Std ID	Reading	Comments
9.65 uS/cm	CIW - 180108A	9.93 @23.1C	% Rec (90-110%)
1412	180131A	1415 @23.1°C	
9987	180108B	10020 @23.0°C	
99601	180201A	99500 @23.0°C	

	Sample ID	Matrix	Reading	Comments
1	NO30123-018B	H_2O	861 @20.2°C	
2	19B		12660 @20.3°C	
3	23B		13100 @20.0C	
4	23BDUP		13700 @20.0°C	
5				
6				
7				
8				
9	1413 uS/cm	CIW -171121C	1477 @20.2°C	
10	10000	180108C	10350 @21.2°C	2% LR 5/3/18
Dup	99672	171215A	99400 @21.2°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 5/4/18 1515
Analyst: LSR

Julia Ramit 5/9/2018

RB 05/18/2018

Standard	Std ID	Reading	Comments
9.65 uS/cm	CIW - 180108A	9.80 @21.9°C	% Rec: (90-110%)
1412	180131A	1438 @22.1°C	
9987	180108B	10020 @22.2°C	
99601	180201A	98300 @22.3°C	

	Sample ID	Matrix	Reading	Comments
1	NO30147-001B	H_2O	11280 @21.4°C	
2	1BDUP		11250 @21.6°C	STD CHK
3	2B		2510 @21.5°C	1413 CIW-171121C
4	3B		1710 @21.8°C	= 1468 @21.0°C
5	4B		16940 @21.8°C	10000 CIW 180108C
6	5B		17530 @21.8°C	= 10210 @21.3°C
7	6B		3340 @21.7°C	99672 CIW 171215A
8	7B		12800 @21.8C	= 100200 @21.8°C
9	8B		11960 @21.8C	
10	9B		13800 @20.9C	2% LR 5/4/18
~~Dup~~	10B		7850 @21.7°C	Accept: ~~10% water, 20%~~ soil
	Std Chk:			% Rec: (90-110%)

Logbook # 6

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R123917
ASSET #: N030123

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 5/7/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ___________

		Ist Level Review			2nd Level Review		
Initial Calibration and Initial Calibration Verification		Y	N	N/A	Y	N	N/A
1.	ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2.	Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3.	ICV within ± 10% of expected value.	X					
Continuing Calibration							
4.	CCV after every 10 injections and at the end of analysis sequence.	X					
5.	CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6.	Calibration blanks run after ICV and CCV?	X					
7.	Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8.	Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9.	Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information							
10.	All samples are within linear range.	X					
11.	All samples pH within 9.3-9.7 when analyzed?	X					
12.	Duplicate sample injections for every sample. (7199 only)			X			
13.	For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14.	For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15.	For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16.	For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17.	For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18.	For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19.	EPA 3060A digestion performed on solid samples (7199 only)			X			
20.	Are all peaks within RT window, ± 0.2 min?	X					
21.	Are all samples analyzed within hold time?	X					
22.	For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items							
23.	Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24.	LCS compounds are within control limits.	X					
25.	MS/MSD, RPD's are within control limits.	X					
26.	Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information							
27.	Runlog complete and included in package.	X					
28.	Extraction log complete and included in package (if applicable)			X			
29.	All manual integrations initialed, date and reasons included.	X					
30.	Before and after manual integration chromatogram included in the package	X					
31.	All samples and QC raw data present in package.	X					
Preliminary Report							
32.	Does the raw data match the preliminary report?	X					
33.	Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34	Is the QC summary report present and complete?	X					

Comments:

Dilution was necessary in N030123-002A/003A due to matrix interference.

SECOND LEVEL REVIEW:

		Y	N	N/A
1.	All assigned sample(s) analyzed			
2.	Matrix / units correct			
3.	Is QC present and complete?			
4.	Are analytical results correct? (dilutions,calculations)			
5.	Is first level review correct and complete?			

1st Level Reviewer: rba   Date: 5/11/2018

2nd Level Reviewer: RB   05/18/2018   Date: ______

IC ARCUS
REV 2.0
011416

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R123962
ASSET #: N030123

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 5/8/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ___________

Initial Calibration and Initial Calibration Verification	**Ist Level Review**			**2nd Level Review**		
	Y	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	~~X~~					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

Dilution was necessary in N030123-015A/016A/017A/019A/~~022A/023A~~ due to matrix interference.

SECOND LEVEL REVIEW:

	Y	**N**	**N/A**
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 5/11/2018

2nd Level Reviewer: RB 05/18/2018 Date: ______

IC ARCUS
REV 2.0
011416

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R123964
ASSET #: N030123

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 5/9/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ___________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments: **Dilution was necessary for N030123-23A due to matrix interference.**

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 5/11/2018

2nd Level Reviewer RB 05/18/2018 Date: ________

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6} ,µg/L = A * DF

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N030123-001A** , the concentration in µg/L is calculated as follows:

Cr^{+6} ,µg/L = 5.1094 * 100

Cr^{+6} ,µg/L = 510.9400

Reporting results in two significant figures,

Cr^{+6} ,µg/L = 510

rba 5/11/2018

ANALYSIS RUN LOG

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	04/30/18 10:42 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/30/18 10:52 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/30/18 11:01 AM	Reported
13	MB-R123727	MBLK	1	Hexavalent Chromium	04/30/18 11:11 AM	Reported
14	LCS-R123727	LCS	1	Hexavalent Chromium	04/30/18 11:20 AM	Reported
15	N030044-001A	SAMP	5	Hexavalent Chromium	04/30/18 11:30 AM	Reported
16	N030044-001AMS	MS	5	Hexavalent Chromium	04/30/18 11:39 AM	Reported
17	N030044-002A	SAMP	5	Hexavalent Chromium	04/30/18 11:49 AM	Reported
18	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 11:58 AM	Not Reported
19	N030044-003A	SAMP	5	Hexavalent Chromium	04/30/18 12:08 PM	Reported
20	N030044-003AMS	MS	5	Hexavalent Chromium	04/30/18 12:17 PM	Reported
21	N030044-004A	SAMP	1000	Hexavalent Chromium	04/30/18 12:26 PM	Reported
22	N030044-004AMS	MS	1000	Hexavalent Chromium	04/30/18 12:36 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/30/18 12:45 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/30/18 12:55 PM	Reported
25	N030044-005A	SAMP	50	Hexavalent Chromium	04/30/18 1:04 PM	Reported
26	N030044-005AMS	MS	50	Hexavalent Chromium	04/30/18 1:14 PM	Reported
27	N030044-006A	SAMP	200	Hexavalent Chromium	04/30/18 1:23 PM	Reported
28	N030044-006AMS	MS	200	Hexavalent Chromium	04/30/18 1:33 PM	Reported
29	N030044-007A	SAMP	200	Hexavalent Chromium	04/30/18 1:42 PM	Reported
30	N030044-007AMS	MS	200	Hexavalent Chromium	04/30/18 1:52 PM	Reported
31	N030044-008A	SAMP	1000	Hexavalent Chromium	04/30/18 2:01 PM	Reported
32	N030044-008AMS	MS	1000	Hexavalent Chromium	04/30/18 2:10 PM	Reported
33	N030044-009A	SAMP	50	Hexavalent Chromium	04/30/18 2:20 PM	Reported
34	N030044-009AMS	MS	50	Hexavalent Chromium	04/30/18 2:29 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/30/18 2:39 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/30/18 2:48 PM	Reported
37	N030044-010A	SAMP	1	Hexavalent Chromium	04/30/18 2:58 PM	Reported
38	N030044-010AMS	MS	1	Hexavalent Chromium	04/30/18 3:07 PM	Reported
39	N030044-011A	SAMP	1	Hexavalent Chromium	04/30/18 3:17 PM	Reported
40	N030044-011AMS	MS	1	Hexavalent Chromium	04/30/18 3:26 PM	Reported
41	N030044-001ADUP	DUP	5	Hexavalent Chromium	04/30/18 3:36 PM	Reported
42	N030044-004AMSD	MSD	1000	Hexavalent Chromium	04/30/18 3:45 PM	Reported

rba 5/6/2018

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 3:55 PM	Reported
44	N029859-008A	SAMP	1	Hexavalent Chromium	04/30/18 4:06 PM	Not Reported
45	N029859-008AMS	MS	1	Hexavalent Chromium	04/30/18 4:17 PM	Not Reported
46	N029859-009A	SAMP	1	Hexavalent Chromium	04/30/18 4:26 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/30/18 4:36 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/30/18 4:45 PM	Reported
49	N029859-009AMS	MS	1	Hexavalent Chromium	04/30/18 4:55 PM	Not Reported
50	N029859-011A	SAMP	1	Hexavalent Chromium	04/30/18 5:04 PM	Not Reported
51	N029859-011AMS	MS	1	Hexavalent Chromium	04/30/18 5:14 PM	Not Reported
52	CCV-4	CCV	1	Hexavalent Chromium	04/30/18 5:23 PM	Reported
53	CCB-4	CCB	1	Hexavalent Chromium	04/30/18 5:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180430A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**30/Apr/18 18:19:59**
No. of Injections:	**56**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		04/30/2018 10:42	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/30/2018 10:52	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/30/2018 11:01	Finished	ICB R180418A
13	MB-H2O,MBLK,1,	13	1000	Unknown		04/30/2018 11:11	Finished	MB R180418A
14	LCS-H2O,LCS,1,	14	1000	Unknown		04/30/2018 11:20	Finished	LCS, IWST-180129B
15	N030044-001A,SAMF	15	1000	Unknown		04/30/2018 11:30	Finished	SAMP,2>10mL
16	N030044-001AMS,MS	16	1000	Unknown		04/30/2018 11:39	Finished	MS (5ppb), IWST-180129B,2>1
17	N030044-002A,SAMF	17	1000	Unknown		04/30/2018 11:49	Finished	SAMP,2>10mL
18	N030044-002AMS,MS	18	1000	Unknown		04/30/2018 11:58	Finished	MS (5ppb), IWST-180129B,2>1
19	N030044-003A,SAMF	19	1000	Unknown		04/30/2018 12:08	Finished	SAMP,2>10mL
20	N030044-003AMS,MS	20	1000	Unknown		04/30/2018 12:17	Finished	MS (5ppb), IWST-180129B,2>1
21	N030044-004A,SAMF	21	1000	Unknown		04/30/2018 12:26	Finished	SAMP,0.01>10mL
22	N030044-004AMS,MS	22	1000	Unknown		04/30/2018 12:36	Finished	MS (5ppb), IWST-180129B,0.0
23	CCV-1,CCV1,1,	23	1000	Unknown		04/30/2018 12:45	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	24	1000	Unknown		04/30/2018 12:55	Finished	CCB R180418A
25	N030044-005A,SAMF	25	1000	Unknown		04/30/2018 13:04	Finished	SAMP,0.2>10mL
26	N030044-005AMS,MS	26	1000	Unknown		04/30/2018 13:14	Finished	MS (5ppb), IWST-180129B,0.2
27	N030044-006A,SAMF	27	1000	Unknown		04/30/2018 13:23	Finished	SAMP,0.05>10mL
28	N030044-006AMS,MS	28	1000	Unknown		04/30/2018 13:33	Finished	MS (5ppb), IWST-180129B,0.0
29	N030044-007A,SAMF	29	1000	Unknown		04/30/2018 13:42	Finished	SAMP,0.05>10mL
30	N030044-007AMS,MS	30	1000	Unknown		04/30/2018 13:52	Finished	MS (5ppb), IWST-180129B,0.0
31	N030044-008A,SAMF	31	1000	Unknown		04/30/2018 14:01	Finished	SAMP,0.01>10mL
32	N030044-008AMS,MS	32	1000	Unknown		04/30/2018 14:10	Finished	MS (5ppb), IWST-180129B,0.0
33	N030044-009A,SAMF	33	1000	Unknown		04/30/2018 14:20	Finished	SAMP,0.2>10mL
34	N030044-009AMS,MS	34	1000	Unknown		04/30/2018 14:29	Finished	MS (5ppb), IWST-180129B,0.2
35	CCV-2,CCV,1,	35	1000	Unknown		04/30/2018 14:39	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	36	1000	Unknown		04/30/2018 14:48	Finished	CCB R180418A
37	N030044-010A,SAMF	37	1000	Unknown		04/30/2018 14:58	Finished	SAMP,10mL
38	N030044-010AMS,MS	38	1000	Unknown		04/30/2018 15:07	Finished	MS (1ppb), IWST-180129B,10
39	N030044-011A,SAMF	39	1000	Unknown		04/30/2018 15:17	Finished	SAMP,10mL
40	N030044-011AMS,MS	40	1000	Unknown		04/30/2018 15:26	Finished	MS (1ppb), IWST-180129B,10
41	N030044-001ADUP,D	41	1000	Unknown		04/30/2018 15:36	Finished	DUP,2>10mL
42	N030044-004AMSD,M	42	1000	Unknown		04/30/2018 15:45	Finished	MSD (5ppb), IWST-180129B,0.
43	N030044-002AMS,MS	43	1000	Unknown		04/30/2018 15:55	Finished	MS (5ppb), IWST-180129B,2>1
44	N029859-008A,SAMF	1	1000	Unknown		04/30/2018 16:06	Finished	SAMP,10mL
45	N029859-008AMS,MS	2	1000	Unknown		04/30/2018 16:17	Finished	MS (1ppb), IWST-180129B,10
46	N029859-009A,SAMF	3	1000	Unknown		04/30/2018 16:26	Finished	SAMP,10mL
47	CCV-3,CCV1,1,	4	1000	Unknown		04/30/2018 16:36	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	5	1000	Unknown		04/30/2018 16:45	Finished	CCB R180418A
49	N029859-009AMS,MS	6	1000	Unknown		04/30/2018 16:55	Finished	MS (1ppb), IWST-180129B,10
50	N029859-011A,SAMF	7	1000	Unknown		04/30/2018 17:04	Finished	SAMP,10mL
51	N029859-011AMS,MS	8	1000	Unknown		04/30/2018 17:14	Finished	MS (1ppb), IWST-180129B,10
52	CCV-4,CCV,1,	9	1000	Unknown		04/30/2018 17:23	Finished	CCV @5ppb, IWST-180129A
53	CCB-4,CCB,1,	10	1000	Unknown		04/30/2018 17:33	Finished	CCB R180418A
54	SHUTDOWN	11	1000	Unknown		04/30/2018 17:42	Finished	
55	Eluent: R180430A	12	1000	Unknown		n.a.	Finished	Eluent
56	PCR: R180430B	13	1000	Unknown		n.a.	Finished	Post-Column Reagent

jba 5/6/2018

INJECTION LOG: 180507A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/07/18 8:59 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/07/18 9:10 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/07/18 9:19 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/07/18 9:29 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/07/18 9:38 AM	Reported
15	MB-R123917	MBLK	1	Hexavalent Chromium	05/07/18 9:48 AM	Reported
16	LCS-R123917	LCS	1	Hexavalent Chromium	05/07/18 9:57 AM	Reported
17	N030120-021A	SAMP	1	Hexavalent Chromium	05/07/18 10:07 AM	Reported
18	N030120-022A	SAMP	1	Hexavalent Chromium	05/07/18 10:16 AM	Reported
19	N030120-023A	SAMP	1	Hexavalent Chromium	05/07/18 10:26 AM	Reported
20	N030121-001B	SAMP	100	Hexavalent Chromium	05/07/18 10:36 AM	Reported
21	N030121-001BMS	MS	100	Hexavalent Chromium	05/07/18 10:47 AM	Reported
22	N030121-002C	SAMP	1	Hexavalent Chromium	05/07/18 10:57 AM	Reported
23	N030121-002CMS	MS	1	Hexavalent Chromium	05/07/18 11:06 AM	Not Reported
24	N029906-014A	SAMP	1	Hexavalent Chromium	05/07/18 11:16 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/07/18 11:25 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/07/18 11:34 AM	Reported
27	N029906-014AMS	MS	1	Hexavalent Chromium	05/07/18 11:44 AM	Not Reported
28	N030121-002CMS	MS	1	Hexavalent Chromium	05/07/18 11:53 AM	Reported
29	N030123-001A	SAMP	100	Hexavalent Chromium	05/07/18 12:03 PM	Reported
30	N030123-001AMS	MS	100	Hexavalent Chromium	05/07/18 12:12 PM	Reported
31	N030123-002A	SAMP	5	Hexavalent Chromium	05/07/18 12:22 PM	Reported
32	N030123-002AMS	MS	5	Hexavalent Chromium	05/07/18 12:31 PM	Reported
33	N030123-003A	SAMP	5	Hexavalent Chromium	05/07/18 12:41 PM	Reported
34	N030123-003AMS	MS	5	Hexavalent Chromium	05/07/18 12:50 PM	Reported
35	N030123-004A	SAMP	10	Hexavalent Chromium	05/07/18 1:00 PM	Reported
36	N030123-004AMS	MS	10	Hexavalent Chromium	05/07/18 1:09 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/07/18 1:19 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/07/18 1:28 PM	Reported
39	N030123-005A	SAMP	20	Hexavalent Chromium	05/07/18 1:37 PM	Reported
40	N030123-005AMS	MS	20	Hexavalent Chromium	05/07/18 1:47 PM	Reported
41	N030123-006A	SAMP	20	Hexavalent Chromium	05/07/18 1:56 PM	Reported
42	N030123-006AMS	MS	20	Hexavalent Chromium	05/07/18 2:06 PM	Reported

INJECTION LOG: 180507A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030121-001BDUP	DUP	100	Hexavalent Chromium	05/07/18 2:16 PM	Reported
44	N030123-004AMSD	MSD	10	Hexavalent Chromium	05/07/18 2:27 PM	Reported
45	N030123-007A	SAMP	10	Hexavalent Chromium	05/07/18 2:37 PM	Reported
46	N030123-007AMS	MS	10	Hexavalent Chromium	05/07/18 2:46 PM	Reported
47	N030123-008A	SAMP	10	Hexavalent Chromium	05/07/18 2:56 PM	Reported
48	N030123-008AMS	MS	10	Hexavalent Chromium	05/07/18 3:05 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/07/18 3:15 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	05/07/18 3:24 PM	Reported
51	N030123-009A	SAMP	5	Hexavalent Chromium	05/07/18 3:34 PM	Reported
52	N030123-009AMS	MS	5	Hexavalent Chromium	05/07/18 3:43 PM	Reported
53	N030123-010A	SAMP	5	Hexavalent Chromium	05/07/18 3:53 PM	Reported
54	N030123-010AMS	MS	5	Hexavalent Chromium	05/07/18 4:02 PM	Reported
55	N030123-011A	SAMP	1	Hexavalent Chromium	05/07/18 4:11 PM	Reported
56	N030123-011AMS	MS	1	Hexavalent Chromium	05/07/18 4:21 PM	Reported
57	N030123-012A	SAMP	1	Hexavalent Chromium	05/07/18 4:30 PM	Reported
58	N030123-012AMS	MS	1	Hexavalent Chromium	05/07/18 4:40 PM	Reported
59	N030123-013A	SAMP	1	Hexavalent Chromium	05/07/18 4:49 PM	Reported
60	N030123-013AMS	MS	1	Hexavalent Chromium	05/07/18 4:59 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	05/07/18 5:08 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	05/07/18 5:18 PM	Reported
63	N030123-014A	SAMP	50	Hexavalent Chromium	05/07/18 5:27 PM	Reported
64	N030123-014AMS	MS	50	Hexavalent Chromium	05/07/18 5:37 PM	Reported
65	N030123-002A	SAMP	1	Hexavalent Chromium	05/07/18 5:46 PM	Not Reported
66	N030123-002AMS	MS	1	Hexavalent Chromium	05/07/18 5:55 PM	Not Reported
67	N030123-003A	SAMP	1	Hexavalent Chromium	05/07/18 6:05 PM	Not Reported
68	N030123-003AMS	MS	1	Hexavalent Chromium	05/07/18 6:14 PM	Not Reported
69	N030121-002C	SAMP	5	Hexavalent Chromium	05/07/18 6:24 PM	Not Reported
70	N030121-002CMS	MS	5	Hexavalent Chromium	05/07/18 6:33 PM	Not Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	05/07/18 6:43 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	05/07/18 6:52 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180507A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/May/18 19:23:04**
No. of Injections:	**75**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/07/2018 08:59	Finished	BLANK
11	BLANK	2	1000	Unknown		05/07/2018 09:10	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		05/07/2018 09:19	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/07/2018 09:29	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		05/07/2018 09:38	Finished	CCB R180409B
15	MB-H2O,MBLK,1,	6	1000	Unknown		05/07/2018 09:48	Finished	MB R180409B
16	LCS-H2O,LCS,1,	7	1000	Unknown		05/07/2018 09:57	Finished	LCS, IWST-180129B
17	N030120-021A,SAMF	9	1000	Unknown		05/07/2018 10:07	Finished	SAMP,10mL
18	N030120-022A,SAMF	10	1000	Unknown		05/07/2018 10:16	Finished	SAMP,10mL
19	N030120-023A,SAMF	11	1000	Unknown		05/07/2018 10:26	Finished	SAMP,10mL
20	N030121-001B,SAMF	1	1000	Unknown		05/07/2018 10:36	Finished	SAMP,0.1>10mL
21	N030121-001BMS,MS	2	1000	Unknown		05/07/2018 10:47	Finished	MS (5ppb), IWST-180129B,0.1
22	N030121-002C,SAMF	3	1000	Unknown		05/07/2018 10:57	Finished	SAMP,10mL
23	N030121-002CMS,MS	4	1000	Unknown		05/07/2018 11:06	Finished	MS (1ppb), IWST-180129B,10
24	N029906-014A,SAMF	5	1000	Unknown		05/07/2018 11:16	Finished	SAMP,10mL
25	CCV-2,CCV1,1,	6	1000	Unknown		05/07/2018 11:25	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	7	1000	Unknown		05/07/2018 11:34	Finished	CCB R180409B
27	N029906-014AMS,MS	8	1000	Unknown		05/07/2018 11:44	Finished	MS (1ppb), IWST-180129B,10
28	N030121-002CMS,MS	9	1000	Unknown		05/07/2018 11:53	Finished	MS (1ppb), IWST-180129B,10
29	N030123-001A,SAMF	10	1000	Unknown		05/07/2018 12:03	Finished	SAMP,0.1>10mL
30	N030123-001AMS,MS	11	1000	Unknown		05/07/2018 12:12	Finished	MS (5ppb), IWST-180129B,0.1
31	N030123-002A,SAMF	12	1000	Unknown		05/07/2018 12:22	Finished	SAMP,2>10mL
32	N030123-002AMS,MS	13	1000	Unknown		05/07/2018 12:31	Finished	MS (1ppb), IWST-180129B,2>1
33	N030123-003A,SAMF	14	1000	Unknown		05/07/2018 12:41	Finished	SAMP,2>10mL
34	N030123-003AMS,MS	15	1000	Unknown		05/07/2018 12:50	Finished	MS (1ppb), IWST-180129B,2>1
35	N030123-004A,SAMF	16	1000	Unknown		05/07/2018 13:00	Finished	SAMP,1>10mL
36	N030123-004AMS,MS	17	1000	Unknown		05/07/2018 13:09	Finished	MS (5ppb), IWST-180129B,1>1
37	CCV-3,CCV,1,	18	1000	Unknown		05/07/2018 13:19	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	19	1000	Unknown		05/07/2018 13:28	Finished	CCB R180418A
39	N030123-005A,SAMF	20	1000	Unknown		05/07/2018 13:37	Finished	SAMP,0.5>10mL
40	N030123-005AMS,MS	21	1000	Unknown		05/07/2018 13:47	Finished	MS (5ppb), IWST-180129B,0.5
41	N030123-006A,SAMF	22	1000	Unknown		05/07/2018 13:56	Finished	SAMP,0.5>10mL
42	N030123-006AMS,MS	23	1000	Unknown		05/07/2018 14:06	Finished	MS (5ppb), IWST-180129B,0.5
43	N030121-001BDUP,D	1	1000	Unknown		05/07/2018 14:16	Finished	DUP,0.1>10mL
44	N030123-004AMSD,M	2	1000	Unknown		05/07/2018 14:27	Finished	MSD (5ppb), IWST-180129B,1>
45	N030123-007A,SAMF	3	1000	Unknown		05/07/2018 14:37	Finished	SAMP,1>10mL
46	N030123-007AMS,MS	4	1000	Unknown		05/07/2018 14:46	Finished	MS (5ppb), IWST-180129B,1>1
47	N030123-008A,SAMF	5	1000	Unknown		05/07/2018 14:56	Finished	SAMP,1>10mL
48	N030123-008AMS,MS	6	1000	Unknown		05/07/2018 15:05	Finished	MS (5ppb), IWST-180129B,1>1
49	CCV-4,CCV1,1,	7	1000	Unknown		05/07/2018 15:15	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	8	1000	Unknown		05/07/2018 15:24	Finished	CCB R180418A
51	N030123-009A,SAMF	9	1000	Unknown		05/07/2018 15:34	Finished	SAMP,0.05>10mL
52	N030123-009AMS,MS	10	1000	Unknown		05/07/2018 15:43	Finished	MS (5ppb), IWST-180129B,0.0
53	N030123-010A,SAMF	11	1000	Unknown		05/07/2018 15:53	Finished	SAMP,2>10mL
54	N030123-010AMS,MS	12	1000	Unknown		05/07/2018 16:02	Finished	MS (5ppb), IWST-180129B,2>1
55	N030123-011A,SAMF	13	1000	Unknown		05/07/2018 16:11	Finished	SAMP,10mL
56	N030123-011AMS,MS	14	1000	Unknown		05/07/2018 16:21	Finished	MS (1ppb), IWST-180129B,10
57	N030123-012A,SAMF	15	1000	Unknown		05/07/2018 16:30	Finished	SAMP,10mL
58	N030123-012AMS,MS	16	1000	Unknown		05/07/2018 16:40	Finished	MS (1ppb), IWST-180129B,10
59	N030123-013A,SAMF	17	1000	Unknown		05/07/2018 16:49	Finished	SAMP,10mL
60	N030123-013AMS,MS	18	1000	Unknown		05/07/2018 16:59	Finished	MS (1ppb), IWST-180129B,10

61	CCV-5,CCV,1,	19	1000	Unknown		05/07/2018 17:08	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	20	1000	Unknown		05/07/2018 17:18	Finished	CCB R180409B
63	N030123-014A,SAMF	21	1000	Unknown		05/07/2018 17:27	Finished	SAMP,0.2>10mL
64	N030123-014AMS,MS	22	1000	Unknown		05/07/2018 17:37	Finished	MS (5ppb), IWST-180129B,0.2
65	N030123-002A,SAMF	23	1000	Unknown		05/07/2018 17:46	Finished	SAMP,10mL
66	N030123-002AMS,MS	24	1000	Unknown		05/07/2018 17:55	Finished	MS (1ppb), IWST-180129B,10
67	N030123-003A,SAMF	25	1000	Unknown		05/07/2018 18:05	Finished	SAMP,10mL
68	N030123-003AMS,MS	26	1000	Unknown		05/07/2018 18:14	Finished	MS (1ppb), IWST-180129B,10
69	N030121-002C,SAMF	27	1000	Unknown		05/07/2018 18:24	Finished	SAMP,2>10mL
70	N030121-002CMS,MS	28	1000	Unknown		05/07/2018 18:33	Finished	MS (1ppb), IWST-180129B,2>1
71	CCV-6,CCV1,1,	29	1000	Unknown		05/07/2018 18:43	Finished	CCV @10ppb, IWST-180129A
72	CCB-6,CCB,1,	30	1000	Unknown		05/07/2018 18:52	Finished	CCB R180409B
73	SHUTDOWN	31	1000	Unknown		05/07/2018 19:02	Finished	
74	Eluent: R180504A	32	1000	Unknown		n.a.	Finished	Eluent
75	PCR: R180502B	33	1000	Unknown		n.a.	Finished	Post-Column Reagent

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Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/08/18 9:33 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/08/18 9:44 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/08/18 9:53 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/08/18 10:03 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/08/18 10:12 AM	Reported
15	MB-R123962	MBLK	1	Hexavalent Chromium	05/08/18 10:22 AM	Reported
16	LCS-R123962	LCS	1	Hexavalent Chromium	05/08/18 10:31 AM	Reported
17	N030123-015A	SAMP	1	Hexavalent Chromium	05/08/18 10:41 AM	Not Reported
18	N030123-015AMS	MS	1	Hexavalent Chromium	05/08/18 10:50 AM	Not Reported
19	N030123-016A	SAMP	1	Hexavalent Chromium	05/08/18 11:00 AM	Not Reported
20	N030123-016AMS	MS	1	Hexavalent Chromium	05/08/18 11:09 AM	Not Reported
21	N030123-017A	SAMP	1	Hexavalent Chromium	05/08/18 11:19 AM	Not Reported
22	N030123-017AMS	MS	1	Hexavalent Chromium	05/08/18 11:28 AM	Not Reported
23	N030123-018A	SAMP	1	Hexavalent Chromium	05/08/18 11:37 AM	Reported
24	N030123-018AMS	MS	1	Hexavalent Chromium	05/08/18 11:47 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/08/18 11:56 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/08/18 12:06 PM	Reported
27	N030123-019A	SAMP	1	Hexavalent Chromium	05/08/18 12:15 PM	Not Reported
28	N030123-019AMS	MS	1	Hexavalent Chromium	05/08/18 12:25 PM	Not Reported
29	N030123-023A	SAMP	1	Hexavalent Chromium	N.A.	Not Reported
30	BLANK	BLANK	1	Hexavalent Chromium	05/08/18 1:11 PM	Not Reported
31	N030123-023AMS	MS	1	Hexavalent Chromium	05/08/18 1:22 PM	Not Reported
32	N030123-015A	SAMP	5	Hexavalent Chromium	05/08/18 1:32 PM	Reported
33	N030123-015AMS	MS	5	Hexavalent Chromium	05/08/18 1:41 PM	Reported
34	N030123-016A	SAMP	5	Hexavalent Chromium	05/08/18 1:51 PM	Reported
35	N030123-016AMS	MS	5	Hexavalent Chromium	05/08/18 2:00 PM	Reported
36	N030123-023A	SAMP	1	Hexavalent Chromium	05/08/18 2:10 PM	Not Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/08/18 2:19 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/08/18 2:28 PM	Reported
39	N030185-002A	SAMP	20	Hexavalent Chromium	05/08/18 2:38 PM	Reported
40	N030185-004A	SAMP	100	Hexavalent Chromium	05/08/18 2:47 PM	Reported
41	N030148-001A	SAMP	1	Hexavalent Chromium	05/08/18 2:56 PM	Reported
42	N030185-004AMS	MS	100	Hexavalent Chromium	05/08/18 3:05 PM	Reported

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Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030185-004AMSD	MSD	100	Hexavalent Chromium	05/08/18 3:15 PM	Reported
44	N030185-002AMS	MS	20	Hexavalent Chromium	05/08/18 3:24 PM	Reported
45	N030148-001ADUP	DUP	1	Hexavalent Chromium	05/08/18 3:34 PM	Reported
46	N030150-001A	SAMP	5	Hexavalent Chromium	05/08/18 3:43 PM	Reported
47	N030185-003A	SAMP	20	Hexavalent Chromium	05/08/18 3:53 PM	Reported
48	N030185-003AMS	MS	20	Hexavalent Chromium	05/08/18 4:02 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/08/18 4:12 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	05/08/18 4:21 PM	Reported
51	N030123-017A	SAMP	5	Hexavalent Chromium	05/08/18 4:30 PM	Reported
52	N030123-017AMS	MS	5	Hexavalent Chromium	05/08/18 4:40 PM	Reported
53	N030123-019A	SAMP	5	Hexavalent Chromium	05/08/18 4:51 PM	Reported
54	N030123-019AMS	MS	5	Hexavalent Chromium	05/08/18 5:03 PM	Reported
55	N030123-023A	SAMP	5	Hexavalent Chromium	05/08/18 5:12 PM	Not Reported
56	N030123-023AMS	MS	5	Hexavalent Chromium	05/08/18 5:21 PM	Not Reported
57	N030123-020A	SAMP	1	Hexavalent Chromium	05/08/18 5:31 PM	Reported
58	N030123-020AMS	MS	1	Hexavalent Chromium	05/08/18 5:40 PM	Reported
59	N030123-021A	SAMP	1	Hexavalent Chromium	05/08/18 5:50 PM	Reported
60	N030123-021AMS	MS	1	Hexavalent Chromium	05/08/18 5:59 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	05/08/18 6:09 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	05/08/18 6:18 PM	Reported
63	N030123-022A	SAMP	1	Hexavalent Chromium	05/08/18 6:28 PM	Not Reported
64	N030123-022AMS	MS	1	Hexavalent Chromium	05/08/18 6:37 PM	Not Reported
65	N030185-001A	SAMP	5	Hexavalent Chromium	05/08/18 6:47 PM	Reported
66	N030185-001AMS	MS	5	Hexavalent Chromium	05/08/18 6:56 PM	Reported
67	N030185-005A	SAMP	1	Hexavalent Chromium	05/08/18 7:06 PM	Reported
68	N030185-005AMS	MS	1	Hexavalent Chromium	05/08/18 7:15 PM	Reported
69	N030185-006A	SAMP	1	Hexavalent Chromium	05/08/18 7:24 PM	Reported
70	N030185-006AMS	MS	1	Hexavalent Chromium	05/08/18 7:34 PM	Reported
71	N030185-007A	SAMP	1	Hexavalent Chromium	05/08/18 7:43 PM	Reported
72	N030185-007AMS	MS	1	Hexavalent Chromium	05/08/18 7:53 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	05/08/18 8:02 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	05/08/18 8:12 PM	Reported
75	N030185-001A	SAMP	1	Hexavalent Chromium	05/08/18 8:21 PM	Not Reported
76	N030185-001AMS	MS	1	Hexavalent Chromium	05/08/18 8:31 PM	Not Reported
77	LCS-R123963	LCS	1	Hexavalent Chromium	05/08/18 8:40 PM	Reported
78	MB-R123963	MBLK	1	Hexavalent Chromium	05/08/18 8:50 PM	Reported
79	N030228-003A	SAMP	50	Hexavalent Chromium	05/08/18 8:59 PM	Reported
80	N030228-003AMS	MS	50	Hexavalent Chromium	05/08/18 9:08 PM	Reported
81	N030228-003AMSD	MSD	50	Hexavalent Chromium	05/08/18 9:18 PM	Reported
82	N030228-005A	SAMP	100	Hexavalent Chromium	05/08/18 9:27 PM	Reported
83	N030228-005AMS	MS	100	Hexavalent Chromium	05/08/18 9:37 PM	Reported
84	N030228-011A	SAMP	500	Hexavalent Chromium	05/08/18 9:46 PM	Reported

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Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	05/08/18 9:56 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	05/08/18 10:05 PM	Reported
87	N030228-011ADUP	DUP	500	Hexavalent Chromium	05/08/18 10:15 PM	Reported
88	N030228-001A	SAMP	1	Hexavalent Chromium	05/08/18 10:24 PM	Reported
89	N030228-002A	SAMP	2	Hexavalent Chromium	05/08/18 10:34 PM	Reported
90	N030228-004A	SAMP	20	Hexavalent Chromium	05/08/18 10:43 PM	Reported
91	N030228-006A	SAMP	10	Hexavalent Chromium	05/08/18 10:53 PM	Reported
92	N030228-007A	SAMP	100	Hexavalent Chromium	05/08/18 11:02 PM	Reported
93	N030228-008A	SAMP	10	Hexavalent Chromium	05/08/18 11:11 PM	Reported
94	N030228-009A	SAMP	1	Hexavalent Chromium	05/08/18 11:21 PM	Reported
95	N030228-010A	SAMP	10	Hexavalent Chromium	05/08/18 11:30 PM	Reported
96	CCV-8	CCV1	1	Hexavalent Chromium	05/08/18 11:40 PM	Reported
97	CCB-8	CCB	1	Hexavalent Chromium	05/08/18 11:49 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180508A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/May/18 00:20:08**
No. of Injections:	**100**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/08/2018 09:33	Finished	BLANK
11	BLANK	2	1000	Unknown		05/08/2018 09:44	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		05/08/2018 09:53	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/08/2018 10:03	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		05/08/2018 10:12	Finished	CCB R180409B
15	MB-H2O,MBLK,1,	6	1000	Unknown		05/08/2018 10:22	Finished	MB R180409B
16	LCS-H2O,LCS,1,	7	1000	Unknown		05/08/2018 10:31	Finished	LCS, IWST-180129B
17	N030123-015A,SAMF	8	1000	Unknown		05/08/2018 10:41	Finished	SAMP,10mL
18	N030123-015AMS,MS	9	1000	Unknown		05/08/2018 10:50	Finished	MS (1ppb), IWST-180129B,10
19	N030123-016A,SAMF	10	1000	Unknown		05/08/2018 11:00	Finished	SAMP,10mL
20	N030123-016AMS,MS	11	1000	Unknown		05/08/2018 11:09	Finished	MS (1ppb), IWST-180129B,10
21	N030123-017A,SAMF	12	1000	Unknown		05/08/2018 11:19	Finished	SAMP,10mL
22	N030123-017AMS,MS	13	1000	Unknown		05/08/2018 11:28	Finished	MS (1ppb), IWST-180129B,10
23	N030123-018A,SAMF	14	1000	Unknown		05/08/2018 11:37	Finished	SAMP,10mL
24	N030123-018AMS,MS	15	1000	Unknown		05/08/2018 11:47	Finished	MS (1ppb), IWST-180129B,10
25	CCV-2,CCV1,1,	16	1000	Unknown		05/08/2018 11:56	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	17	1000	Unknown		05/08/2018 12:06	Finished	CCB R180409B
27	N030123-019A,SAMF	18	1000	Unknown		05/08/2018 12:15	Finished	SAMP,10mL
28	N030123-019AMS,MS	19	1000	Unknown		05/08/2018 12:25	Finished	MS (1ppb), IWST-180129B,10
29	N030123-023A,SAMF	20	1000	Unknown		n.a.	Finished	SAMP,10mL
30	BLANK	21	1000	Unknown		05/08/2018 13:11	Finished	BLANK
31	N030123-023AMS,MS	22	1000	Unknown		05/08/2018 13:22	Finished	MS (1ppb), IWST-180129B,10
32	N030123-015A,SAMF	23	1000	Unknown		05/08/2018 13:32	Finished	SAMP,2>10mL
33	N030123-015AMS,MS	24	1000	Unknown		05/08/2018 13:41	Finished	MS (1ppb), IWST-180129B,2>1
34	N030123-016A,SAMF	25	1000	Unknown		05/08/2018 13:51	Finished	SAMP,2>10mL
35	N030123-016AMS,MS	26	1000	Unknown		05/08/2018 14:00	Finished	MS (1ppb), IWST-180129B,2>1
36	N030123-023A,SAMF	27	1000	Unknown		05/08/2018 14:10	Finished	SAMP,10mL
37	CCV-3,CCV,1,	28	1000	Unknown		05/08/2018 14:19	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	29	1000	Unknown		05/08/2018 14:28	Finished	CCB R180418A
39	N030185-002A,SAMF	30	1000	Unknown		05/08/2018 14:38	Finished	SAMP,0.5>10mL
40	N030185-004A,SAMF	31	1000	Unknown		05/08/2018 14:47	Finished	SAMP,0.1>10mL
41	N030148-001A,SAMF	32	1000	Unknown		05/08/2018 14:56	Finished	SAMP,10mL
42	N030185-004AMS,MS	33	1000	Unknown		05/08/2018 15:05	Finished	MS (5ppb), IWST-180129B,0.1
43	N030185-004AMSD,M	34	1000	Unknown		05/08/2018 15:15	Finished	MSD (5ppb), IWST-180129B,0.
44	N030185-002AMS,MS	35	1000	Unknown		05/08/2018 15:24	Finished	MS (5ppb), IWST-180129B,0.5
45	N030148-001ADUP,D	36	1000	Unknown		05/08/2018 15:34	Finished	DUP,10mL
46	N030150-001A,SAMF	37	1000	Unknown		05/08/2018 15:43	Finished	SAMP,2>10mL
47	N030185-003A,SAMF	38	1000	Unknown		05/08/2018 15:53	Finished	SAMP,0.5>10mL
48	N030185-003AMS,MS	39	1000	Unknown		05/08/2018 16:02	Finished	MS (5ppb), IWST-180129B,0.1
49	CCV-4,CCV1,1,	40	1000	Unknown		05/08/2018 16:12	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	41	1000	Unknown		05/08/2018 16:21	Finished	CCB R180418A
51	N030123-017A,SAMF	42	1000	Unknown		05/08/2018 16:30	Finished	SAMP,2>10mL
52	N030123-017AMS,MS	43	1000	Unknown		05/08/2018 16:40	Finished	MS (1ppb), IWST-180129B,2>1
53	N030123-019A,SAMF	1	1000	Unknown		05/08/2018 16:51	Finished	SAMP,2>10mL
54	N030123-019AMS,MS	2	1000	Unknown		05/08/2018 17:03	Finished	MS (1ppb), IWST-180129B,2>1
55	N030123-023A,SAMF	3	1000	Unknown		05/08/2018 17:12	Finished	SAMP,2>10mL
56	N030123-023AMS,MS	4	1000	Unknown		05/08/2018 17:21	Finished	MS (1ppb), IWST-180129B,2>1
57	N030123-020A,SAMF	5	1000	Unknown		05/08/2018 17:31	Finished	SAMP,10mL
58	N030123-020AMS,MS	6	1000	Unknown		05/08/2018 17:40	Finished	MS (1ppb), IWST-180129B,10
59	N030123-021A,SAMF	7	1000	Unknown		05/08/2018 17:50	Finished	SAMP,10mL
60	N030123-021AMS,MS	8	1000	Unknown		05/08/2018 17:59	Finished	MS (1ppb), IWST-180129B,10

61	CCV-5,CCV,1,	9	1000	Unknown		05/08/2018 18:09	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	10	1000	Unknown		05/08/2018 18:18	Finished	CCB R180409B
63	N030123-022A,SAMF	11	1000	Unknown		05/08/2018 18:28	Finished	SAMP,10mL
64	N030123-022AMS,MS	12	1000	Unknown		05/08/2018 18:37	Finished	MS (1ppb), IWST-180129B,10
65	N030185-001A,SAMF	13	1000	Unknown		05/08/2018 18:47	Finished	SAMP,2>10mL
66	N030185-001AMS,MS	14	1000	Unknown		05/08/2018 18:56	Finished	MS (1ppb), IWST-180129B,2>1
67	N030185-005A,SAMF	15	1000	Unknown		05/08/2018 19:06	Finished	SAMP,10mL
68	N030185-005AMS,MS	16	1000	Unknown		05/08/2018 19:15	Finished	MS (1ppb), IWST-180129B,10
69	N030185-006A,SAMF	17	1000	Unknown		05/08/2018 19:24	Finished	SAMP,10mL
70	N030185-006AMS,MS	18	1000	Unknown		05/08/2018 19:34	Finished	MS (1ppb), IWST-180129B,10
71	N030185-007A,SAMF	19	1000	Unknown		05/08/2018 19:43	Finished	SAMP,10mL
72	N030185-007AMS,MS	20	1000	Unknown		05/08/2018 19:53	Finished	MS (1ppb), IWST-180129B,10
73	CCV-6,CCV1,1,	21	1000	Unknown		05/08/2018 20:02	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	22	1000	Unknown		05/08/2018 20:12	Finished	CCB R180409B
75	N030185-001A,SAMF	23	1000	Unknown		05/08/2018 20:21	Finished	SAMP,10mL
76	N030185-001AMS,MS	24	1000	Unknown		05/08/2018 20:31	Finished	MS (1ppb), IWST-180129B,10
77	LCS-2,LCS,1,	25	1000	Unknown		05/08/2018 20:40	Finished	LCS, IWST-180129B
78	MB-2,MBLK,1,	26	1000	Unknown		05/08/2018 20:50	Finished	MB R180409B
79	N030228-003A,SAMF	27	1000	Unknown		05/08/2018 20:59	Finished	SAMP,0.2>10mL
80	N030228-003AMS,MS	28	1000	Unknown		05/08/2018 21:08	Finished	MS (5ppb), IWST-180129B,0.2
81	N030228-003AMSD,M	29	1000	Unknown		05/08/2018 21:18	Finished	MSD (5ppb), IWST-180129B,0.
82	N030228-005A,SAMF	30	1000	Unknown		05/08/2018 21:27	Finished	SAMP,0.1>10mL
83	N030228-005AMS,MS	31	1000	Unknown		05/08/2018 21:37	Finished	MS (5ppb), IWST-180129B,0.1
84	N030228-011A,SAMF	32	1000	Unknown		05/08/2018 21:46	Finished	SAMP,0.02>10mL
85	CCV-7,CCV,1,	33	1000	Unknown		05/08/2018 21:56	Finished	CCV @5ppb, IWST-180129A
86	CCB-7,CCB,1,	34	1000	Unknown		05/08/2018 22:05	Finished	CCB R180409B
87	N030228-011ADUP,D	35	1000	Unknown		05/08/2018 22:15	Finished	DUP,0.02>10mL
88	N030228-001A,SAMF	36	1000	Unknown		05/08/2018 22:24	Finished	SAMP,10mL
89	N030228-002A,SAMF	37	1000	Unknown		05/08/2018 22:34	Finished	SAMP,5>10mL
90	N030228-004A,SAMF	38	1000	Unknown		05/08/2018 22:43	Finished	SAMP,0.5>10mL
91	N030228-006A,SAMF	39	1000	Unknown		05/08/2018 22:53	Finished	SAMP,1>10mL
92	N030228-007A,SAMF	40	1000	Unknown		05/08/2018 23:02	Finished	SAMP,0.1>10mL
93	N030228-008A,SAMF	41	1000	Unknown		05/08/2018 23:11	Finished	SAMP,1>10mL
94	N030228-009A,SAMF	42	1000	Unknown		05/08/2018 23:21	Finished	SAMP,10mL
N030228-010A 95	~~N030228-0010~~A,SAM	43	1000	Unknown		05/08/2018 23:30	Finished	SAMP,1>10mL
96	CCV-8,CCV1,1,	44	1000	Unknown		05/08/2018 23:40	Finished	CCV @10ppb, IWST-180129A
97	CCB-8,CCB,1,	45	1000	Unknown		05/08/2018 23:49	Finished	CCB R180409B
98	SHUTDOWN	46	1000	Unknown		05/08/2018 23:59	Finished	
99	Eluent: R180508A	47	1000	Unknown		n.a.	Finished	Eluent
100	PCR: R180508B	48	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180509A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/09/18 8:42 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/09/18 8:53 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/09/18 9:03 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/09/18 9:12 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/09/18 9:22 AM	Reported
15	MB-R123964	MBLK	1	Hexavalent Chromium	05/09/18 9:31 AM	Reported
16	LCS-R123964	LCS	1	Hexavalent Chromium	05/09/18 9:41 AM	Reported
17	N030251-004A	SAMP	25	Hexavalent Chromium	05/09/18 9:50 AM	Not Reported
18	N030251-004A	SAMP	5	Hexavalent Chromium	05/09/18 9:59 AM	Reported
19	N030251-004A	SAMP	125	Hexavalent Chromium	05/09/18 10:09 AM	Not Reported
20	N030251-003A	SAMP	5	Hexavalent Chromium	05/09/18 10:18 AM	Not Reported
21	N030251-003A	SAMP	25	Hexavalent Chromium	05/09/18 10:28 AM	Reported
22	N030251-003A	SAMP	125	Hexavalent Chromium	05/09/18 10:44 AM	Not Reported
23	N030251-001A	SAMP	5	Hexavalent Chromium	05/09/18 10:55 AM	Not Reported
24	N030251-002A	SAMP	5	Hexavalent Chromium	05/09/18 11:05 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/09/18 11:14 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/09/18 11:24 AM	Reported
27	N030251-004AMS	MS	25	Hexavalent Chromium	05/09/18 11:33 AM	Not Reported
28	N030251-003AMS	MS	5	Hexavalent Chromium	05/09/18 11:43 AM	Not Reported
29	N030251-004AMS	MS	5	Hexavalent Chromium	05/09/18 12:00 PM	Reported
30	N030251-003AMS	MS	25	Hexavalent Chromium	05/09/18 12:11 PM	Reported
31	N030186-001A	SAMP	1	Hexavalent Chromium	05/09/18 12:21 PM	Reported
32	N030251-004AMS	MS	1	Hexavalent Chromium	05/09/18 12:30 PM	Not Reported
33	N030251-004AREP	DUP	5	Hexavalent Chromium	05/09/18 12:40 PM	Reported
34	N030251-003ADUP	DUP	25	Hexavalent Chromium	05/09/18 12:49 PM	Reported
35	N030251-004A	SAMP	1	Hexavalent Chromium	05/09/18 12:59 PM	Not Reported
36	N030186-001AMS	MS	1	Hexavalent Chromium	05/09/18 1:08 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/09/18 1:18 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/09/18 1:27 PM	Reported
39	N030254-001A	SAMP	5	Hexavalent Chromium	05/09/18 1:37 PM	Not Reported
40	N030254-002A	SAMP	5	Hexavalent Chromium	05/09/18 1:46 PM	Not Reported
41	N030254-003A	SAMP	5	Hexavalent Chromium	05/09/18 1:56 PM	Reported
42	N030254-004A	SAMP	5	Hexavalent Chromium	05/09/18 2:05 PM	Reported

INJECTION LOG: 180509A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030254-001AMS	MS	5	Hexavalent Chromium	05/09/18 2:14 PM	Not Reported
44	N030254-002AMS	MS	5	Hexavalent Chromium	05/09/18 2:24 PM	Not Reported
45	N030254-003AMS	MS	5	Hexavalent Chromium	05/09/18 2:33 PM	Reported
46	N030254-004AMS	MS	5	Hexavalent Chromium	05/09/18 2:43 PM	Reported
47	N030254-001AMS	MS	25	Hexavalent Chromium	05/09/18 2:52 PM	Reported
48	N030254-002AMS	MS	25	Hexavalent Chromium	05/09/18 3:02 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/09/18 3:11 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	05/09/18 3:21 PM	Reported
51	N030254-001A	SAMP	25	Hexavalent Chromium	05/09/18 3:30 PM	Reported
52	N030254-002A	SAMP	25	Hexavalent Chromium	05/09/18 3:40 PM	Reported
53	N030254-004AMSD	MSD	5	Hexavalent Chromium	05/09/18 3:49 PM	Reported
54	N030254-001AREP	DUP	25	Hexavalent Chromium	05/09/18 3:59 PM	Reported
55	N030254-002AREP	DUP	25	Hexavalent Chromium	05/09/18 4:08 PM	Reported
56	N030254-003AREP	DUP	5	Hexavalent Chromium	05/09/18 4:17 PM	Reported
57	N030254-004AREP	DUP	5	Hexavalent Chromium	05/09/18 4:27 PM	Reported
58	N030186-002A	SAMP	100	Hexavalent Chromium	05/09/18 4:36 PM	Reported
59	N030186-002AMS	MS	100	Hexavalent Chromium	05/09/18 4:49 PM	Reported
60	N030186-002AMSD	MSD	100	Hexavalent Chromium	05/09/18 5:00 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	05/09/18 5:09 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	05/09/18 5:19 PM	Reported
63	N030254-003A	SAMP	1	Hexavalent Chromium	05/09/18 5:28 PM	Not Reported
64	N030254-003AMS	MS	1	Hexavalent Chromium	05/09/18 5:38 PM	Not Reported
65	N030254-004A	SAMP	1	Hexavalent Chromium	05/09/18 5:47 PM	Not Reported
66	N030254-004AMS	MS	1	Hexavalent Chromium	05/09/18 5:57 PM	Not Reported
67	BLANK	BLANK	1	Hexavalent Chromium	05/09/18 6:06 PM	Not Reported
68	N030256-001A	SAMP	1	Hexavalent Chromium	05/09/18 6:15 PM	Not Reported
69	N030256-002A	SAMP	1	Hexavalent Chromium	05/09/18 6:25 PM	Reported
70	N030256-002ADUP	DUP	1	Hexavalent Chromium	05/09/18 6:34 PM	Reported
71	N030256-003A	SAMP	1	Hexavalent Chromium	05/09/18 6:44 PM	Not Reported
72	N030256-004A	SAMP	1	Hexavalent Chromium	05/09/18 6:53 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	05/09/18 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	05/09/18 7:12 PM	Reported
75	N030256-005A	SAMP	1	Hexavalent Chromium	05/09/18 7:22 PM	Reported
76	N030256-006A	SAMP	1	Hexavalent Chromium	05/09/18 7:31 PM	Reported
77	N030256-007A	SAMP	1	Hexavalent Chromium	05/09/18 7:41 PM	Reported
78	N030256-008A	SAMP	1	Hexavalent Chromium	05/09/18 7:50 PM	Reported
79	N030256-009A	SAMP	1	Hexavalent Chromium	05/09/18 8:00 PM	Reported
80	N030256-010A	SAMP	1	Hexavalent Chromium	05/09/18 8:09 PM	Reported
81	N030123-022A	SAMP	1	Hexavalent Chromium	05/09/18 8:18 PM	Reported
82	N030123-022AMS	MS	1	Hexavalent Chromium	05/09/18 8:28 PM	Reported
83	N030228-004A	SAMP	20	Hexavalent Chromium	05/09/18 8:37 PM	Not Reported
84	CCV-7	CCV	1	Hexavalent Chromium	05/09/18 8:47 PM	Reported

INJECTION LOG: 180509A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	05/09/18 8:56 PM	Reported
86	N030123-023A	SAMP	5	Hexavalent Chromium	05/09/18 9:06 PM	Reported
87	N030123-023AMS	MS	5	Hexavalent Chromium	05/09/18 9:15 PM	Reported
88	N030123-023A	SAMP	25	Hexavalent Chromium	05/09/18 9:25 PM	Not Reported
89	N030123-023AMS	MS	25	Hexavalent Chromium	05/09/18 9:34 PM	Not Reported
90	CCV-8	CCV1	1	Hexavalent Chromium	05/09/18 9:44 PM	Reported
91	CCB-8	CCB	1	Hexavalent Chromium	05/09/18 9:53 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180509A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/May/18 22:23:52**
No. of Injections:	**94**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/09/2018 08:42	Finished	BLANK
11	BLANK	2	1000	Unknown		05/09/2018 08:53	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		05/09/2018 09:03	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/09/2018 09:12	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		05/09/2018 09:22	Finished	CCB R180409B
15	MB-H2O,MBLK,1,	6	1000	Unknown		05/09/2018 09:31	Finished	MB R180409B
16	LCS-H2O,LCS,1,	7	1000	Unknown		05/09/2018 09:41	Finished	LCS, IWST-180129B
17	N030251-004A,SAMF	8	1000	Unknown		05/09/2018 09:50	Finished	SAMP,0.4>10mL
18	N030251-004A,SAMF	9	1000	Unknown		05/09/2018 09:59	Finished	SAMP,2>10mL
19	N030251-004A,SAMF	10	1000	Unknown		05/09/2018 10:09	Finished	SAMP,0.08>10mL
20	N030251-003A,SAMF	11	1000	Unknown		05/09/2018 10:18	Finished	SAMP,2>10mL
21	N030251-003A,SAMF	12	1000	Unknown		05/09/2018 10:28	Finished	SAMP,0.4>10mL
22	N030251-003A,SAMF	13	1000	Unknown		05/09/2018 10:44	Finished	SAMP,0.08>10mL
23	N030251-001A,SAMF	14	1000	Unknown		05/09/2018 10:55	Finished	SAMP,2>10mL
24	N030251-002A,SAMF	15	1000	Unknown		05/09/2018 11:05	Finished	SAMP,2>10mL
25	CCV-2,CCV1,1,	16	1000	Unknown		05/09/2018 11:14	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	17	1000	Unknown		05/09/2018 11:24	Finished	CCB R180409B
27	N030251-004AMS,MS	18	1000	Unknown		05/09/2018 11:33	Finished	MS (1ppb), IWST-180129B,0.4
28	N030251-003AMS,MS	19	1000	Unknown		05/09/2018 11:43	Finished	MS (1ppb), IWST-180129B,2>1
29	N030251-004AMS,MS	1	1000	Unknown		05/09/2018 12:00	Finished	MS (1ppb), IWST-180129B,2>1
30	N030251-003AMS,MS	2	1000	Unknown		05/09/2018 12:11	Finished	MS (1ppb), IWST-180129B,0.4
31	N030186-001A,SAMF	3	1000	Unknown		05/09/2018 12:21	Finished	SAMP,10mL
32	N030251-004AMS,MS	4	1000	Unknown		05/09/2018 12:30	Finished	MS (1ppb), IWST-180129B,10
33	N030251-004AREP,D	5	1000	Unknown		05/09/2018 12:40	Finished	REP,2>10mL
34	N030251-003A~~REP~~,DDUP	6	1000	Unknown		05/09/2018 12:49	Finished	REP,0.4>10mL
35	N030251-004A,SAMF	7	1000	Unknown		05/09/2018 12:59	Finished	SAMP,10mL
36	N030186-001AMS,MS	8	1000	Unknown		05/09/2018 13:08	Finished	MS (1ppb), IWST-180129B,10
37	CCV-3,CCV,1,	9	1000	Unknown		05/09/2018 13:18	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	10	1000	Unknown		05/09/2018 13:27	Finished	CCB R180418A
39	N030254-001A,SAMF	12	1000	Unknown		05/09/2018 13:37	Finished	SAMP,2>10mL
40	N030254-002A,SAMF	13	1000	Unknown		05/09/2018 13:46	Finished	SAMP,2>10mL
41	N030254-003A,SAMF	14	1000	Unknown		05/09/2018 13:56	Finished	SAMP,2>10mL
42	N030254-004A,SAMF	15	1000	Unknown		05/09/2018 14:05	Finished	SAMP,2>10mL
43	N030254-001AMS,MS	16	1000	Unknown		05/09/2018 14:14	Finished	MS (1ppb), IWST-180129B,2>1
44	N030254-002AMS,MS	17	1000	Unknown		05/09/2018 14:24	Finished	MS (1ppb), IWST-180129B,2>1
45	N030254-003AMS,MS	18	1000	Unknown		05/09/2018 14:33	Finished	MS (1ppb), IWST-180129B,2>1
46	N030254-004AMS,MS	19	1000	Unknown		05/09/2018 14:43	Finished	MS (1ppb), IWST-180129B,2>1
47	N030254-001AMS,MS	21	1000	Unknown		05/09/2018 14:52	Finished	MS (1ppb), IWST-180129B,0.4
48	N030254-002AMS,MS	22	1000	Unknown		05/09/2018 15:02	Finished	MS (1ppb), IWST-180129B,0.4
49	CCV-4,CCV1,1,	23	1000	Unknown		05/09/2018 15:11	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	24	1000	Unknown		05/09/2018 15:21	Finished	CCB R180418A
51	N030254-001A,SAMF	25	1000	Unknown		05/09/2018 15:30	Finished	SAMP,0.4>10mL
52	N030254-002A,SAMF	26	1000	Unknown		05/09/2018 15:40	Finished	SAMP,0.4>10mL
53	N030254-004AMSD,M	27	1000	Unknown		05/09/2018 15:49	Finished	MSD (1ppb), IWST-180129B,0.
54	N030254-001AREP,D	28	1000	Unknown		05/09/2018 15:59	Finished	REP,0.4>10mL
55	N030254-002AREP,D	29	1000	Unknown		05/09/2018 16:08	Finished	REP,0.4>10mL
56	N030254-003AREP,D	30	1000	Unknown		05/09/2018 16:17	Finished	REP,2>10mL
57	N030254-004AREP,D	31	1000	Unknown		05/09/2018 16:27	Finished	REP,2>10mL
58	N030186-002A,SAMF	32	1000	Unknown		05/09/2018 16:36	Finished	SAMP,0.1>10mL
59	N030186-002AMS,MS	1	1000	Unknown		05/09/2018 16:49	Finished	MS (5ppb), IWST-180129B,0.1
60	N030186-002AMSD,M	2	1000	Unknown		05/09/2018 17:00	Finished	MSD (5ppb), IWST-180129B,0.

61	CCV-5,CCV,1,	3	1000	Unknown		05/09/2018 17:09	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	4	1000	Unknown		05/09/2018 17:19	Finished	CCB R180409B
63	N030254-003A,SAMF	5	1000	Unknown		05/09/2018 17:28	Finished	SAMP,10mL
64	N030254-003AMS,MS	6	1000	Unknown		05/09/2018 17:38	Finished	MS (1ppb), IWST-180129B,10
65	N030254-004A,SAMF	7	1000	Unknown		05/09/2018 17:47	Finished	SAMP,10mL
66	N030254-004AMS,MS	8	1000	Unknown		05/09/2018 17:57	Finished	MS (1ppb), IWST-180129B,10
67	BLANK	9	1000	Unknown		05/09/2018 18:06	Finished	BLANK
68	N030256-001A,SAMF	10	1000	Unknown		05/09/2018 18:15	Finished	SAMP,10mL
69	N030256-002A,SAMF	11	1000	Unknown		05/09/2018 18:25	Finished	SAMP,10mL
70	N030256-002ADUP,D	12	1000	Unknown		05/09/2018 18:34	Finished	DUP,10mL
71	N030256-003A,SAMF	13	1000	Unknown		05/09/2018 18:44	Finished	SAMP,10mL
72	N030256-004A,SAMF	14	1000	Unknown		05/09/2018 18:53	Finished	SAMP,10mL
73	CCV-6,CCV1,1,	15	1000	Unknown		05/09/2018 19:03	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	16	1000	Unknown		05/09/2018 19:12	Finished	CCB R180409B
75	N030256-005A,SAMF	17	1000	Unknown		05/09/2018 19:22	Finished	SAMP,10mL
76	N030256-006A,SAMF	18	1000	Unknown		05/09/2018 19:31	Finished	SAMP,10mL
77	N030256-007A,SAMF	19	1000	Unknown		05/09/2018 19:41	Finished	SAMP,10mL
78	N030256-008A,SAMF	20	1000	Unknown		05/09/2018 19:50	Finished	SAMP,10mL
79	N030256-009A,SAMF	21	1000	Unknown		05/09/2018 20:00	Finished	SAMP,10mL
80	N030256-010A,SAMF	22	1000	Unknown		05/09/2018 20:09	Finished	SAMP,10mL
81	N030123-022A,SAMF	23	1000	Unknown		05/09/2018 20:18	Finished	SAMP,10mL
82	N030123-022AMS,MS	24	1000	Unknown		05/09/2018 20:28	Finished	MS (1ppb), IWST-180129B,10
83	N030228-004A,SAMF	25	1000	Unknown		05/09/2018 20:37	Finished	SAMP,0.5>10mL
84	CCV-7,CCV,1,	26	1000	Unknown		05/09/2018 20:47	Finished	CCV @5ppb, IWST-180129A
85	CCB-7,CCB,1,	27	1000	Unknown		05/09/2018 20:56	Finished	CCB R180409B
86	N030123-023A,SAMF	28	1000	Unknown		05/09/2018 21:06	Finished	SAMP,2>10mL
87	N030123-023AMS,MS	29	1000	Unknown		05/09/2018 21:15	Finished	MS (1ppb), IWST-180129B,2>1
88	N030123-023A,SAMF	30	1000	Unknown		05/09/2018 21:25	Finished	SAMP,0.4>10mL
89	N030123-023AMS,MS	31	1000	Unknown		05/09/2018 21:34	Finished	MS (1ppb), IWST-180129B,0.4
90	CCV-8,CCV1,1,	32	1000	Unknown		05/09/2018 21:44	Finished	CCV @10ppb, IWST-180129A
91	CCB-8,CCB,1,	33	1000	Unknown		05/09/2018 21:53	Finished	CCB R180409B
92	SHUTDOWN	34	1000	Unknown		05/09/2018 22:03	Finished	
93	Eluent: R180508A	35	1000	Unknown		n.a.	Finished	Eluent
94	PCR: R180508B	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 5/3/18
Time Prepared: 1353H
Prepared By: MBA

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A 6N NaOH: M171229A
NH4OH + NH4SO4 eluent: M180502A/M180501A
NH4OH + NH4SO4 buffer: M180409B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030120-001A	9.05	9.55	~250 mL	~250 mL	+8 dps NaOH	
2)	2A	9.55	–				
3)	3A	9.21	–				
4)	5A	9.09	9.53			+7 dps NaOH	
5)	6A	9.44	–				
6)	7A	8.86	9.35			+8 dps NaOH	
7)	8A	9.01	9.47			+8 " "	
8)	9A	9.17	9.28			+6 dps NaOH	
9)	10A	9.07	9.32			+7 " "	
10)	11A	9.46	–				
11)	12A	~~9.46~~ 9.15	9.38			+5 " "	
12)	13A	9.05	9.42			+8 " "	
13)	14A	9.04	9.50			+8 " "	
14)	15A	9.37					
15)	16A	9.11	9.40			+8 " "	
	17A	9.04	9.42			+8 " "	

Sample Preparation

Date Prepared: 5/3/18
Time Prepared: 1353H
Prepared By: MBA

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A 6N NaOH: M171229A
NH4OH + NH4SO4 eluent: M180502A/M180501A
NH4OH + NH4SO4 buffer: M180409B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030120-18A	9.08	9.40	~250 mL	~250 mL	+ 7 dps NaOH	
2)	19A	9.09	9.38			+ " "	
3)	20A	9.11	9.33			+ 6 " "	
4)	21A	9.41	–				
5)	22A	9.28	–				
6)	23A	9.43	–				
7)	N029123-1A	9.39	–				
8)	2A	9.48	–				
9)	3A	9.53	–				
10)	4A	9.52	–				
11)	5A	9.41	–				
12)	6A	9.35	–				
13)	7A	9.52	–				
14)	8A	9.55	–				
15)	9A	9.56	–				
	10A	9.56	–				

Logbook No. 14

mba 5/11/2018

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 5/3/18
Time Prepared: 1253H
Prepared By: RBA

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M805022A / M805054A
NH4OH + NH4SO4 buffer: M804094

6N NaOH R171229A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M029123-11A	9.63	-	~250ml	~250ml		
2)	12A	9.59	-				
3)	13A	9.64	-				
4)	14A	9.51	-				
5)	15A	8.86	9.39			+8 drops NaOH	1/2
6)	15A	8.85	9.36			+8 " "	2/2
7)	16A	8.74	9.58			+9 " "	
8)	17A	9.67	-				
9)	18A	9.66	-				
10)	19A	8.82	9.34			+8 " "	1/2
11)	19A	8.80	9.34			+8 " "	2/2
12)	20A	9.66	-				
13)	21A	9.63	-				
14)	22A	9.68	-				
15)	23A	9.50	-				
	M030119-001A	9.19	9.33			+5 drops NaOH	M804094

Sample Preparation

Date Prepared: 5/3/18
Time Prepared: 1353H
Prepared By: RBA

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M805054A
NH4OH + NH4SO4 buffer: M804094

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M030121-001B	7.94	9.46	~250ml	~250ml	+5ml M804158A	
2)	002C	7.91	9.60				
3)							
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 14

rba 5/11/2018

RB 05/21/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/30/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0607	0.2618	1.2924	2.5813	3.8731	5.1050	0.9999

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RJB 05/21/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ICV** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3020224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.194	0.20	5.000	0	104	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3020225**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **CCV** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.102	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.239	0.20	0.2000	0	119	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ZZZZZZ** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.924	0.20	10.00	0	99.2	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **123917**
Client ID: **CCV**	Batch ID: **R123917**	TestNo: **EPA 218.6**		Analysis Date: **5/7/2018**	SeqNo: **3020249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.939	0.20	5.000	0	98.8	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **123917**
Client ID: **ZZZZZZ**	Batch ID: **R123917**	TestNo: **EPA 218.6**		Analysis Date: **5/7/2018**	SeqNo: **3020261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.868	0.20	10.00	0	98.7	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **123917**
Client ID: **CCV**	Batch ID: **R123917**	TestNo: **EPA 218.6**		Analysis Date: **5/7/2018**	SeqNo: **3020273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.919	0.20	5.000	0	98.4	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **123917**
Client ID: **ZZZZZZ**	Batch ID: **R123917**	TestNo: **EPA 218.6**		Analysis Date: **5/7/2018**	SeqNo: **3020277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.811	0.20	10.00	0	98.1	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ICV** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3022152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.194	0.20	5.000	0	104	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3022153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCV** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.943	0.20	5.000	0	98.9	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.217	0.20	0.2000	0	108	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.090	0.20	10.00	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCV** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.039	0.20	5.000	0	101	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.136	0.20	10.00	0	101	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCV** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.005	0.20	5.000	0	100	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.113	0.20	10.00	0	101	95	105				

Sample ID **CCV-7** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCV** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.041	0.20	5.000	0	101	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ICV** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3022231**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.194	0.20	5.000	0	104	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3022232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCV** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.004	0.20	5.000	0	100	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.219	0.20	0.2000	0	109	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022241**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.072	0.20	10.00	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCV** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.031	0.20	5.000	0	101	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.053	0.20	10.00	0	101	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCV** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022269**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.018	0.20	5.000	0	100	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022276**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.132	0.20	10.00	0	101	95	105				

Sample ID **CCV-7** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCV** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.991	0.20	5.000	0	99.8	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-8** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.150	0.20	10.00	0	102	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

ASSET Laboratories

Date: *10-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **ICB** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3020226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **CCB** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020229**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **CCB** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020239**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **CCB** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **CCB** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **CCB** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020274**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123917**
Client ID: **CCB** Batch ID: **R123917** TestNo: **EPA 218.6** Analysis Date: **5/7/2018** SeqNo: **3020278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123962**
Client ID: **ICB**	Batch ID: **R123962**	TestNo: **EPA 218.6**	Analysis Date: **4/30/2018**	SeqNo: **3022154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123962**
Client ID: **CCB**	Batch ID: **R123962**	TestNo: **EPA 218.6**	Analysis Date: **5/8/2018**	SeqNo: **3022157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123962**
Client ID: **CCB**	Batch ID: **R123962**	TestNo: **EPA 218.6**	Analysis Date: **5/8/2018**	SeqNo: **3022163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123962**
Client ID: **CCB**	Batch ID: **R123962**	TestNo: **EPA 218.6**	Analysis Date: **5/8/2018**	SeqNo: **3022169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123962**
Client ID: **CCB**	Batch ID: **R123962**	TestNo: **EPA 218.6**	Analysis Date: **5/8/2018**	SeqNo: **3022181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCB** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCB** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCB** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ICB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3022233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022287**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-8** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/7/2018

Sample Name	Retention Time	Evaluation
ICV	4.248	
CCV-1	4.215	
CCV-2	4.223	
CCV-3	4.215	
CCV-4	4.215	
CCV-5	4.215	
CCV-6	4.215	

Average	4.216	
Actual RT Window	4.136 -	4.296
Applied RT Window	4.016 -	4.416

MB-R123917	N.A.	N.A.
LCS-R123917	4.215	PASS
N030120-021A	4.198	PASS
N030120-022A	4.215	PASS
N030120-023A	4.206	PASS
N030121-001B	4.215	PASS
N030121-001BMS	4.215	PASS
N030121-002C	N.A.	N.A.
N030121-002CMS	4.073	PASS
N029906-014A	4.206	PASS
N029906-014AMS	4.198	PASS
N030121-002CMS	4.073	PASS
N030123-001A	4.215	PASS
N030123-001AMS	4.215	PASS
N030123-002A	4.148	PASS
N030123-002AMS	4.148	PASS
N030123-003A	4.140	PASS
N030123-003AMS	4.148	PASS
N030123-004A	4.190	PASS
N030123-004AMS	4.190	PASS
N030123-005A	4.215	PASS

rba 5/11/2018

RJB 05/21/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/7/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.215		
CCV-2	4.223		
CCV-3	4.215		
CCV-4	4.215		
CCV-5	4.215		
CCV-6	4.215		
Average	4.216		
Actual RT Window	4.136 -	4.296	
Applied RT Window	4.016 -	4.416	
N030123-005AMS	4.215		PASS
N030123-006A	4.215		PASS
N030123-006AMS	4.215		PASS
N030121-001BDUP	4.215		PASS
N030123-004AMSD	4.181		PASS
N030123-007A	4.215		PASS
N030123-007AMS	4.215		PASS
N030123-008A	4.215		PASS
N030123-008AMS	4.215		PASS
N030123-009A	4.131		PASS
N030123-009AMS	4.123		PASS
N030123-010A	4.131		PASS
N030123-010AMS	4.131		PASS
N030123-011A	4.198		PASS
N030123-011AMS	4.198		PASS
N030123-012A	4.190		PASS
N030123-012AMS	4.190		PASS
N030123-013A	4.198		PASS
N030123-013AMS	4.198		PASS
N030123-014A	4.206		PASS
N030123-014AMS	4.215		PASS
N030123-002A	N.A.		N.A.

RB 05/21/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/7/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.215		
CCV-2	4.223		
CCV-3	4.215		
CCV-4	4.215		
CCV-5	4.215		
CCV-6	4.215		
Average	4.216		
Actual RT Window	4.136 -	4.296	
Applied RT Window	4.016 -	4.416	
N030123-002AMS	N.A.		N.A.
N030123-003A	N.A.		N.A.
N030123-003AMS	N.A.		N.A.
N030121-002C	N.A.		N.A.
N030121-002CMS	4.190		PASS

RB 05/21/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/8/2018

Sample Name	Retention Time	Evaluation
ICV	4.248	
CCV-1	4.215	
CCV-2	4.215	
CCV-3	4.223	
CCV-4	4.215	
CCV-5	4.215	
CCV-6	4.215	
CCV-7	4.215	
CCV-8	4.206	

Average	4.215	
Actual RT Window	4.135 -	4.295
Applied RT Window	4.015 -	4.415

MB-R123962	N.A.	N.A.
LCS-R123962	4.215	PASS
N030123-015A	N.A.	N.A.
N030123-015AMS	3.973	FAIL
N030123-016A	N.A.	N.A.
N030123-016AMS	N.A.	N.A.
N030123-017A	N.A.	N.A.
N030123-017AMS	N.A.	N.A.
N030123-018A	4.206	PASS
N030123-018AMS	4.206	PASS
N030123-019A	3.940	FAIL
N030123-019AMS	3.965	FAIL
N030123-023A	N.A.	N.A.
N030123-023AMS	N.A.	N.A.
N030123-015A	4.173	PASS
N030123-015AMS	4.173	PASS
N030123-016A	N.A.	N.A.
N030123-016AMS	4.156	PASS
N030123-023A	N.A.	N.A.

RB 05/21/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/8/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.215		
CCV-2	4.215		
CCV-3	4.223		
CCV-4	4.215		
CCV-5	4.215		
CCV-6	4.215		
CCV-7	4.215		
CCV-8	4.206		
Average	4.215		
Actual RT Window	4.135 -	4.295	
Applied RT Window	4.015 -	4.415	
N030185-002A	4.215		PASS
N030185-004A	4.215		PASS
N030148-001A	4.190		PASS
N030185-004AMS	4.215		PASS
N030185-004AMSD	4.215		PASS
N030185-002AMS	4.215		PASS
N030148-001ADUP	4.190		PASS
N030150-001A	4.215		PASS
N030185-003A	4.215		PASS
N030185-003AMS	4.215		PASS
N030123-017A	N.A.		N.A.
N030123-017AMS	4.140		PASS
N030123-019A	4.173		PASS
N030123-019AMS	4.173		PASS
N030123-023A	N.A.		N.A.
N030123-023AMS	4.165		PASS
N030123-020A	4.206		PASS
N030123-020AMS	4.215		PASS
N030123-021A	4.206		PASS
N030123-021AMS	4.215		PASS

RB 05/21/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/8/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.215		
CCV-2	4.215		
CCV-3	4.223		
CCV-4	4.215		
CCV-5	4.215		
CCV-6	4.215		
CCV-7	4.215		
CCV-8	4.206		
Average	4.215		
Actual RT Window	4.135 -	4.295	
Applied RT Window	4.015 -	4.415	
N030123-022A	N.A.		N.A.
N030123-022AMS	4.215		PASS
N030185-001A	N.A.		N.A.
N030185-001AMS	4.123		PASS
N030185-005A	4.215		PASS
N030185-005AMS	4.215		PASS
N030185-006A	N.A.		N.A.
N030185-006AMS	4.215		PASS
N030185-007A	4.215		PASS
N030185-007AMS	4.206		PASS
N030185-001A	N.A.		N.A.
N030185-001AMS	N.A.		N.A.
LCS-R123963	4.198		PASS
MB-R123963	N.A.		N.A.
N030228-003A	4.206		PASS
N030228-003AMS	4.215		PASS
N030228-003AMSD	4.206		PASS
N030228-005A	4.215		PASS
N030228-005AMS	4.215		PASS
N030228-011A	4.215		PASS

RJB 05/21/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/8/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.215		
CCV-2	4.215		
CCV-3	4.223		
CCV-4	4.215		
CCV-5	4.215		
CCV-6	4.215		
CCV-7	4.215		
CCV-8	4.206		
Average	4.215		
Actual RT Window	4.135 -	4.295	
Applied RT Window	4.015 -	4.415	
N030228-011ADUP	4.215		PASS
N030228-001A	N.A.		N.A.
N030228-002A	4.090		PASS
N030228-004A	4.206		PASS
N030228-006A	4.190		PASS
N030228-007A	4.206		PASS
N030228-008A	4.206		PASS
N030228-009A	N.A.		N.A.
N030228-010A	4.190		PASS

RB 05/21/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/9/2018

Sample Name	Retention Time	Evaluation
ICV	4.248	
CCV-1	4.215	
CCV-2	4.215	
CCV-3	4.190	
CCV-4	4.215	
CCV-5	4.215	
CCV-6	4.215	
CCV-7	4.215	
CCV-8	4.215	

Average	4.212	
Actual RT Window	4.132 -	4.292
Applied RT Window	4.012 -	4.412

MB-R123964	N.A.	N.A.
LCS-R123964	4.206	PASS
N030251-004A	N.A.	N.A.
N030251-004A	N.A.	N.A.
N030251-004A	N.A.	N.A.
N030251-003A	N.A.	N.A.
N030251-003A	N.A.	N.A.
N030251-003A	N.A.	N.A.
N030251-001A	N.A.	N.A.
N030251-002A	N.A.	N.A.
N030251-004AMS	4.206	PASS
N030251-003AMS	3.948	FAIL
N030251-004AMS	4.190	PASS
N030251-003AMS	4.173	PASS
N030186-001A	4.198	PASS
N030251-004AMS	4.040	PASS
N030251-004AREP	N.A.	N.A.
N030251-003ADUP	N.A.	N.A.
N030251-004A	N.A.	N.A.

RB 05/21/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/9/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.215		
CCV-2	4.215		
CCV-3	4.190		
CCV-4	4.215		
CCV-5	4.215		
CCV-6	4.215		
CCV-7	4.215		
CCV-8	4.215		
Average	4.212		
Actual RT Window	4.132 -	4.292	
Applied RT Window	4.012 -	4.412	
N030186-001AMS	4.190		PASS
N030254-001A	N.A.		N.A.
N030254-002A	N.A.		N.A.
N030254-003A	N.A.		N.A.
N030254-004A	N.A.		N.A.
N030254-001AMS	4.065		PASS
N030254-002AMS	4.090		PASS
N030254-003AMS	4.148		PASS
N030254-004AMS	4.148		PASS
N030254-001AMS	4.190		PASS
N030254-002AMS	4.190		PASS
N030254-001A	N.A.		N.A.
N030254-002A	N.A.		N.A.
N030254-004AMSD	4.148		PASS
N030254-001AREP	N.A.		N.A.
N030254-002AREP	N.A.		N.A.
N030254-003AREP	N.A.		N.A.
N030254-004AREP	N.A.		N.A.
N030186-002A	4.206		PASS
N030186-002AMS	4.215		PASS

RJB 05/21/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/9/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.215		
CCV-2	4.215		
CCV-3	4.190		
CCV-4	4.215		
CCV-5	4.215		
CCV-6	4.215		
CCV-7	4.215		
CCV-8	4.215		
Average	4.212		
Actual RT Window	4.132 -	4.292	
Applied RT Window	4.012 -	4.412	
N030186-002AMSD	4.198		PASS
N030254-003A	N.A.		N.A.
N030254-003AMS	N.A.		N.A.
N030254-004A	N.A.		N.A.
N030254-004AMS	N.A.		N.A.
N030256-001A	4.156		PASS
N030256-002A	N.A.		N.A.
N030256-002ADUP	N.A.		N.A.
N030256-003A	4.165		PASS
N030256-004A	N.A.		N.A.
N030256-005A	N.A.		N.A.
N030256-006A	N.A.		N.A.
N030256-007A	N.A.		N.A.
N030256-008A	4.173		PASS
N030256-009A	N.A.		N.A.
N030256-010A	N.A.		N.A.
N030123-022A	N.A.		N.A.
N030123-022AMS	4.206		PASS
N030228-004A	4.206		PASS
N030123-023A	N.A.		N.A.

RB 05/21/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/9/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.215		
CCV-2	4.215		
CCV-3	4.190		
CCV-4	4.215		
CCV-5	4.215		
CCV-6	4.215		
CCV-7	4.215		
CCV-8	4.215		
Average	4.212		
Actual RT Window	4.132 -	4.292	
Applied RT Window	4.012 -	4.412	
N030123-023AMS	4.156		PASS
N030123-023A	N.A.		N.A.
N030123-023AMS	4.198		PASS

RB 05/21/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2018 (1st Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 3/21/2018
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	**MDL**	**LOD Spike Conc., µg/L**	**LOD actual Conc., µg/L**
Hexavalent Chromium	0.0331	0.100	0.116

Compound	**PQL**	**PQL Spike Conc., µg/L**	**PQL actual Conc., µg/L**	**% Recovery**
Hexavalent Chromium	0.200	0.200	0.201	**100**

INITIAL CALIBRATION

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	04/30/18 10:42 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/30/18 10:52 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/30/18 11:01 AM	Reported
13	MB-R123727	MBLK	1	Hexavalent Chromium	04/30/18 11:11 AM	Reported
14	LCS-R123727	LCS	1	Hexavalent Chromium	04/30/18 11:20 AM	Reported
15	N030044-001A	SAMP	5	Hexavalent Chromium	04/30/18 11:30 AM	Reported
16	N030044-001AMS	MS	5	Hexavalent Chromium	04/30/18 11:39 AM	Reported
17	N030044-002A	SAMP	5	Hexavalent Chromium	04/30/18 11:49 AM	Reported
18	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 11:58 AM	Not Reported
19	N030044-003A	SAMP	5	Hexavalent Chromium	04/30/18 12:08 PM	Reported
20	N030044-003AMS	MS	5	Hexavalent Chromium	04/30/18 12:17 PM	Reported
21	N030044-004A	SAMP	1000	Hexavalent Chromium	04/30/18 12:26 PM	Reported
22	N030044-004AMS	MS	1000	Hexavalent Chromium	04/30/18 12:36 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/30/18 12:45 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/30/18 12:55 PM	Reported
25	N030044-005A	SAMP	50	Hexavalent Chromium	04/30/18 1:04 PM	Reported
26	N030044-005AMS	MS	50	Hexavalent Chromium	04/30/18 1:14 PM	Reported
27	N030044-006A	SAMP	200	Hexavalent Chromium	04/30/18 1:23 PM	Reported
28	N030044-006AMS	MS	200	Hexavalent Chromium	04/30/18 1:33 PM	Reported
29	N030044-007A	SAMP	200	Hexavalent Chromium	04/30/18 1:42 PM	Reported
30	N030044-007AMS	MS	200	Hexavalent Chromium	04/30/18 1:52 PM	Reported
31	N030044-008A	SAMP	1000	Hexavalent Chromium	04/30/18 2:01 PM	Reported
32	N030044-008AMS	MS	1000	Hexavalent Chromium	04/30/18 2:10 PM	Reported
33	N030044-009A	SAMP	50	Hexavalent Chromium	04/30/18 2:20 PM	Reported
34	N030044-009AMS	MS	50	Hexavalent Chromium	04/30/18 2:29 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/30/18 2:39 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/30/18 2:48 PM	Reported
37	N030044-010A	SAMP	1	Hexavalent Chromium	04/30/18 2:58 PM	Reported
38	N030044-010AMS	MS	1	Hexavalent Chromium	04/30/18 3:07 PM	Reported
39	N030044-011A	SAMP	1	Hexavalent Chromium	04/30/18 3:17 PM	Reported
40	N030044-011AMS	MS	1	Hexavalent Chromium	04/30/18 3:26 PM	Reported
41	N030044-001ADUP	DUP	5	Hexavalent Chromium	04/30/18 3:36 PM	Reported
42	N030044-004AMSD	MSD	1000	Hexavalent Chromium	04/30/18 3:45 PM	Reported

rba 5/6/2018

Nancy 5/7/2018

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 3:55 PM	Reported
44	N029859-008A	SAMP	1	Hexavalent Chromium	04/30/18 4:06 PM	Not Reported
45	N029859-008AMS	MS	1	Hexavalent Chromium	04/30/18 4:17 PM	Not Reported
46	N029859-009A	SAMP	1	Hexavalent Chromium	04/30/18 4:26 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/30/18 4:36 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/30/18 4:45 PM	Reported
49	N029859-009AMS	MS	1	Hexavalent Chromium	04/30/18 4:55 PM	Not Reported
50	N029859-011A	SAMP	1	Hexavalent Chromium	04/30/18 5:04 PM	Not Reported
51	N029859-011AMS	MS	1	Hexavalent Chromium	04/30/18 5:14 PM	Not Reported
52	CCV-4	CCV	1	Hexavalent Chromium	04/30/18 5:23 PM	Reported
53	CCB-4	CCB	1	Hexavalent Chromium	04/30/18 5:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180430A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**30/Apr/18 18:19:59**
No. of Injections:	**56**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		04/30/2018 10:42	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/30/2018 10:52	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/30/2018 11:01	Finished	ICB R180418A
13	MB-H2O,MBLK,1,	13	1000	Unknown		04/30/2018 11:11	Finished	MB R180418A
14	LCS-H2O,LCS,1,	14	1000	Unknown		04/30/2018 11:20	Finished	LCS, IWST-180129B
15	N030044-001A,SAMF	15	1000	Unknown		04/30/2018 11:30	Finished	SAMP,2>10mL
16	N030044-001AMS,MS	16	1000	Unknown		04/30/2018 11:39	Finished	MS (5ppb), IWST-180129B,2>1
17	N030044-002A,SAMF	17	1000	Unknown		04/30/2018 11:49	Finished	SAMP,2>10mL
18	N030044-002AMS,MS	18	1000	Unknown		04/30/2018 11:58	Finished	MS (5ppb), IWST-180129B,2>1
19	N030044-003A,SAMF	19	1000	Unknown		04/30/2018 12:08	Finished	SAMP,2>10mL
20	N030044-003AMS,MS	20	1000	Unknown		04/30/2018 12:17	Finished	MS (5ppb), IWST-180129B,2>1
21	N030044-004A,SAMF	21	1000	Unknown		04/30/2018 12:26	Finished	SAMP,0.01>10mL
22	N030044-004AMS,MS	22	1000	Unknown		04/30/2018 12:36	Finished	MS (5ppb), IWST-180129B,0.0
23	CCV-1,CCV1,1,	23	1000	Unknown		04/30/2018 12:45	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	24	1000	Unknown		04/30/2018 12:55	Finished	CCB R180418A
25	N030044-005A,SAMF	25	1000	Unknown		04/30/2018 13:04	Finished	SAMP,0.2>10mL
26	N030044-005AMS,MS	26	1000	Unknown		04/30/2018 13:14	Finished	MS (5ppb), IWST-180129B,0.2
27	N030044-006A,SAMF	27	1000	Unknown		04/30/2018 13:23	Finished	SAMP,0.05>10mL
28	N030044-006AMS,MS	28	1000	Unknown		04/30/2018 13:33	Finished	MS (5ppb), IWST-180129B,0.0
29	N030044-007A,SAMF	29	1000	Unknown		04/30/2018 13:42	Finished	SAMP,0.05>10mL
30	N030044-007AMS,MS	30	1000	Unknown		04/30/2018 13:52	Finished	MS (5ppb), IWST-180129B,0.0
31	N030044-008A,SAMF	31	1000	Unknown		04/30/2018 14:01	Finished	SAMP,0.01>10mL
32	N030044-008AMS,MS	32	1000	Unknown		04/30/2018 14:10	Finished	MS (5ppb), IWST-180129B,0.0
33	N030044-009A,SAMF	33	1000	Unknown		04/30/2018 14:20	Finished	SAMP,0.2>10mL
34	N030044-009AMS,MS	34	1000	Unknown		04/30/2018 14:29	Finished	MS (5ppb), IWST-180129B,0.2
35	CCV-2,CCV,1,	35	1000	Unknown		04/30/2018 14:39	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	36	1000	Unknown		04/30/2018 14:48	Finished	CCB R180418A
37	N030044-010A,SAMF	37	1000	Unknown		04/30/2018 14:58	Finished	SAMP,10mL
38	N030044-010AMS,MS	38	1000	Unknown		04/30/2018 15:07	Finished	MS (1ppb), IWST-180129B,10
39	N030044-011A,SAMF	39	1000	Unknown		04/30/2018 15:17	Finished	SAMP,10mL
40	N030044-011AMS,MS	40	1000	Unknown		04/30/2018 15:26	Finished	MS (1ppb), IWST-180129B,10
41	N030044-001ADUP,D	41	1000	Unknown		04/30/2018 15:36	Finished	DUP,2>10mL
42	N030044-004AMSD,M	42	1000	Unknown		04/30/2018 15:45	Finished	MSD (5ppb), IWST-180129B,0.
43	N030044-002AMS,MS	43	1000	Unknown		04/30/2018 15:55	Finished	MS (5ppb), IWST-180129B,2>1
44	N029859-008A,SAMF	1	1000	Unknown		04/30/2018 16:06	Finished	SAMP,10mL
45	N029859-008AMS,MS	2	1000	Unknown		04/30/2018 16:17	Finished	MS (1ppb), IWST-180129B,10
46	N029859-009A,SAMF	3	1000	Unknown		04/30/2018 16:26	Finished	SAMP,10mL
47	CCV-3,CCV1,1,	4	1000	Unknown		04/30/2018 16:36	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	5	1000	Unknown		04/30/2018 16:45	Finished	CCB R180418A
49	N029859-009AMS,MS	6	1000	Unknown		04/30/2018 16:55	Finished	MS (1ppb), IWST-180129B,10
50	N029859-011A,SAMF	7	1000	Unknown		04/30/2018 17:04	Finished	SAMP,10mL
51	N029859-011AMS,MS	8	1000	Unknown		04/30/2018 17:14	Finished	MS (1ppb), IWST-180129B,10
52	CCV-4,CCV,1,	9	1000	Unknown		04/30/2018 17:23	Finished	CCV @5ppb, IWST-180129A
53	CCB-4,CCB,1,	10	1000	Unknown		04/30/2018 17:33	Finished	CCB R180418A
54	SHUTDOWN	11	1000	Unknown		04/30/2018 17:42	Finished	
55	Eluent: R180430A	12	1000	Unknown		n.a.	Finished	Eluent
56	PCR: R180430B	13	1000	Unknown		n.a.	Finished	Post-Column Reagent

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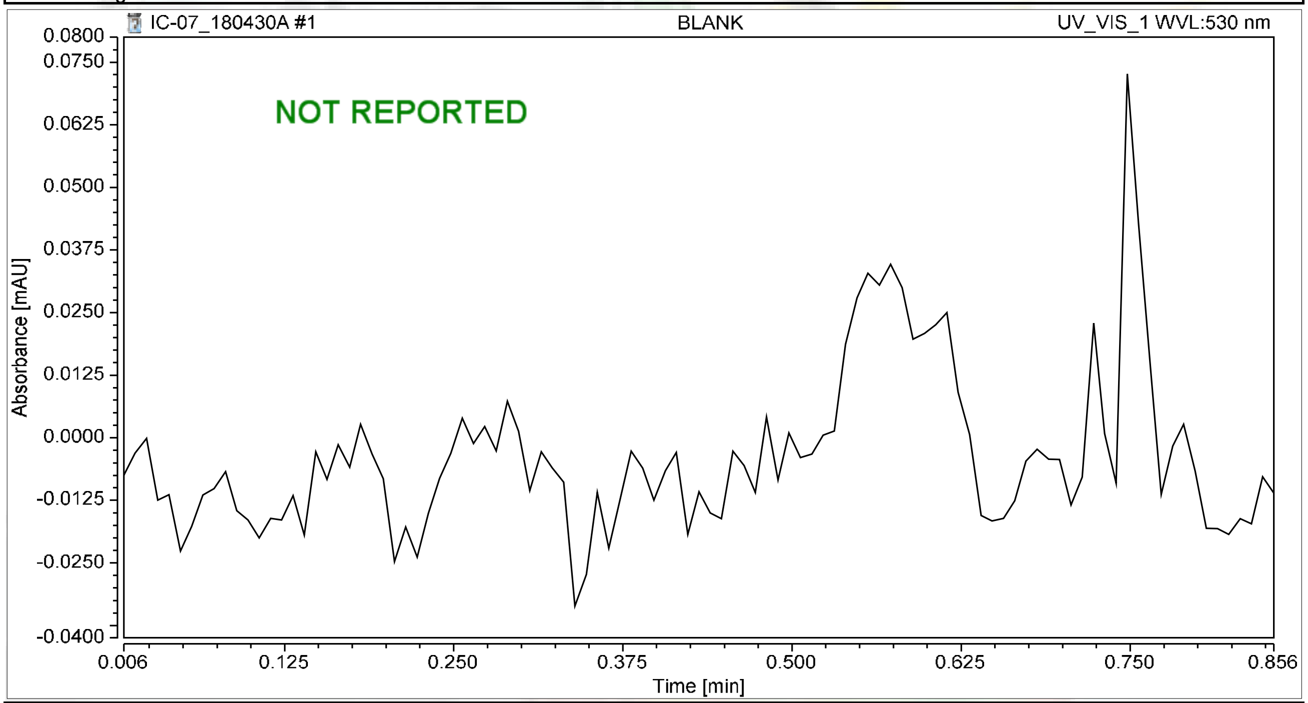
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.85**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

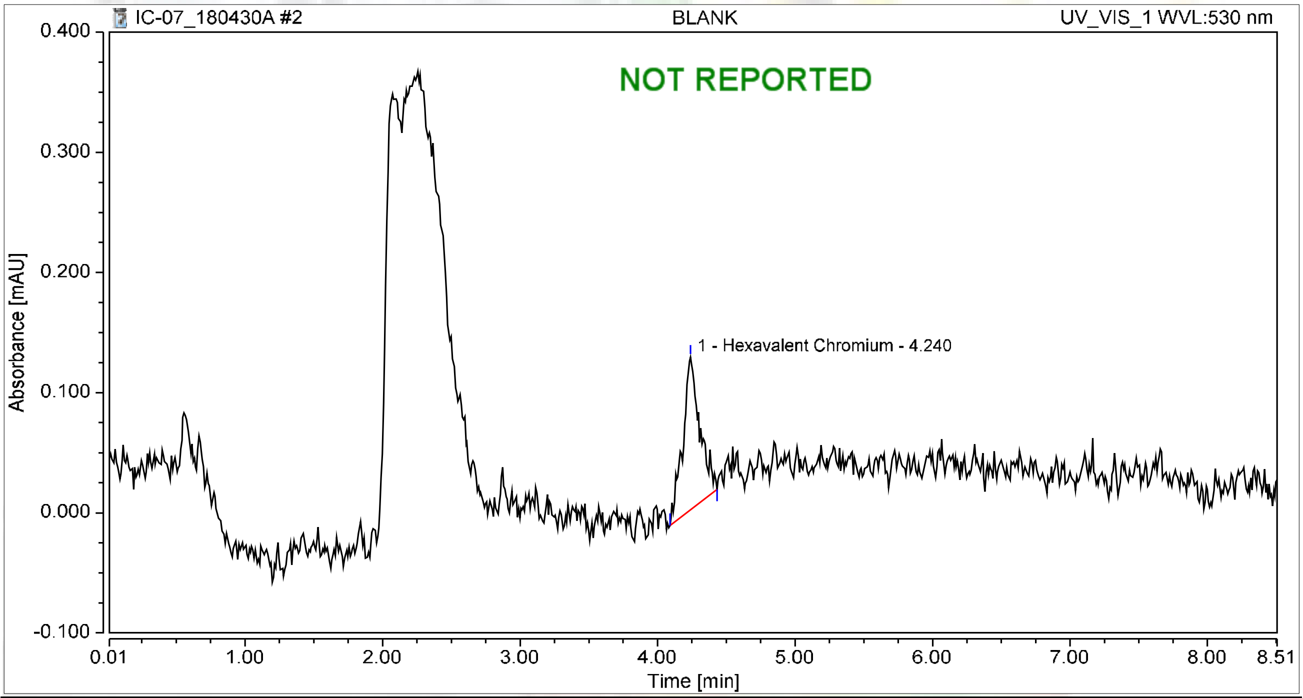
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

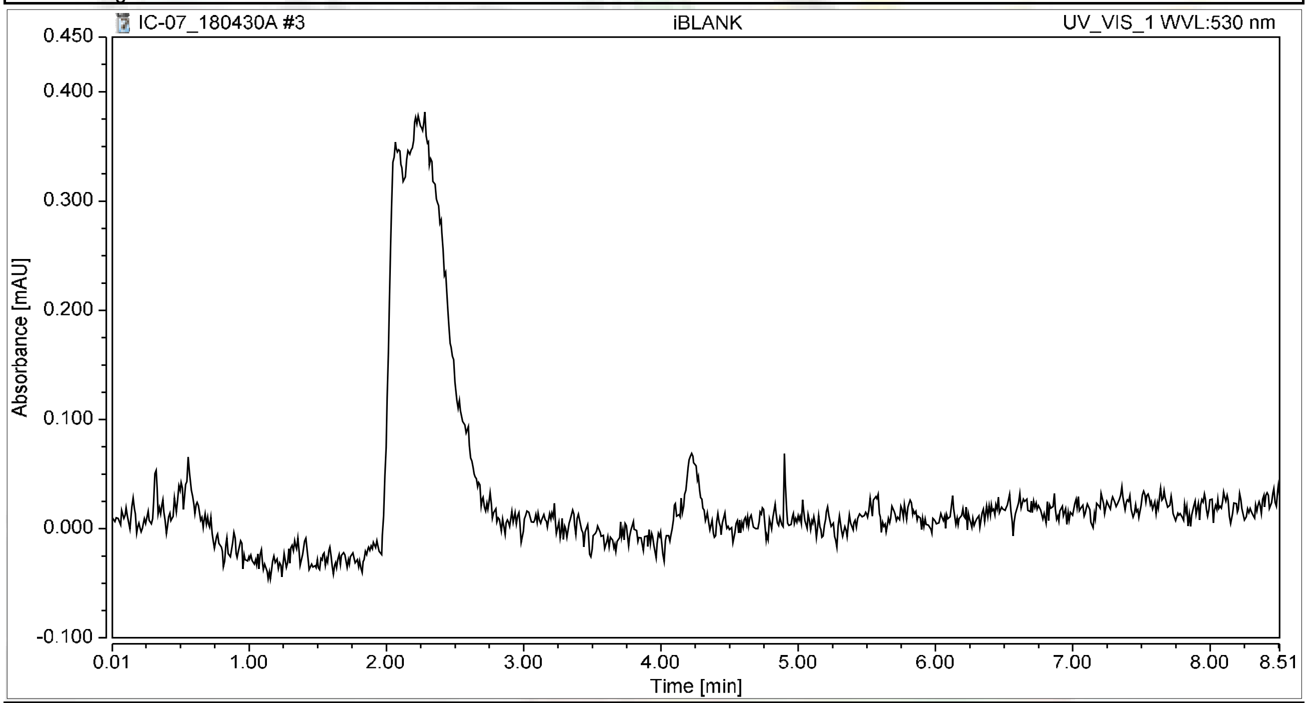
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.018	0.127	100.00	100.00	0.0705
Total:			**0.018**	**0.127**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

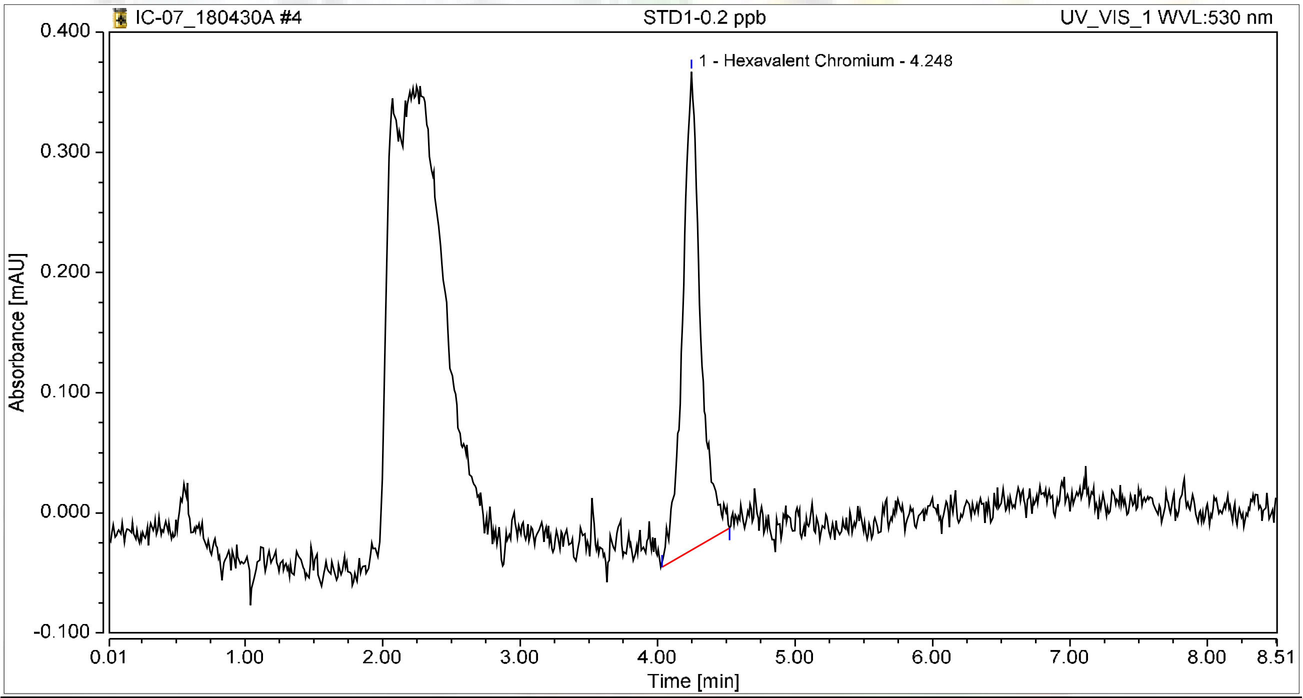
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

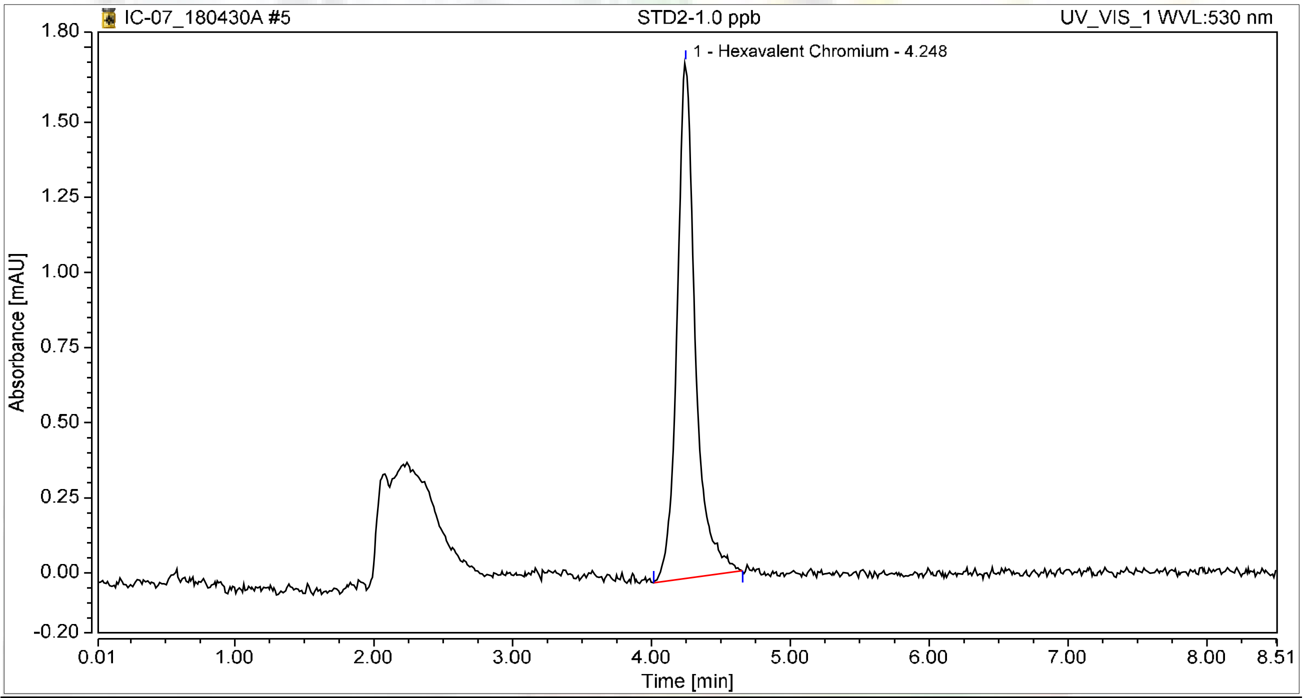
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.061	0.398	100.00	100.00	0.2363
Total:			**0.061**	**0.398**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

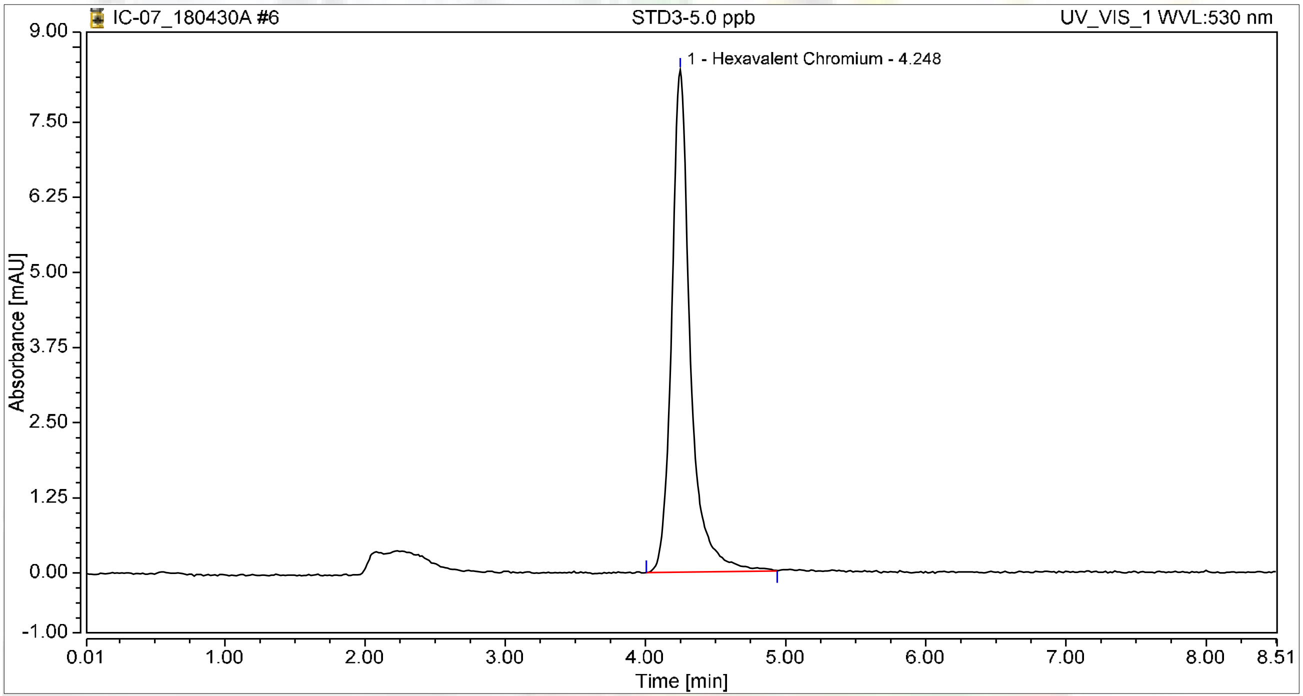
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.262	1.718	100.00	100.00	1.0201
Total:			**0.262**	**1.718**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

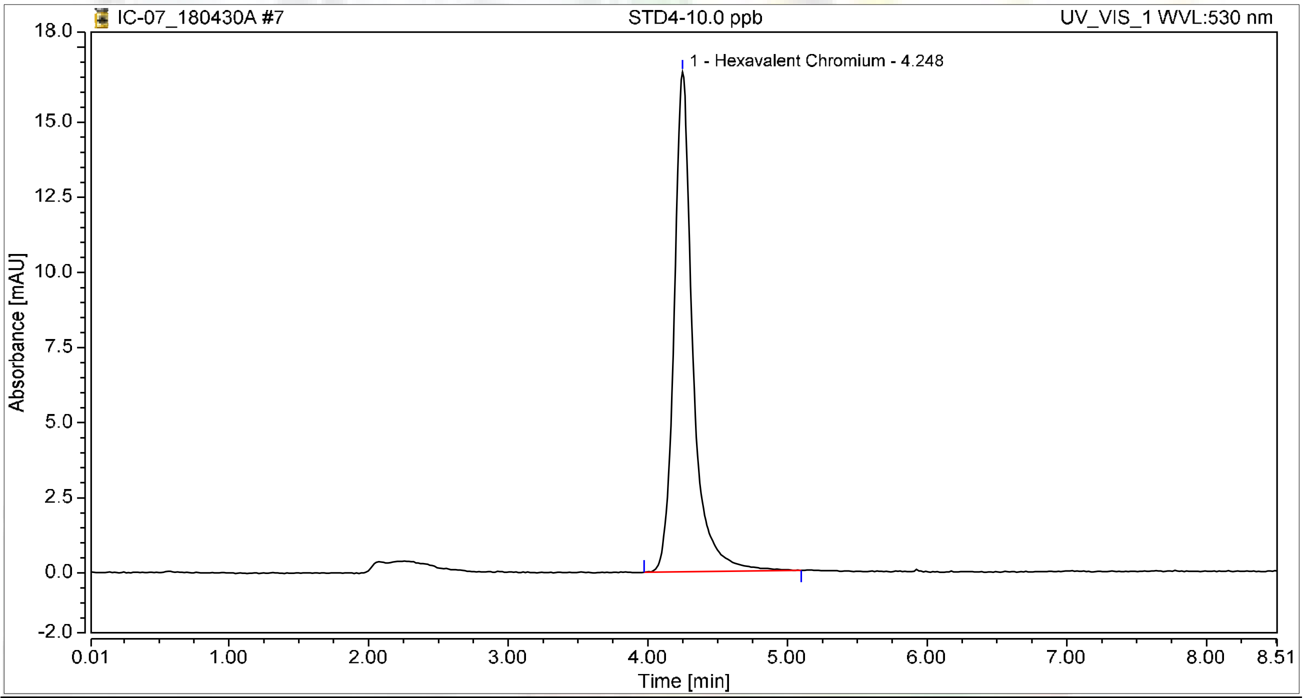
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.292	8.359	100.00	100.00	5.0360
Total:			**1.292**	**8.359**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

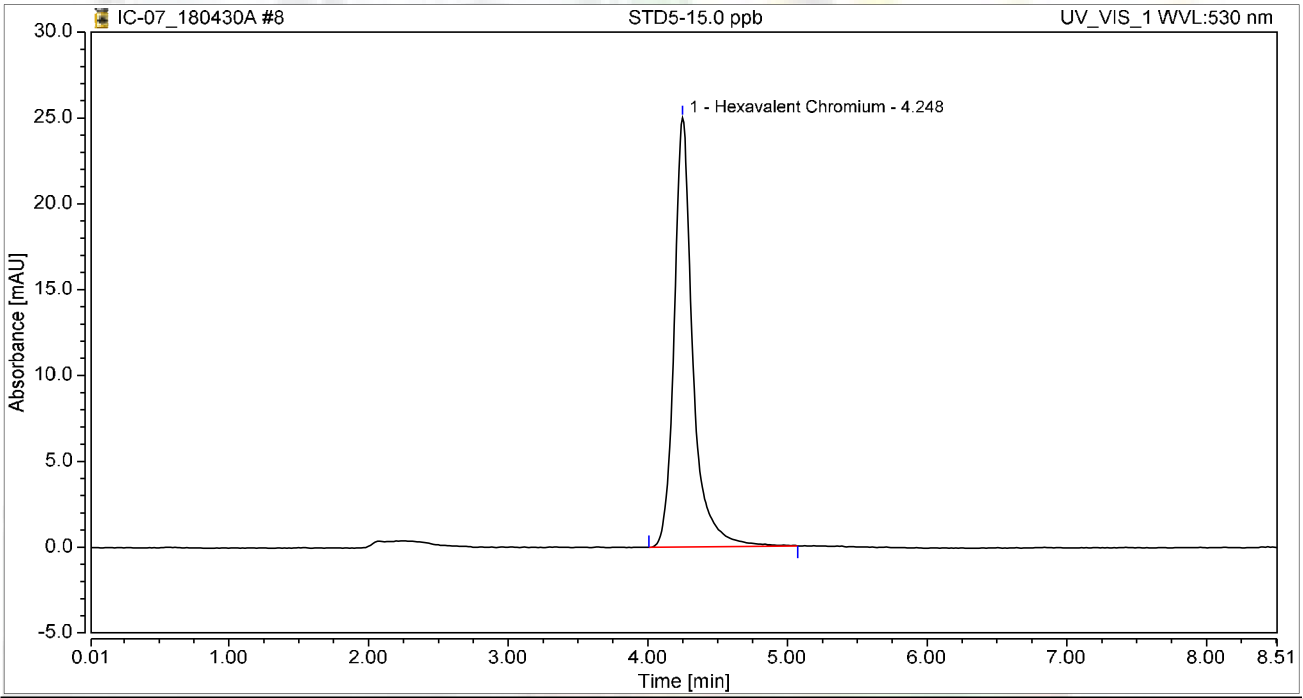
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.581	16.640	100.00	100.00	10.0583
Total:			**2.581**	**16.640**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

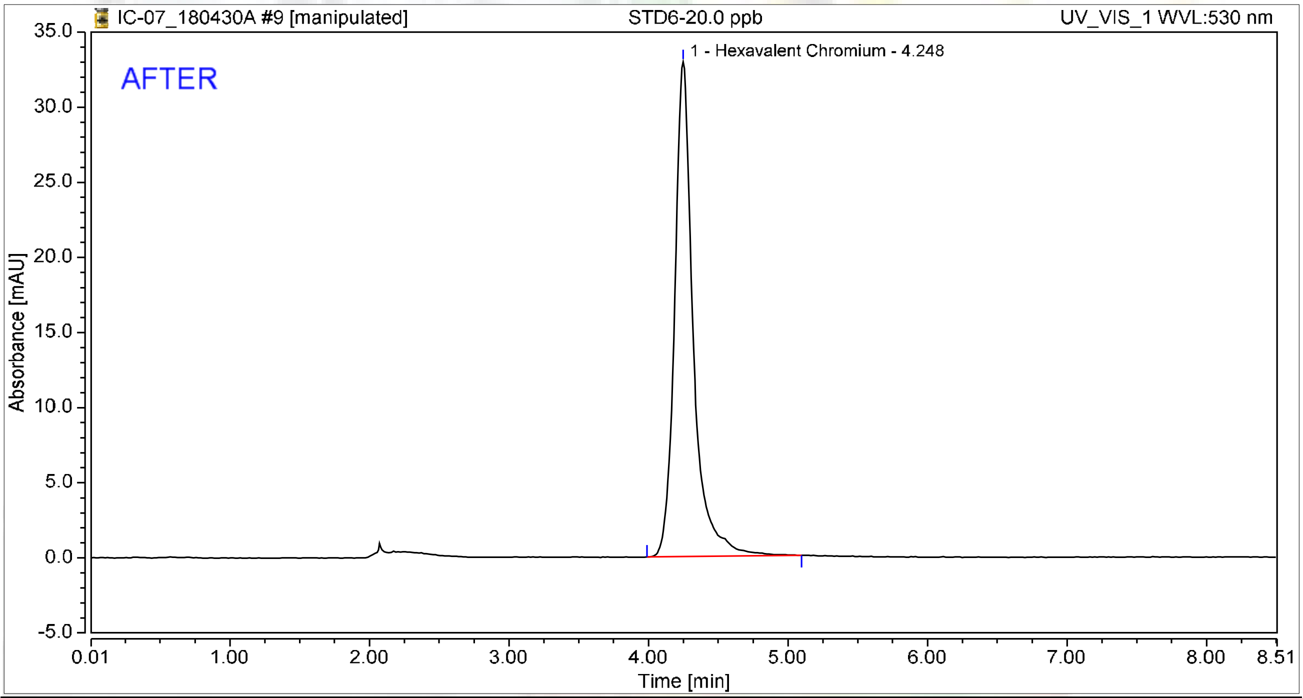
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.873	25.002	100.00	100.00	15.0915
Total:			**3.873**	**25.002**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.105	32.932	100.00	100.00	19.8919
Total:			**5.105**	**32.932**	**100.00**	**100.00**	

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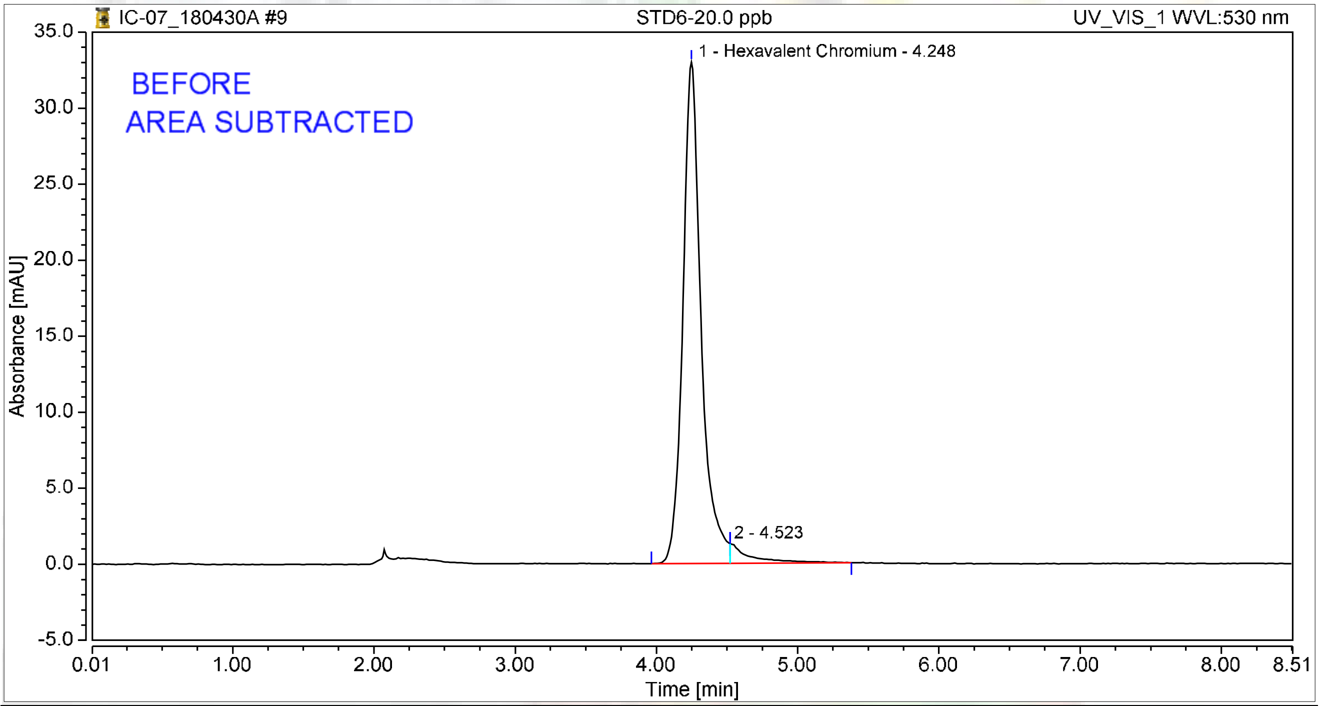
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	4.957	32.968	95.88	96.27	19.6162
2		4.523	0.213	1.278	4.12	3.73	n.a.
Total:			**5.170**	**34.246**	**100.00**	**100.00**	

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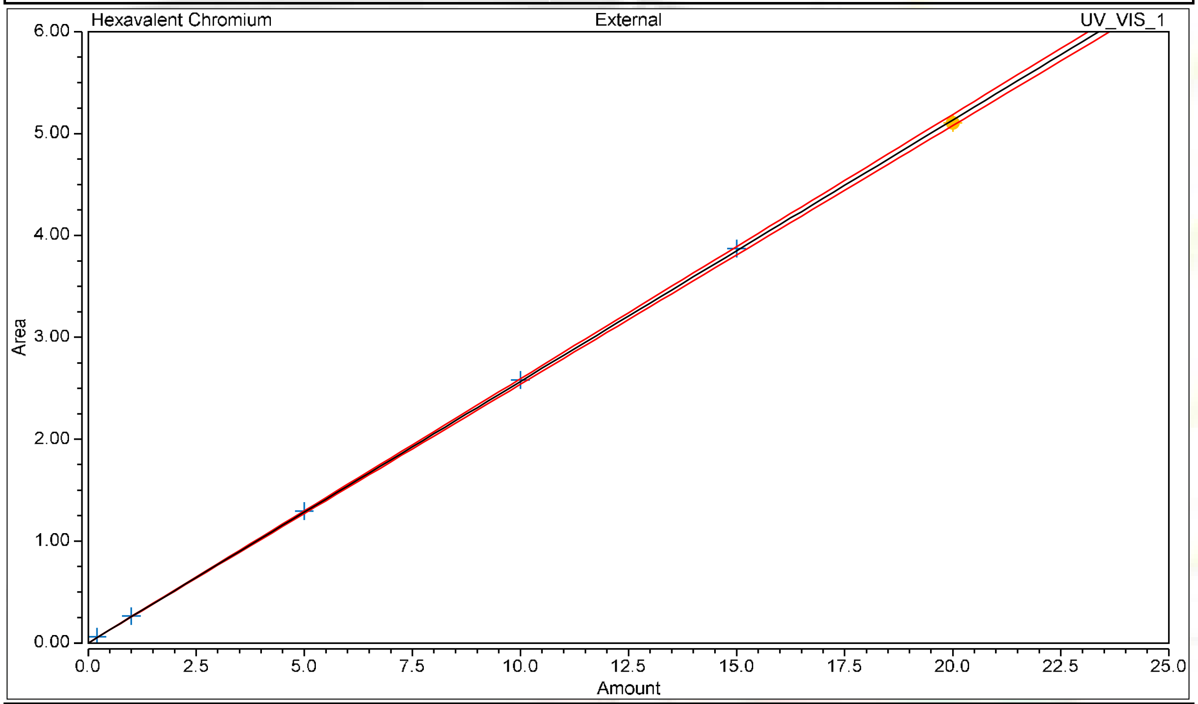
Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2566
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99992

Calibration Plot   Hexavalent Chromium



Calibration Results   Hexavalent Chromium

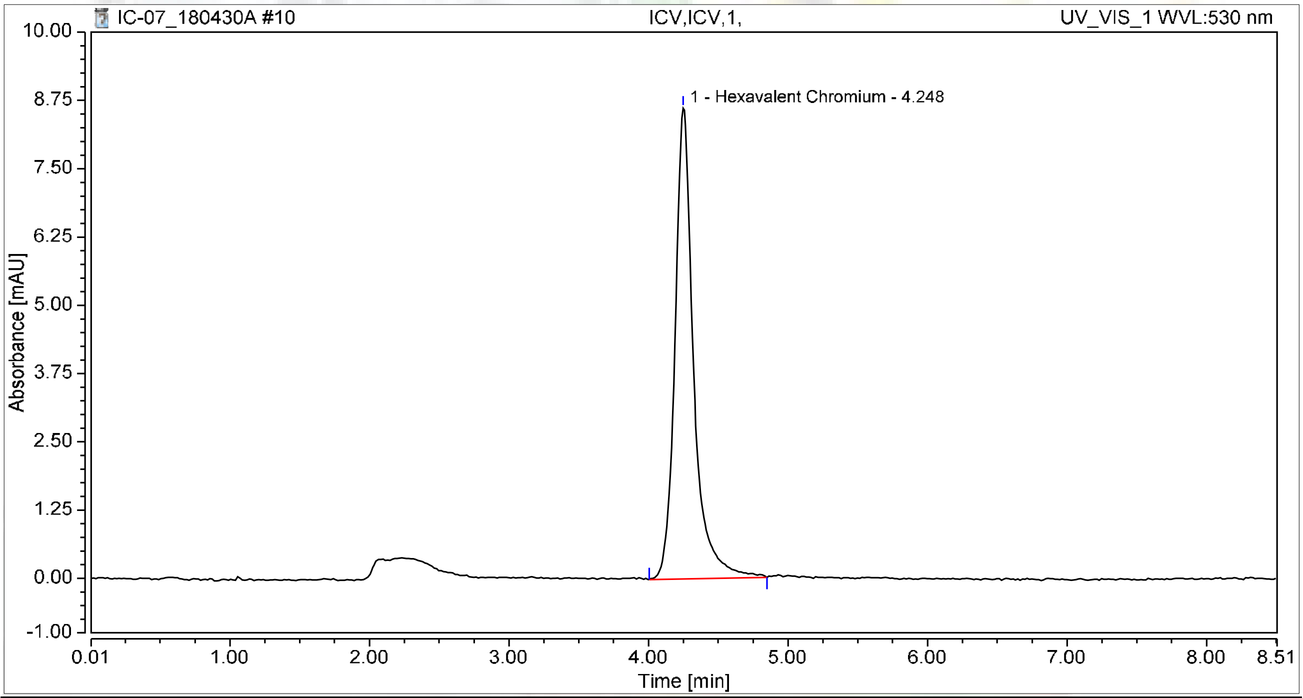
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0607	0.061	0.398
5	STD2-1.0 ppb	02	1.0000	0.2618	0.262	1.718
6	STD3-5.0 ppb	03	5.0000	1.2924	1.292	8.359
7	STD4-10.0 ppb	04	10.0000	2.5813	2.581	16.640
8	STD5-15.0 ppb	05	15.0000	3.8731	3.873	25.002
9	STD6-20.0 ppb	06	20.0000	5.1050	5.105	32.932

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

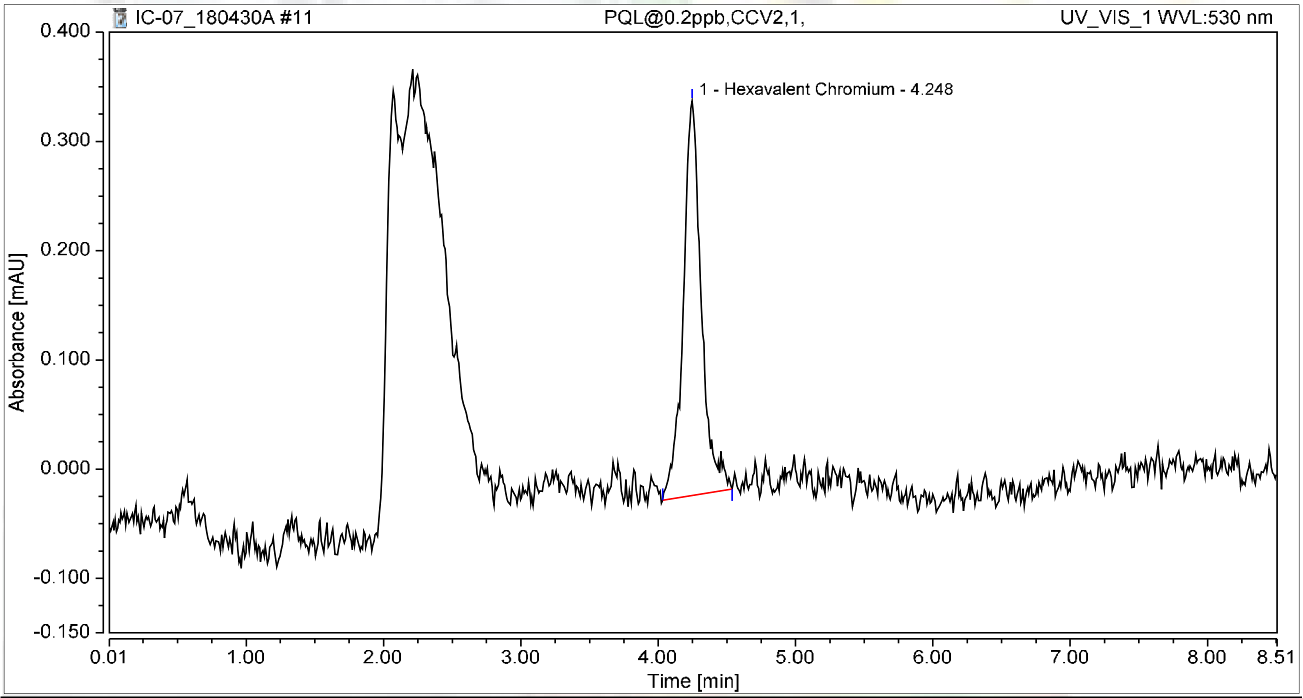
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.333	8.618	100.00	100.00	5.1938
Total:			**1.333**	**8.618**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

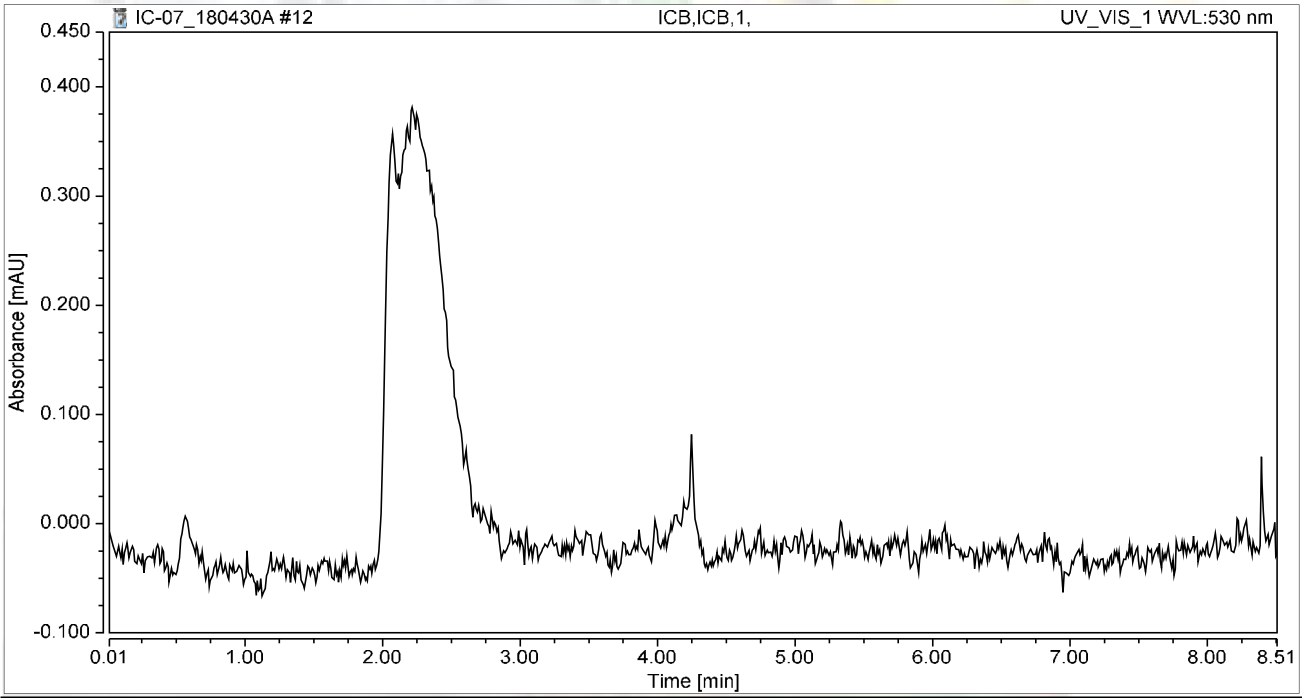
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.055	0.361	100.00	100.00	0.2153
Total:			**0.055**	**0.361**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180507A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/07/18 8:59 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/07/18 9:10 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/07/18 9:19 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/07/18 9:29 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/07/18 9:38 AM	Reported
15	MB-R123917	MBLK	1	Hexavalent Chromium	05/07/18 9:48 AM	Reported
16	LCS-R123917	LCS	1	Hexavalent Chromium	05/07/18 9:57 AM	Reported
17	N030120-021A	SAMP	1	Hexavalent Chromium	05/07/18 10:07 AM	Reported
18	N030120-022A	SAMP	1	Hexavalent Chromium	05/07/18 10:16 AM	Reported
19	N030120-023A	SAMP	1	Hexavalent Chromium	05/07/18 10:26 AM	Reported
20	N030121-001B	SAMP	100	Hexavalent Chromium	05/07/18 10:36 AM	Reported
21	N030121-001BMS	MS	100	Hexavalent Chromium	05/07/18 10:47 AM	Reported
22	N030121-002C	SAMP	1	Hexavalent Chromium	05/07/18 10:57 AM	Reported
23	N030121-002CMS	MS	1	Hexavalent Chromium	05/07/18 11:06 AM	Not Reported
24	N029906-014A	SAMP	1	Hexavalent Chromium	05/07/18 11:16 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/07/18 11:25 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/07/18 11:34 AM	Reported
27	N029906-014AMS	MS	1	Hexavalent Chromium	05/07/18 11:44 AM	Not Reported
28	N030121-002CMS	MS	1	Hexavalent Chromium	05/07/18 11:53 AM	Reported
29	N030123-001A	SAMP	100	Hexavalent Chromium	05/07/18 12:03 PM	Reported
30	N030123-001AMS	MS	100	Hexavalent Chromium	05/07/18 12:12 PM	Reported
31	N030123-002A	SAMP	5	Hexavalent Chromium	05/07/18 12:22 PM	Reported
32	N030123-002AMS	MS	5	Hexavalent Chromium	05/07/18 12:31 PM	Reported
33	N030123-003A	SAMP	5	Hexavalent Chromium	05/07/18 12:41 PM	Reported
34	N030123-003AMS	MS	5	Hexavalent Chromium	05/07/18 12:50 PM	Reported
35	N030123-004A	SAMP	10	Hexavalent Chromium	05/07/18 1:00 PM	Reported
36	N030123-004AMS	MS	10	Hexavalent Chromium	05/07/18 1:09 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/07/18 1:19 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/07/18 1:28 PM	Reported
39	N030123-005A	SAMP	20	Hexavalent Chromium	05/07/18 1:37 PM	Reported
40	N030123-005AMS	MS	20	Hexavalent Chromium	05/07/18 1:47 PM	Reported
41	N030123-006A	SAMP	20	Hexavalent Chromium	05/07/18 1:56 PM	Reported
42	N030123-006AMS	MS	20	Hexavalent Chromium	05/07/18 2:06 PM	Reported

IC7 RBA 5/9/2018 1:49 PM

rba 5/11/2018

RB 05/17/2018

INJECTION LOG: 180507A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030121-001BDUP	DUP	100	Hexavalent Chromium	05/07/18 2:16 PM	Reported
44	N030123-004AMSD	MSD	10	Hexavalent Chromium	05/07/18 2:27 PM	Reported
45	N030123-007A	SAMP	10	Hexavalent Chromium	05/07/18 2:37 PM	Reported
46	N030123-007AMS	MS	10	Hexavalent Chromium	05/07/18 2:46 PM	Reported
47	N030123-008A	SAMP	10	Hexavalent Chromium	05/07/18 2:56 PM	Reported
48	N030123-008AMS	MS	10	Hexavalent Chromium	05/07/18 3:05 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/07/18 3:15 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	05/07/18 3:24 PM	Reported
51	N030123-009A	SAMP	5	Hexavalent Chromium	05/07/18 3:34 PM	Reported
52	N030123-009AMS	MS	5	Hexavalent Chromium	05/07/18 3:43 PM	Reported
53	N030123-010A	SAMP	5	Hexavalent Chromium	05/07/18 3:53 PM	Reported
54	N030123-010AMS	MS	5	Hexavalent Chromium	05/07/18 4:02 PM	Reported
55	N030123-011A	SAMP	1	Hexavalent Chromium	05/07/18 4:11 PM	Reported
56	N030123-011AMS	MS	1	Hexavalent Chromium	05/07/18 4:21 PM	Reported
57	N030123-012A	SAMP	1	Hexavalent Chromium	05/07/18 4:30 PM	Reported
58	N030123-012AMS	MS	1	Hexavalent Chromium	05/07/18 4:40 PM	Reported
59	N030123-013A	SAMP	1	Hexavalent Chromium	05/07/18 4:49 PM	Reported
60	N030123-013AMS	MS	1	Hexavalent Chromium	05/07/18 4:59 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	05/07/18 5:08 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	05/07/18 5:18 PM	Reported
63	N030123-014A	SAMP	50	Hexavalent Chromium	05/07/18 5:27 PM	Reported
64	N030123-014AMS	MS	50	Hexavalent Chromium	05/07/18 5:37 PM	Reported
65	N030123-002A	SAMP	1	Hexavalent Chromium	05/07/18 5:46 PM	Not Reported
66	N030123-002AMS	MS	1	Hexavalent Chromium	05/07/18 5:55 PM	Not Reported
67	N030123-003A	SAMP	1	Hexavalent Chromium	05/07/18 6:05 PM	Not Reported
68	N030123-003AMS	MS	1	Hexavalent Chromium	05/07/18 6:14 PM	Not Reported
69	N030121-002C	SAMP	5	Hexavalent Chromium	05/07/18 6:24 PM	Not Reported
70	N030121-002CMS	MS	5	Hexavalent Chromium	05/07/18 6:33 PM	Not Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	05/07/18 6:43 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	05/07/18 6:52 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180507A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**07/May/18 19:23:04**
No. of Injections:	**75**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/07/2018 08:59	Finished	BLANK
11	BLANK	2	1000	Unknown		05/07/2018 09:10	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		05/07/2018 09:19	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/07/2018 09:29	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		05/07/2018 09:38	Finished	CCB R180409B
15	MB-H2O,MBLK,1,	6	1000	Unknown		05/07/2018 09:48	Finished	MB R180409B
16	LCS-H2O,LCS,1,	7	1000	Unknown		05/07/2018 09:57	Finished	LCS, IWST-180129B
17	N030120-021A,SAMF	9	1000	Unknown		05/07/2018 10:07	Finished	SAMP,10mL
18	N030120-022A,SAMF	10	1000	Unknown		05/07/2018 10:16	Finished	SAMP,10mL
19	N030120-023A,SAMF	11	1000	Unknown		05/07/2018 10:26	Finished	SAMP,10mL
20	N030121-001B,SAMF	1	1000	Unknown		05/07/2018 10:36	Finished	SAMP,0.1>10mL
21	N030121-001BMS,MS	2	1000	Unknown		05/07/2018 10:47	Finished	MS (5ppb), IWST-180129B,0.1
22	N030121-002C,SAMF	3	1000	Unknown		05/07/2018 10:57	Finished	SAMP,10mL
23	N030121-002CMS,MS	4	1000	Unknown		05/07/2018 11:06	Finished	MS (1ppb), IWST-180129B,10
24	N029906-014A,SAMF	5	1000	Unknown		05/07/2018 11:16	Finished	SAMP,10mL
25	CCV-2,CCV1,1,	6	1000	Unknown		05/07/2018 11:25	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	7	1000	Unknown		05/07/2018 11:34	Finished	CCB R180409B
27	N029906-014AMS,MS	8	1000	Unknown		05/07/2018 11:44	Finished	MS (1ppb), IWST-180129B,10
28	N030121-002CMS,MS	9	1000	Unknown		05/07/2018 11:53	Finished	MS (1ppb), IWST-180129B,10
29	N030123-001A,SAMF	10	1000	Unknown		05/07/2018 12:03	Finished	SAMP,0.1>10mL
30	N030123-001AMS,MS	11	1000	Unknown		05/07/2018 12:12	Finished	MS (5ppb), IWST-180129B,0.1
31	N030123-002A,SAMF	12	1000	Unknown		05/07/2018 12:22	Finished	SAMP,2>10mL
32	N030123-002AMS,MS	13	1000	Unknown		05/07/2018 12:31	Finished	MS (1ppb), IWST-180129B,2>1
33	N030123-003A,SAMF	14	1000	Unknown		05/07/2018 12:41	Finished	SAMP,2>10mL
34	N030123-003AMS,MS	15	1000	Unknown		05/07/2018 12:50	Finished	MS (1ppb), IWST-180129B,2>1
35	N030123-004A,SAMF	16	1000	Unknown		05/07/2018 13:00	Finished	SAMP,1>10mL
36	N030123-004AMS,MS	17	1000	Unknown		05/07/2018 13:09	Finished	MS (5ppb), IWST-180129B,1>1
37	CCV-3,CCV,1,	18	1000	Unknown		05/07/2018 13:19	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	19	1000	Unknown		05/07/2018 13:28	Finished	CCB R180418A
39	N030123-005A,SAMF	20	1000	Unknown		05/07/2018 13:37	Finished	SAMP,0.5>10mL
40	N030123-005AMS,MS	21	1000	Unknown		05/07/2018 13:47	Finished	MS (5ppb), IWST-180129B,0.5
41	N030123-006A,SAMF	22	1000	Unknown		05/07/2018 13:56	Finished	SAMP,0.5>10mL
42	N030123-006AMS,MS	23	1000	Unknown		05/07/2018 14:06	Finished	MS (5ppb), IWST-180129B,0.5
43	N030121-001BDUP,D	1	1000	Unknown		05/07/2018 14:16	Finished	DUP,0.1>10mL
44	N030123-004AMSD,M	2	1000	Unknown		05/07/2018 14:27	Finished	MSD (5ppb), IWST-180129B,1>
45	N030123-007A,SAMF	3	1000	Unknown		05/07/2018 14:37	Finished	SAMP,1>10mL
46	N030123-007AMS,MS	4	1000	Unknown		05/07/2018 14:46	Finished	MS (5ppb), IWST-180129B,1>1
47	N030123-008A,SAMF	5	1000	Unknown		05/07/2018 14:56	Finished	SAMP,1>10mL
48	N030123-008AMS,MS	6	1000	Unknown		05/07/2018 15:05	Finished	MS (5ppb), IWST-180129B,1>1
49	CCV-4,CCV1,1,	7	1000	Unknown		05/07/2018 15:15	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	8	1000	Unknown		05/07/2018 15:24	Finished	CCB R180418A
51	N030123-009A,SAMF	9	1000	Unknown		05/07/2018 15:34	Finished	SAMP,0.05>10mL
52	N030123-009AMS,MS	10	1000	Unknown		05/07/2018 15:43	Finished	MS (5ppb), IWST-180129B,0.0
53	N030123-010A,SAMF	11	1000	Unknown		05/07/2018 15:53	Finished	SAMP,2>10mL
54	N030123-010AMS,MS	12	1000	Unknown		05/07/2018 16:02	Finished	MS (5ppb), IWST-180129B,2>1
55	N030123-011A,SAMF	13	1000	Unknown		05/07/2018 16:11	Finished	SAMP,10mL
56	N030123-011AMS,MS	14	1000	Unknown		05/07/2018 16:21	Finished	MS (1ppb), IWST-180129B,10
57	N030123-012A,SAMF	15	1000	Unknown		05/07/2018 16:30	Finished	SAMP,10mL
58	N030123-012AMS,MS	16	1000	Unknown		05/07/2018 16:40	Finished	MS (1ppb), IWST-180129B,10
59	N030123-013A,SAMF	17	1000	Unknown		05/07/2018 16:49	Finished	SAMP,10mL
60	N030123-013AMS,MS	18	1000	Unknown		05/07/2018 16:59	Finished	MS (1ppb), IWST-180129B,10

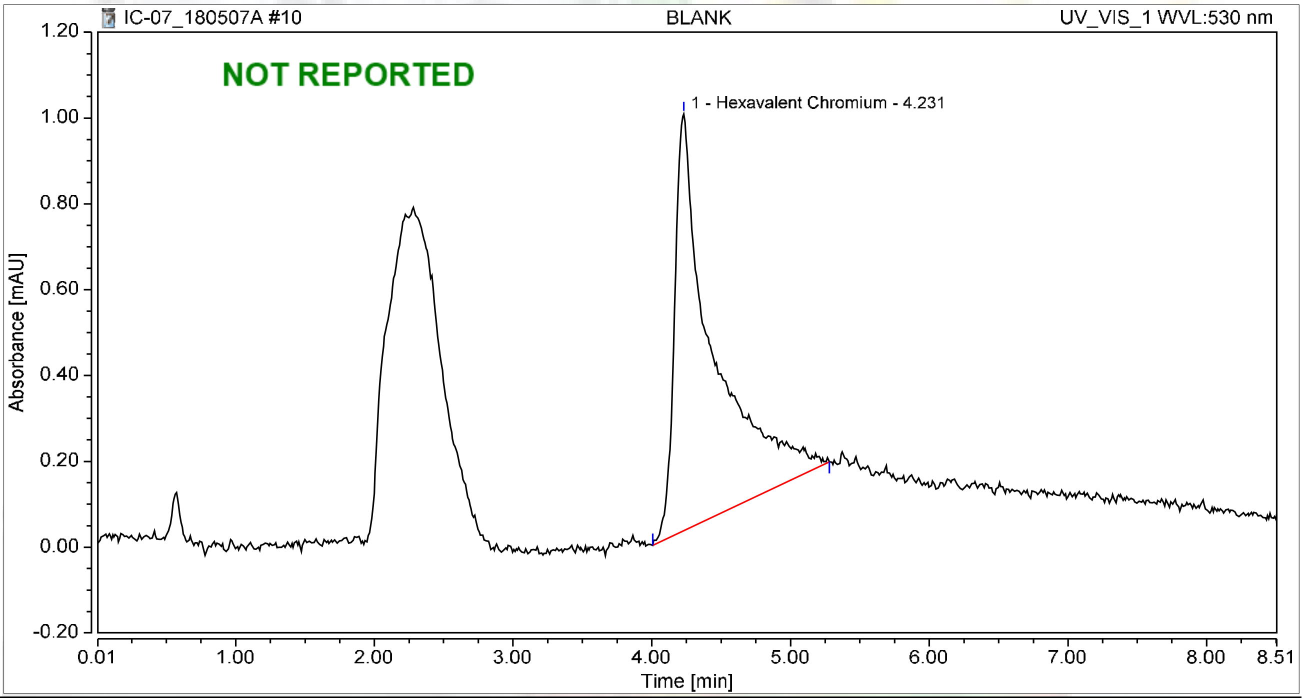
61	CCV-5,CCV,1,	19	1000	Unknown		05/07/2018 17:08	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	20	1000	Unknown		05/07/2018 17:18	Finished	CCB R180409B
63	N030123-014A,SAMF	21	1000	Unknown		05/07/2018 17:27	Finished	SAMP,0.2>10mL
64	N030123-014AMS,MS	22	1000	Unknown		05/07/2018 17:37	Finished	MS (5ppb), IWST-180129B,0.2
65	N030123-002A,SAMF	23	1000	Unknown		05/07/2018 17:46	Finished	SAMP,10mL
66	N030123-002AMS,MS	24	1000	Unknown		05/07/2018 17:55	Finished	MS (1ppb), IWST-180129B,10
67	N030123-003A,SAMF	25	1000	Unknown		05/07/2018 18:05	Finished	SAMP,10mL
68	N030123-003AMS,MS	26	1000	Unknown		05/07/2018 18:14	Finished	MS (1ppb), IWST-180129B,10
69	N030121-002C,SAMF	27	1000	Unknown		05/07/2018 18:24	Finished	SAMP,2>10mL
70	N030121-002CMS,MS	28	1000	Unknown		05/07/2018 18:33	Finished	MS (1ppb), IWST-180129B,2>1
71	CCV-6,CCV1,1,	29	1000	Unknown		05/07/2018 18:43	Finished	CCV @10ppb, IWST-180129A
72	CCB-6,CCB,1,	30	1000	Unknown		05/07/2018 18:52	Finished	CCB R180409B
73	SHUTDOWN	31	1000	Unknown		05/07/2018 19:02	Finished	
74	Eluent: R180504A	32	1000	Unknown		n.a.	Finished	Eluent
75	PCR: R180502B	33	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 08:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

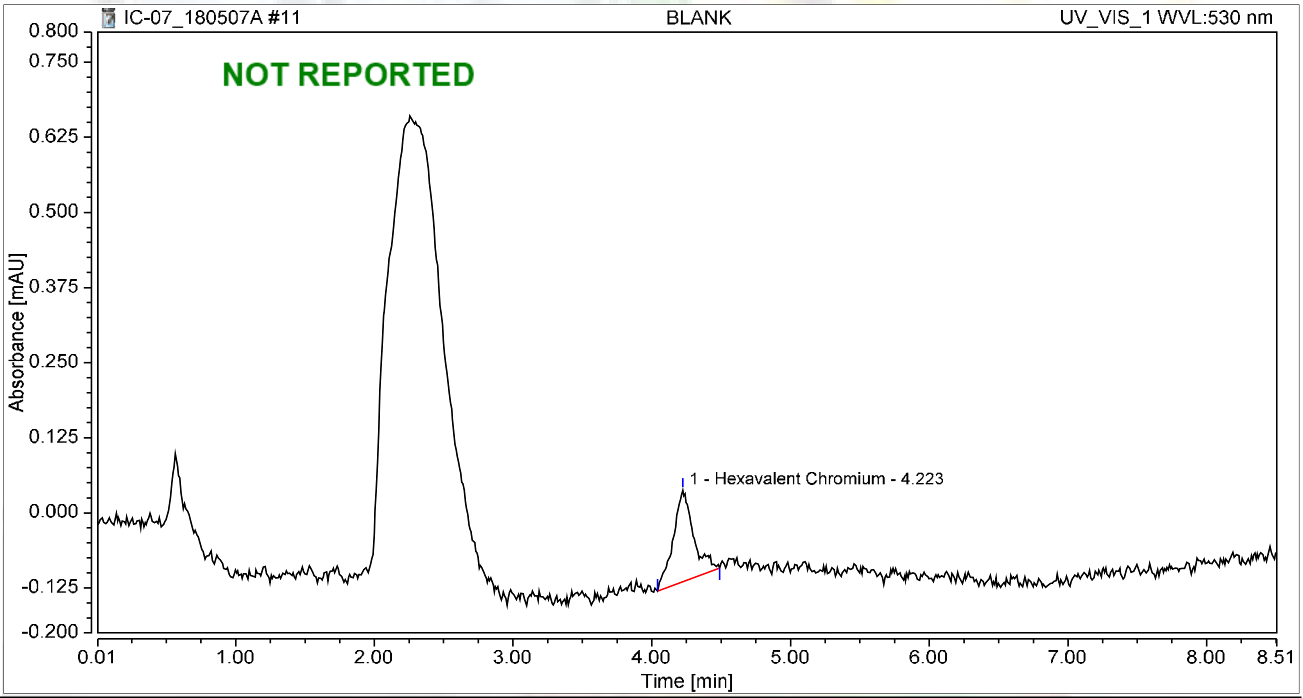
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.231	0.316	0.971	100.00	100.00	1.2314
Total:			**0.316**	**0.971**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 09:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

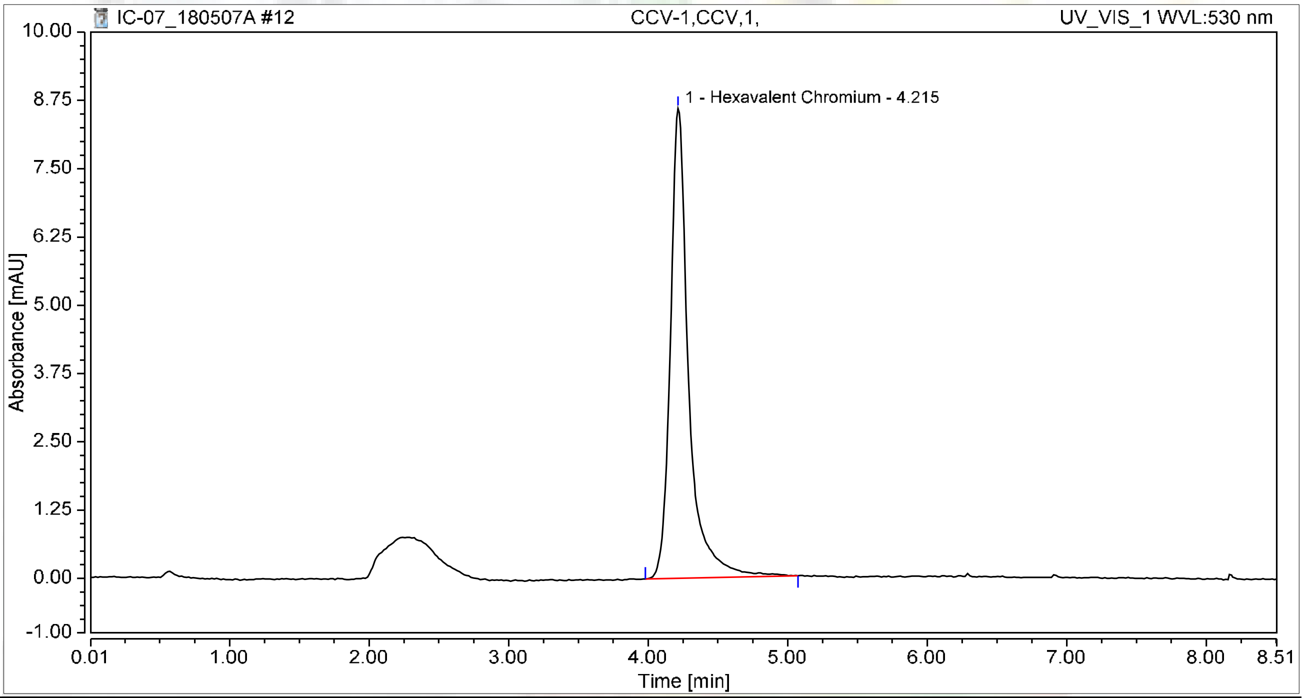
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	0.025	0.152	100.00	100.00	0.0993
Total:			**0.025**	**0.152**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 09:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

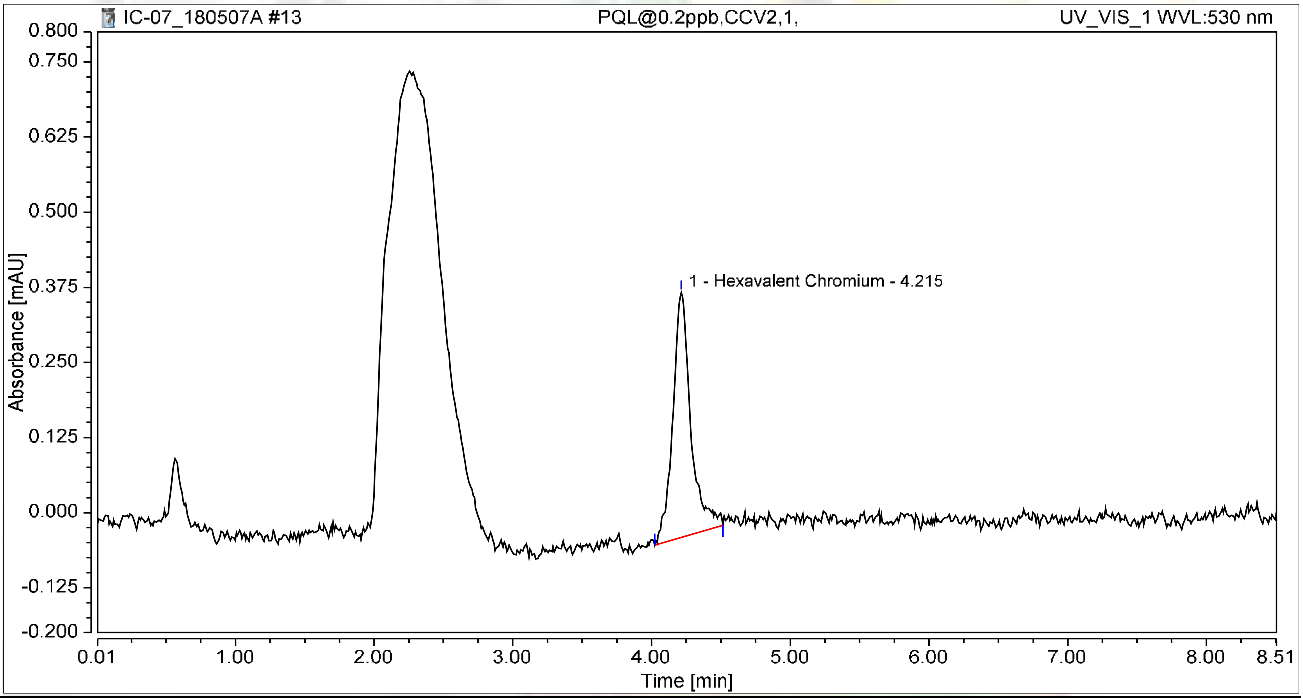
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.309	8.604	100.00	100.00	5.1024
Total:			**1.309**	**8.604**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 09:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

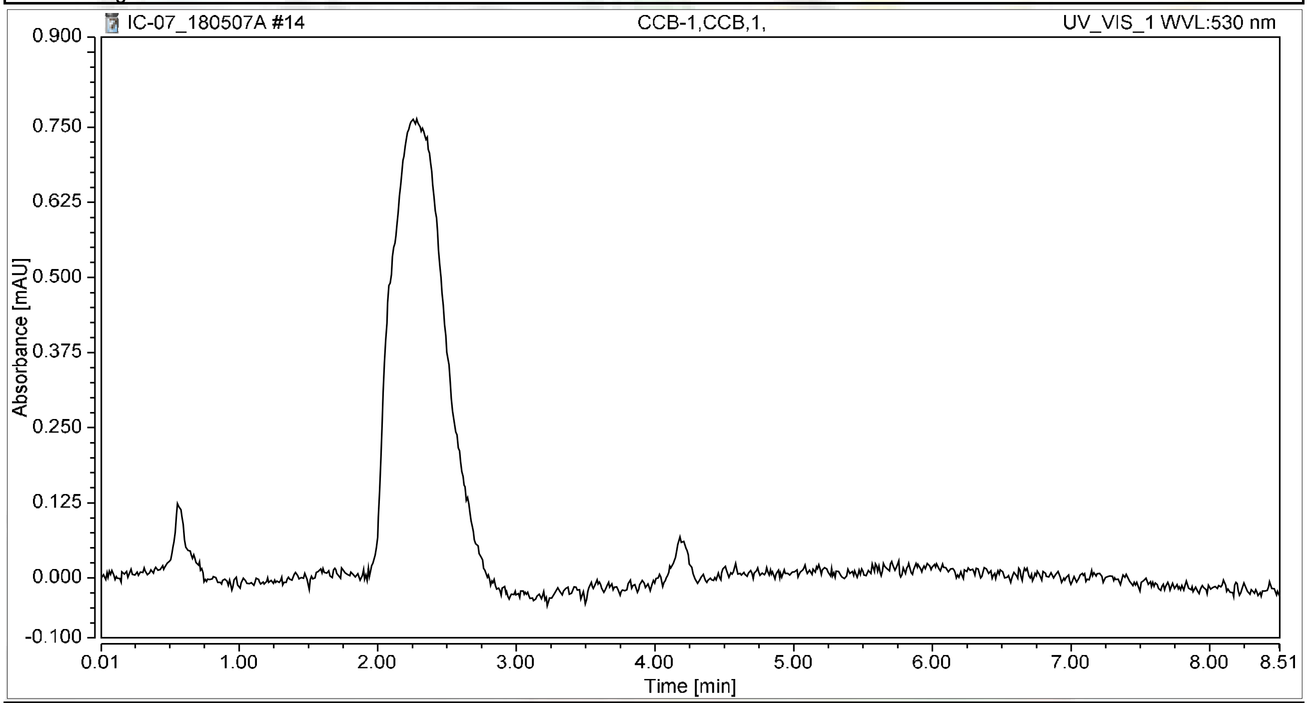
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.061	0.408	100.00	100.00	0.2389
Total:			**0.061**	**0.408**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 09:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

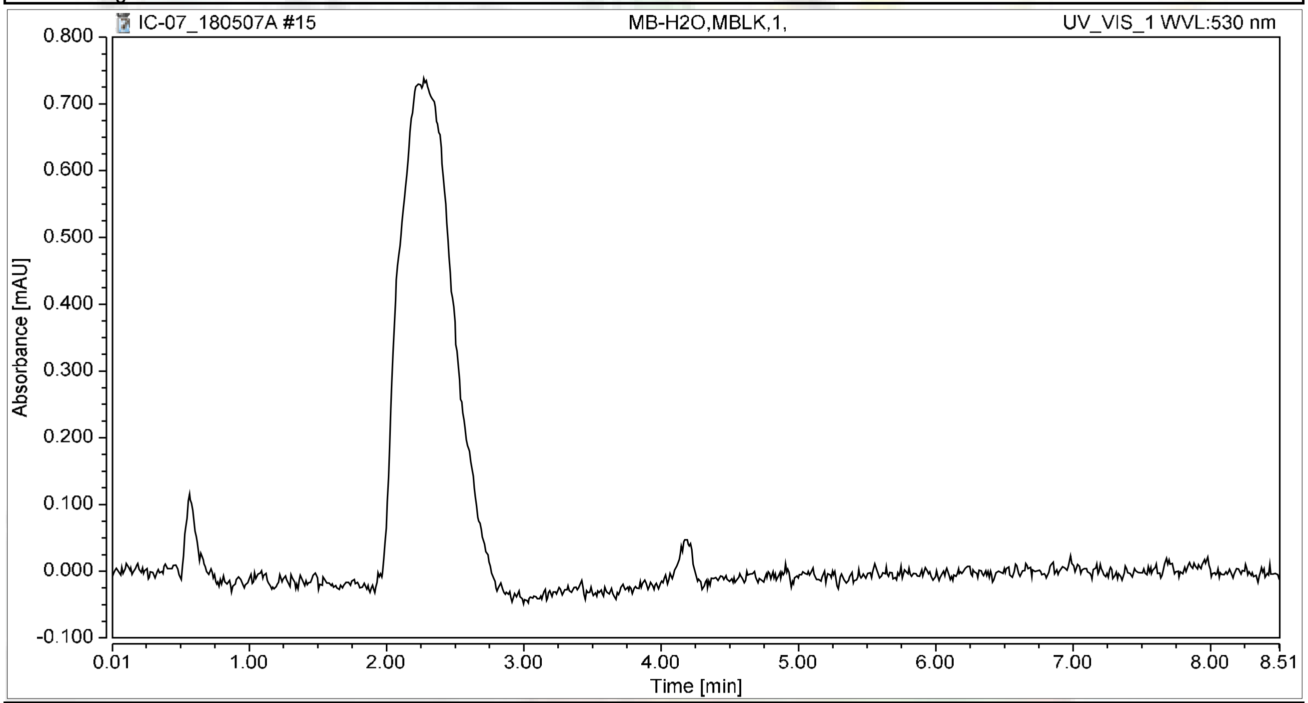
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 09:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

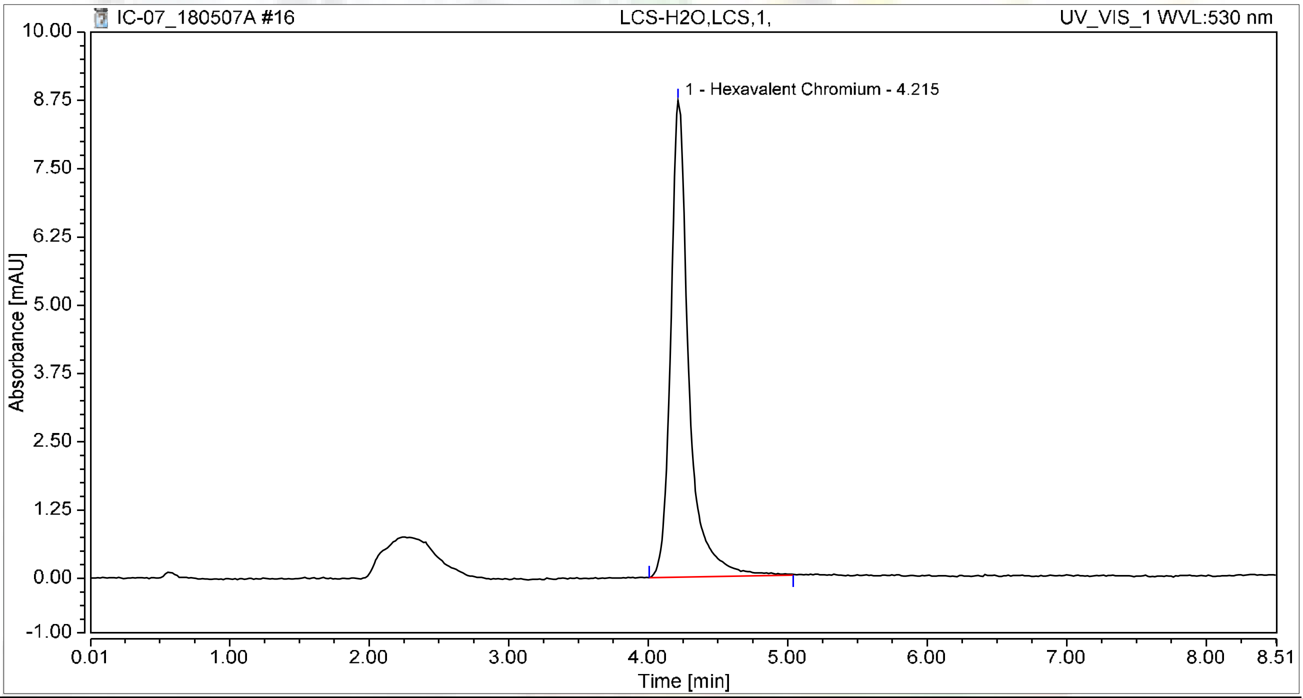
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 09:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

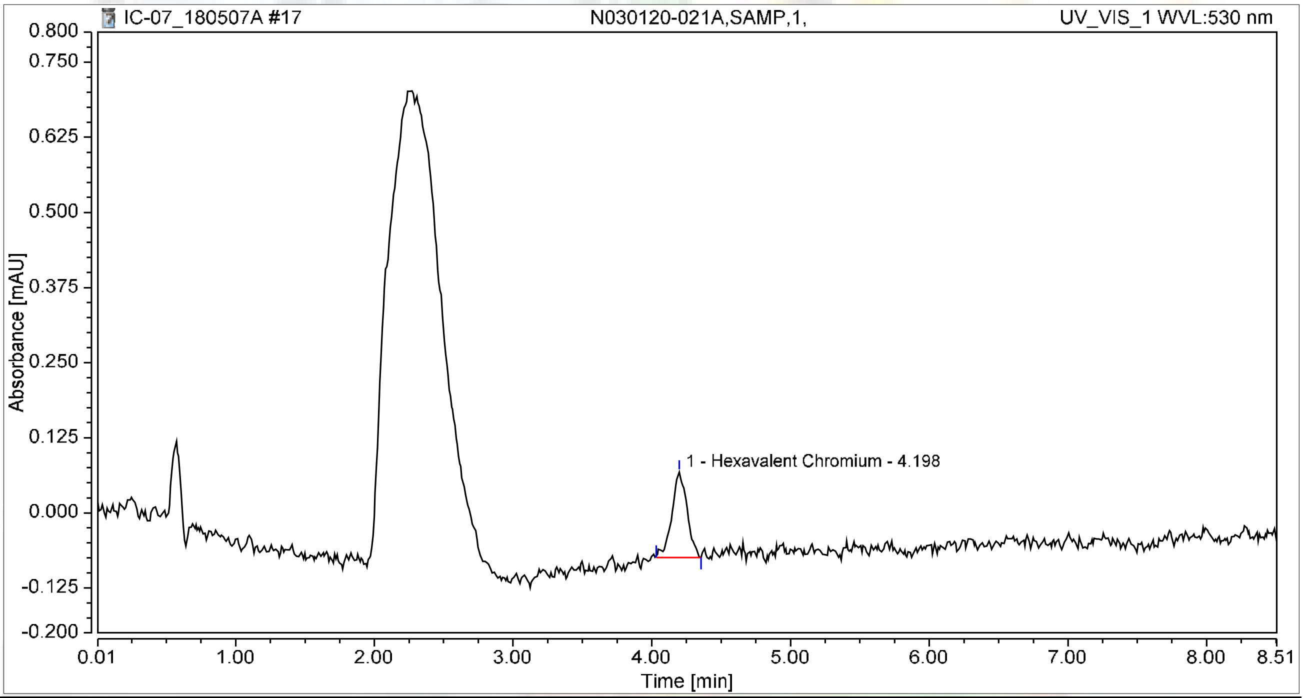
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.320	8.724	100.00	100.00	5.1439
Total:			**1.320**	**8.724**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030120-021A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 10:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

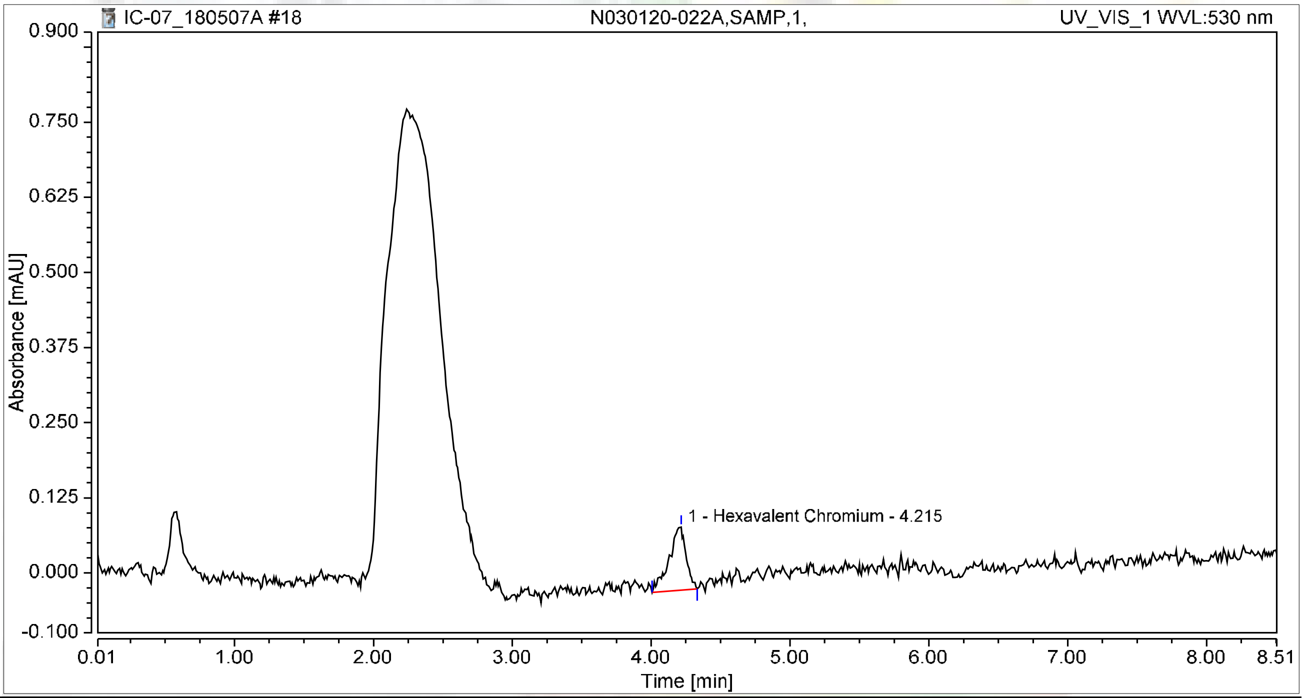
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.018	0.142	100.00	100.00	0.0699
Total:			**0.018**	**0.142**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030120-022A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 10:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

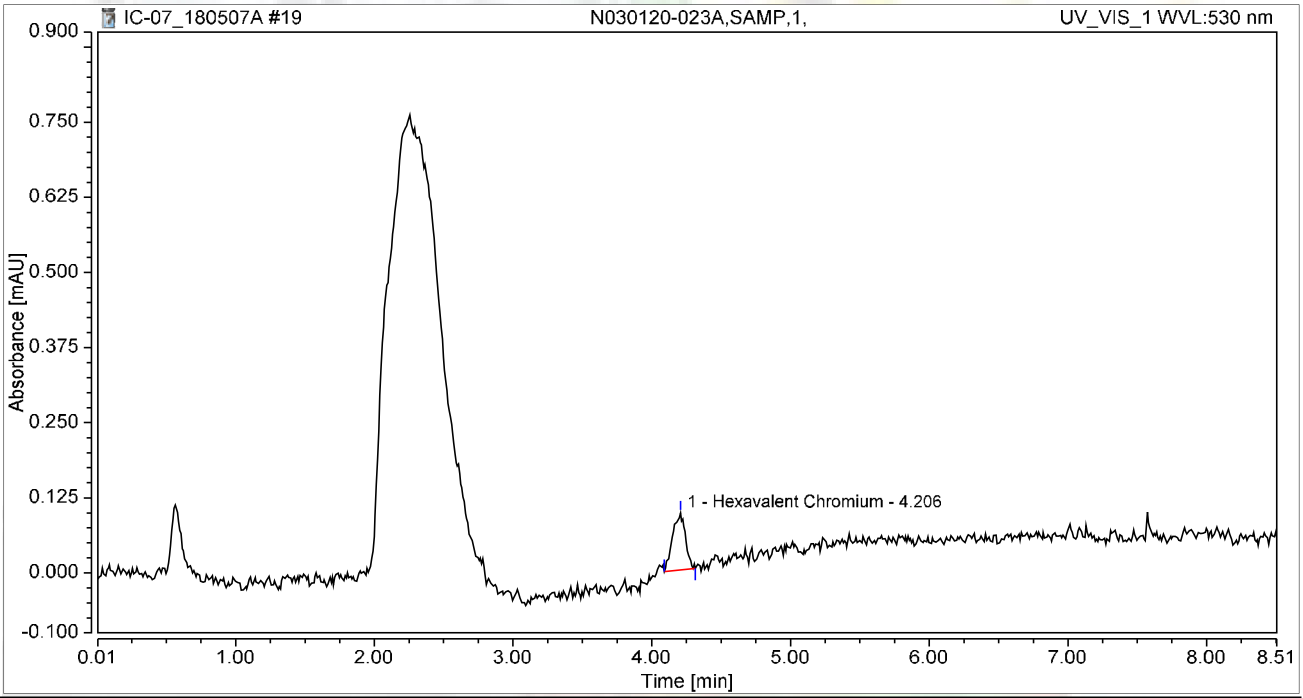
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.015	0.105	100.00	100.00	0.0582
Total:			**0.015**	**0.105**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030120-023A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 10:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

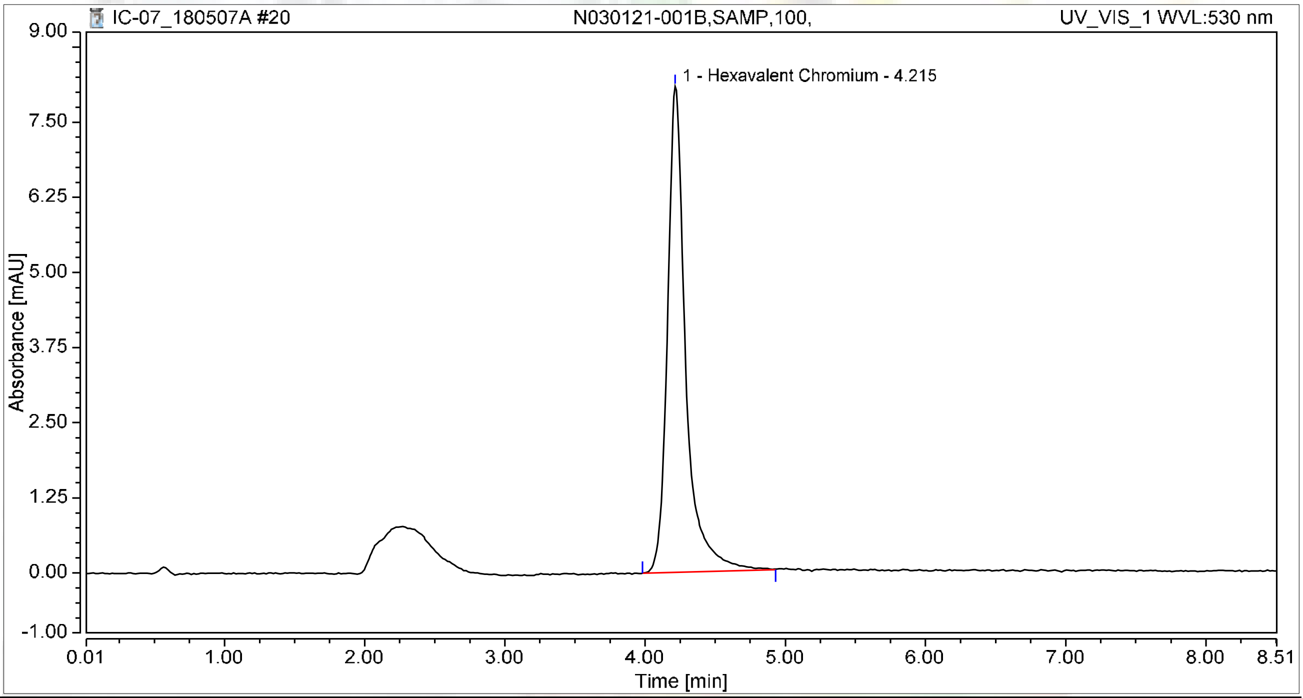
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.010	0.095	100.00	100.00	0.0391
Total:			**0.010**	**0.095**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030121-001B,SAMP,100,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 10:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

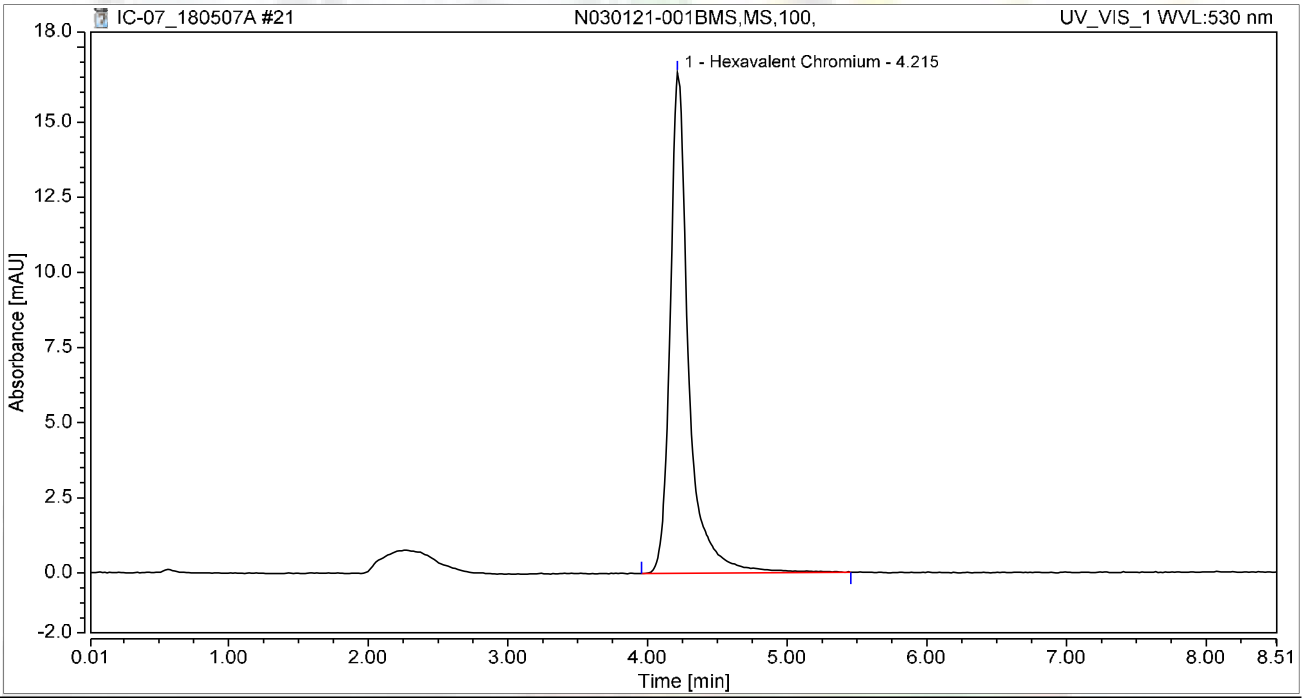
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.222	8.084	100.00	100.00	4.7609
Total:			**1.222**	**8.084**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030121-001BMS,MS,100,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 10:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

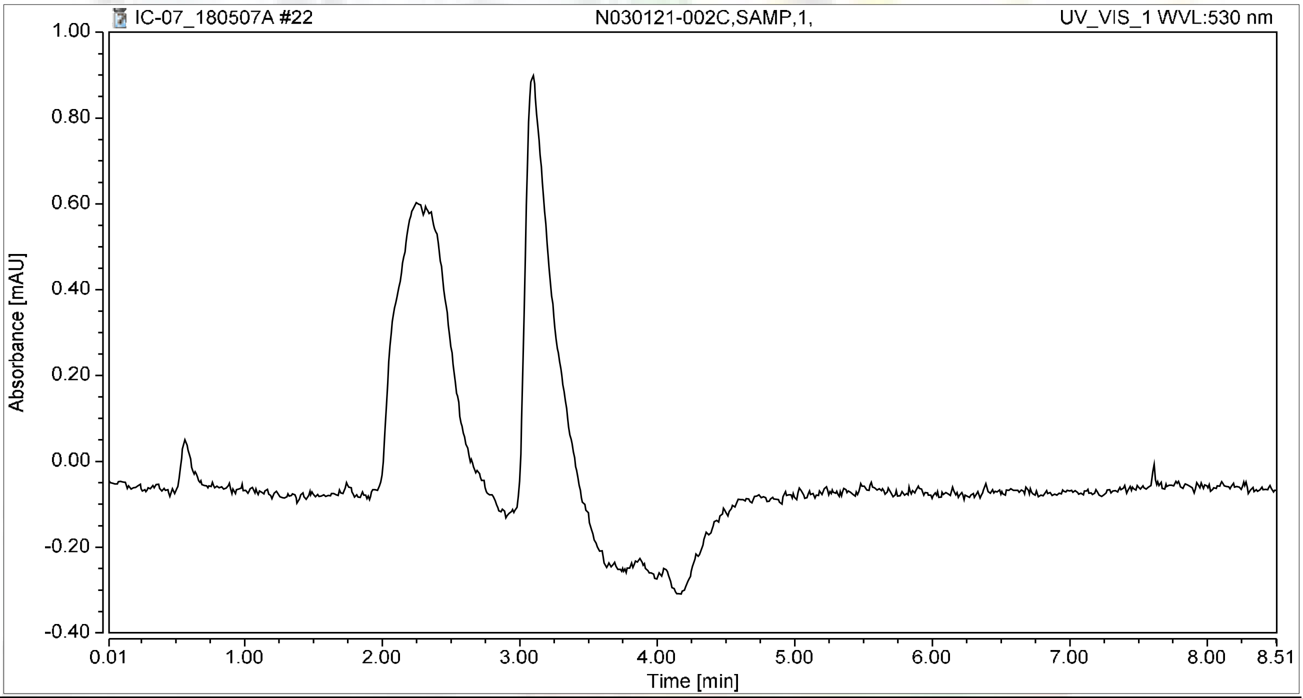
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.569	16.655	100.00	100.00	10.0117
Total:			**2.569**	**16.655**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030121-002C,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



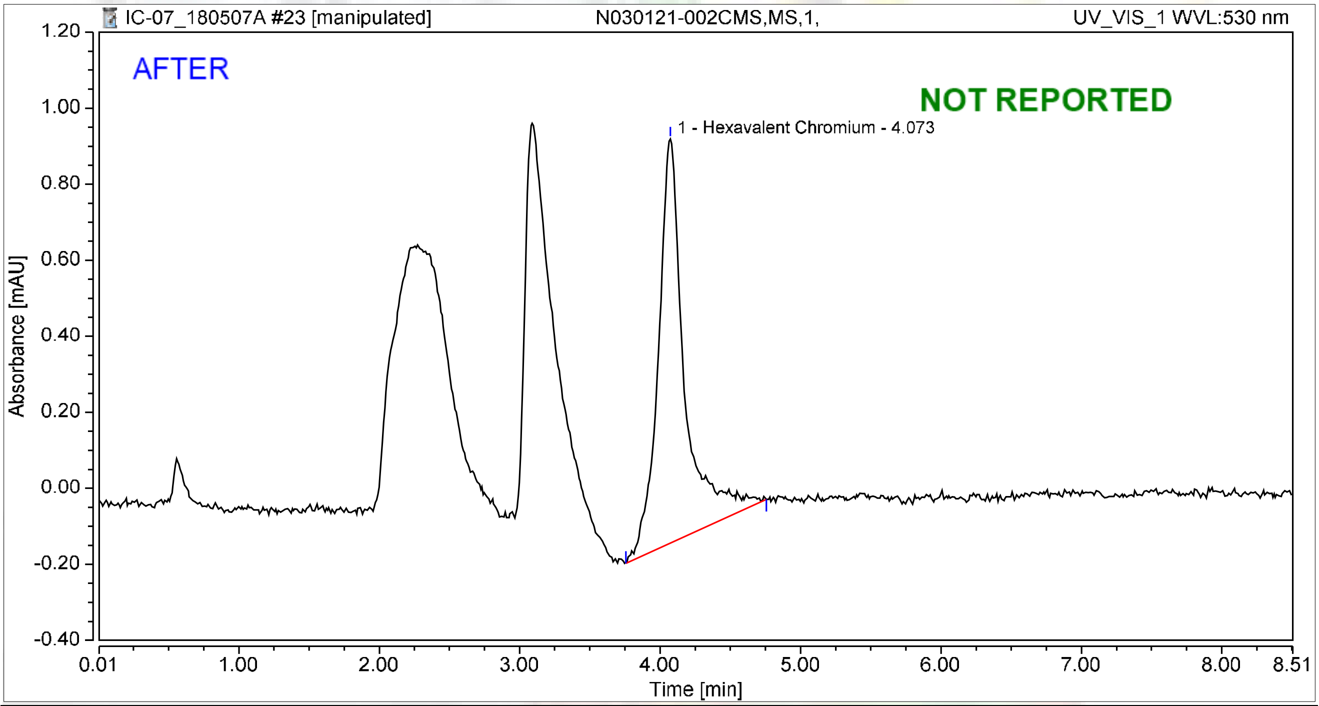
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details			
Injection Name:	**N030121-002CMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.232	1.063	100.00	100.00	0.9033
Total:			**0.232**	**1.063**	**100.00**	**100.00**	

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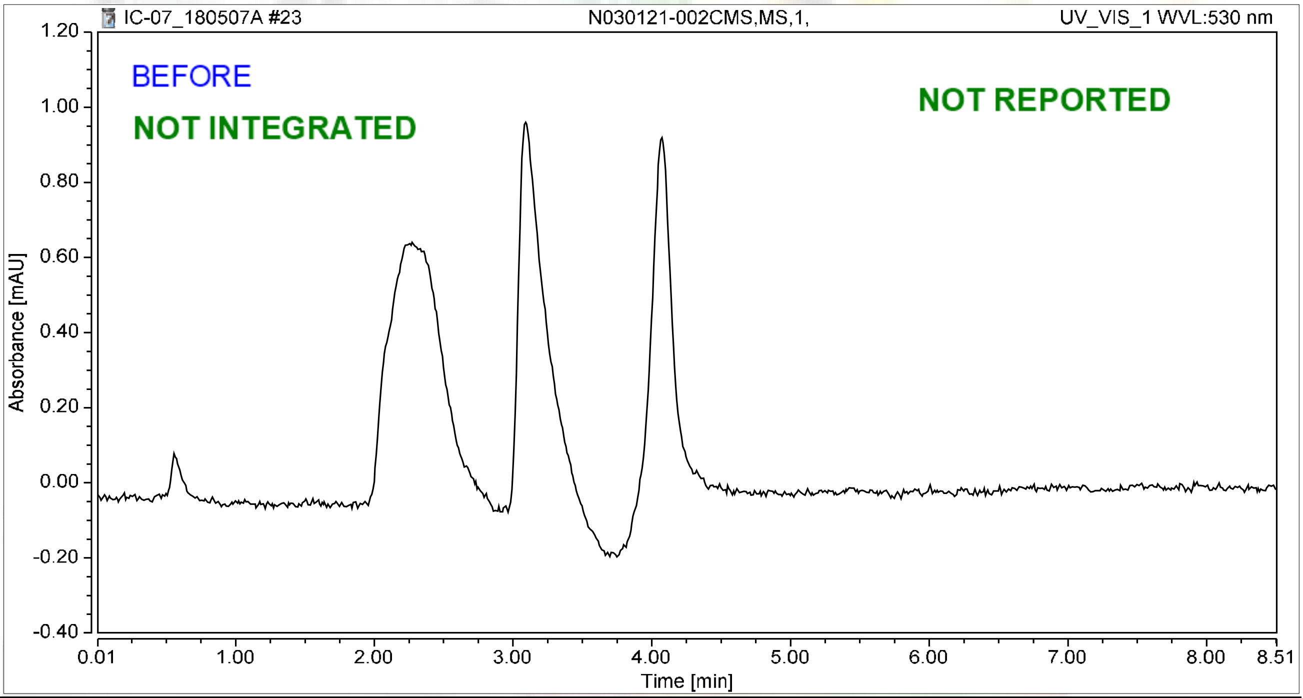
Chromatogram and Results

Injection Details

Injection Name:	**N030121-002CMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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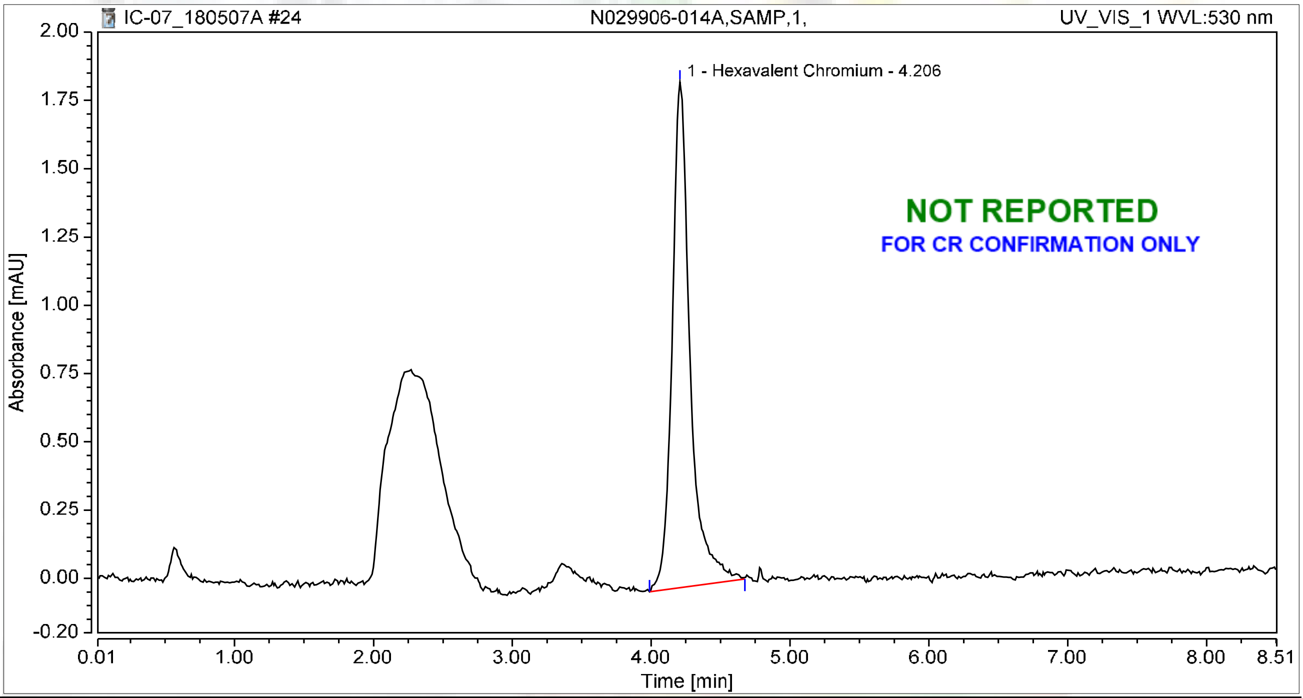
Chromatogram and Results

Injection Details

Injection Name:	**N029906-014A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

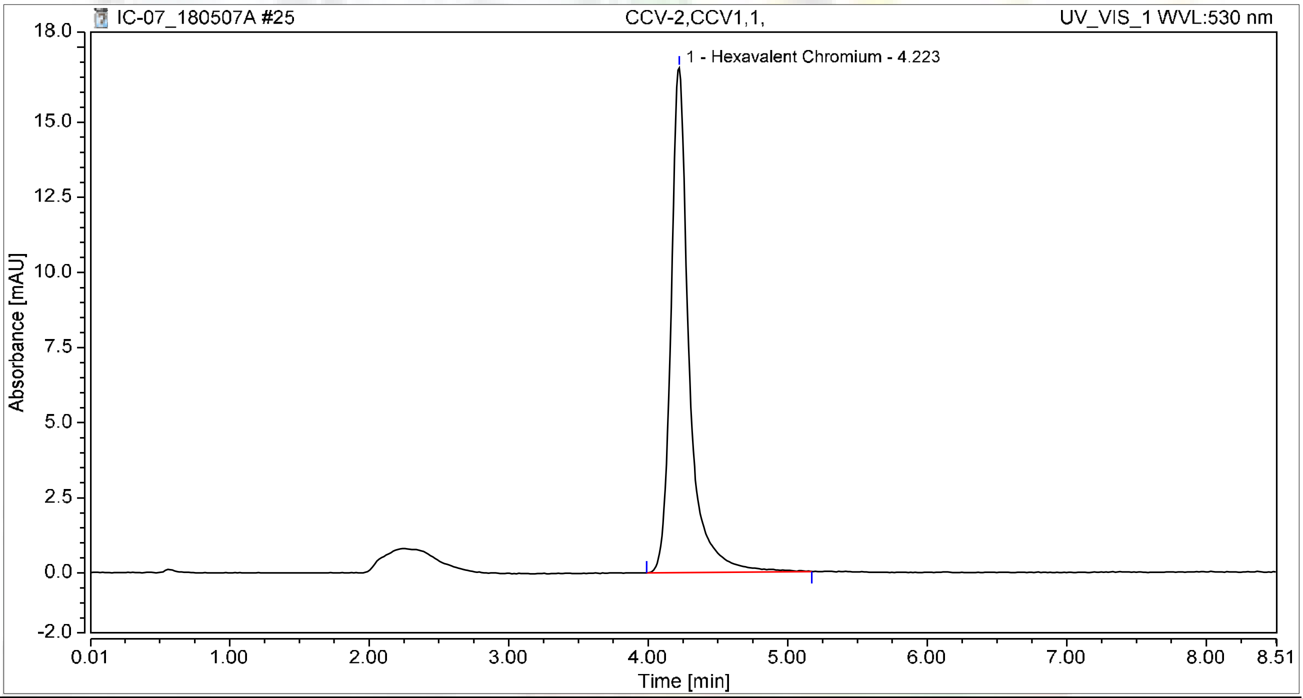
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.278	1.852	100.00	100.00	1.0843
Total:			**0.278**	**1.852**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 11:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

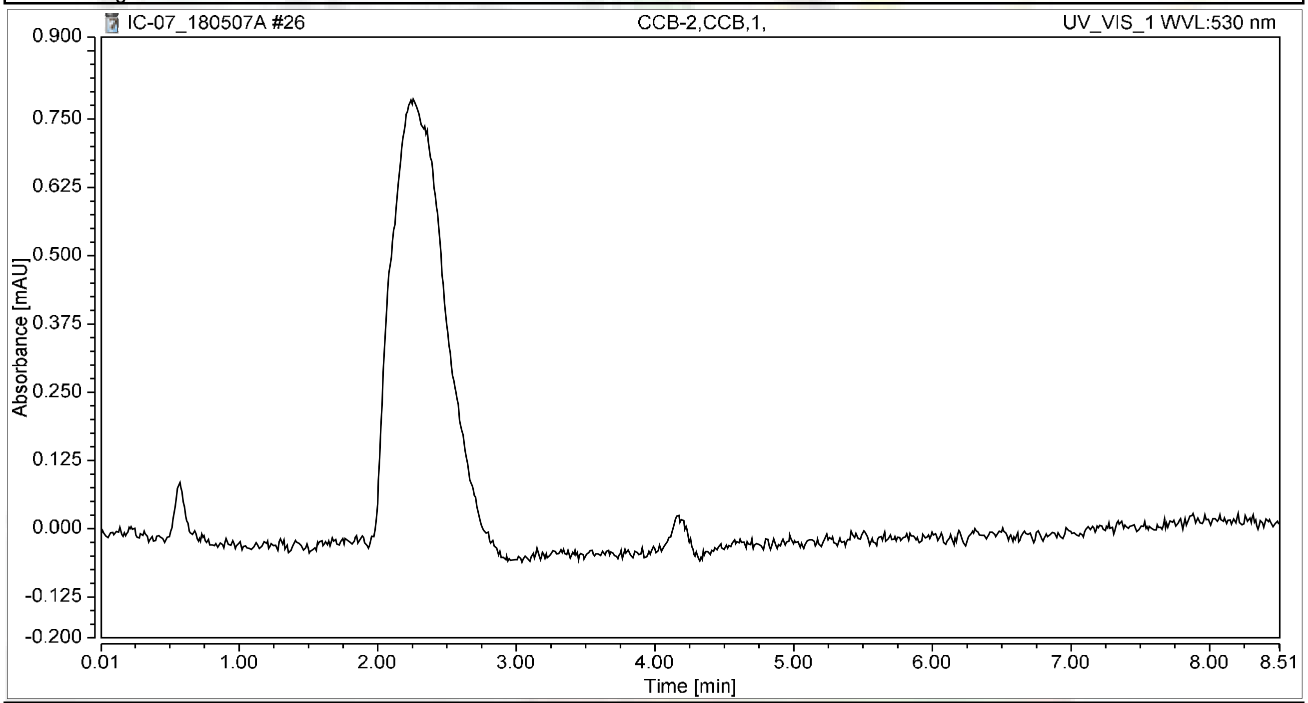
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	2.547	16.805	100.00	100.00	9.9242
Total:			**2.547**	**16.805**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 11:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

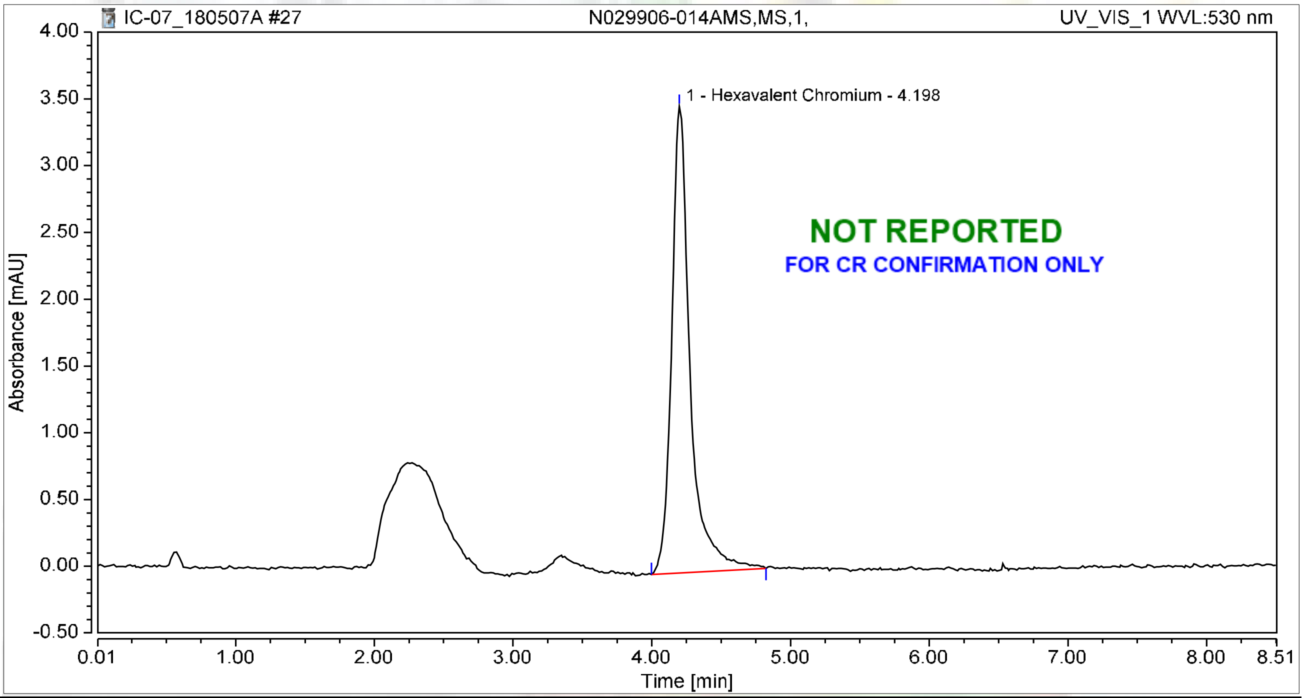
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N029906-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 11:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

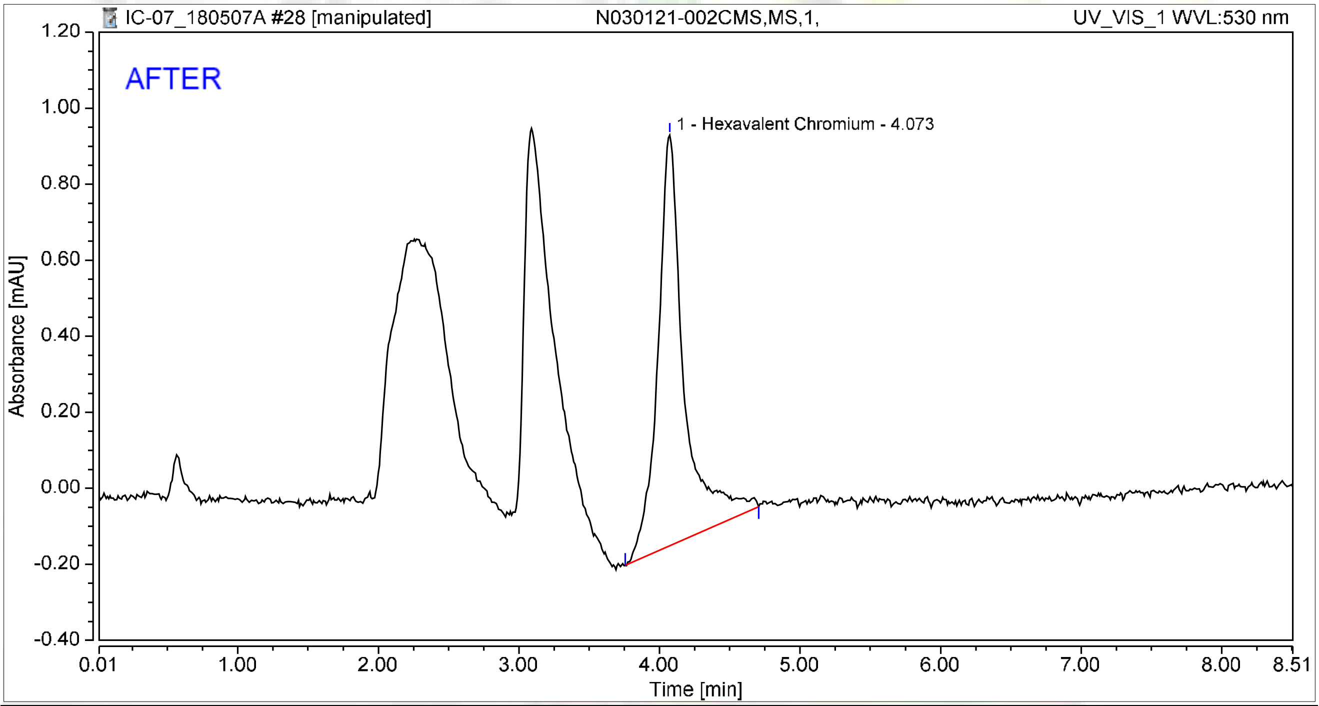
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.539	3.495	100.00	100.00	2.0999
Total:			**0.539**	**3.495**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030121-002CMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.234	1.080	100.00	100.00	0.9116
Total:			**0.234**	**1.080**	**100.00**	**100.00**	

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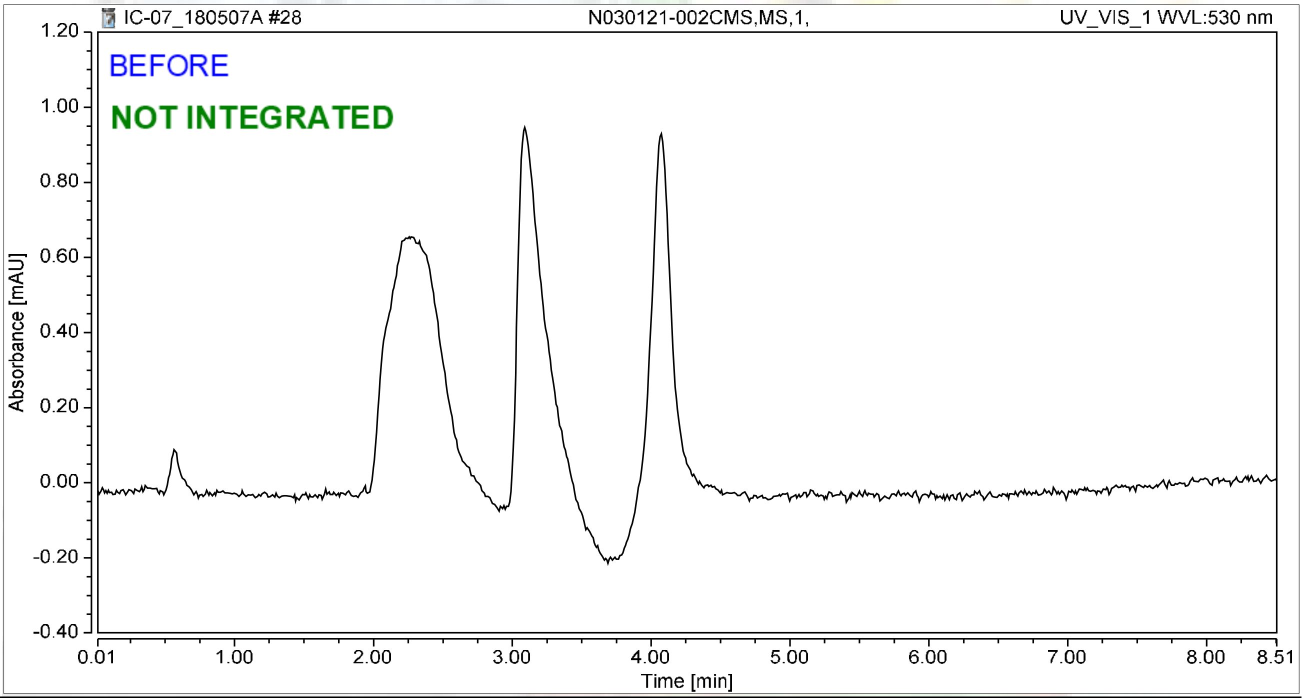
Chromatogram and Results

Injection Details

Injection Name:	**N030121-002CMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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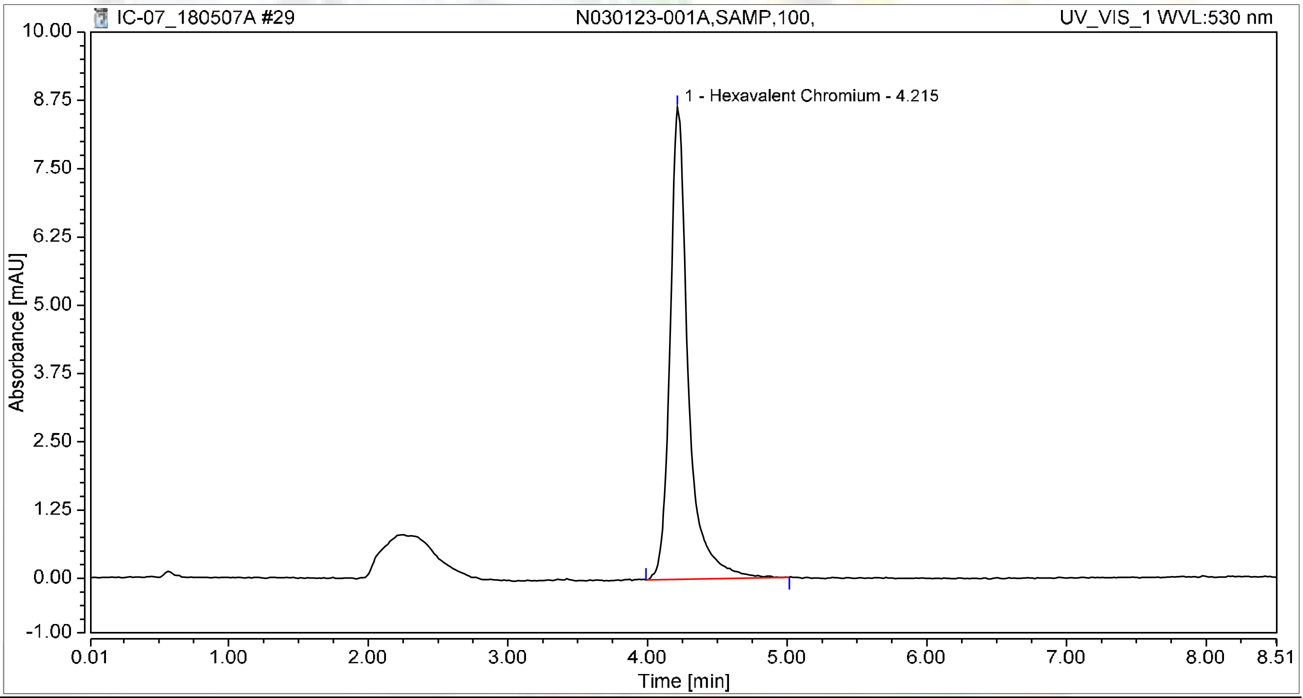
Chromatogram and Results

Injection Details

Injection Name:	**N030123-001A,SAMP,100,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 12:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

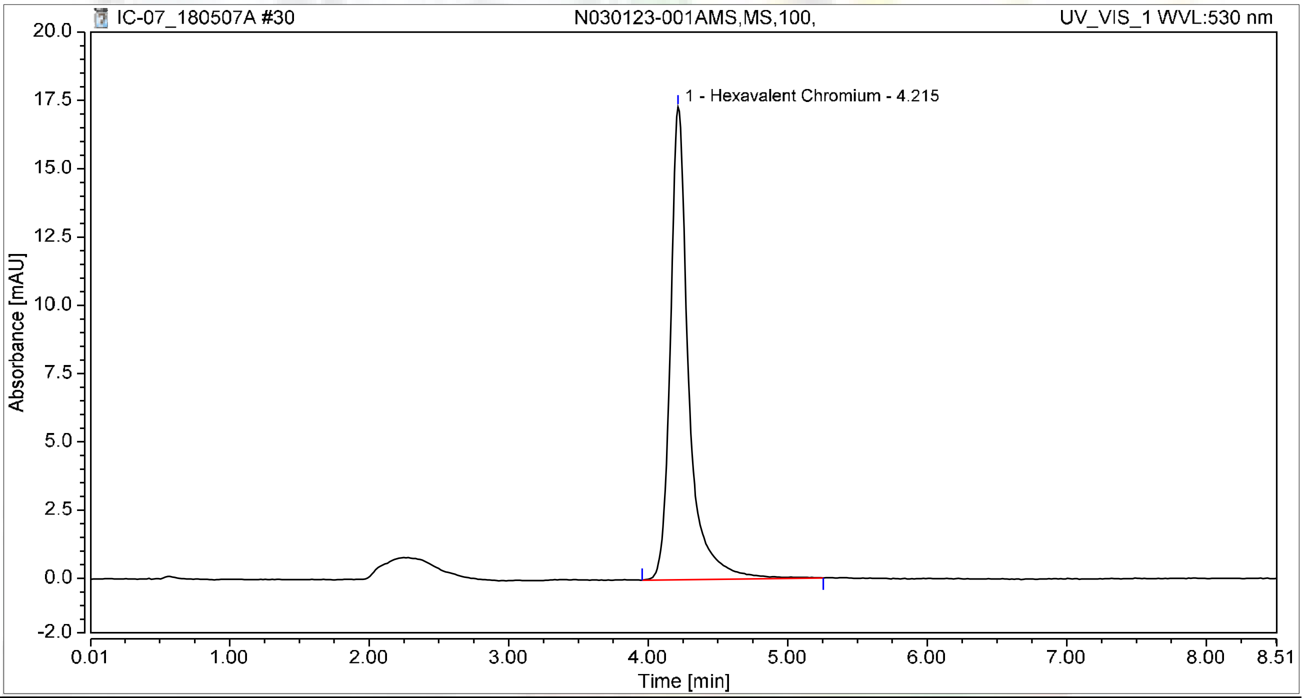
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.311	8.642	100.00	100.00	5.1094
Total:			**1.311**	**8.642**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-001AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 12:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

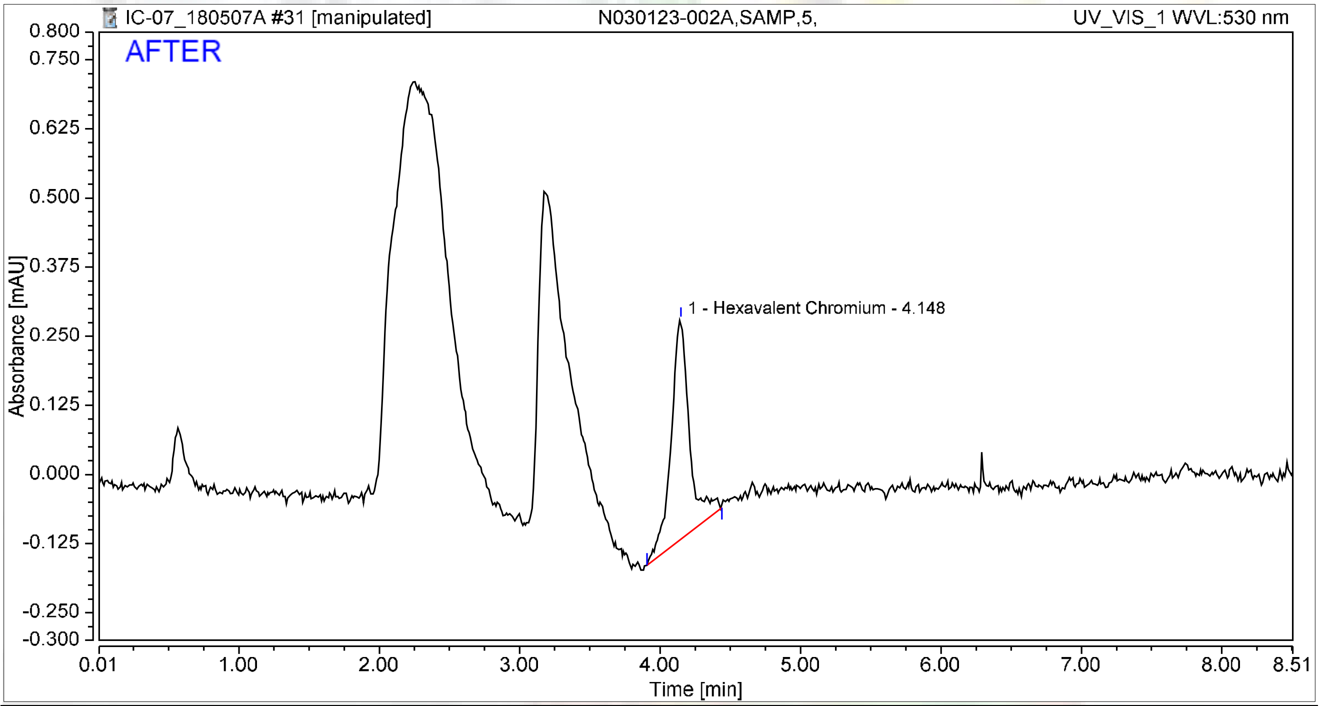
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.643	17.308	100.00	100.00	10.2981
Total:			**2.643**	**17.308**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 12:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.060	0.397	100.00	100.00	0.2345
Total:			**0.060**	**0.397**	**100.00**	**100.00**	

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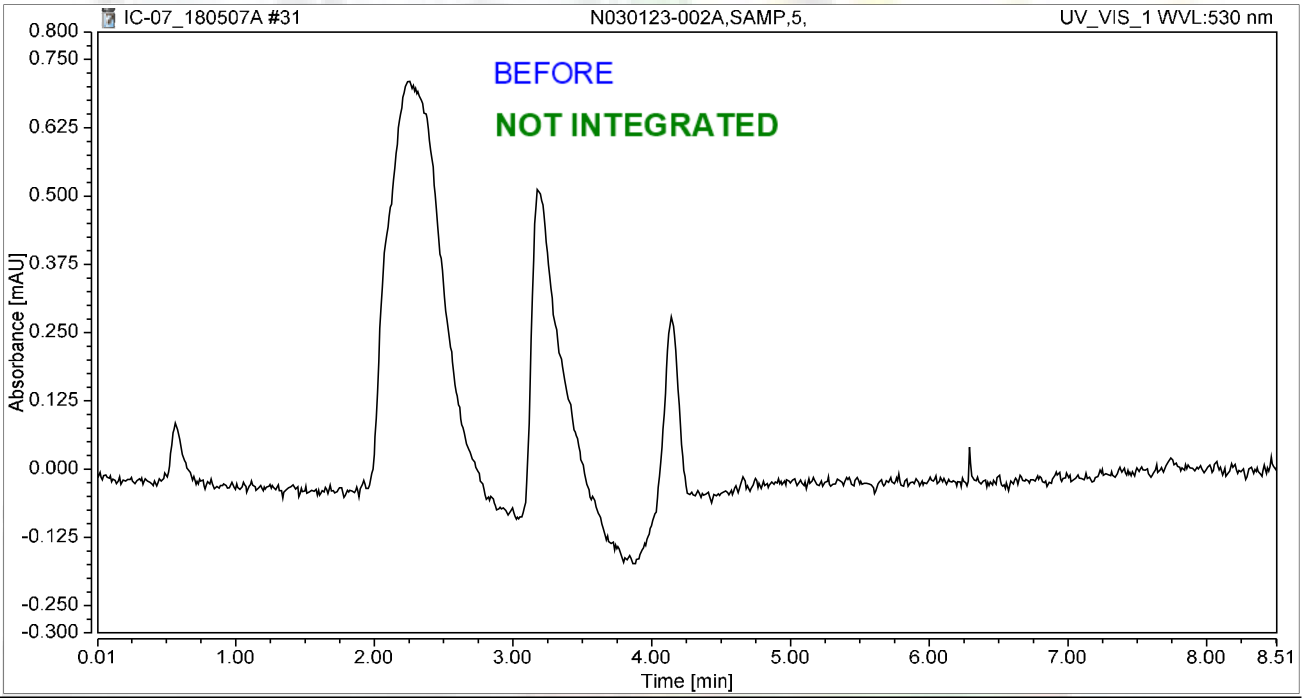
Chromatogram and Results

Injection Details

Injection Name:	**N030123-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 12:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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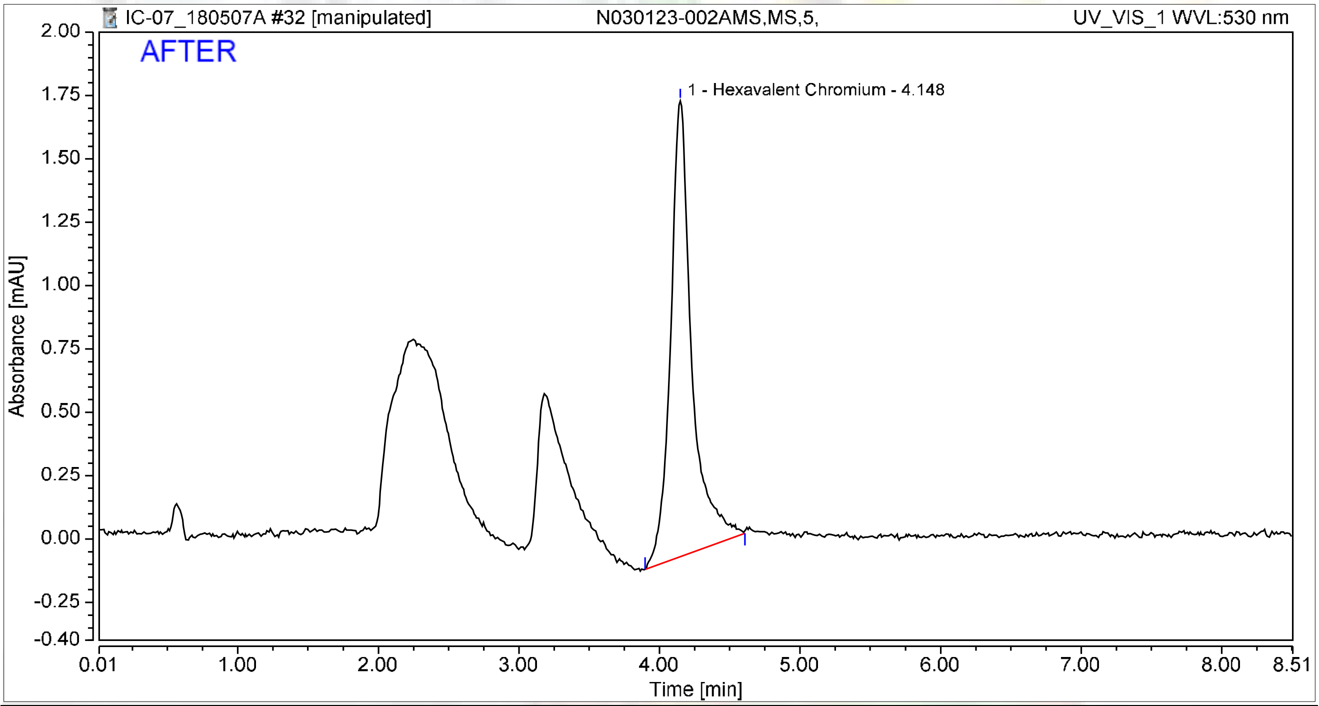
Chromatogram and Results

Injection Details

Injection Name:	**N030123-002AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 12:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.316	1.798	100.00	100.00	1.2298
Total:			**0.316**	**1.798**	**100.00**	**100.00**	

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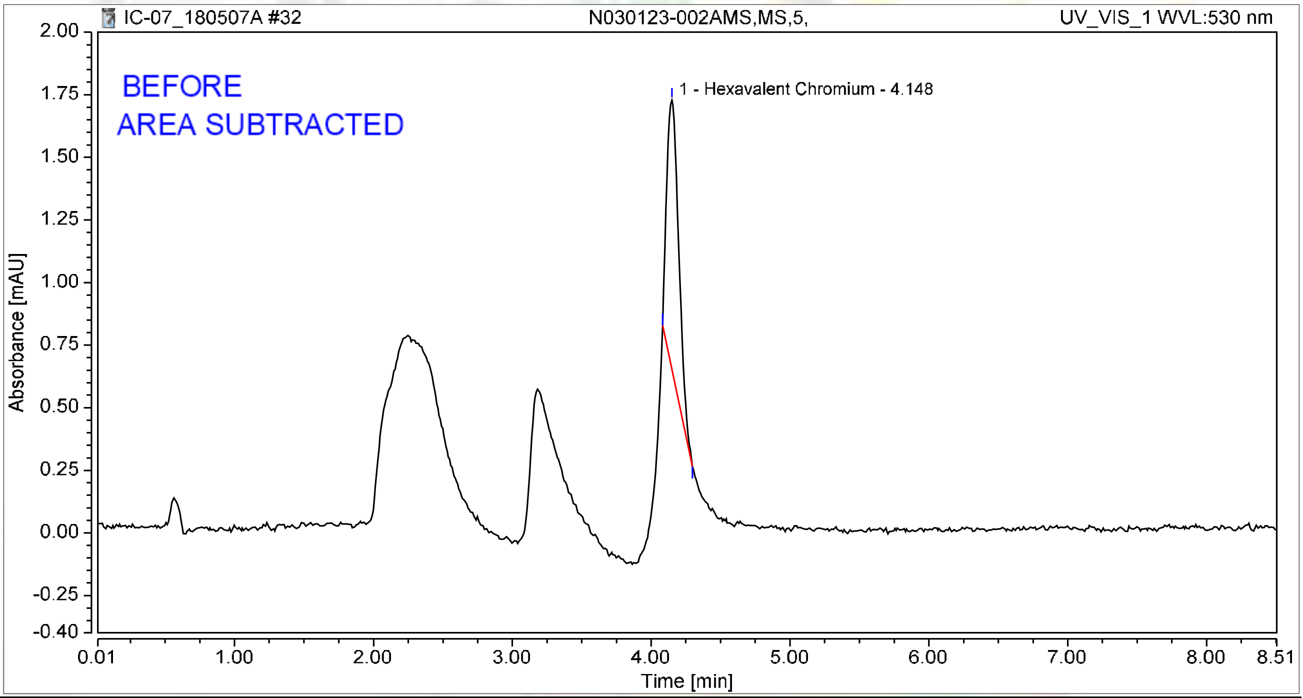
Chromatogram and Results

Injection Details

Injection Name:	**N030123-002AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 12:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.107	1.073	100.00	100.00	0.4169
Total:			**0.107**	**1.073**	**100.00**	**100.00**	

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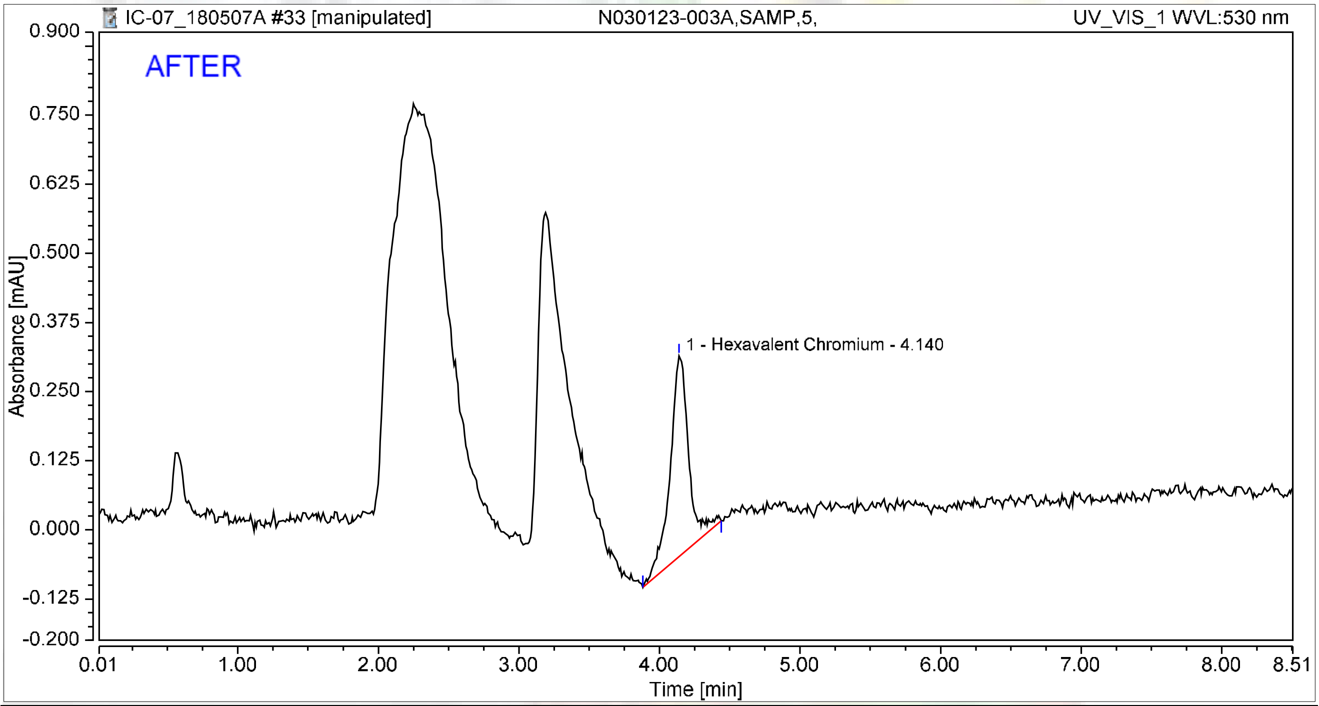
Chromatogram and Results

Injection Details

Injection Name:	**N030123-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 12:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.055	0.363	100.00	100.00	0.2143
Total:			**0.055**	**0.363**	**100.00**	**100.00**	

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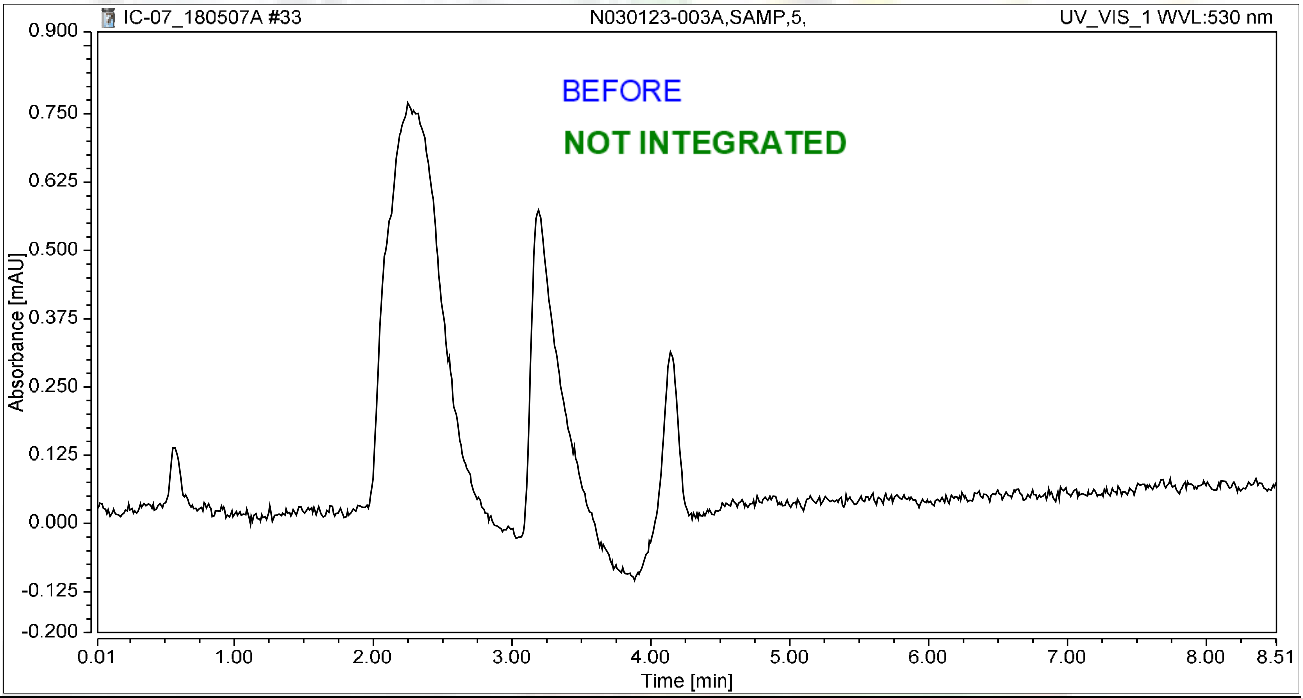
Chromatogram and Results

Injection Details

Injection Name:	**N030123-003A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 12:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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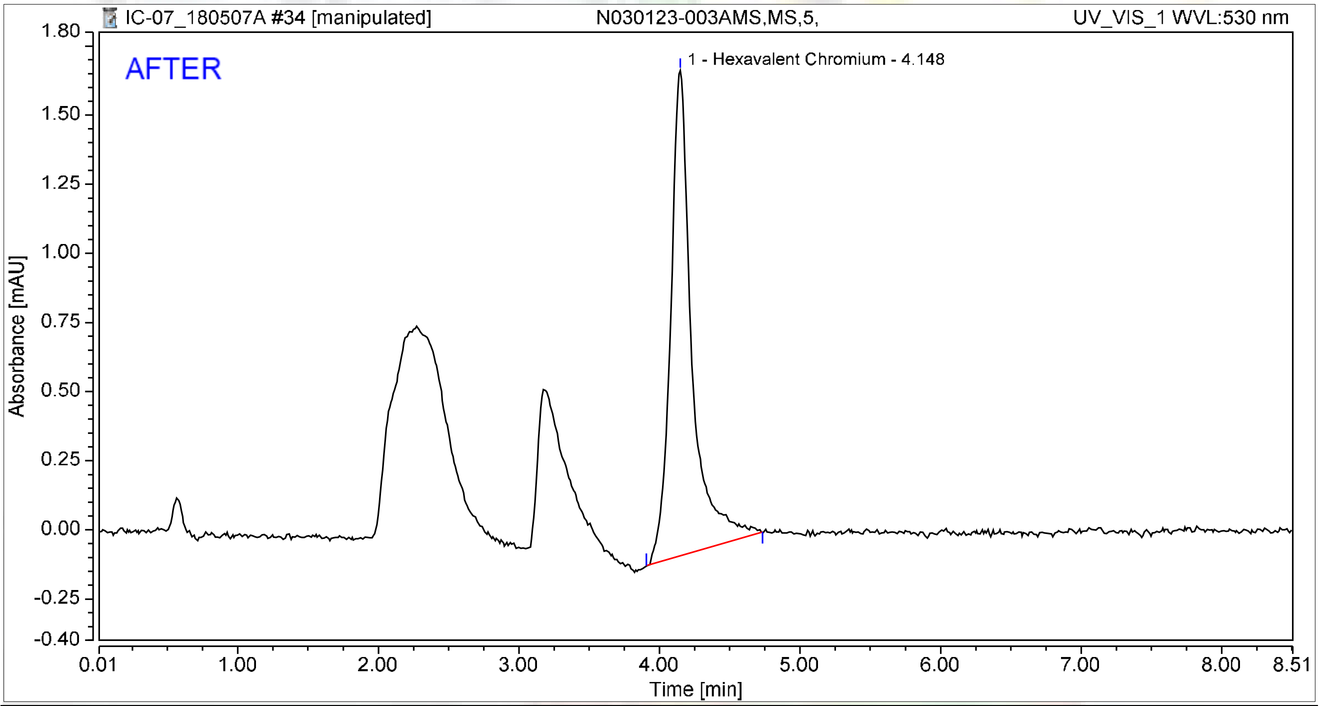
Chromatogram and Results

Injection Details

Injection Name:	**N030123-003AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 12:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.309	1.753	100.00	100.00	1.2047
Total:			**0.309**	**1.753**	**100.00**	**100.00**	

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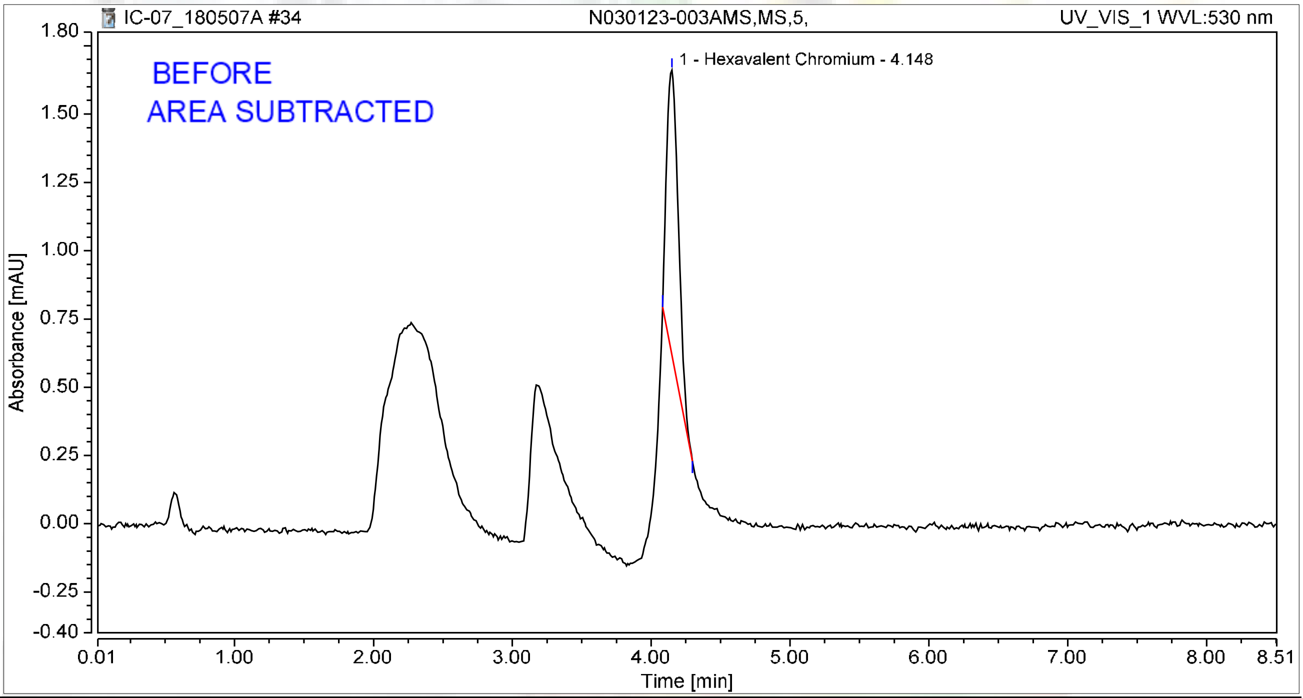
Chromatogram and Results

Injection Details

Injection Name:	**N030123-003AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 12:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.101	1.041	100.00	100.00	0.3951
Total:			**0.101**	**1.041**	**100.00**	**100.00**	

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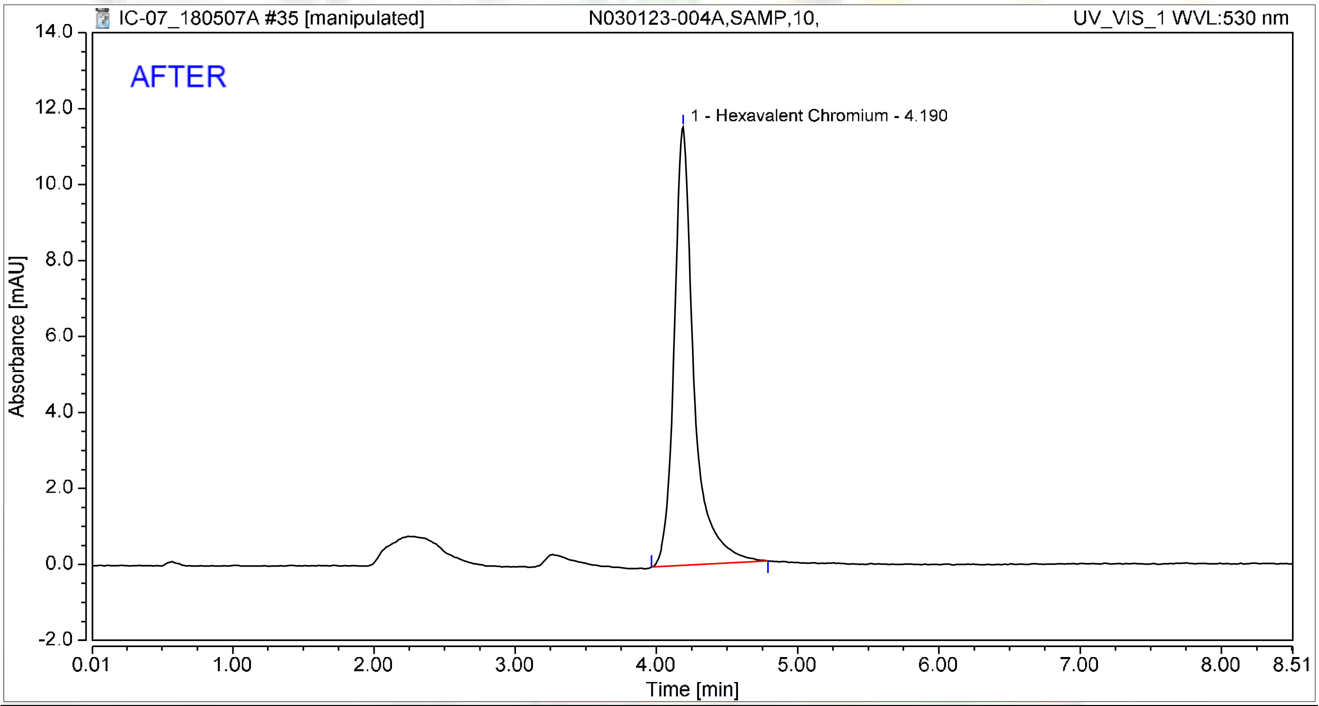
Chromatogram and Results

Injection Details

Injection Name:	**N030123-004A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.869	11.543	100.00	100.00	7.2825
Total:			**1.869**	**11.543**	**100.00**	**100.00**	

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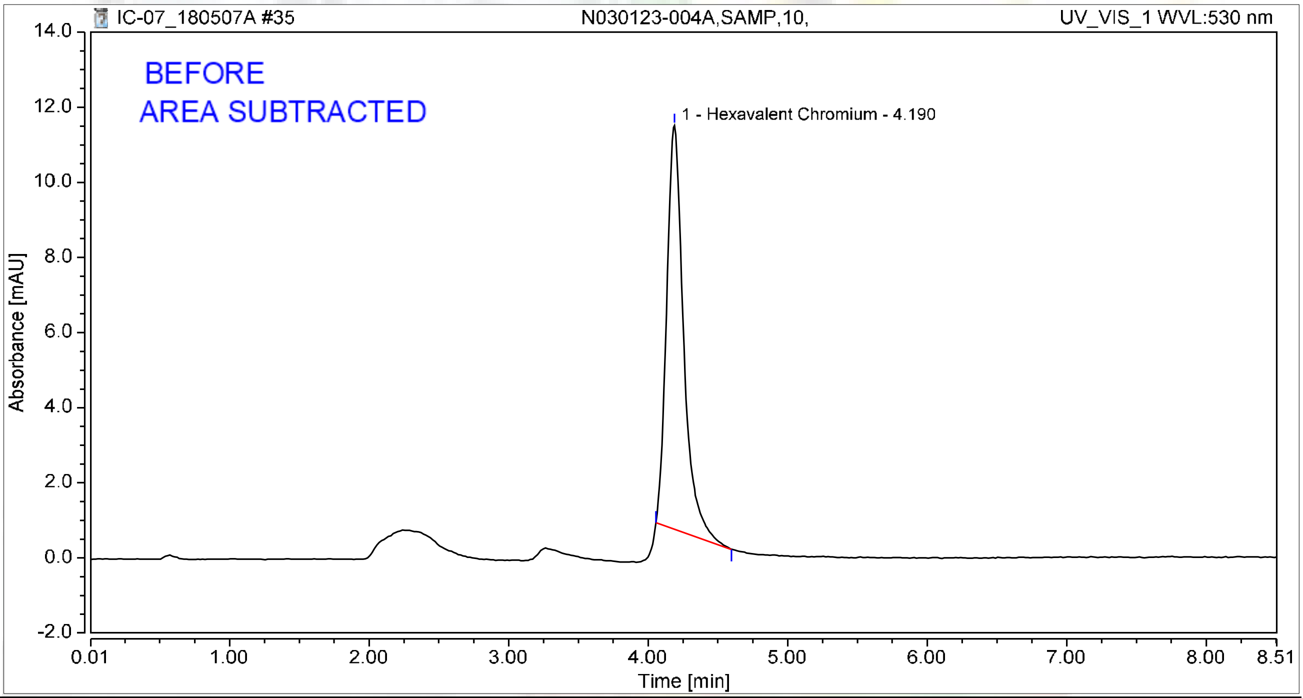
Chromatogram and Results

Injection Details

Injection Name:	**N030123-004A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.514	10.758	100.00	100.00	5.9003
Total:			**1.514**	**10.758**	**100.00**	**100.00**	

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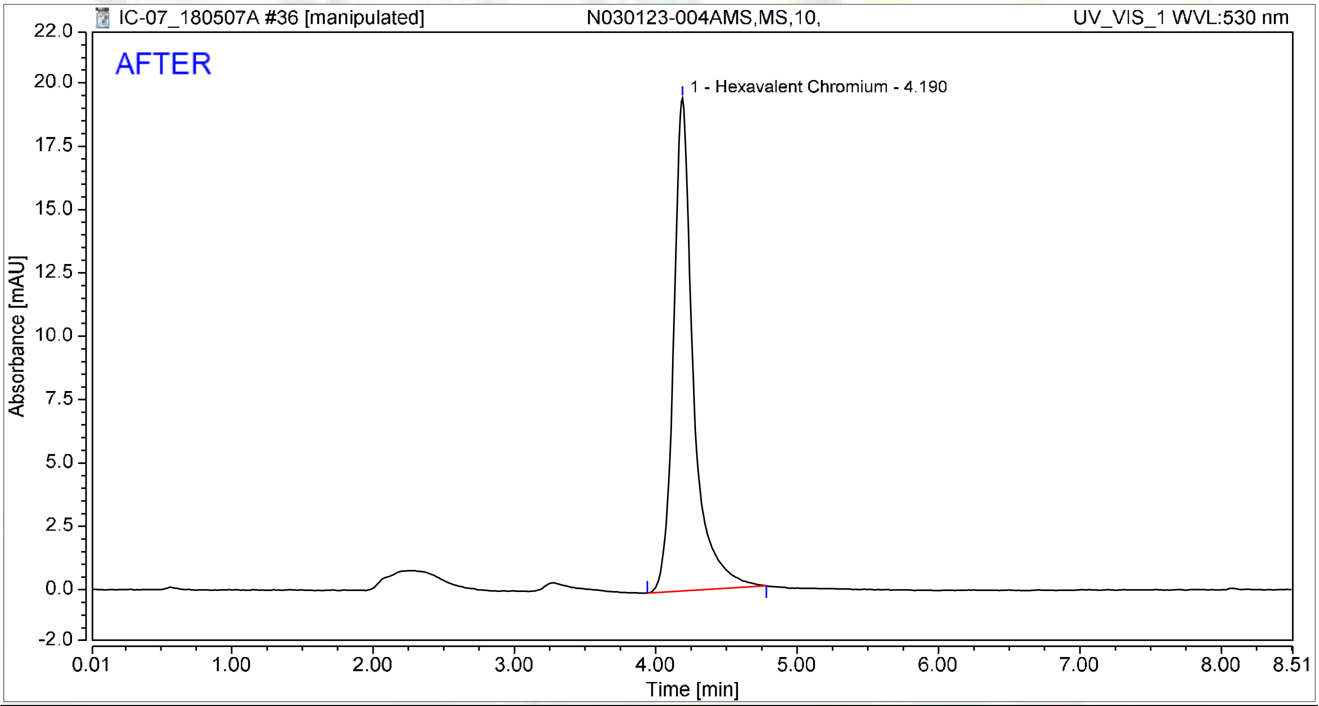
Chromatogram and Results

Injection Details

Injection Name:	**N030123-004AMS,MS,10,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 13:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	3.156	19.440	100.00	100.00	12.2985
Total:			**3.156**	**19.440**	**100.00**	**100.00**	

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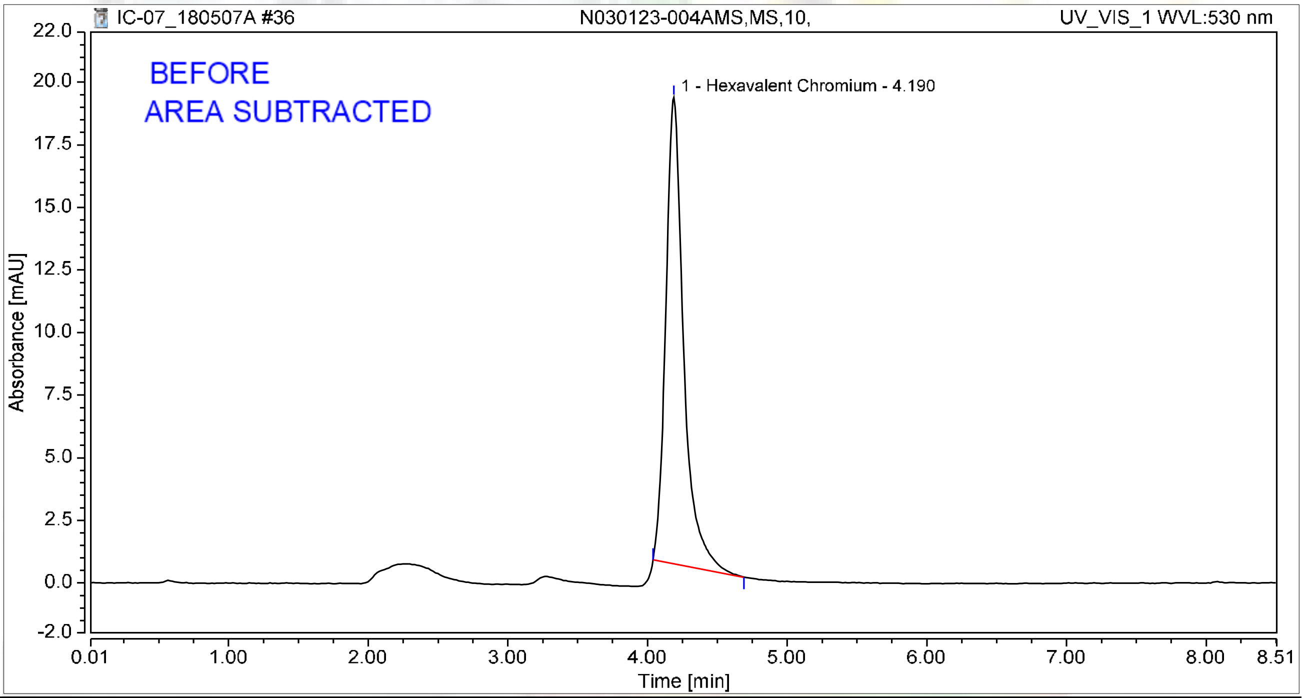
Chromatogram and Results

Injection Details

Injection Name:	**N030123-004AMS,MS,10,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 13:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.763	18.639	100.00	100.00	10.7677
Total:			**2.763**	**18.639**	**100.00**	**100.00**	

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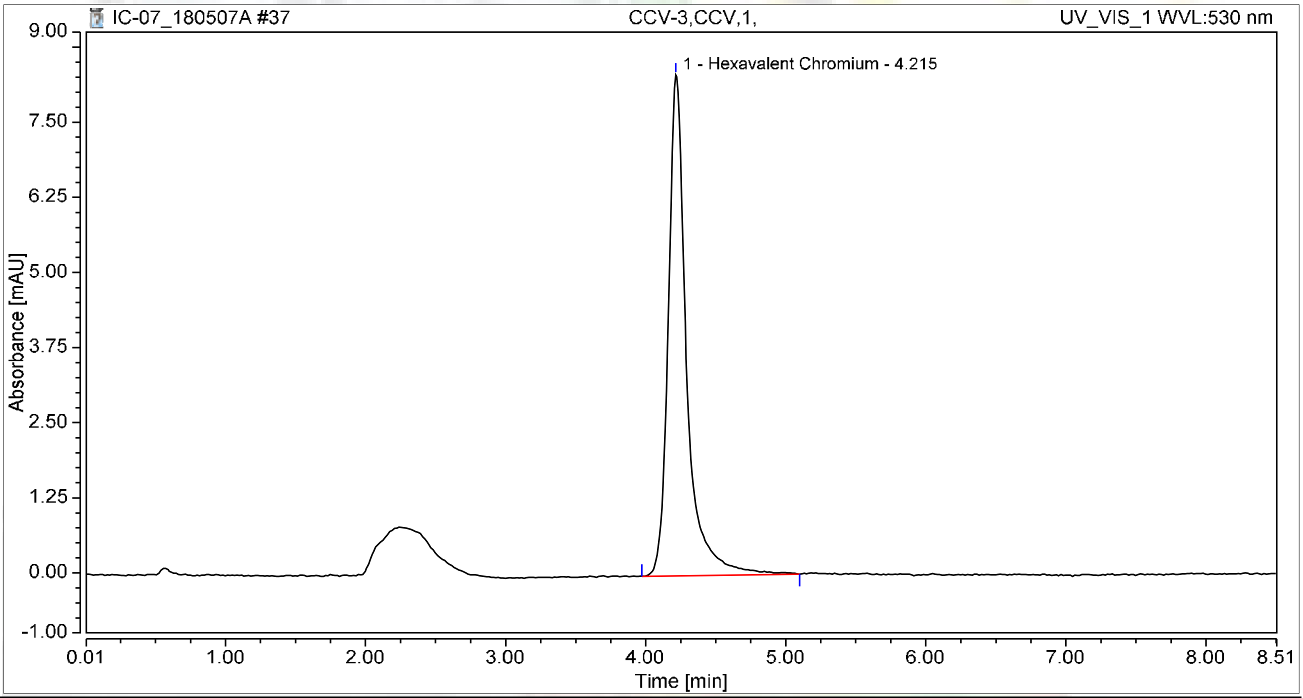
Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 13:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

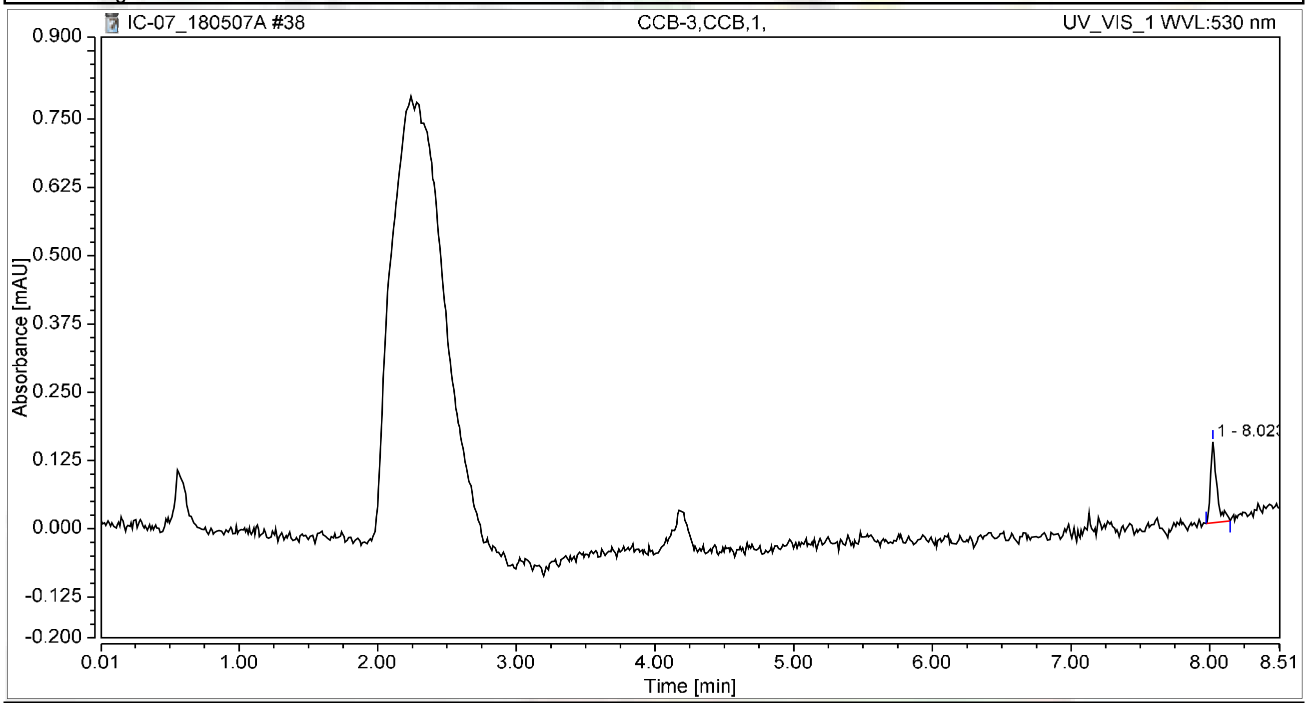
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.267	8.336	100.00	100.00	4.9386
Total:			**1.267**	**8.336**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 13:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

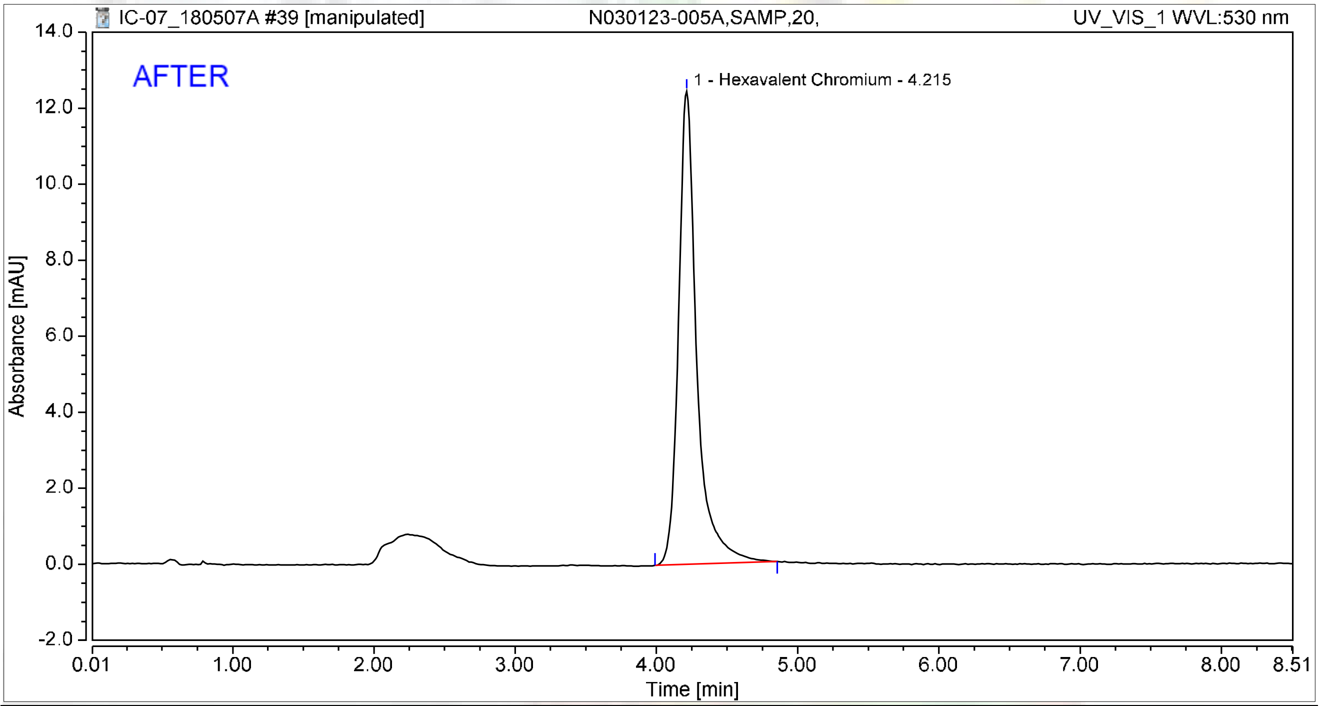
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		8.023	0.008	0.148	100.00	100.00	n.a.
Total:			**0.008**	**0.148**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-005A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 13:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.863	12.444	100.00	100.00	7.2610
Total:			**1.863**	**12.444**	**100.00**	**100.00**	

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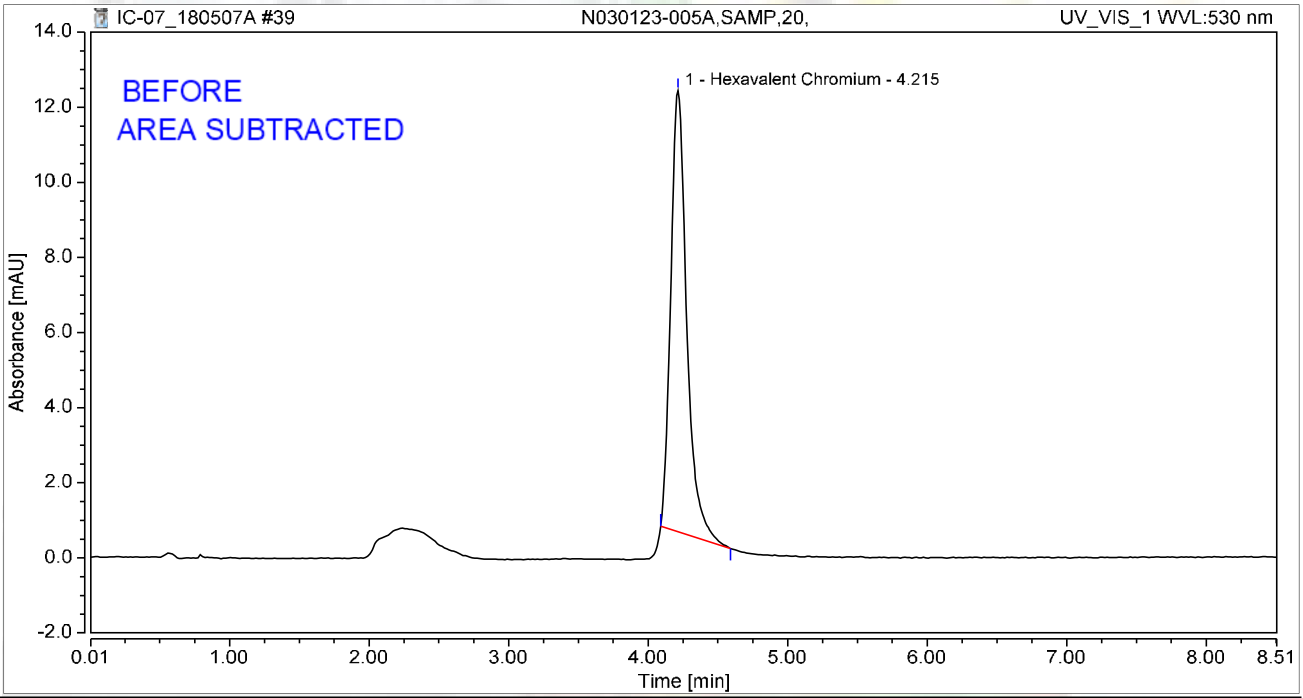
Chromatogram and Results

Injection Details

Injection Name:	**N030123-005A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 13:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.558	11.747	100.00	100.00	6.0696
Total:			**1.558**	**11.747**	**100.00**	**100.00**	

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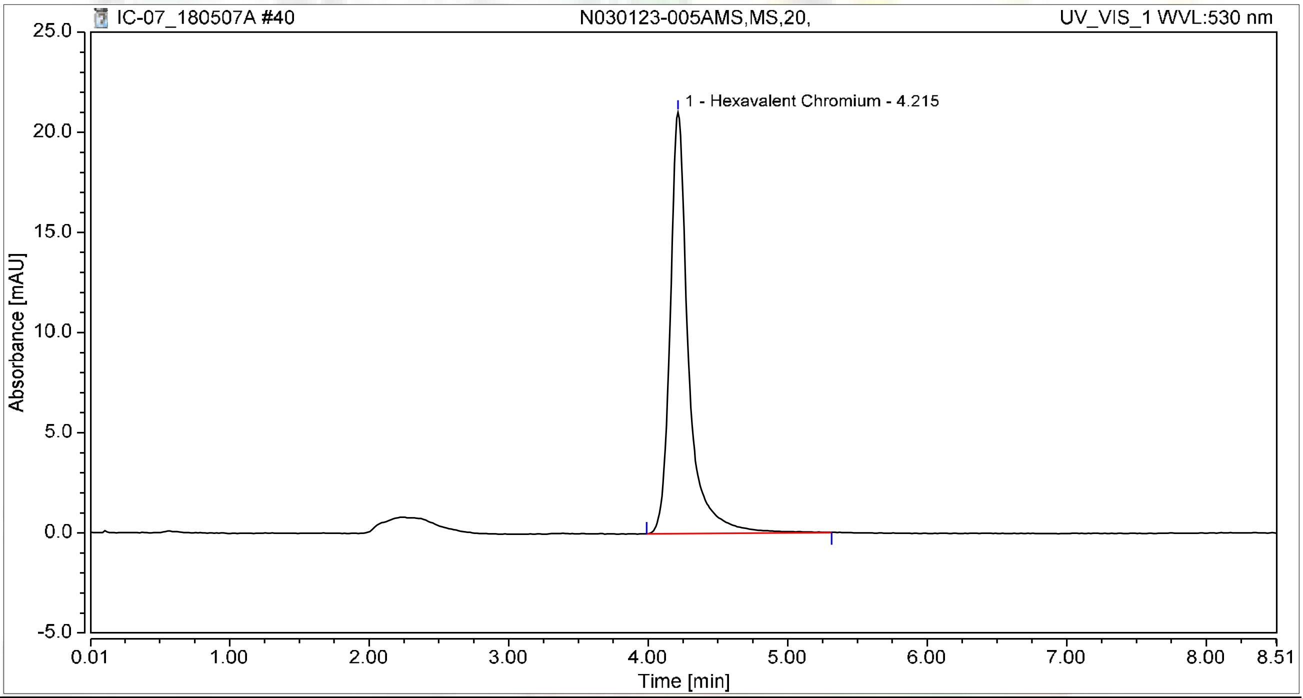
Chromatogram and Results

Injection Details

Injection Name:	**N030123-005AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 13:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

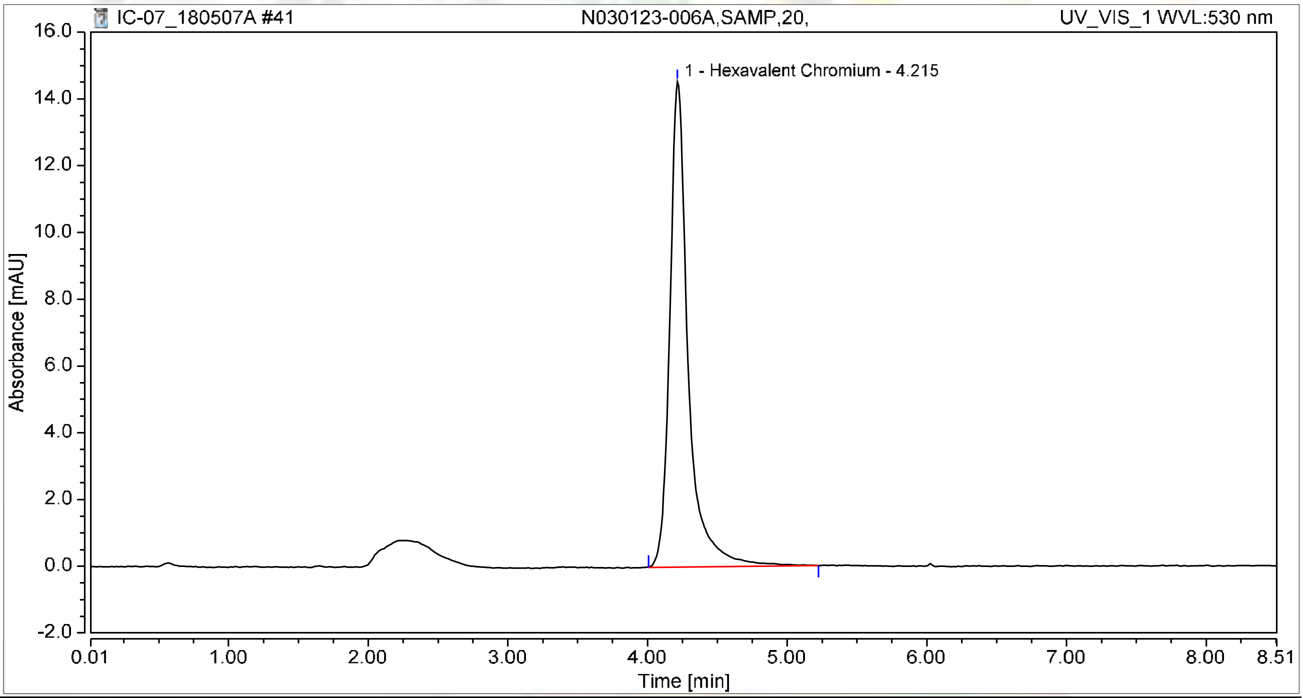
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	3.219	21.032	100.00	100.00	12.5429
Total:			**3.219**	**21.032**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-006A,SAMP,20,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 13:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

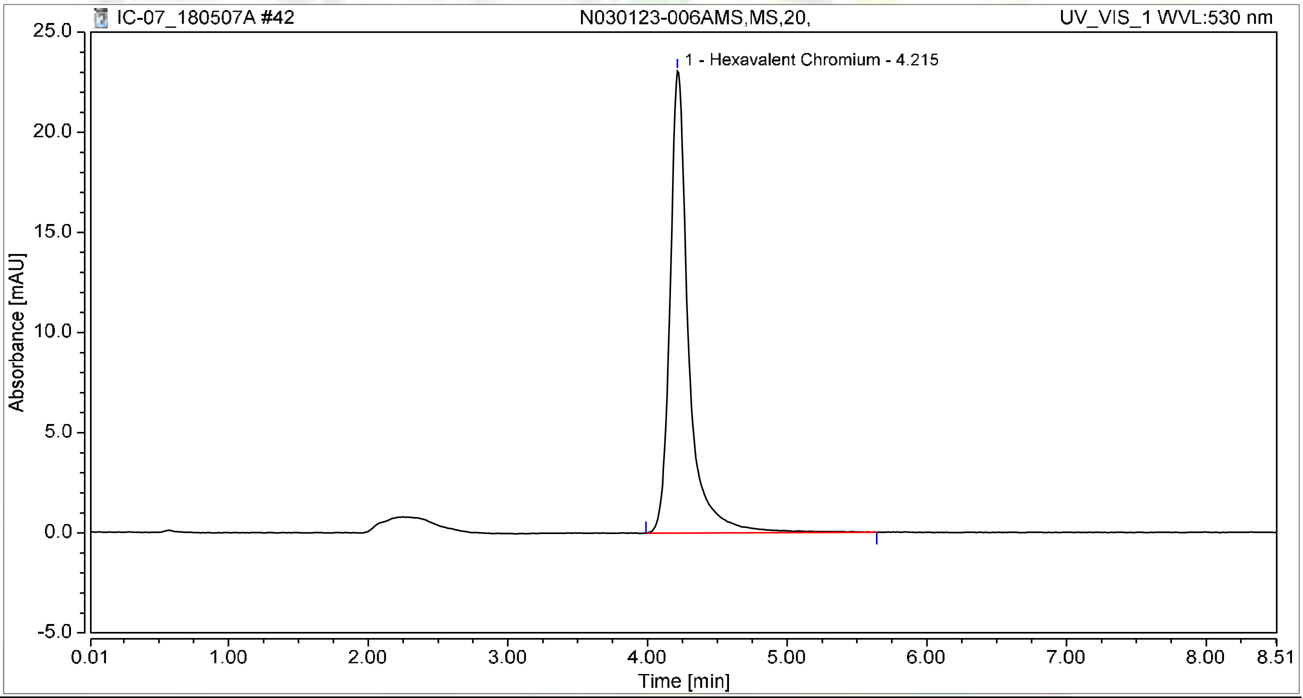
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.219	14.542	100.00	100.00	8.6451
Total:			**2.219**	**14.542**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-006AMS,MS,20,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 14:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

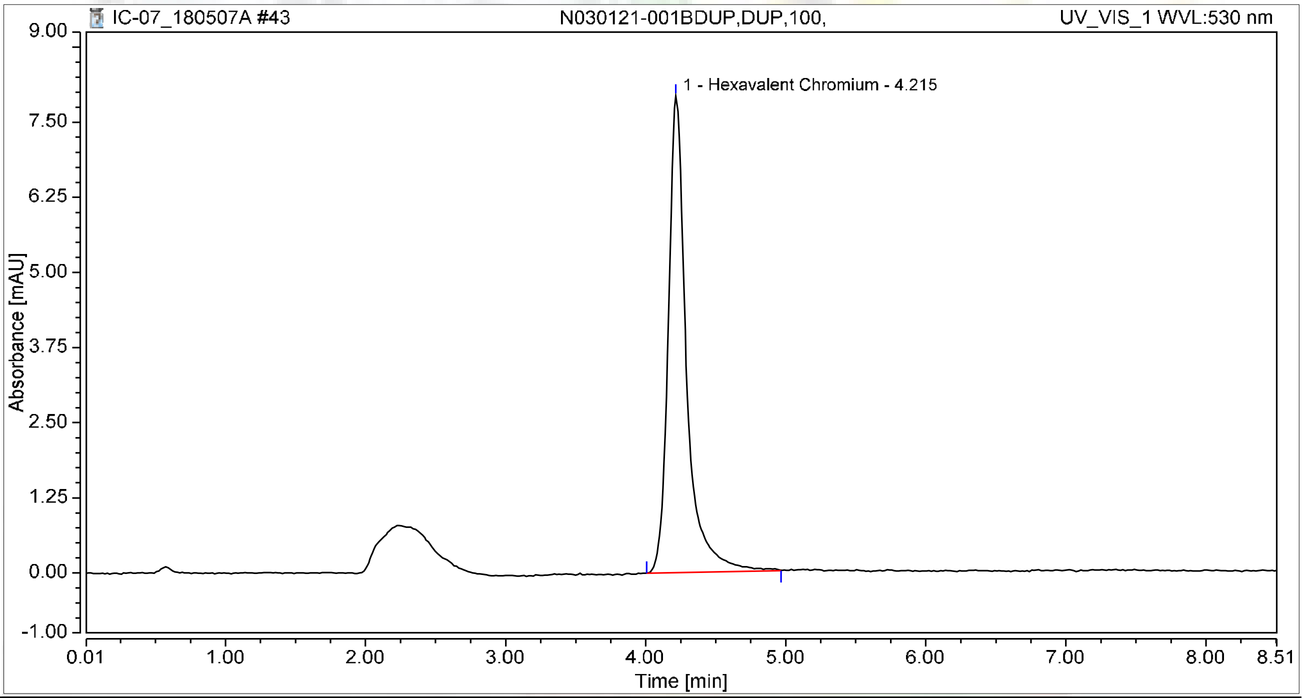
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	3.569	23.079	100.00	100.00	13.9080
Total:			**3.569**	**23.079**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030121-001BDUP,DUP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

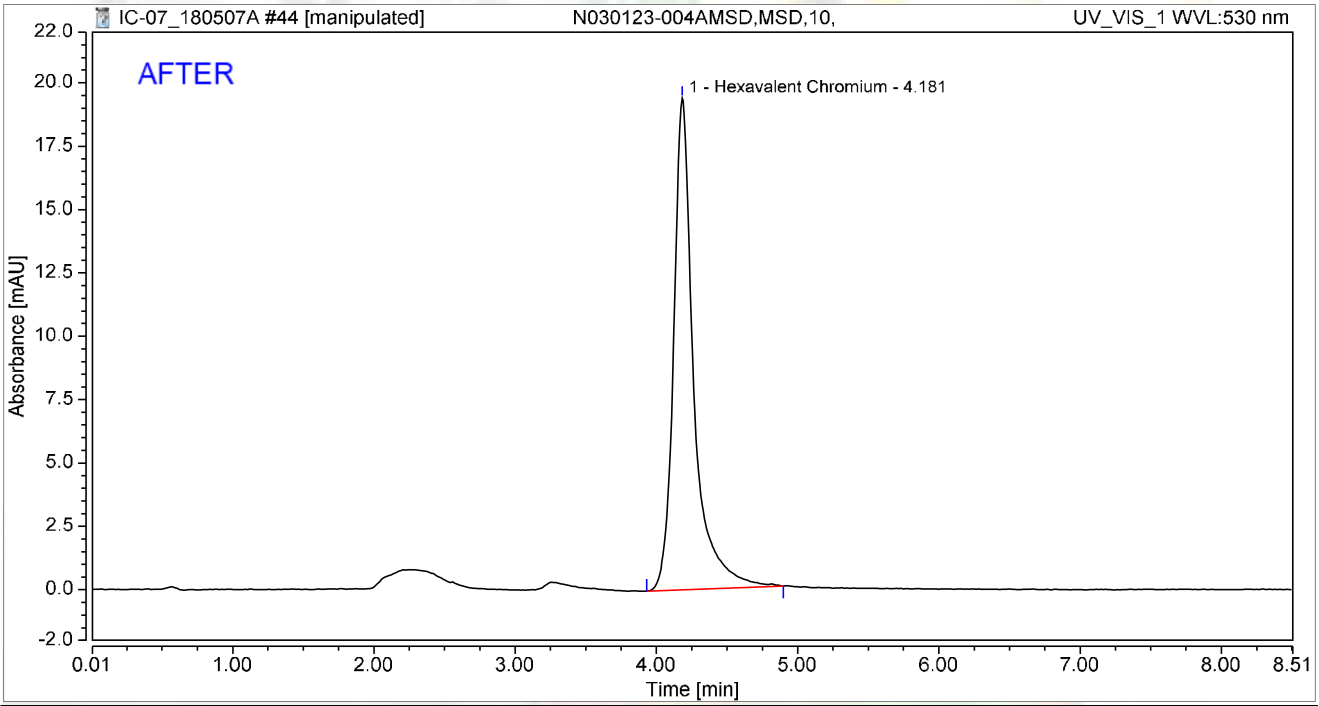
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.200	7.932	100.00	100.00	4.6755
Total:			**1.200**	**7.932**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-004AMSD,MSD,10,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 14:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	3.200	19.397	100.00	100.00	12.4708
Total:			**3.200**	**19.397**	**100.00**	**100.00**	

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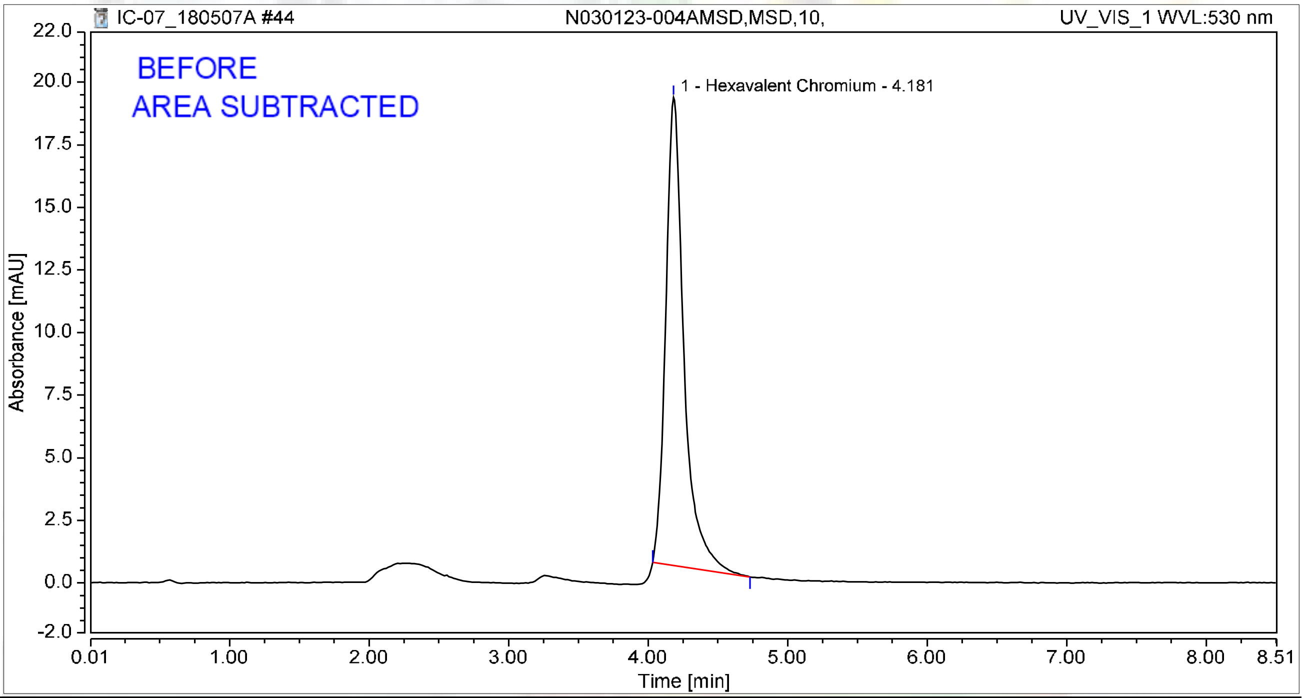
Chromatogram and Results

Injection Details

Injection Name:	**N030123-004AMSD,MSD,10,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 14:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.822	18.695	100.00	100.00	10.9955
Total:			**2.822**	**18.695**	**100.00**	**100.00**	

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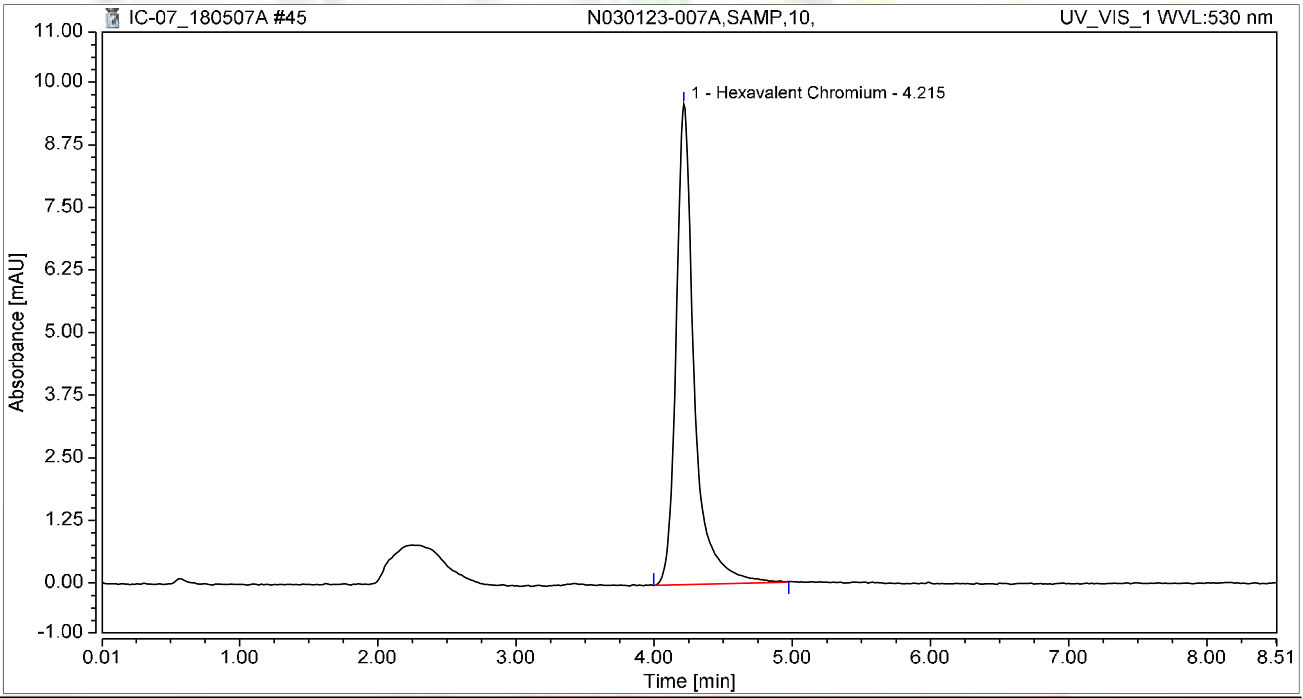
Chromatogram and Results

Injection Details

Injection Name:	**N030123-007A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 14:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

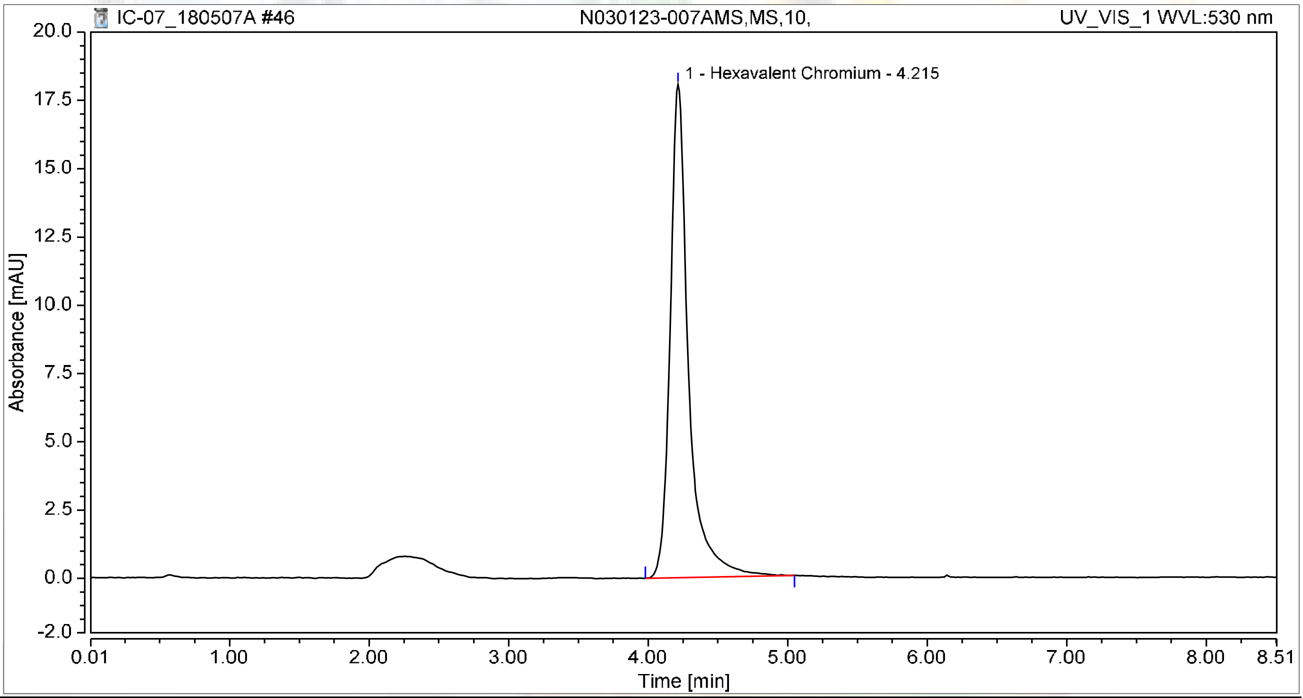
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.461	9.599	100.00	100.00	5.6913
Total:			**1.461**	**9.599**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-007AMS,MS,10,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 14:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

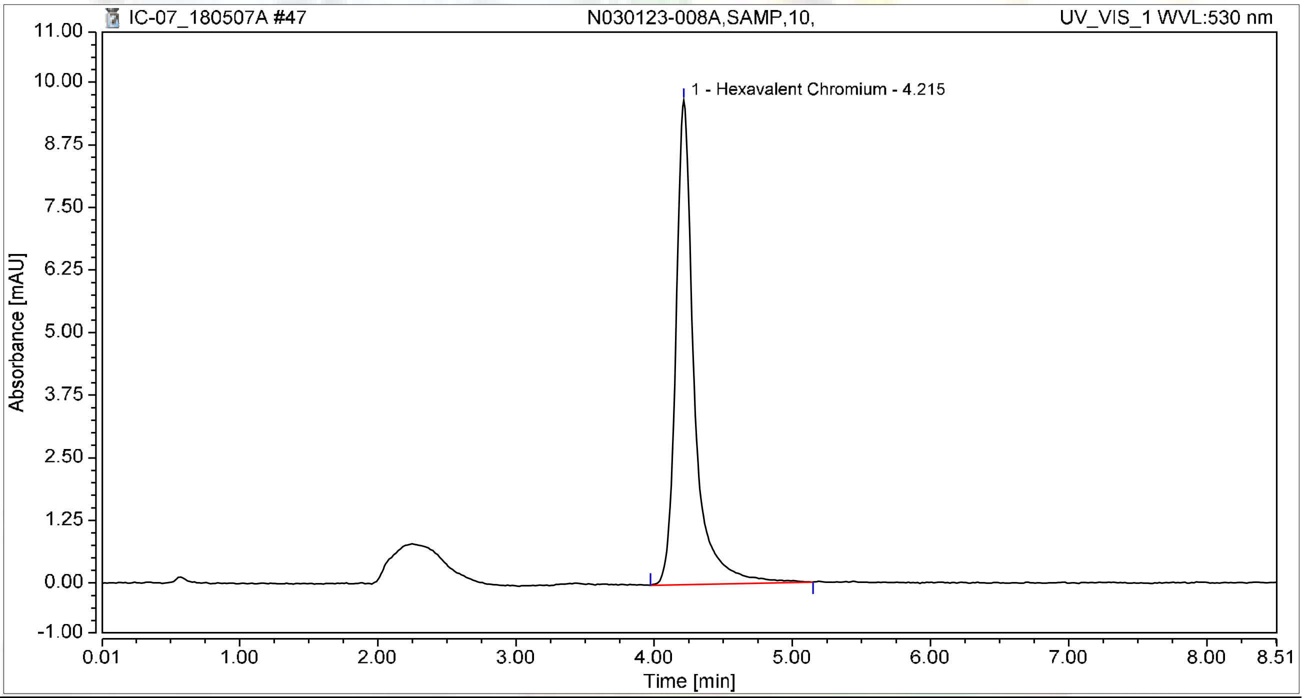
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.754	18.060	100.00	100.00	10.7305
Total:			**2.754**	**18.060**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-008A,SAMP,10,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 14:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

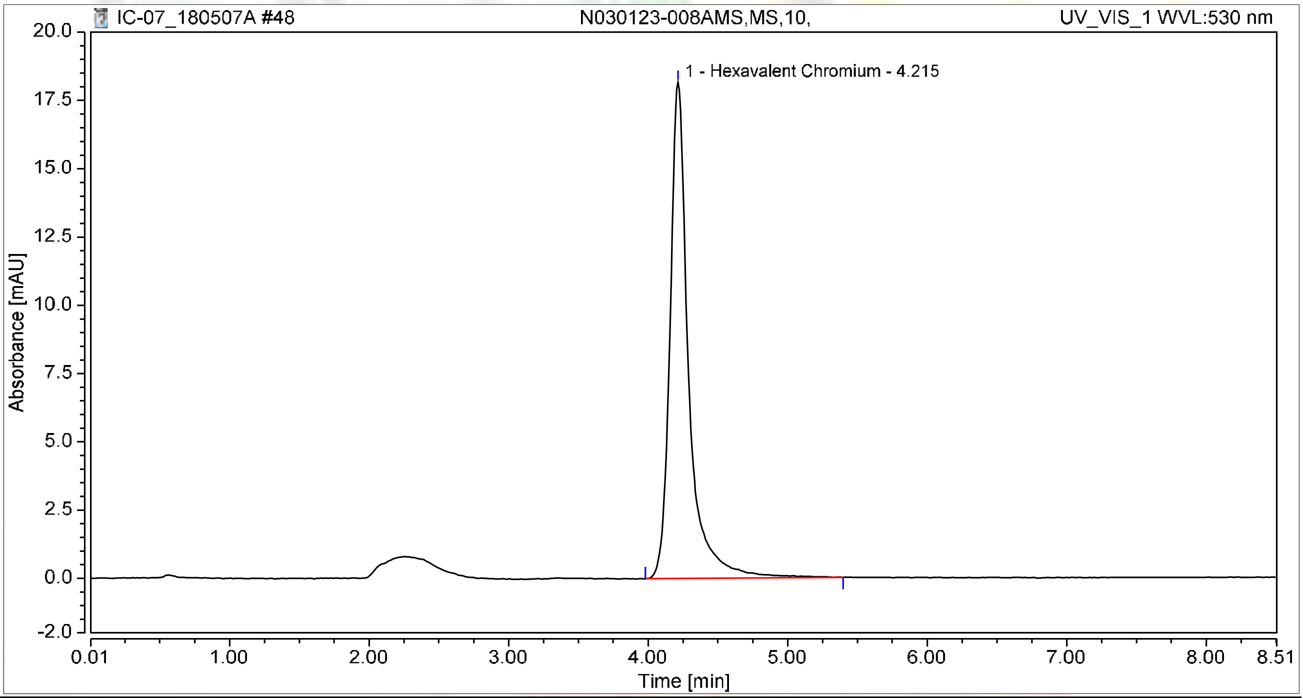
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.493	9.668	100.00	100.00	5.8177
Total:			**1.493**	**9.668**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-008AMS,MS,10,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 15:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

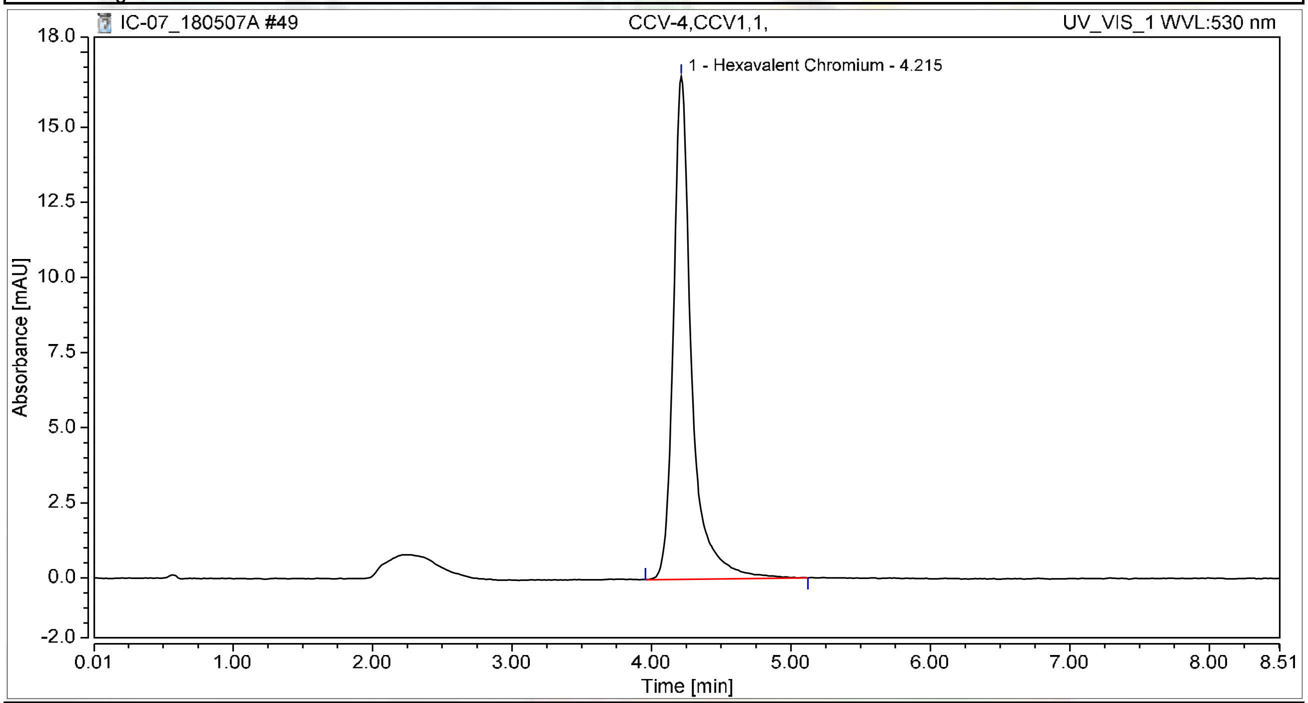
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.811	18.169	100.00	100.00	10.9518
Total:			**2.811**	**18.169**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 15:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

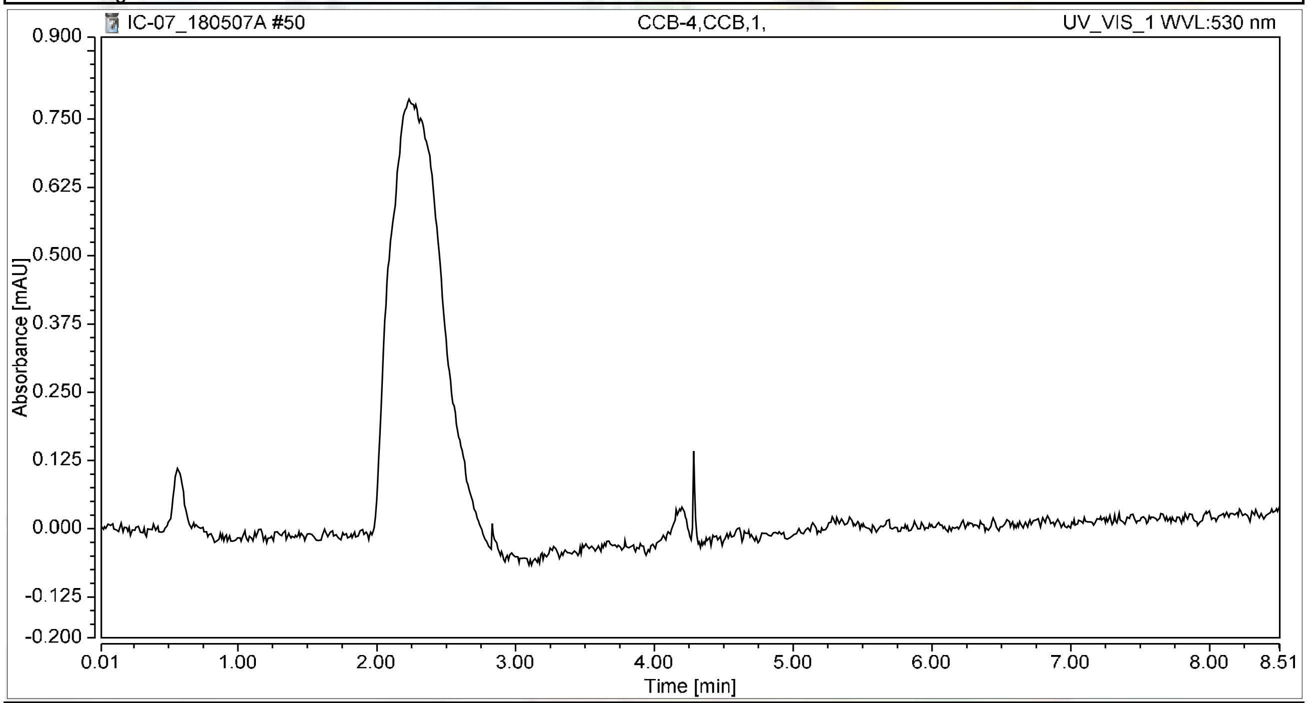
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.533	16.739	100.00	100.00	9.8681
Total:			**2.533**	**16.739**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 15:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

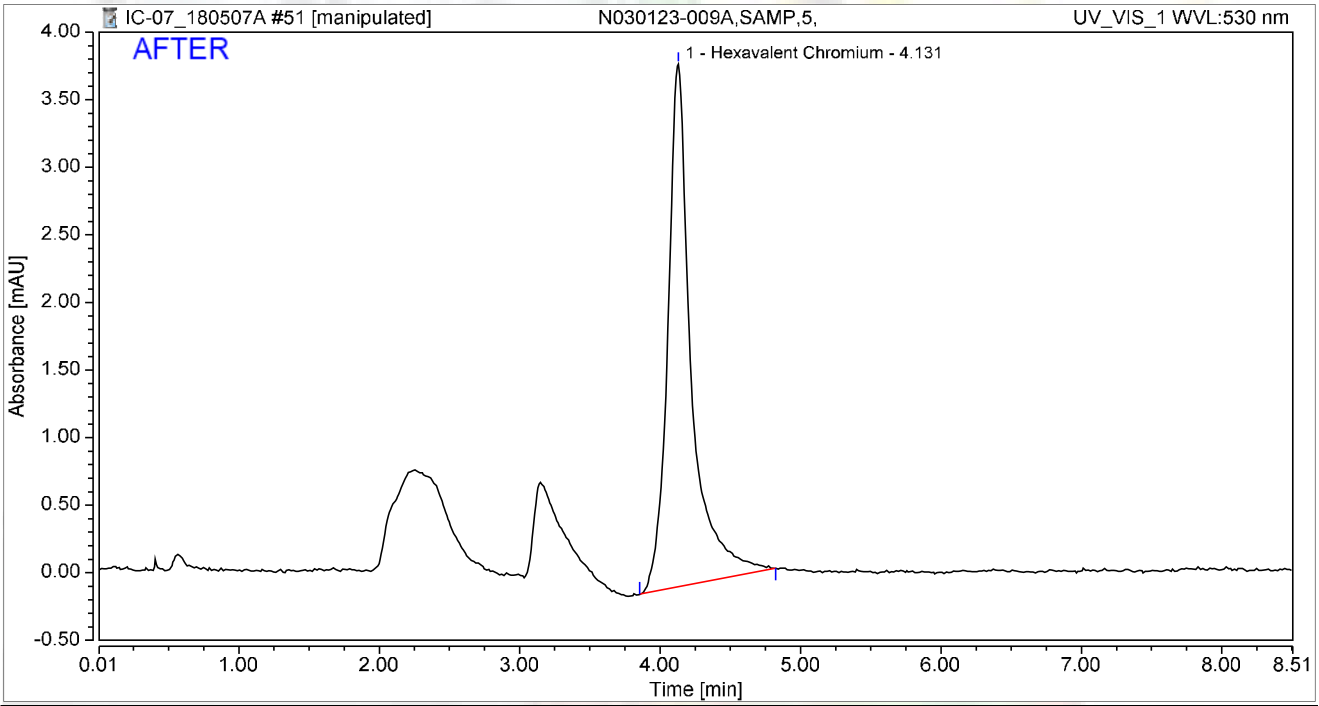
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-009A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 15:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.752	3.866	100.00	100.00	2.9310
Total:			**0.752**	**3.866**	**100.00**	**100.00**	

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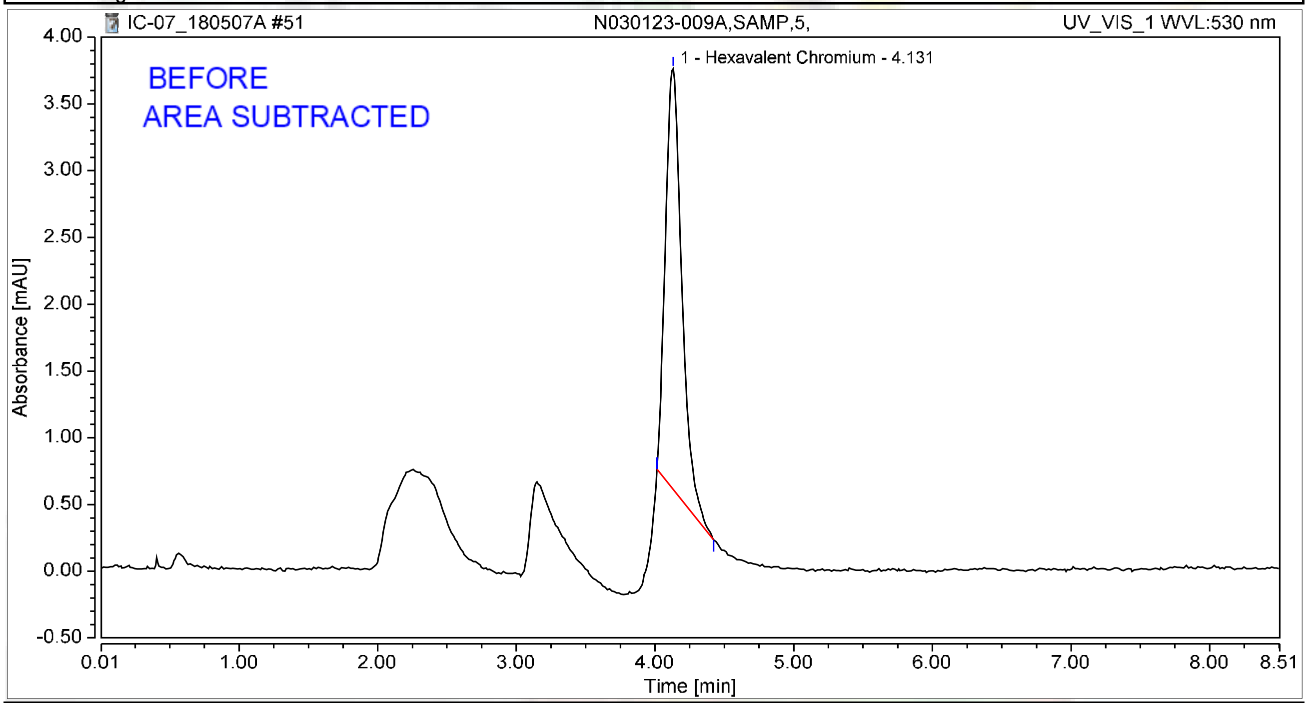
Chromatogram and Results

Injection Details

Injection Name:	**N030123-009A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 15:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.433	3.150	100.00	100.00	1.6886
Total:			**0.433**	**3.150**	**100.00**	**100.00**	

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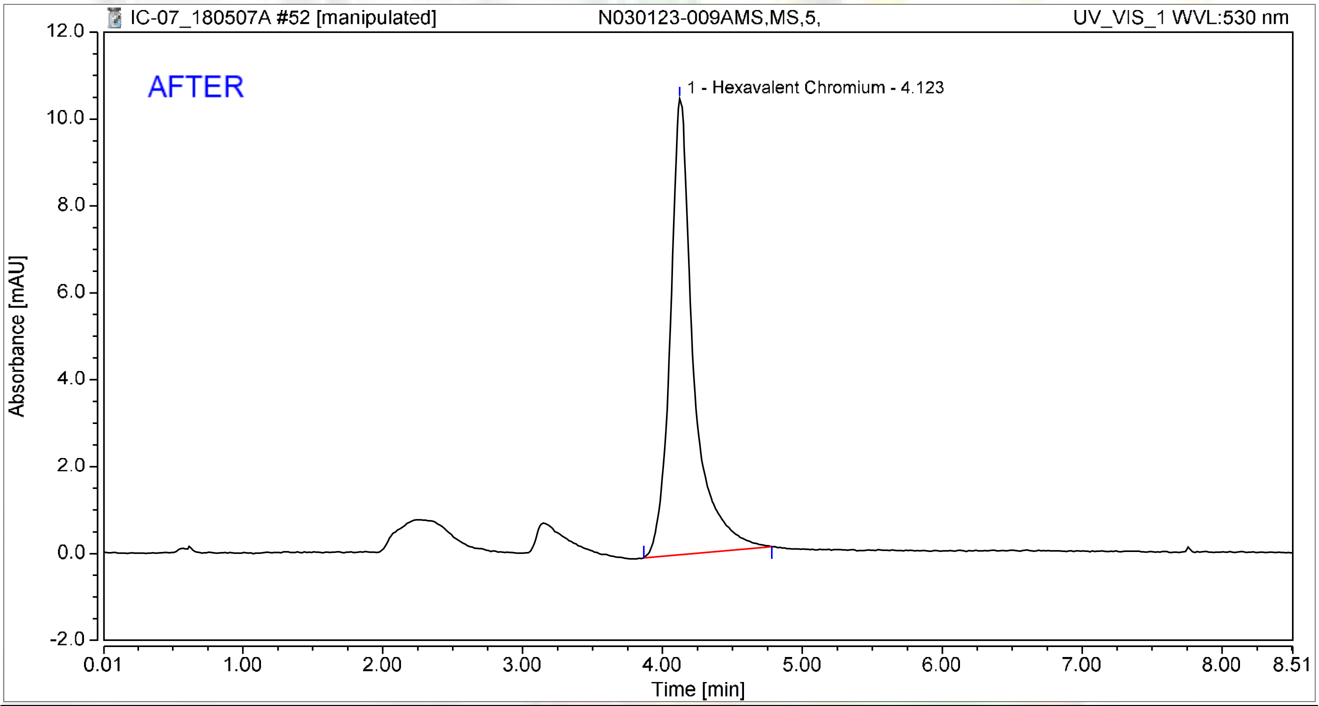
Chromatogram and Results

Injection Details

Injection Name:	**N030123-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 15:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	2.034	10.492	100.00	100.00	7.9269
Total:			**2.034**	**10.492**	**100.00**	**100.00**	

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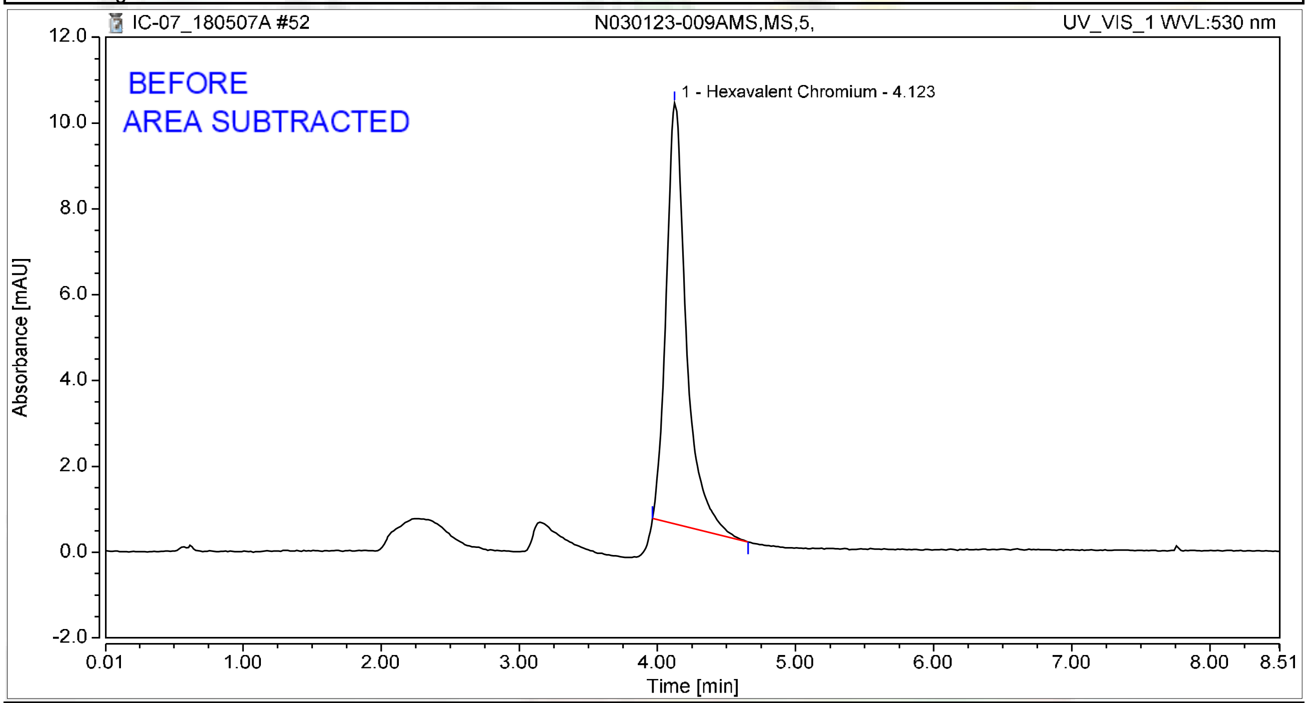
Chromatogram and Results

Injection Details

Injection Name:	**N030123-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 15:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.662	9.798	100.00	100.00	6.4767
Total:			**1.662**	**9.798**	**100.00**	**100.00**	

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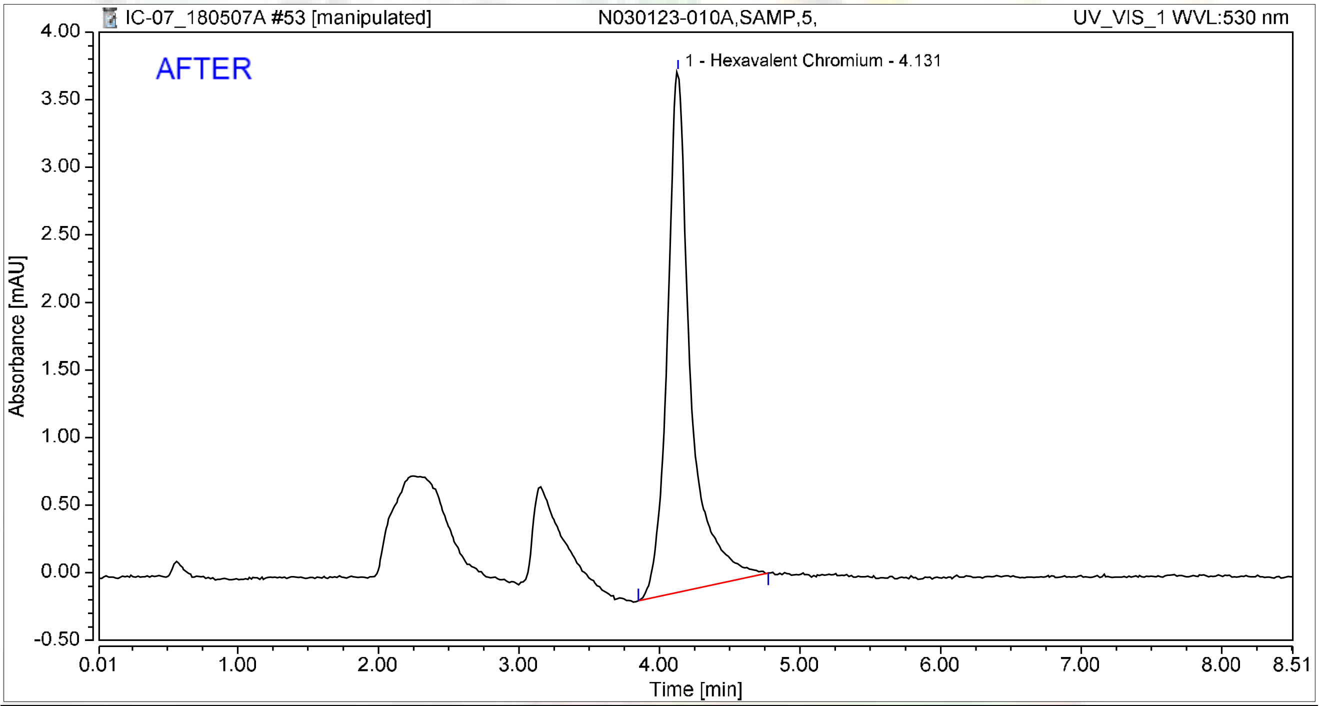
Chromatogram and Results

Injection Details

Injection Name:	**N030123-010A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 15:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.745	3.850	100.00	100.00	2.9014
Total:			**0.745**	**3.850**	**100.00**	**100.00**	

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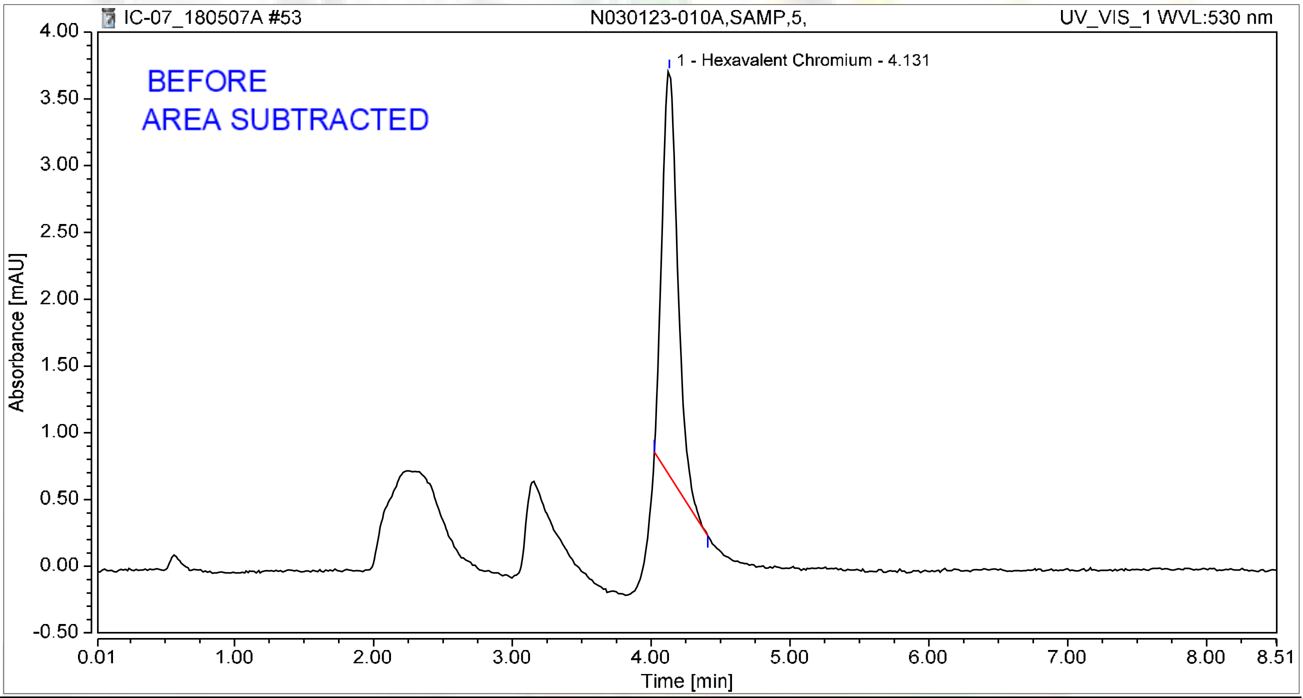
Chromatogram and Results

Injection Details

Injection Name:	**N030123-010A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 15:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.401	3.026	100.00	100.00	1.5608
Total:			**0.401**	**3.026**	**100.00**	**100.00**	

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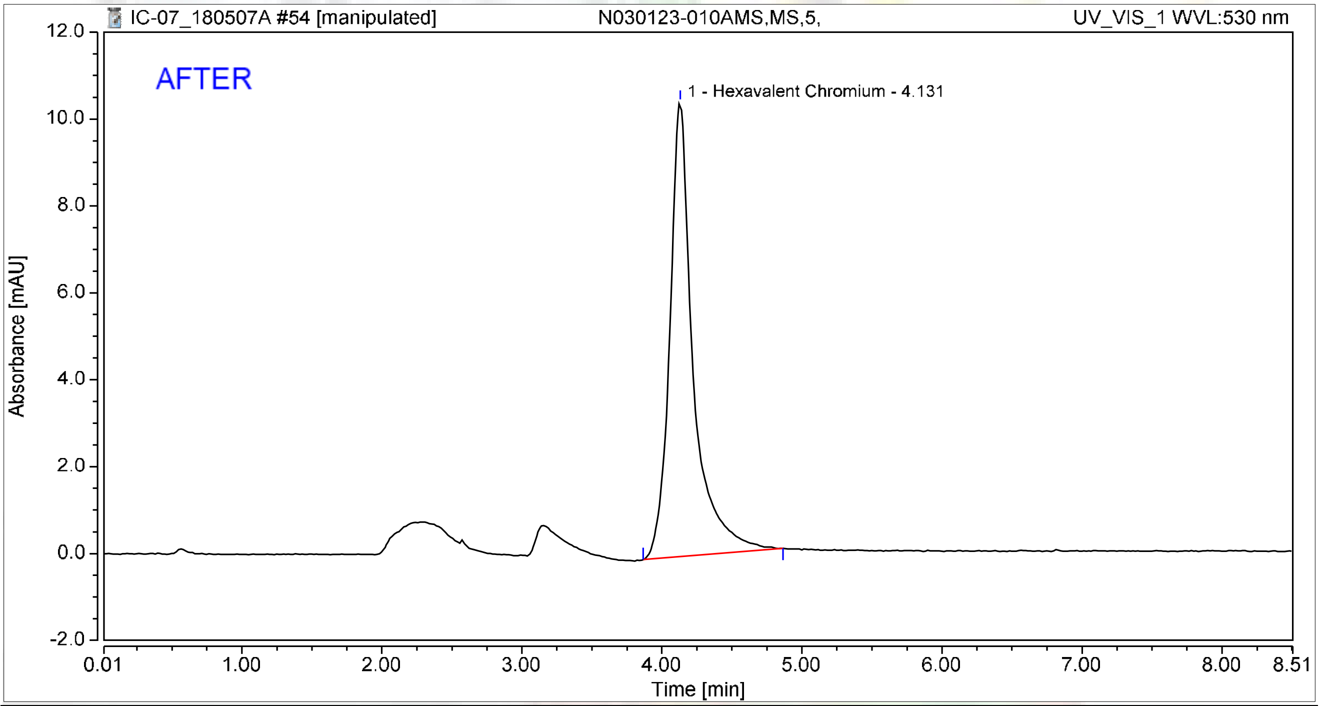
Chromatogram and Results

Injection Details

Injection Name:	**N030123-010AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 16:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.033	10.451	100.00	100.00	7.9235
Total:			**2.033**	**10.451**	**100.00**	**100.00**	

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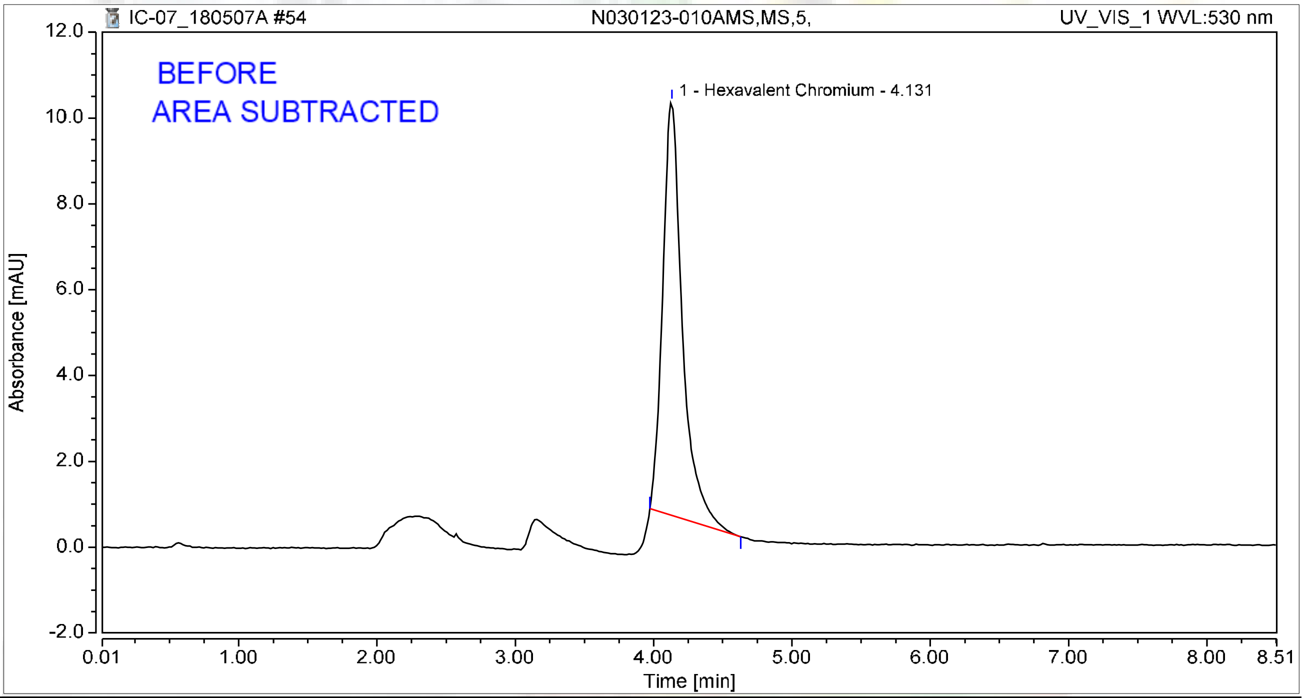
Chromatogram and Results

Injection Details

Injection Name:	**N030123-010AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 16:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.593	9.643	100.00	100.00	6.2077
Total:			**1.593**	**9.643**	**100.00**	**100.00**	

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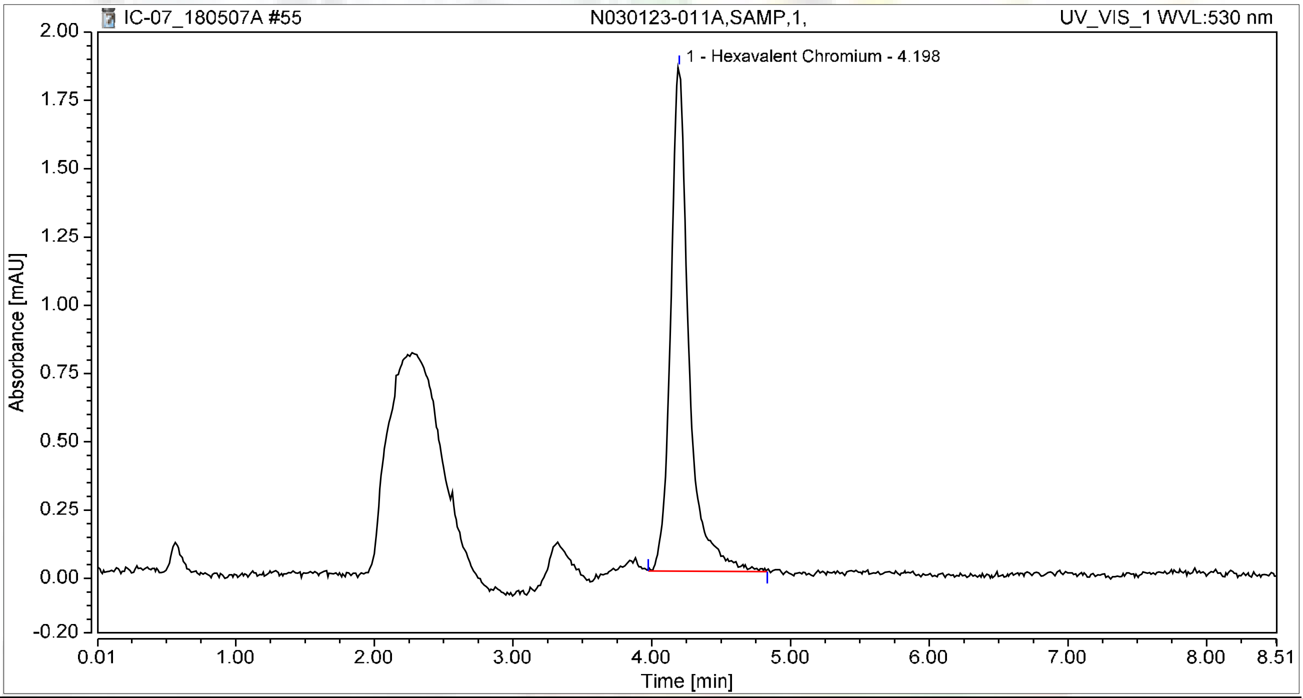
Chromatogram and Results

Injection Details

Injection Name:	**N030123-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 16:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

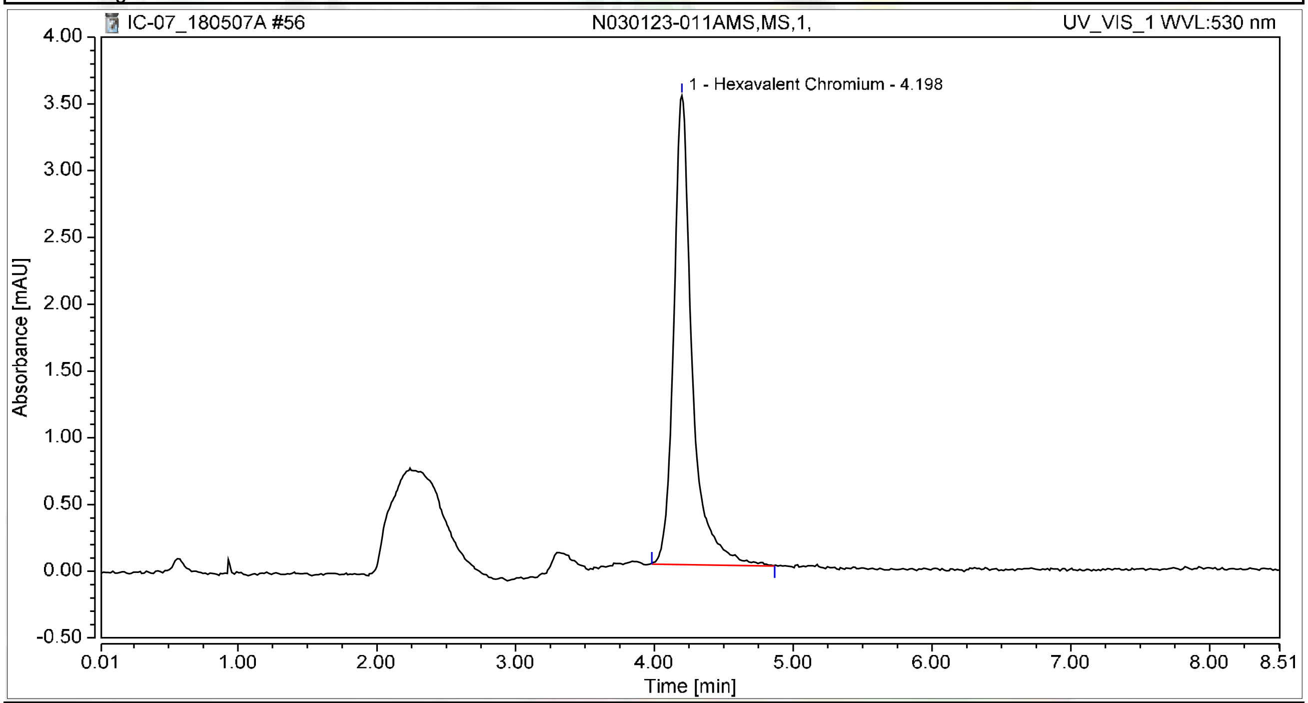
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.282	1.844	100.00	100.00	1.1002
Total:			**0.282**	**1.844**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-011AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 16:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

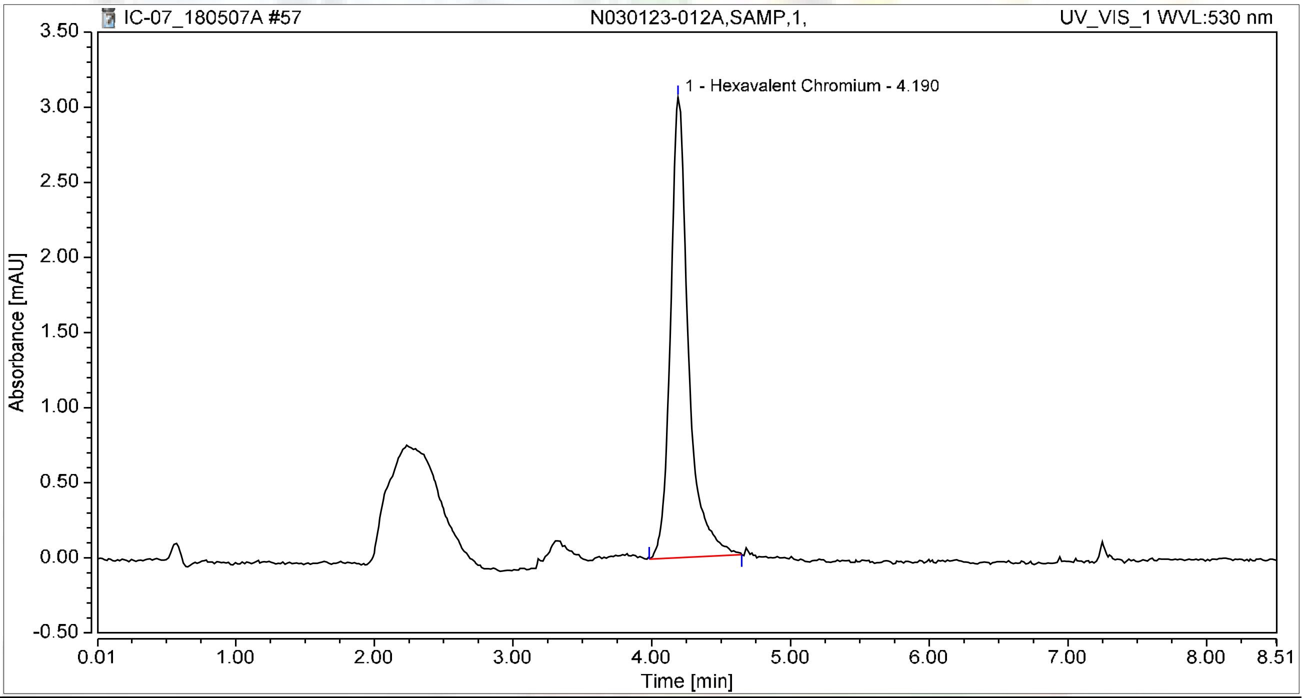
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.541	3.512	100.00	100.00	2.1088
Total:			**0.541**	**3.512**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 16:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

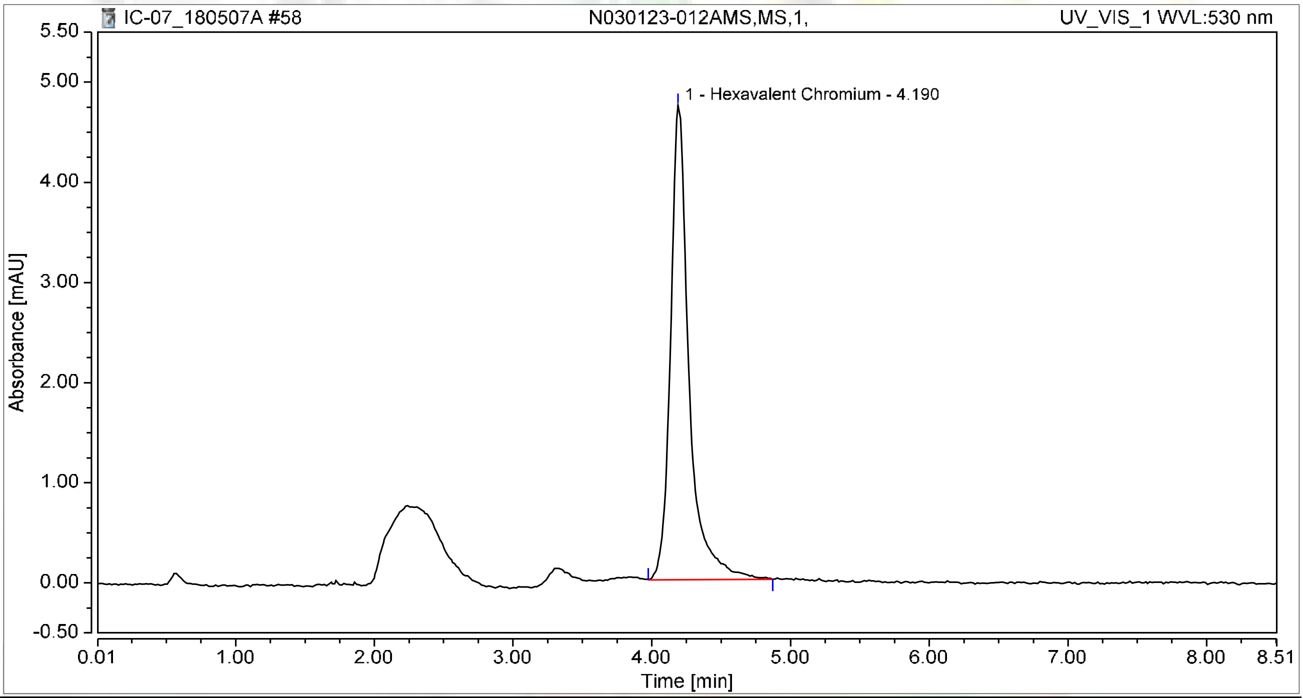
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.462	3.065	100.00	100.00	1.7996
Total:			**0.462**	**3.065**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 16:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

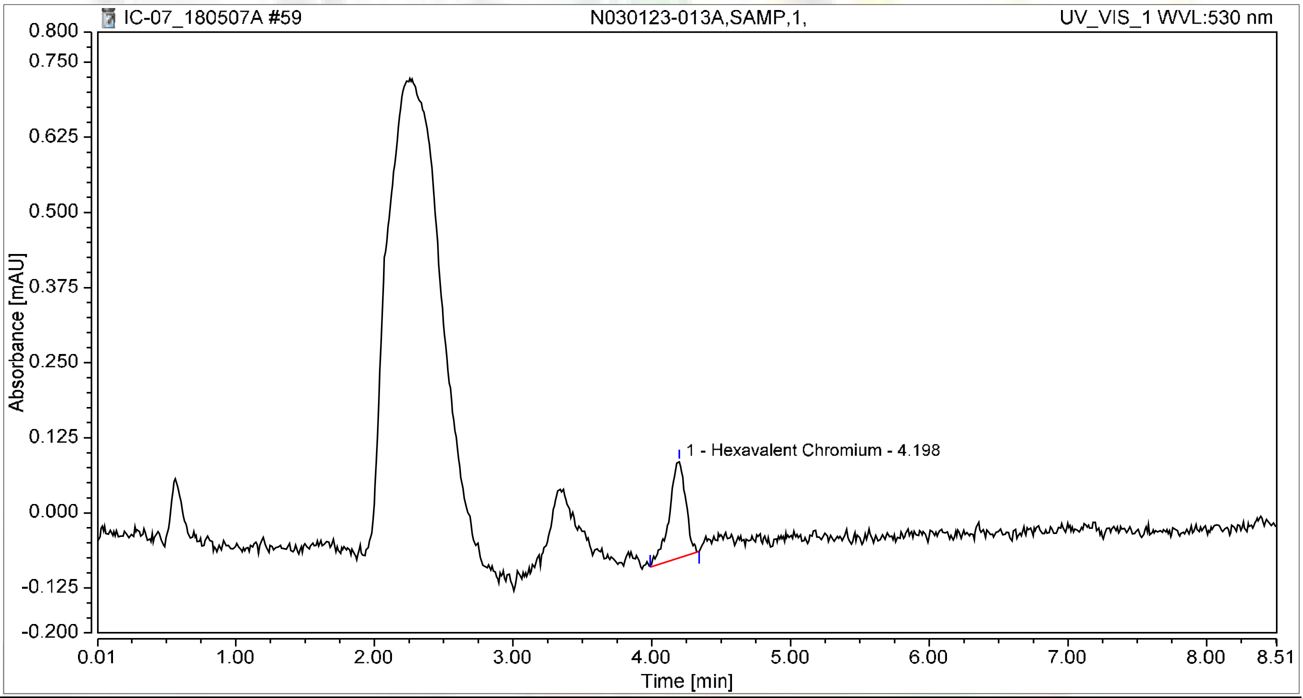
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.734	4.737	100.00	100.00	2.8603
Total:			**0.734**	**4.737**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 16:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

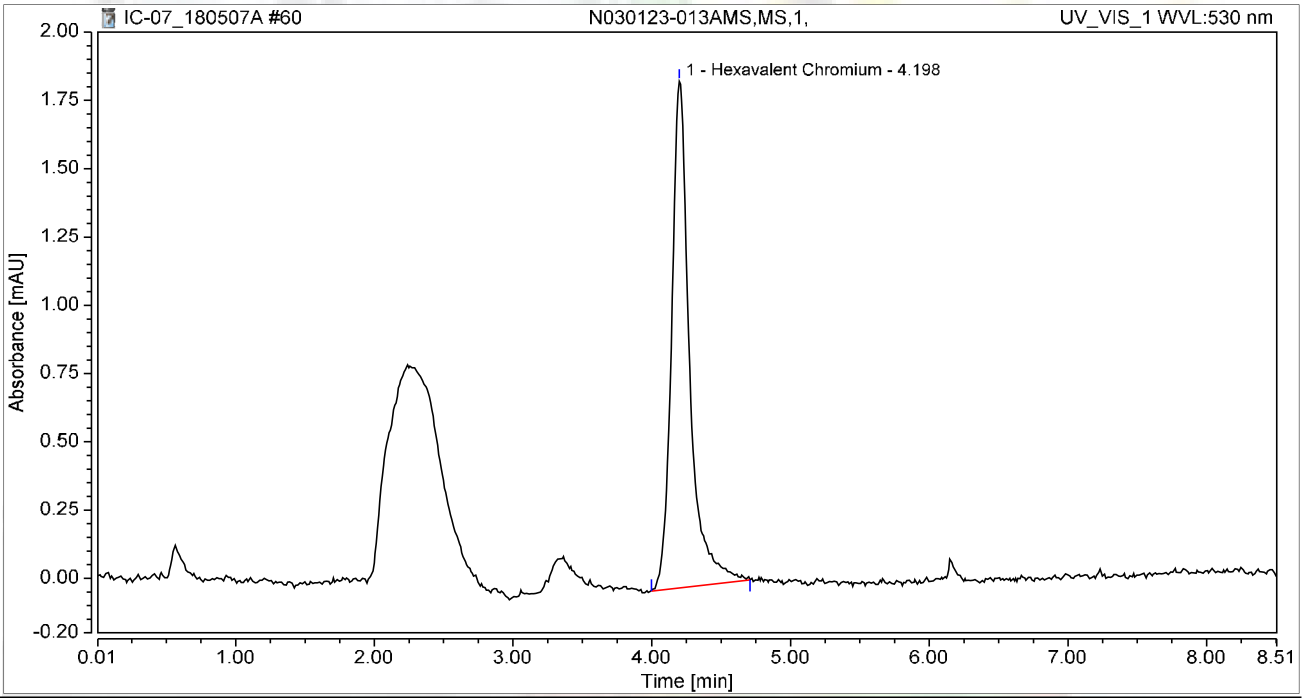
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.022	0.160	100.00	100.00	0.0864
Total:			**0.022**	**0.160**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 16:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

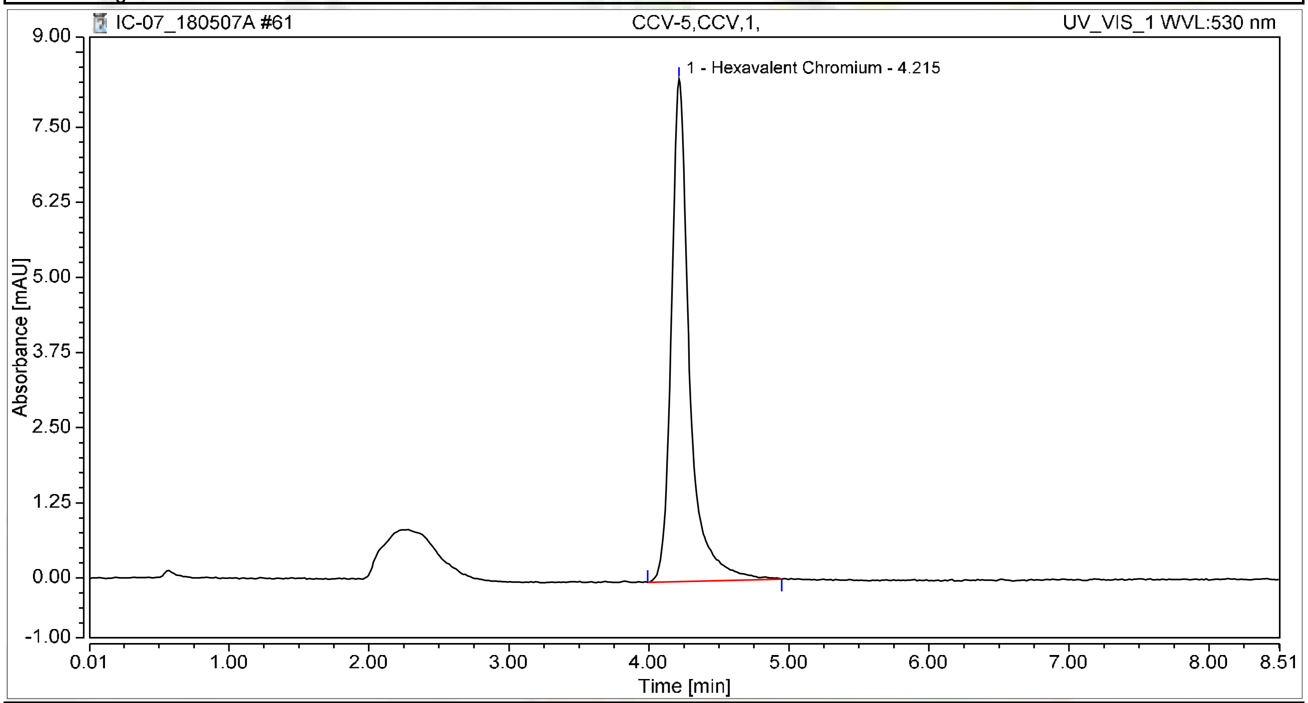
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.280	1.856	100.00	100.00	1.0895
Total:			**0.280**	**1.856**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 17:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

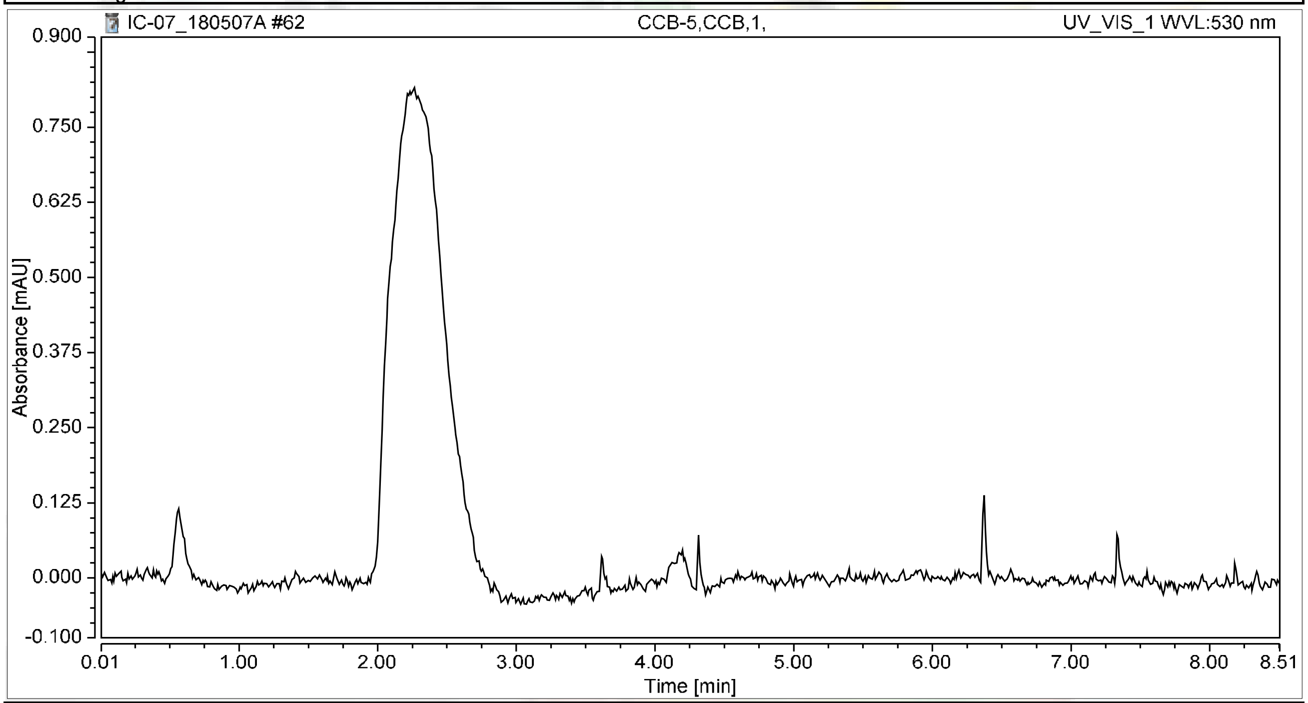
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.262	8.365	100.00	100.00	4.9193
Total:			**1.262**	**8.365**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 17:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

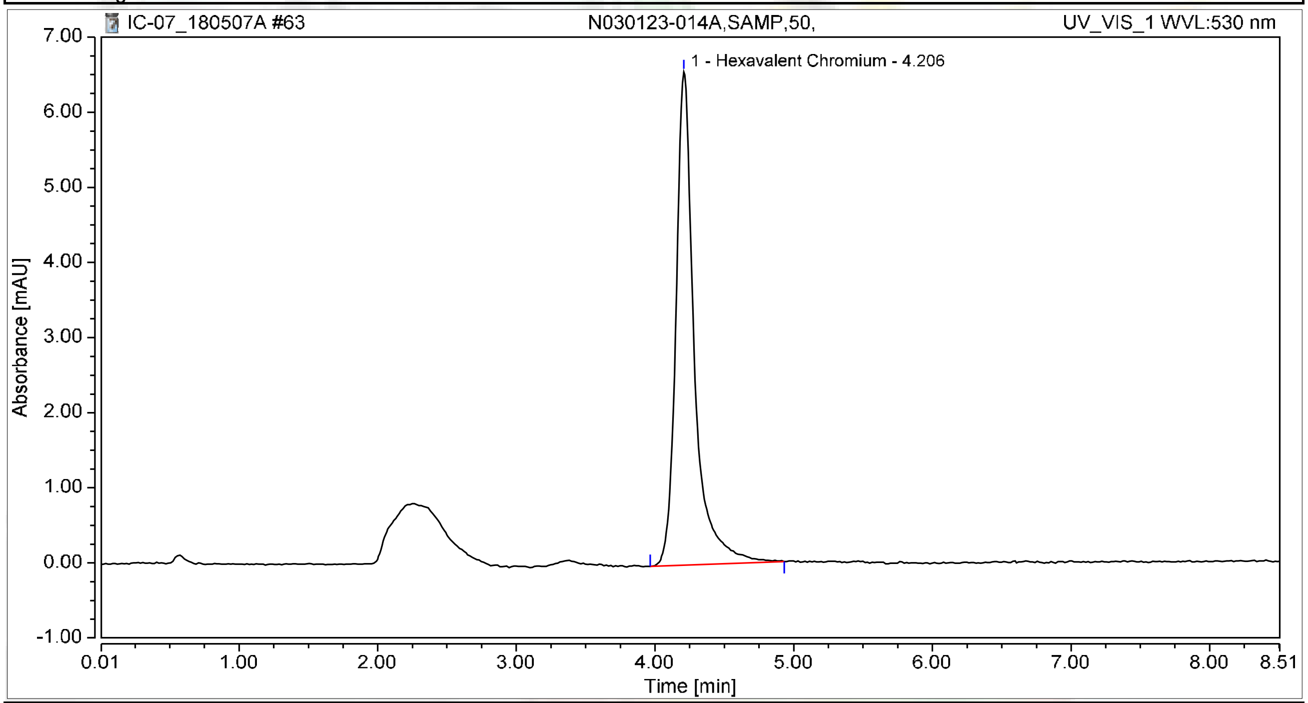
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-014A,SAMP,50,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 17:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

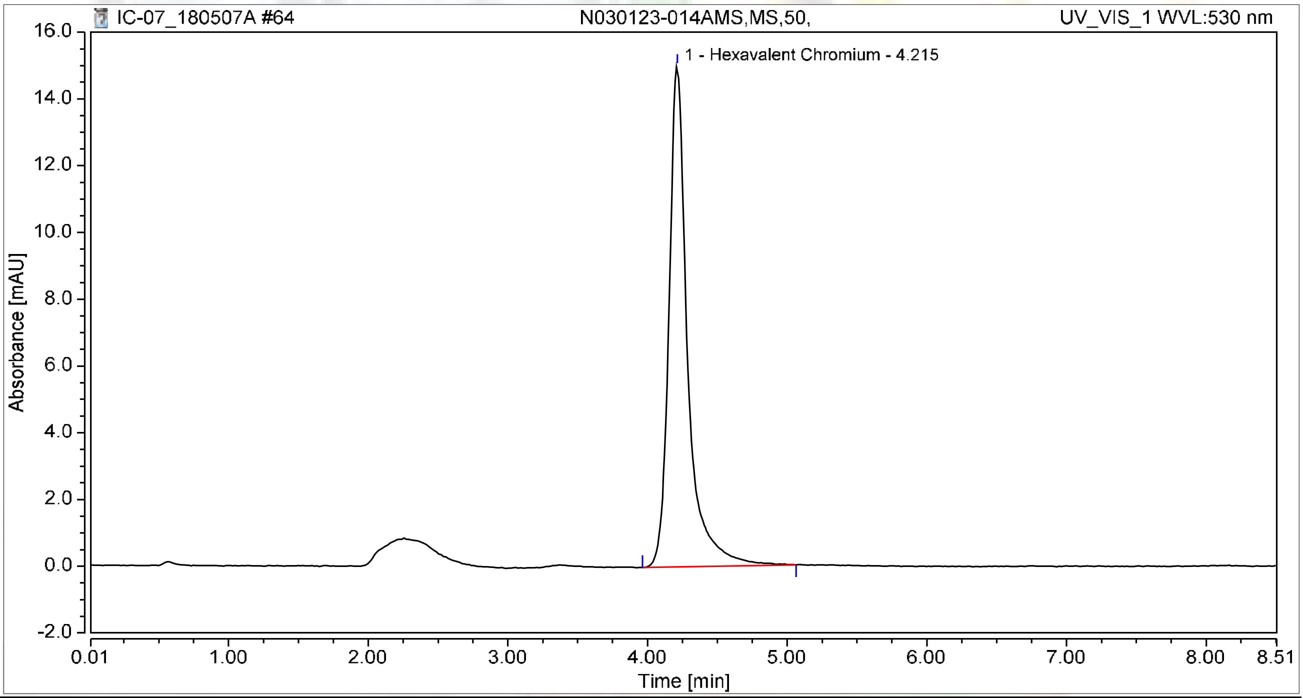
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.009	6.567	100.00	100.00	3.9331
Total:			**1.009**	**6.567**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-014AMS,MS,50,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 17:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

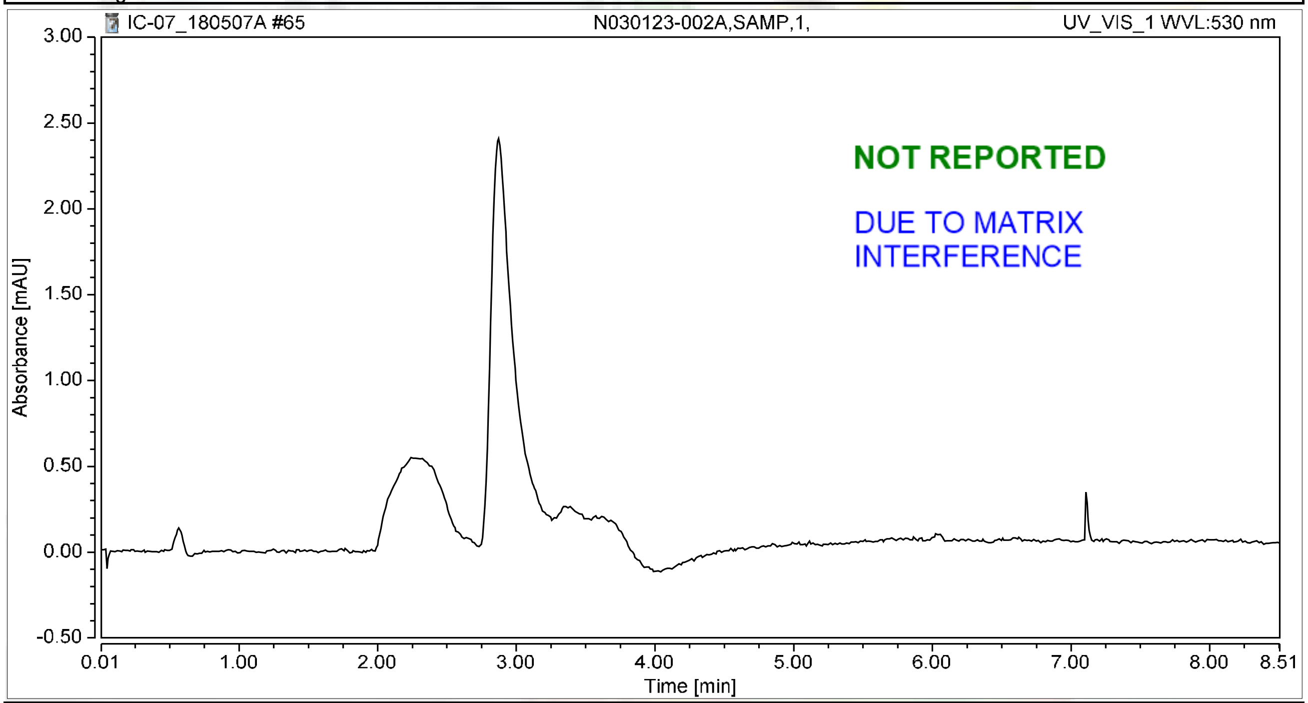
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.326	15.009	100.00	100.00	9.0652
Total:			**2.326**	**15.009**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 17:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

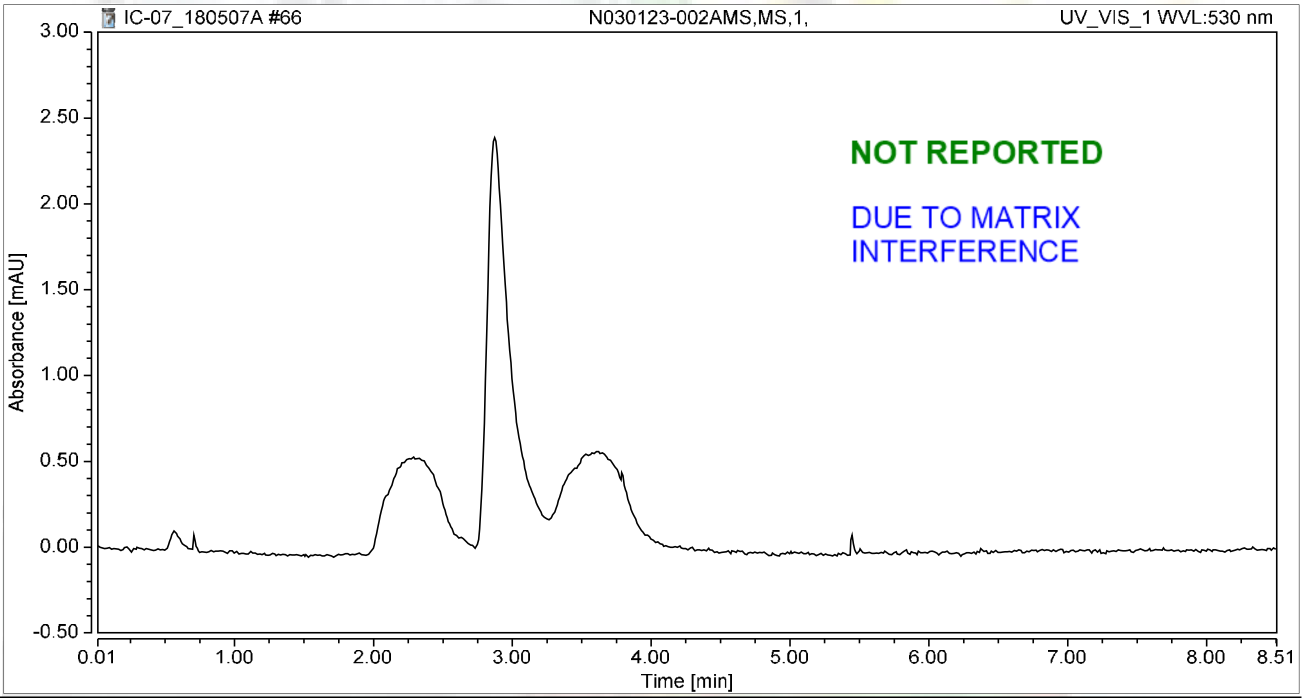
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 17:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

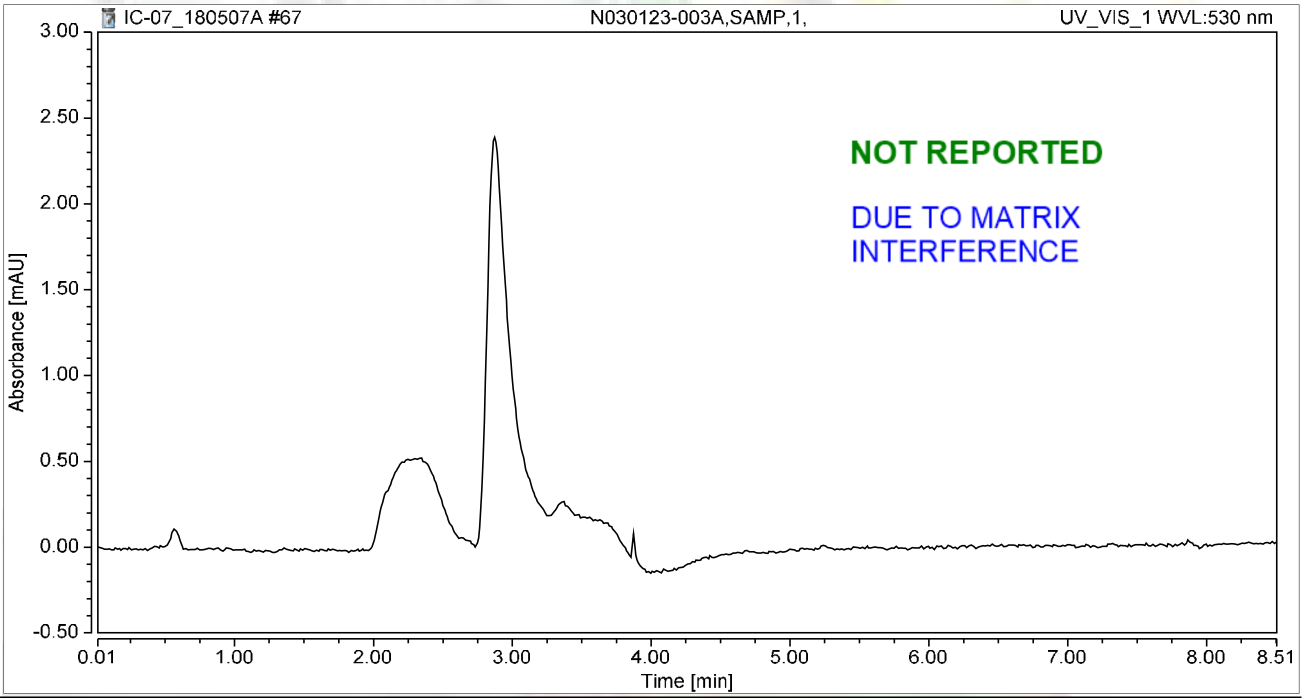
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-003A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 18:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

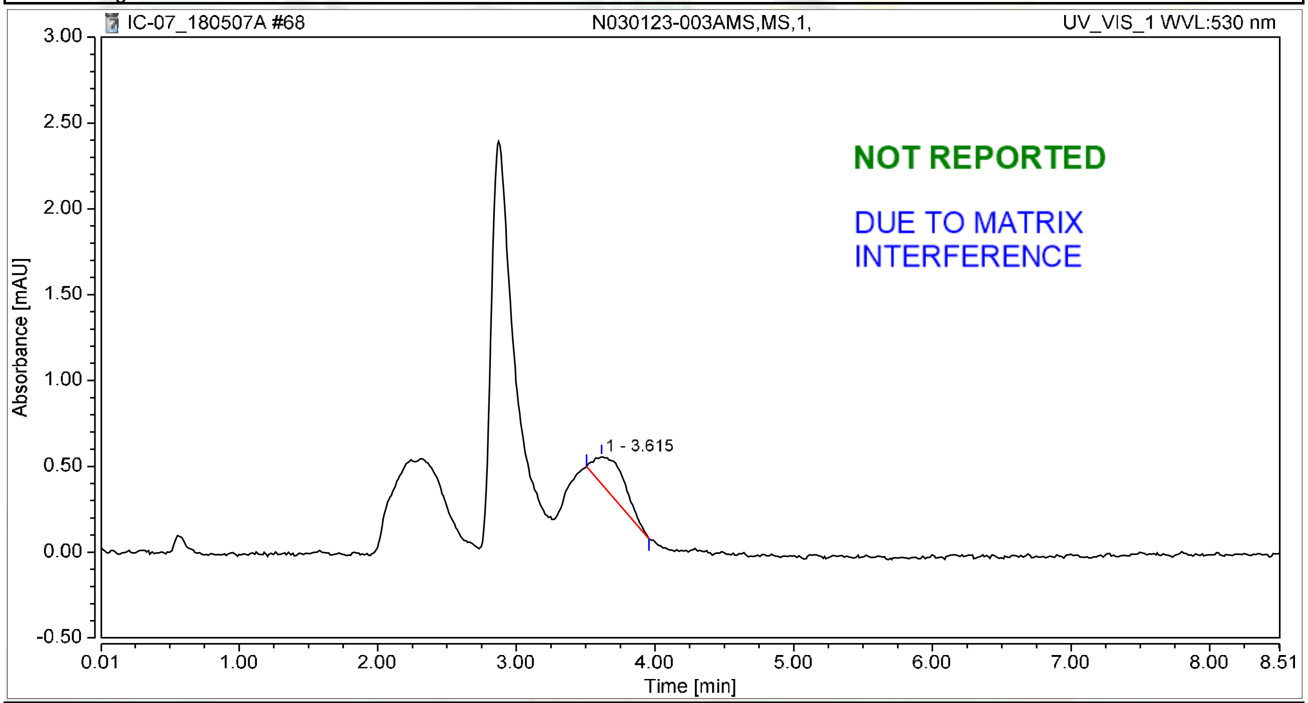
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 18:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

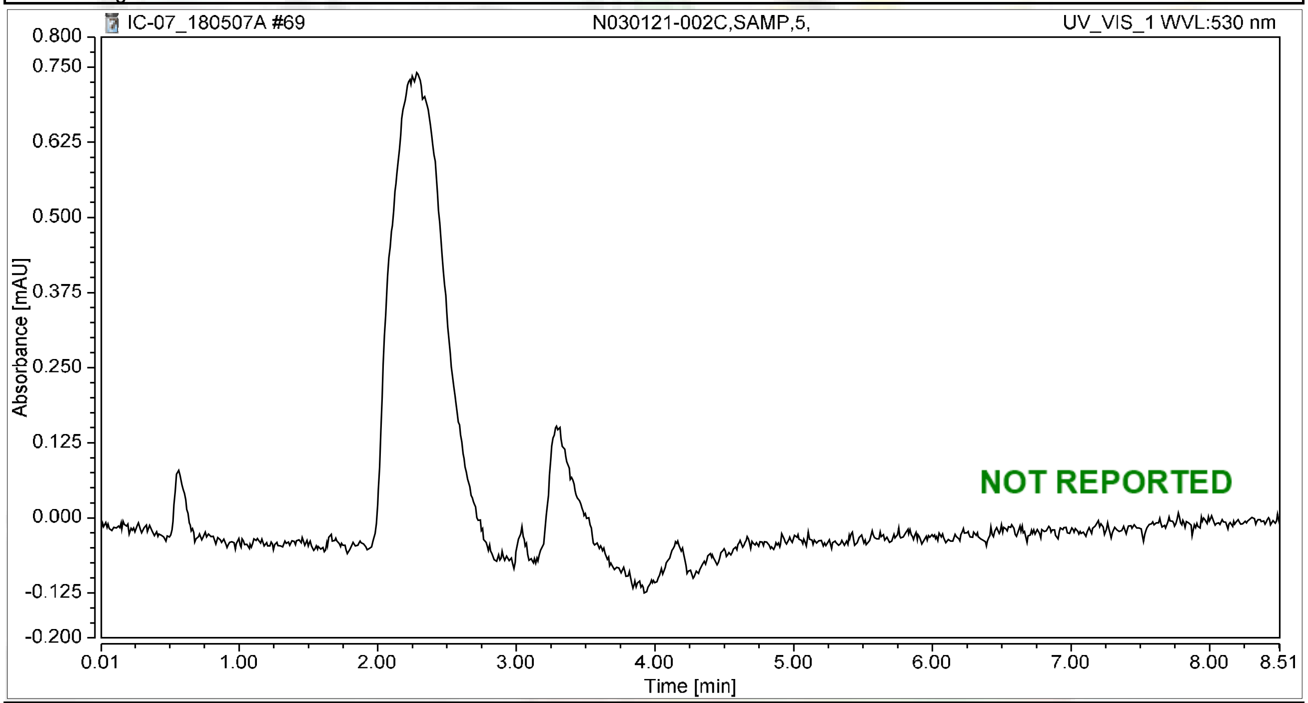
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.615	0.052	0.157	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.052**	**0.157**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030121-002C,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 18:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

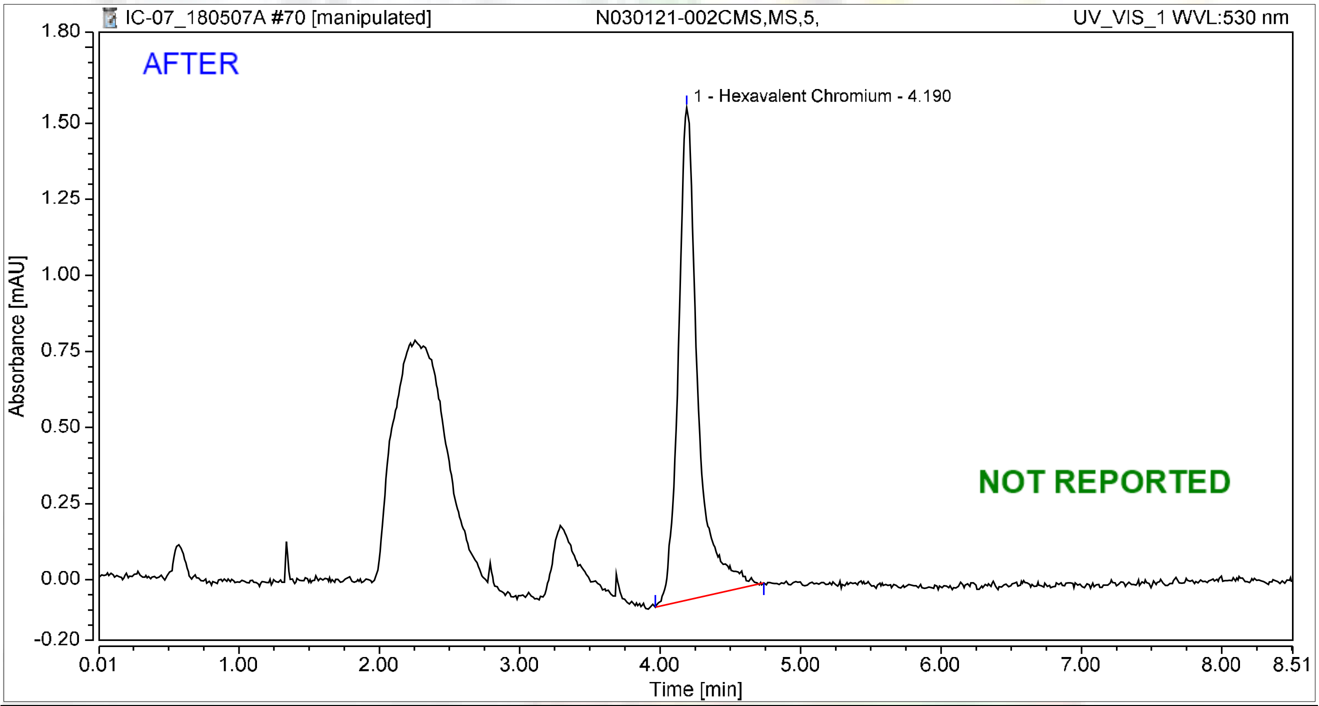
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030121-002CMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 18:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.262	1.620	100.00	100.00	1.0205
Total:			**0.262**	**1.620**	**100.00**	**100.00**	

rba 5/11/2018

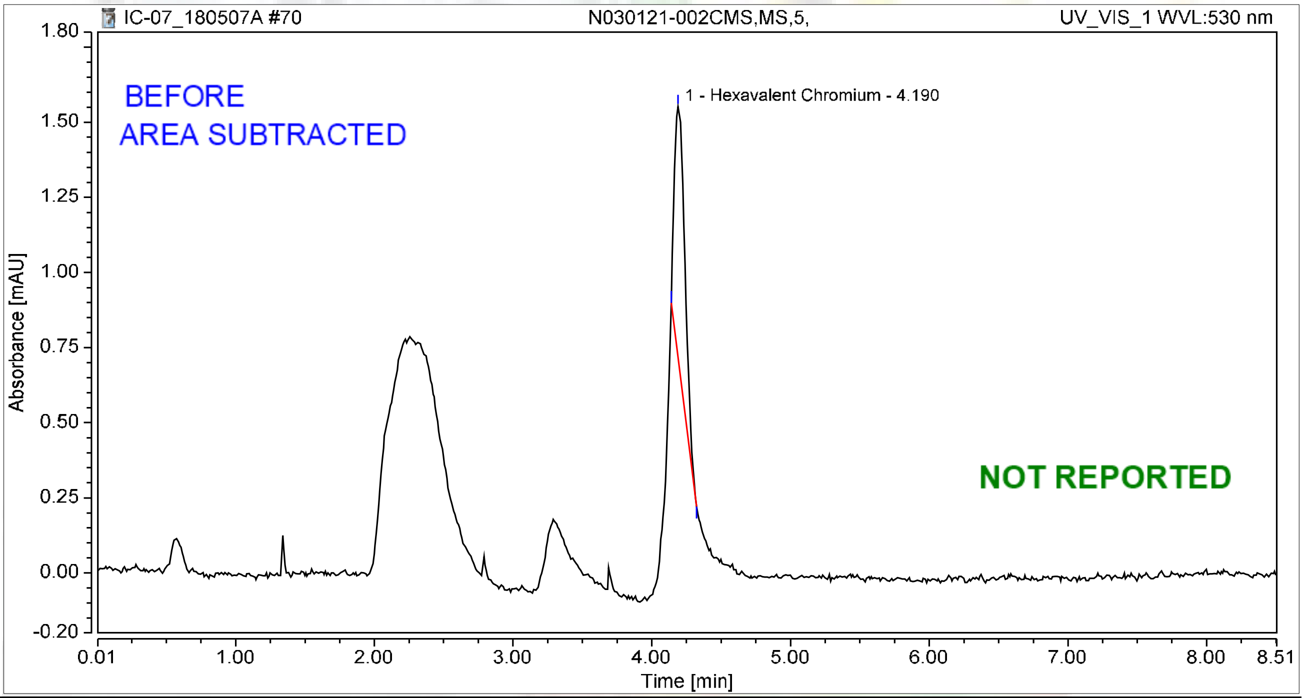
RB 05/17/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030121-002CMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 18:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.075	0.838	100.00	100.00	0.2918
Total:			**0.075**	**0.838**	**100.00**	**100.00**	

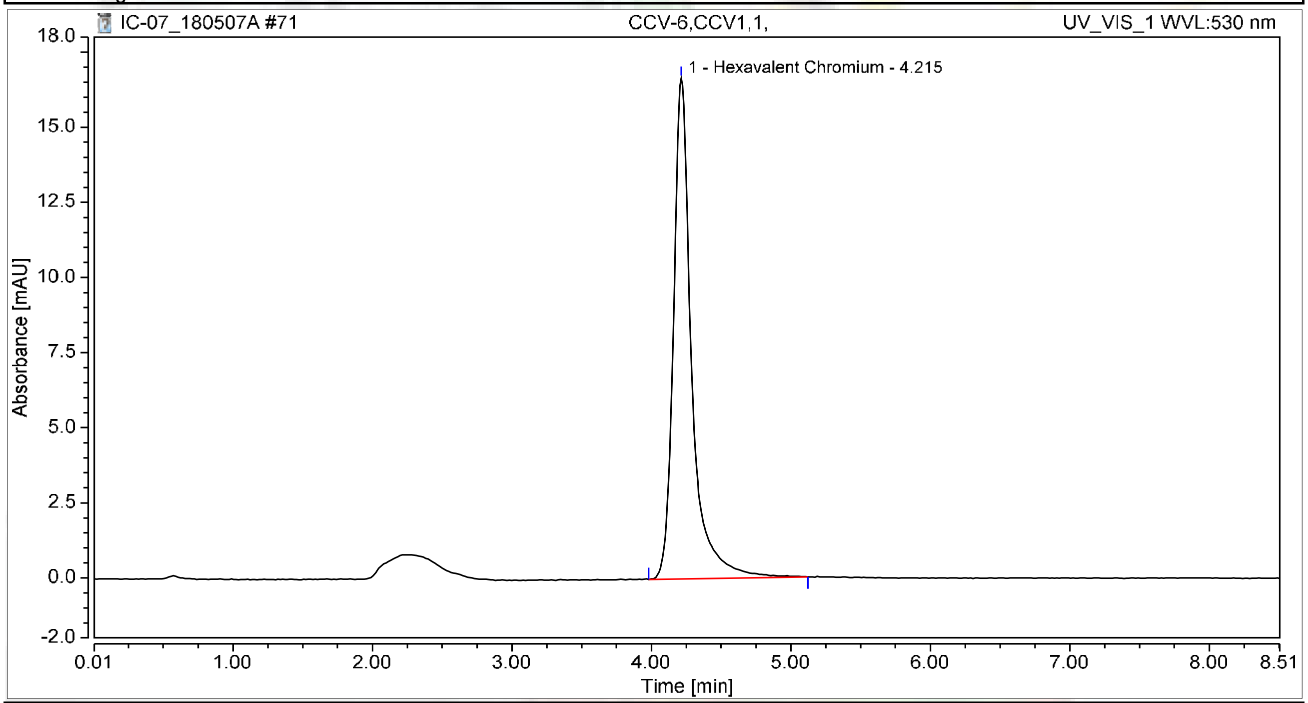
rba 5/11/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 18:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

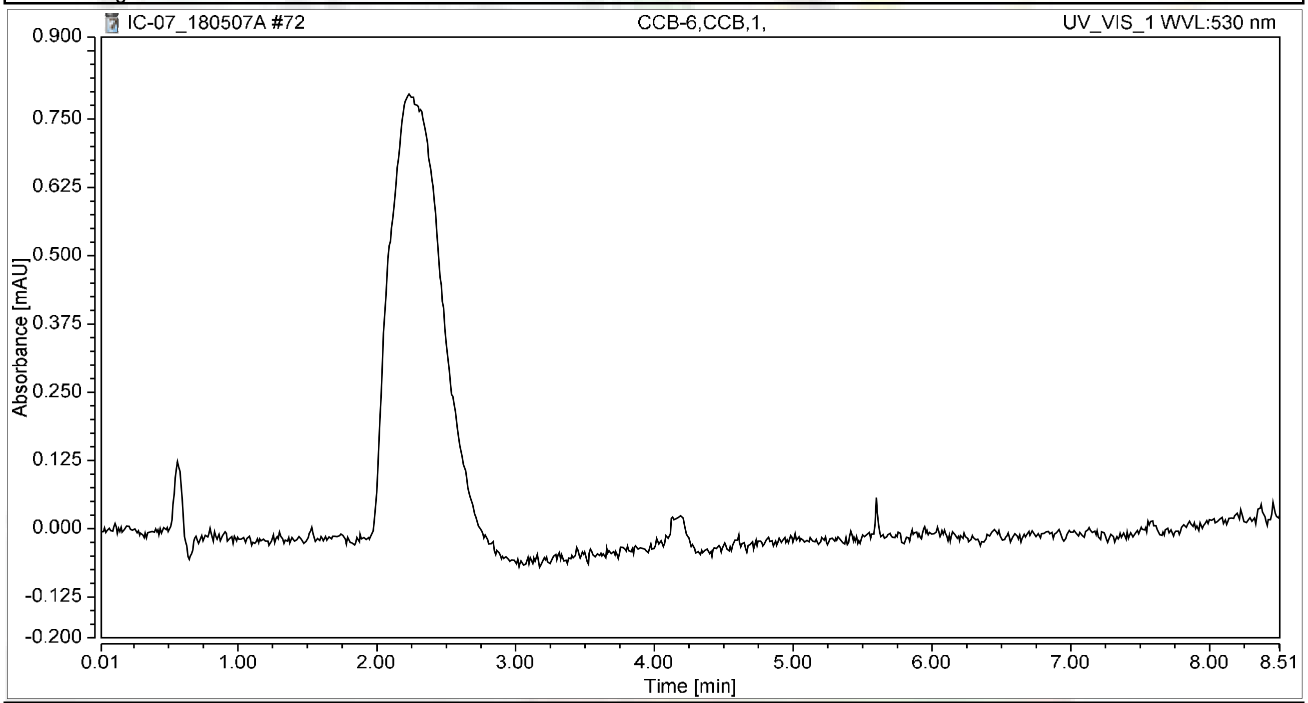
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.518	16.658	100.00	100.00	9.8114
Total:			**2.518**	**16.658**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**07/May/18 18:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180508A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/08/18 9:33 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/08/18 9:44 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/08/18 9:53 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/08/18 10:03 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/08/18 10:12 AM	Reported
15	MB-R123962	MBLK	1	Hexavalent Chromium	05/08/18 10:22 AM	Reported
16	LCS-R123962	LCS	1	Hexavalent Chromium	05/08/18 10:31 AM	Reported
17	N030123-015A	SAMP	1	Hexavalent Chromium	05/08/18 10:41 AM	Not Reported
18	N030123-015AMS	MS	1	Hexavalent Chromium	05/08/18 10:50 AM	Not Reported
19	N030123-016A	SAMP	1	Hexavalent Chromium	05/08/18 11:00 AM	Not Reported
20	N030123-016AMS	MS	1	Hexavalent Chromium	05/08/18 11:09 AM	Not Reported
21	N030123-017A	SAMP	1	Hexavalent Chromium	05/08/18 11:19 AM	Not Reported
22	N030123-017AMS	MS	1	Hexavalent Chromium	05/08/18 11:28 AM	Not Reported
23	N030123-018A	SAMP	1	Hexavalent Chromium	05/08/18 11:37 AM	Reported
24	N030123-018AMS	MS	1	Hexavalent Chromium	05/08/18 11:47 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/08/18 11:56 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/08/18 12:06 PM	Reported
27	N030123-019A	SAMP	1	Hexavalent Chromium	05/08/18 12:15 PM	Not Reported
28	N030123-019AMS	MS	1	Hexavalent Chromium	05/08/18 12:25 PM	Not Reported
29	N030123-023A	SAMP	1	Hexavalent Chromium	N.A.	Not Reported
30	BLANK	BLANK	1	Hexavalent Chromium	05/08/18 1:11 PM	Not Reported
31	N030123-023AMS	MS	1	Hexavalent Chromium	05/08/18 1:22 PM	Not Reported
32	N030123-015A	SAMP	5	Hexavalent Chromium	05/08/18 1:32 PM	Reported
33	N030123-015AMS	MS	5	Hexavalent Chromium	05/08/18 1:41 PM	Reported
34	N030123-016A	SAMP	5	Hexavalent Chromium	05/08/18 1:51 PM	Reported
35	N030123-016AMS	MS	5	Hexavalent Chromium	05/08/18 2:00 PM	Reported
36	N030123-023A	SAMP	1	Hexavalent Chromium	05/08/18 2:10 PM	Not Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/08/18 2:19 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/08/18 2:28 PM	Reported
39	N030185-002A	SAMP	20	Hexavalent Chromium	05/08/18 2:38 PM	Reported
40	N030185-004A	SAMP	100	Hexavalent Chromium	05/08/18 2:47 PM	Reported
41	N030148-001A	SAMP	1	Hexavalent Chromium	05/08/18 2:56 PM	Reported
42	N030185-004AMS	MS	100	Hexavalent Chromium	05/08/18 3:05 PM	Reported

INJECTION LOG: 180508A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030185-004AMSD	MSD	100	Hexavalent Chromium	05/08/18 3:15 PM	Reported
44	N030185-002AMS	MS	20	Hexavalent Chromium	05/08/18 3:24 PM	Reported
45	N030148-001ADUP	DUP	1	Hexavalent Chromium	05/08/18 3:34 PM	Reported
46	N030150-001A	SAMP	5	Hexavalent Chromium	05/08/18 3:43 PM	Reported
47	N030185-003A	SAMP	20	Hexavalent Chromium	05/08/18 3:53 PM	Reported
48	N030185-003AMS	MS	20	Hexavalent Chromium	05/08/18 4:02 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/08/18 4:12 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	05/08/18 4:21 PM	Reported
51	N030123-017A	SAMP	5	Hexavalent Chromium	05/08/18 4:30 PM	Reported
52	N030123-017AMS	MS	5	Hexavalent Chromium	05/08/18 4:40 PM	Reported
53	N030123-019A	SAMP	5	Hexavalent Chromium	05/08/18 4:51 PM	Reported
54	N030123-019AMS	MS	5	Hexavalent Chromium	05/08/18 5:03 PM	Reported
55	N030123-023A	SAMP	5	Hexavalent Chromium	05/08/18 5:12 PM	Not Reported
56	N030123-023AMS	MS	5	Hexavalent Chromium	05/08/18 5:21 PM	Not Reported
57	N030123-020A	SAMP	1	Hexavalent Chromium	05/08/18 5:31 PM	Reported
58	N030123-020AMS	MS	1	Hexavalent Chromium	05/08/18 5:40 PM	Reported
59	N030123-021A	SAMP	1	Hexavalent Chromium	05/08/18 5:50 PM	Reported
60	N030123-021AMS	MS	1	Hexavalent Chromium	05/08/18 5:59 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	05/08/18 6:09 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	05/08/18 6:18 PM	Reported
63	N030123-022A	SAMP	1	Hexavalent Chromium	05/08/18 6:28 PM	Not Reported
64	N030123-022AMS	MS	1	Hexavalent Chromium	05/08/18 6:37 PM	Not Reported
65	N030185-001A	SAMP	5	Hexavalent Chromium	05/08/18 6:47 PM	Reported
66	N030185-001AMS	MS	5	Hexavalent Chromium	05/08/18 6:56 PM	Reported
67	N030185-005A	SAMP	1	Hexavalent Chromium	05/08/18 7:06 PM	Reported
68	N030185-005AMS	MS	1	Hexavalent Chromium	05/08/18 7:15 PM	Reported
69	N030185-006A	SAMP	1	Hexavalent Chromium	05/08/18 7:24 PM	Reported
70	N030185-006AMS	MS	1	Hexavalent Chromium	05/08/18 7:34 PM	Reported
71	N030185-007A	SAMP	1	Hexavalent Chromium	05/08/18 7:43 PM	Reported
72	N030185-007AMS	MS	1	Hexavalent Chromium	05/08/18 7:53 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	05/08/18 8:02 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	05/08/18 8:12 PM	Reported
75	N030185-001A	SAMP	1	Hexavalent Chromium	05/08/18 8:21 PM	Not Reported
76	N030185-001AMS	MS	1	Hexavalent Chromium	05/08/18 8:31 PM	Not Reported
77	LCS-R123963	LCS	1	Hexavalent Chromium	05/08/18 8:40 PM	Reported
78	MB-R123963	MBLK	1	Hexavalent Chromium	05/08/18 8:50 PM	Reported
79	N030228-003A	SAMP	50	Hexavalent Chromium	05/08/18 8:59 PM	Reported
80	N030228-003AMS	MS	50	Hexavalent Chromium	05/08/18 9:08 PM	Reported
81	N030228-003AMSD	MSD	50	Hexavalent Chromium	05/08/18 9:18 PM	Reported
82	N030228-005A	SAMP	100	Hexavalent Chromium	05/08/18 9:27 PM	Reported
83	N030228-005AMS	MS	100	Hexavalent Chromium	05/08/18 9:37 PM	Reported
84	N030228-011A	SAMP	500	Hexavalent Chromium	05/08/18 9:46 PM	Reported

INJECTION LOG: 180508A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	05/08/18 9:56 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	05/08/18 10:05 PM	Reported
87	N030228-011ADUP	DUP	500	Hexavalent Chromium	05/08/18 10:15 PM	Reported
88	N030228-001A	SAMP	1	Hexavalent Chromium	05/08/18 10:24 PM	Reported
89	N030228-002A	SAMP	2	Hexavalent Chromium	05/08/18 10:34 PM	Reported
90	N030228-004A	SAMP	20	Hexavalent Chromium	05/08/18 10:43 PM	Reported
91	N030228-006A	SAMP	10	Hexavalent Chromium	05/08/18 10:53 PM	Reported
92	N030228-007A	SAMP	100	Hexavalent Chromium	05/08/18 11:02 PM	Reported
93	N030228-008A	SAMP	10	Hexavalent Chromium	05/08/18 11:11 PM	Reported
94	N030228-009A	SAMP	1	Hexavalent Chromium	05/08/18 11:21 PM	Reported
95	N030228-010A	SAMP	10	Hexavalent Chromium	05/08/18 11:30 PM	Reported
96	CCV-8	CCV1	1	Hexavalent Chromium	05/08/18 11:40 PM	Reported
97	CCB-8	CCB	1	Hexavalent Chromium	05/08/18 11:49 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180508A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/May/18 00:20:08**
No. of Injections:	**100**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/08/2018 09:33	Finished	BLANK
11	BLANK	2	1000	Unknown		05/08/2018 09:44	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		05/08/2018 09:53	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,	4	1000	Unknown		05/08/2018 10:03	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		05/08/2018 10:12	Finished	CCB R180409B
15	MB-H2O,MBLK,1,	6	1000	Unknown		05/08/2018 10:22	Finished	MB R180409B
16	LCS-H2O,LCS,1,	7	1000	Unknown		05/08/2018 10:31	Finished	LCS, IWST-180129B
17	N030123-015A,SAMF	8	1000	Unknown		05/08/2018 10:41	Finished	SAMP,10mL
18	N030123-015AMS,MS	9	1000	Unknown		05/08/2018 10:50	Finished	MS (1ppb), IWST-180129B,10
19	N030123-016A,SAMF	10	1000	Unknown		05/08/2018 11:00	Finished	SAMP,10mL
20	N030123-016AMS,MS	11	1000	Unknown		05/08/2018 11:09	Finished	MS (1ppb), IWST-180129B,10
21	N030123-017A,SAMF	12	1000	Unknown		05/08/2018 11:19	Finished	SAMP,10mL
22	N030123-017AMS,MS	13	1000	Unknown		05/08/2018 11:28	Finished	MS (1ppb), IWST-180129B,10
23	N030123-018A,SAMF	14	1000	Unknown		05/08/2018 11:37	Finished	SAMP,10mL
24	N030123-018AMS,MS	15	1000	Unknown		05/08/2018 11:47	Finished	MS (1ppb), IWST-180129B,10
25	CCV-2,CCV1,1,	16	1000	Unknown		05/08/2018 11:56	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	17	1000	Unknown		05/08/2018 12:06	Finished	CCB R180409B
27	N030123-019A,SAMF	18	1000	Unknown		05/08/2018 12:15	Finished	SAMP,10mL
28	N030123-019AMS,MS	19	1000	Unknown		05/08/2018 12:25	Finished	MS (1ppb), IWST-180129B,10
29	N030123-023A,SAMF	20	1000	Unknown		n.a.	Finished	SAMP,10mL
30	BLANK	21	1000	Unknown		05/08/2018 13:11	Finished	BLANK
31	N030123-023AMS,MS	22	1000	Unknown		05/08/2018 13:22	Finished	MS (1ppb), IWST-180129B,10
32	N030123-015A,SAMF	23	1000	Unknown		05/08/2018 13:32	Finished	SAMP,2>10mL
33	N030123-015AMS,MS	24	1000	Unknown		05/08/2018 13:41	Finished	MS (1ppb), IWST-180129B,2>1
34	N030123-016A,SAMF	25	1000	Unknown		05/08/2018 13:51	Finished	SAMP,2>10mL
35	N030123-016AMS,MS	26	1000	Unknown		05/08/2018 14:00	Finished	MS (1ppb), IWST-180129B,2>1
36	N030123-023A,SAMF	27	1000	Unknown		05/08/2018 14:10	Finished	SAMP,10mL
37	CCV-3,CCV,1,	28	1000	Unknown		05/08/2018 14:19	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	29	1000	Unknown		05/08/2018 14:28	Finished	CCB R180418A
39	N030185-002A,SAMF	30	1000	Unknown		05/08/2018 14:38	Finished	SAMP,0.5>10mL
40	N030185-004A,SAMF	31	1000	Unknown		05/08/2018 14:47	Finished	SAMP,0.1>10mL
41	N030148-001A,SAMF	32	1000	Unknown		05/08/2018 14:56	Finished	SAMP,10mL
42	N030185-004AMS,MS	33	1000	Unknown		05/08/2018 15:05	Finished	MS (5ppb), IWST-180129B,0.1
43	N030185-004AMSD,M	34	1000	Unknown		05/08/2018 15:15	Finished	MSD (5ppb), IWST-180129B,0.
44	N030185-002AMS,MS	35	1000	Unknown		05/08/2018 15:24	Finished	MS (5ppb), IWST-180129B,0.5
45	N030148-001ADUP,D	36	1000	Unknown		05/08/2018 15:34	Finished	DUP,10mL
46	N030150-001A,SAMF	37	1000	Unknown		05/08/2018 15:43	Finished	SAMP,2>10mL
47	N030185-003A,SAMF	38	1000	Unknown		05/08/2018 15:53	Finished	SAMP,0.5>10mL
48	N030185-003AMS,MS	39	1000	Unknown		05/08/2018 16:02	Finished	MS (5ppb), IWST-180129B,0.1
49	CCV-4,CCV1,1,	40	1000	Unknown		05/08/2018 16:12	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	41	1000	Unknown		05/08/2018 16:21	Finished	CCB R180418A
51	N030123-017A,SAMF	42	1000	Unknown		05/08/2018 16:30	Finished	SAMP,2>10mL
52	N030123-017AMS,MS	43	1000	Unknown		05/08/2018 16:40	Finished	MS (1ppb), IWST-180129B,2>1
53	N030123-019A,SAMF	1	1000	Unknown		05/08/2018 16:51	Finished	SAMP,2>10mL
54	N030123-019AMS,MS	2	1000	Unknown		05/08/2018 17:03	Finished	MS (1ppb), IWST-180129B,2>1
55	N030123-023A,SAMF	3	1000	Unknown		05/08/2018 17:12	Finished	SAMP,2>10mL
56	N030123-023AMS,MS	4	1000	Unknown		05/08/2018 17:21	Finished	MS (1ppb), IWST-180129B,2>1
57	N030123-020A,SAMF	5	1000	Unknown		05/08/2018 17:31	Finished	SAMP,10mL
58	N030123-020AMS,MS	6	1000	Unknown		05/08/2018 17:40	Finished	MS (1ppb), IWST-180129B,10
59	N030123-021A,SAMF	7	1000	Unknown		05/08/2018 17:50	Finished	SAMP,10mL
60	N030123-021AMS,MS	8	1000	Unknown		05/08/2018 17:59	Finished	MS (1ppb), IWST-180129B,10

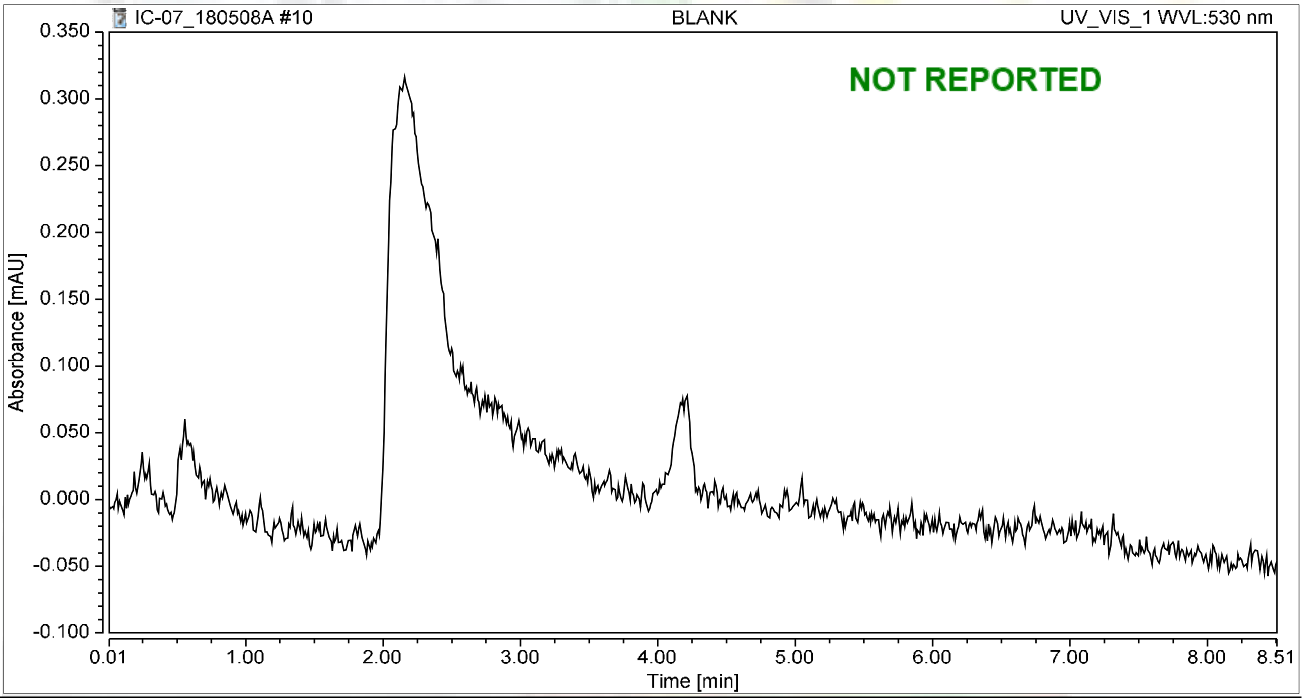
	61	CCV-5,CCV,1,	9	1000	Unknown		05/08/2018 18:09	Finished	CCV @5ppb, IWST-180129A
	62	CCB-5,CCB,1,	10	1000	Unknown		05/08/2018 18:18	Finished	CCB R180409B
	63	N030123-022A,SAMP	11	1000	Unknown		05/08/2018 18:28	Finished	SAMP,10mL
	64	N030123-022AMS,MS	12	1000	Unknown		05/08/2018 18:37	Finished	MS (1ppb), IWST-180129B,10
	65	N030185-001A,SAMP	13	1000	Unknown		05/08/2018 18:47	Finished	SAMP,2>10mL
	66	N030185-001AMS,MS	14	1000	Unknown		05/08/2018 18:56	Finished	MS (1ppb), IWST-180129B,2>1
	67	N030185-005A,SAMP	15	1000	Unknown		05/08/2018 19:06	Finished	SAMP,10mL
	68	N030185-005AMS,MS	16	1000	Unknown		05/08/2018 19:15	Finished	MS (1ppb), IWST-180129B,10
	69	N030185-006A,SAMP	17	1000	Unknown		05/08/2018 19:24	Finished	SAMP,10mL
	70	N030185-006AMS,MS	18	1000	Unknown		05/08/2018 19:34	Finished	MS (1ppb), IWST-180129B,10
	71	N030185-007A,SAMP	19	1000	Unknown		05/08/2018 19:43	Finished	SAMP,10mL
	72	N030185-007AMS,MS	20	1000	Unknown		05/08/2018 19:53	Finished	MS (1ppb), IWST-180129B,10
	73	CCV-6,CCV1,1,	21	1000	Unknown		05/08/2018 20:02	Finished	CCV @10ppb, IWST-180129A
	74	CCB-6,CCB,1,	22	1000	Unknown		05/08/2018 20:12	Finished	CCB R180409B
	75	N030185-001A,SAMP	23	1000	Unknown		05/08/2018 20:21	Finished	SAMP,10mL
	76	N030185-001AMS,MS	24	1000	Unknown		05/08/2018 20:31	Finished	MS (1ppb), IWST-180129B,10
	77	LCS-2,LCS,1,	25	1000	Unknown		05/08/2018 20:40	Finished	LCS, IWST-180129B
	78	MB-2,MBLK,1,	26	1000	Unknown		05/08/2018 20:50	Finished	MB R180409B
	79	N030228-003A,SAMP	27	1000	Unknown		05/08/2018 20:59	Finished	SAMP,0.2>10mL
	80	N030228-003AMS,MS	28	1000	Unknown		05/08/2018 21:08	Finished	MS (5ppb), IWST-180129B,0.2
	81	N030228-003AMSD,M	29	1000	Unknown		05/08/2018 21:18	Finished	MSD (5ppb), IWST-180129B,0.
	82	N030228-005A,SAMP	30	1000	Unknown		05/08/2018 21:27	Finished	SAMP,0.1>10mL
	83	N030228-005AMS,MS	31	1000	Unknown		05/08/2018 21:37	Finished	MS (5ppb), IWST-180129B,0.1
	84	N030228-011A,SAMP	32	1000	Unknown		05/08/2018 21:46	Finished	SAMP,0.02>10mL
	85	CCV-7,CCV,1,	33	1000	Unknown		05/08/2018 21:56	Finished	CCV @5ppb, IWST-180129A
	86	CCB-7,CCB,1,	34	1000	Unknown		05/08/2018 22:05	Finished	CCB R180409B
	87	N030228-011ADUP,D	35	1000	Unknown		05/08/2018 22:15	Finished	DUP,0.02>10mL
	88	N030228-001A,SAMP	36	1000	Unknown		05/08/2018 22:24	Finished	SAMP,10mL
	89	N030228-002A,SAMP	37	1000	Unknown		05/08/2018 22:34	Finished	SAMP,5>10mL
	90	N030228-004A,SAMP	38	1000	Unknown		05/08/2018 22:43	Finished	SAMP,0.5>10mL
	91	N030228-006A,SAMP	39	1000	Unknown		05/08/2018 22:53	Finished	SAMP,1>10mL
	92	N030228-007A,SAMP	40	1000	Unknown		05/08/2018 23:02	Finished	SAMP,0.1>10mL
	93	N030228-008A,SAMP	41	1000	Unknown		05/08/2018 23:11	Finished	SAMP,1>10mL
	94	N030228-009A,SAMP	42	1000	Unknown		05/08/2018 23:21	Finished	SAMP,10mL
N020228-010A	95	~~N030228-0010~~A,SAM	43	1000	Unknown		05/08/2018 23:30	Finished	SAMP,1>10mL
	96	CCV-8,CCV1,1,	44	1000	Unknown		05/08/2018 23:40	Finished	CCV @10ppb, IWST-180129A
	97	CCB-8,CCB,1,	45	1000	Unknown		05/08/2018 23:49	Finished	CCB R180409B
	98	SHUTDOWN	46	1000	Unknown		05/08/2018 23:59	Finished	
	99	Eluent: R180508A	47	1000	Unknown		n.a.	Finished	Eluent
	100	PCR: R180508B	48	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

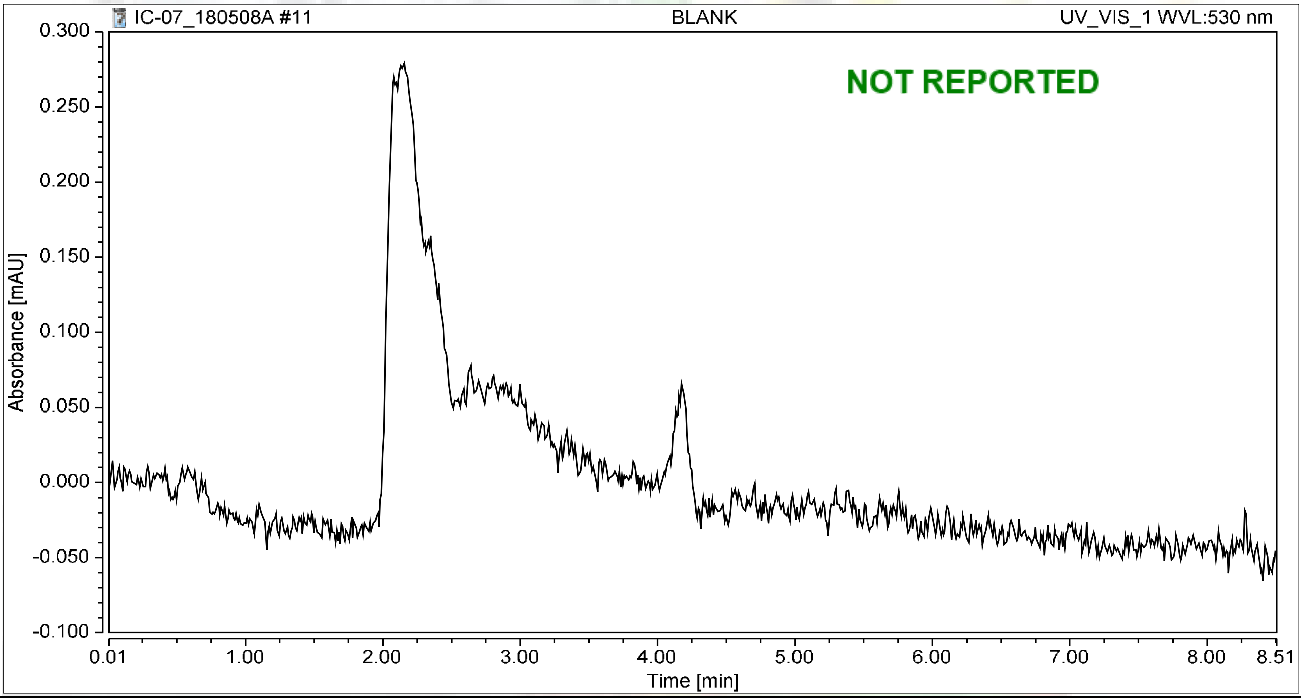
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 09:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

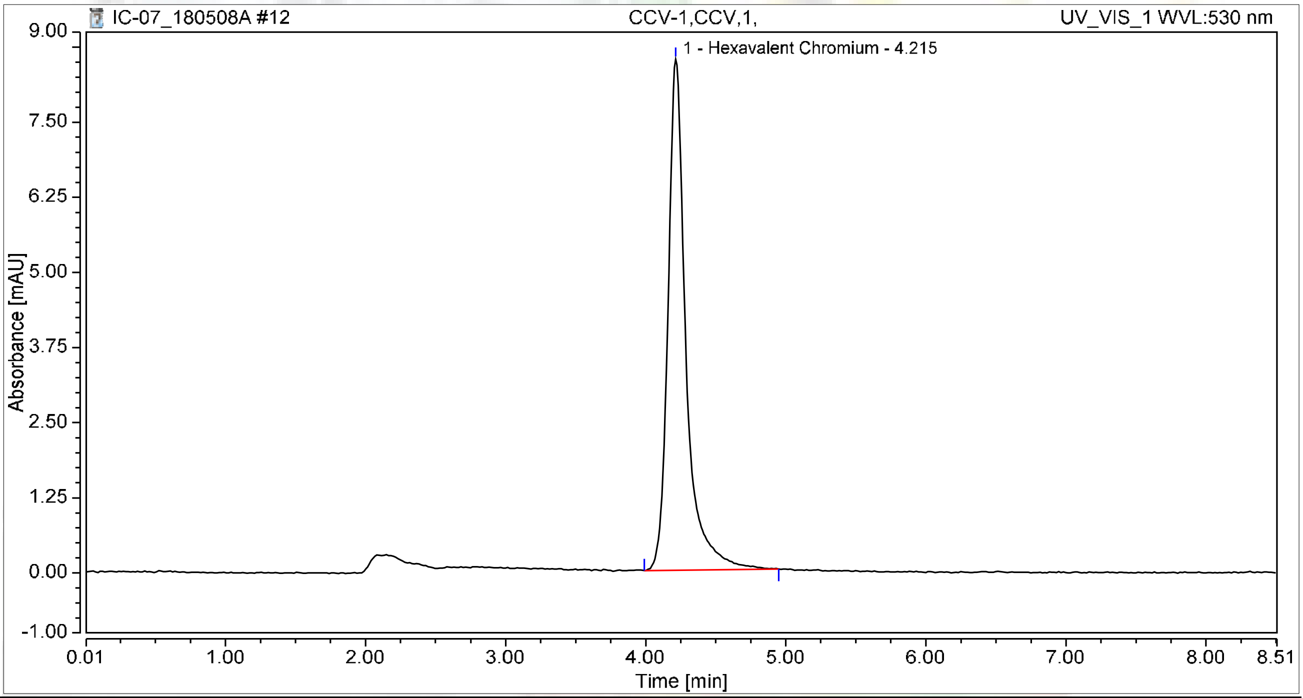
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 09:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

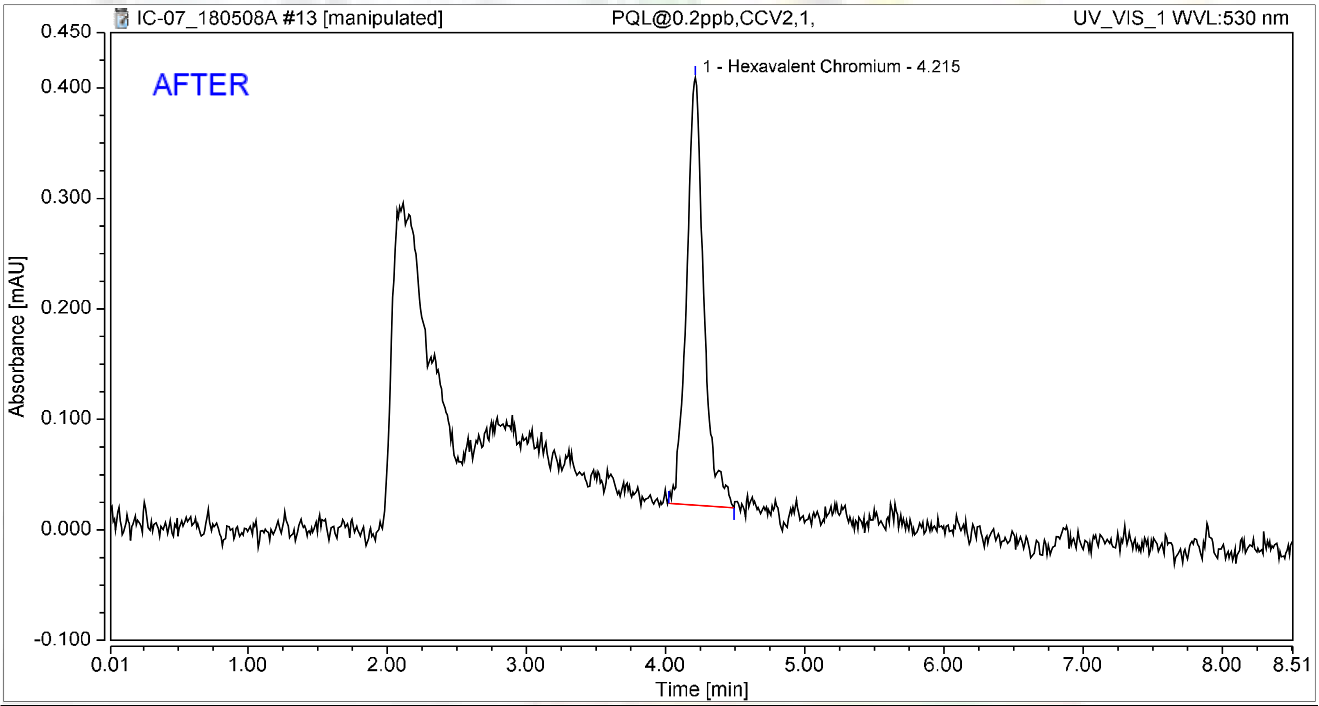
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.269	8.505	100.00	100.00	4.9433
Total:			**1.269**	**8.505**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 10:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.056	0.387	100.00	100.00	0.2167
Total:			**0.056**	**0.387**	**100.00**	**100.00**	

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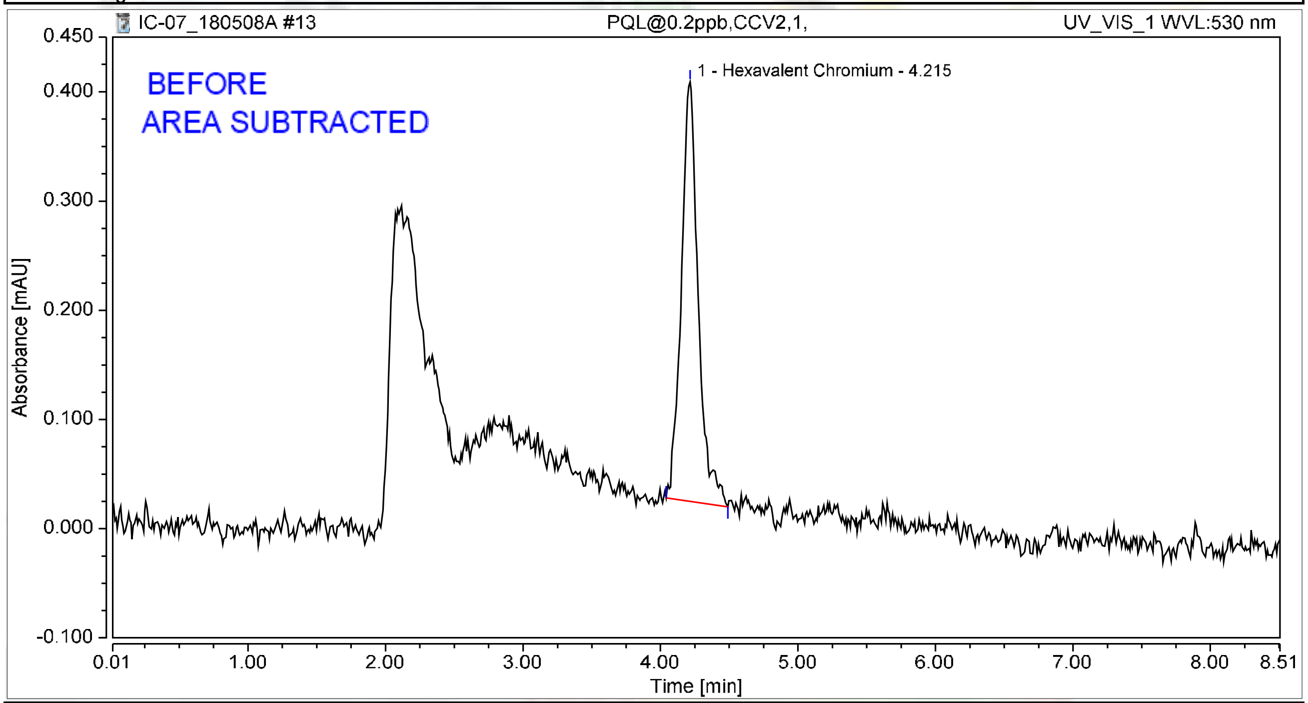
RB 05/18/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 10:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.055	0.384	100.00	100.00	0.2126
Total:			**0.055**	**0.384**	**100.00**	**100.00**	

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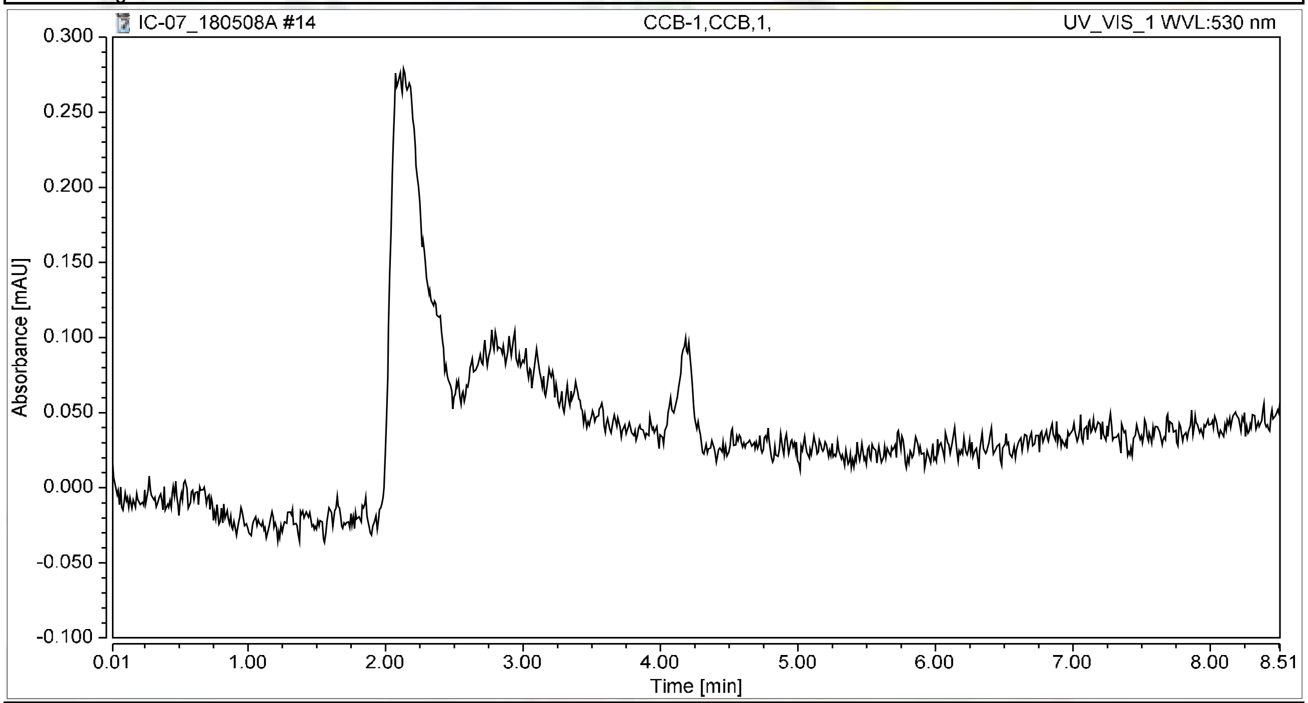
Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 10:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

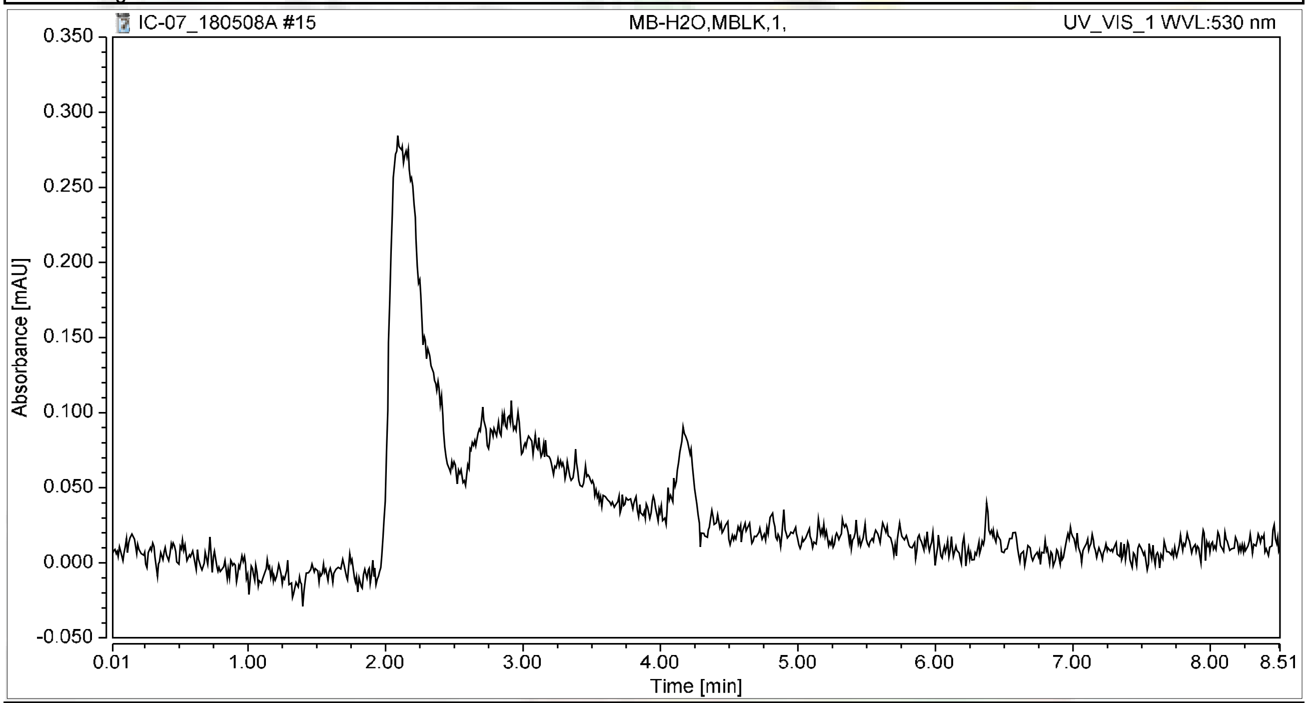
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 10:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

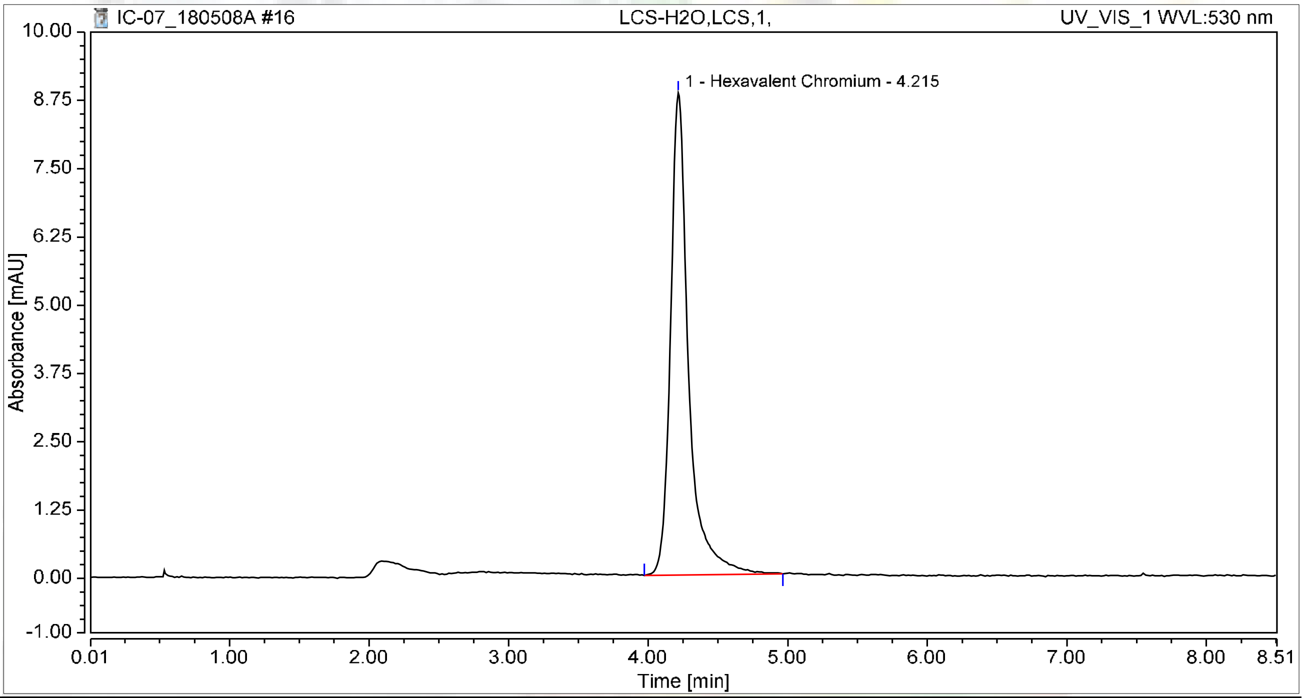
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 10:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

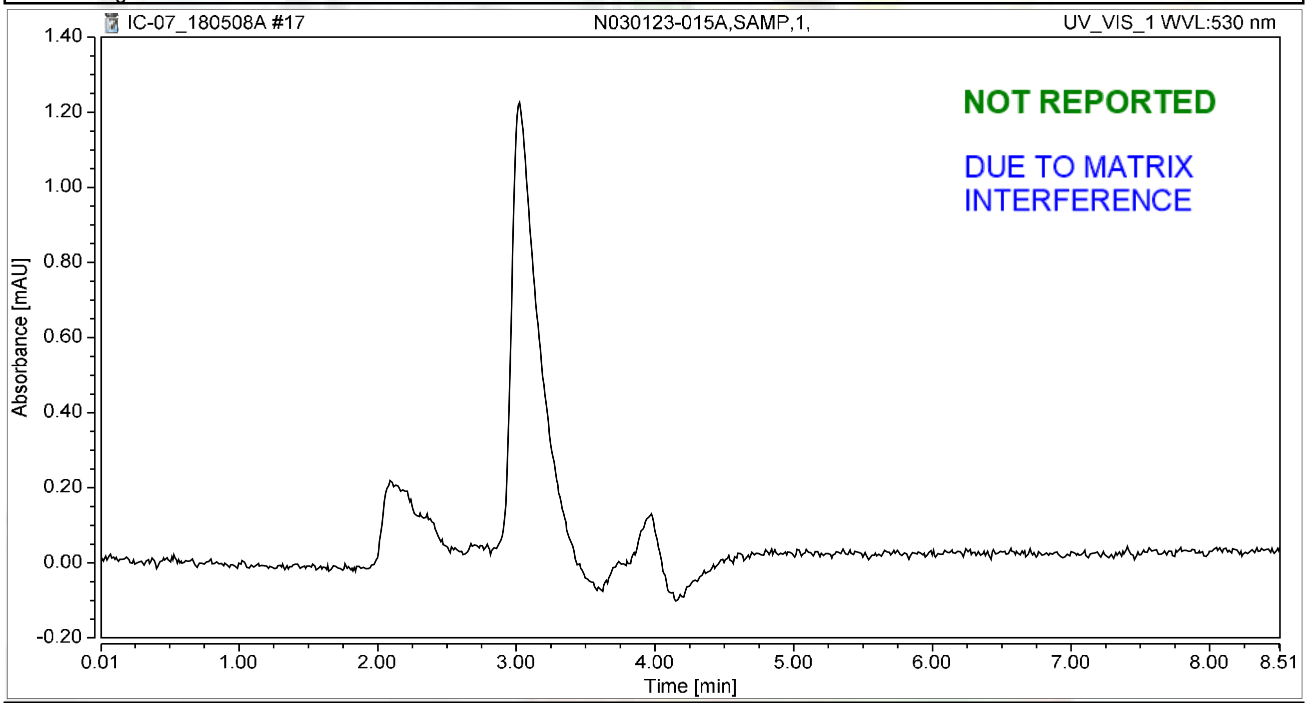
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.328	8.827	100.00	100.00	5.1754
Total:			**1.328**	**8.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 10:41**	*Sample Weight:*	**1.0000**

Chromatogram



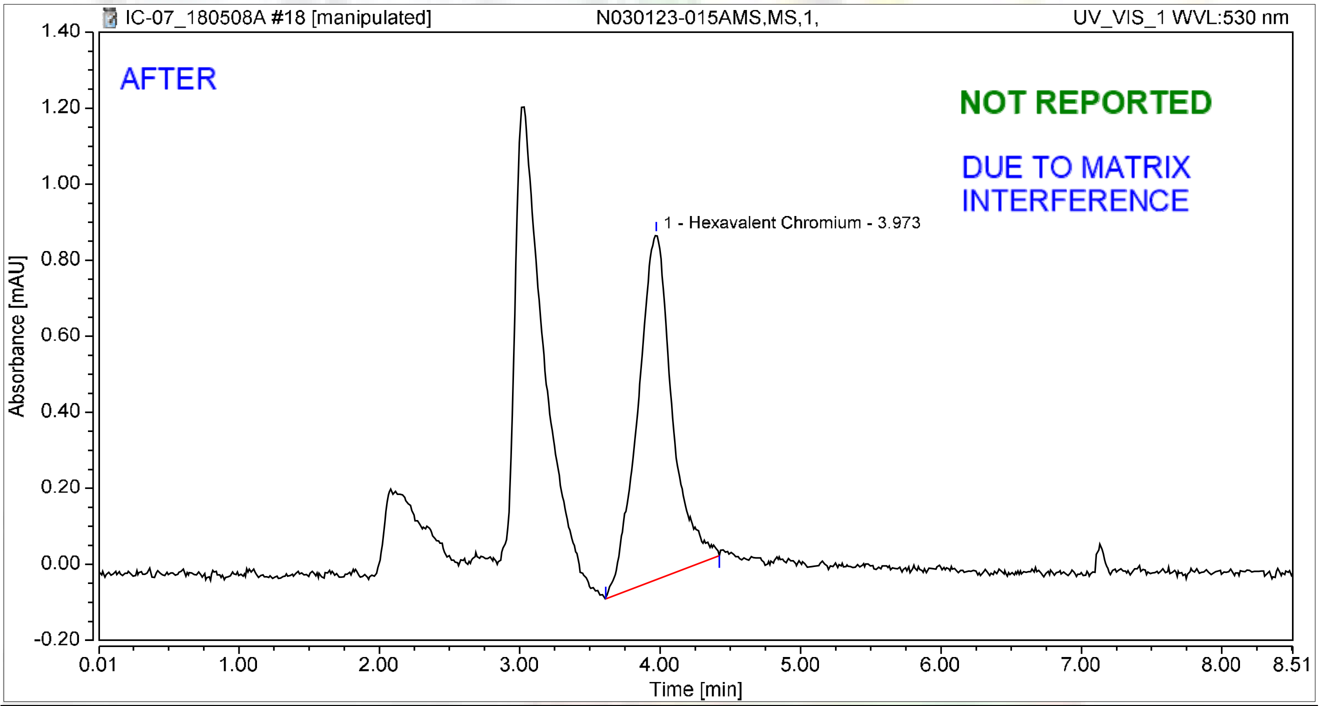
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details			
Injection Name:	**N030123-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.973	0.259	0.909	100.00	100.00	1.0090
Total:			**0.259**	**0.909**	**100.00**	**100.00**	

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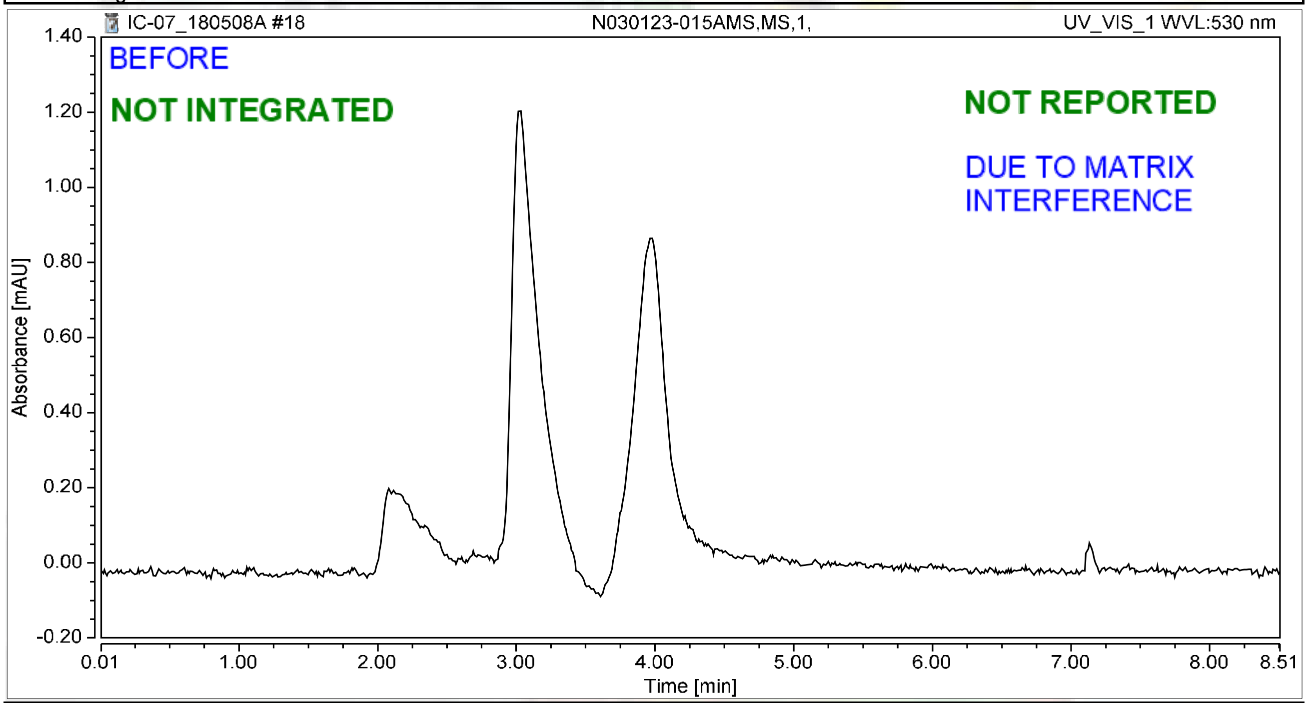
Chromatogram and Results

Injection Details

Injection Name:	**N030123-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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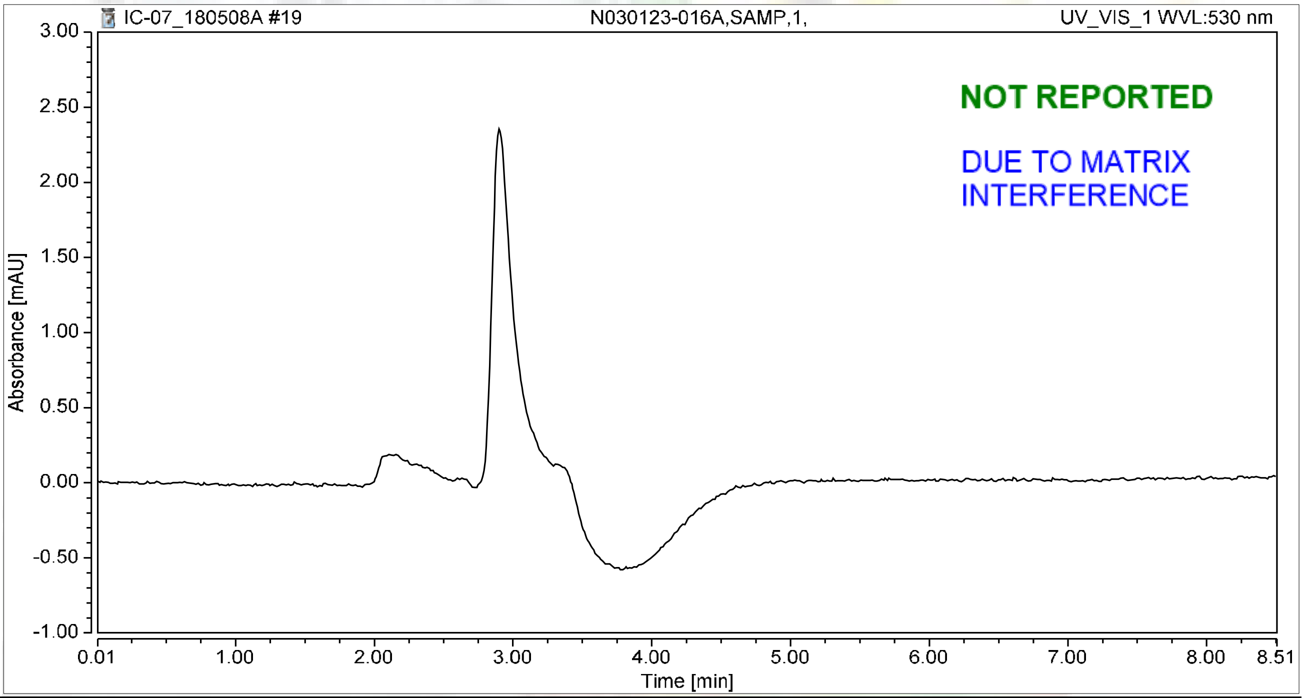
Chromatogram and Results

Injection Details

Injection Name:	**N030123-016A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 11:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

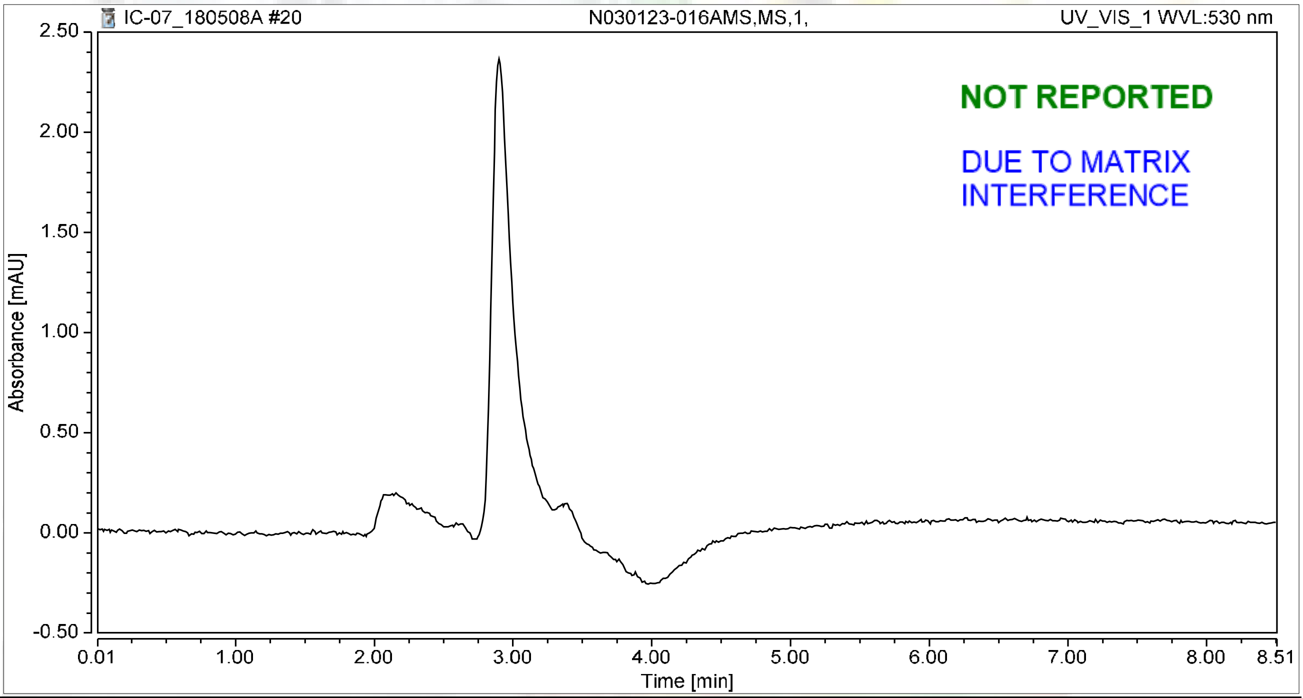
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-016AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 11:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

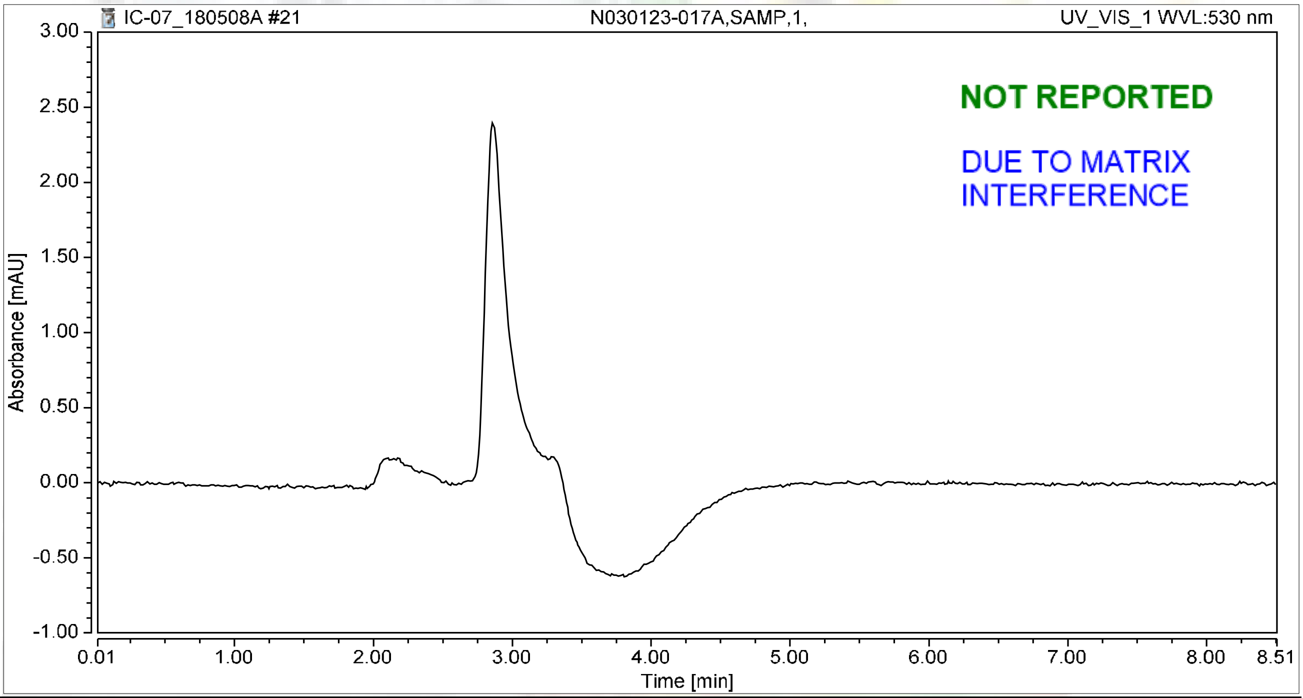
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-017A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 11:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

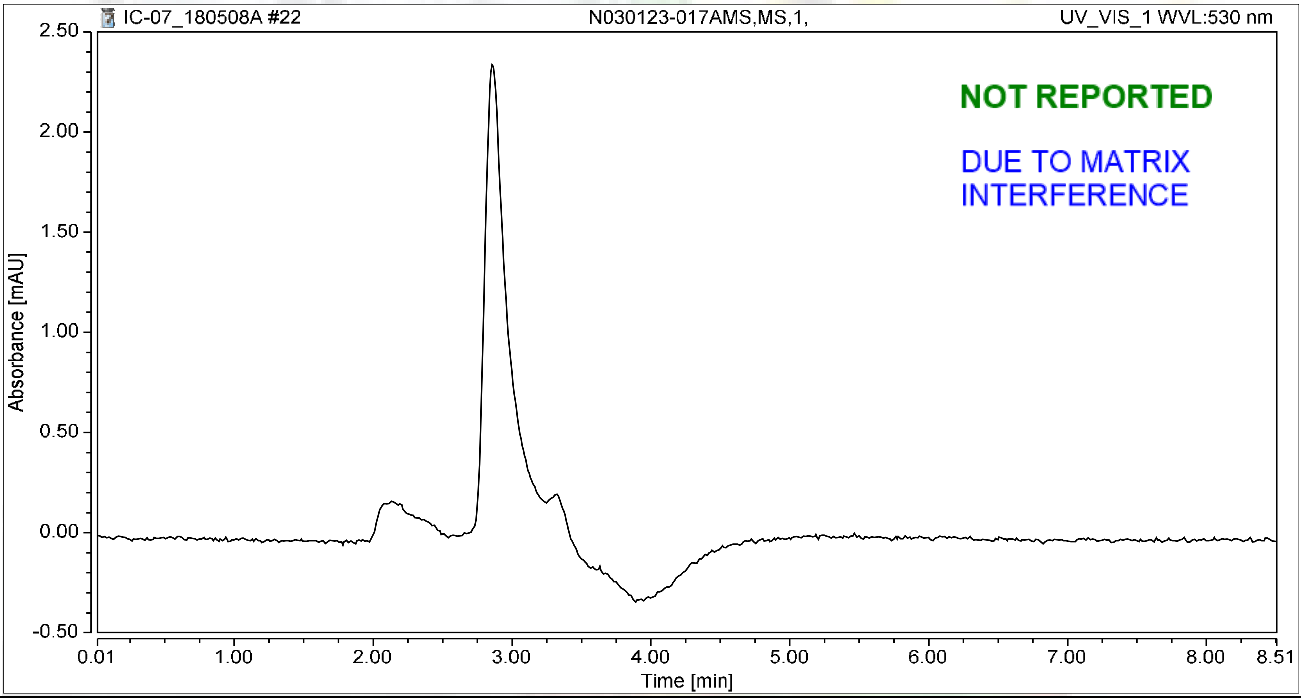
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-017AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 11:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

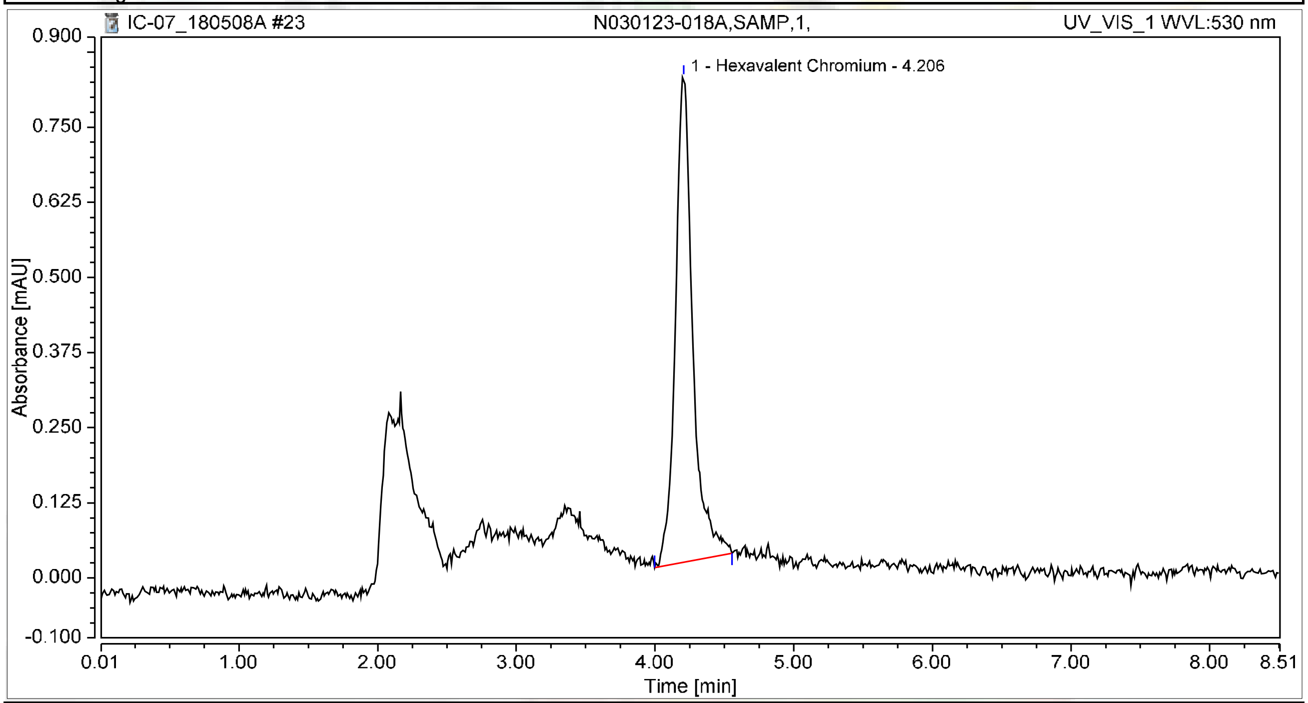
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-018A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 11:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

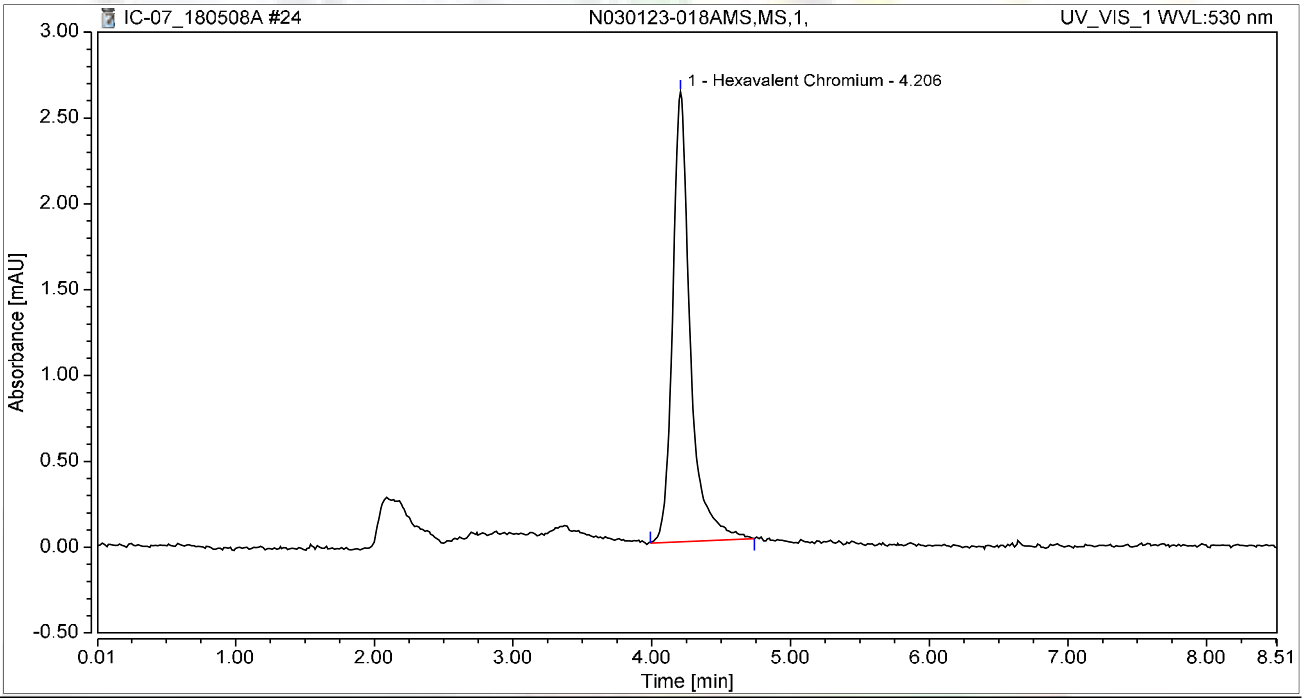
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.118	0.807	100.00	100.00	0.4578
Total:			**0.118**	**0.807**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-018AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 11:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

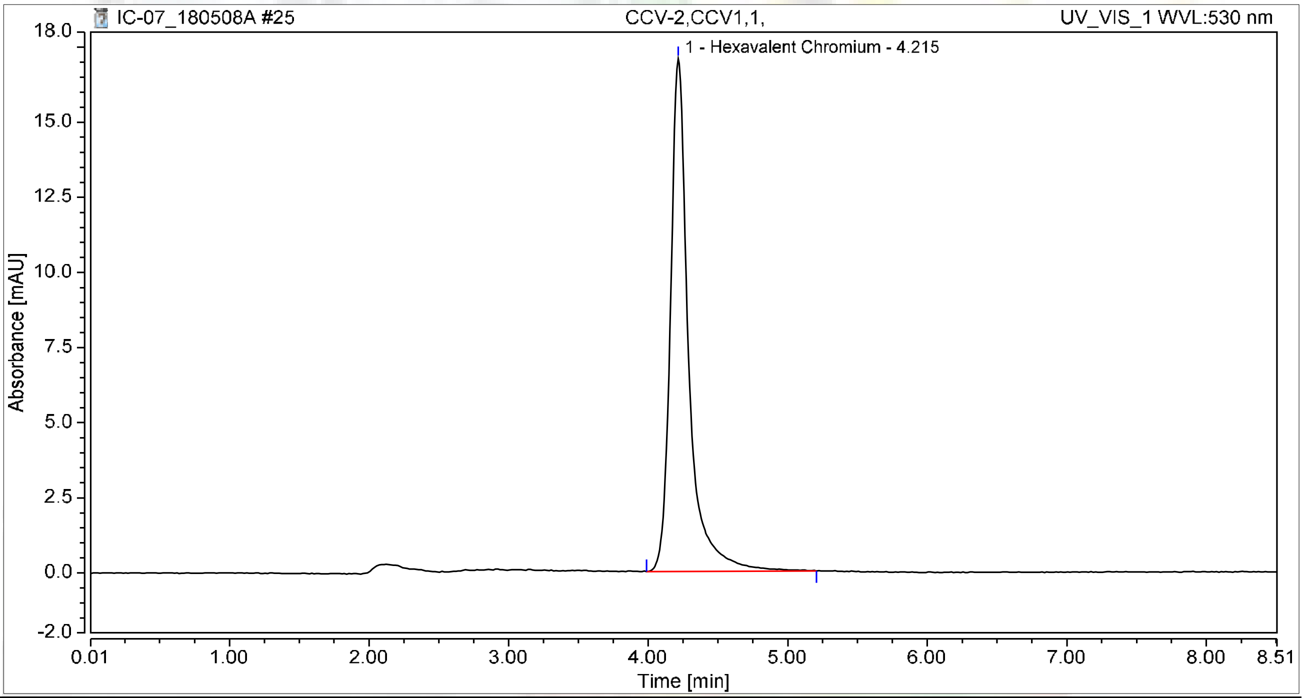
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.388	2.621	100.00	100.00	1.5135
Total:			**0.388**	**2.621**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 11:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

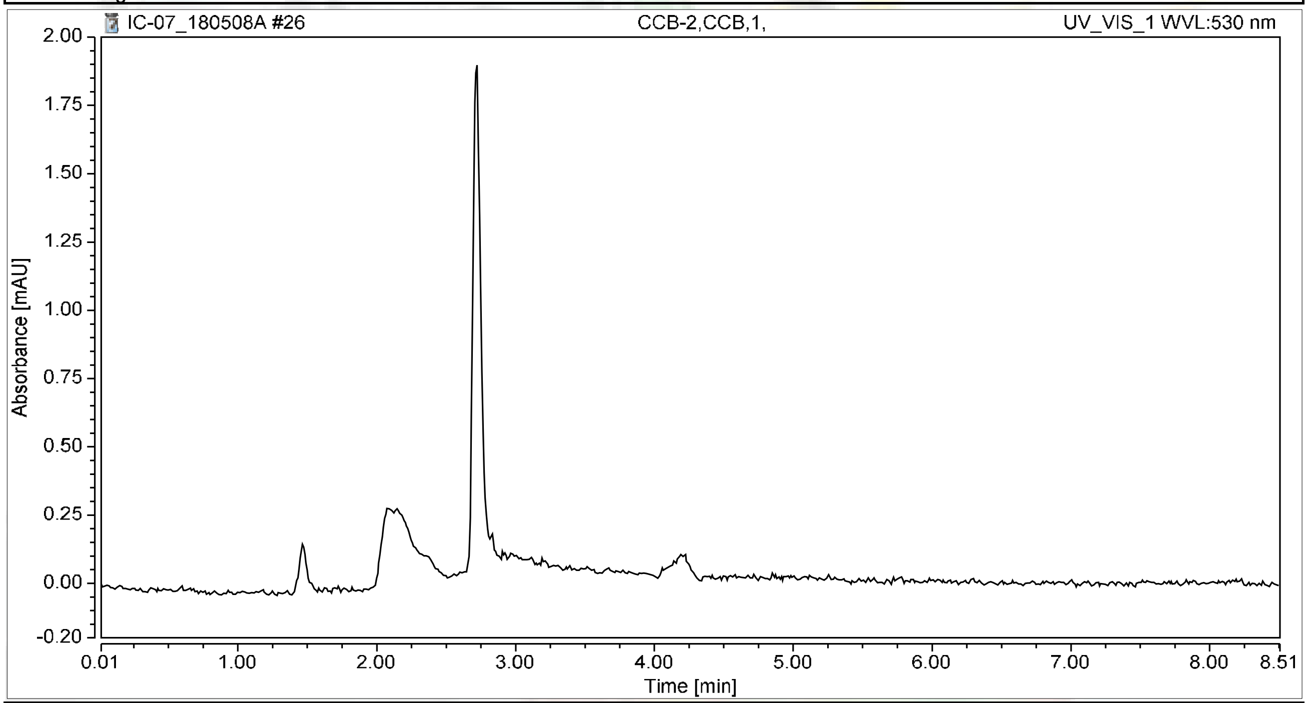
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.589	17.075	100.00	100.00	10.0896
Total:			**2.589**	**17.075**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 12:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

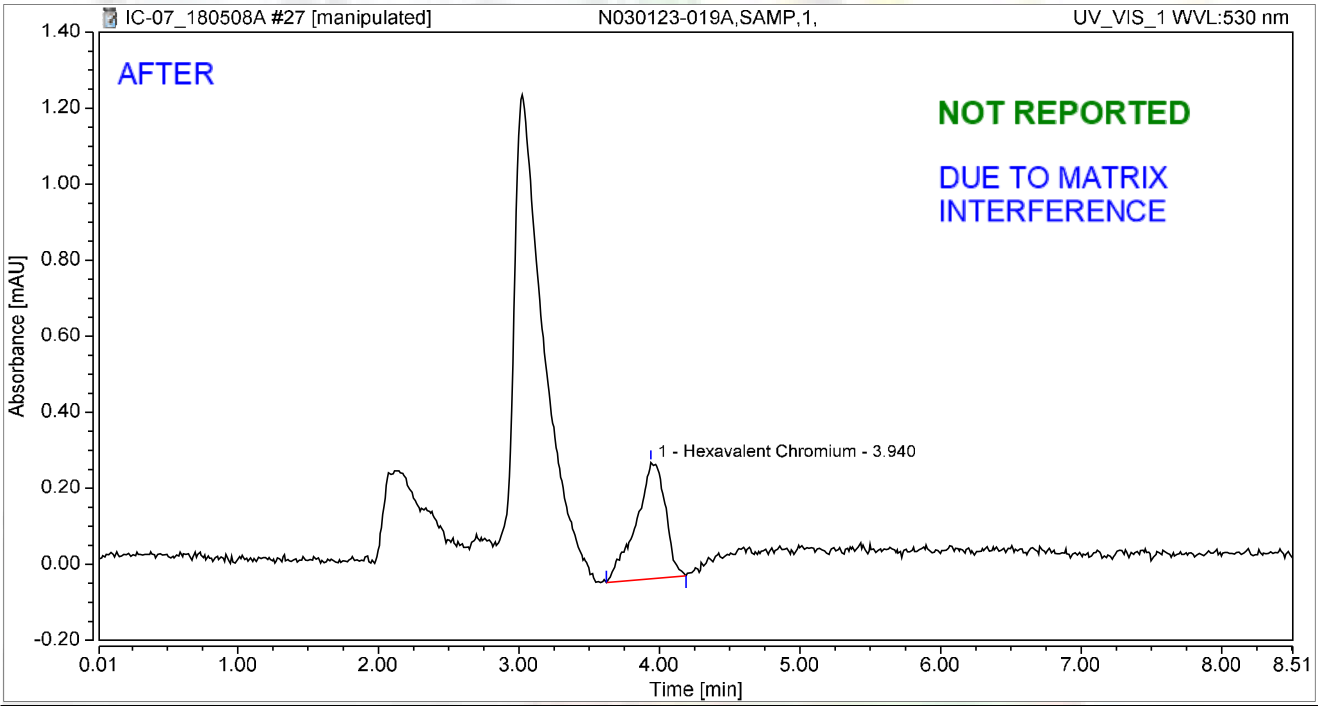
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-019A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 12:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.940	0.074	0.306	100.00	100.00	0.2878
Total:			**0.074**	**0.306**	**100.00**	**100.00**	

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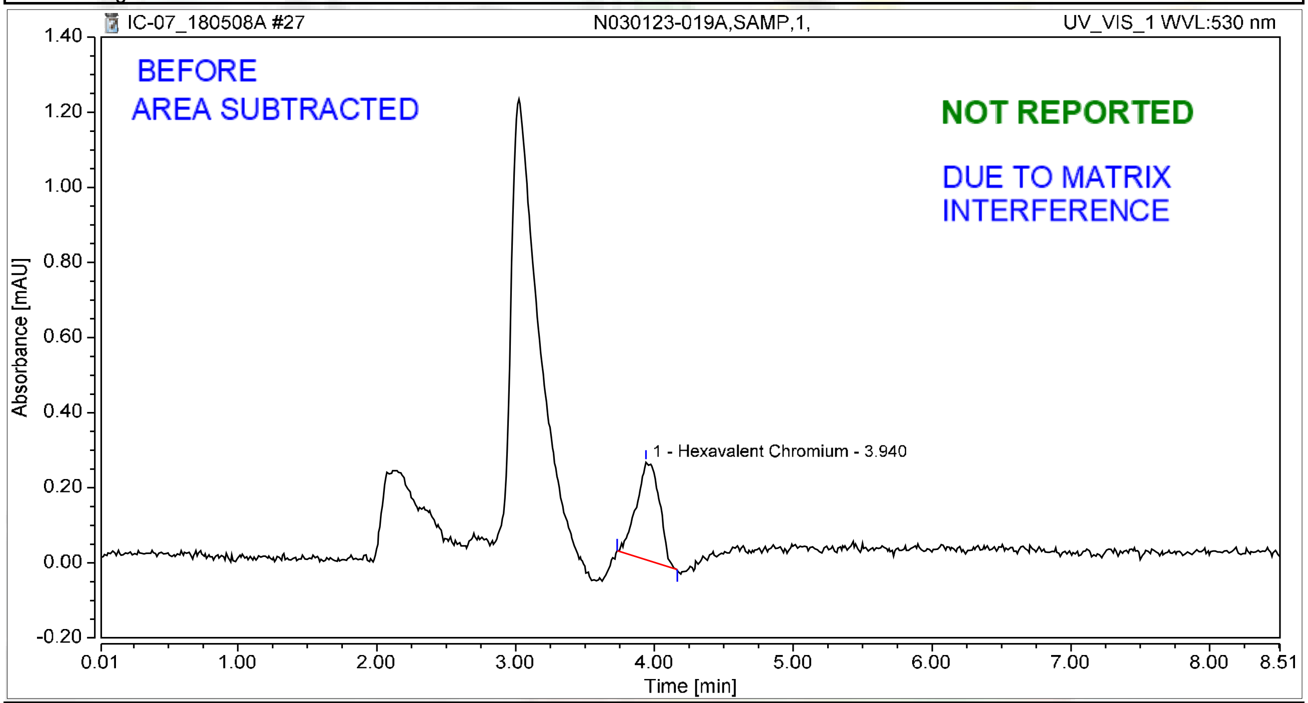
Chromatogram and Results

Injection Details

Injection Name:	**N030123-019A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 12:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.940	0.050	0.260	100.00	100.00	0.1965
Total:			**0.050**	**0.260**	**100.00**	**100.00**	

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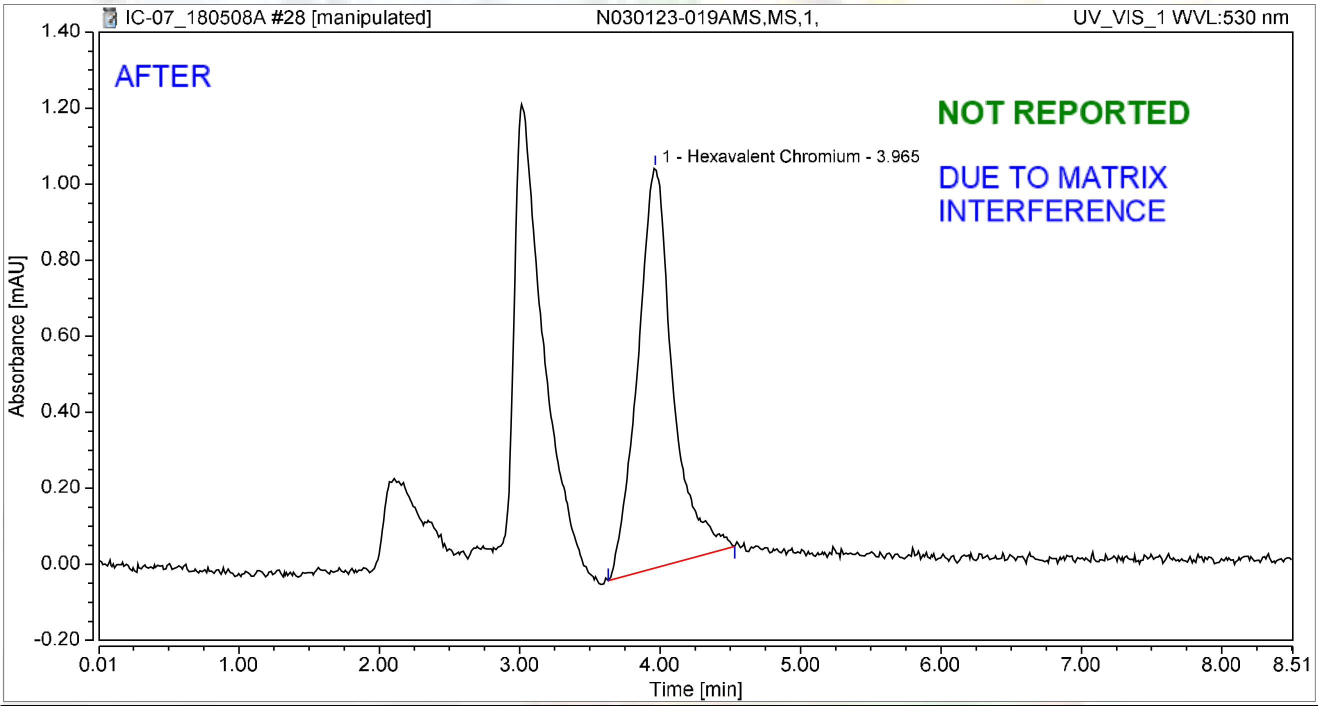
Chromatogram and Results

Injection Details

Injection Name:	**N030123-019AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 12:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.965	0.305	1.052	100.00	100.00	1.1895
Total:			**0.305**	**1.052**	**100.00**	**100.00**	

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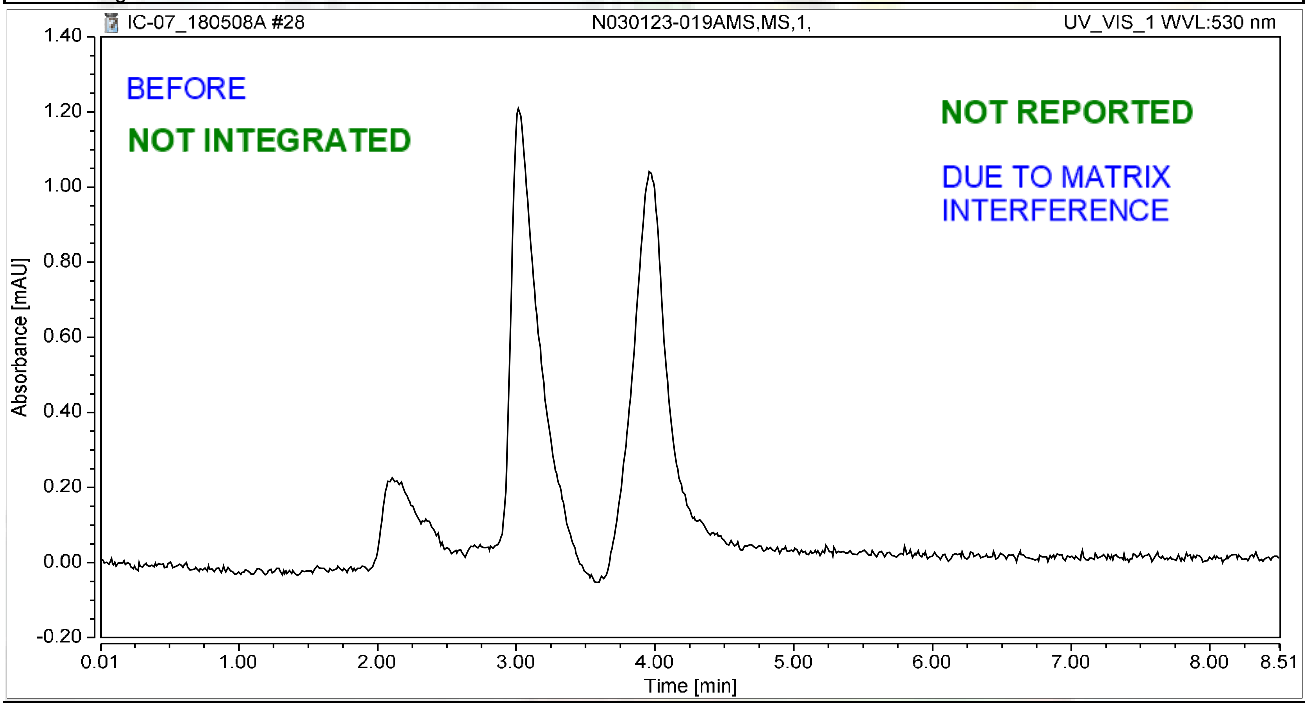
Chromatogram and Results

Injection Details

Injection Name:	**N030123-019AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 12:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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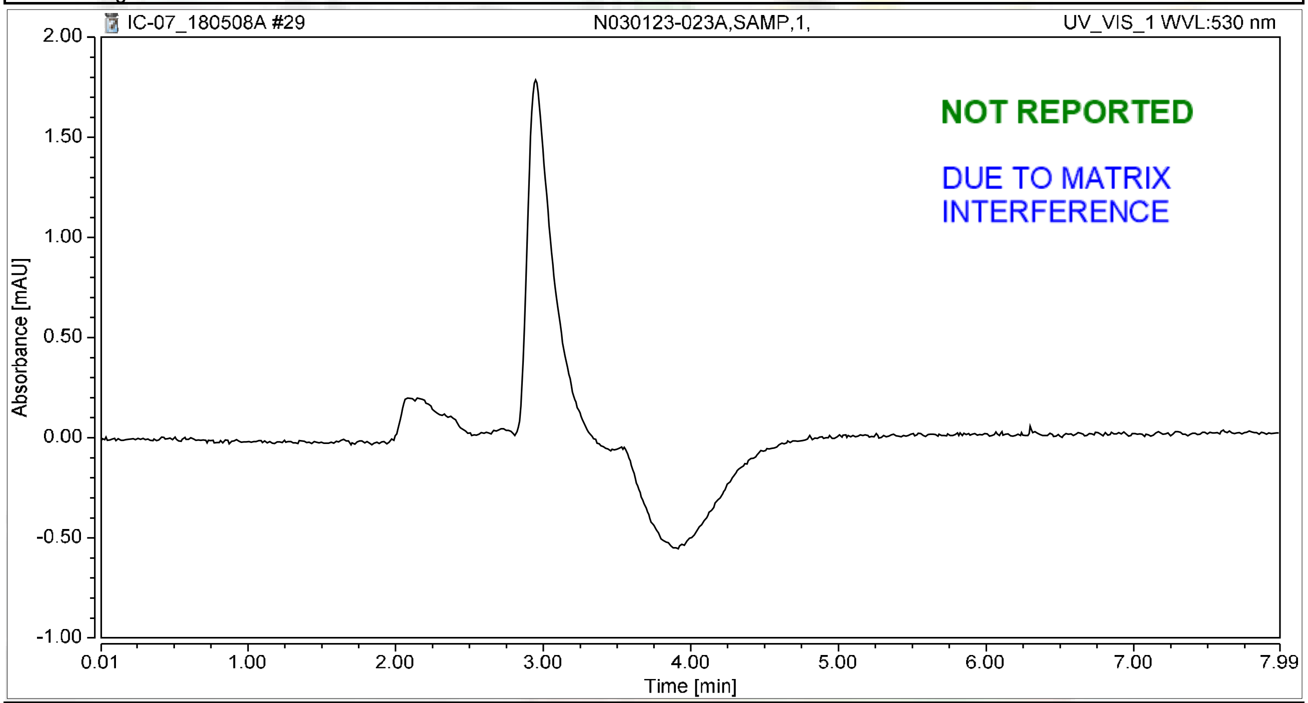
Chromatogram and Results

Injection Details

Injection Name:	**N030123-023A,SAMP,1,**	*Run Time (min):*	**7.98**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**n.a.**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

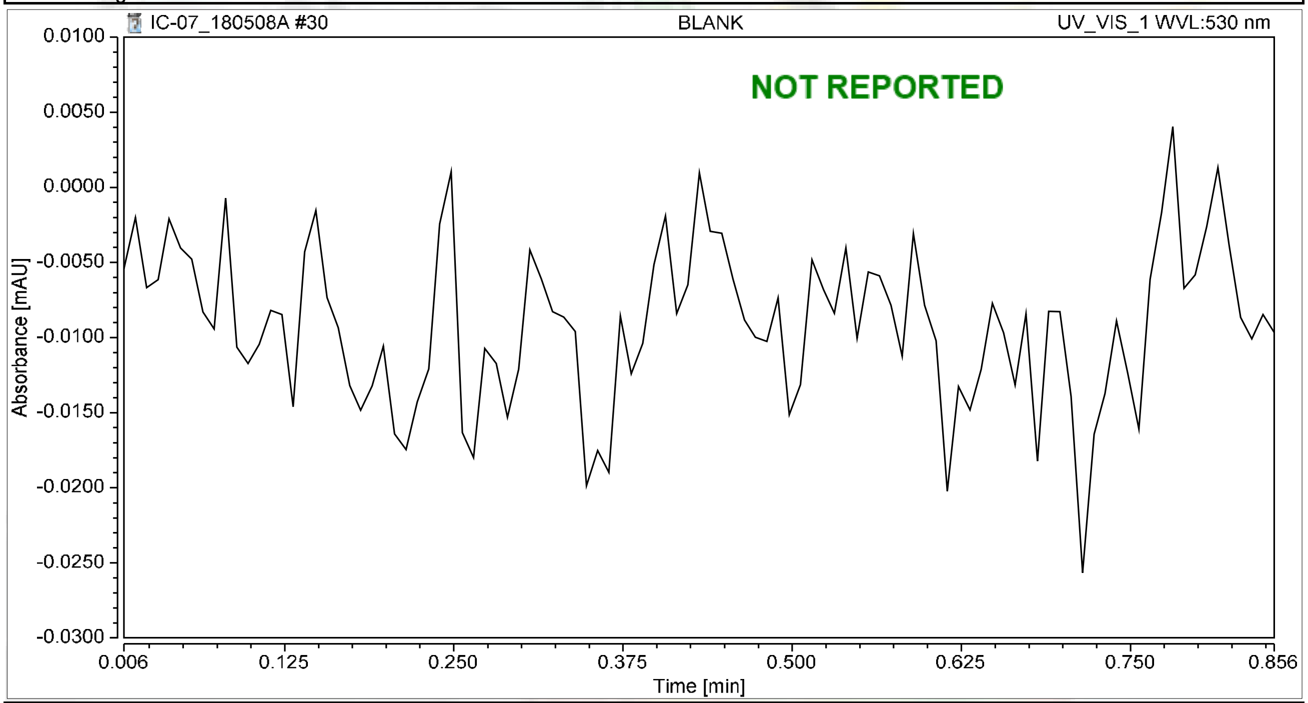
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.85**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 13:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

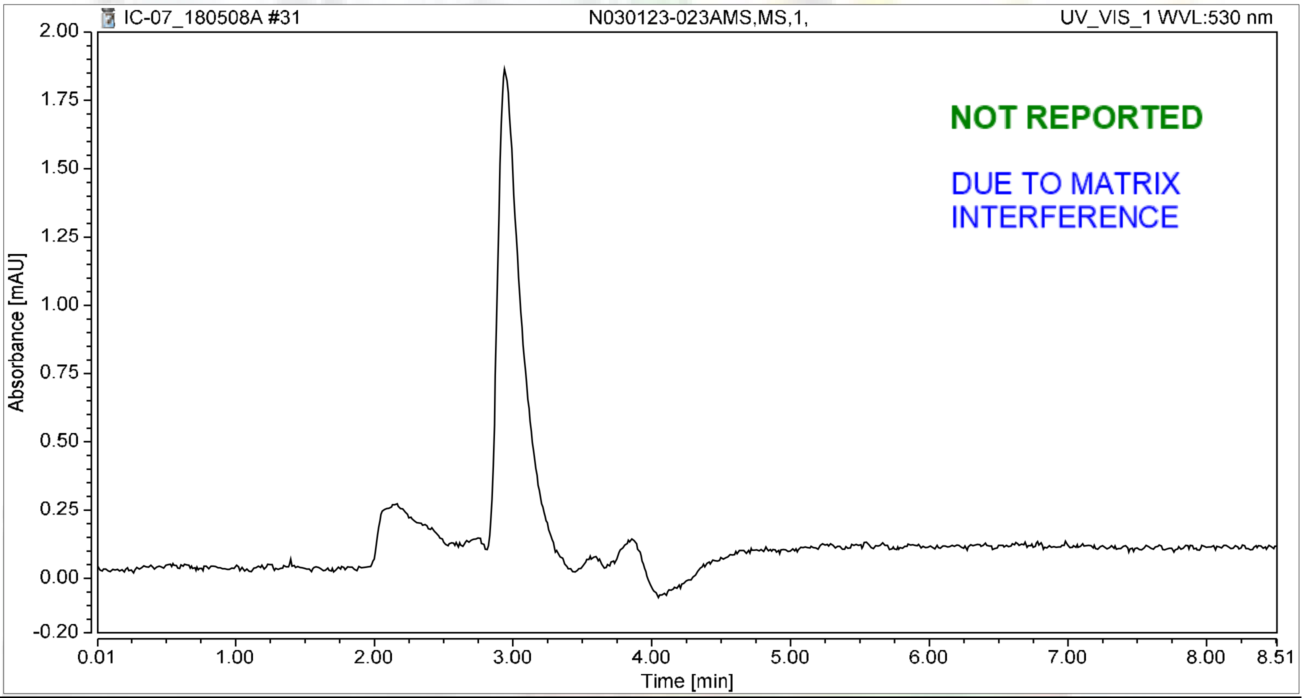
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-023AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 13:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

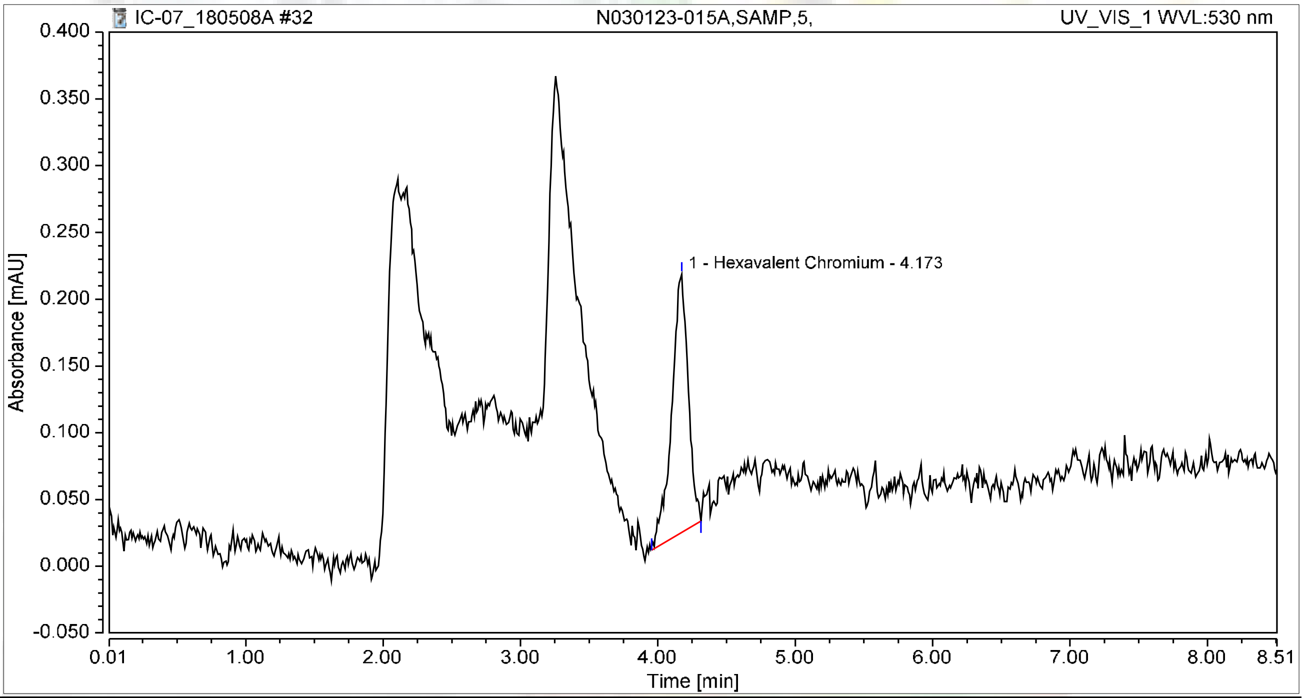
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-015A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 13:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

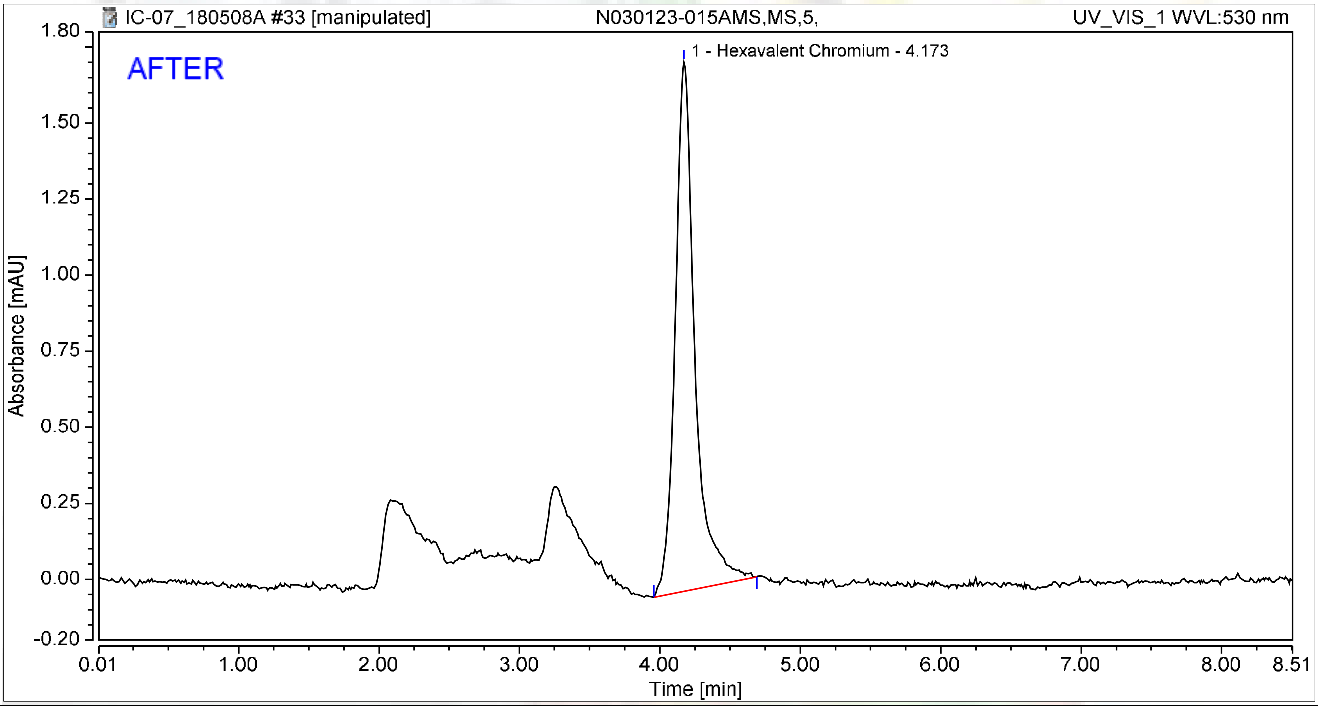
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.027	0.194	100.00	100.00	0.1045
Total:			**0.027**	**0.194**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-015AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 13:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.284	1.740	100.00	100.00	1.1067
Total:			**0.284**	**1.740**	**100.00**	**100.00**	

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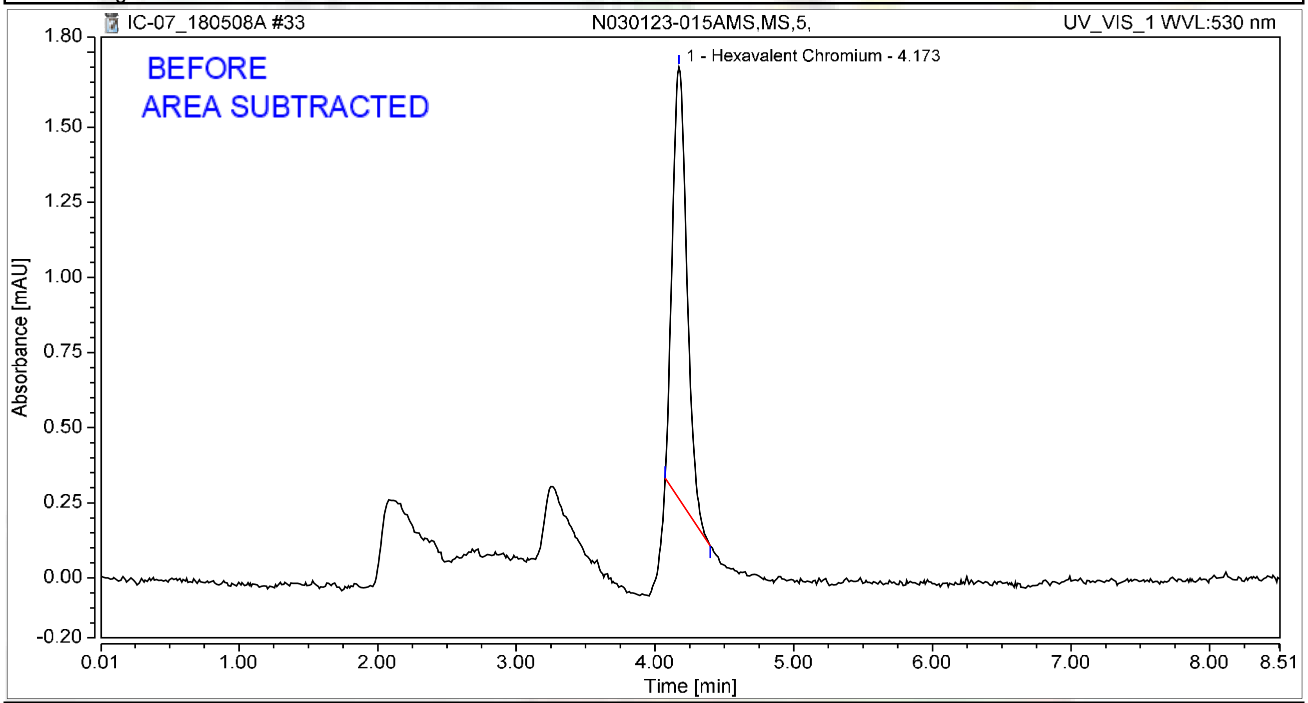
Chromatogram and Results

Injection Details

Injection Name:	**N030123-015AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 13:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.176	1.438	100.00	100.00	0.6841
Total:			**0.176**	**1.438**	**100.00**	**100.00**	

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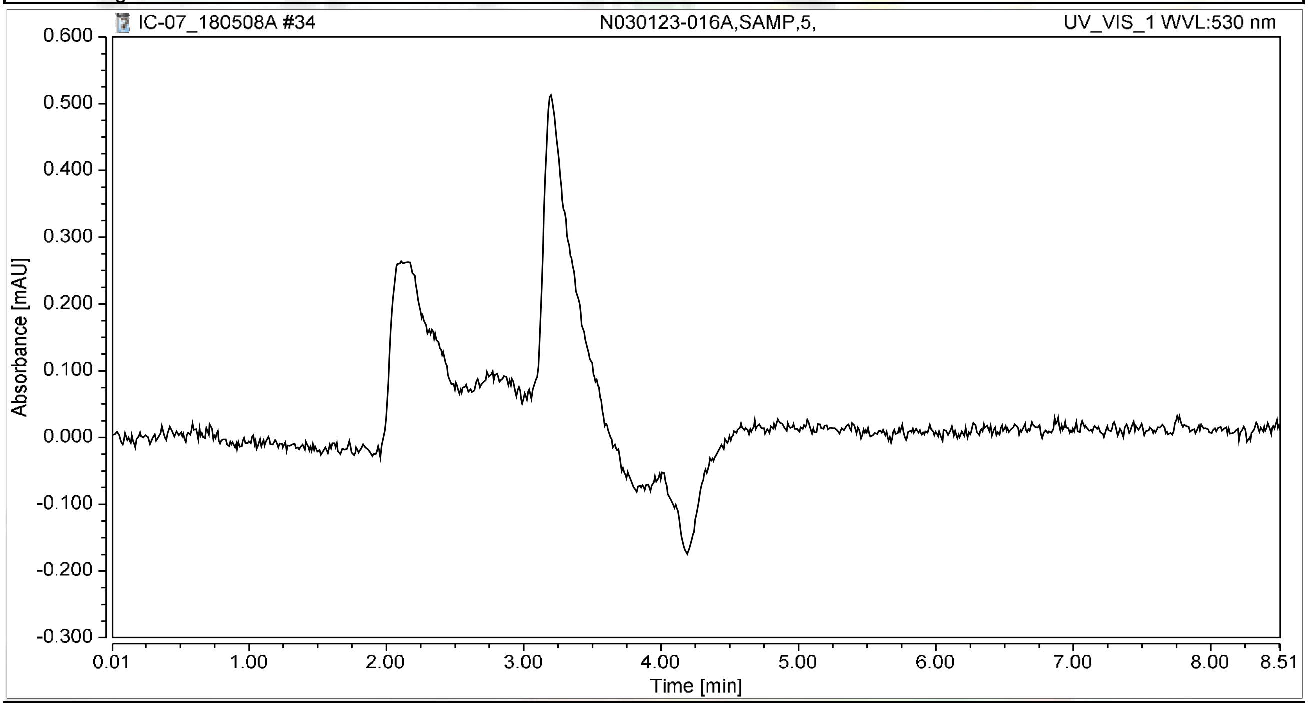
Chromatogram and Results

Injection Details

Injection Name:	**N030123-016A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 13:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

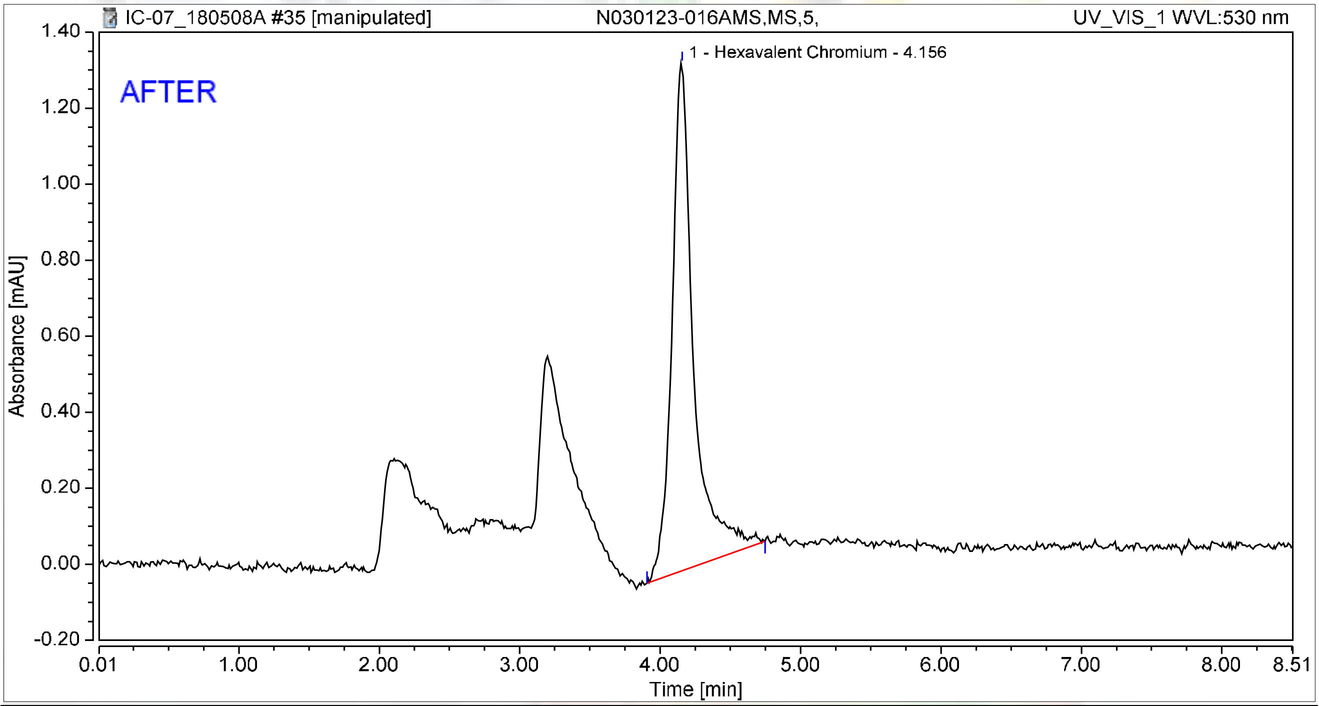
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-016AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 14:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.240	1.335	100.00	100.00	0.9356
Total:			**0.240**	**1.335**	**100.00**	**100.00**	

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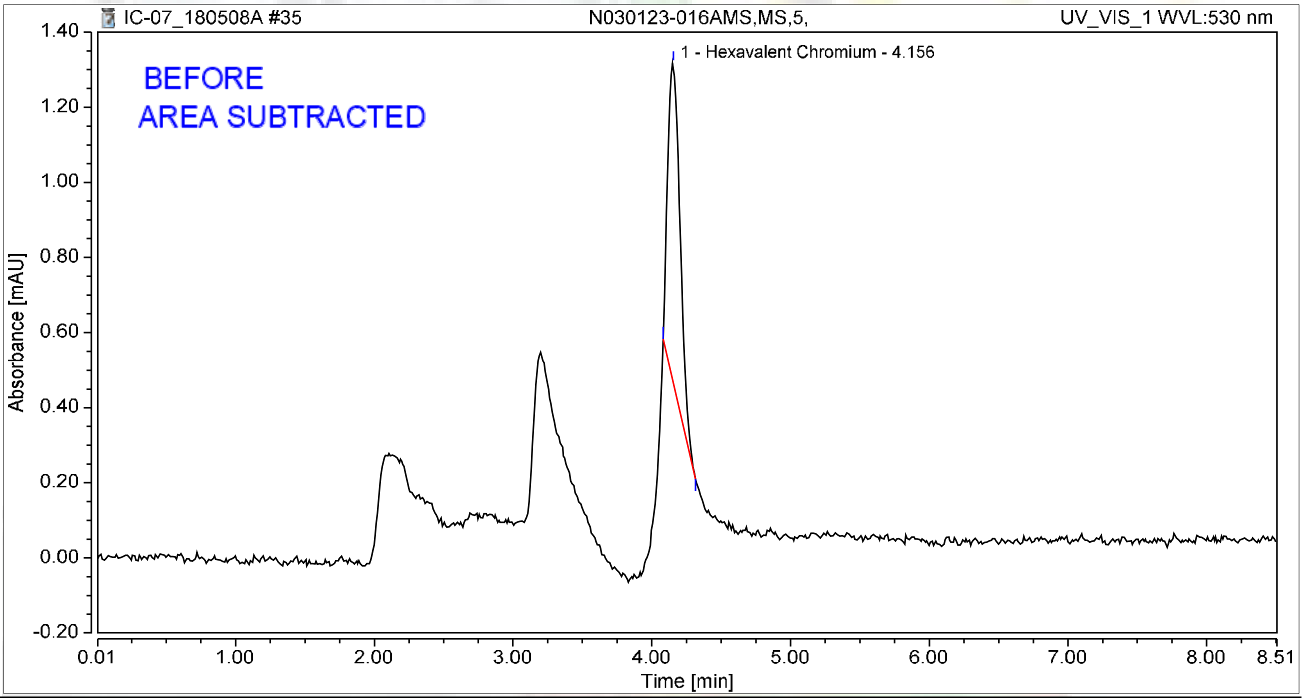
Chromatogram and Results

Injection Details

Injection Name:	**N030123-016AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 14:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.088	0.854	100.00	100.00	0.3428
Total:			**0.088**	**0.854**	**100.00**	**100.00**	

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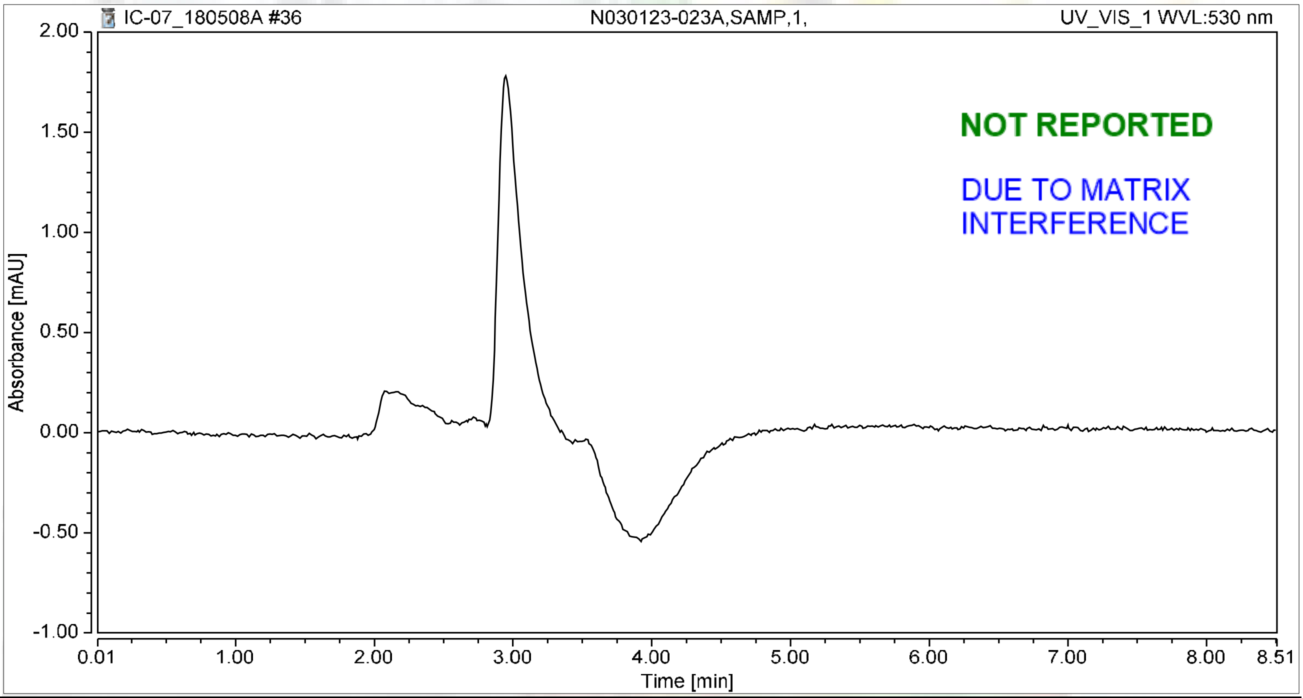
Chromatogram and Results

Injection Details

Injection Name:	**N030123-023A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 14:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

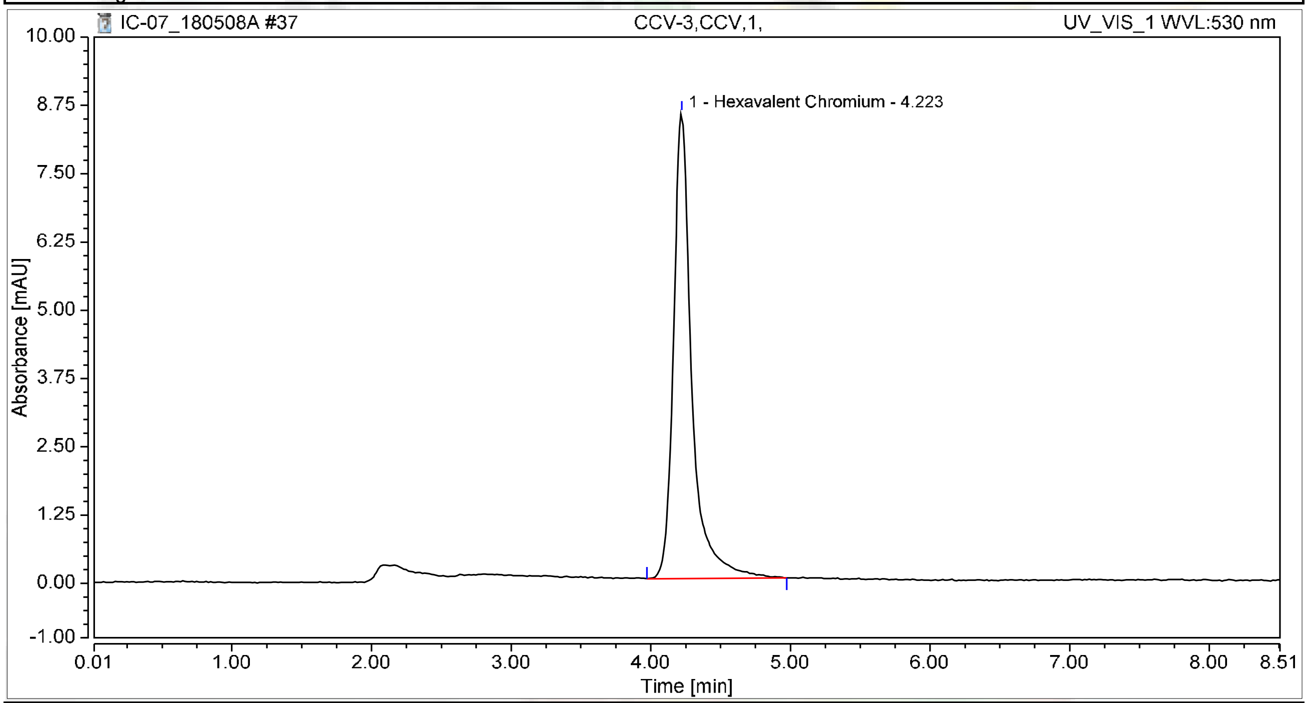
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 14:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

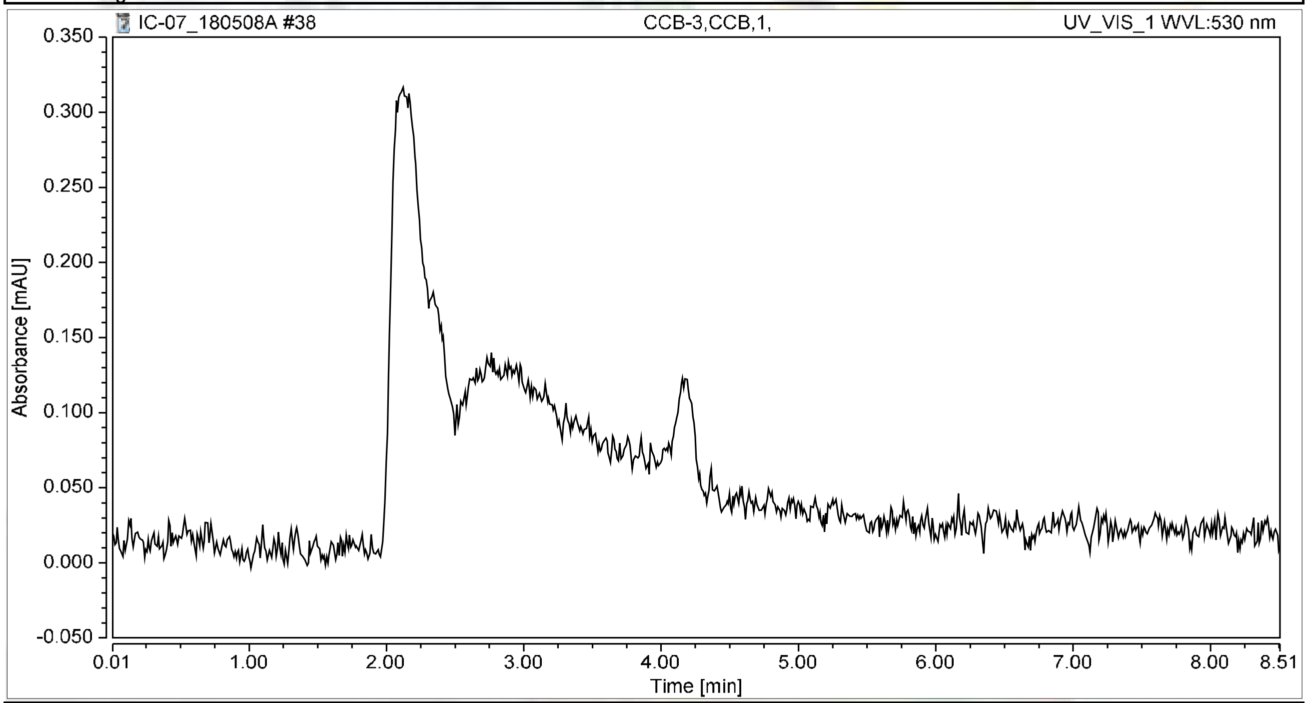
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	1.293	8.524	100.00	100.00	5.0387
Total:			**1.293**	**8.524**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 14:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

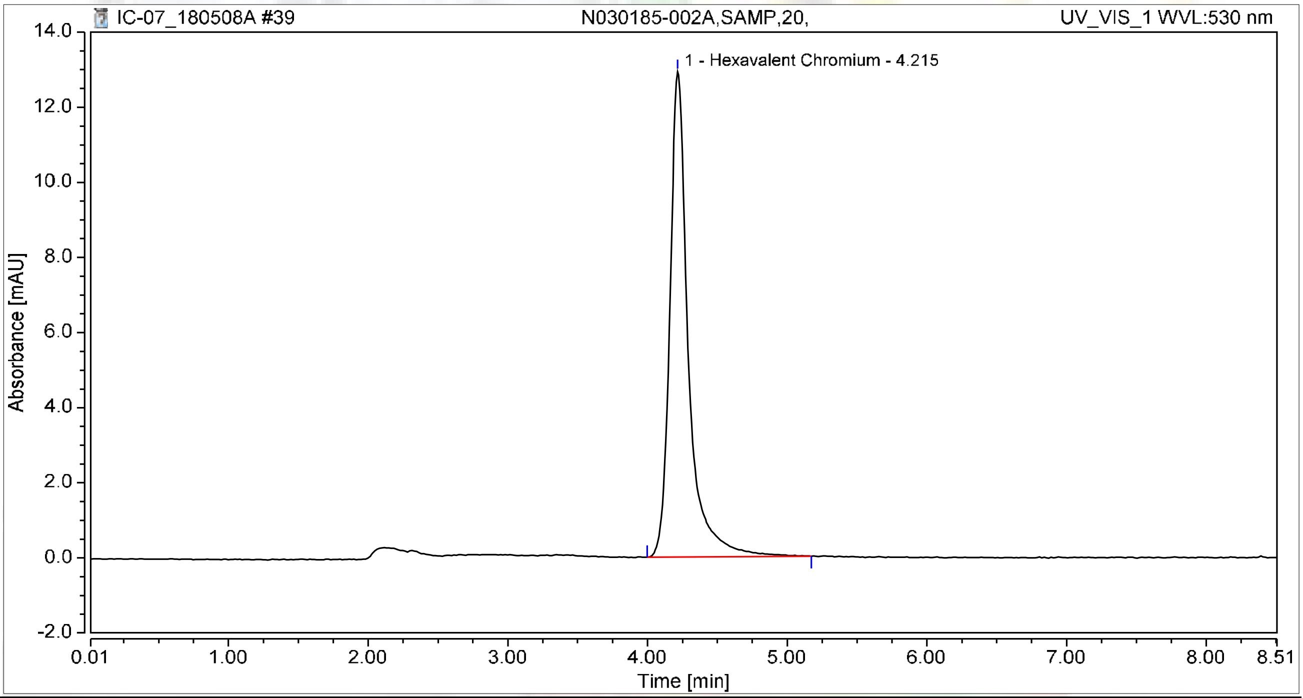
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-002A,SAMP,20,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 14:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

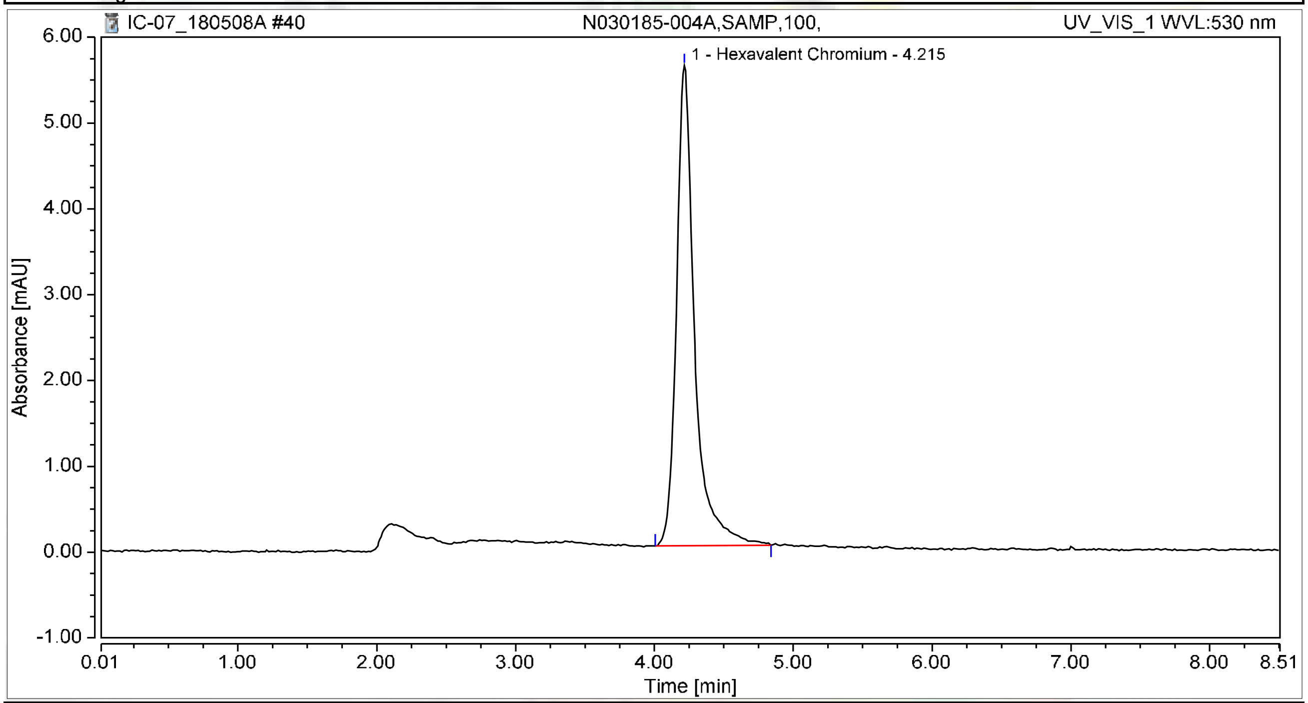
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.980	12.924	100.00	100.00	7.7147
Total:			**1.980**	**12.924**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-004A,SAMP,100,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 14:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

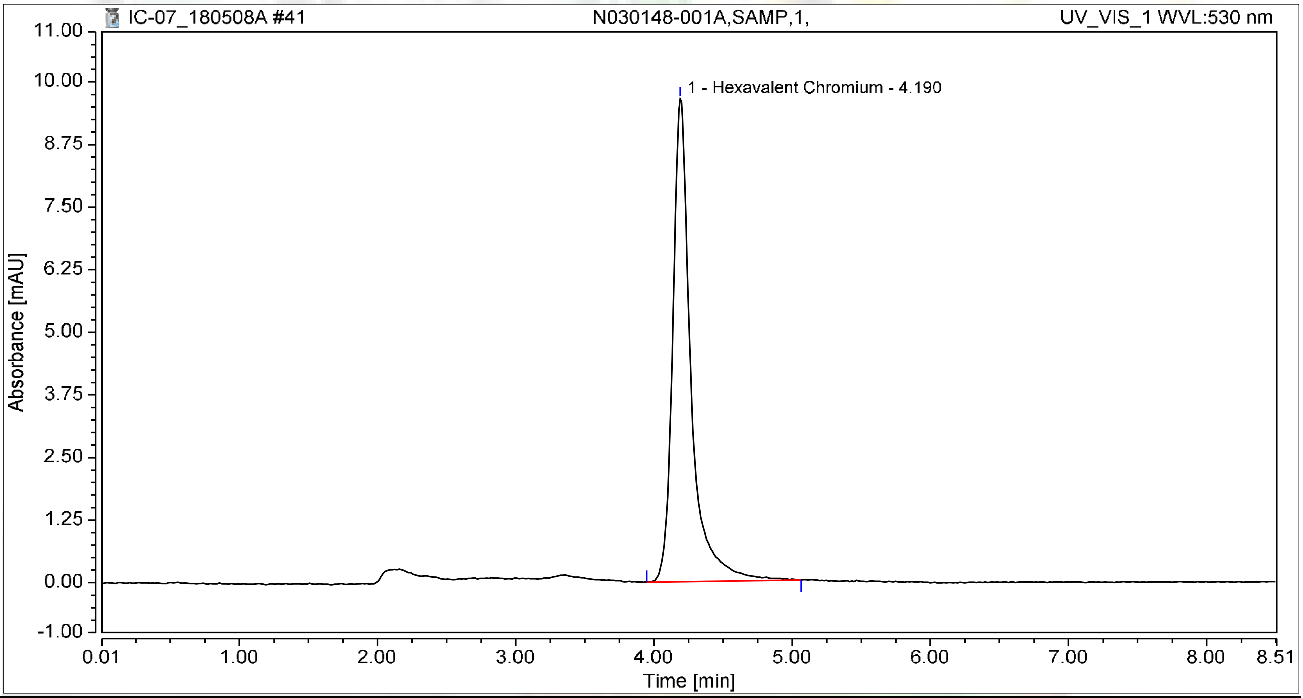
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.847	5.597	100.00	100.00	3.3020
Total:			**0.847**	**5.597**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030148-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 14:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

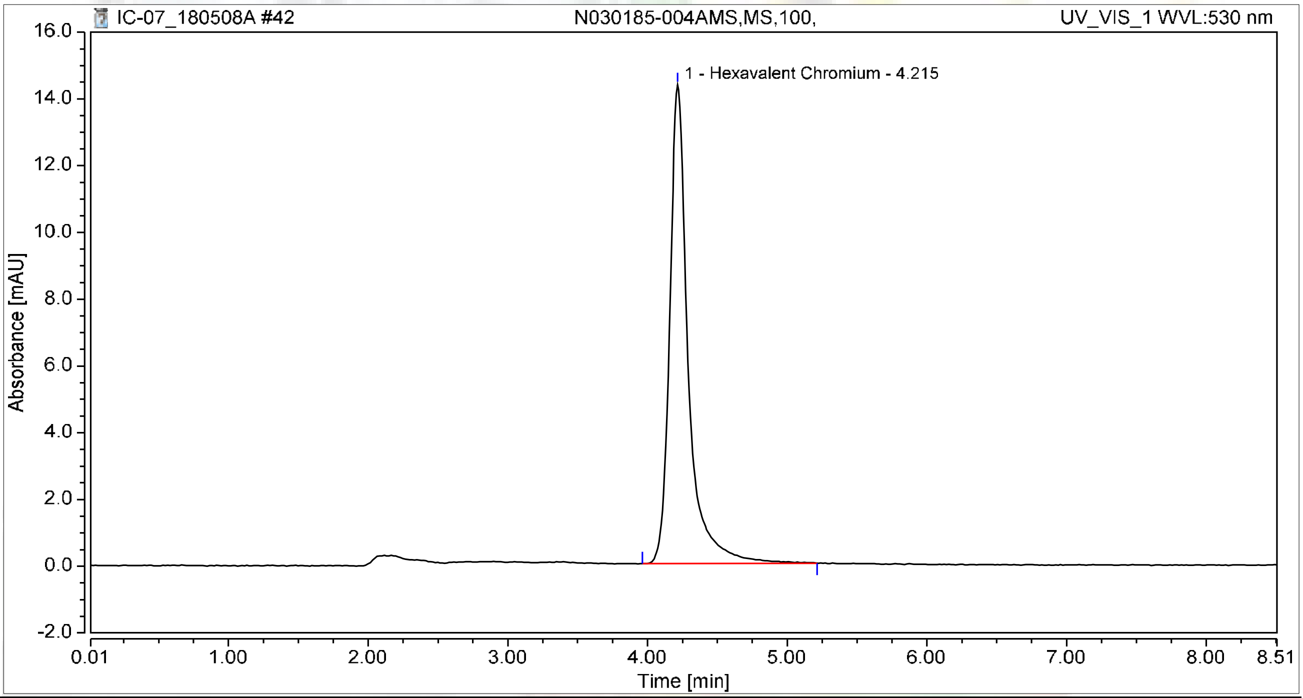
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.479	9.647	100.00	100.00	5.7646
Total:			**1.479**	**9.647**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-004AMS,MS,100,**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 15:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

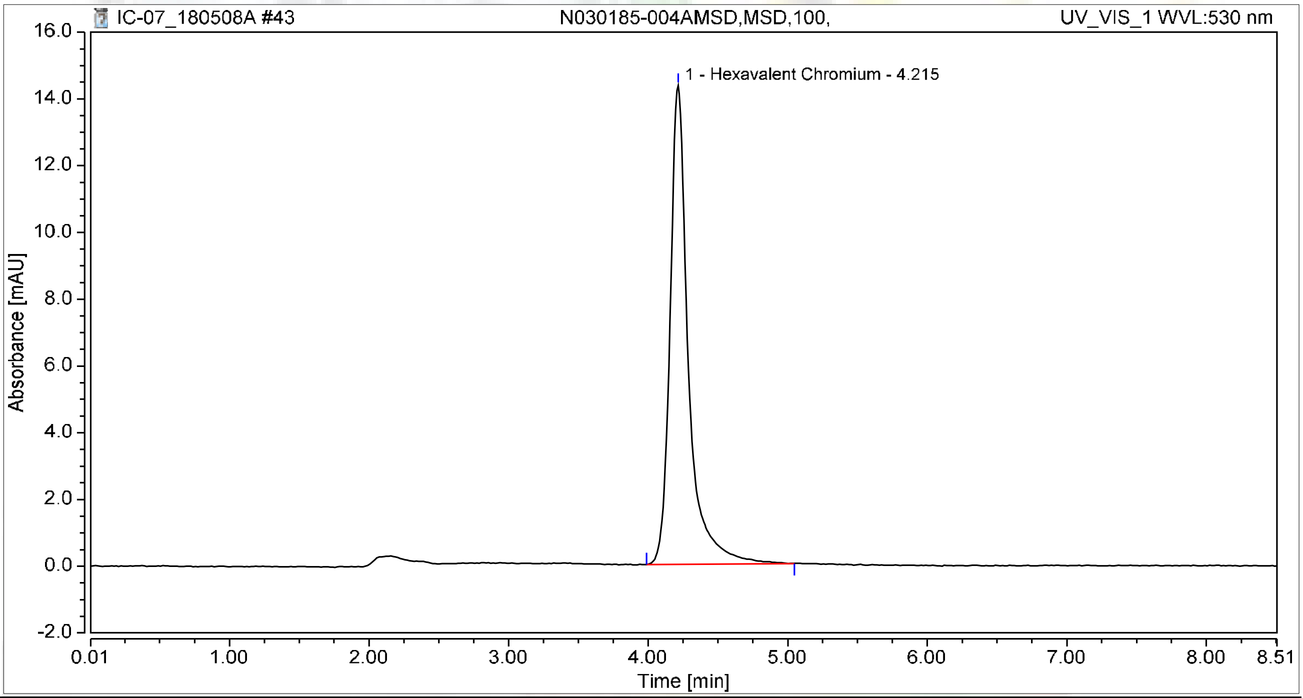
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.201	14.347	100.00	100.00	8.5751
Total:			**2.201**	**14.347**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-004AMSD,MSD,100,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 15:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

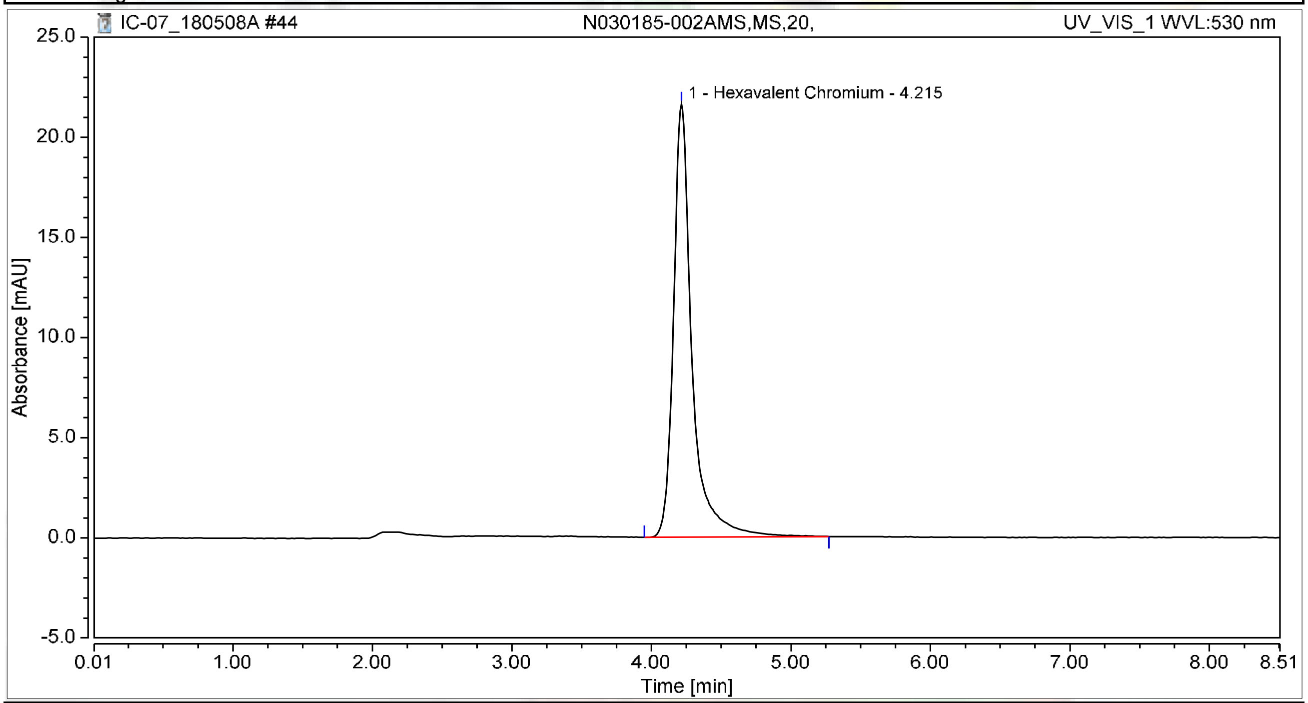
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.191	14.352	100.00	100.00	8.5357
Total:			**2.191**	**14.352**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-002AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 15:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

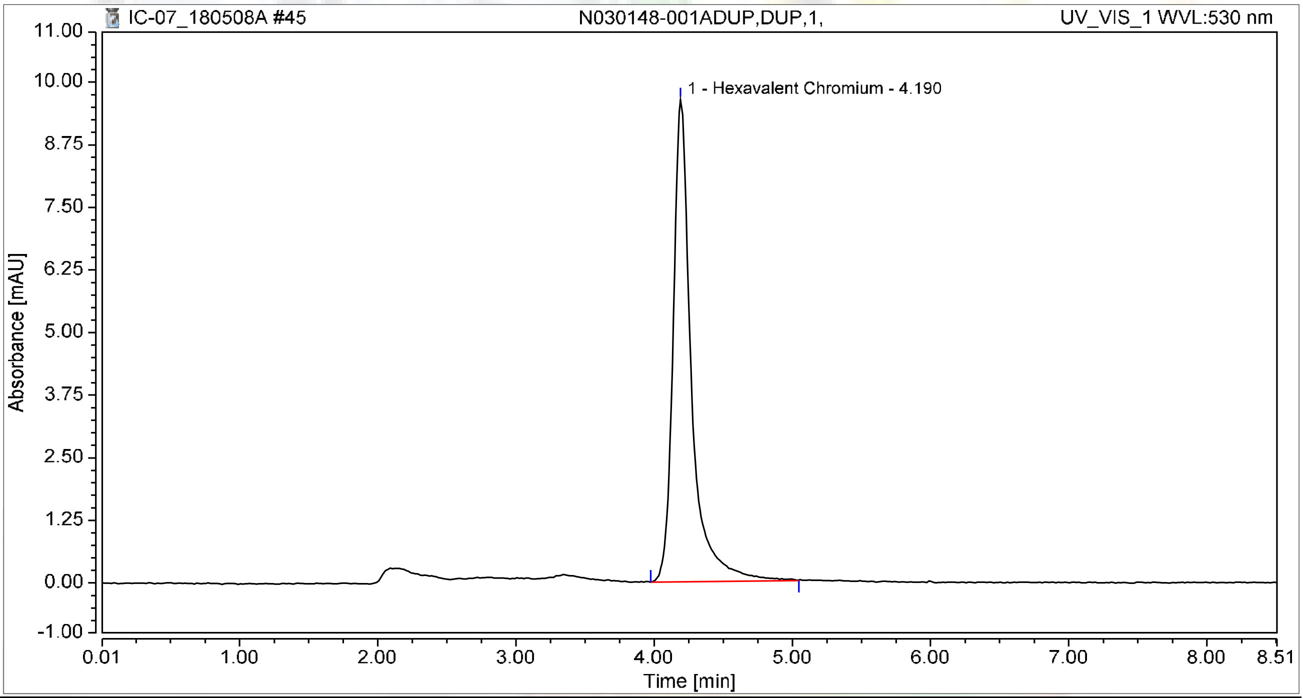
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	3.331	21.636	100.00	100.00	12.9775
Total:			**3.331**	**21.636**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030148-001ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 15:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

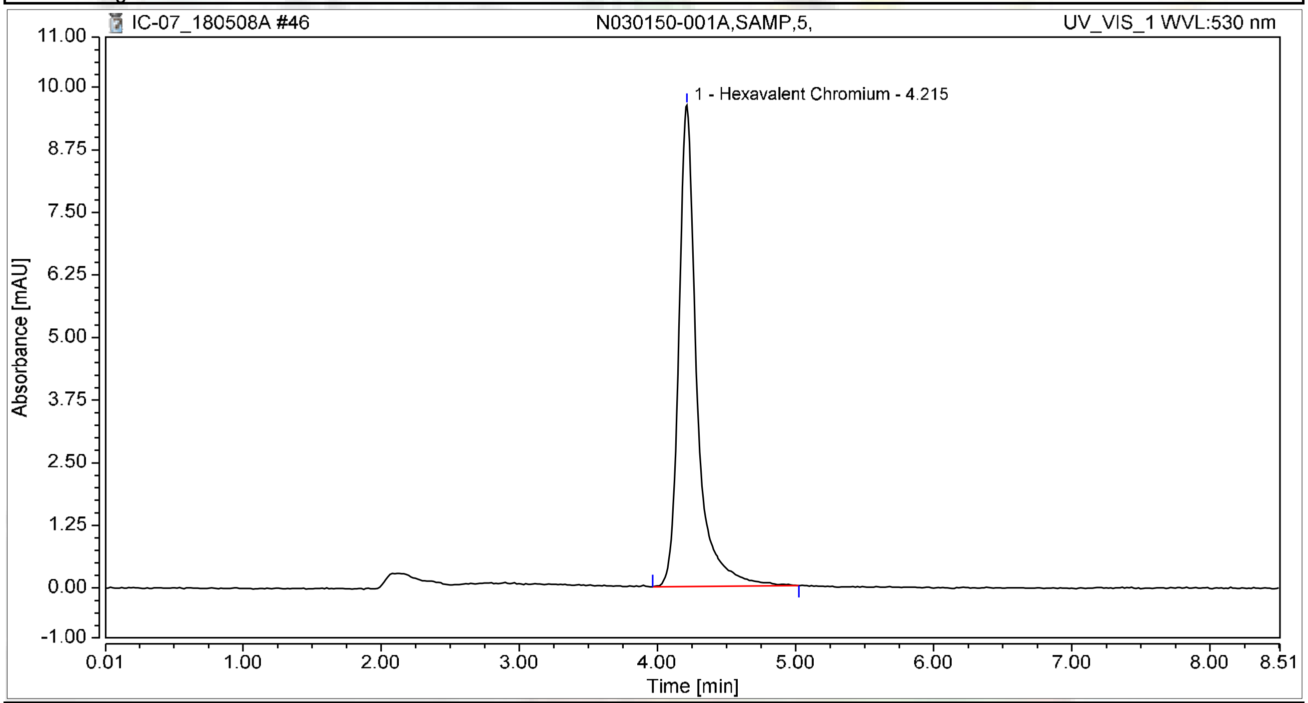
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.479	9.624	100.00	100.00	5.7630
Total:			**1.479**	**9.624**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030150-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 15:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

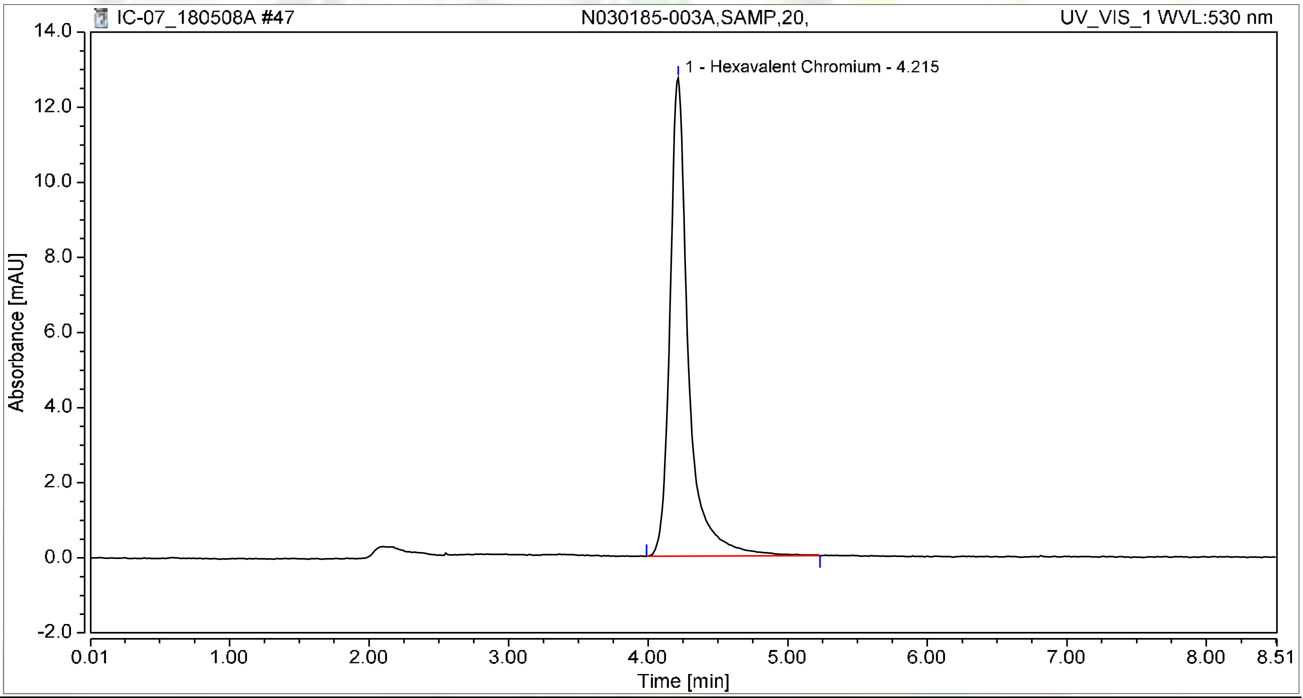
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.455	9.609	100.00	100.00	5.6697
Total:			**1.455**	**9.609**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-003A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 15:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

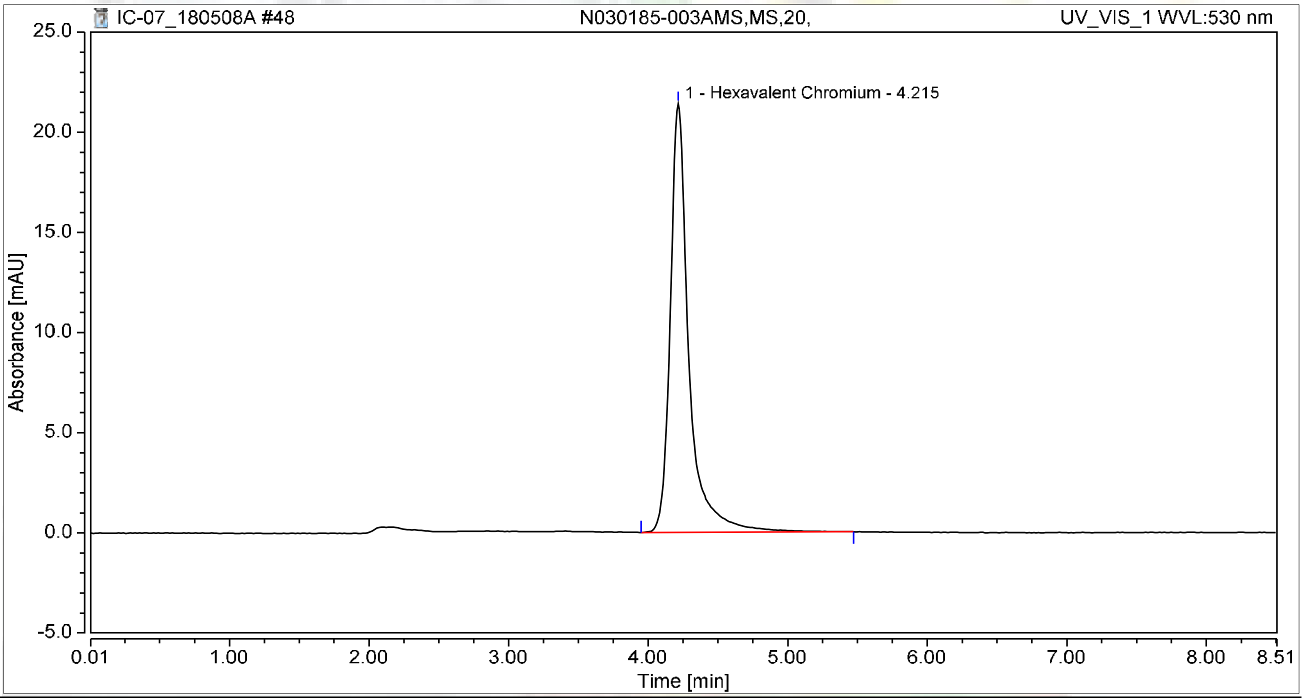
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.961	12.736	100.00	100.00	7.6397
Total:			**1.961**	**12.736**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-003AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 16:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

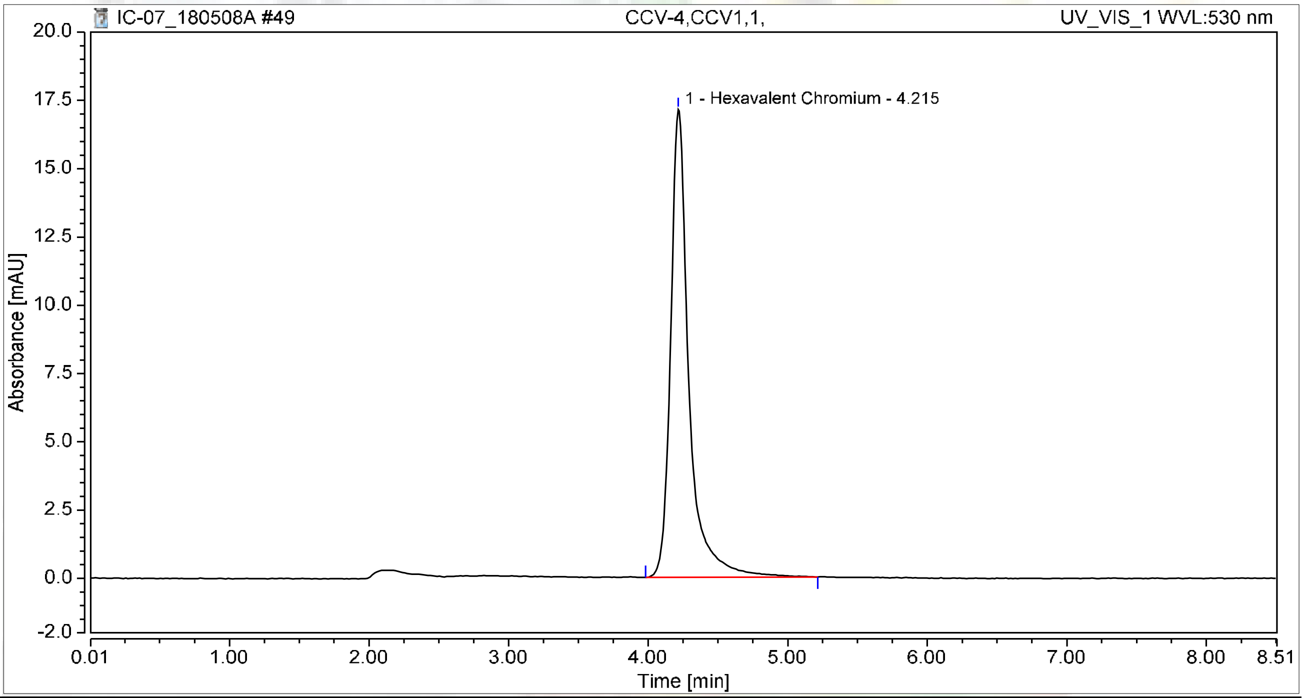
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	3.320	21.402	100.00	100.00	12.9379
Total:			**3.320**	**21.402**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 16:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

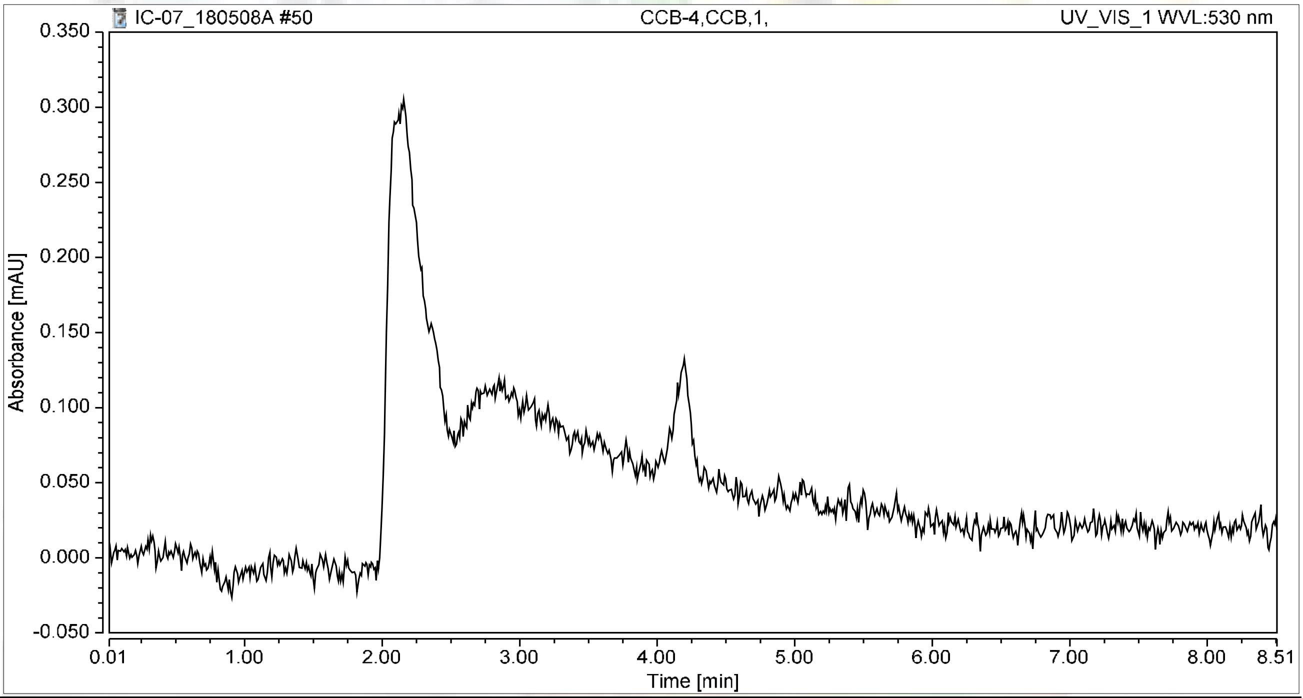
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.601	17.127	100.00	100.00	10.1357
Total:			**2.601**	**17.127**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 16:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

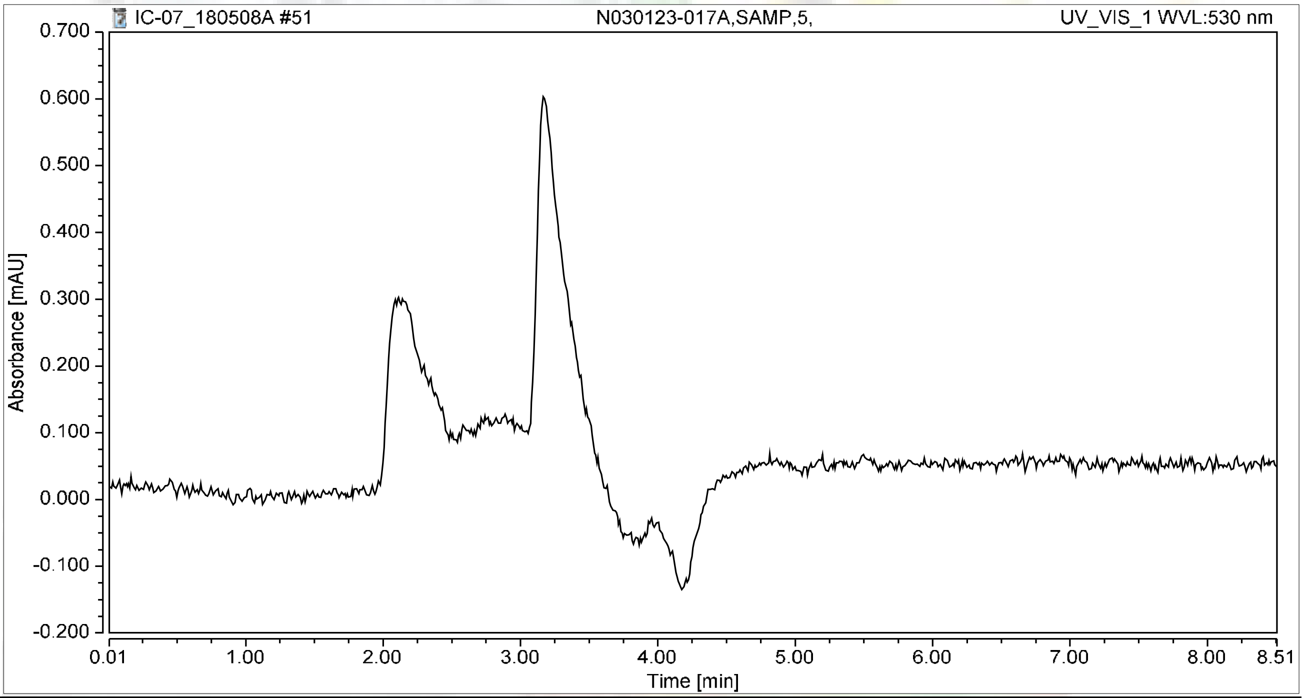
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-017A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 16:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

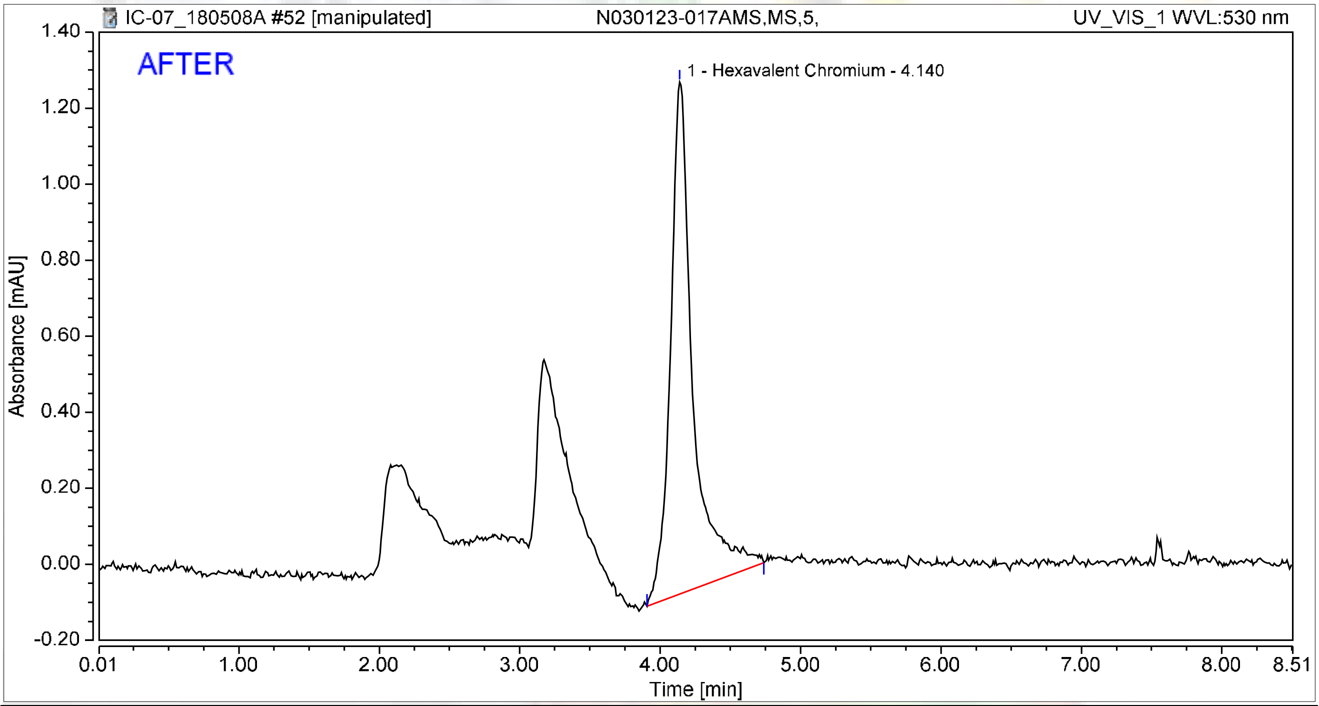
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-017AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 16:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.252	1.346	100.00	100.00	0.9809
Total:			**0.252**	**1.346**	**100.00**	**100.00**	

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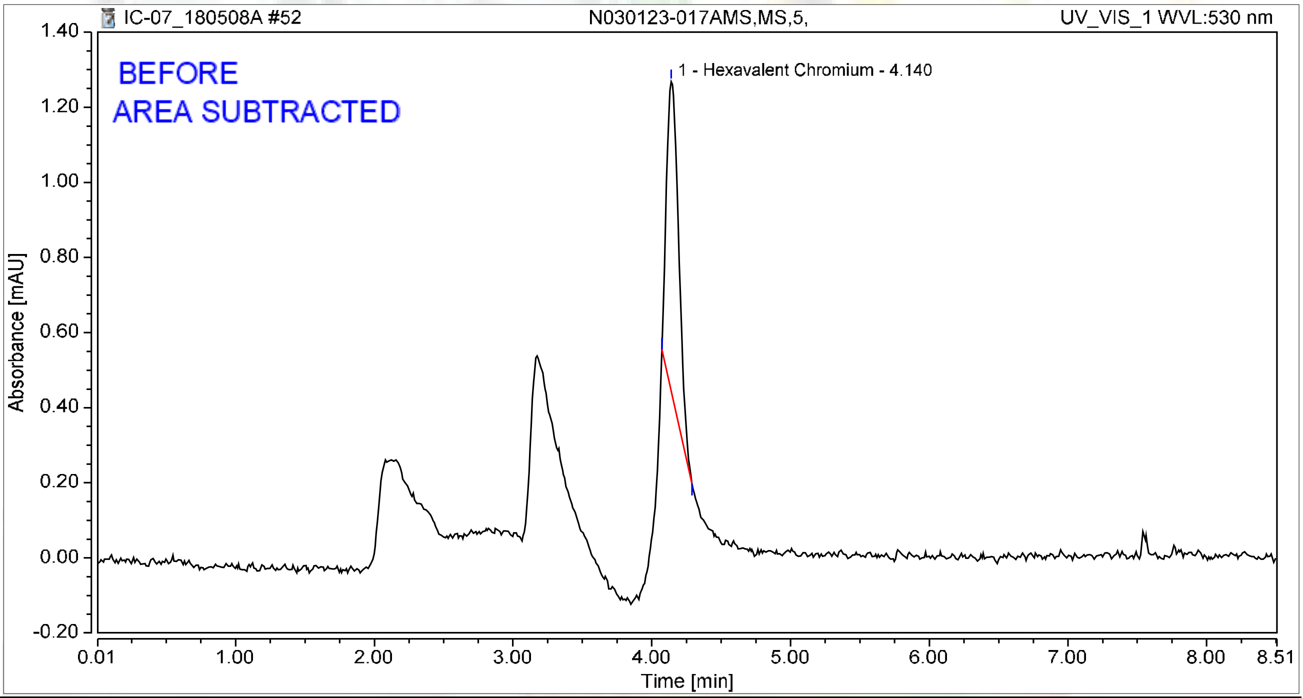
Chromatogram and Results

Injection Details

Injection Name:	**N030123-017AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 16:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.085	0.824	100.00	100.00	0.3304
Total:			**0.085**	**0.824**	**100.00**	**100.00**	

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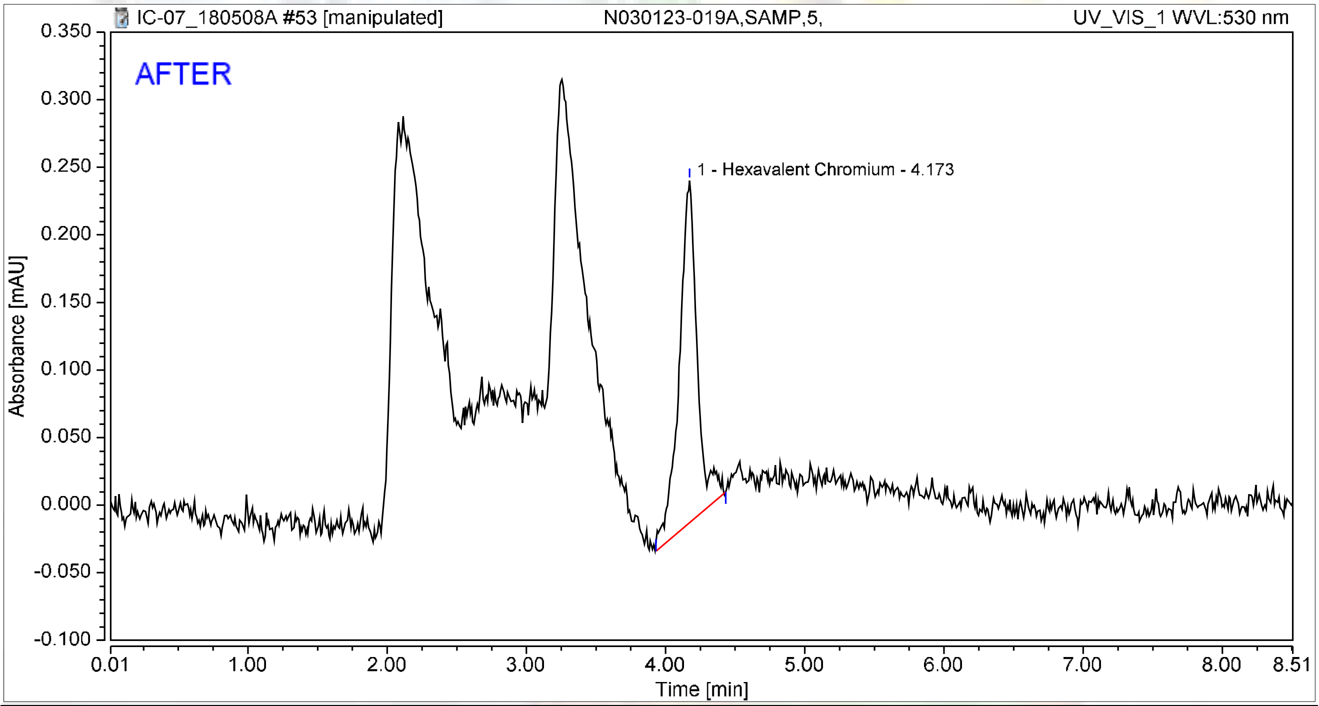
Chromatogram and Results

Injection Details

Injection Name:	**N030123-019A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 16:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.038	0.253	100.00	100.00	0.1476
Total:			**0.038**	**0.253**	**100.00**	**100.00**	

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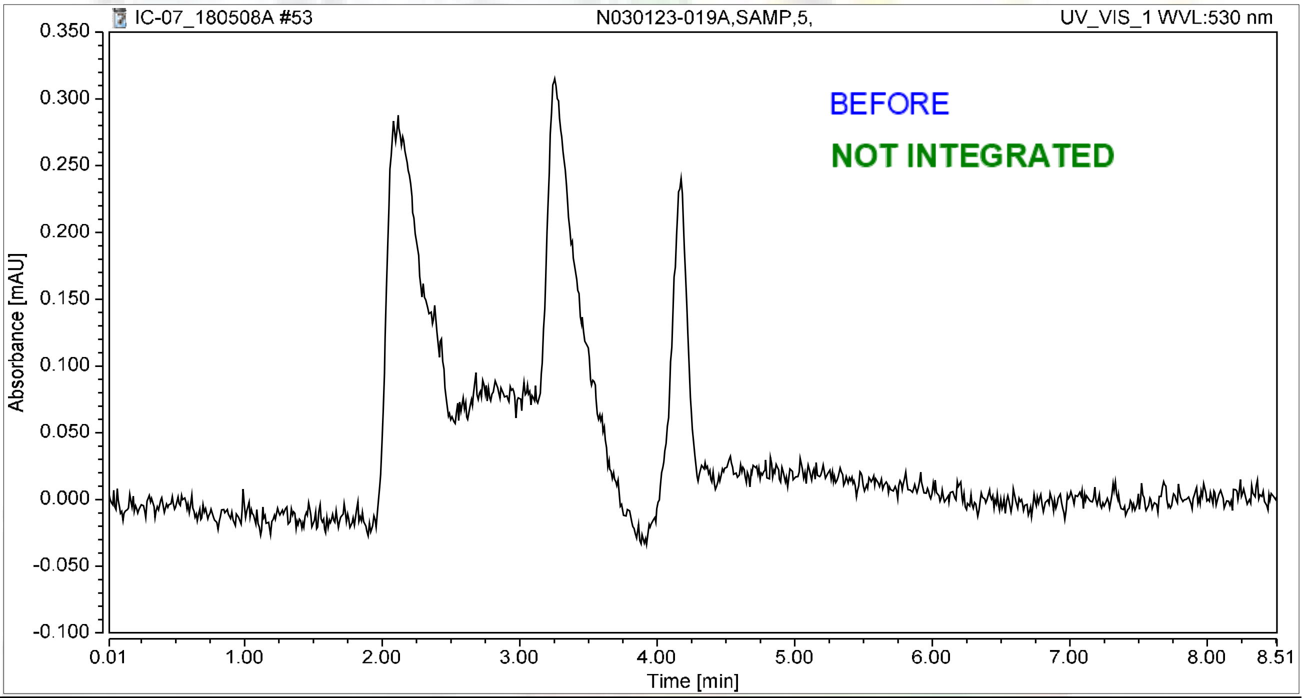
Chromatogram and Results

Injection Details

Injection Name:	**N030123-019A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 16:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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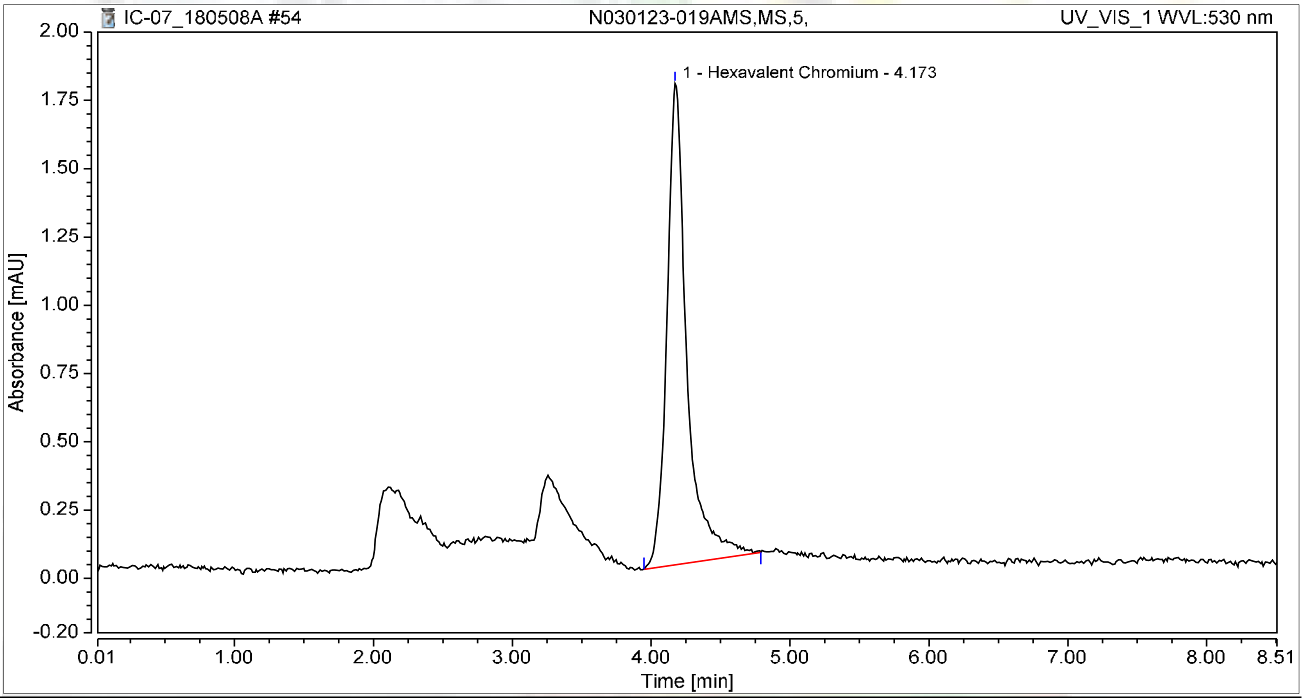
Chromatogram and Results

Injection Details

Injection Name:	**N030123-019AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 17:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

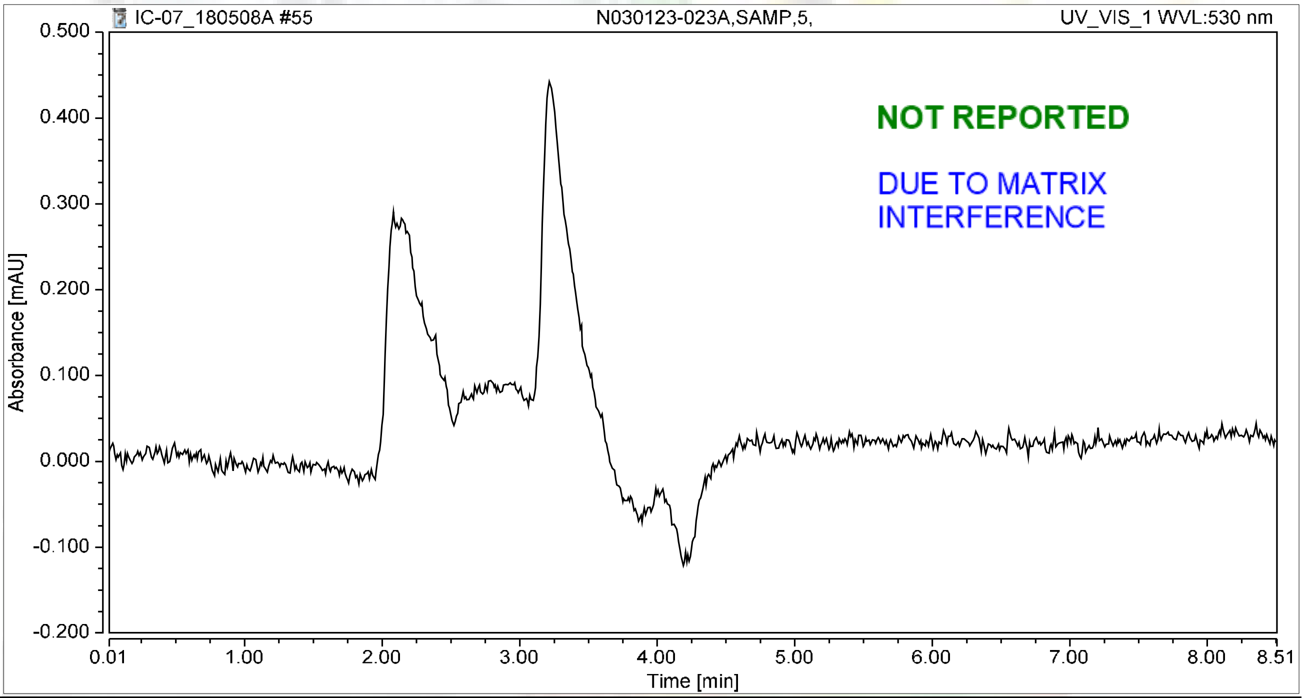
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.294	1.762	100.00	100.00	1.1474
Total:			**0.294**	**1.762**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-023A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 17:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

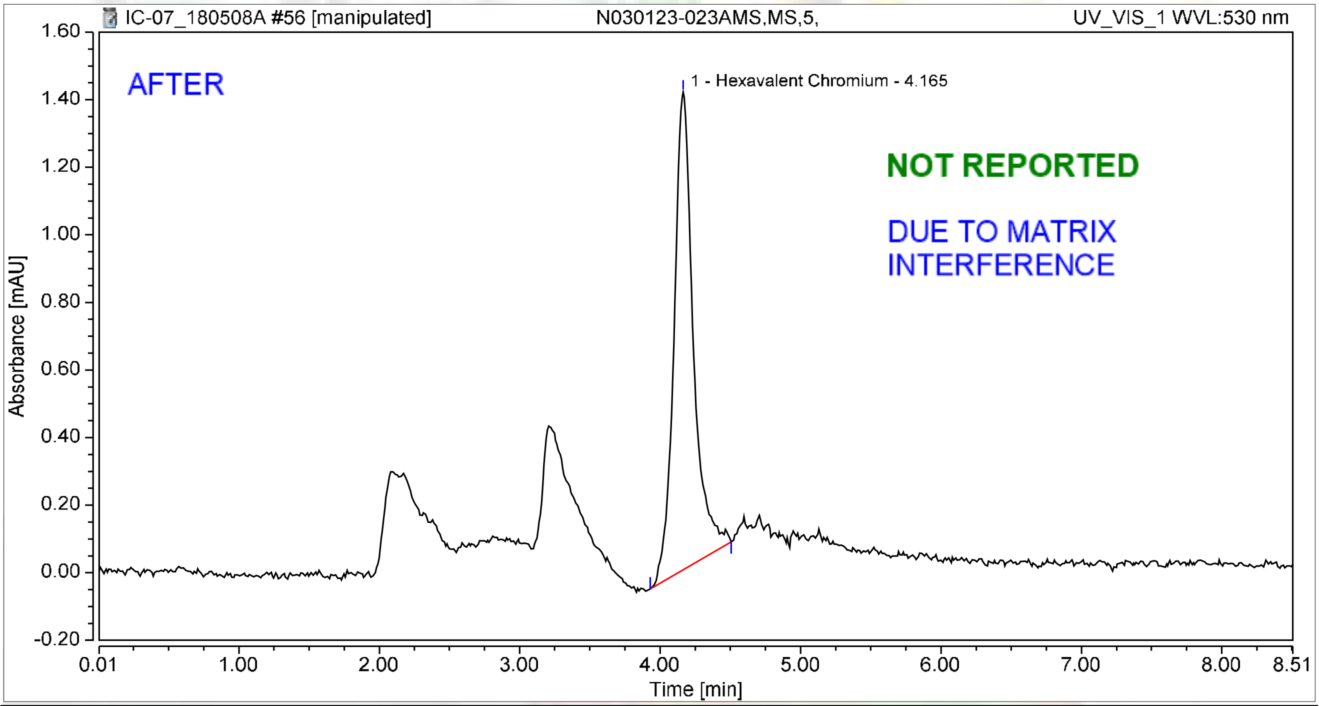
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-023AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.226	1.414	100.00	100.00	0.8818
Total:			**0.226**	**1.414**	**100.00**	**100.00**	

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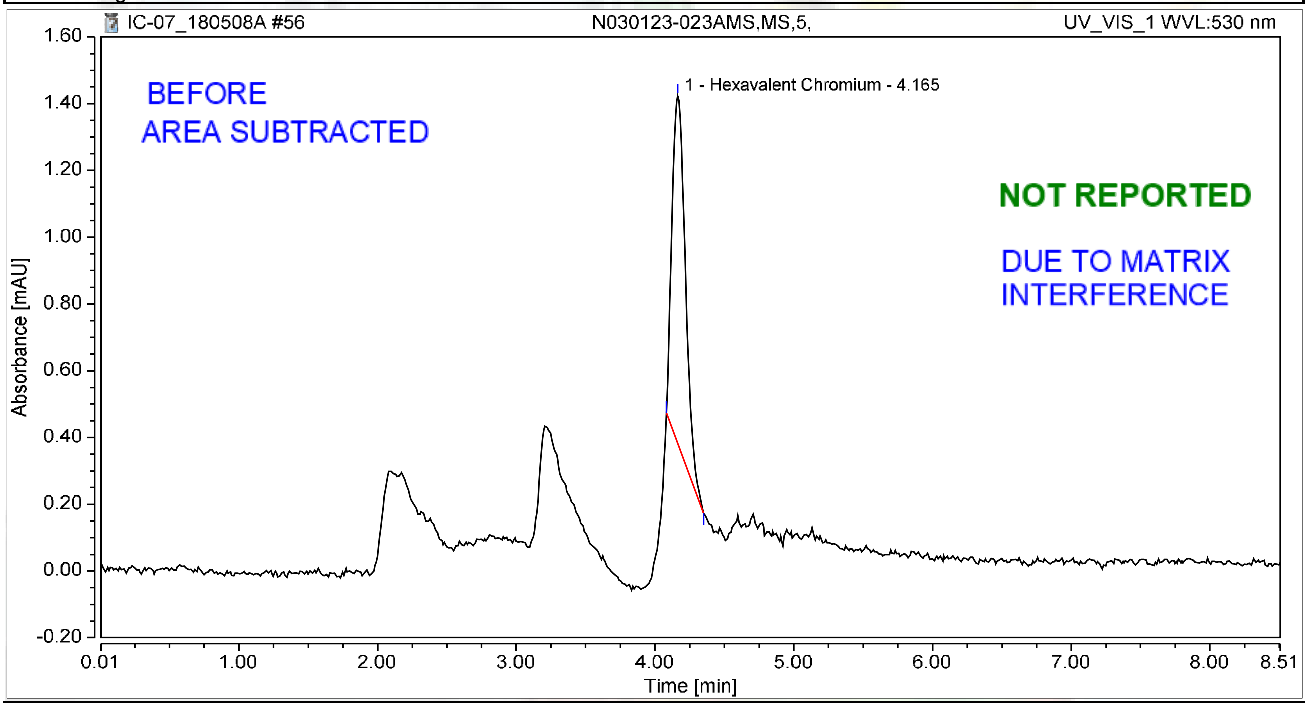
Chromatogram and Results

Injection Details

Injection Name:	**N030123-023AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.117	1.043	100.00	100.00	0.4567
Total:			**0.117**	**1.043**	**100.00**	**100.00**	

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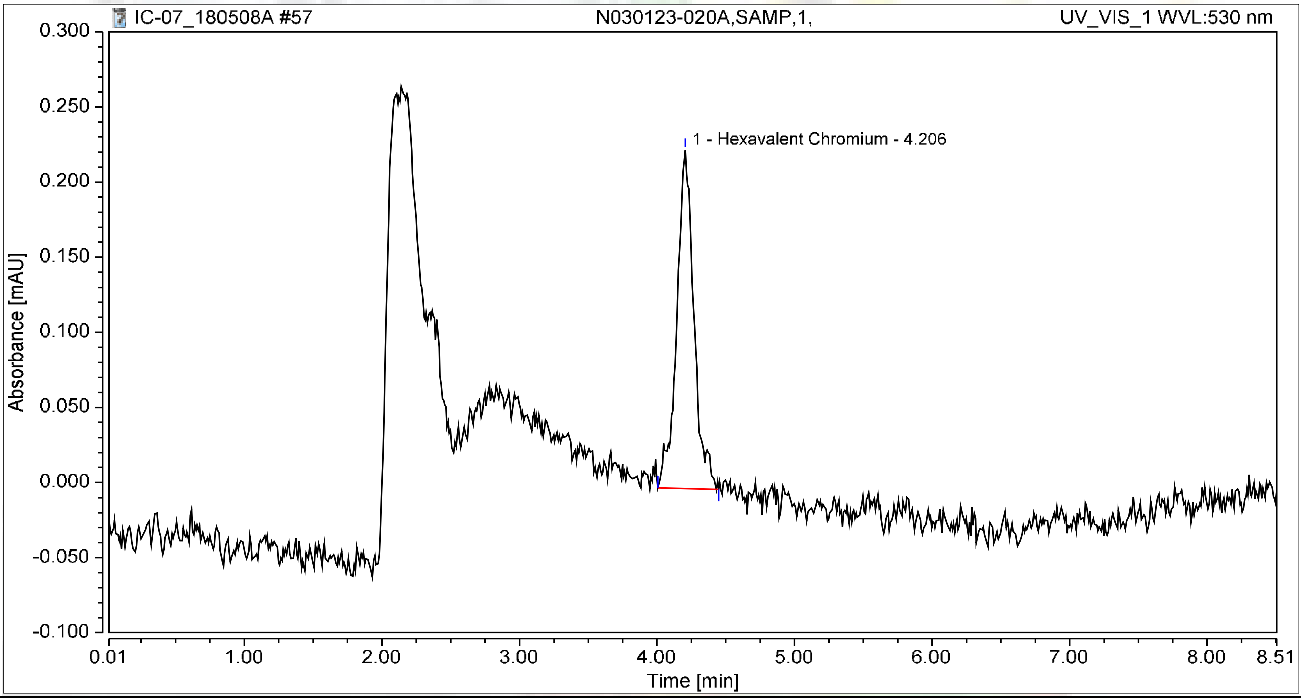
Chromatogram and Results

Injection Details

Injection Name:	**N030123-020A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

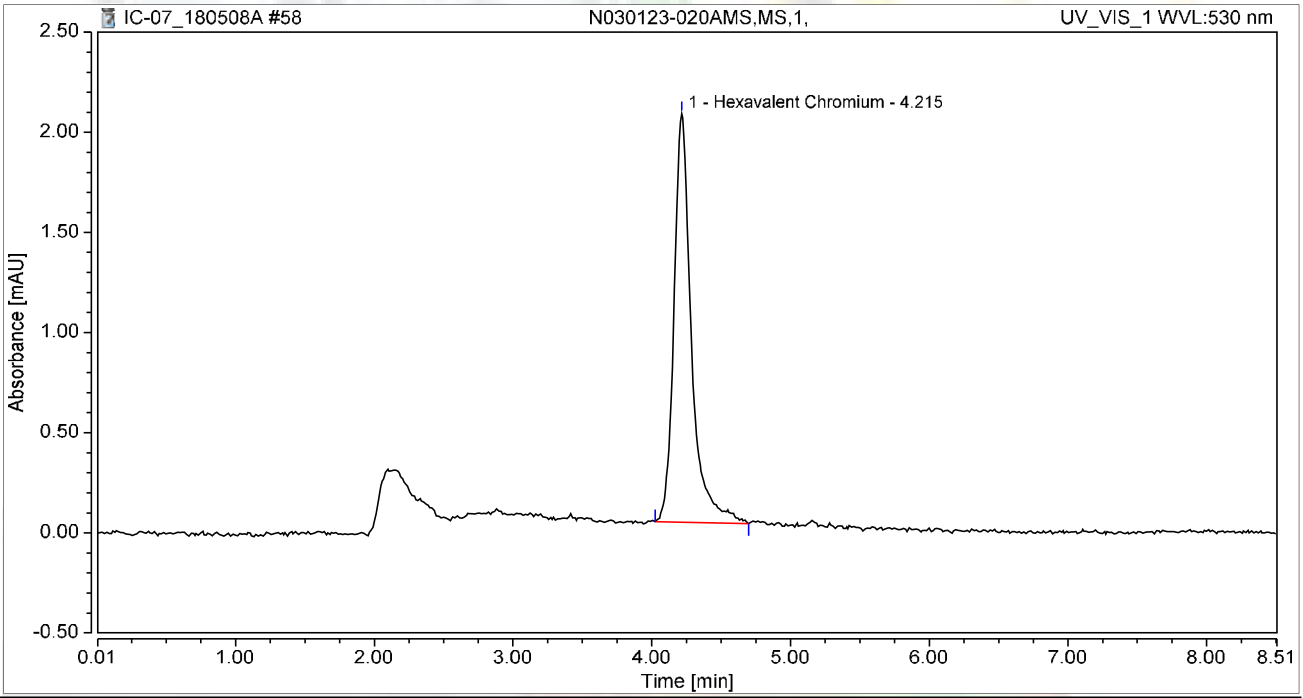
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.032	0.225	100.00	100.00	0.1266
Total:			**0.032**	**0.225**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-020AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 17:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

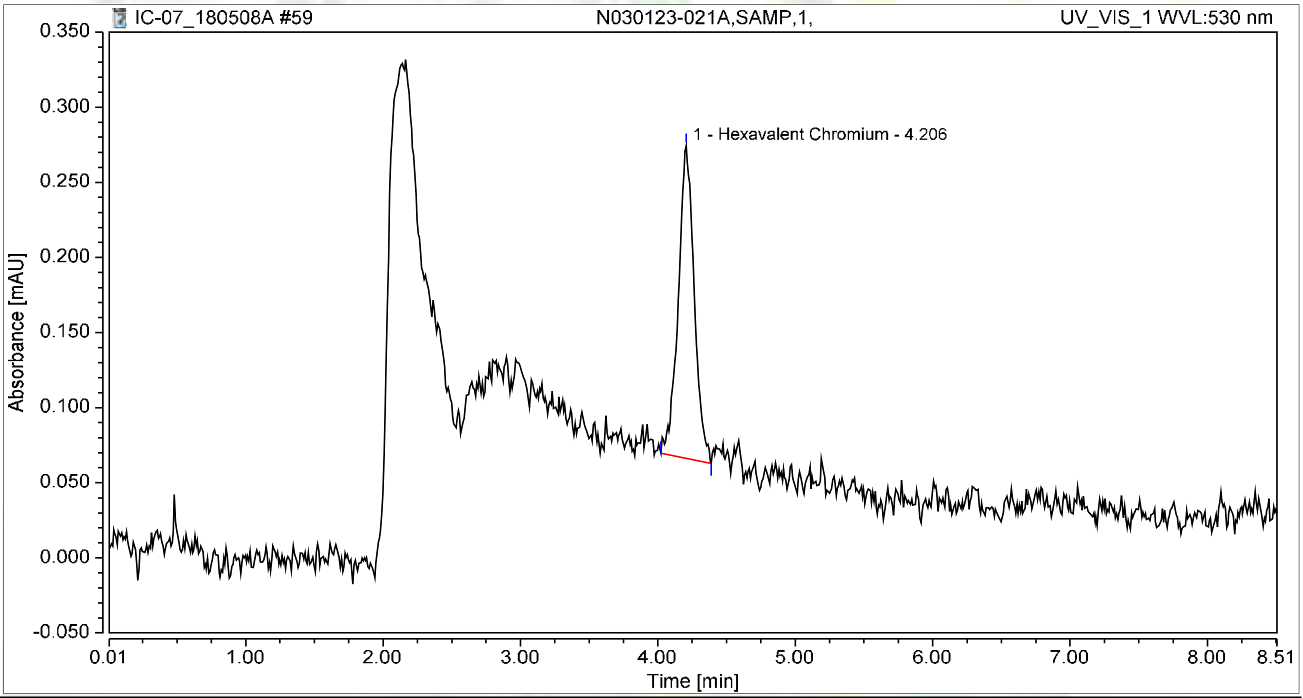
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.298	2.041	100.00	100.00	1.1603
Total:			**0.298**	**2.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-021A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 17:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

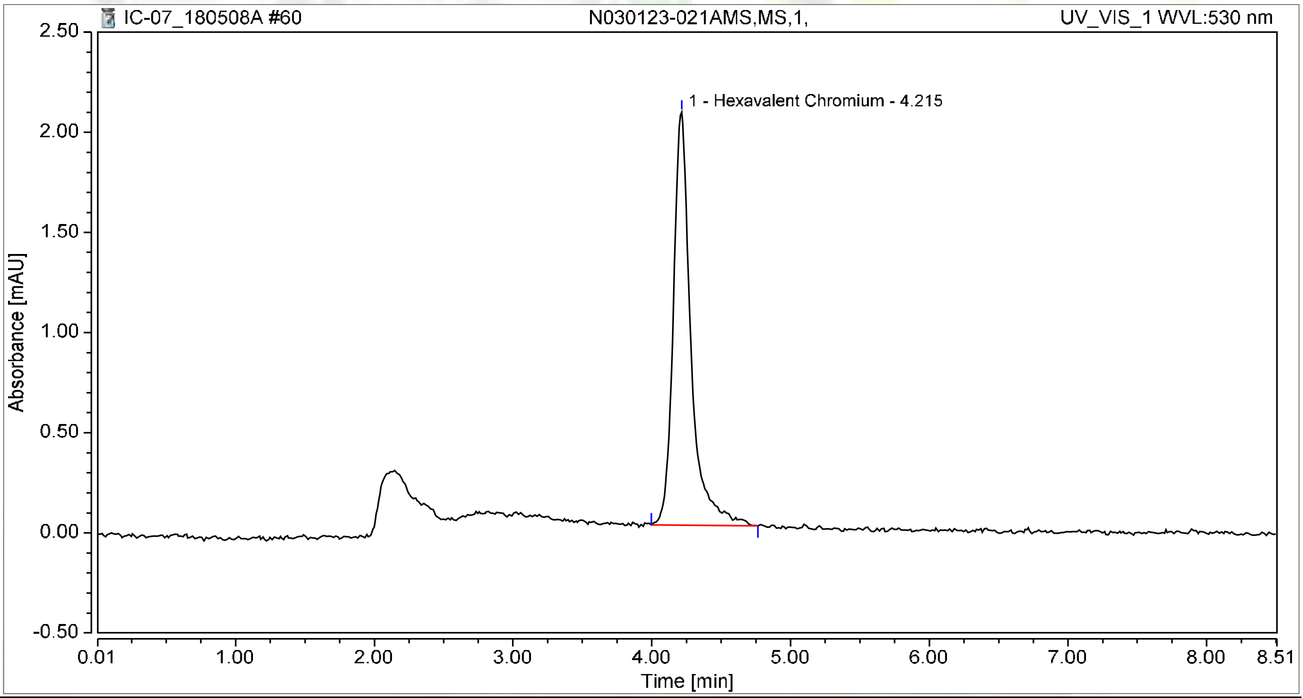
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.028	0.208	100.00	100.00	0.1096
Total:			**0.028**	**0.208**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-021AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 17:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

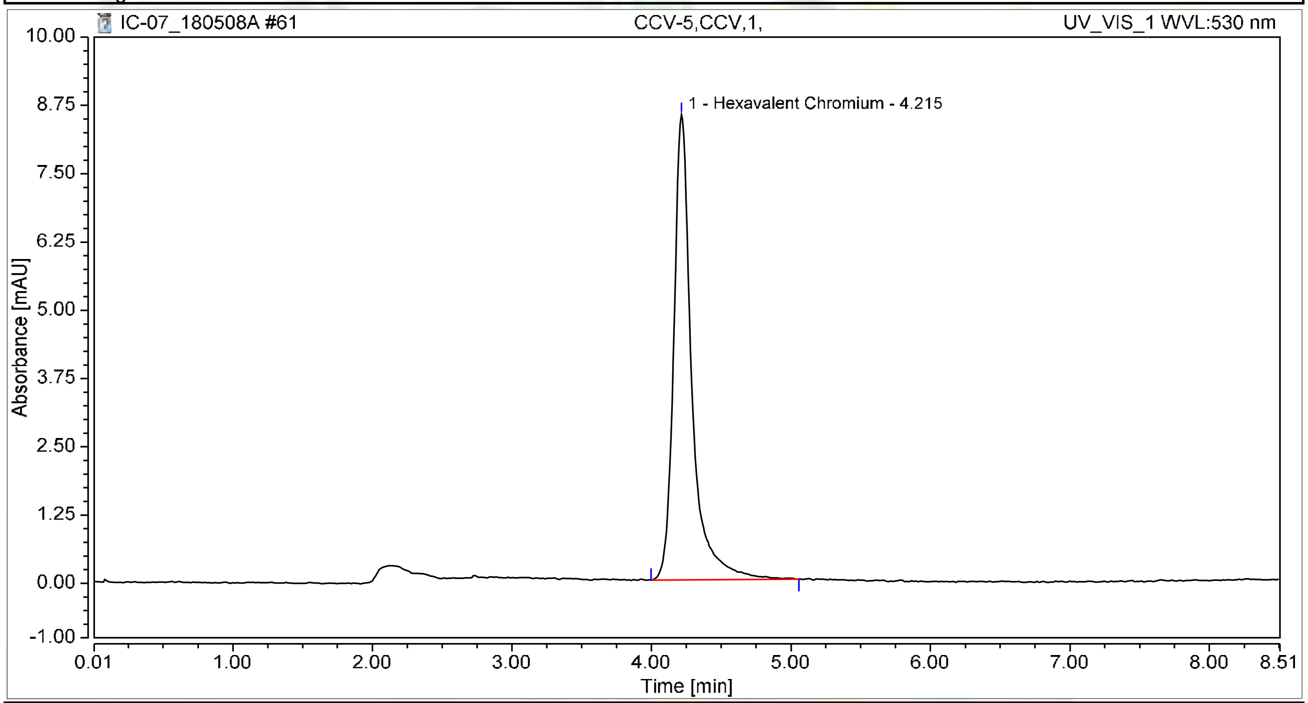
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.305	2.062	100.00	100.00	1.1865
Total:			**0.305**	**2.062**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 18:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

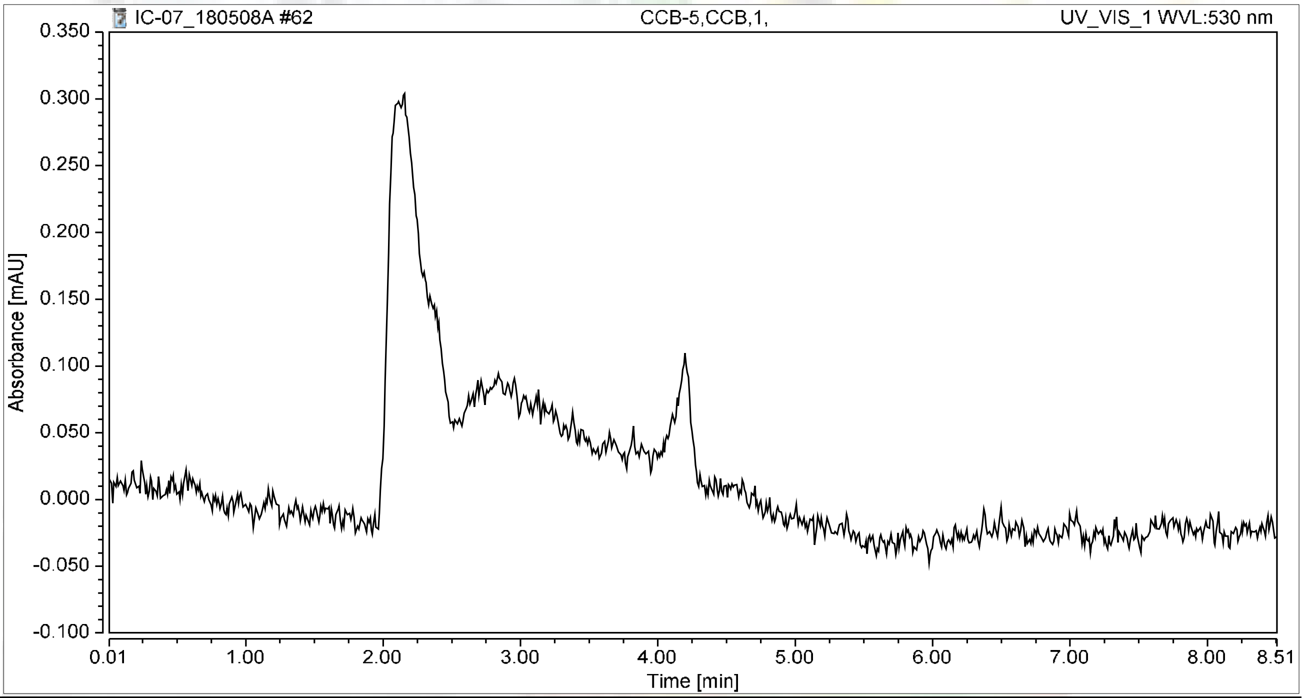
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.285	8.521	100.00	100.00	5.0054
Total:			**1.285**	**8.521**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 18:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

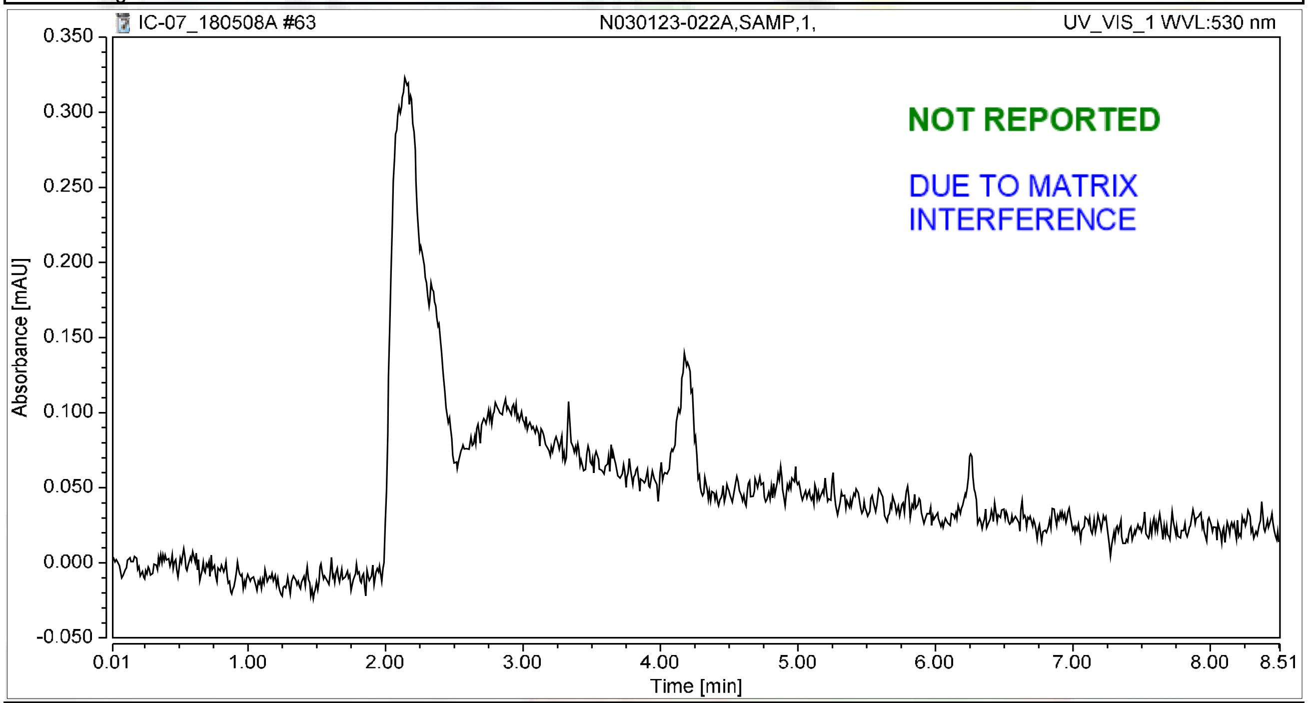
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-022A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 18:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

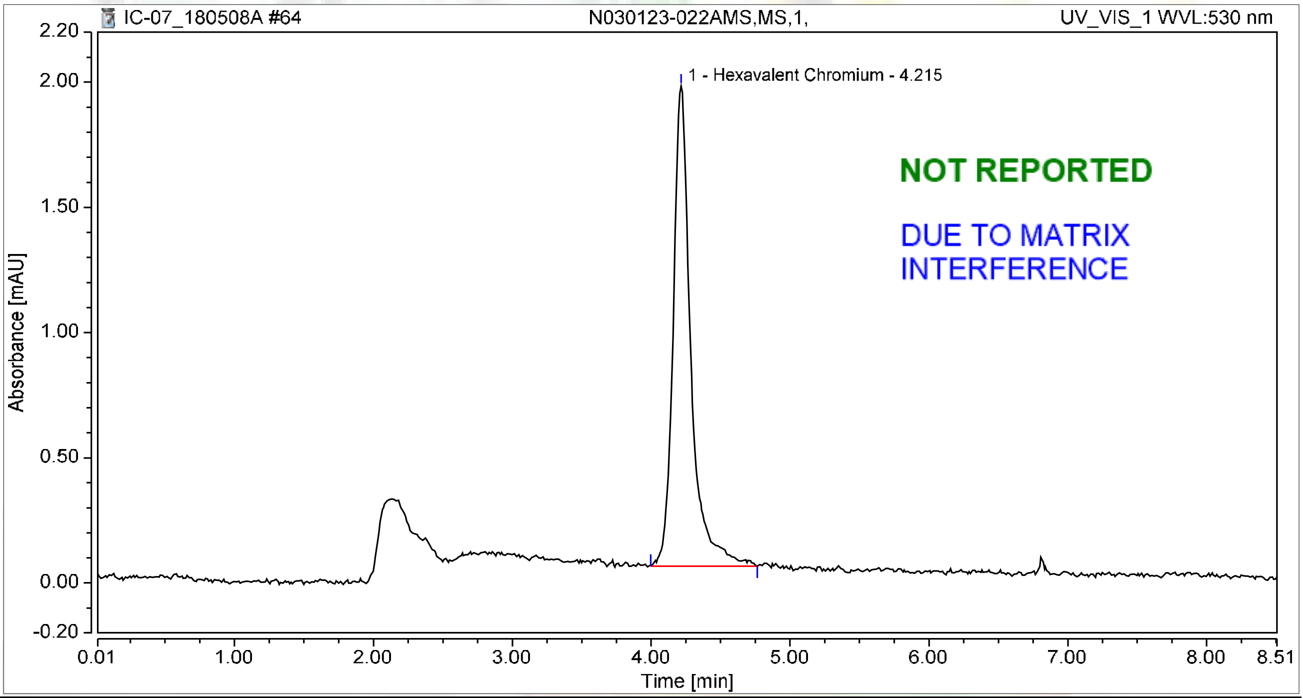
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-022AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 18:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

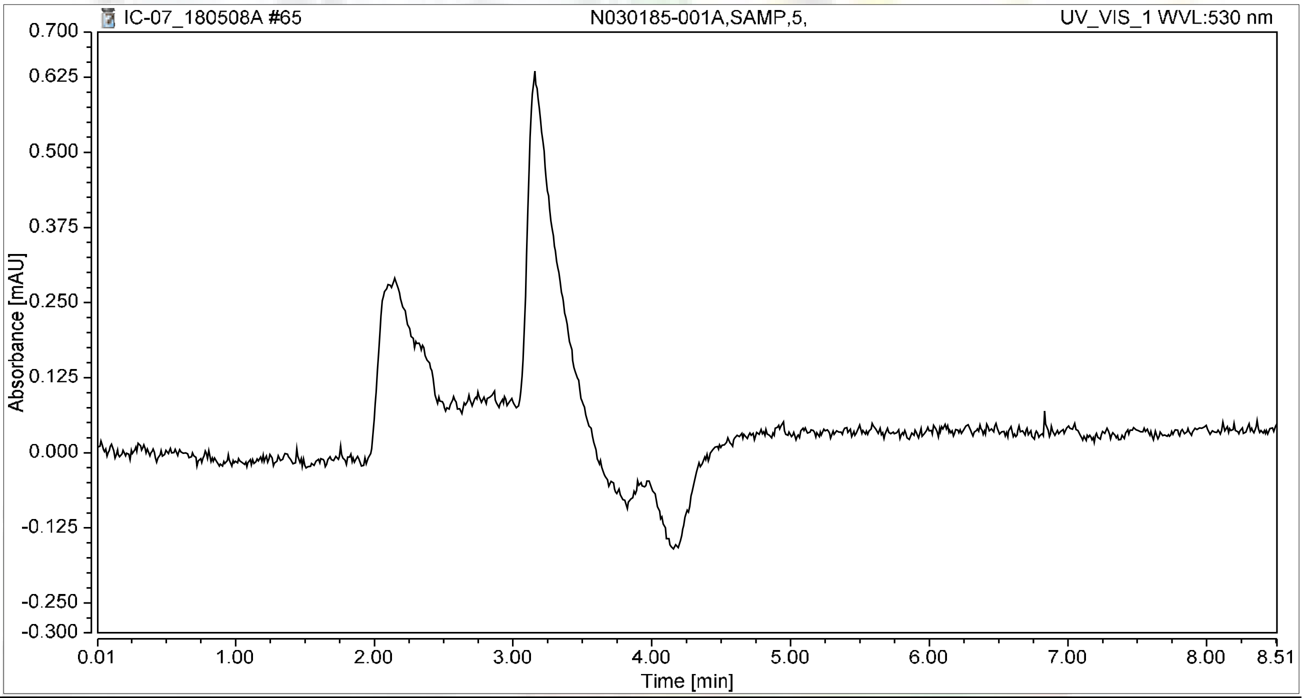
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.283	1.917	100.00	100.00	1.1040
Total:			**0.283**	**1.917**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 18:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

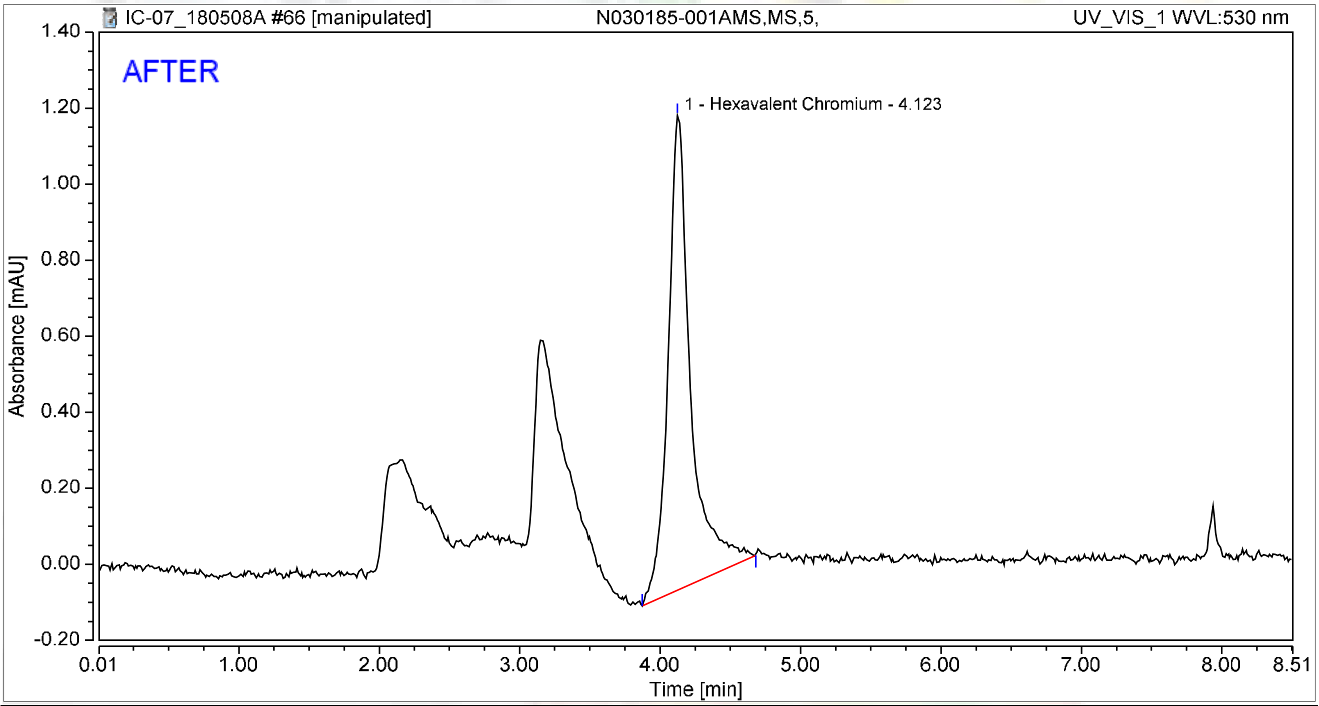
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 18:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.235	1.249	100.00	100.00	0.9138
Total:			**0.235**	**1.249**	**100.00**	**100.00**	

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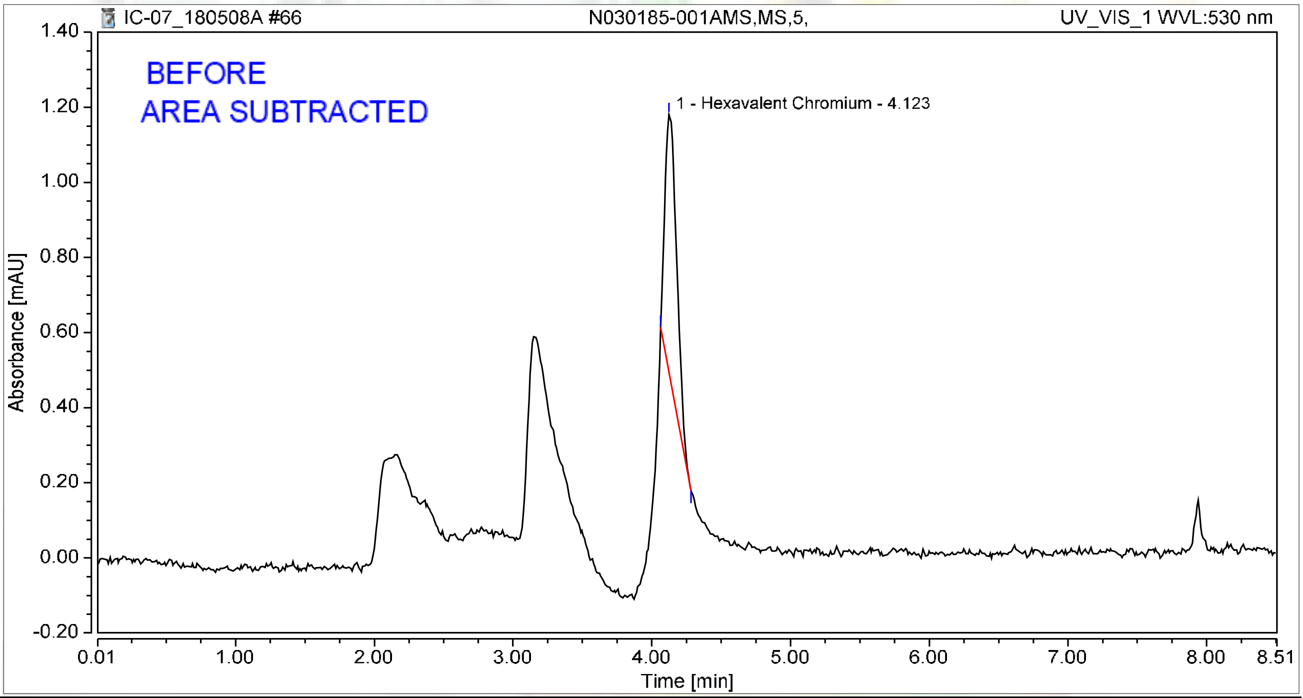
Chromatogram and Results

Injection Details

Injection Name:	**N030185-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 18:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.069	0.684	100.00	100.00	0.2700
Total:			**0.069**	**0.684**	**100.00**	**100.00**	

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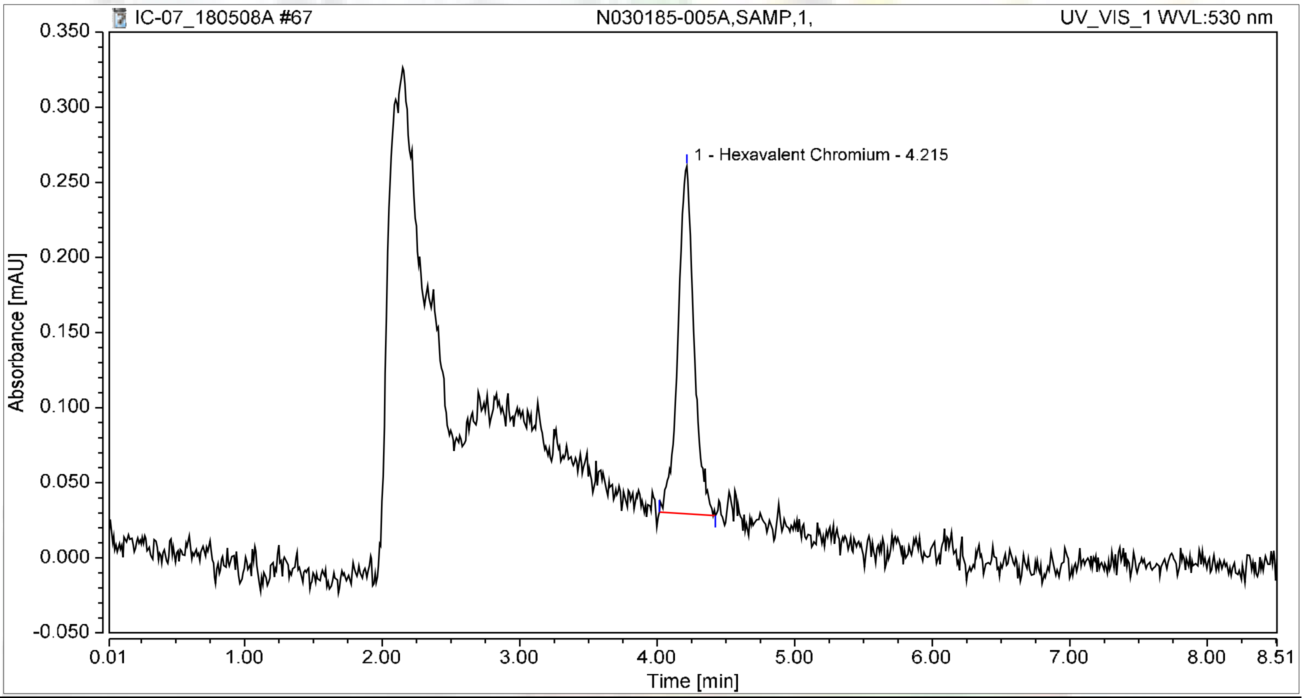
Chromatogram and Results

Injection Details

Injection Name:	**N030185-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 19:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

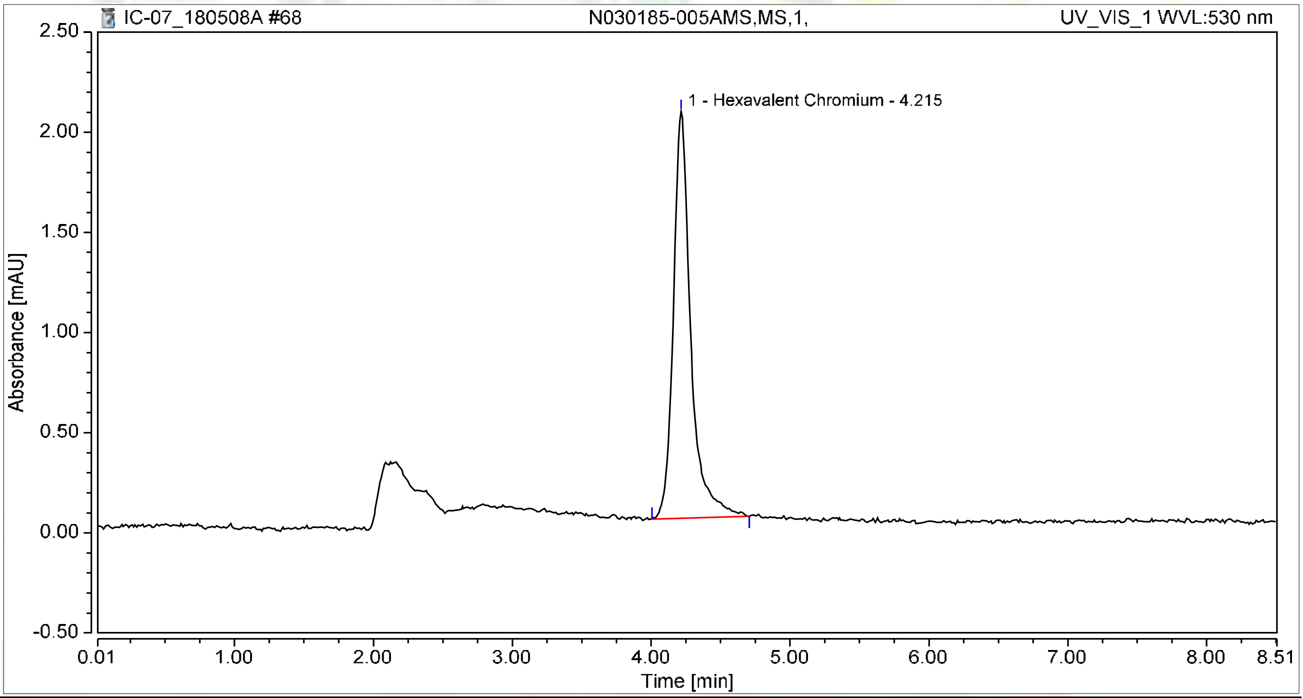
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.031	0.231	100.00	100.00	0.1216
Total:			**0.031**	**0.231**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-005AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 19:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

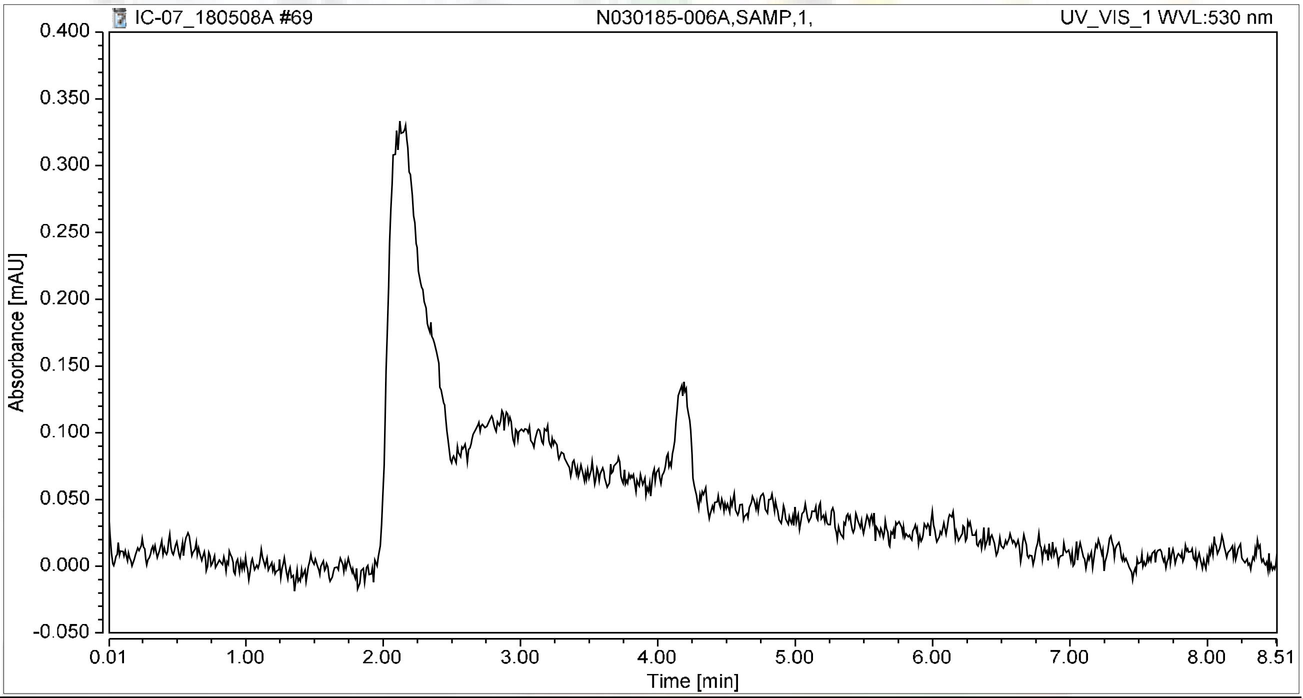
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.294	2.031	100.00	100.00	1.1474
Total:			**0.294**	**2.031**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

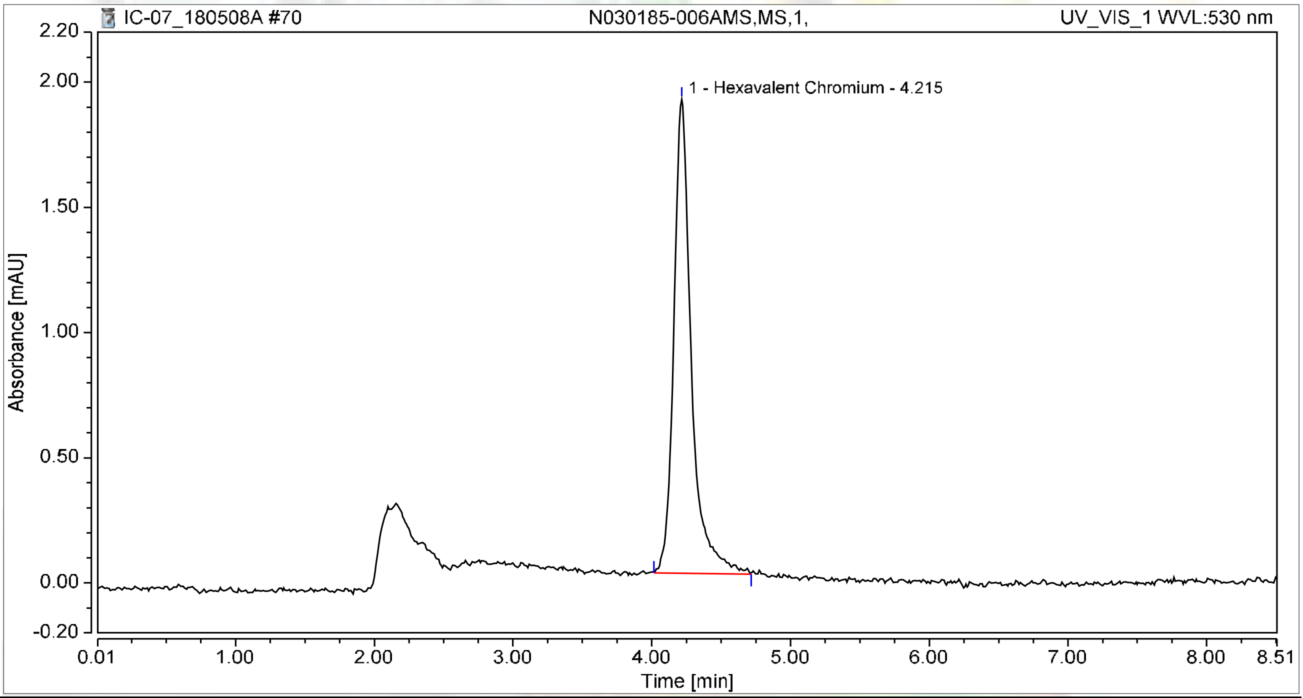
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 19:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

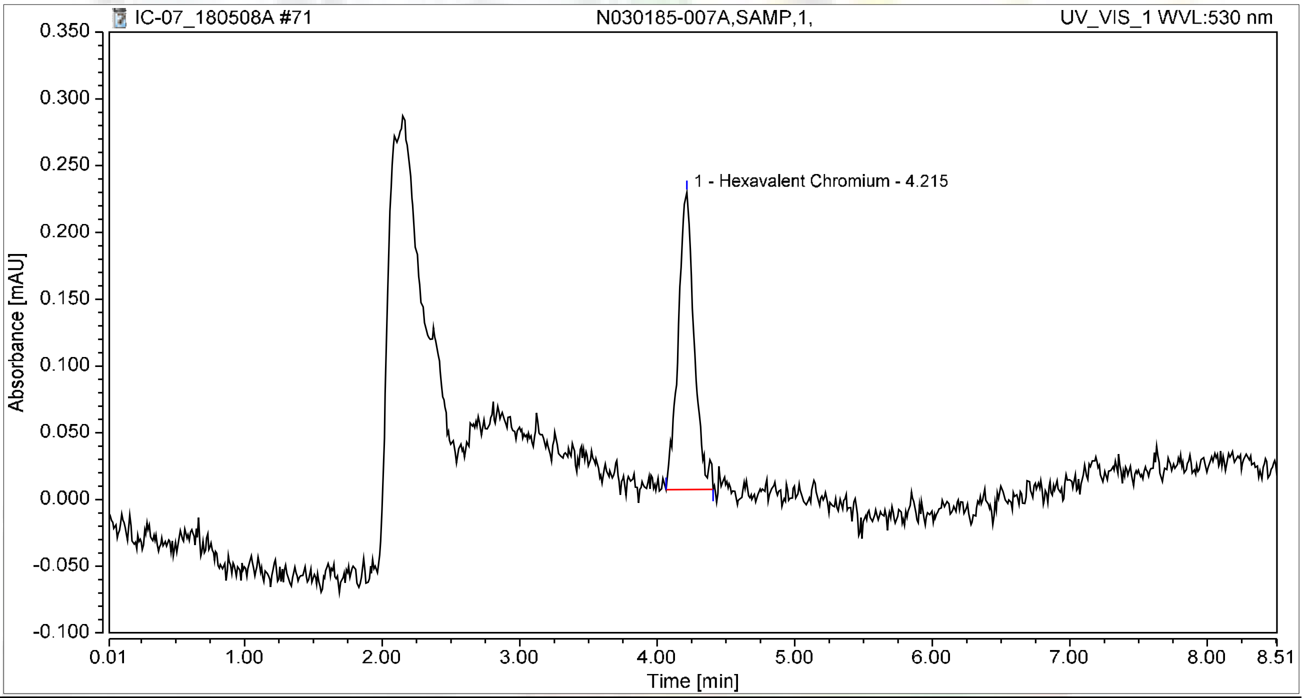
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.277	1.894	100.00	100.00	1.0799
Total:			**0.277**	**1.894**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-007A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 19:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

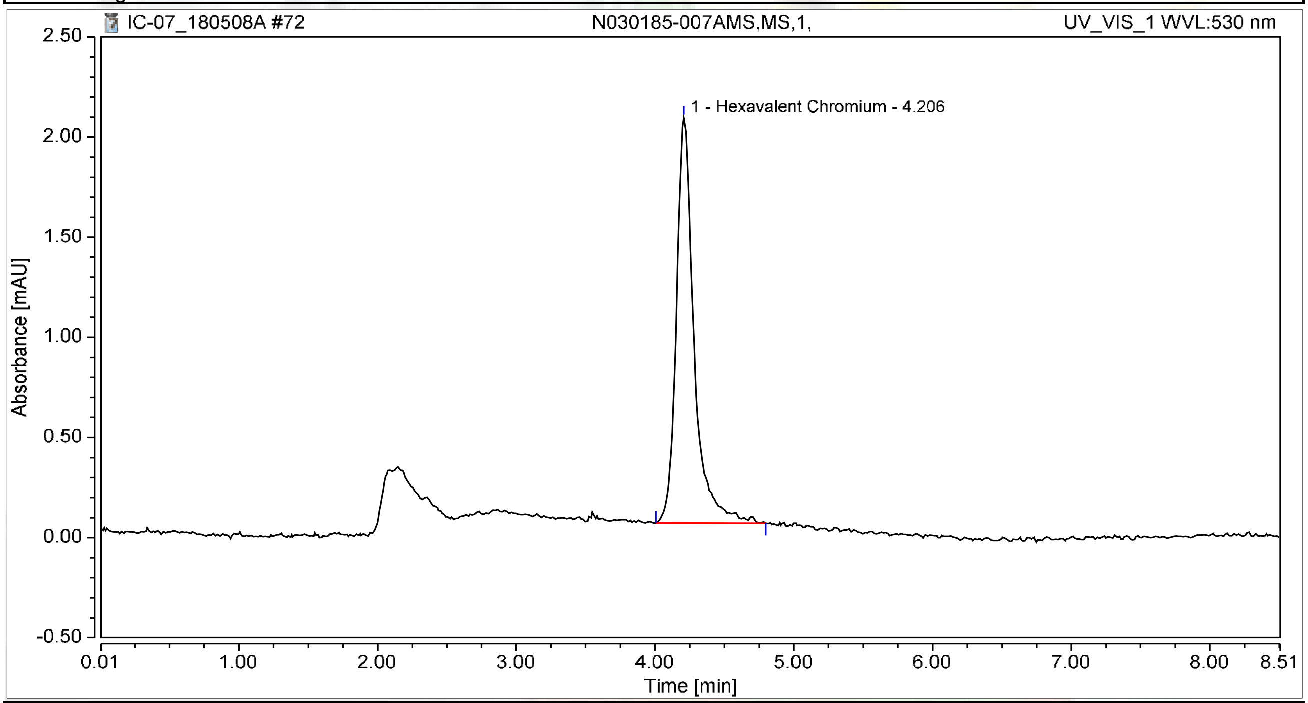
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.030	0.222	100.00	100.00	0.1164
Total:			**0.030**	**0.222**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 19:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

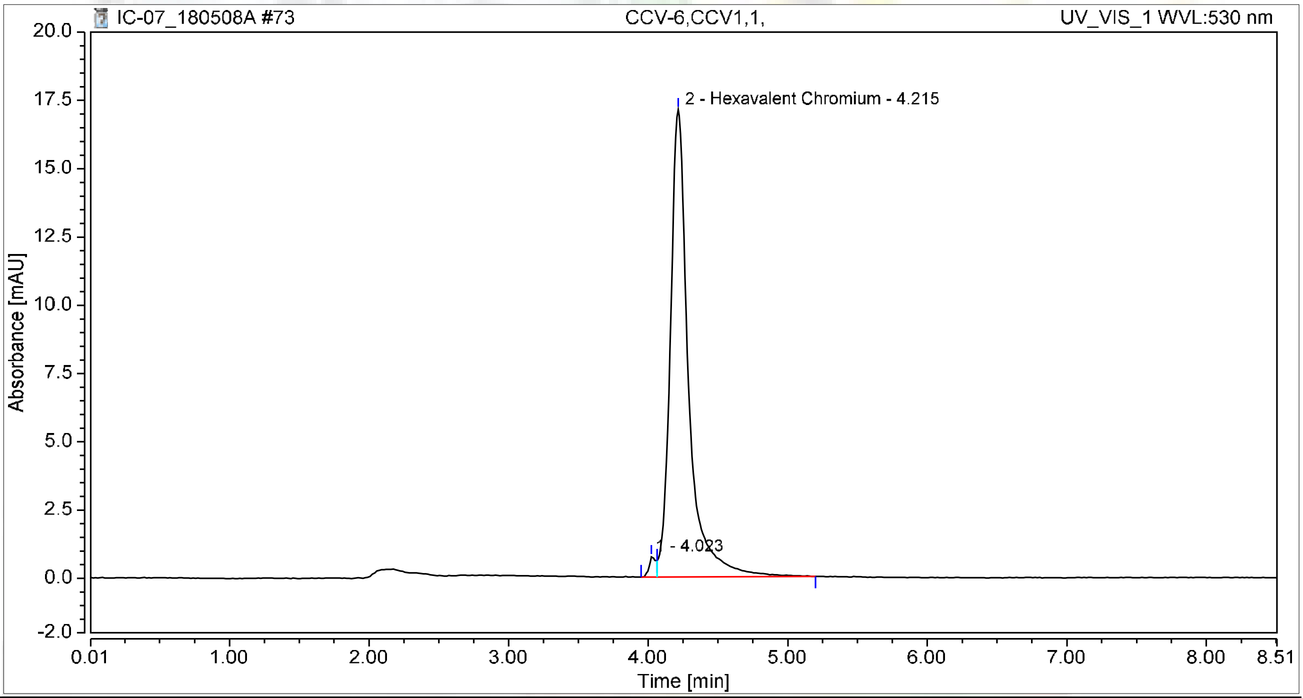
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.302	2.023	100.00	100.00	1.1768
Total:			**0.302**	**2.023**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 20:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

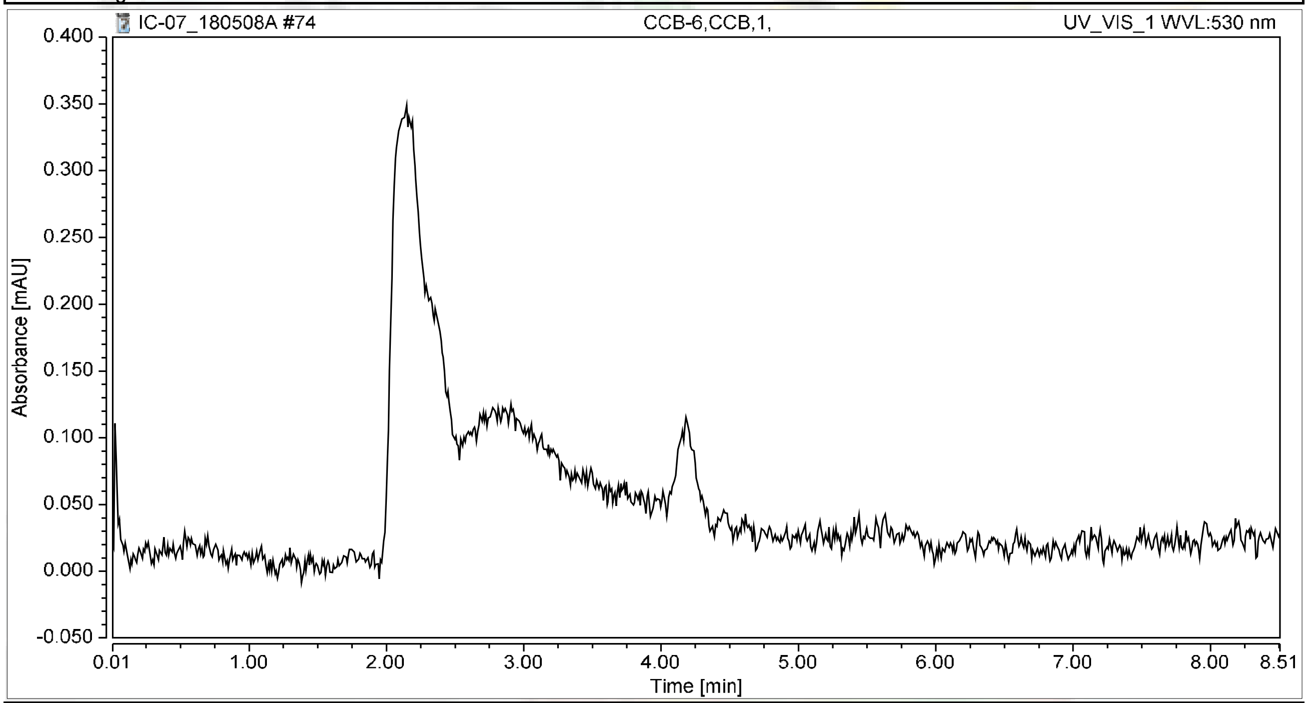
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.023	0.041	0.739	1.57	4.14	n.a.
2	Hexavalent Chromium	4.215	2.595	17.101	98.43	95.86	10.1126
Total:			**2.637**	**17.841**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 20:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

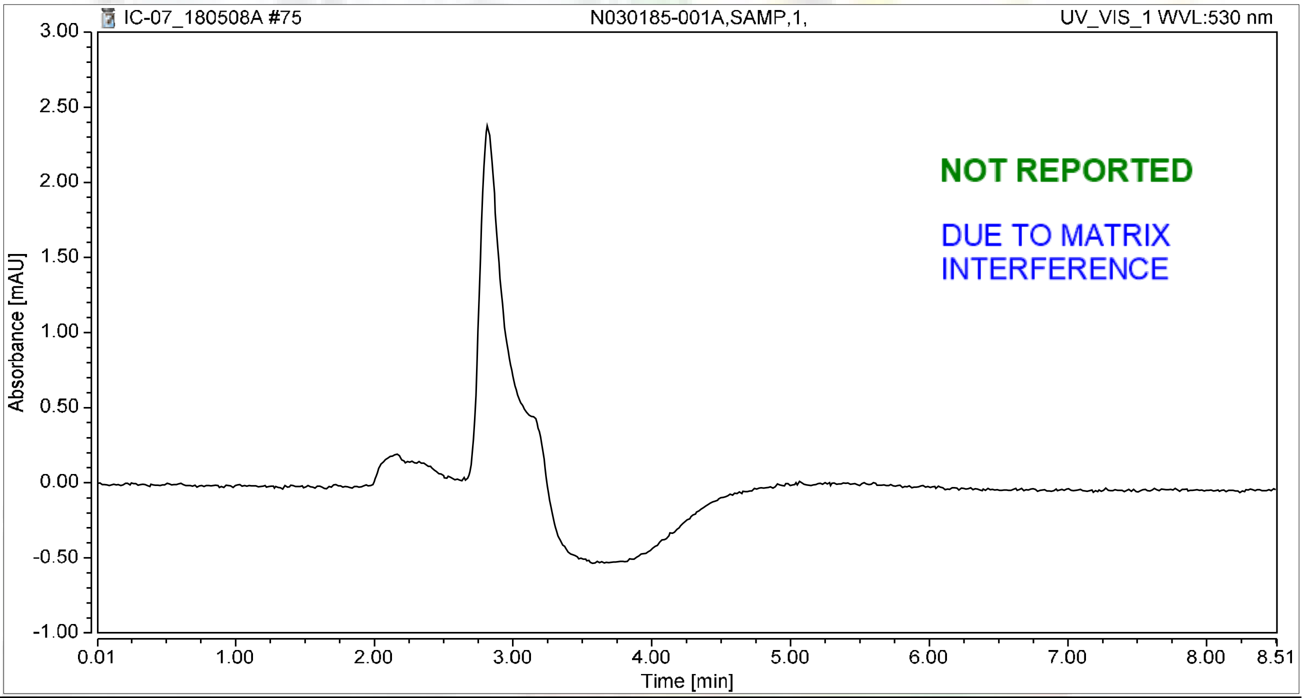
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 20:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

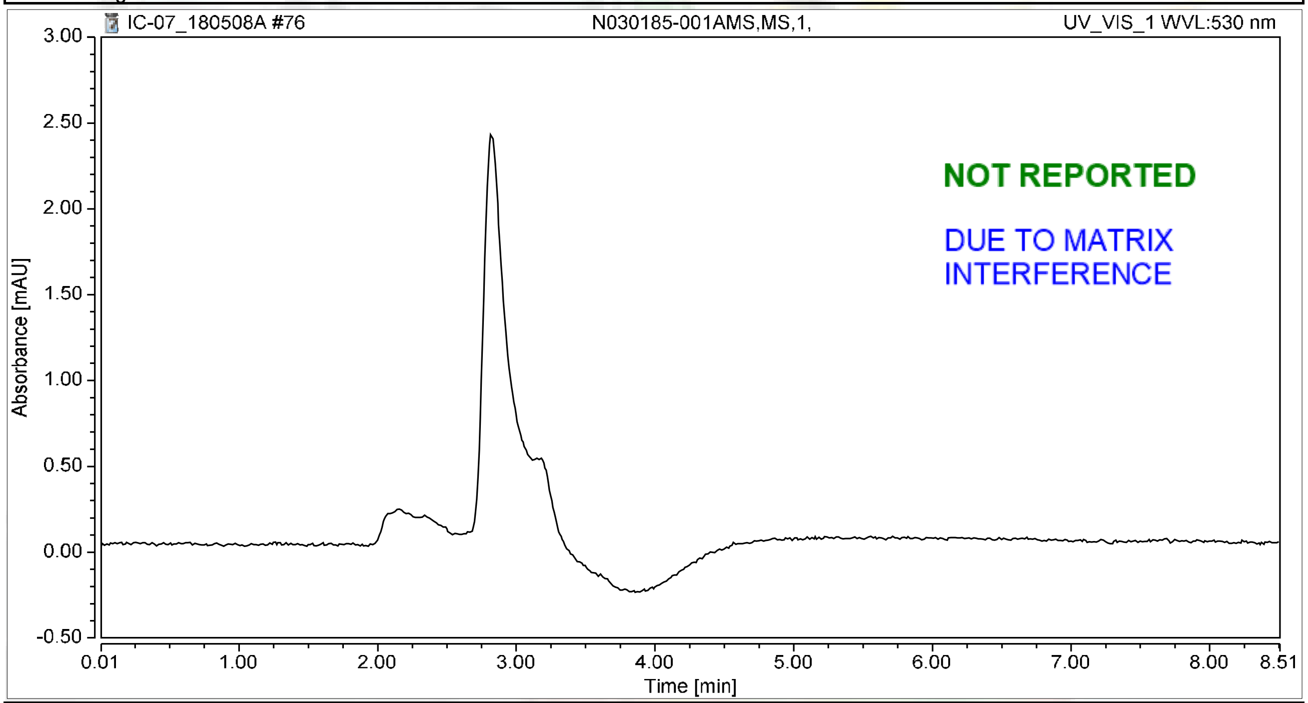
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 20:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

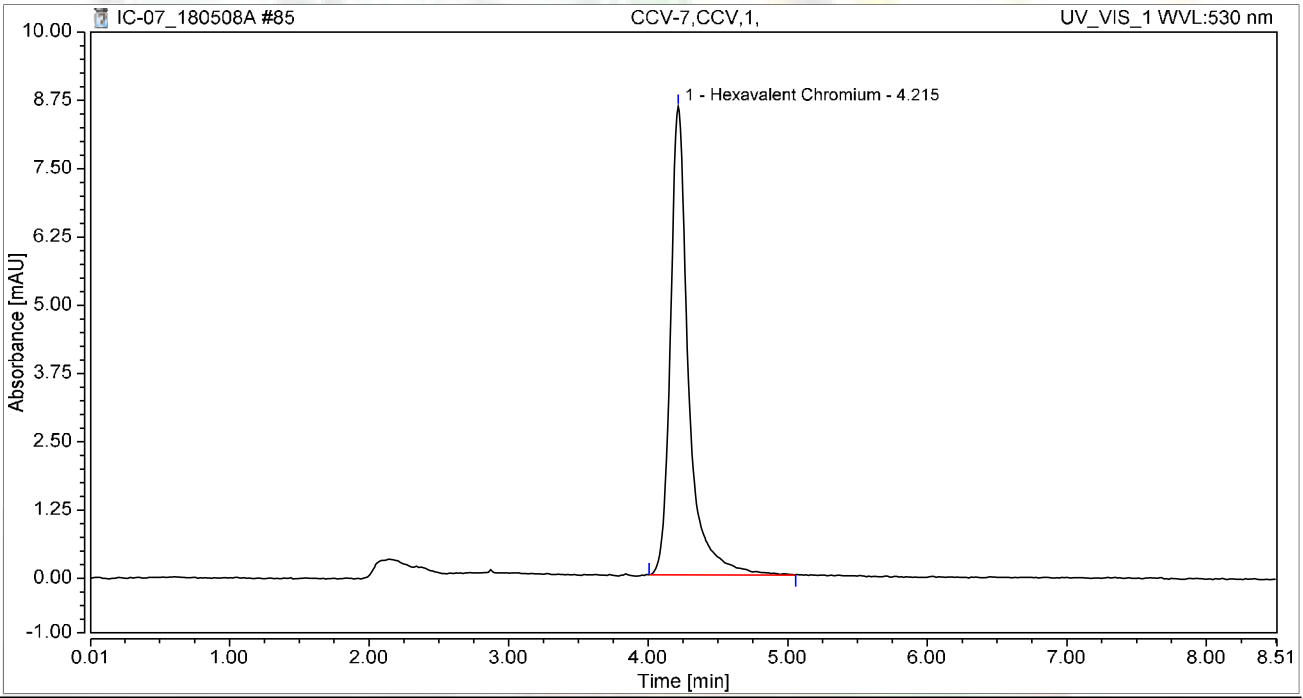
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 21:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

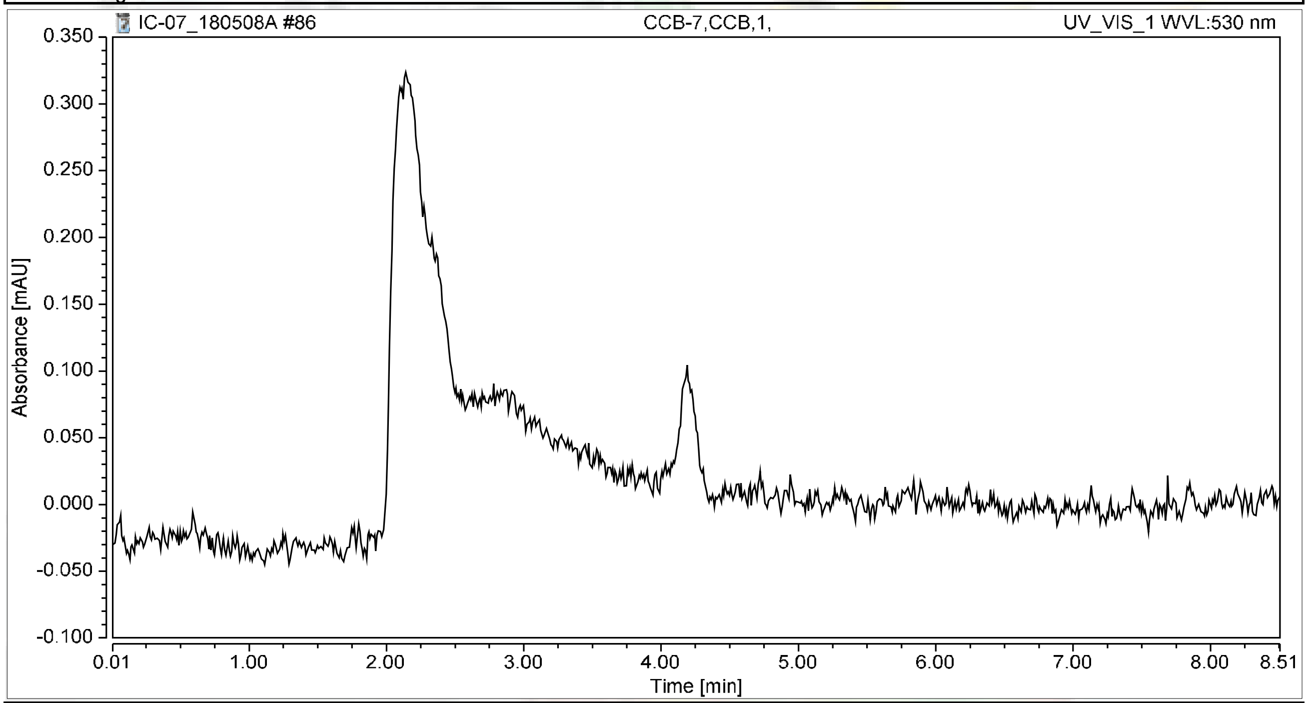
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.294	8.579	100.00	100.00	5.0409
Total:			**1.294**	**8.579**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 22:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180509A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/09/18 8:42 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/09/18 8:53 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/09/18 9:03 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/09/18 9:12 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/09/18 9:22 AM	Reported
15	MB-R123964	MBLK	1	Hexavalent Chromium	05/09/18 9:31 AM	Reported
16	LCS-R123964	LCS	1	Hexavalent Chromium	05/09/18 9:41 AM	Reported
17	N030251-004A	SAMP	25	Hexavalent Chromium	05/09/18 9:50 AM	Not Reported
18	N030251-004A	SAMP	5	Hexavalent Chromium	05/09/18 9:59 AM	Reported
19	N030251-004A	SAMP	125	Hexavalent Chromium	05/09/18 10:09 AM	Not Reported
20	N030251-003A	SAMP	5	Hexavalent Chromium	05/09/18 10:18 AM	Not Reported
21	N030251-003A	SAMP	25	Hexavalent Chromium	05/09/18 10:28 AM	Reported
22	N030251-003A	SAMP	125	Hexavalent Chromium	05/09/18 10:44 AM	Not Reported
23	N030251-001A	SAMP	5	Hexavalent Chromium	05/09/18 10:55 AM	Not Reported
24	N030251-002A	SAMP	5	Hexavalent Chromium	05/09/18 11:05 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/09/18 11:14 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/09/18 11:24 AM	Reported
27	N030251-004AMS	MS	25	Hexavalent Chromium	05/09/18 11:33 AM	Not Reported
28	N030251-003AMS	MS	5	Hexavalent Chromium	05/09/18 11:43 AM	Not Reported
29	N030251-004AMS	MS	5	Hexavalent Chromium	05/09/18 12:00 PM	Reported
30	N030251-003AMS	MS	25	Hexavalent Chromium	05/09/18 12:11 PM	Reported
31	N030186-001A	SAMP	1	Hexavalent Chromium	05/09/18 12:21 PM	Reported
32	N030251-004AMS	MS	1	Hexavalent Chromium	05/09/18 12:30 PM	Not Reported
33	N030251-004AREP	DUP	5	Hexavalent Chromium	05/09/18 12:40 PM	Reported
34	N030251-003ADUP	DUP	25	Hexavalent Chromium	05/09/18 12:49 PM	Reported
35	N030251-004A	SAMP	1	Hexavalent Chromium	05/09/18 12:59 PM	Not Reported
36	N030186-001AMS	MS	1	Hexavalent Chromium	05/09/18 1:08 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/09/18 1:18 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/09/18 1:27 PM	Reported
39	N030254-001A	SAMP	5	Hexavalent Chromium	05/09/18 1:37 PM	Not Reported
40	N030254-002A	SAMP	5	Hexavalent Chromium	05/09/18 1:46 PM	Not Reported
41	N030254-003A	SAMP	5	Hexavalent Chromium	05/09/18 1:56 PM	Reported
42	N030254-004A	SAMP	5	Hexavalent Chromium	05/09/18 2:05 PM	Reported

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IC7 RBA 5/11/2018 2:31 PM

RB 05/18/2018

INJECTION LOG: 180509A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030254-001AMS	MS	5	Hexavalent Chromium	05/09/18 2:14 PM	Not Reported
44	N030254-002AMS	MS	5	Hexavalent Chromium	05/09/18 2:24 PM	Not Reported
45	N030254-003AMS	MS	5	Hexavalent Chromium	05/09/18 2:33 PM	Reported
46	N030254-004AMS	MS	5	Hexavalent Chromium	05/09/18 2:43 PM	Reported
47	N030254-001AMS	MS	25	Hexavalent Chromium	05/09/18 2:52 PM	Reported
48	N030254-002AMS	MS	25	Hexavalent Chromium	05/09/18 3:02 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/09/18 3:11 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	05/09/18 3:21 PM	Reported
51	N030254-001A	SAMP	25	Hexavalent Chromium	05/09/18 3:30 PM	Reported
52	N030254-002A	SAMP	25	Hexavalent Chromium	05/09/18 3:40 PM	Reported
53	N030254-004AMSD	MSD	5	Hexavalent Chromium	05/09/18 3:49 PM	Reported
54	N030254-001AREP	DUP	25	Hexavalent Chromium	05/09/18 3:59 PM	Reported
55	N030254-002AREP	DUP	25	Hexavalent Chromium	05/09/18 4:08 PM	Reported
56	N030254-003AREP	DUP	5	Hexavalent Chromium	05/09/18 4:17 PM	Reported
57	N030254-004AREP	DUP	5	Hexavalent Chromium	05/09/18 4:27 PM	Reported
58	N030186-002A	SAMP	100	Hexavalent Chromium	05/09/18 4:36 PM	Reported
59	N030186-002AMS	MS	100	Hexavalent Chromium	05/09/18 4:49 PM	Reported
60	N030186-002AMSD	MSD	100	Hexavalent Chromium	05/09/18 5:00 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	05/09/18 5:09 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	05/09/18 5:19 PM	Reported
63	N030254-003A	SAMP	1	Hexavalent Chromium	05/09/18 5:28 PM	Not Reported
64	N030254-003AMS	MS	1	Hexavalent Chromium	05/09/18 5:38 PM	Not Reported
65	N030254-004A	SAMP	1	Hexavalent Chromium	05/09/18 5:47 PM	Not Reported
66	N030254-004AMS	MS	1	Hexavalent Chromium	05/09/18 5:57 PM	Not Reported
67	BLANK	BLANK	1	Hexavalent Chromium	05/09/18 6:06 PM	Not Reported
68	N030256-001A	SAMP	1	Hexavalent Chromium	05/09/18 6:15 PM	~~Not~~ Reported
69	N030256-002A	SAMP	1	Hexavalent Chromium	05/09/18 6:25 PM	Reported
70	N030256-002ADUP	DUP	1	Hexavalent Chromium	05/09/18 6:34 PM	Reported
71	N030256-003A	SAMP	1	Hexavalent Chromium	05/09/18 6:44 PM	~~Not~~ Reported
72	N030256-004A	SAMP	1	Hexavalent Chromium	05/09/18 6:53 PM	~~Not~~ Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	05/09/18 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	05/09/18 7:12 PM	Reported
75	N030256-005A	SAMP	1	Hexavalent Chromium	05/09/18 7:22 PM	Reported
76	N030256-006A	SAMP	1	Hexavalent Chromium	05/09/18 7:31 PM	Reported
77	N030256-007A	SAMP	1	Hexavalent Chromium	05/09/18 7:41 PM	Reported
78	N030256-008A	SAMP	1	Hexavalent Chromium	05/09/18 7:50 PM	Reported
79	N030256-009A	SAMP	1	Hexavalent Chromium	05/09/18 8:00 PM	Reported
80	N030256-010A	SAMP	1	Hexavalent Chromium	05/09/18 8:09 PM	Reported
81	N030123-022A	SAMP	1	Hexavalent Chromium	05/09/18 8:18 PM	Reported
82	N030123-022AMS	MS	1	Hexavalent Chromium	05/09/18 8:28 PM	Reported
83	N030228-004A	SAMP	20	Hexavalent Chromium	05/09/18 8:37 PM	Not Reported
84	CCV-7	CCV	1	Hexavalent Chromium	05/09/18 8:47 PM	Reported

INJECTION LOG: 180509A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	05/09/18 8:56 PM	Reported
86	N030123-023A	SAMP	5	Hexavalent Chromium	05/09/18 9:06 PM	Reported
87	N030123-023AMS	MS	5	Hexavalent Chromium	05/09/18 9:15 PM	Reported
88	N030123-023A	SAMP	25	Hexavalent Chromium	05/09/18 9:25 PM	Not Reported
89	N030123-023AMS	MS	25	Hexavalent Chromium	05/09/18 9:34 PM	Not Reported
90	CCV-8	CCV1	1	Hexavalent Chromium	05/09/18 9:44 PM	Reported
91	CCB-8	CCB	1	Hexavalent Chromium	05/09/18 9:53 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180509A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/May/18 22:23:52**
No. of Injections:	**94**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/09/2018 08:42	Finished	BLANK
11	BLANK	2	1000	Unknown		05/09/2018 08:53	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		05/09/2018 09:03	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/09/2018 09:12	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		05/09/2018 09:22	Finished	CCB R180409B
15	MB-H2O,MBLK,1,	6	1000	Unknown		05/09/2018 09:31	Finished	MB R180409B
16	LCS-H2O,LCS,1,	7	1000	Unknown		05/09/2018 09:41	Finished	LCS, IWST-180129B
17	N030251-004A,SAMF	8	1000	Unknown		05/09/2018 09:50	Finished	SAMP,0.4>10mL
18	N030251-004A,SAMF	9	1000	Unknown		05/09/2018 09:59	Finished	SAMP,2>10mL
19	N030251-004A,SAMF	10	1000	Unknown		05/09/2018 10:09	Finished	SAMP,0.08>10mL
20	N030251-003A,SAMF	11	1000	Unknown		05/09/2018 10:18	Finished	SAMP,2>10mL
21	N030251-003A,SAMF	12	1000	Unknown		05/09/2018 10:28	Finished	SAMP,0.4>10mL
22	N030251-003A,SAMF	13	1000	Unknown		05/09/2018 10:44	Finished	SAMP,0.08>10mL
23	N030251-001A,SAMF	14	1000	Unknown		05/09/2018 10:55	Finished	SAMP,2>10mL
24	N030251-002A,SAMF	15	1000	Unknown		05/09/2018 11:05	Finished	SAMP,2>10mL
25	CCV-2,CCV1,1,	16	1000	Unknown		05/09/2018 11:14	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	17	1000	Unknown		05/09/2018 11:24	Finished	CCB R180409B
27	N030251-004AMS,MS	18	1000	Unknown		05/09/2018 11:33	Finished	MS (1ppb), IWST-180129B,0.4
28	N030251-003AMS,MS	19	1000	Unknown		05/09/2018 11:43	Finished	MS (1ppb), IWST-180129B,2>1
29	N030251-004AMS,MS	1	1000	Unknown		05/09/2018 12:00	Finished	MS (1ppb), IWST-180129B,2>1
30	N030251-003AMS,MS	2	1000	Unknown		05/09/2018 12:11	Finished	MS (1ppb), IWST-180129B,0.4
31	N030186-001A,SAMF	3	1000	Unknown		05/09/2018 12:21	Finished	SAMP,10mL
32	N030251-004AMS,MS	4	1000	Unknown		05/09/2018 12:30	Finished	MS (1ppb), IWST-180129B,10
33	N030251-004AREP,D	5	1000	Unknown		05/09/2018 12:40	Finished	REP,2>10mL
34	N030251-003A~~REP~~,DDUP	6	1000	Unknown		05/09/2018 12:49	Finished	REP,0.4>10mL
35	N030251-004A,SAMF	7	1000	Unknown		05/09/2018 12:59	Finished	SAMP,10mL
36	N030186-001AMS,MS	8	1000	Unknown		05/09/2018 13:08	Finished	MS (1ppb), IWST-180129B,10
37	CCV-3,CCV,1,	9	1000	Unknown		05/09/2018 13:18	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	10	1000	Unknown		05/09/2018 13:27	Finished	CCB R180418A
39	N030254-001A,SAMF	12	1000	Unknown		05/09/2018 13:37	Finished	SAMP,2>10mL
40	N030254-002A,SAMF	13	1000	Unknown		05/09/2018 13:46	Finished	SAMP,2>10mL
41	N030254-003A,SAMF	14	1000	Unknown		05/09/2018 13:56	Finished	SAMP,2>10mL
42	N030254-004A,SAMF	15	1000	Unknown		05/09/2018 14:05	Finished	SAMP,2>10mL
43	N030254-001AMS,MS	16	1000	Unknown		05/09/2018 14:14	Finished	MS (1ppb), IWST-180129B,2>1
44	N030254-002AMS,MS	17	1000	Unknown		05/09/2018 14:24	Finished	MS (1ppb), IWST-180129B,2>1
45	N030254-003AMS,MS	18	1000	Unknown		05/09/2018 14:33	Finished	MS (1ppb), IWST-180129B,2>1
46	N030254-004AMS,MS	19	1000	Unknown		05/09/2018 14:43	Finished	MS (1ppb), IWST-180129B,2>1
47	N030254-001AMS,MS	21	1000	Unknown		05/09/2018 14:52	Finished	MS (1ppb), IWST-180129B,0.4
48	N030254-002AMS,MS	22	1000	Unknown		05/09/2018 15:02	Finished	MS (1ppb), IWST-180129B,0.4
49	CCV-4,CCV1,1,	23	1000	Unknown		05/09/2018 15:11	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	24	1000	Unknown		05/09/2018 15:21	Finished	CCB R180418A
51	N030254-001A,SAMF	25	1000	Unknown		05/09/2018 15:30	Finished	SAMP,0.4>10mL
52	N030254-002A,SAMF	26	1000	Unknown		05/09/2018 15:40	Finished	SAMP,0.4>10mL
53	N030254-004AMSD,M	27	1000	Unknown		05/09/2018 15:49	Finished	MSD (1ppb), IWST-180129B,0.
54	N030254-001AREP,D	28	1000	Unknown		05/09/2018 15:59	Finished	REP,0.4>10mL
55	N030254-002AREP,D	29	1000	Unknown		05/09/2018 16:08	Finished	REP,0.4>10mL
56	N030254-003AREP,D	30	1000	Unknown		05/09/2018 16:17	Finished	REP,2>10mL
57	N030254-004AREP,D	31	1000	Unknown		05/09/2018 16:27	Finished	REP,2>10mL
58	N030186-002A,SAMF	32	1000	Unknown		05/09/2018 16:36	Finished	SAMP,0.1>10mL
59	N030186-002AMS,MS	1	1000	Unknown		05/09/2018 16:49	Finished	MS (5ppb), IWST-180129B,0.1
60	N030186-002AMSD,M	2	1000	Unknown		05/09/2018 17:00	Finished	MSD (5ppb), IWST-180129B,0.

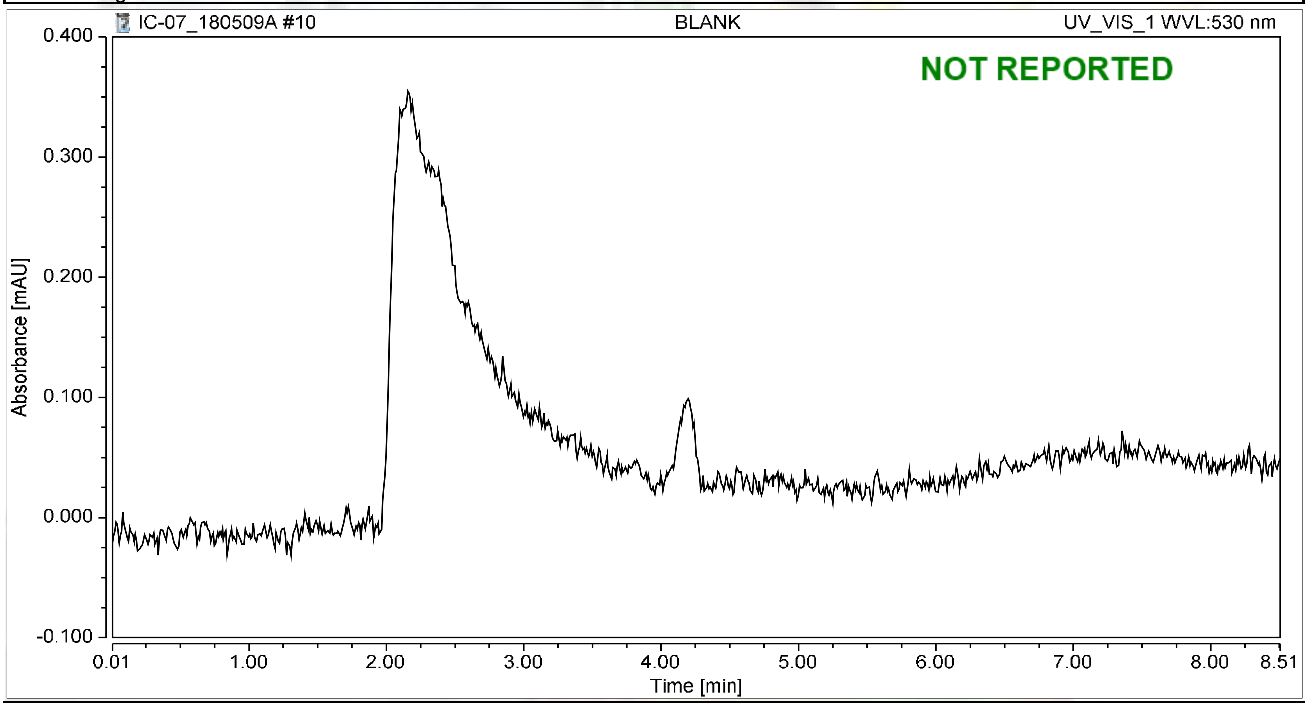
61	CCV-5,CCV,1,	3	1000	Unknown		05/09/2018 17:09	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	4	1000	Unknown		05/09/2018 17:19	Finished	CCB R180409B
63	N030254-003A,SAMF	5	1000	Unknown		05/09/2018 17:28	Finished	SAMP,10mL
64	N030254-003AMS,MS	6	1000	Unknown		05/09/2018 17:38	Finished	MS (1ppb), IWST-180129B,10
65	N030254-004A,SAMF	7	1000	Unknown		05/09/2018 17:47	Finished	SAMP,10mL
66	N030254-004AMS,MS	8	1000	Unknown		05/09/2018 17:57	Finished	MS (1ppb), IWST-180129B,10
67	BLANK	9	1000	Unknown		05/09/2018 18:06	Finished	BLANK
68	N030256-001A,SAMF	10	1000	Unknown		05/09/2018 18:15	Finished	SAMP,10mL
69	N030256-002A,SAMF	11	1000	Unknown		05/09/2018 18:25	Finished	SAMP,10mL
70	N030256-002ADUP,D	12	1000	Unknown		05/09/2018 18:34	Finished	DUP,10mL
71	N030256-003A,SAMF	13	1000	Unknown		05/09/2018 18:44	Finished	SAMP,10mL
72	N030256-004A,SAMF	14	1000	Unknown		05/09/2018 18:53	Finished	SAMP,10mL
73	CCV-6,CCV1,1,	15	1000	Unknown		05/09/2018 19:03	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	16	1000	Unknown		05/09/2018 19:12	Finished	CCB R180409B
75	N030256-005A,SAMF	17	1000	Unknown		05/09/2018 19:22	Finished	SAMP,10mL
76	N030256-006A,SAMF	18	1000	Unknown		05/09/2018 19:31	Finished	SAMP,10mL
77	N030256-007A,SAMF	19	1000	Unknown		05/09/2018 19:41	Finished	SAMP,10mL
78	N030256-008A,SAMF	20	1000	Unknown		05/09/2018 19:50	Finished	SAMP,10mL
79	N030256-009A,SAMF	21	1000	Unknown		05/09/2018 20:00	Finished	SAMP,10mL
80	N030256-010A,SAMF	22	1000	Unknown		05/09/2018 20:09	Finished	SAMP,10mL
81	N030123-022A,SAMF	23	1000	Unknown		05/09/2018 20:18	Finished	SAMP,10mL
82	N030123-022AMS,MS	24	1000	Unknown		05/09/2018 20:28	Finished	MS (1ppb), IWST-180129B,10
83	N030228-004A,SAMF	25	1000	Unknown		05/09/2018 20:37	Finished	SAMP,0.5>10mL
84	CCV-7,CCV,1,	26	1000	Unknown		05/09/2018 20:47	Finished	CCV @5ppb, IWST-180129A
85	CCB-7,CCB,1,	27	1000	Unknown		05/09/2018 20:56	Finished	CCB R180409B
86	N030123-023A,SAMF	28	1000	Unknown		05/09/2018 21:06	Finished	SAMP,2>10mL
87	N030123-023AMS,MS	29	1000	Unknown		05/09/2018 21:15	Finished	MS (1ppb), IWST-180129B,2>1
88	N030123-023A,SAMF	30	1000	Unknown		05/09/2018 21:25	Finished	SAMP,0.4>10mL
89	N030123-023AMS,MS	31	1000	Unknown		05/09/2018 21:34	Finished	MS (1ppb), IWST-180129B,0.4
90	CCV-8,CCV1,1,	32	1000	Unknown		05/09/2018 21:44	Finished	CCV @10ppb, IWST-180129A
91	CCB-8,CCB,1,	33	1000	Unknown		05/09/2018 21:53	Finished	CCB R180409B
92	SHUTDOWN	34	1000	Unknown		05/09/2018 22:03	Finished	
93	Eluent: R180508A	35	1000	Unknown		n.a.	Finished	Eluent
94	PCR: R180508B	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 08:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

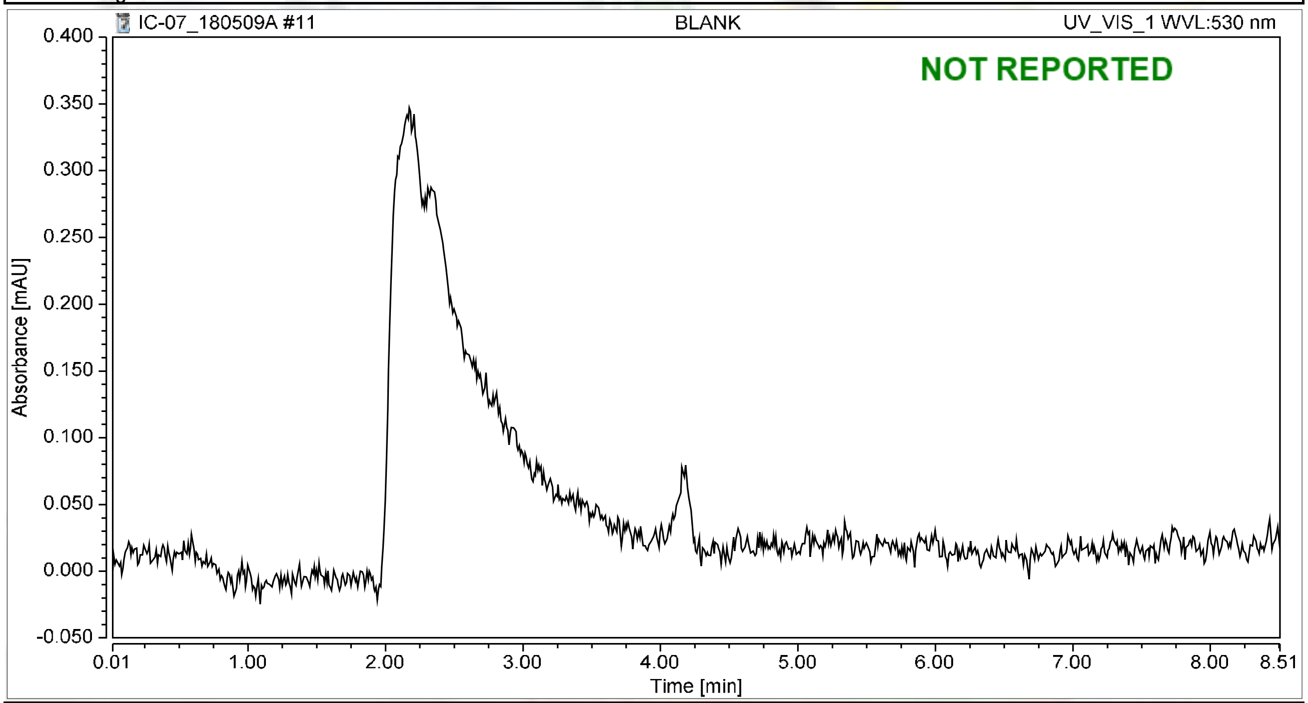
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 08:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

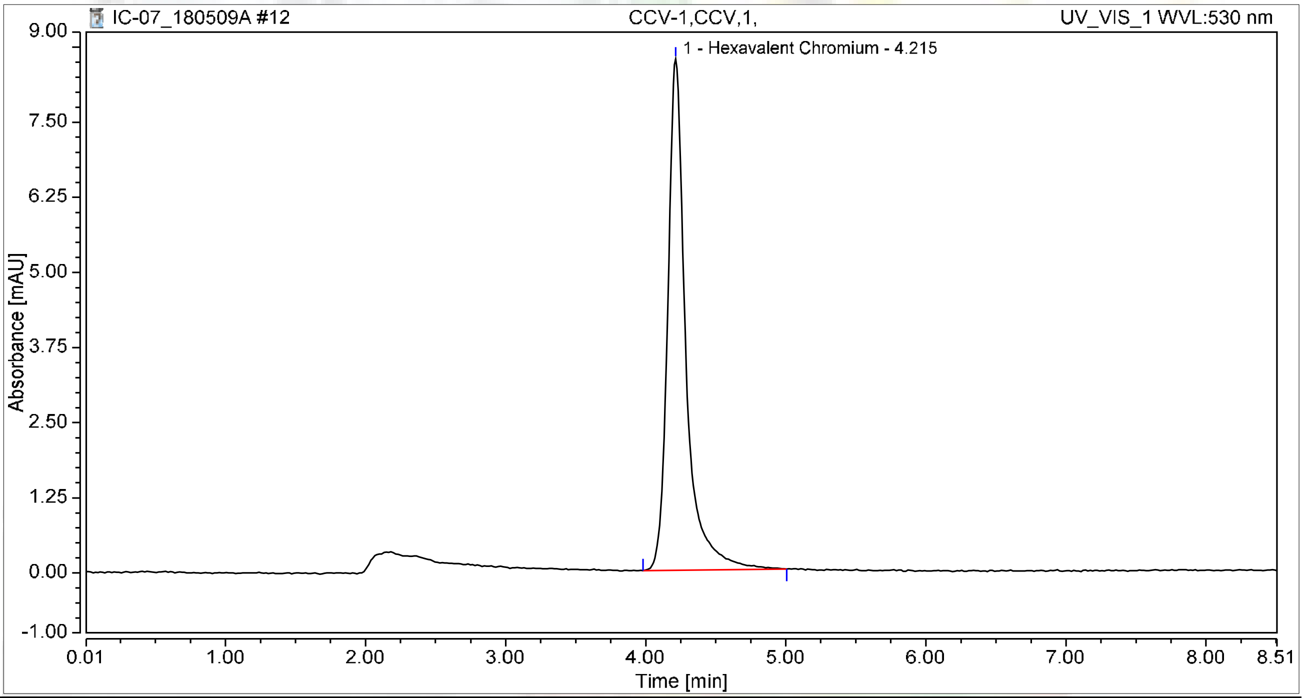
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 09:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

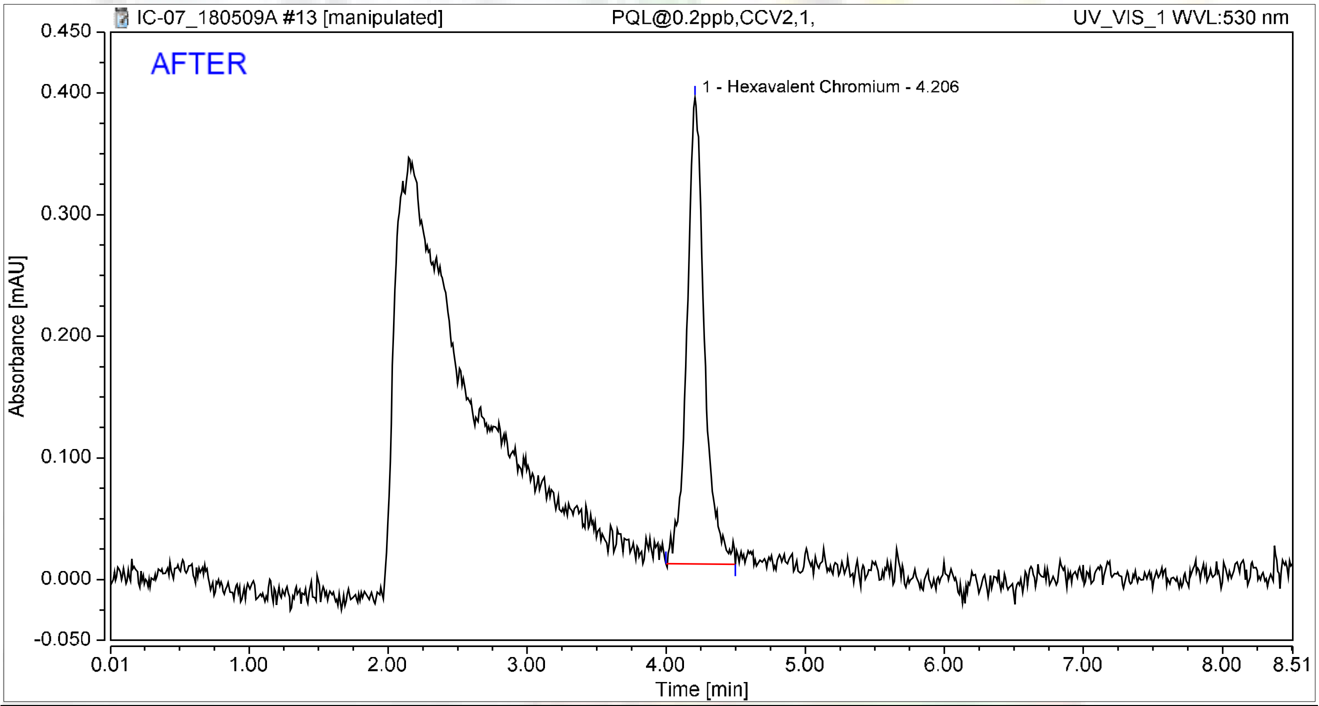
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.284	8.507	100.00	100.00	5.0035
Total:			**1.284**	**8.507**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 09:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.056	0.383	100.00	100.00	0.2187
Total:			**0.056**	**0.383**	**100.00**	**100.00**	

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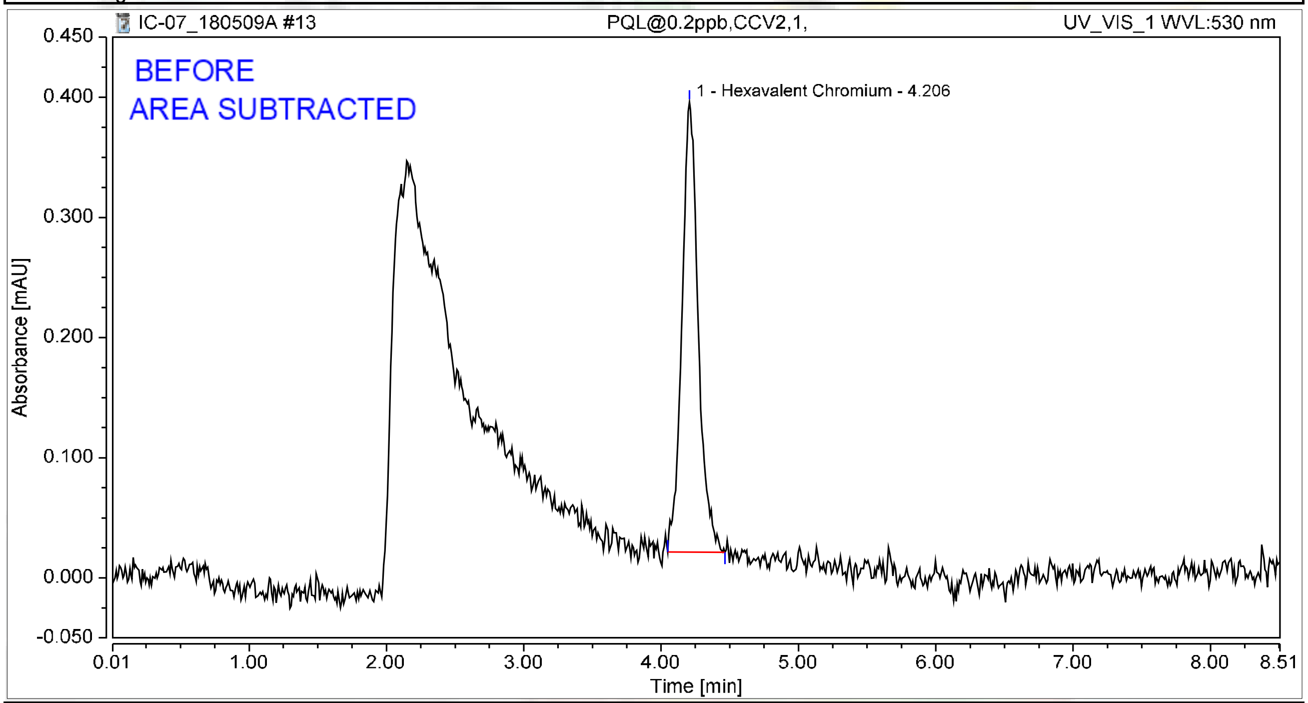
Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 09:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.052	0.374	100.00	100.00	0.2011
Total:			**0.052**	**0.374**	**100.00**	**100.00**	

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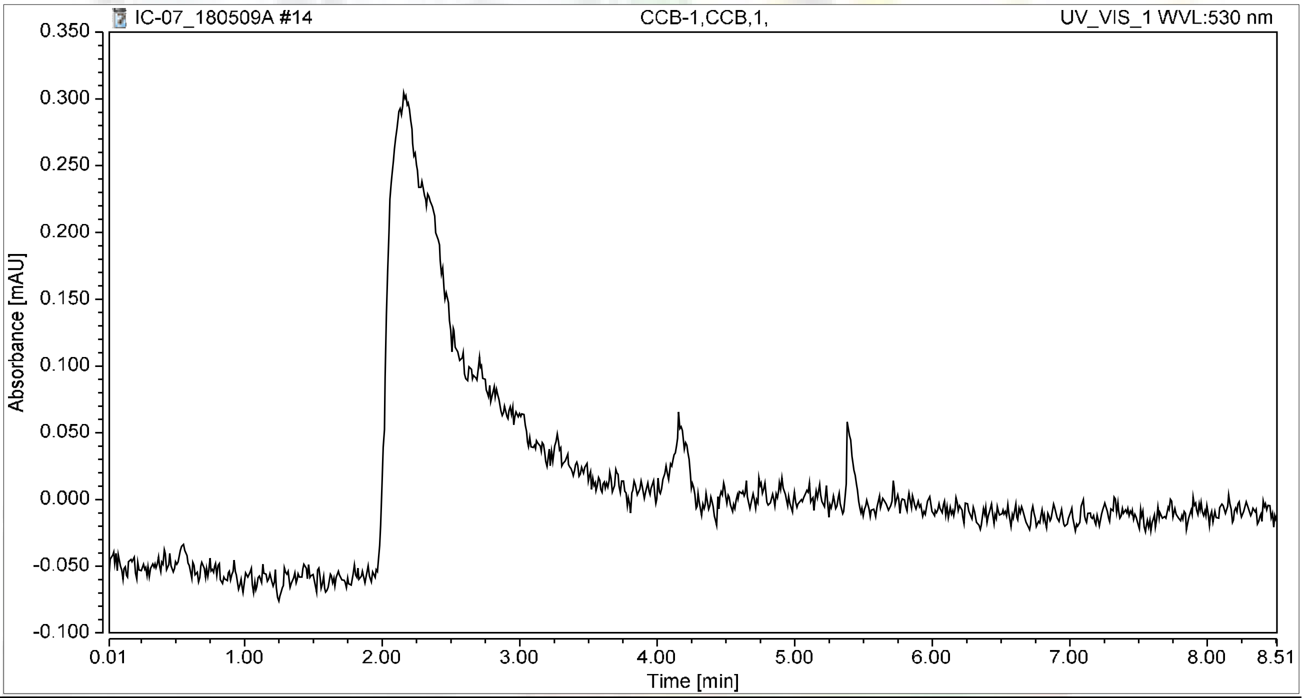
Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

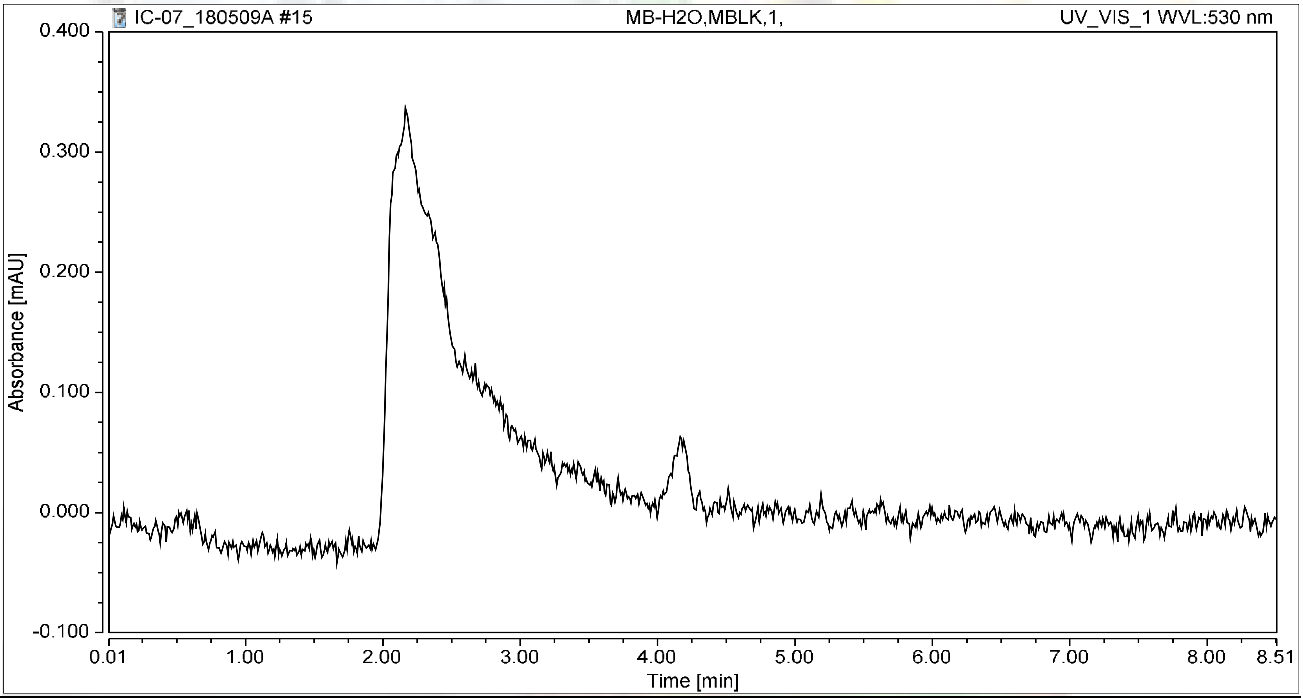
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 09:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

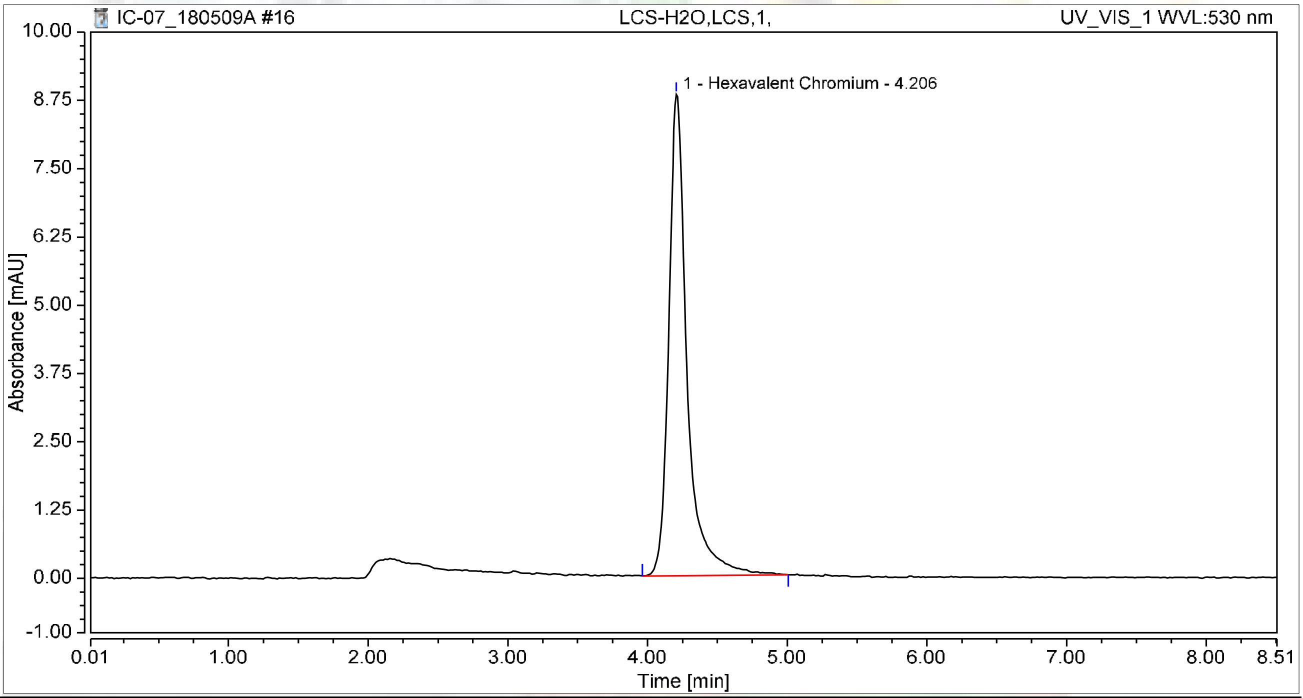
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 09:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

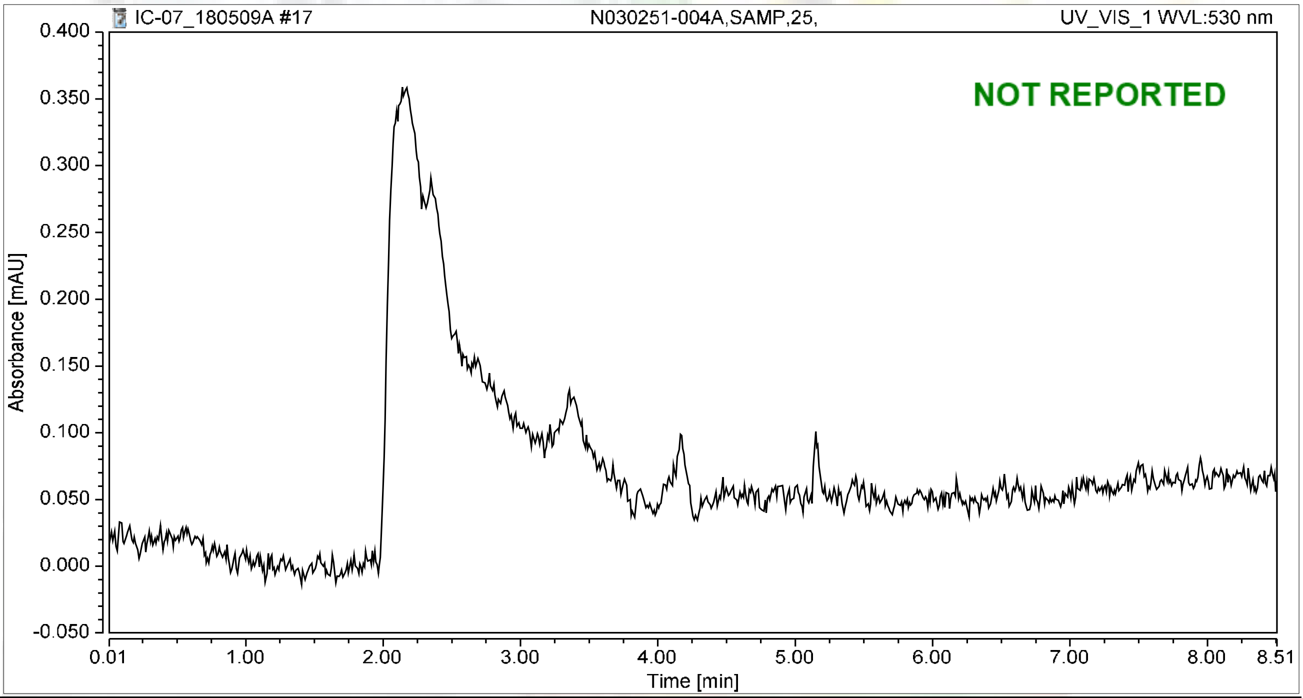
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.338	8.813	100.00	100.00	5.2129
Total:			**1.338**	**8.813**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-004A,SAMP,25,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 09:50**	*Sample Weight:*	**1.0000**

Chromatogram



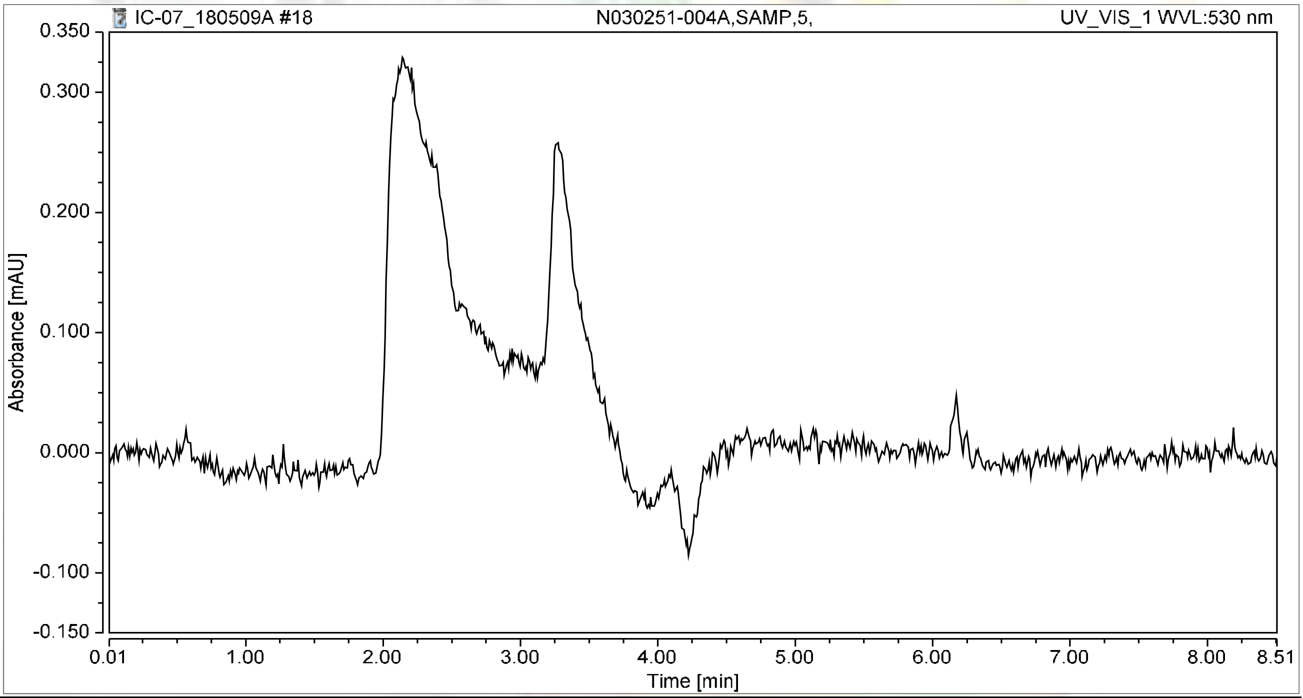
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details			
Injection Name:	**N030251-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 09:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

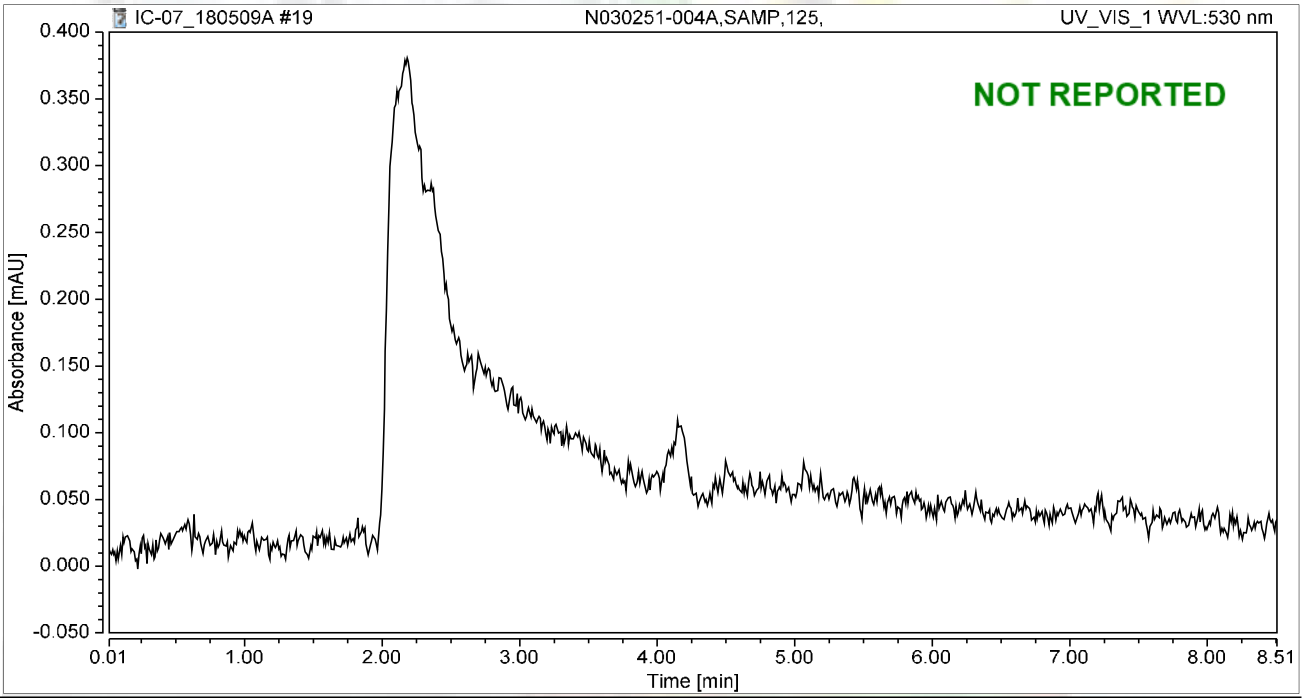
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-004A,SAMP,125,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

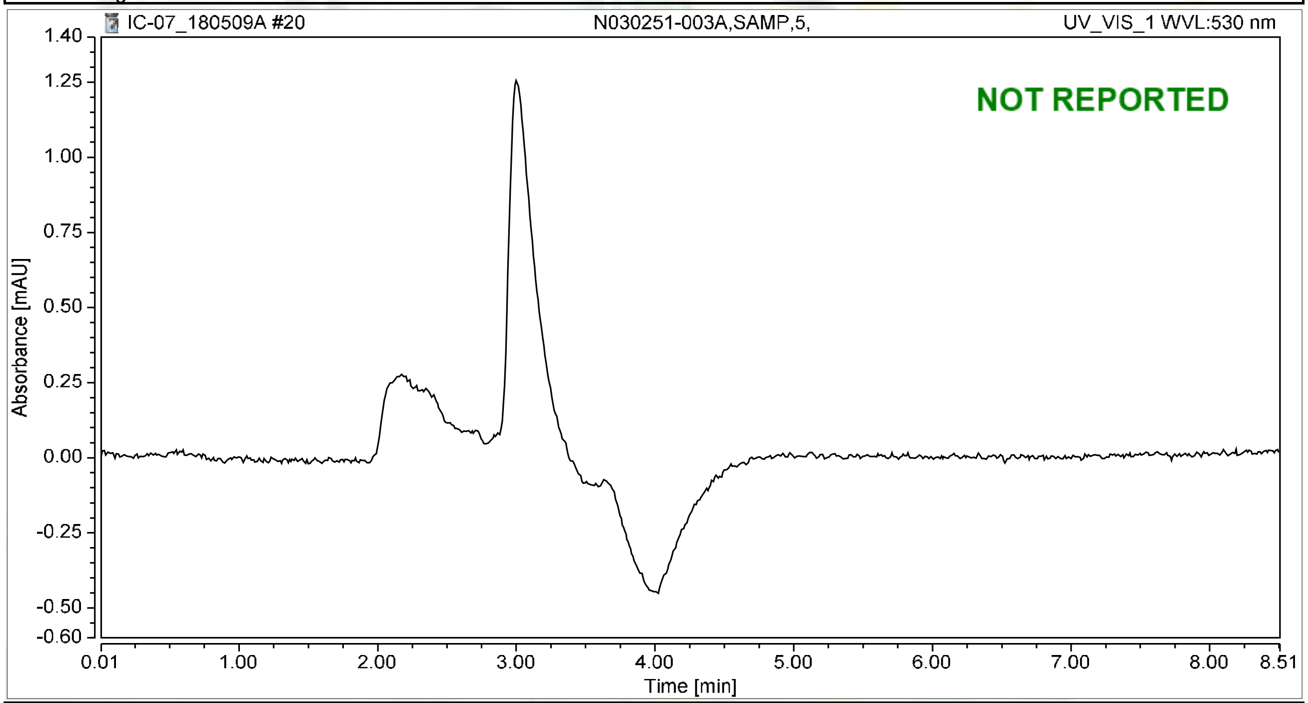
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-003A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

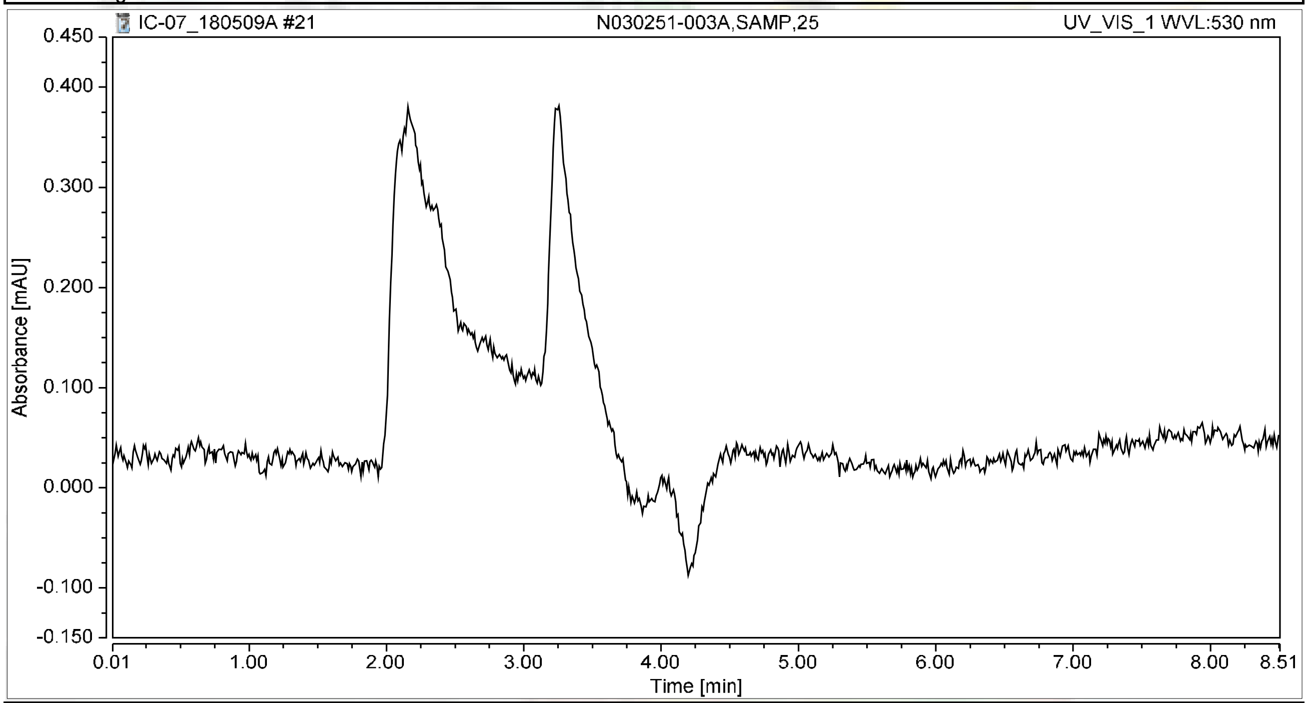
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-003A,SAMP,25**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 10:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

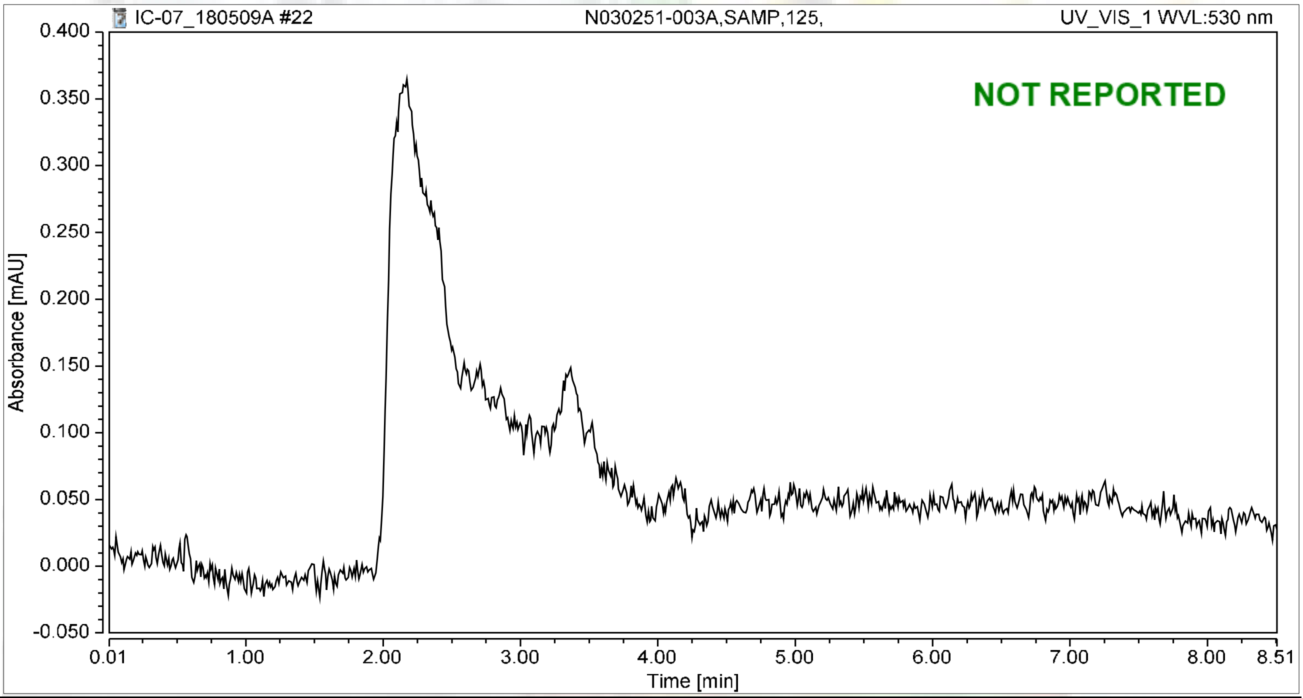
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-003A,SAMP,125,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 10:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

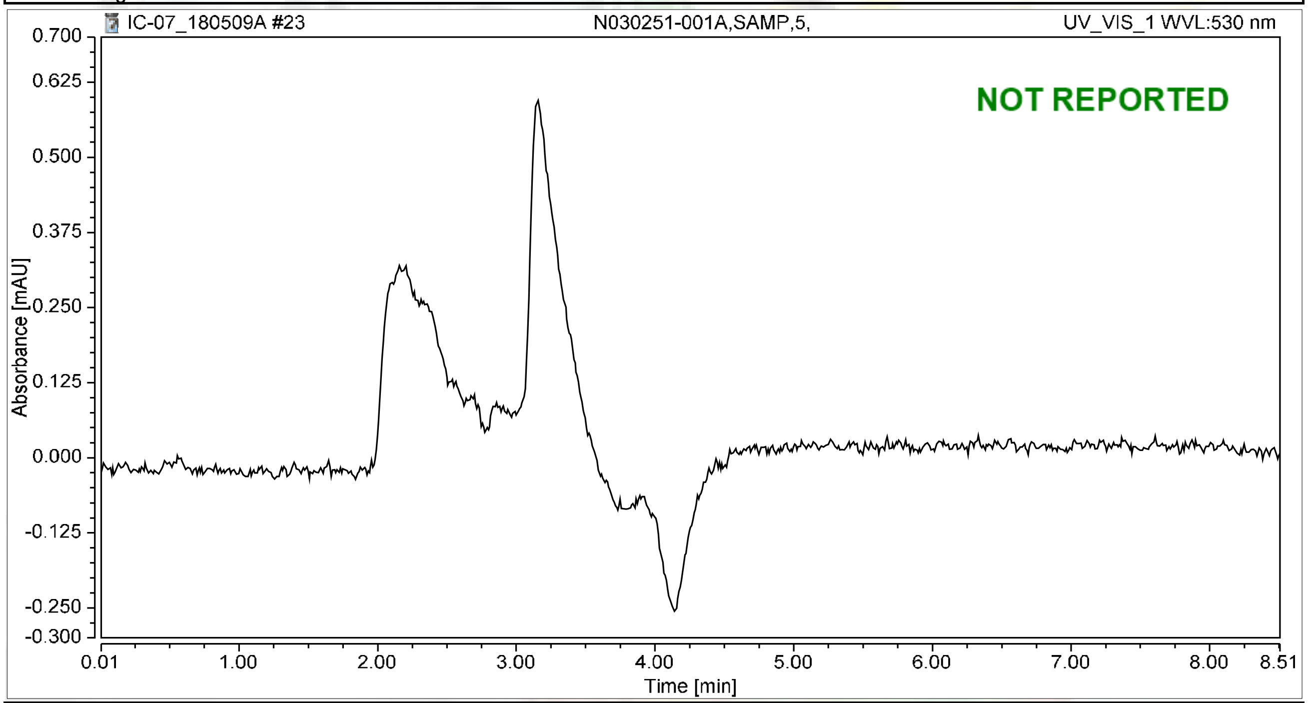
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 10:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

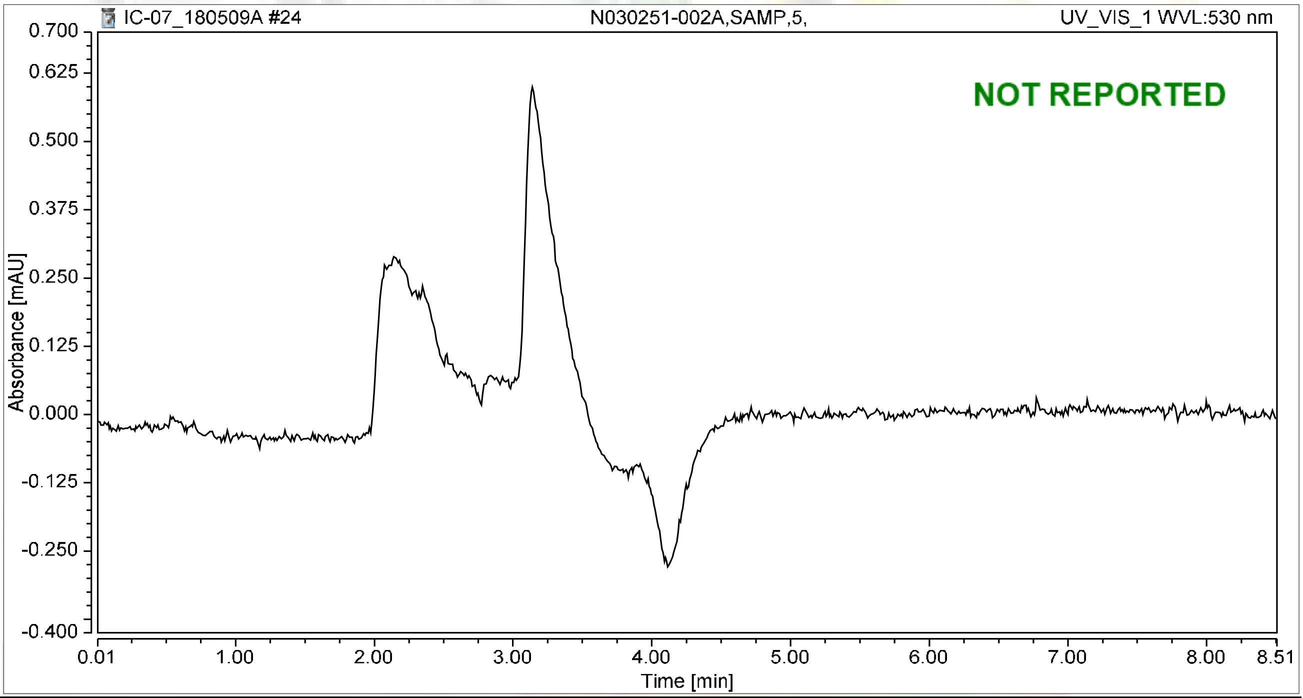
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 11:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

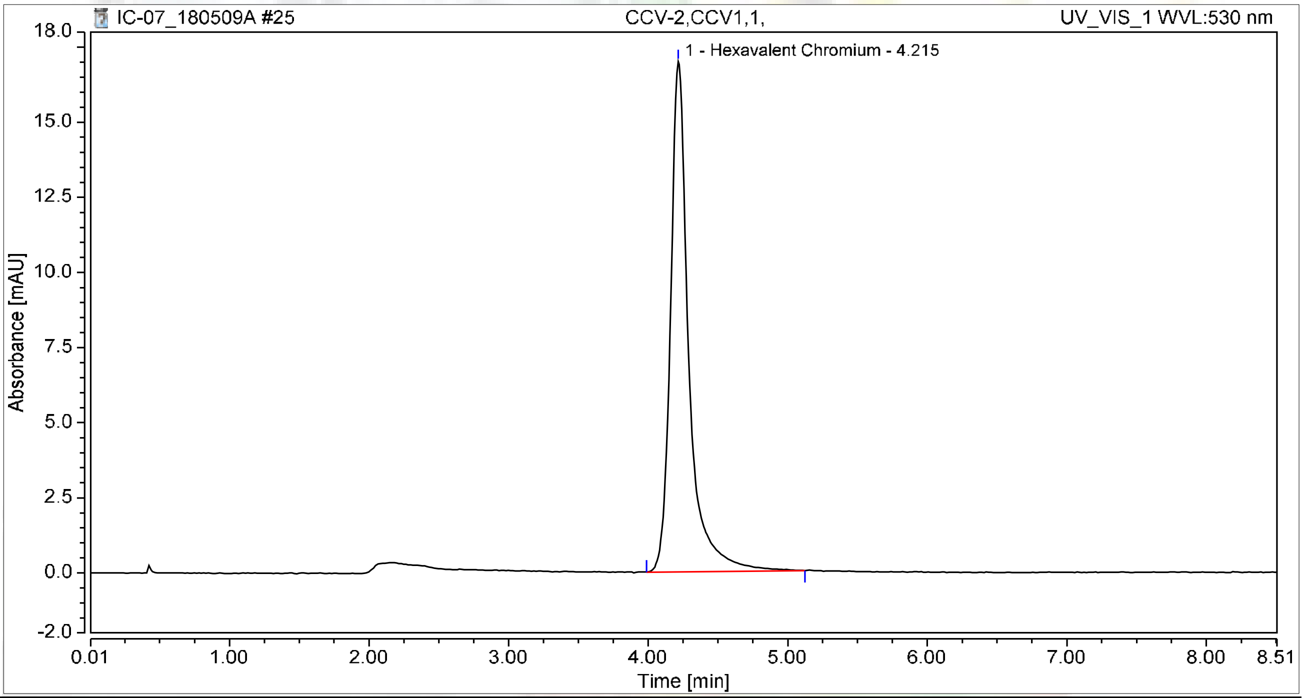
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 11:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

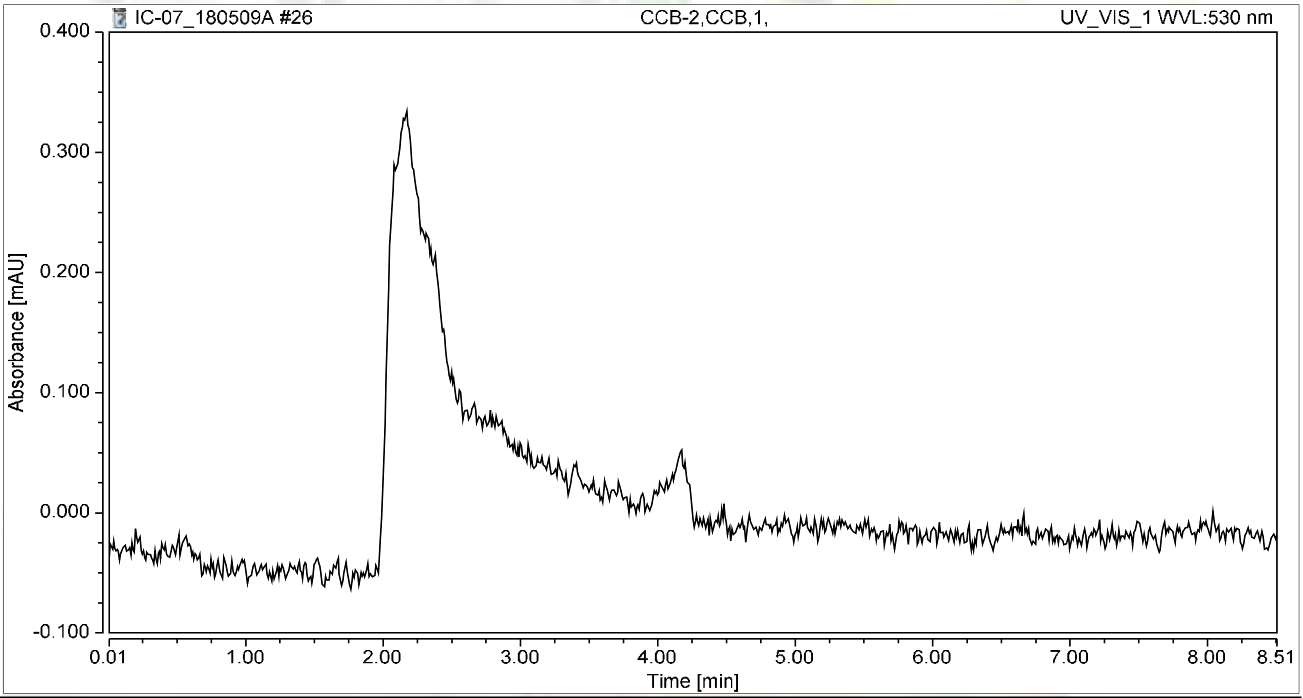
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.585	16.981	100.00	100.00	10.0721
Total:			**2.585**	**16.981**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 11:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

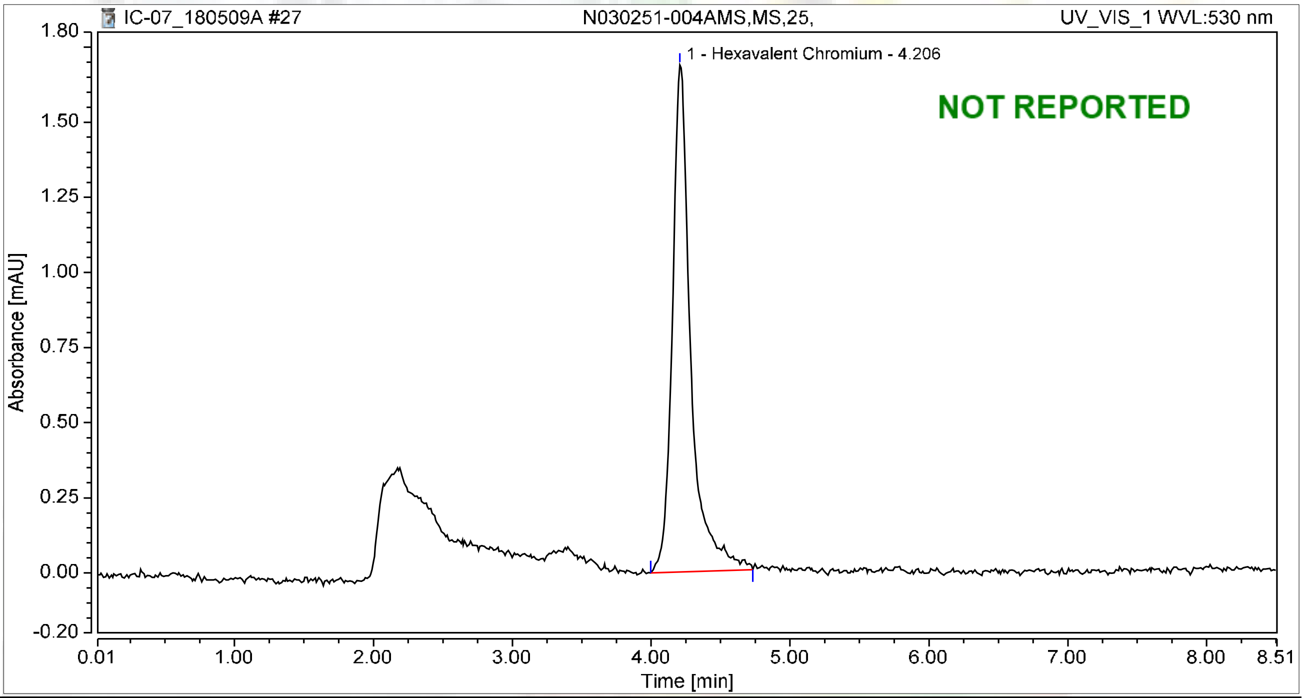
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-004AMS,MS,25,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

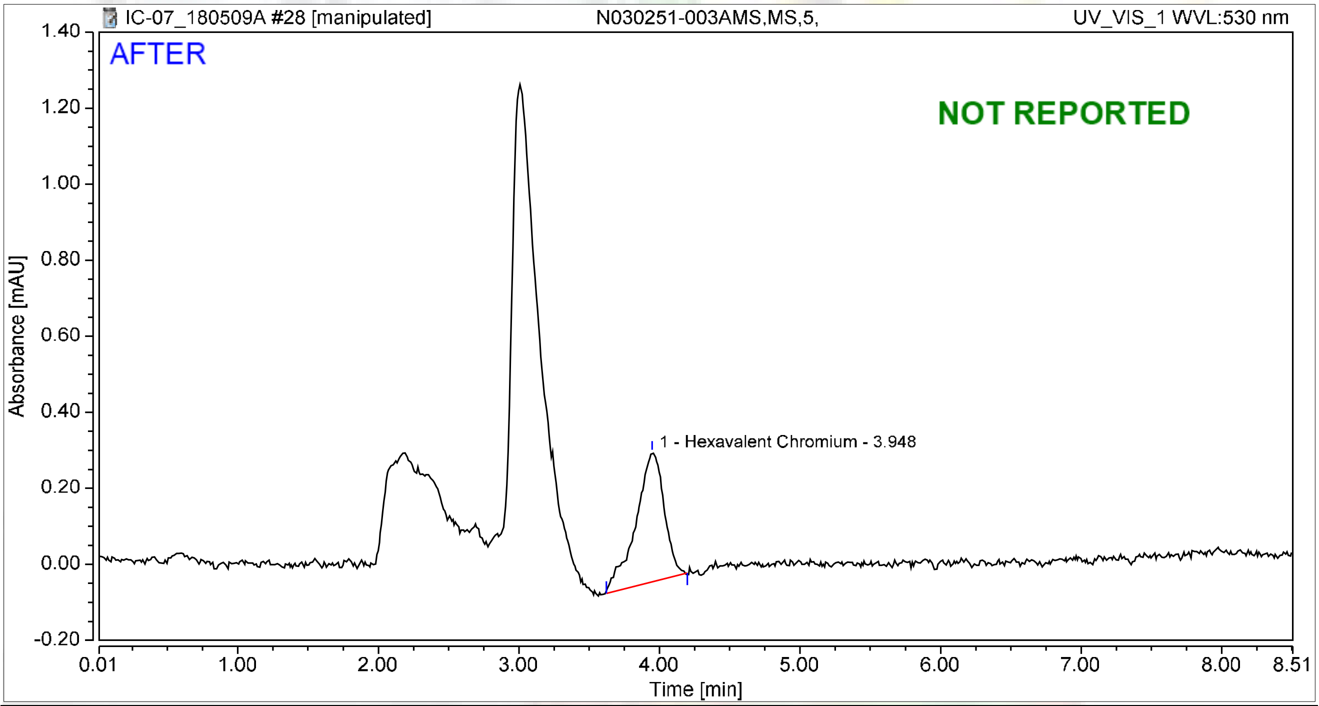
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.260	1.687	100.00	100.00	1.0123
Total:			**0.260**	**1.687**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-003AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.948	0.080	0.339	100.00	100.00	0.3104
Total:			**0.080**	**0.339**	**100.00**	**100.00**	

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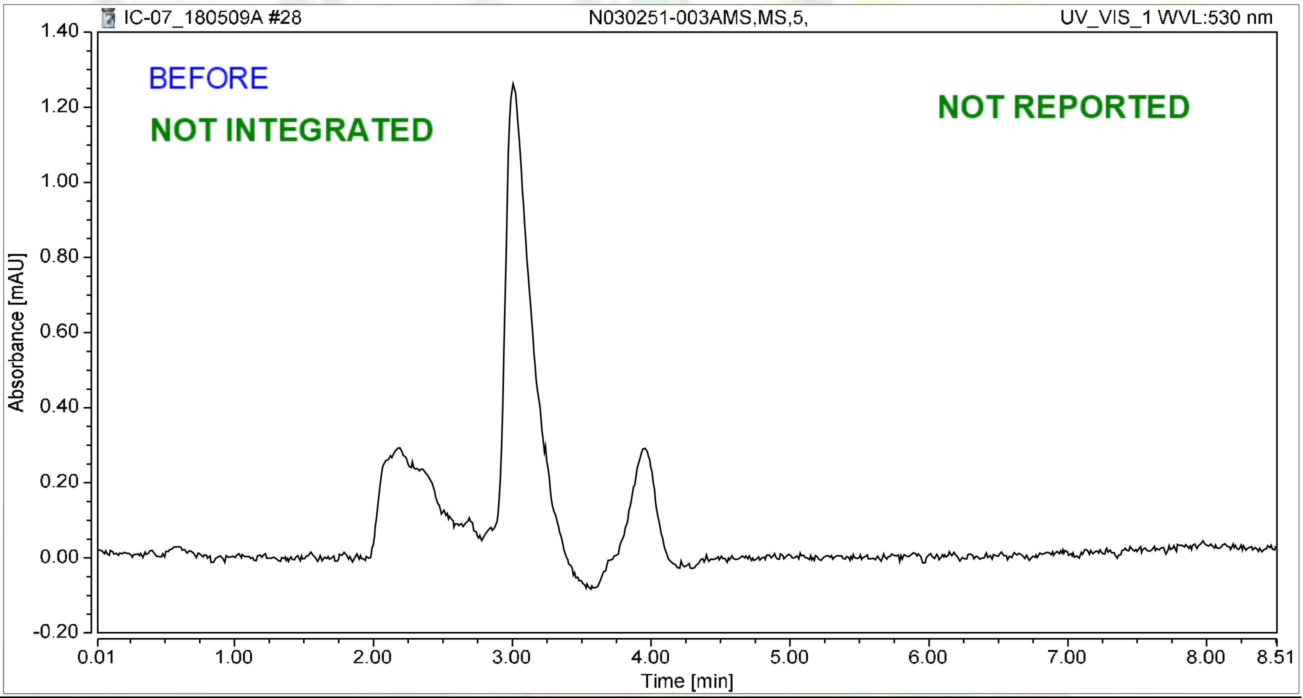
Chromatogram and Results

Injection Details			
Injection Name:	**N030251-003AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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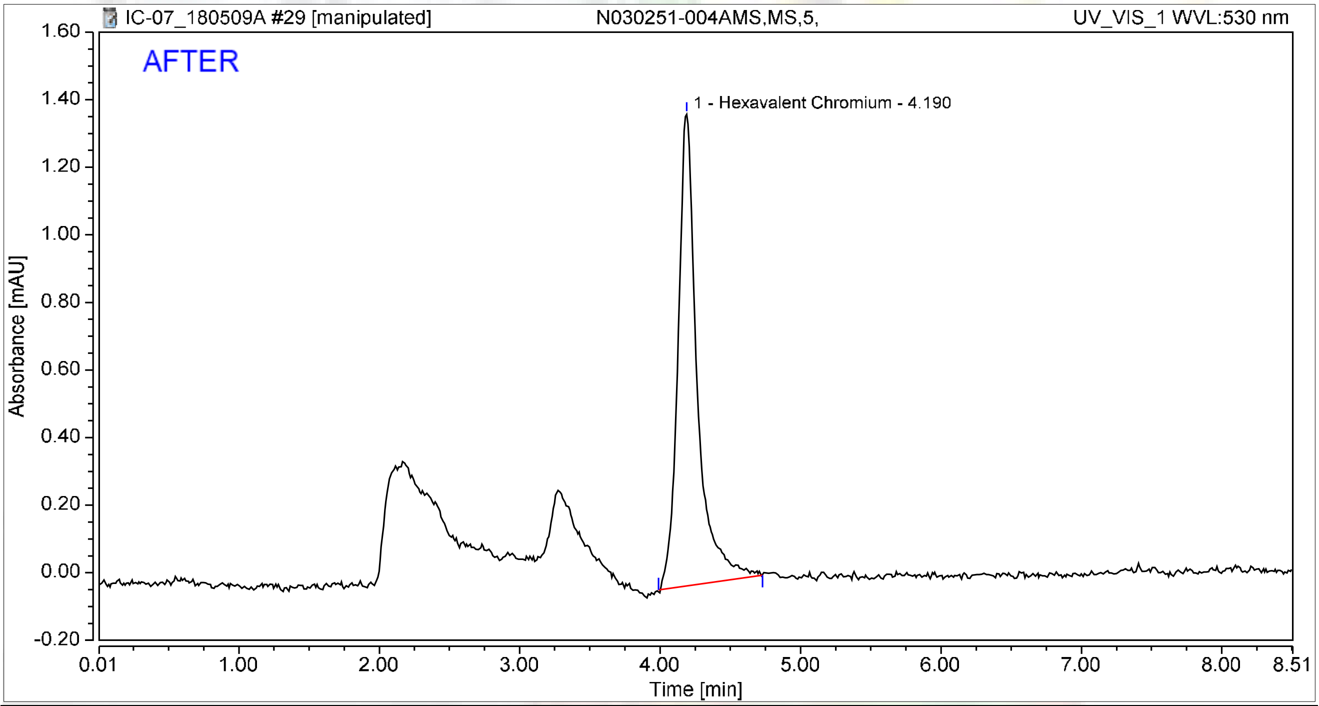
Chromatogram and Results

Injection Details

Injection Name:	**N030251-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.222	1.396	100.00	100.00	0.8643
Total:			**0.222**	**1.396**	**100.00**	**100.00**	

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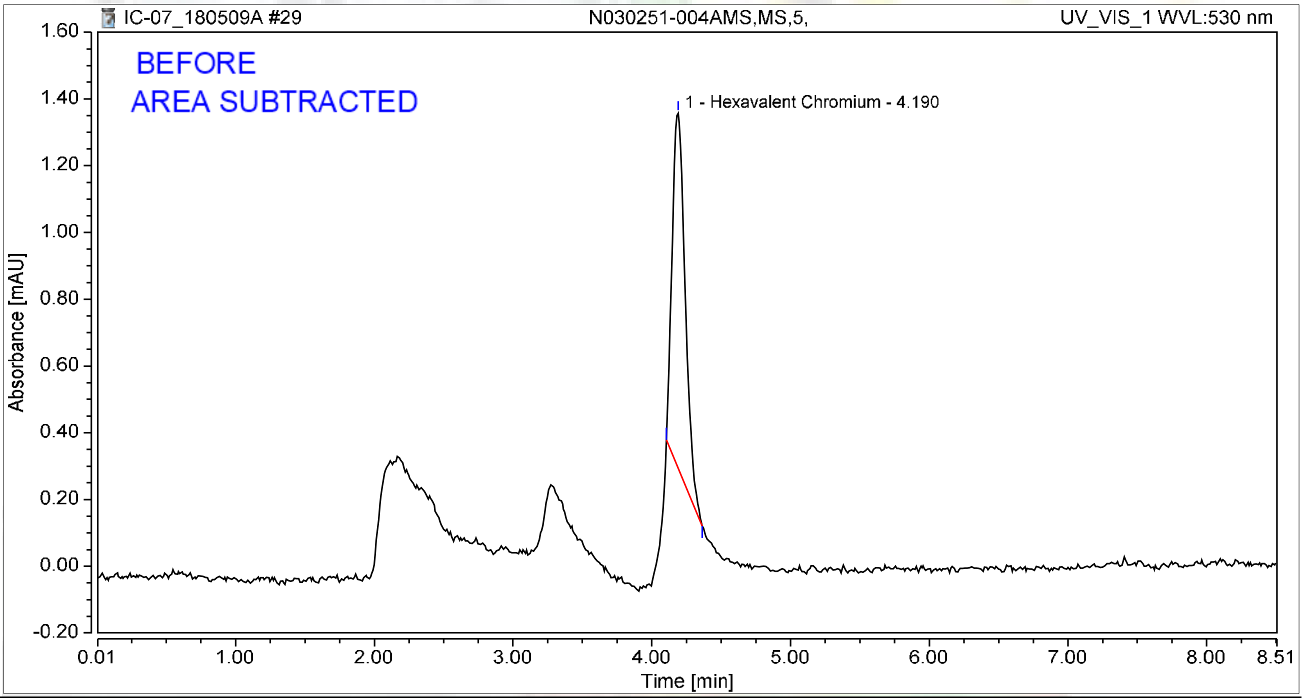
Chromatogram and Results

Injection Details

Injection Name:	**N030251-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.115	1.061	100.00	100.00	0.4493
Total:			**0.115**	**1.061**	**100.00**	**100.00**	

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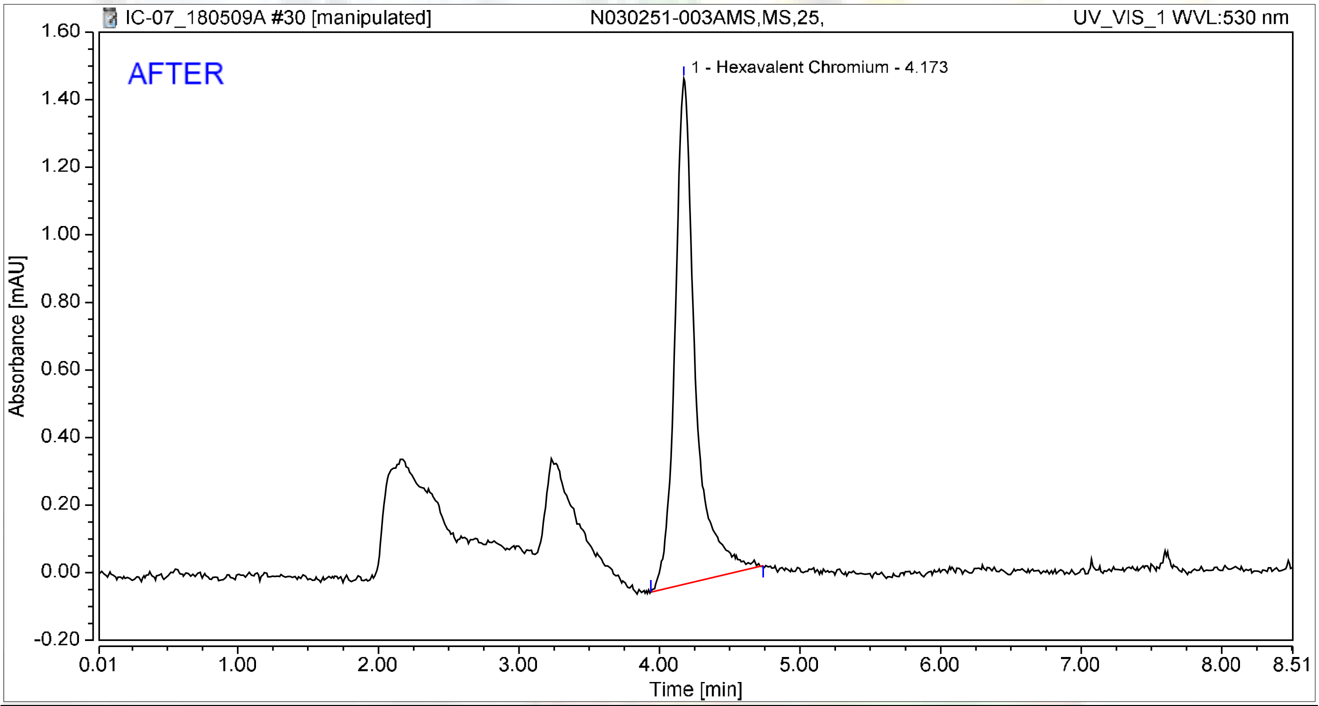
Chromatogram and Results

Injection Details

Injection Name:	**N030251-003AMS,MS,25,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.252	1.496	100.00	100.00	0.9811
Total:			**0.252**	**1.496**	**100.00**	**100.00**	

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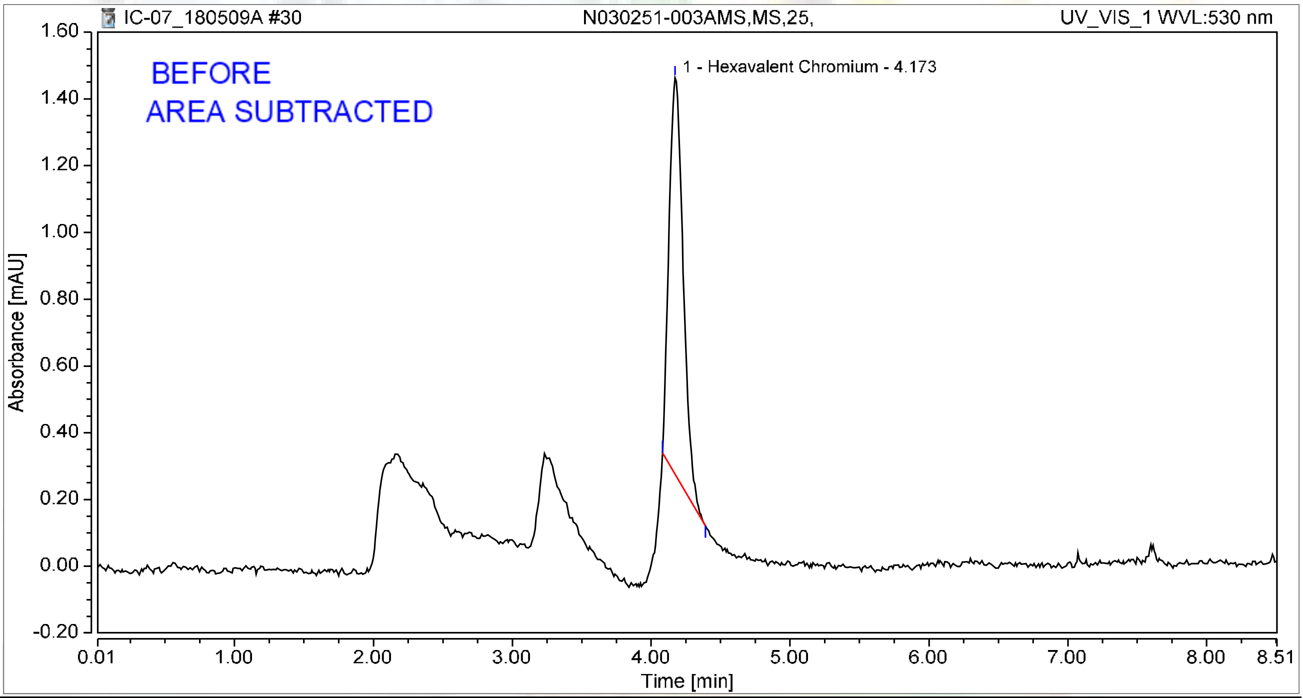
Chromatogram and Results

Injection Details

Injection Name:	**N030251-003AMS,MS,25,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.141	1.188	100.00	100.00	0.5494
Total:			**0.141**	**1.188**	**100.00**	**100.00**	

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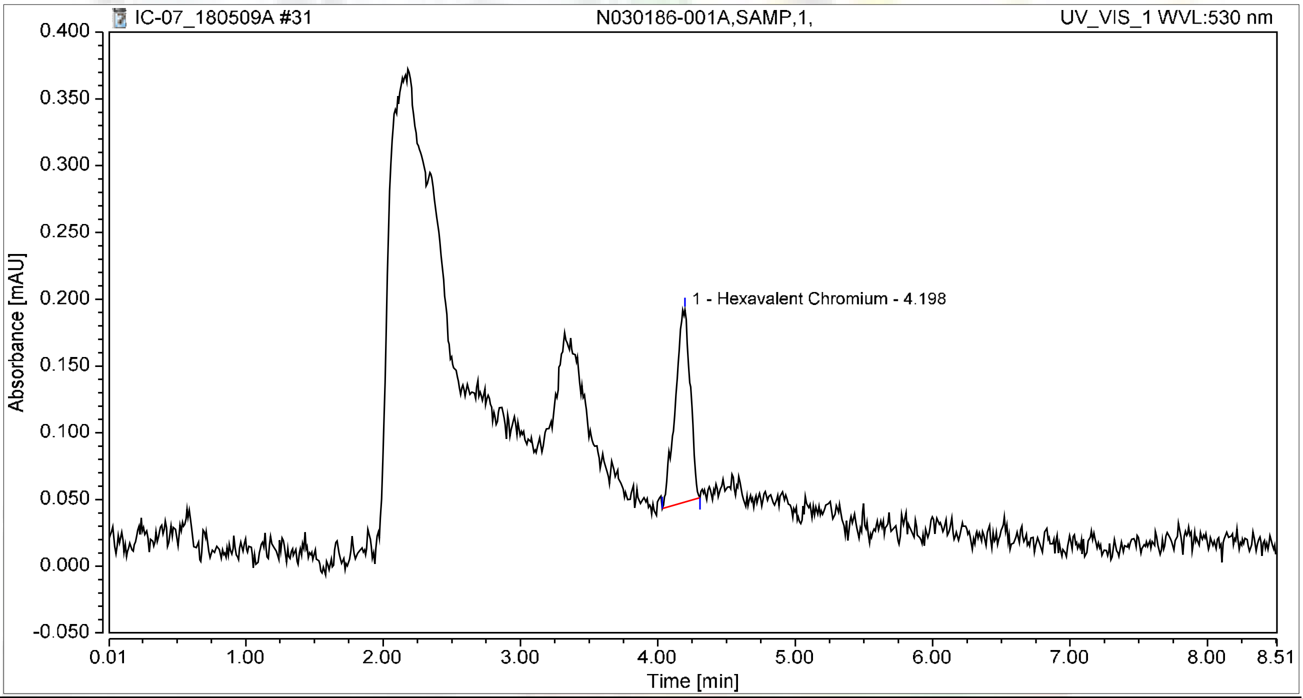
Chromatogram and Results

Injection Details

Injection Name:	**N030186-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

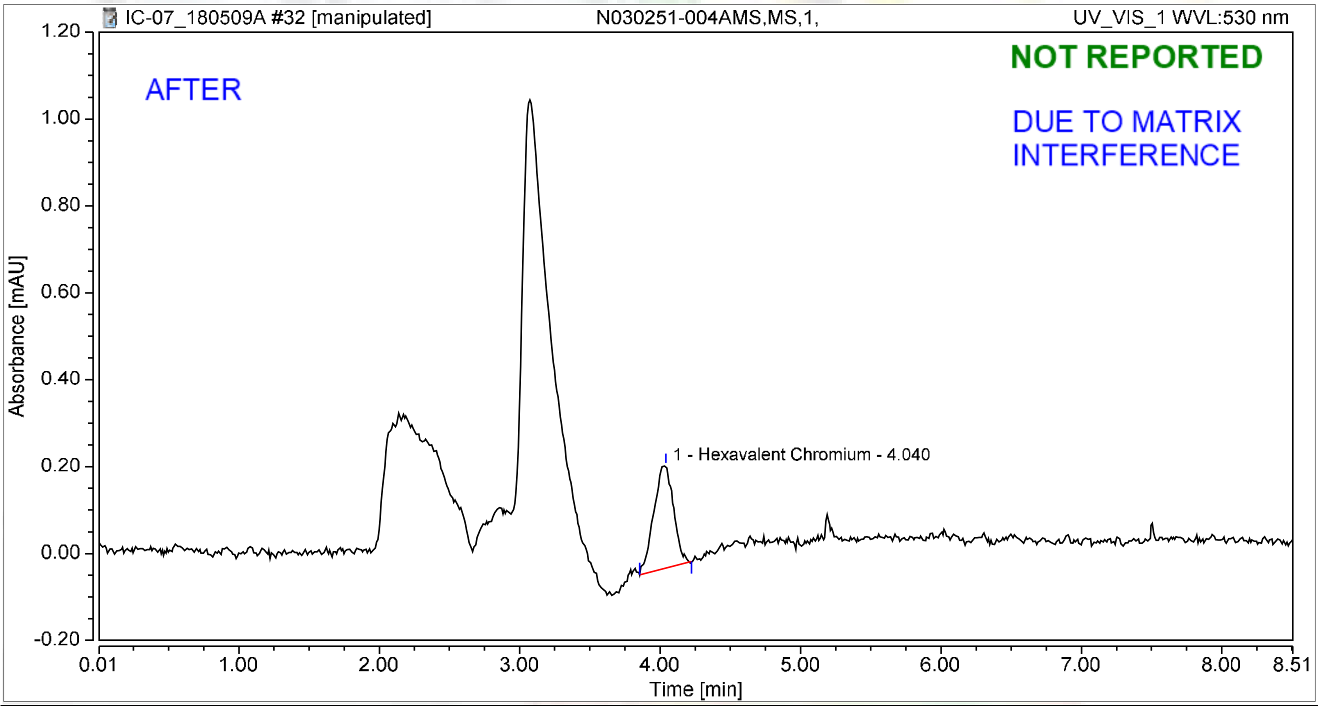
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.018	0.144	100.00	100.00	0.0710
Total:			**0.018**	**0.144**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.039	0.236	100.00	100.00	0.1500
Total:			**0.039**	**0.236**	**100.00**	**100.00**	

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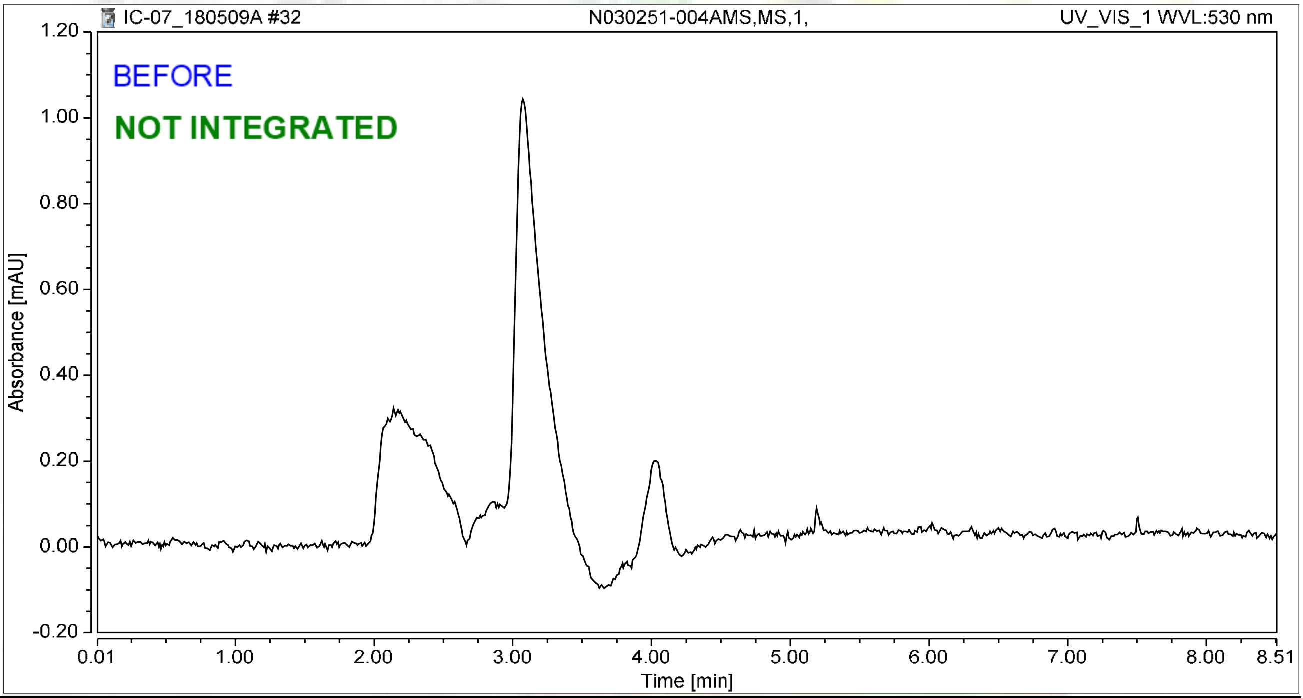
Injection Details

Injection Name:	**N030251-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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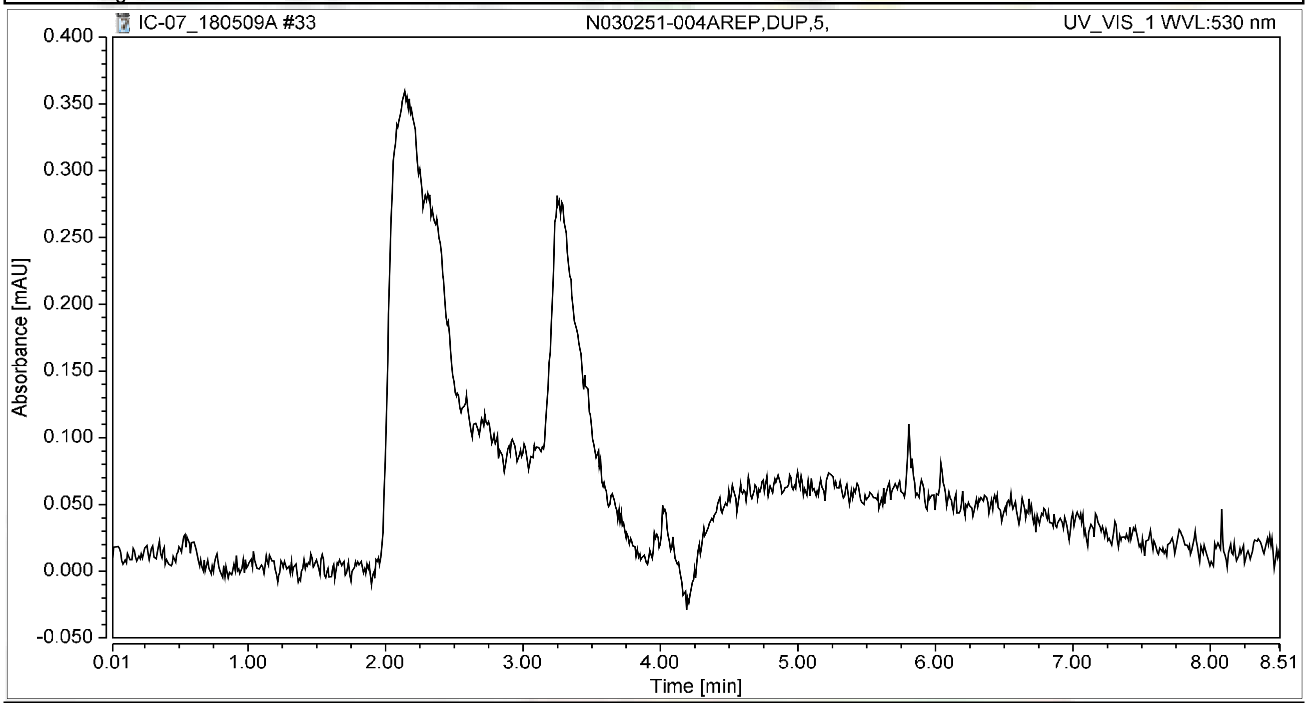
Chromatogram and Results

Injection Details

Injection Name:	**N030251-004AREP,DUP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:40**	*Sample Weight:*	**1.0000**

Chromatogram



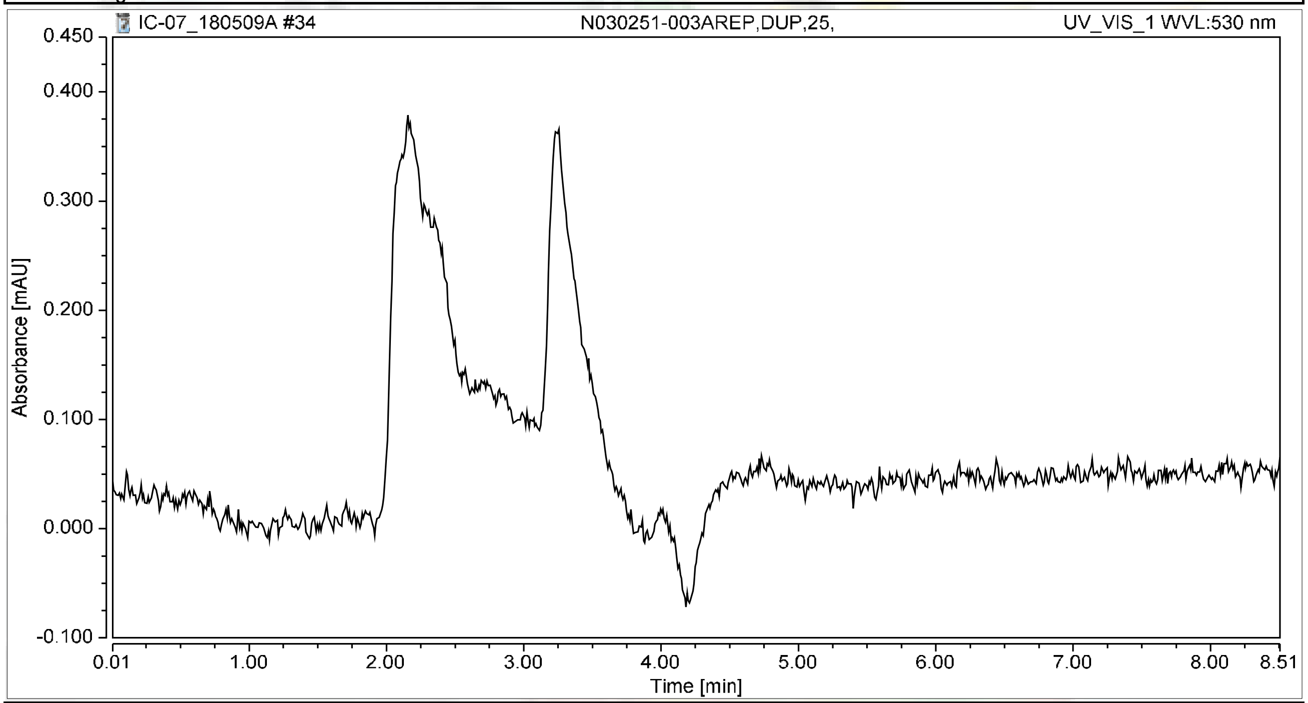
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details	DUP		
Injection Name:	**N030251-003A~~REP~~,DUP,25,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

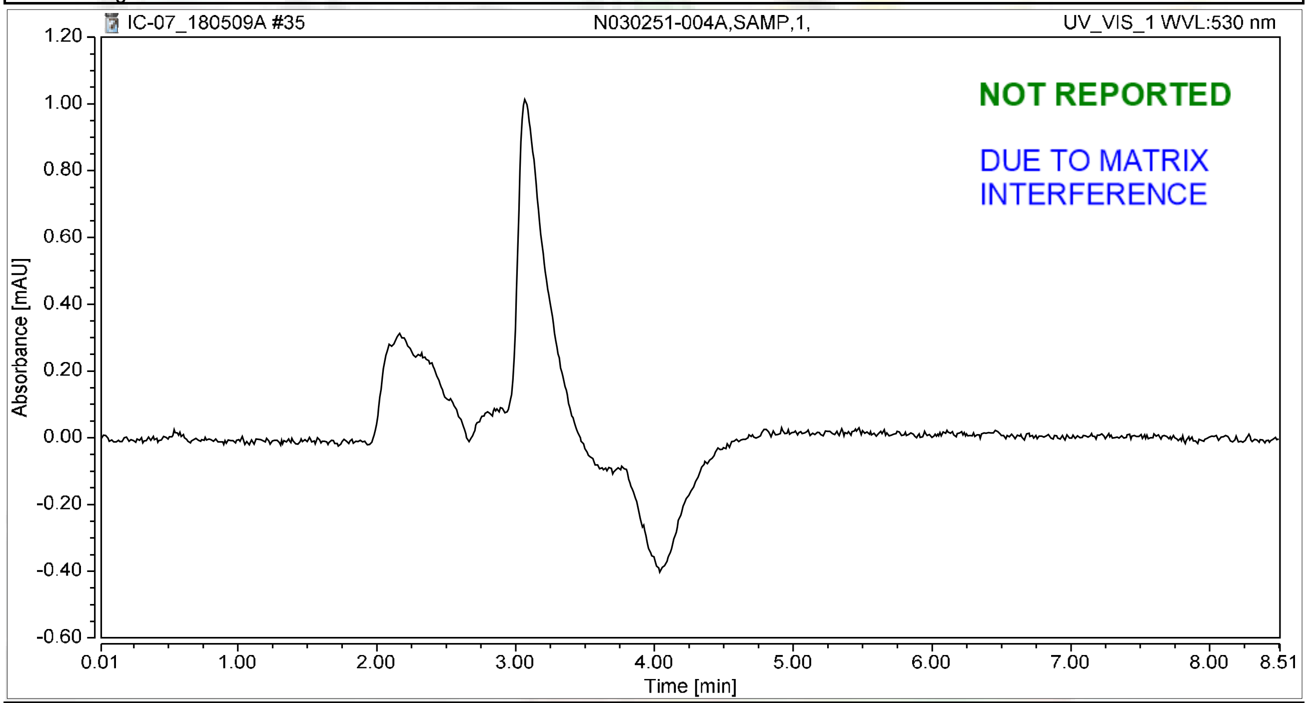
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-004A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

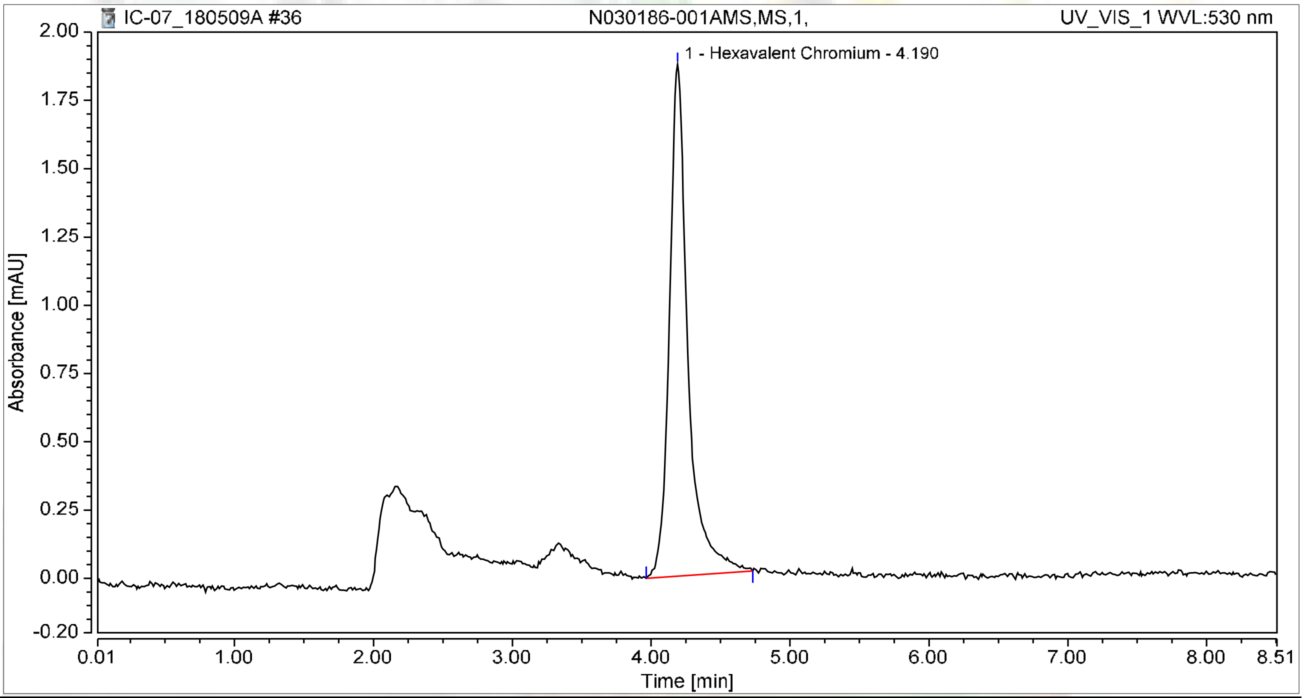
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030186-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 13:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

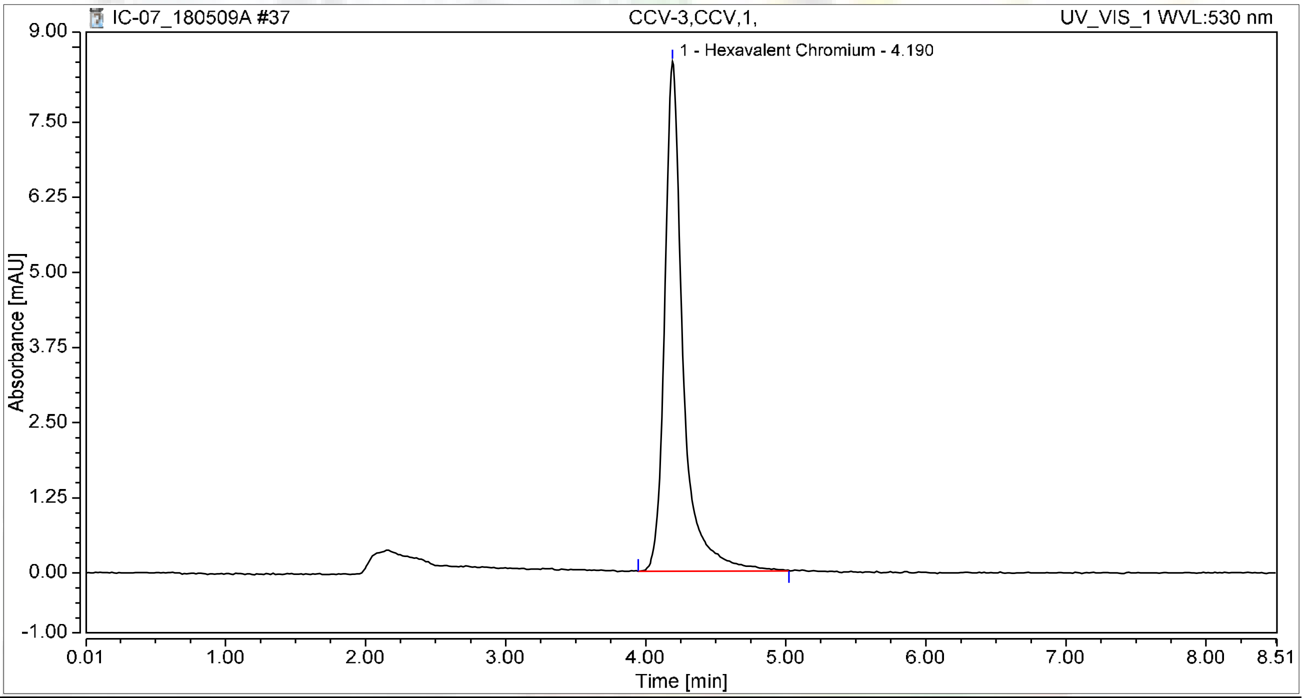
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.290	1.873	100.00	100.00	1.1309
Total:			**0.290**	**1.873**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 13:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

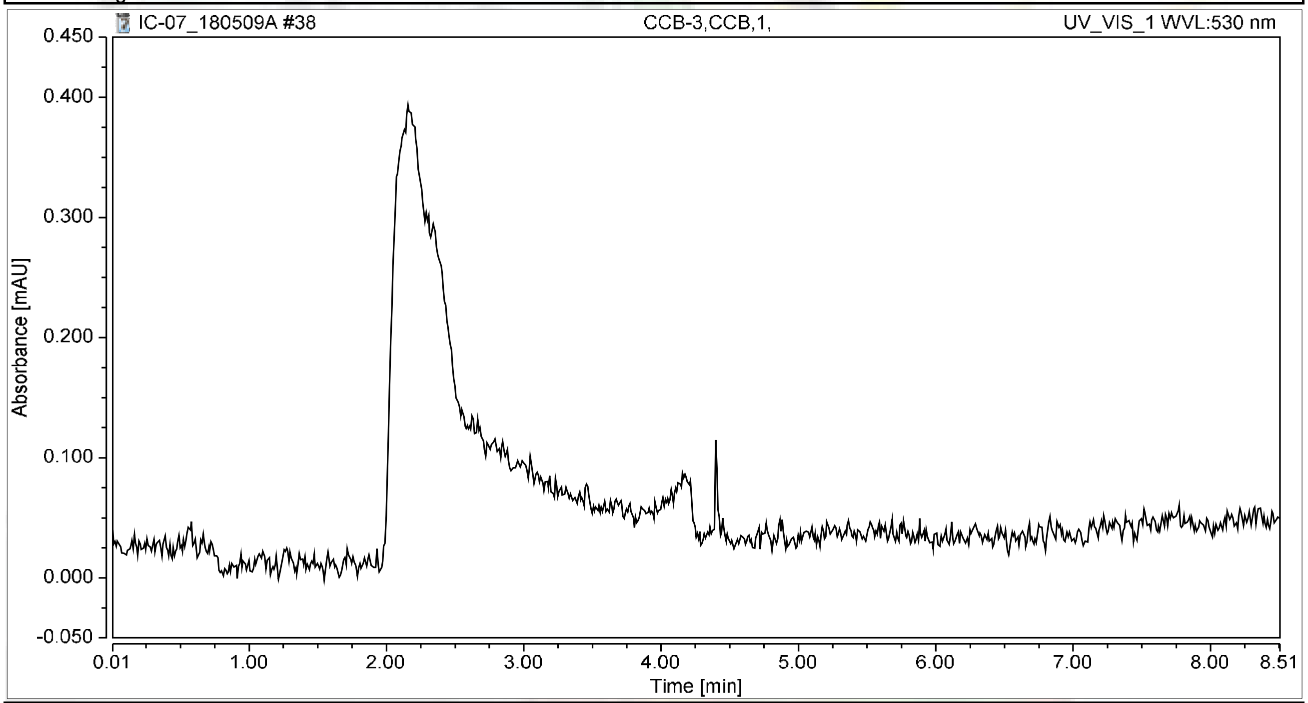
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.291	8.482	100.00	100.00	5.0309
Total:			**1.291**	**8.482**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 13:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

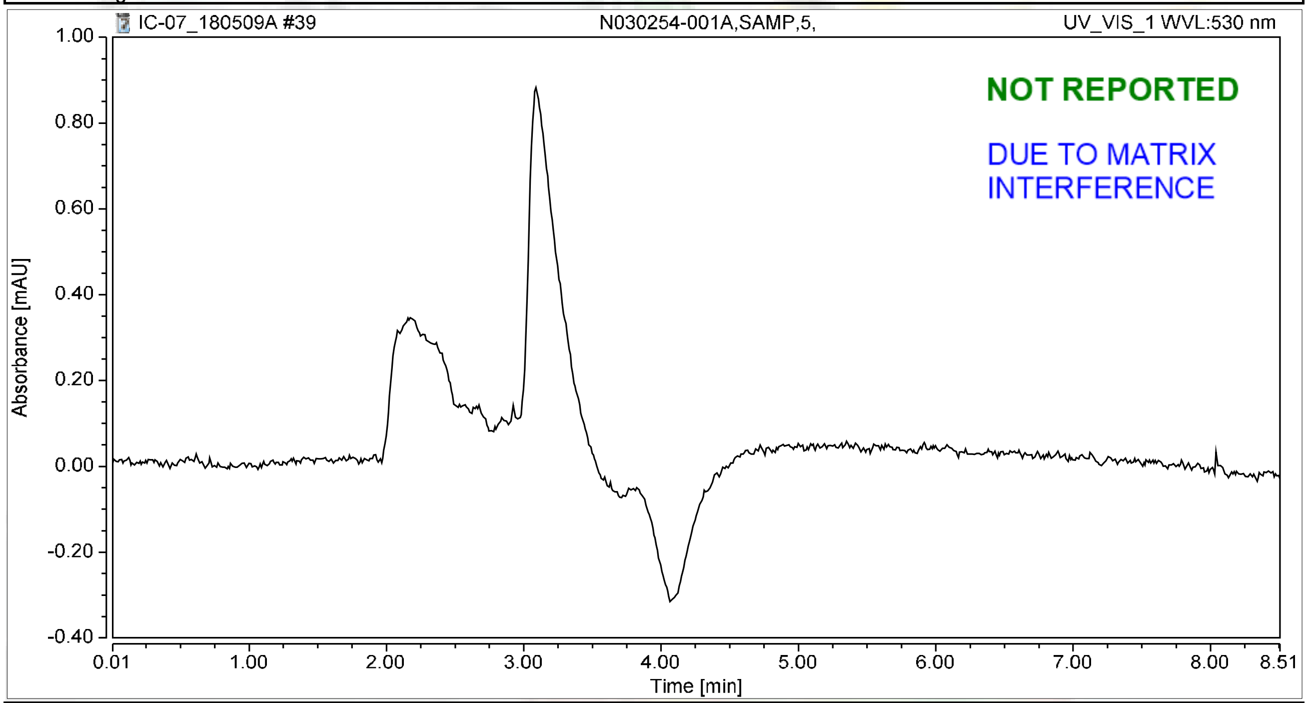
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 13:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

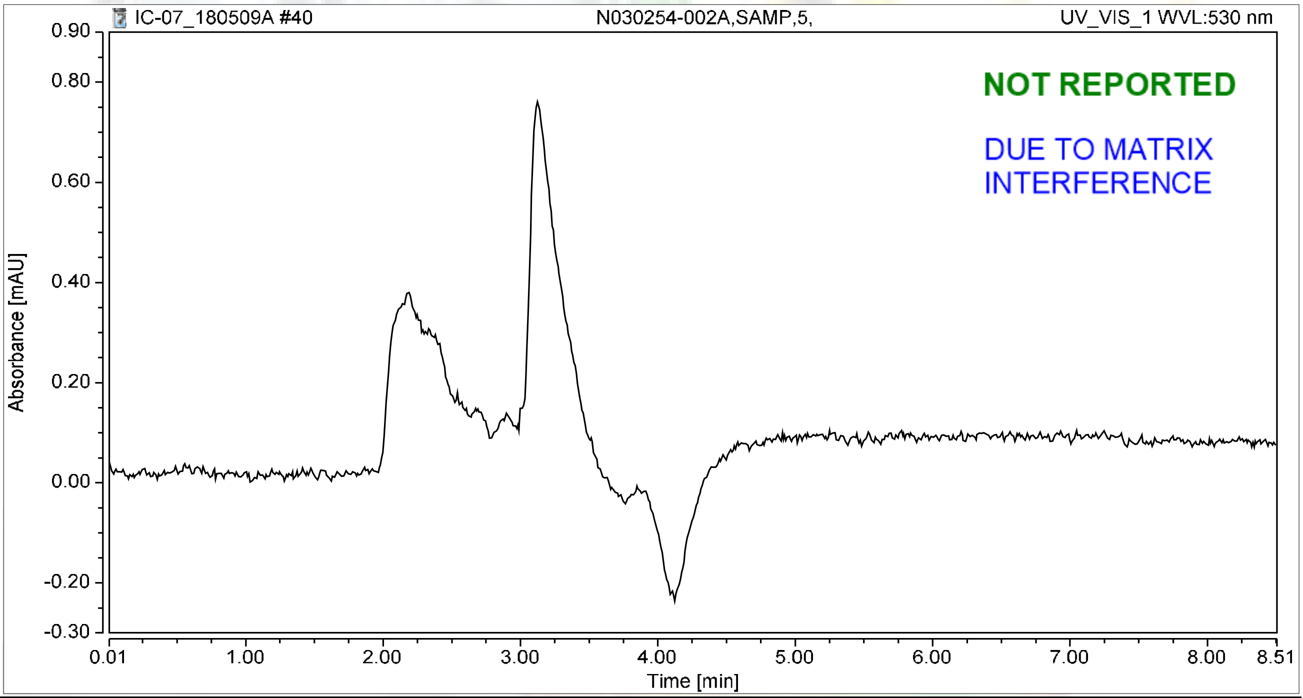
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 13:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

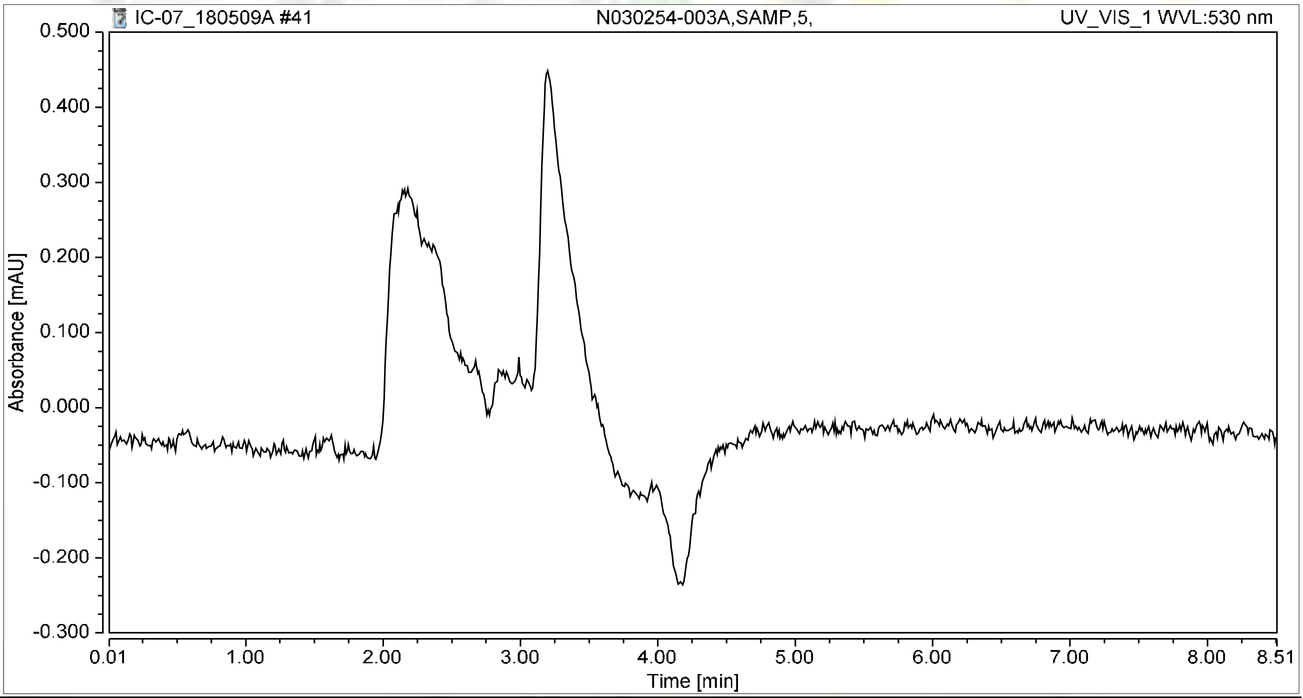
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-003A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 13:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

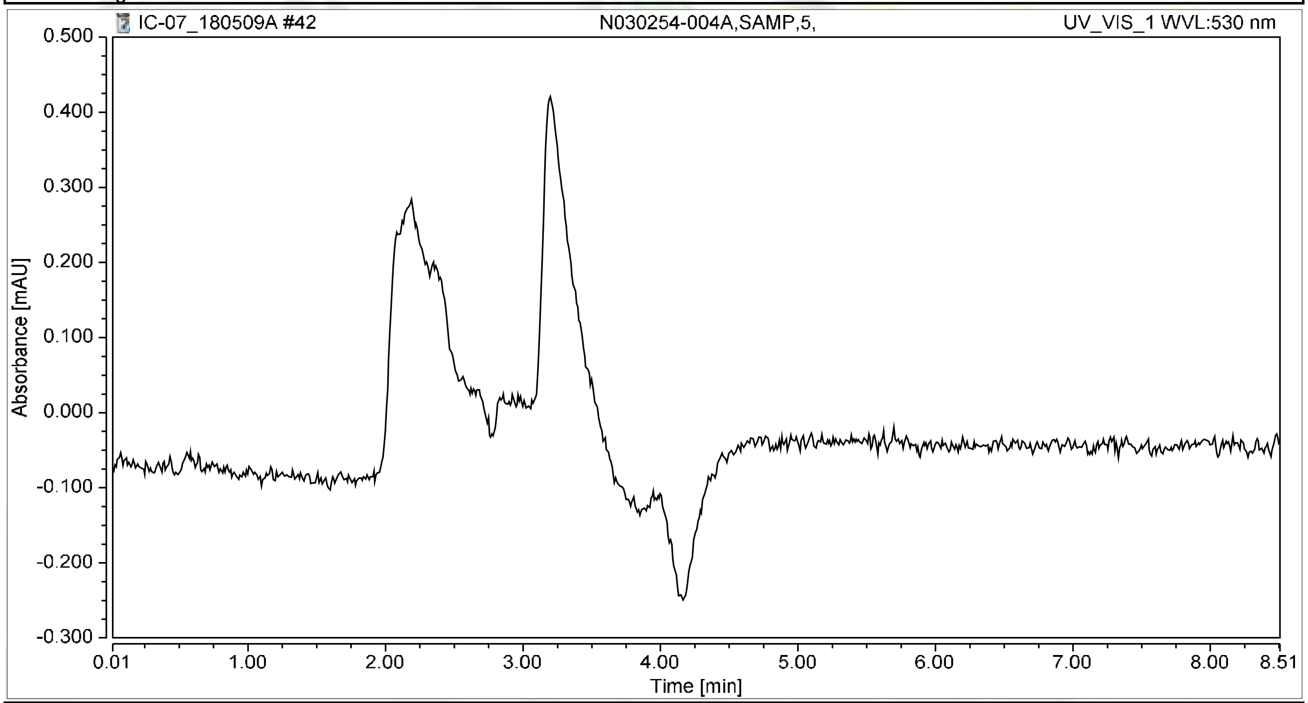
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-004A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

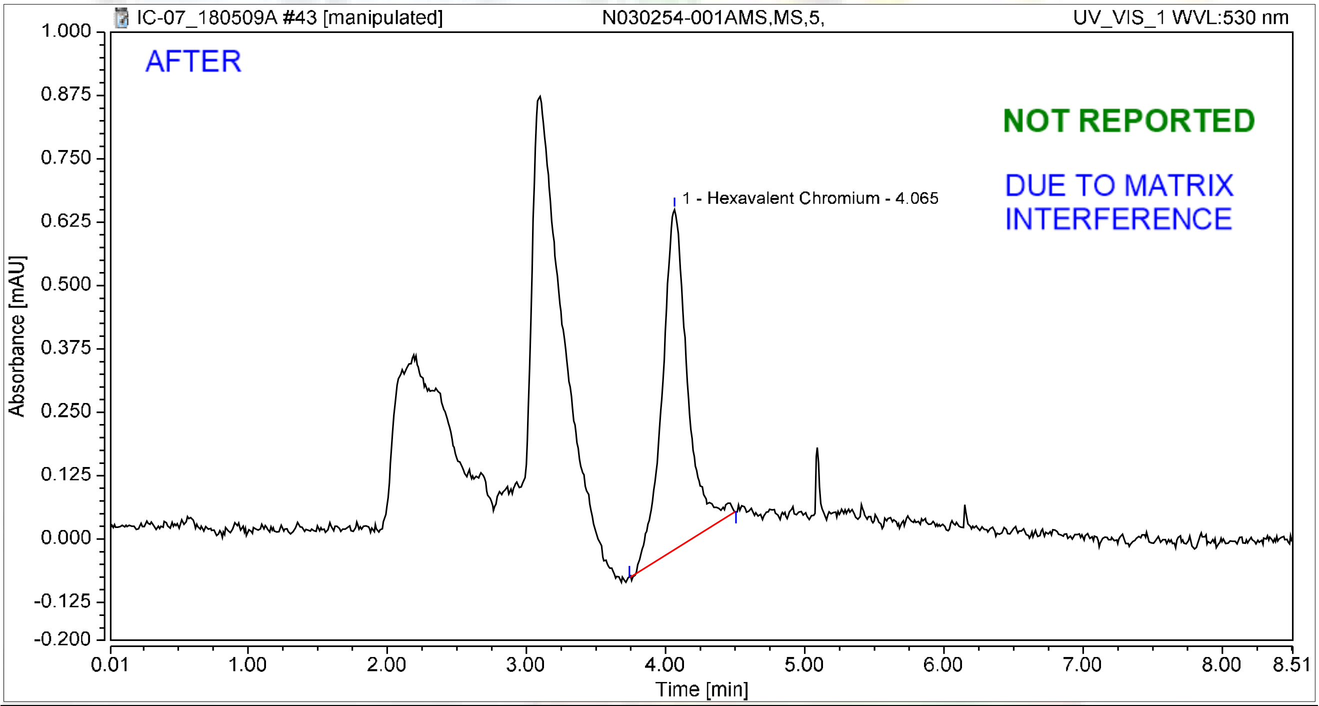
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-001AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.142	0.671	100.00	100.00	0.5548
Total:			**0.142**	**0.671**	**100.00**	**100.00**	

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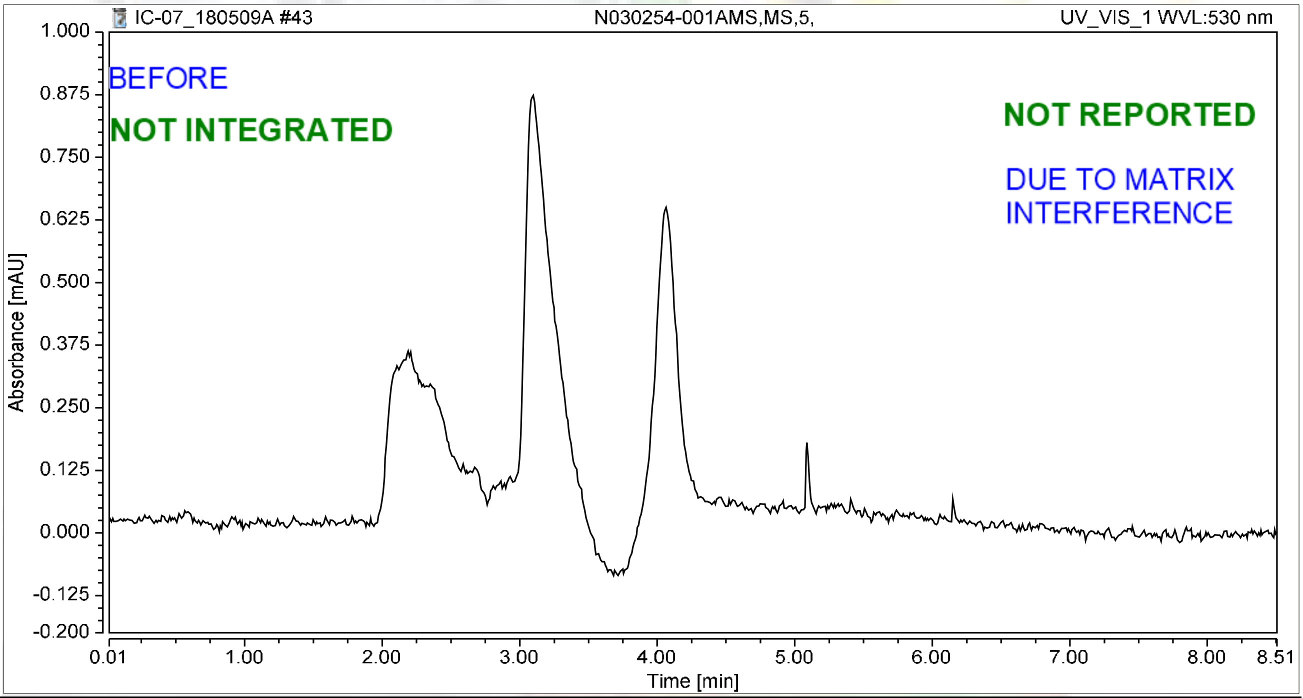
Chromatogram and Results

Injection Details

Injection Name:	**N030254-001AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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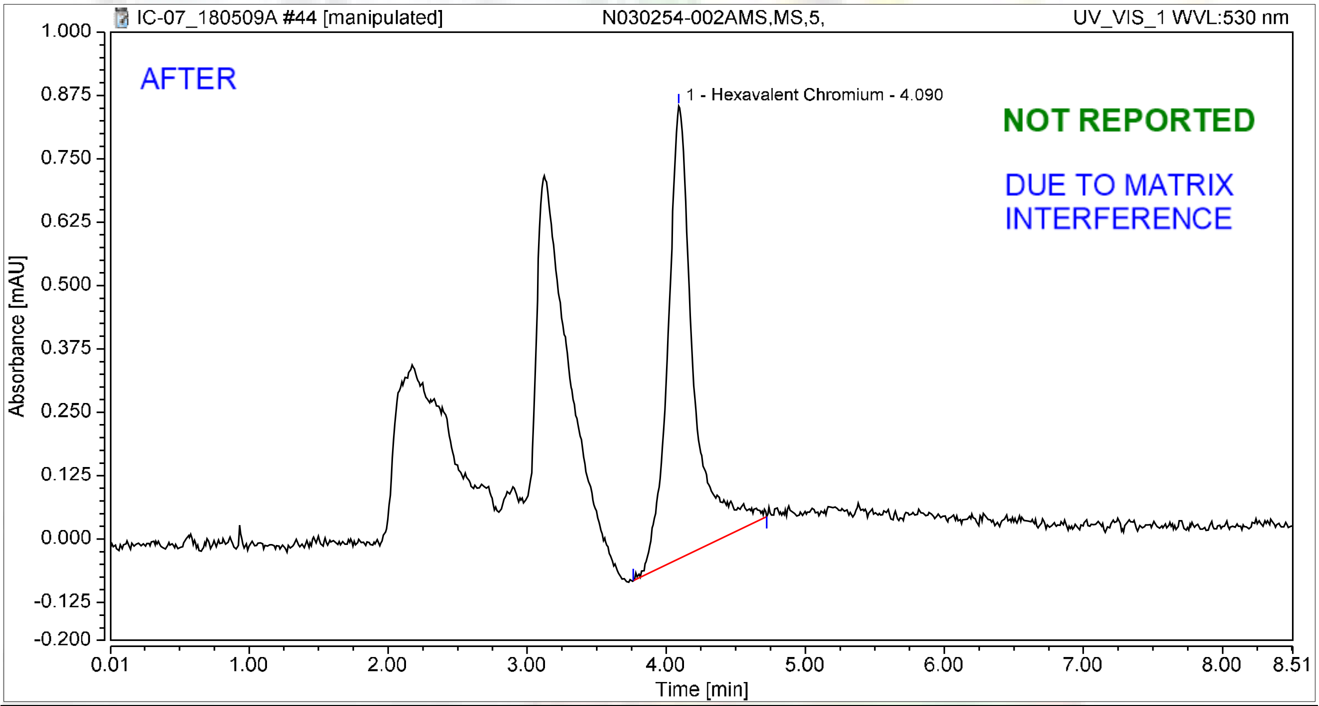
Chromatogram and Results

Injection Details

Injection Name:	**N030254-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.193	0.893	100.00	100.00	0.7521
Total:			**0.193**	**0.893**	**100.00**	**100.00**	

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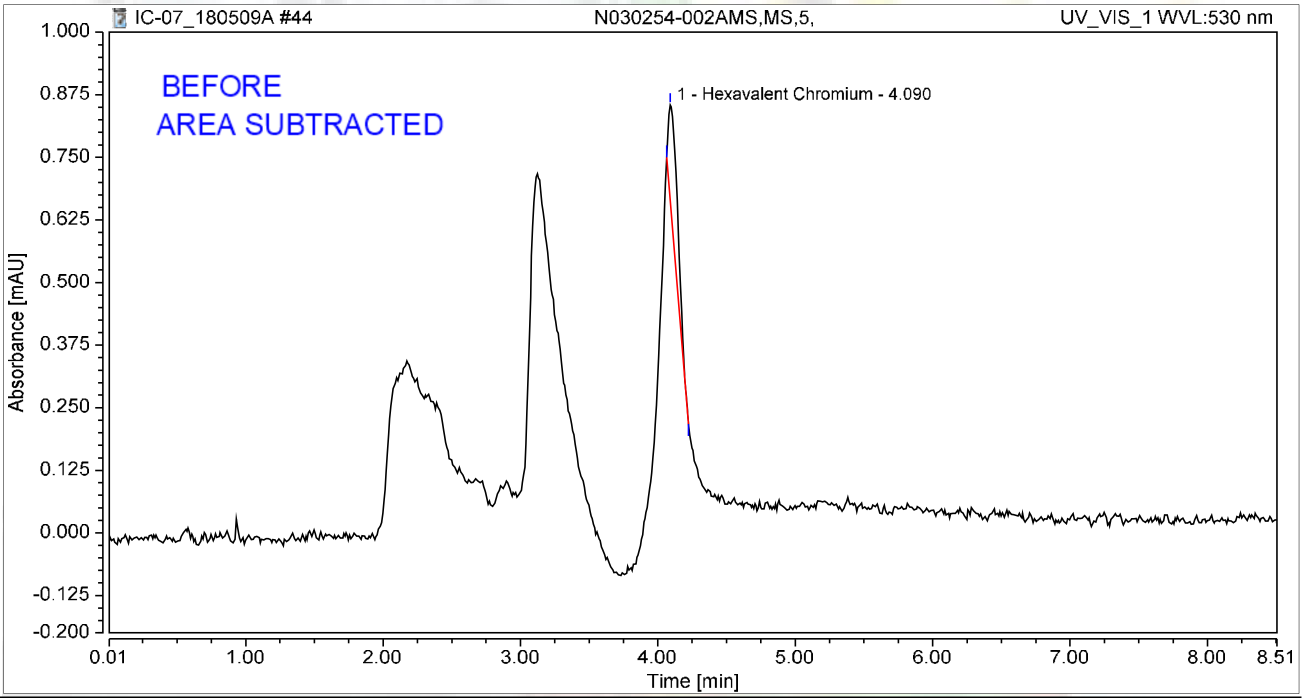
Chromatogram and Results

Injection Details			
Injection Name:	**N030254-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.017	0.188	100.00	100.00	0.0672
Total:			**0.017**	**0.188**	**100.00**	**100.00**	

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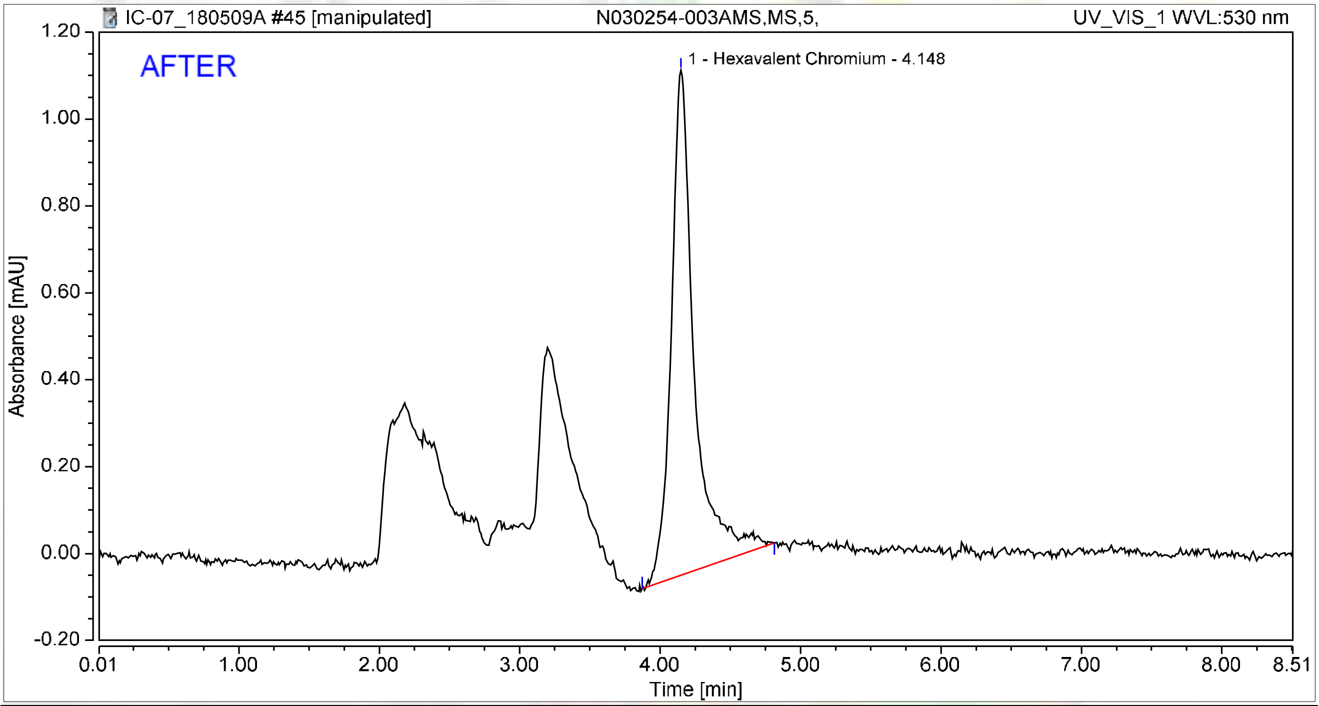
Chromatogram and Results

Injection Details

Injection Name:	**N030254-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.222	1.162	100.00	100.00	0.8651
Total:			**0.222**	**1.162**	**100.00**	**100.00**	

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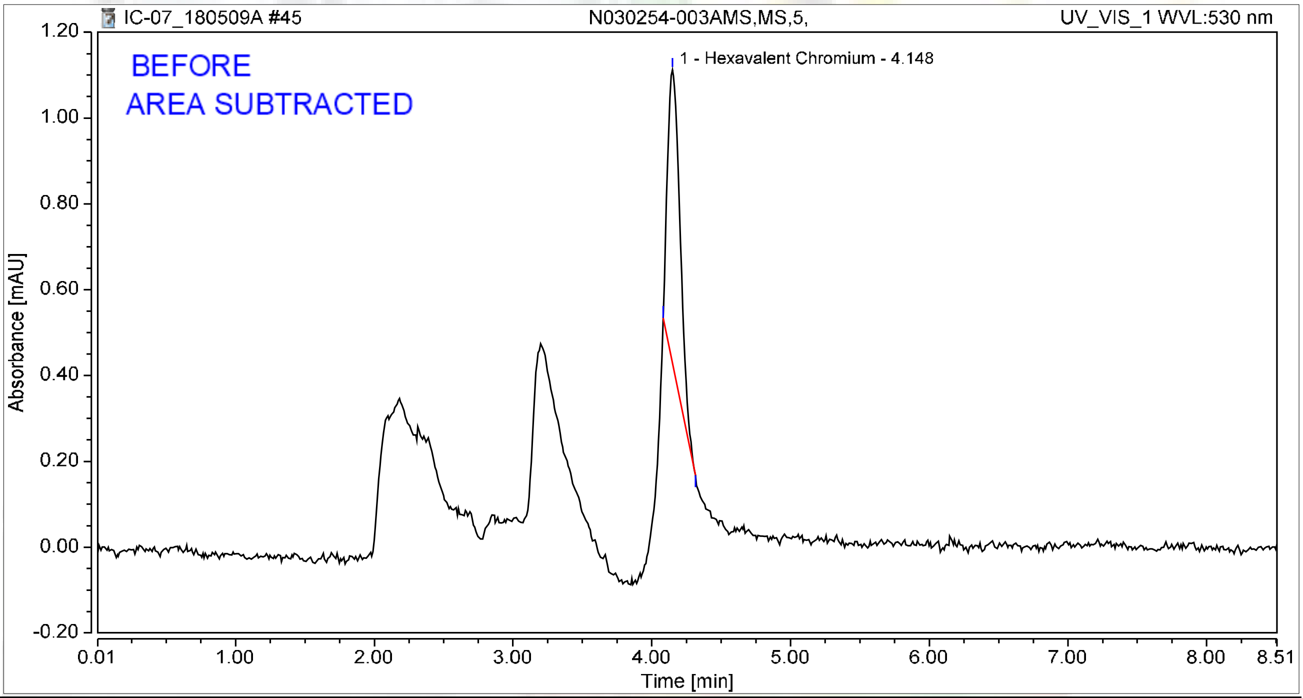
Chromatogram and Results

Injection Details

Injection Name:	**N030254-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.072	0.683	100.00	100.00	0.2801
Total:			**0.072**	**0.683**	**100.00**	**100.00**	

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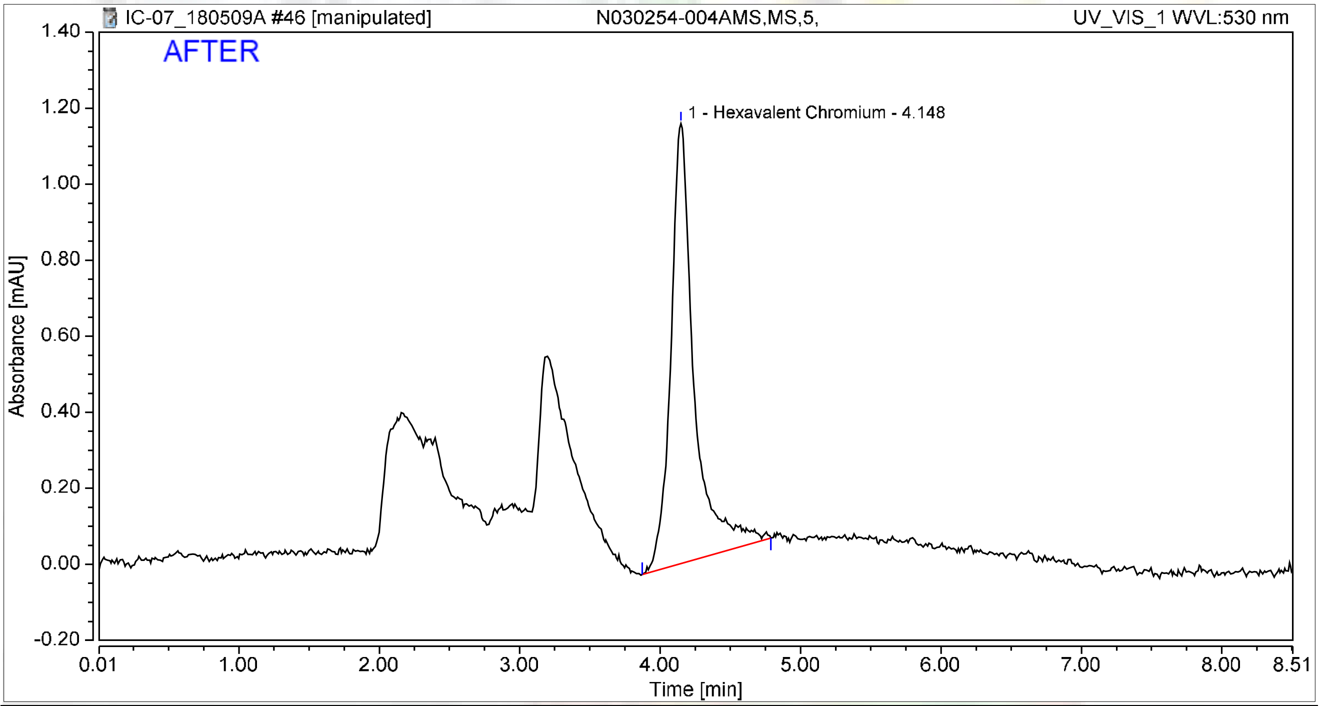
Chromatogram and Results

Injection Details

Injection Name:	**N030254-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.224	1.157	100.00	100.00	0.8711
Total:			**0.224**	**1.157**	**100.00**	**100.00**	

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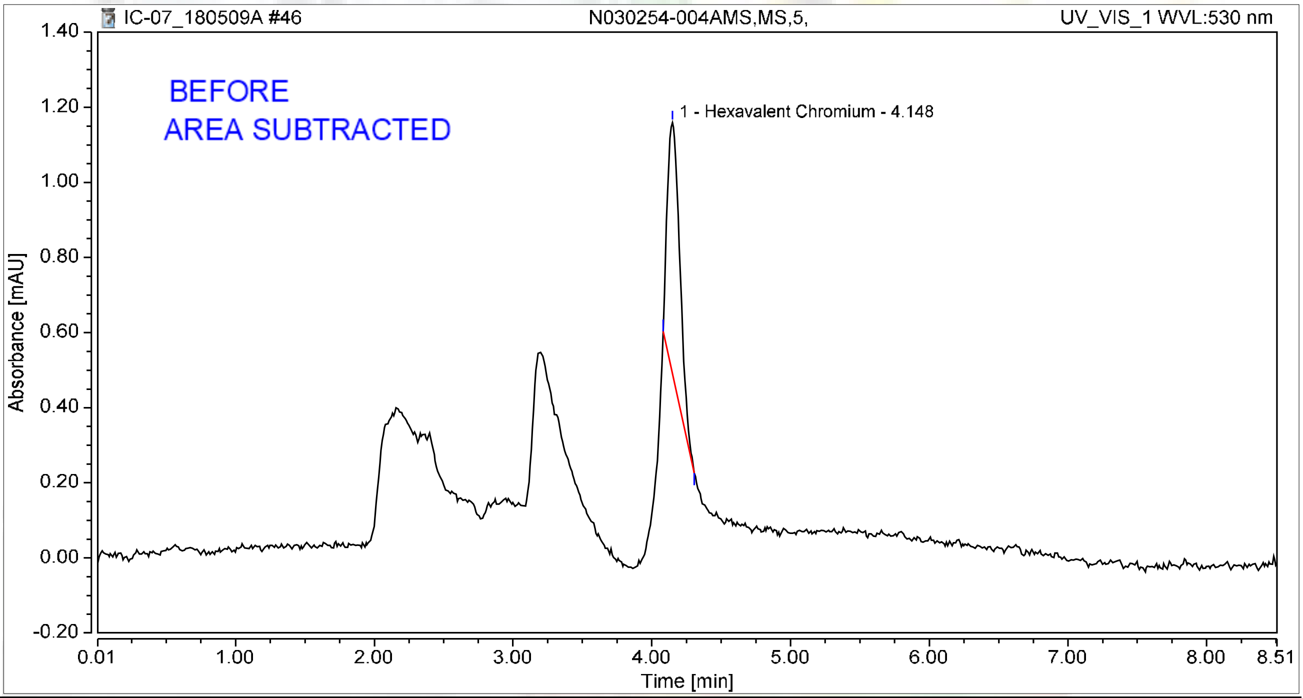
Chromatogram and Results

Injection Details

Injection Name:	**N030254-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.070	0.667	100.00	100.00	0.2726
Total:			**0.070**	**0.667**	**100.00**	**100.00**	

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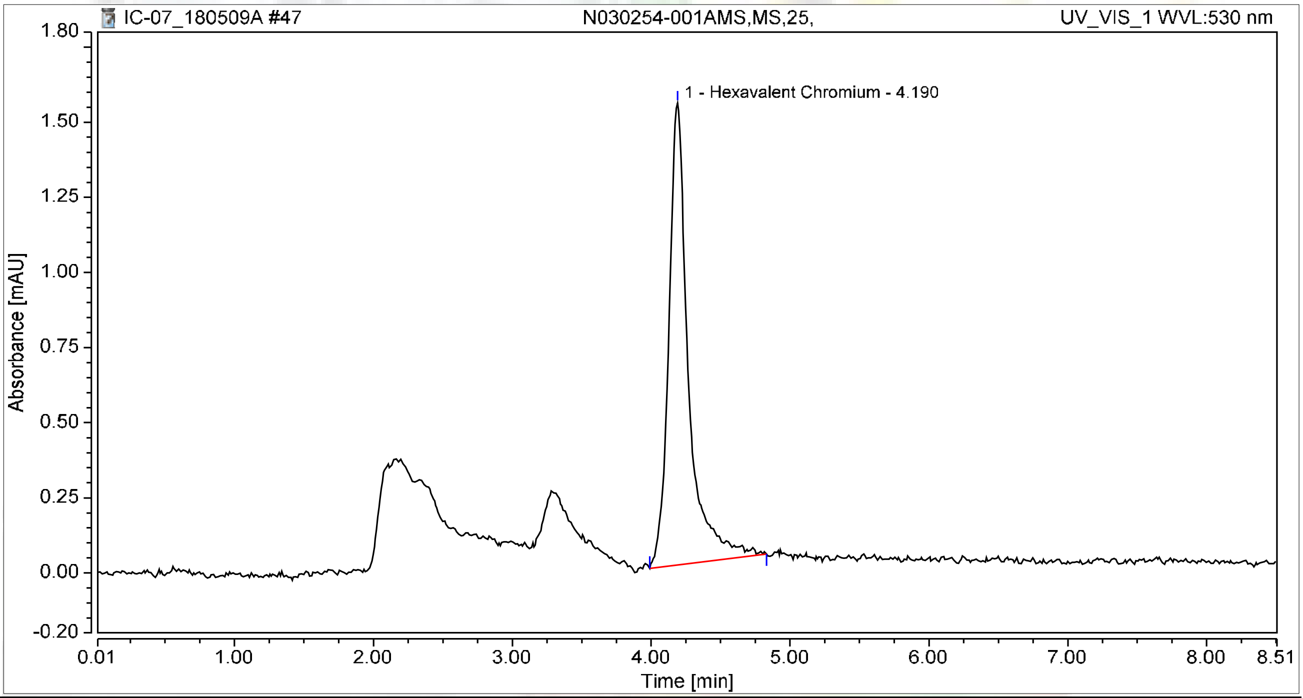
Chromatogram and Results

Injection Details

Injection Name:	**N030254-001AMS,MS,25,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

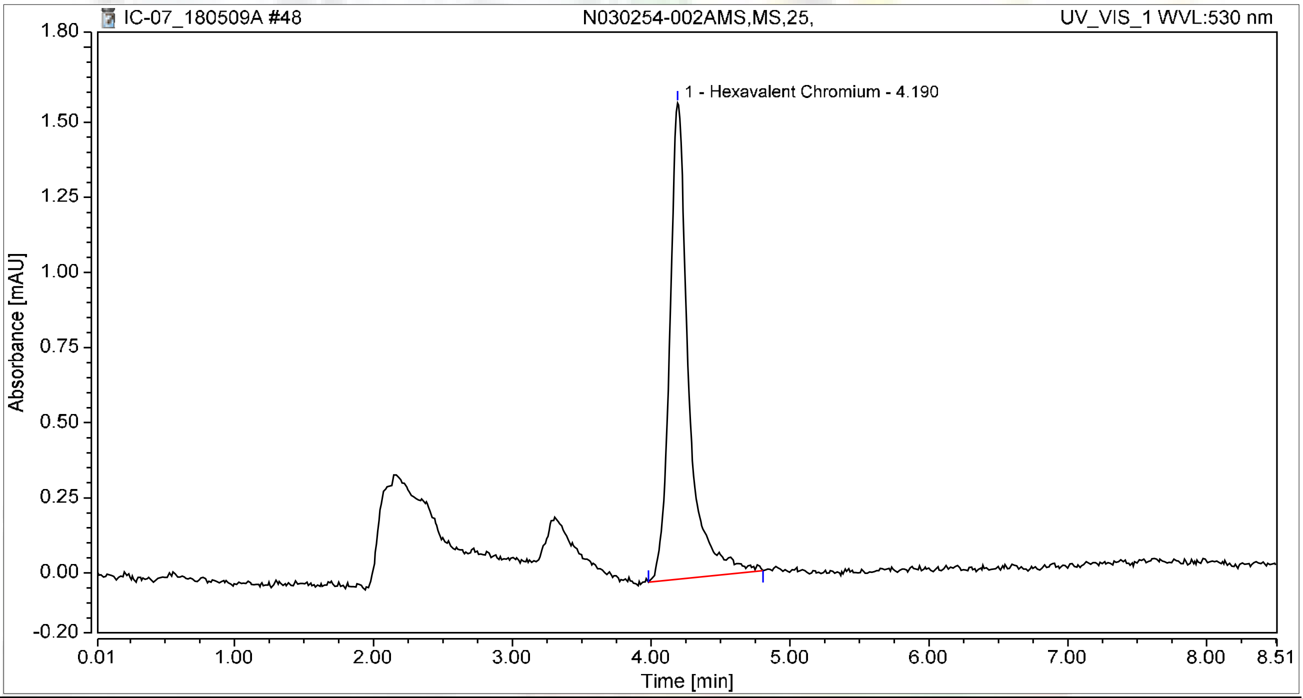
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.252	1.537	100.00	100.00	0.9832
Total:			**0.252**	**1.537**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-002AMS,MS,25,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

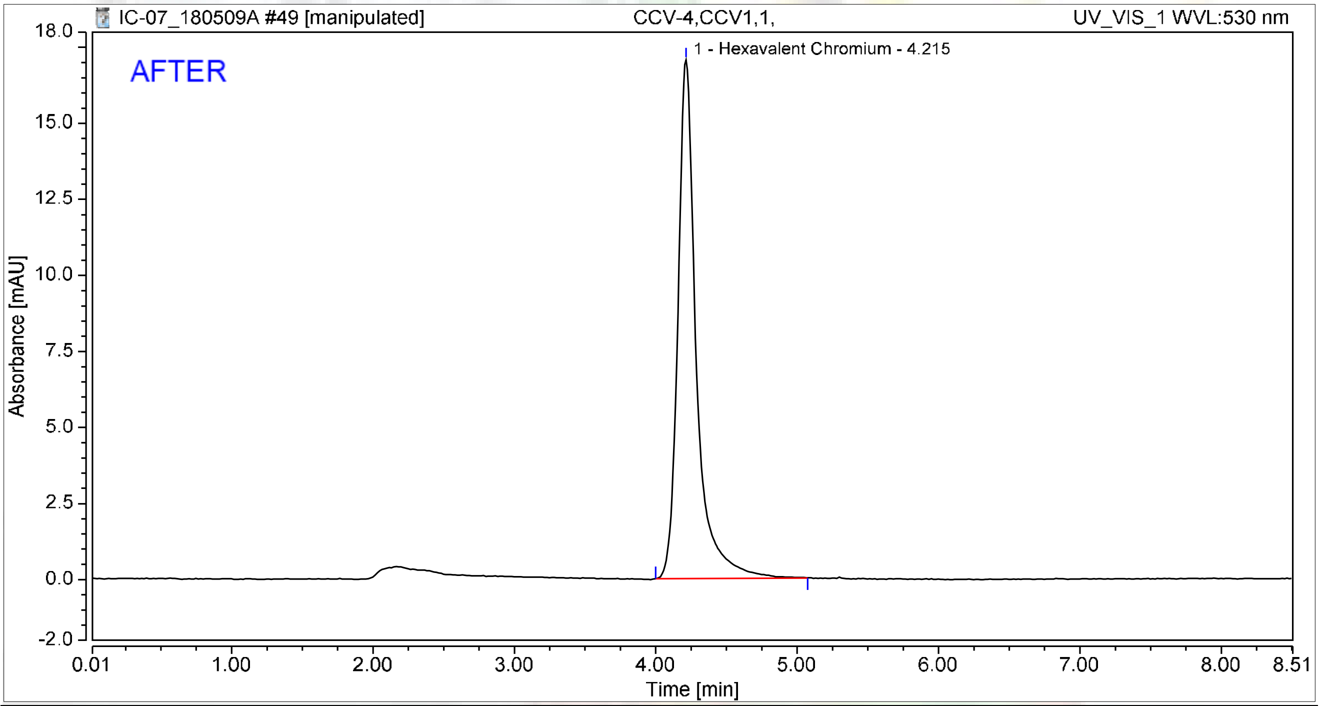
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.252	1.585	100.00	100.00	0.9836
Total:			**0.252**	**1.585**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.580	17.053	100.00	100.00	10.0530
Total:			**2.580**	**17.053**	**100.00**	**100.00**	

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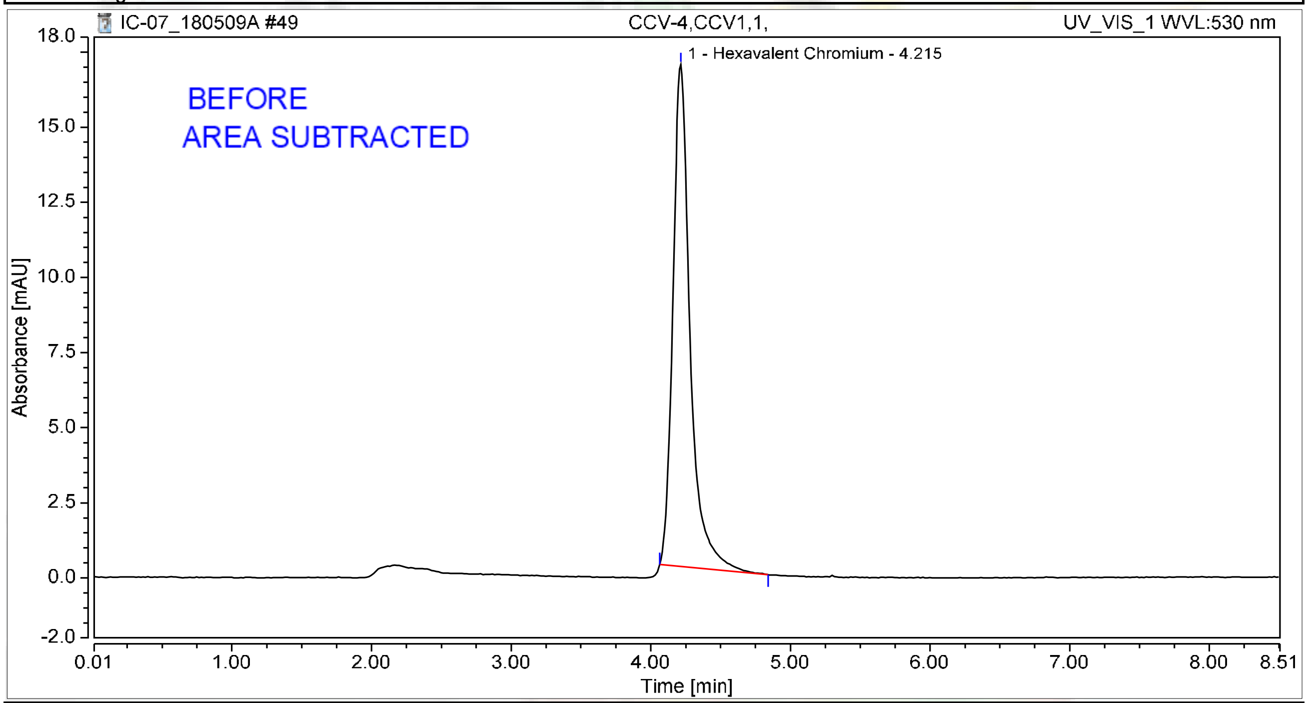
Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.378	16.700	100.00	100.00	9.2650
Total:			**2.378**	**16.700**	**100.00**	**100.00**	

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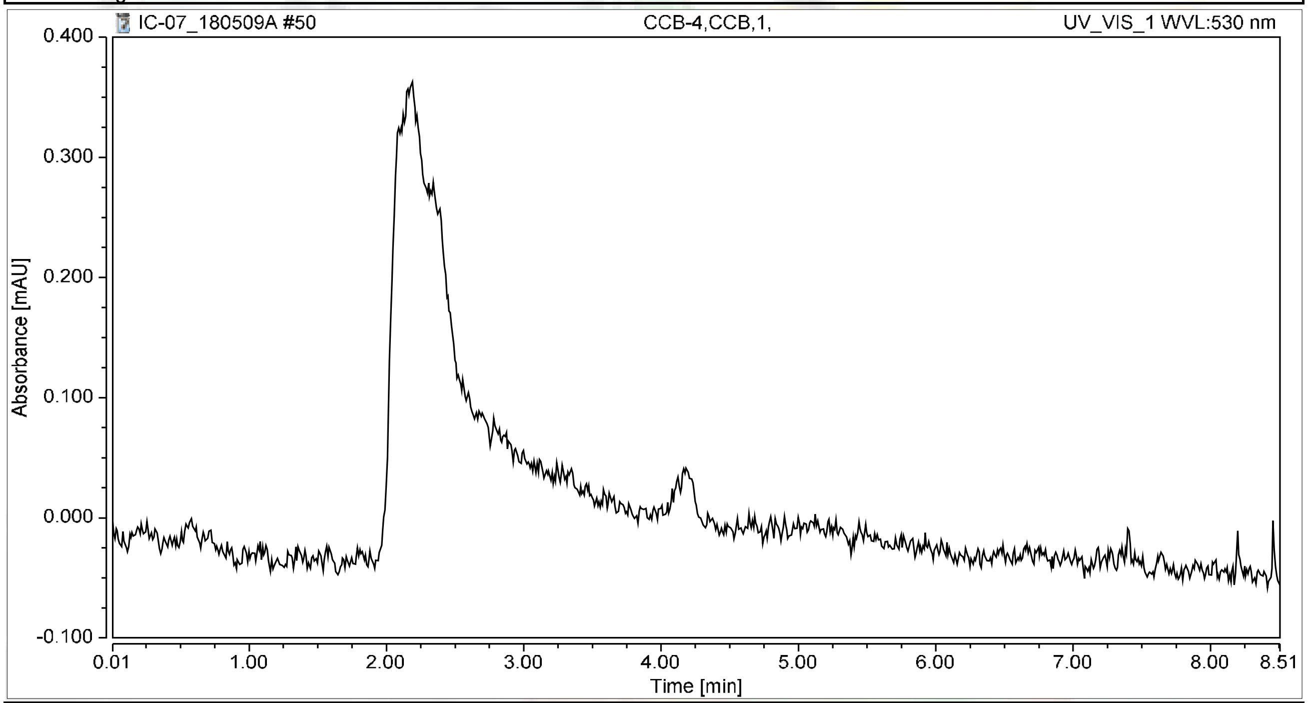
Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

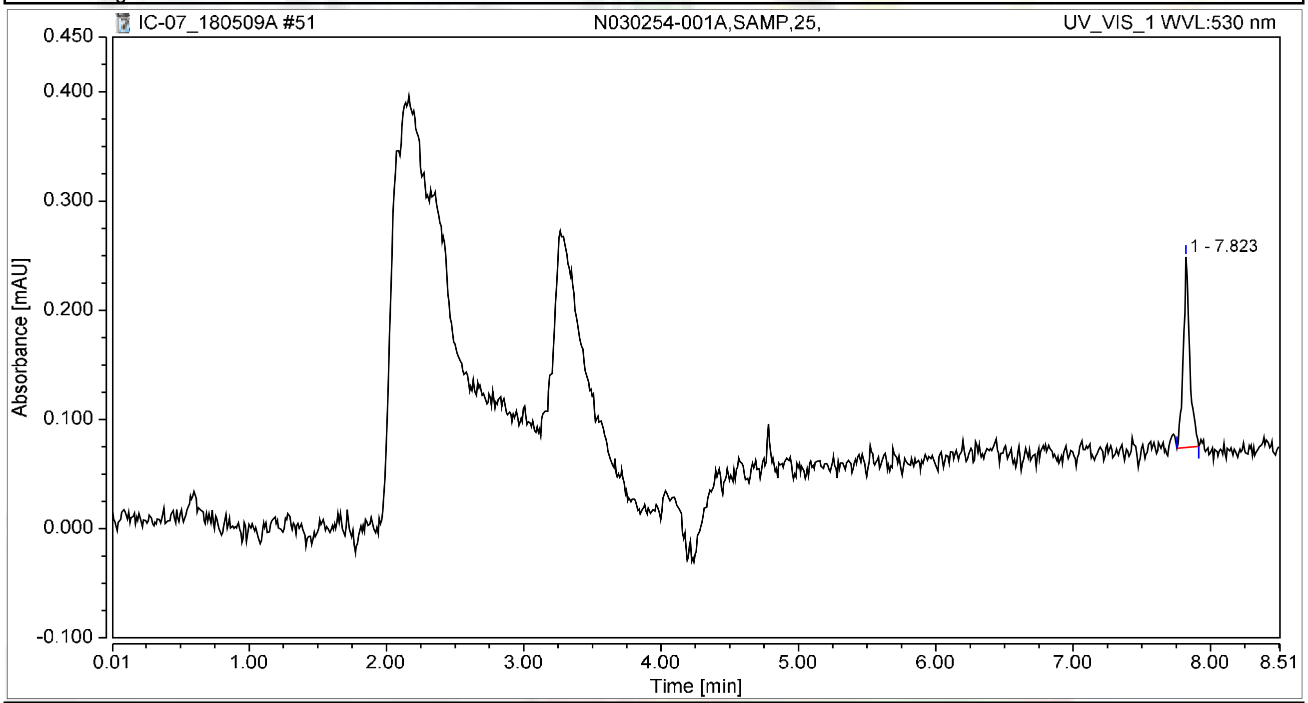
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-001A,SAMP,25,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

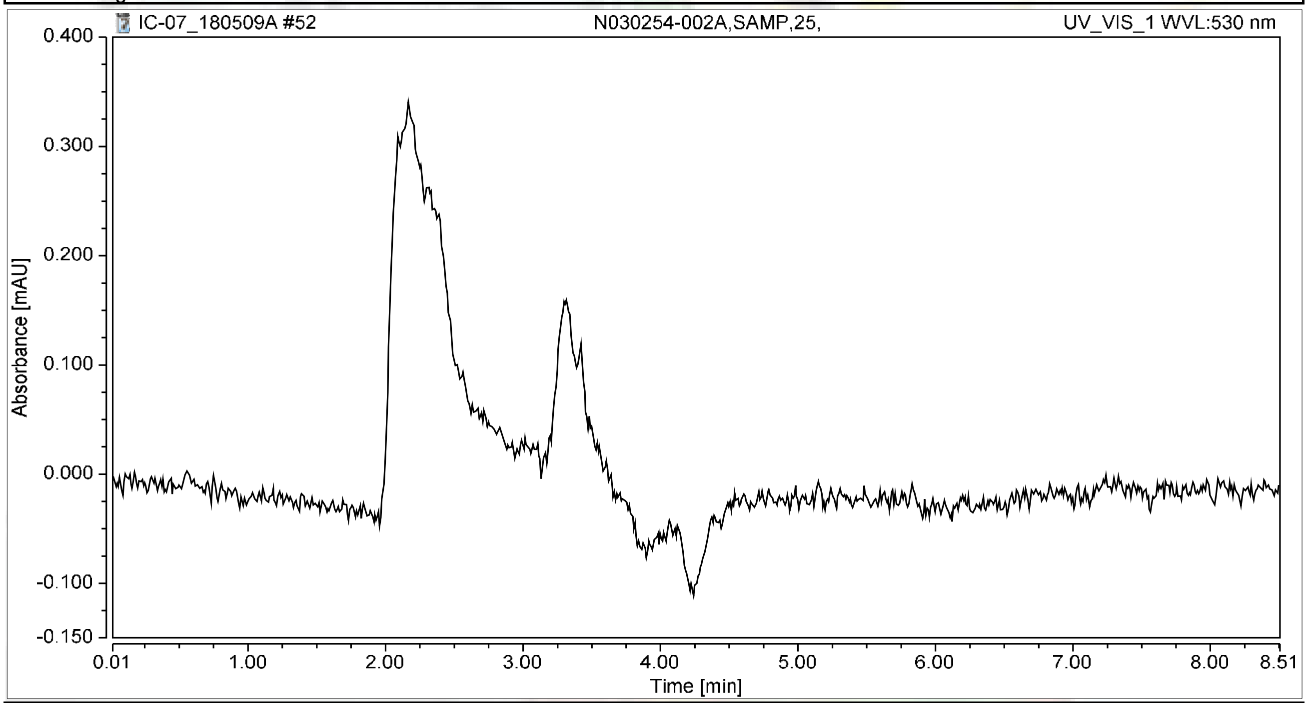
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.823	0.009	0.174	100.00	100.00	n.a.
Total:			**0.009**	**0.174**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-002A,SAMP,25,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

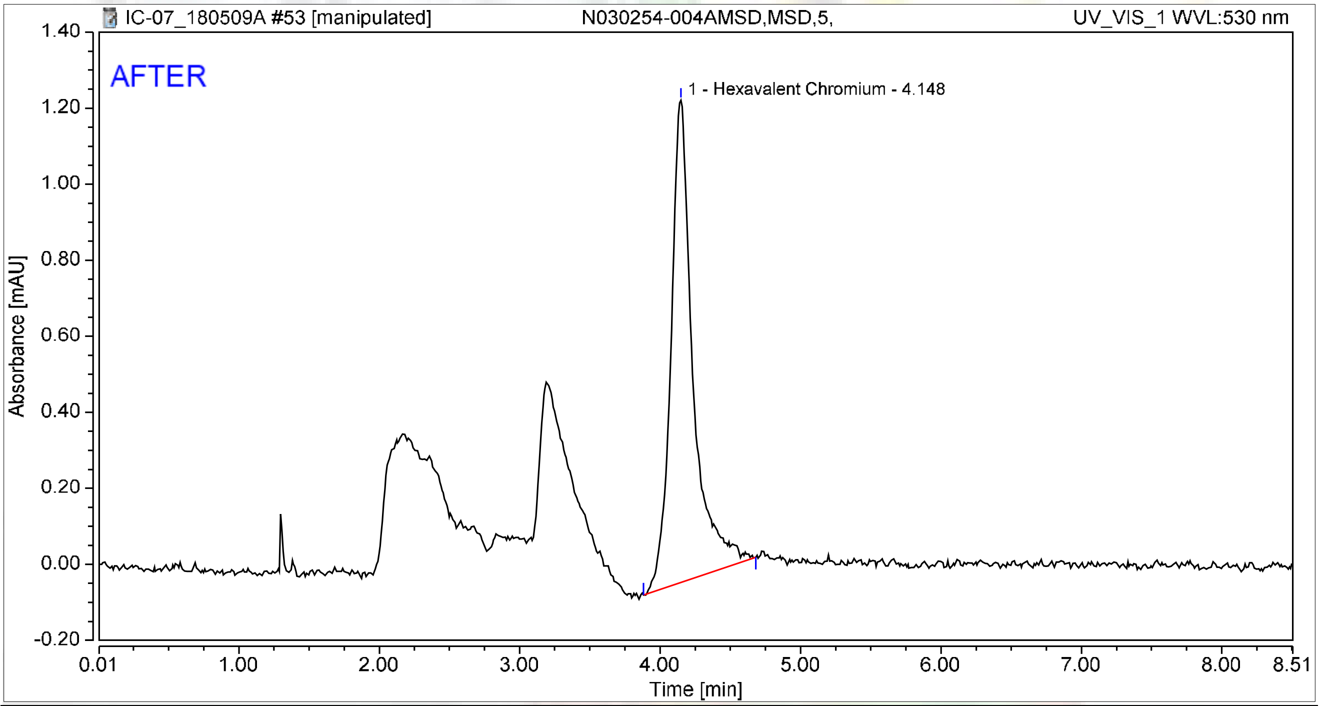
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-004AMSD,MSD,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.232	1.268	100.00	100.00	0.9039
Total:			**0.232**	**1.268**	**100.00**	**100.00**	

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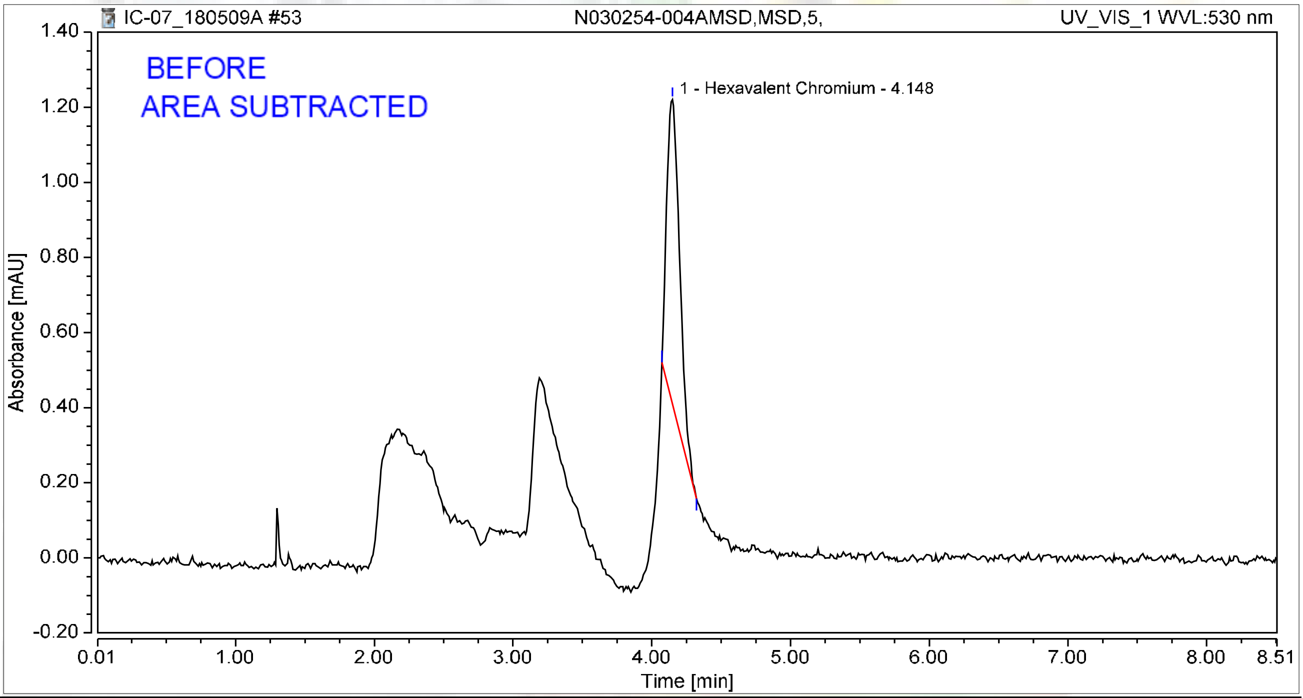
Chromatogram and Results

Injection Details

Injection Name:	**N030254-004AMSD,MSD,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.087	0.809	100.00	100.00	0.3401
Total:			**0.087**	**0.809**	**100.00**	**100.00**	

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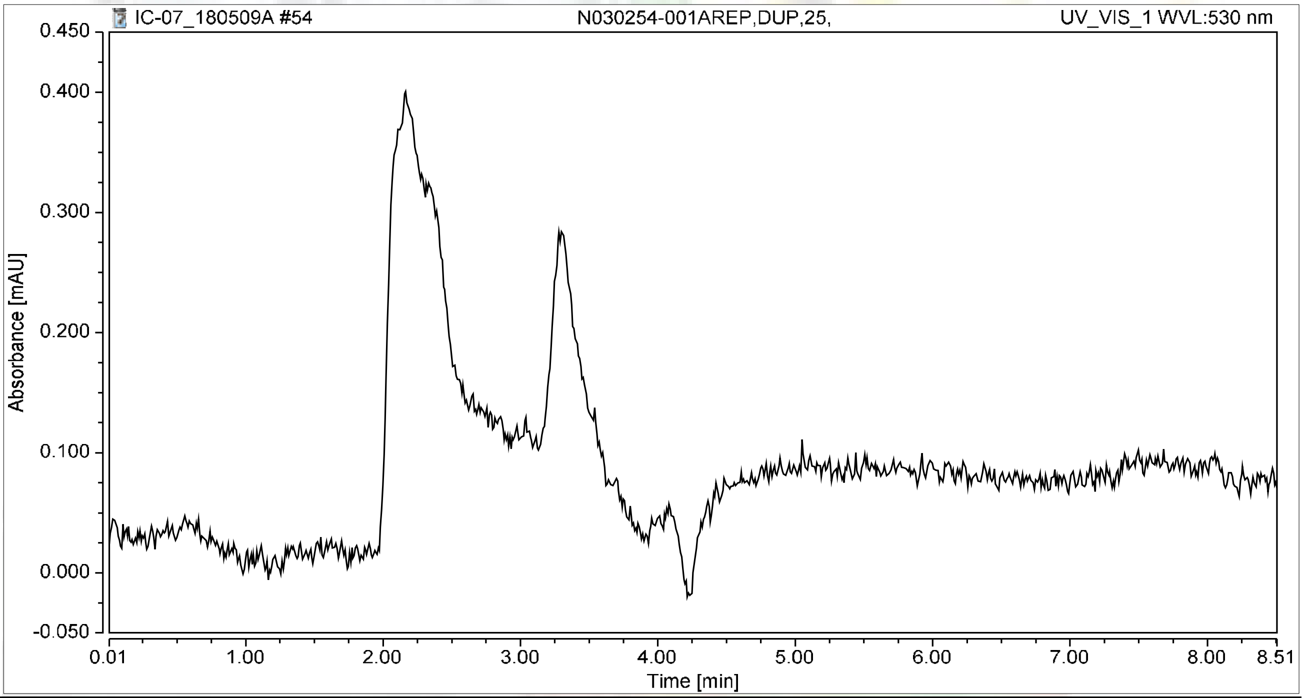
Chromatogram and Results

Injection Details

Injection Name:	**N030254-001AREP,DUP,25,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

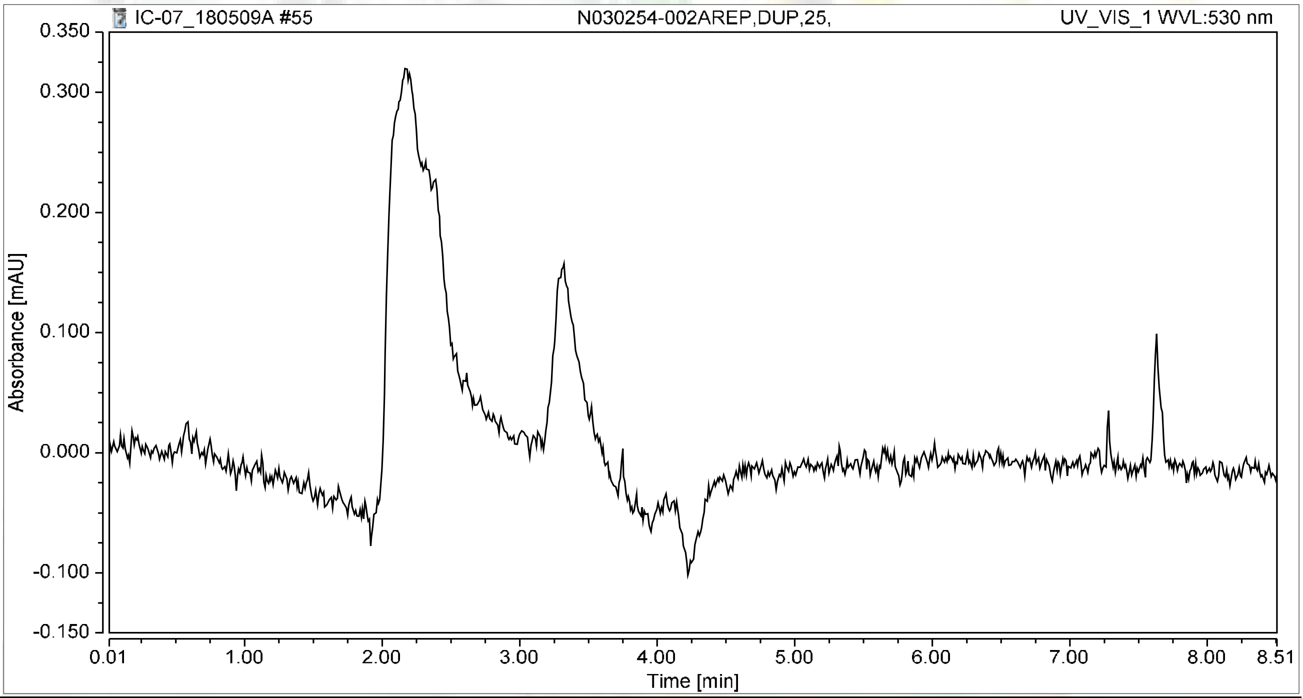
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-002AREP,DUP,25,**	*Run Time (min):*	**8.49**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 16:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

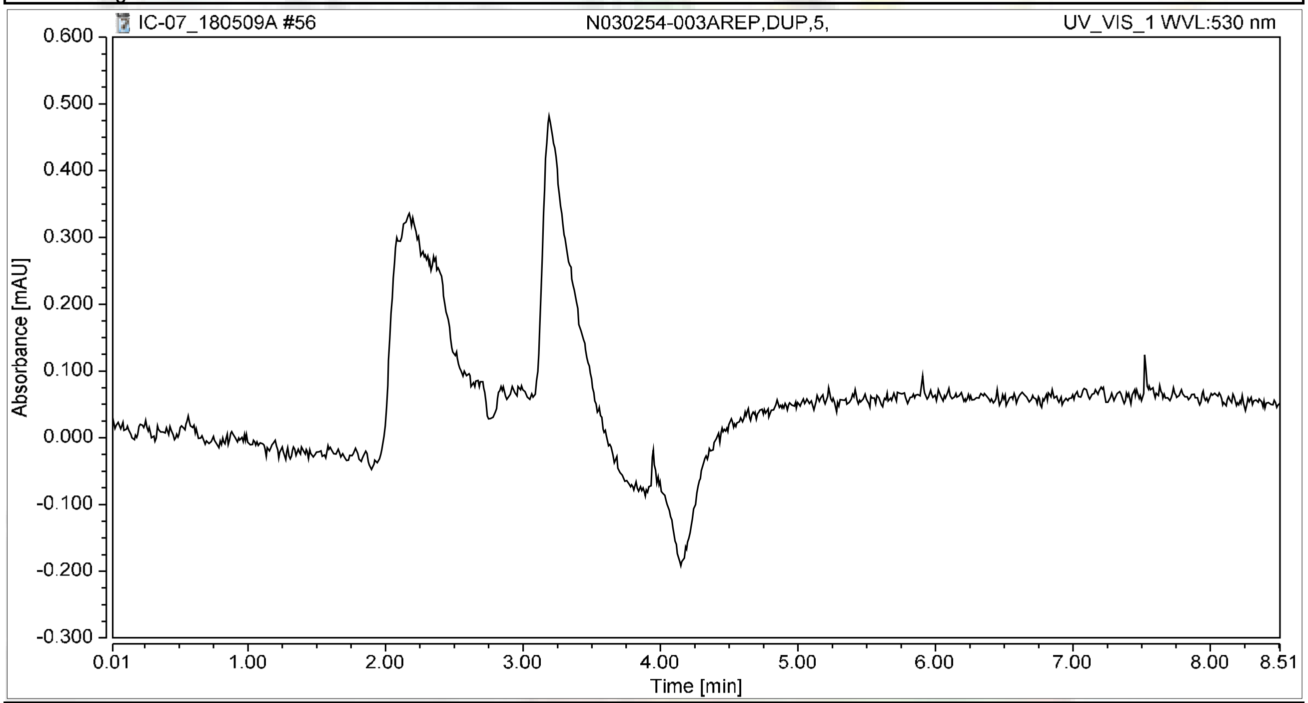
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-003AREP,DUP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 16:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

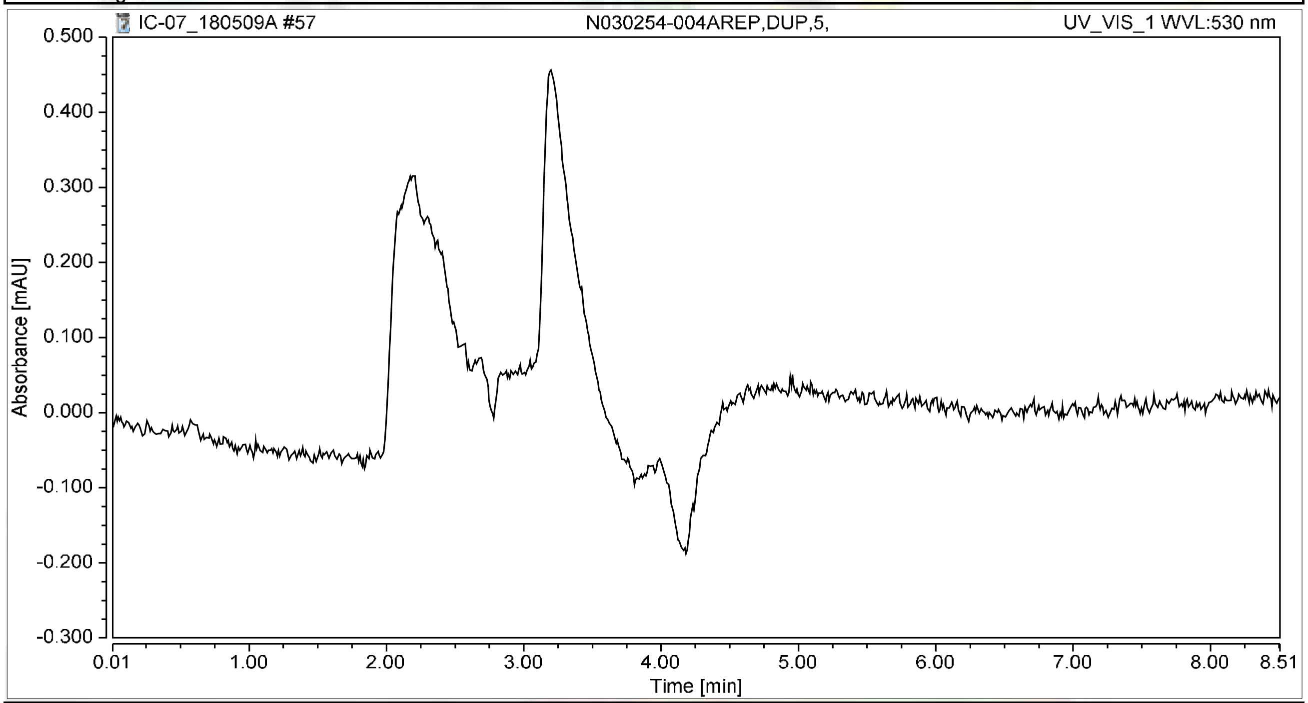
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-004AREP,DUP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 16:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

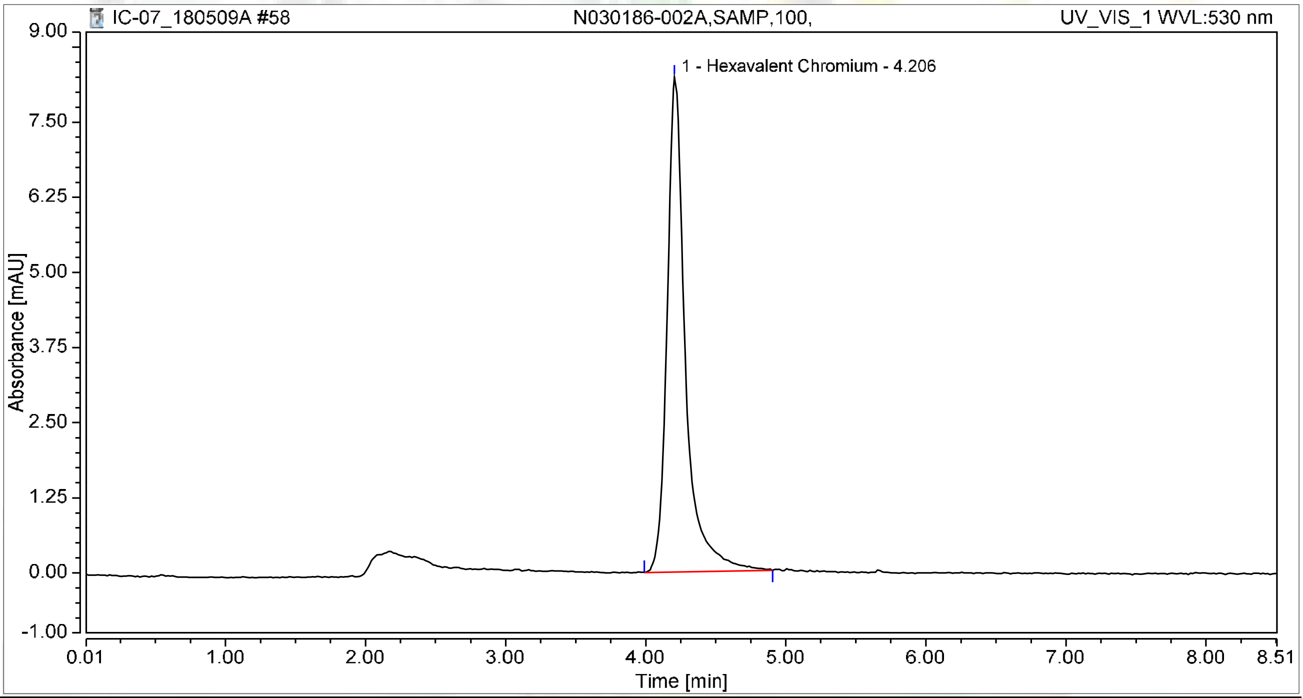
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030186-002A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 16:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

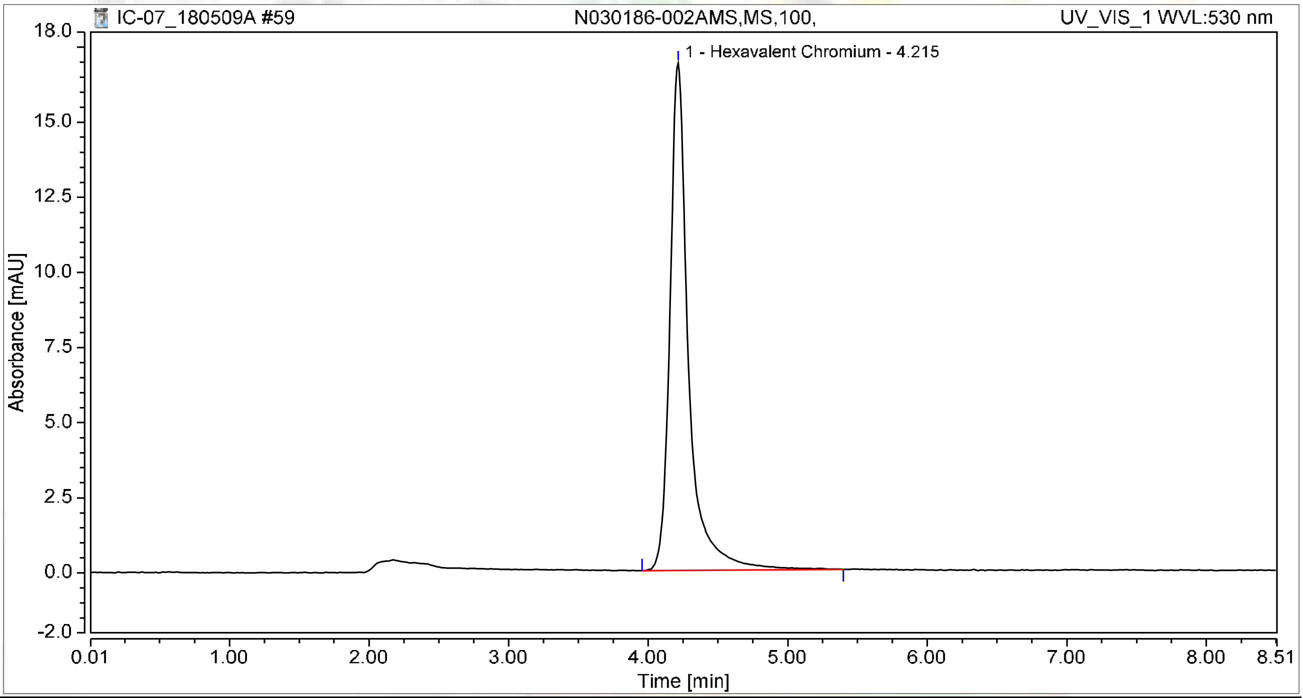
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.255	8.235	100.00	100.00	4.8917
Total:			**1.255**	**8.235**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030186-002AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 16:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

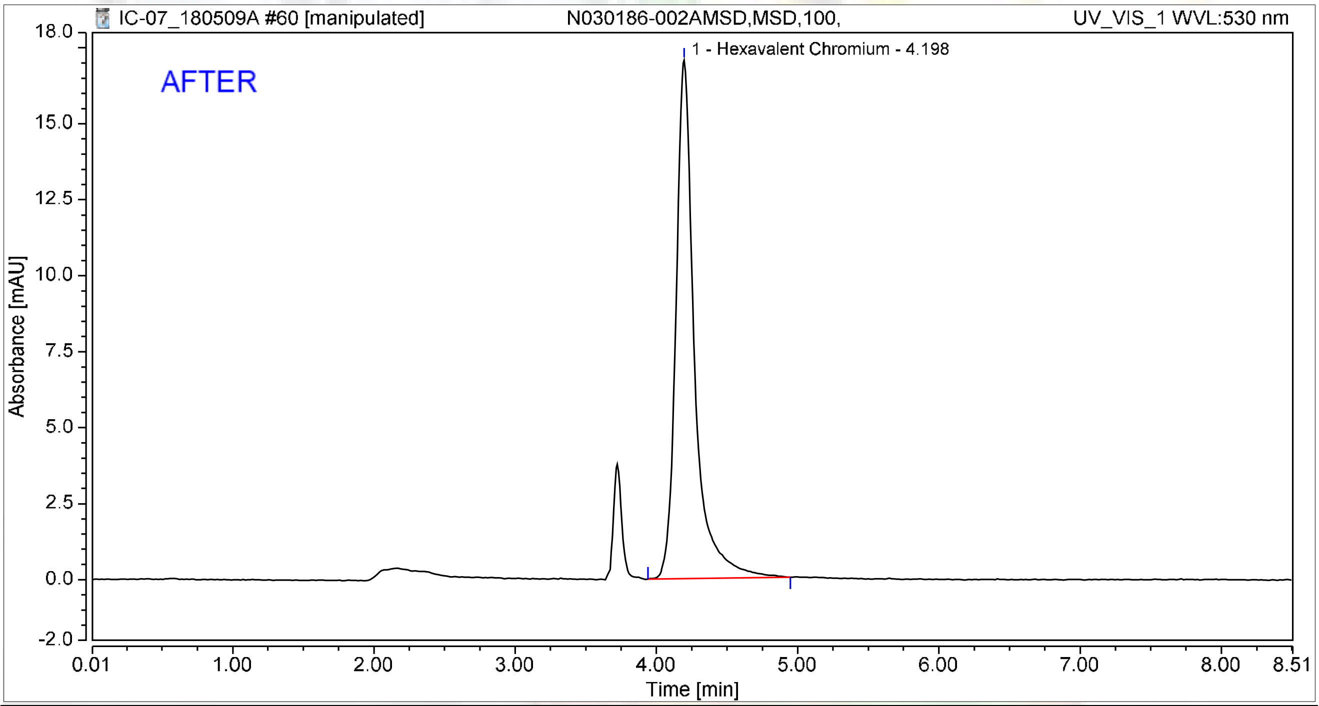
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.616	16.893	100.00	100.00	10.1943
Total:			**2.616**	**16.893**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030186-002AMSD,MSD,100,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 17:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	2.601	17.058	100.00	100.00	10.1355
Total:			**2.601**	**17.058**	**100.00**	**100.00**	

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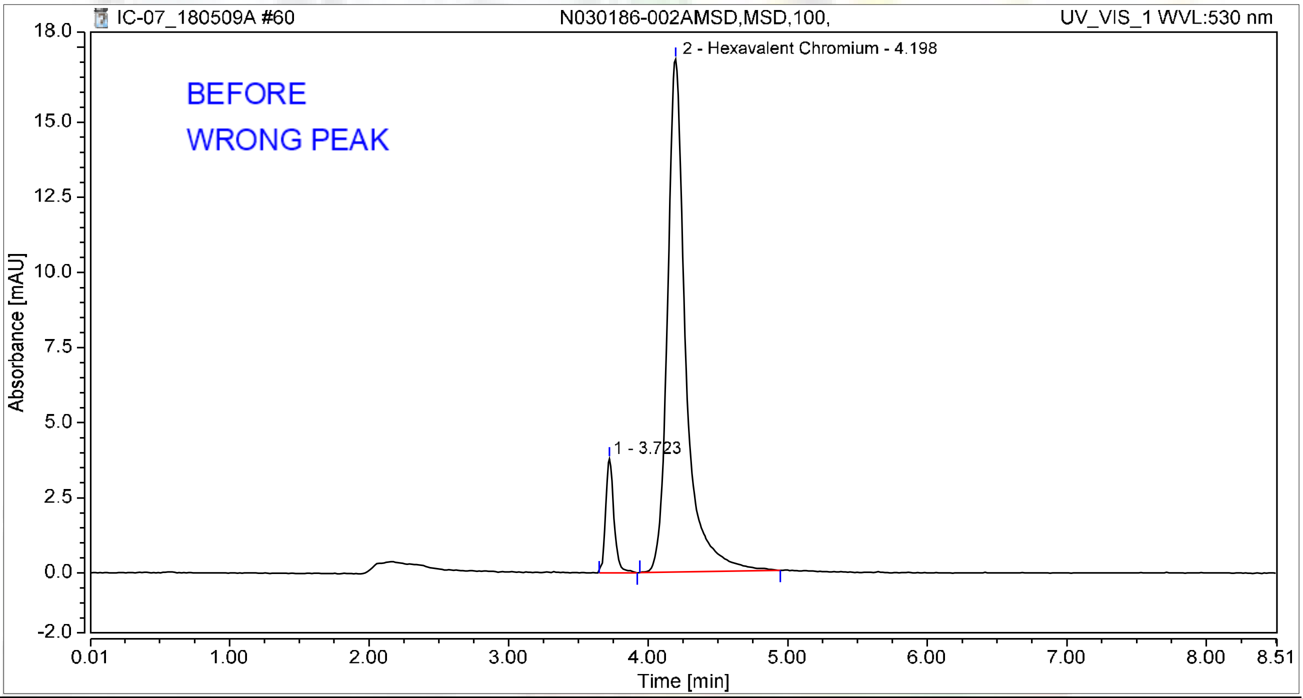
Chromatogram and Results

Injection Details

Injection Name:	**N030186-002AMSD,MSD,100,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 17:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.723	0.262	3.792	9.16	18.19	n.a.
2	Hexavalent Chromium	4.198	2.601	17.058	90.84	81.81	10.1355
Total:			**2.864**	**20.850**	**100.00**	**100.00**	

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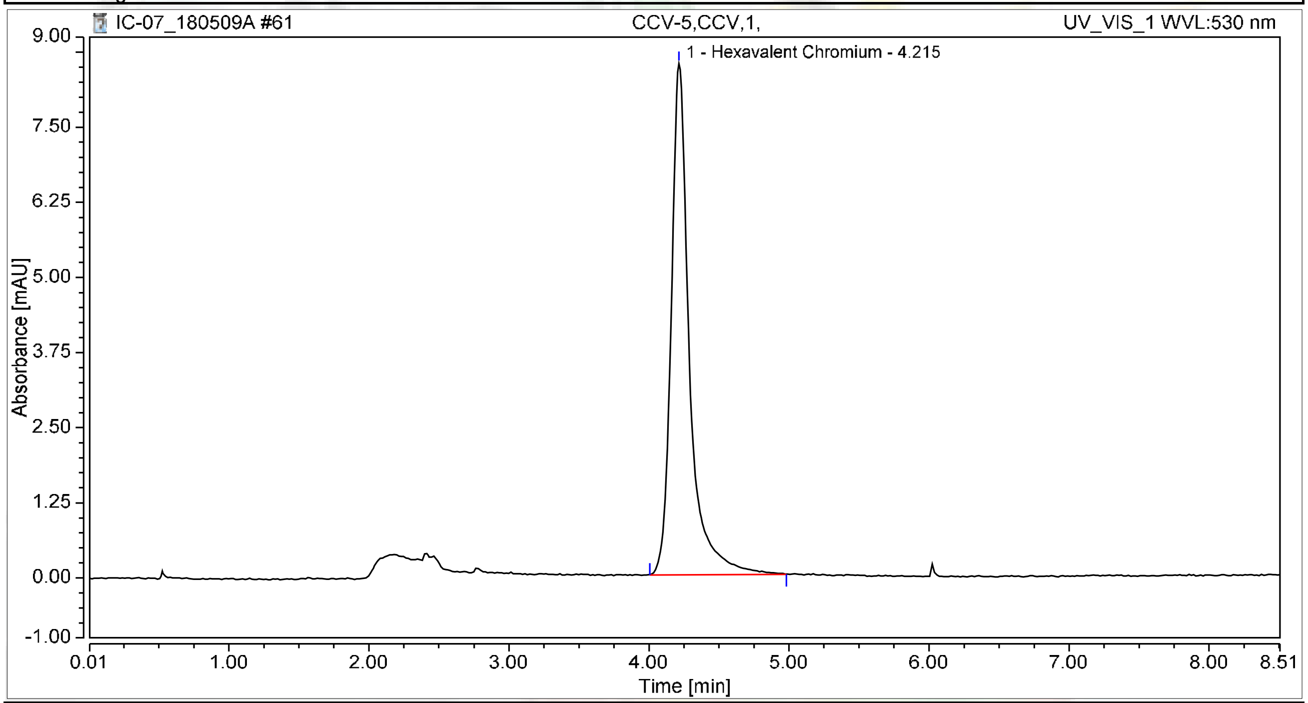
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 17:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

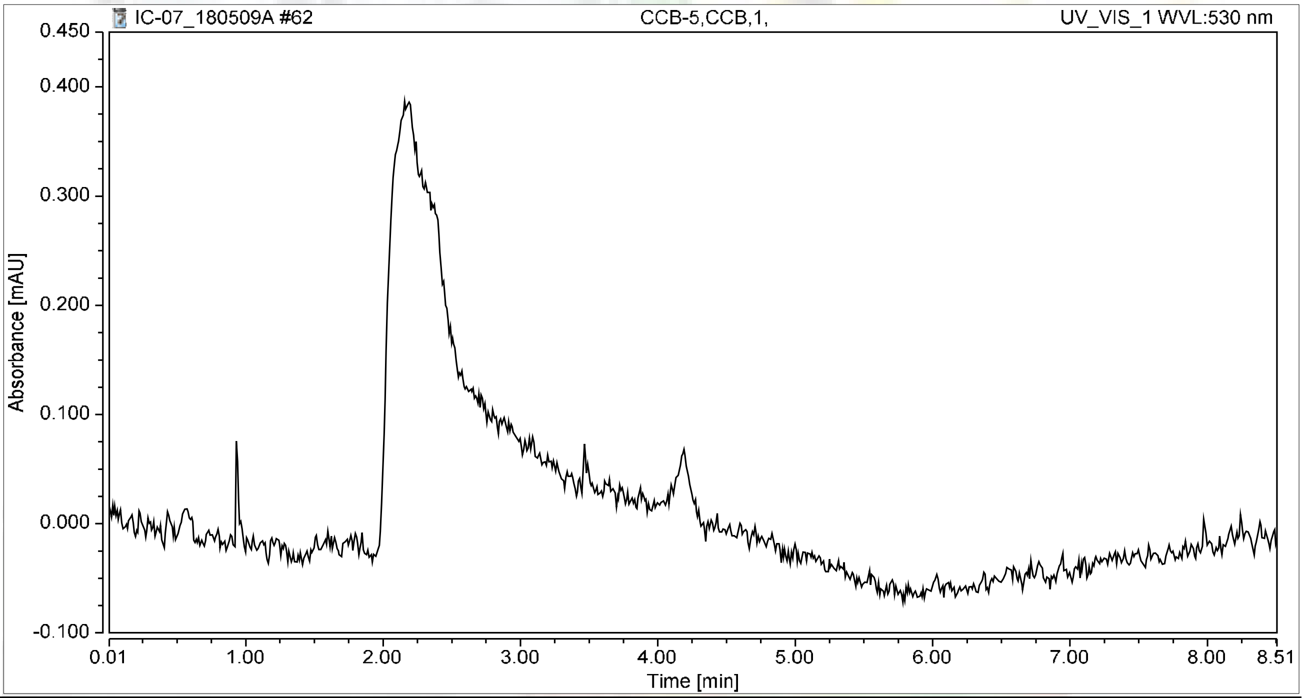
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.288	8.512	100.00	100.00	5.0175
Total:			**1.288**	**8.512**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 17:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

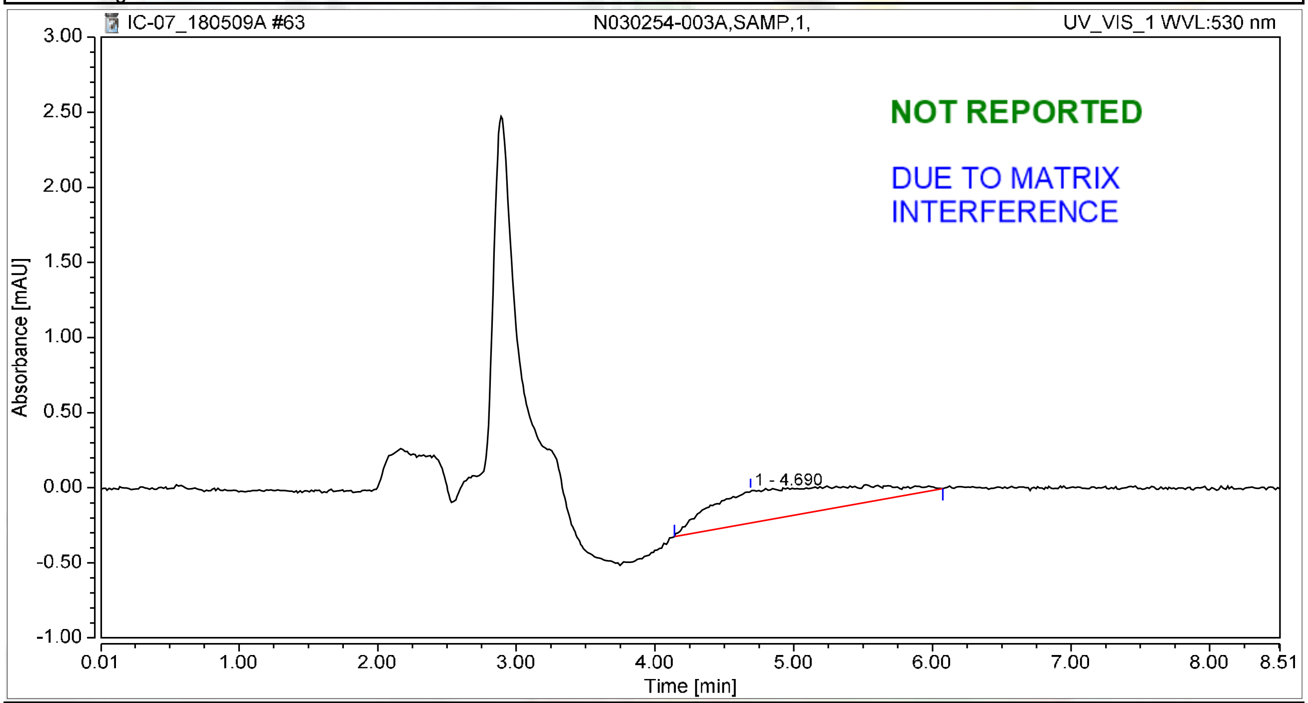
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 17:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

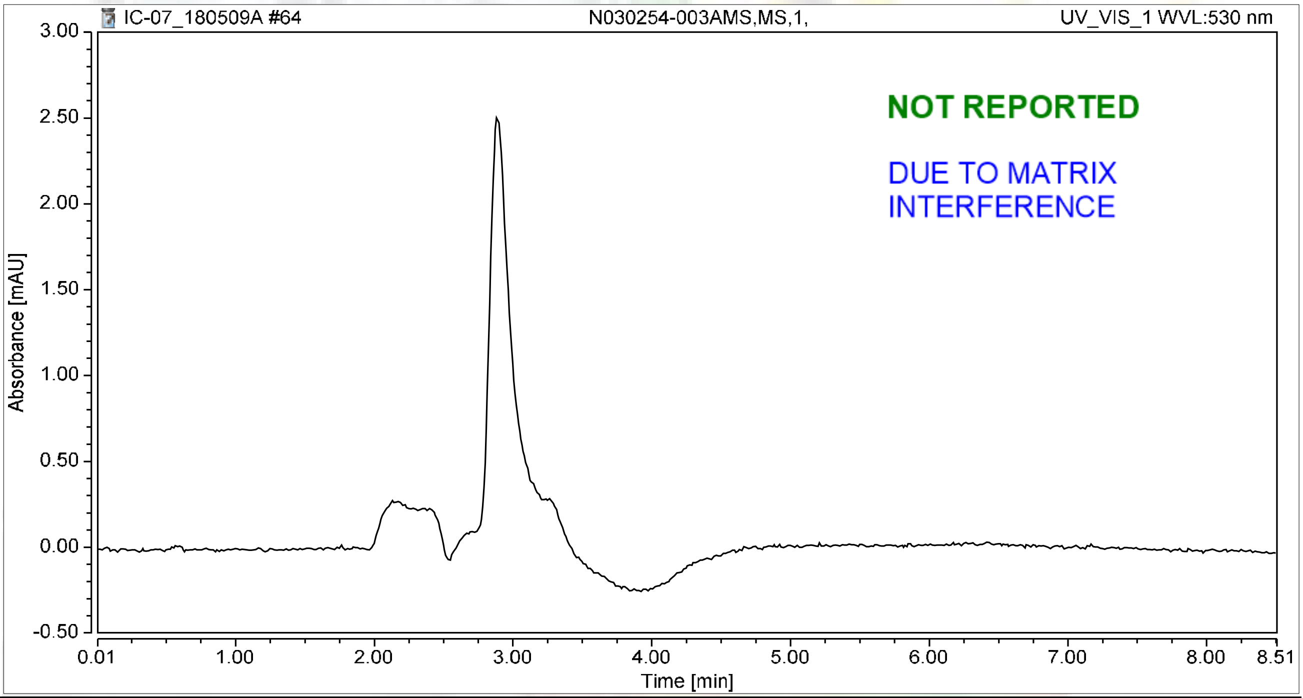
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		4.690	0.246	0.215	100.00	100.00	n.a.
Total:			**0.246**	**0.215**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 17:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

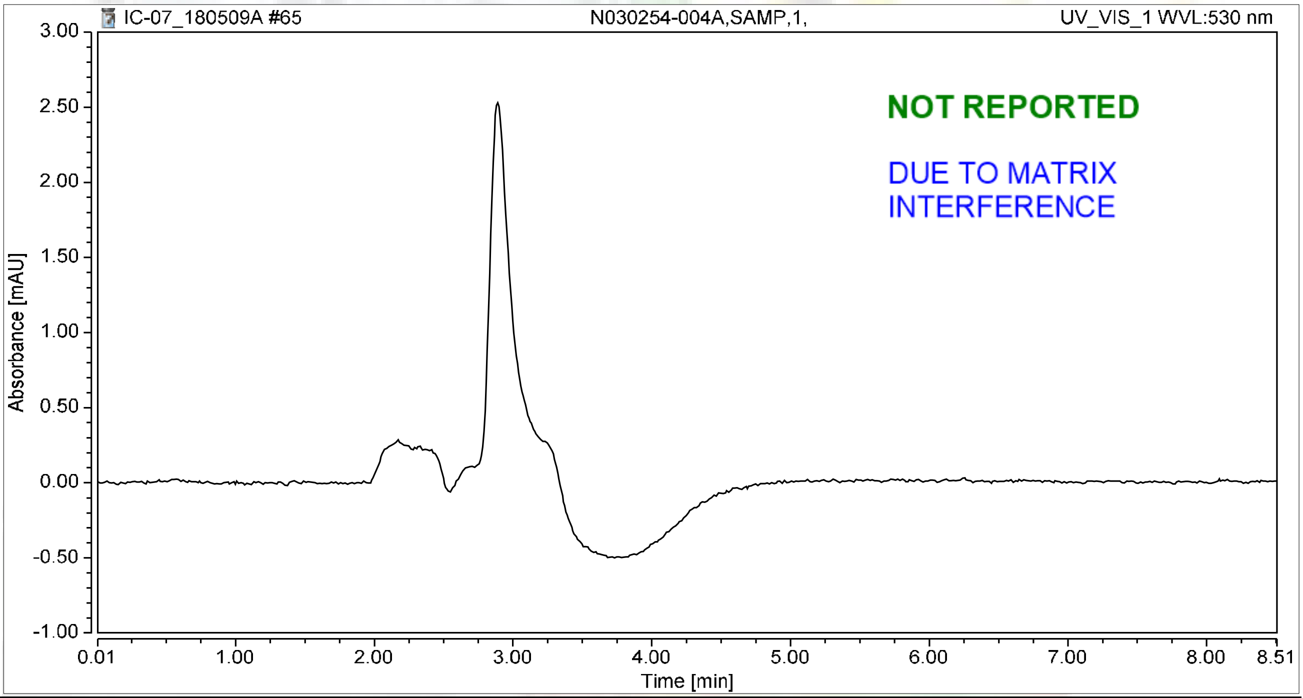
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 17:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

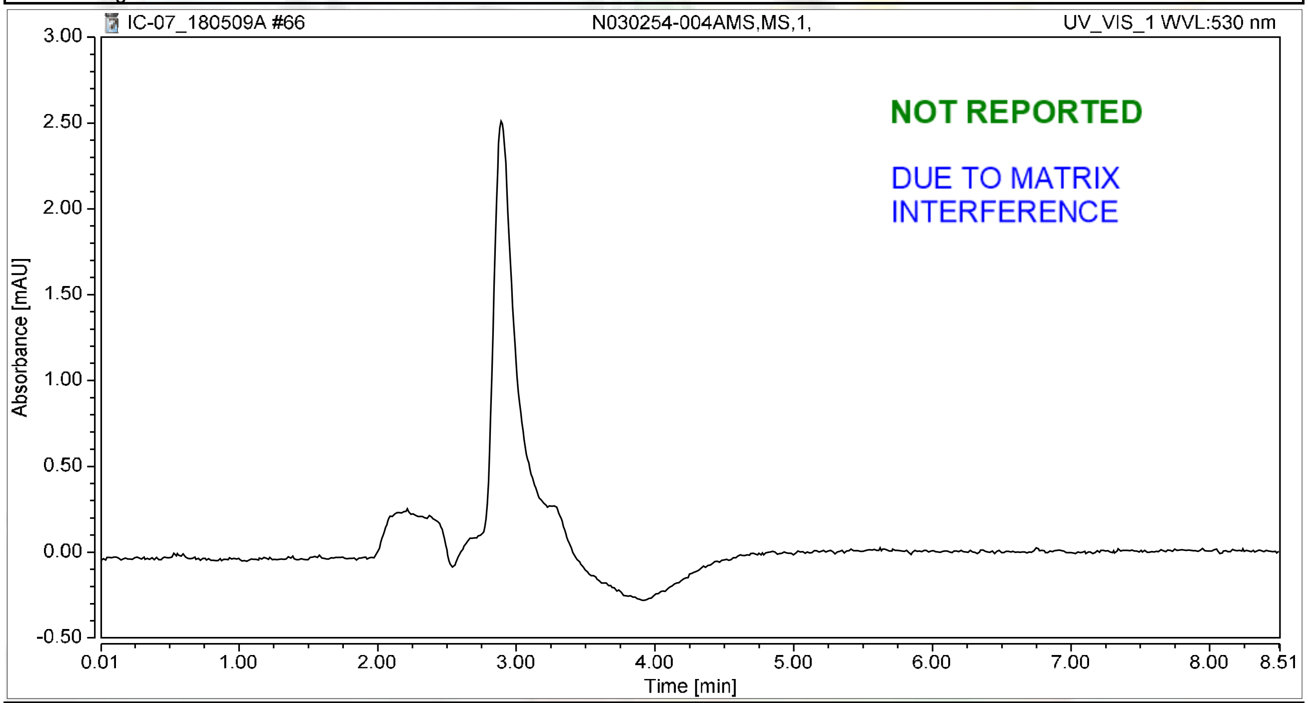
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 17:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

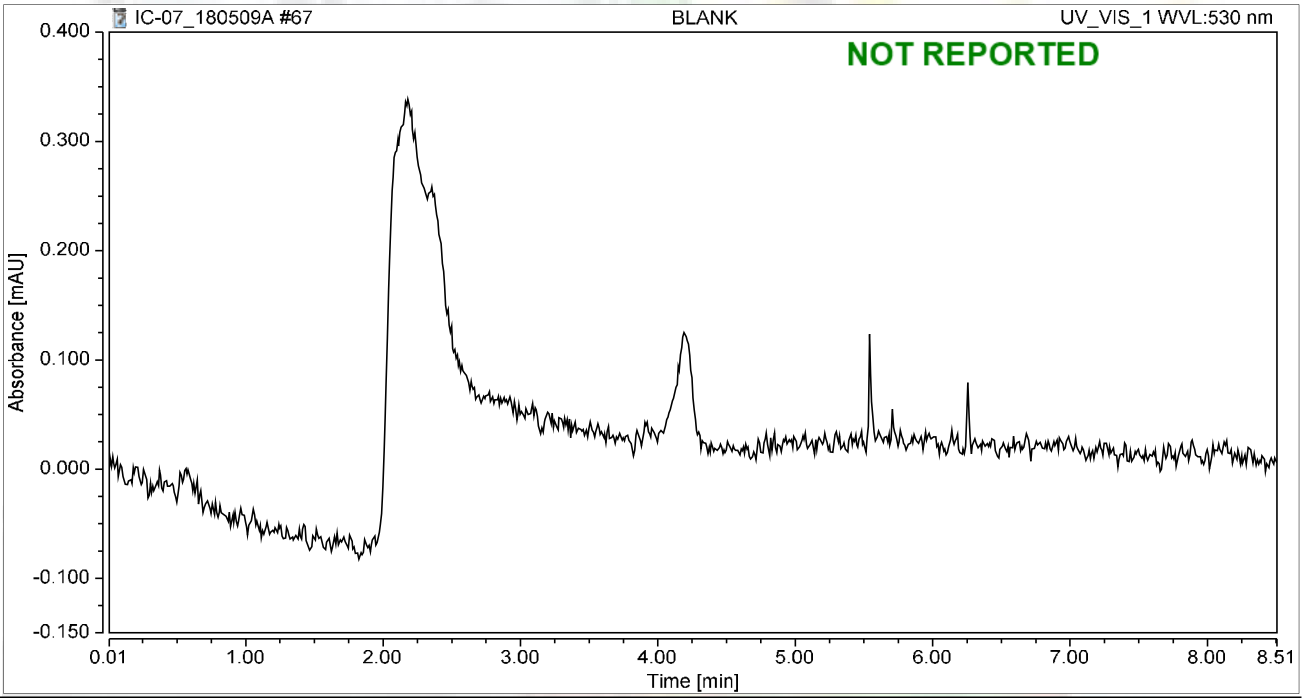
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

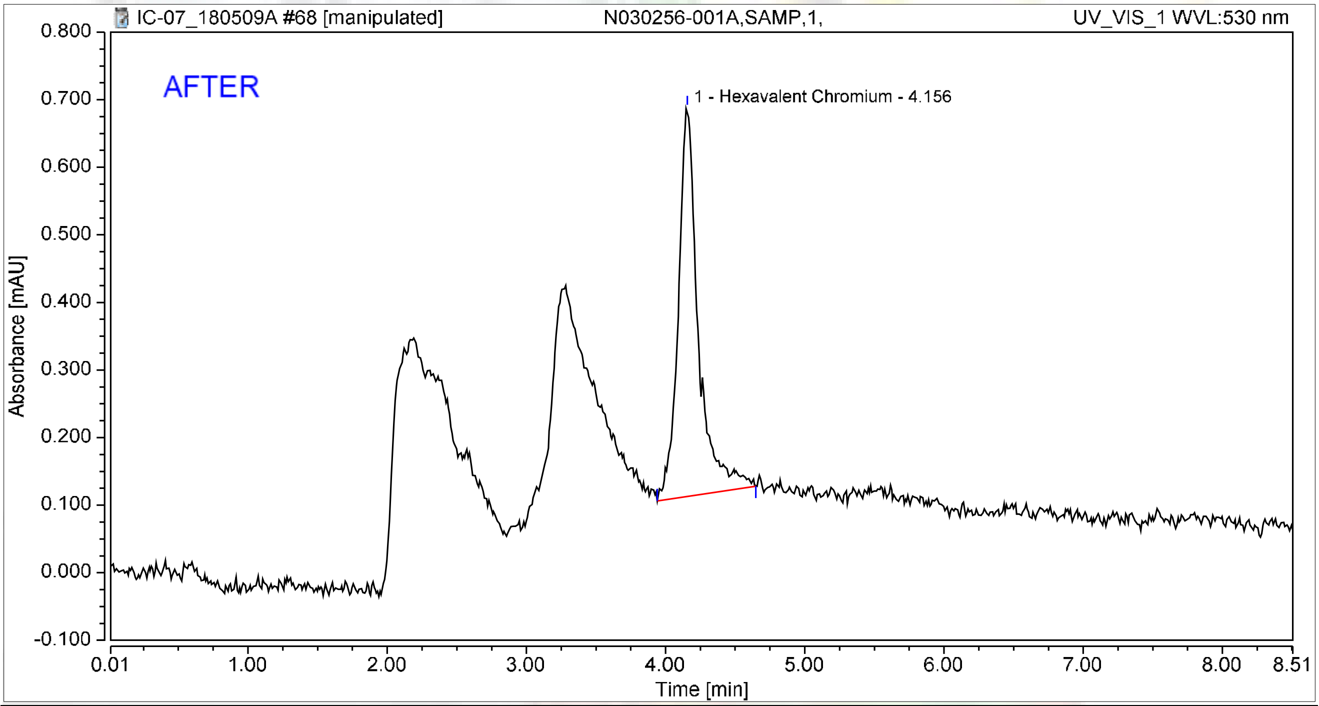
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 18:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.096	0.575	100.00	100.00	0.3744
Total:			**0.096**	**0.575**	**100.00**	**100.00**	

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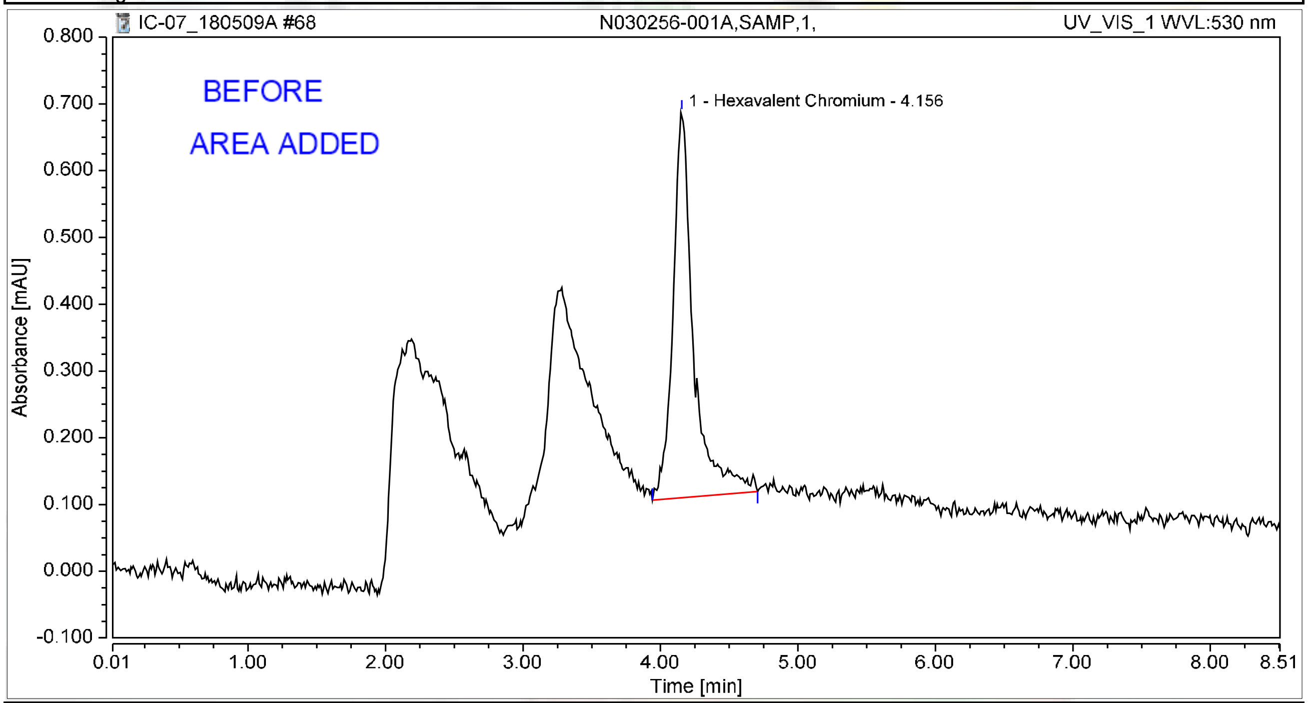
Chromatogram and Results

Injection Details

Injection Name:	**N030256-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 18:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.100	0.578	100.00	100.00	0.3913
Total:			**0.100**	**0.578**	**100.00**	**100.00**	

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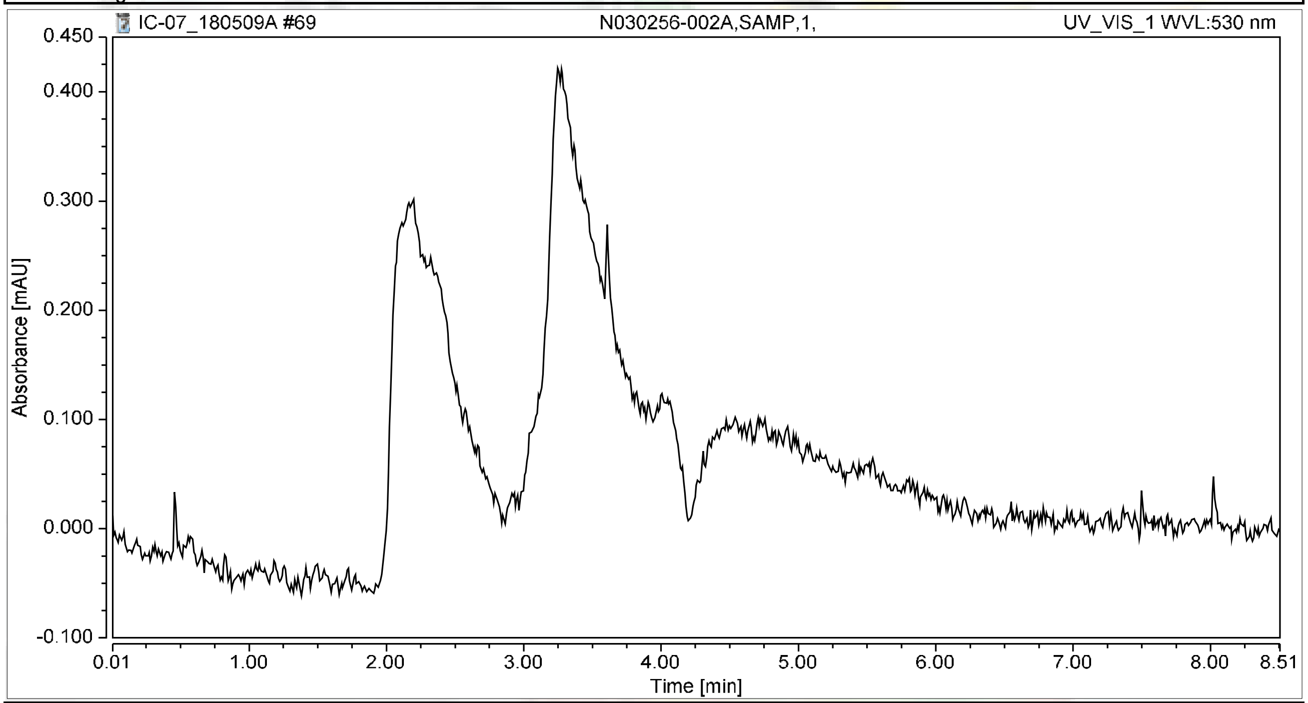
Chromatogram and Results

Injection Details

Injection Name:	**N030256-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

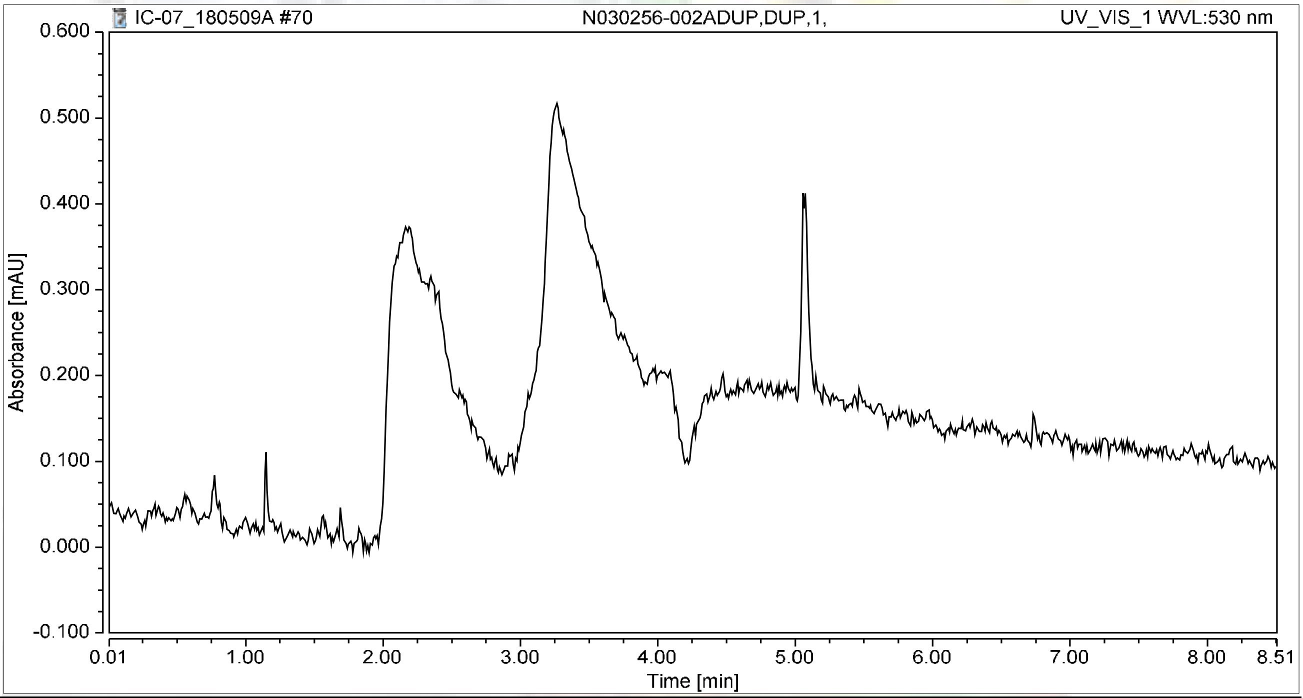
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-002ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 18:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

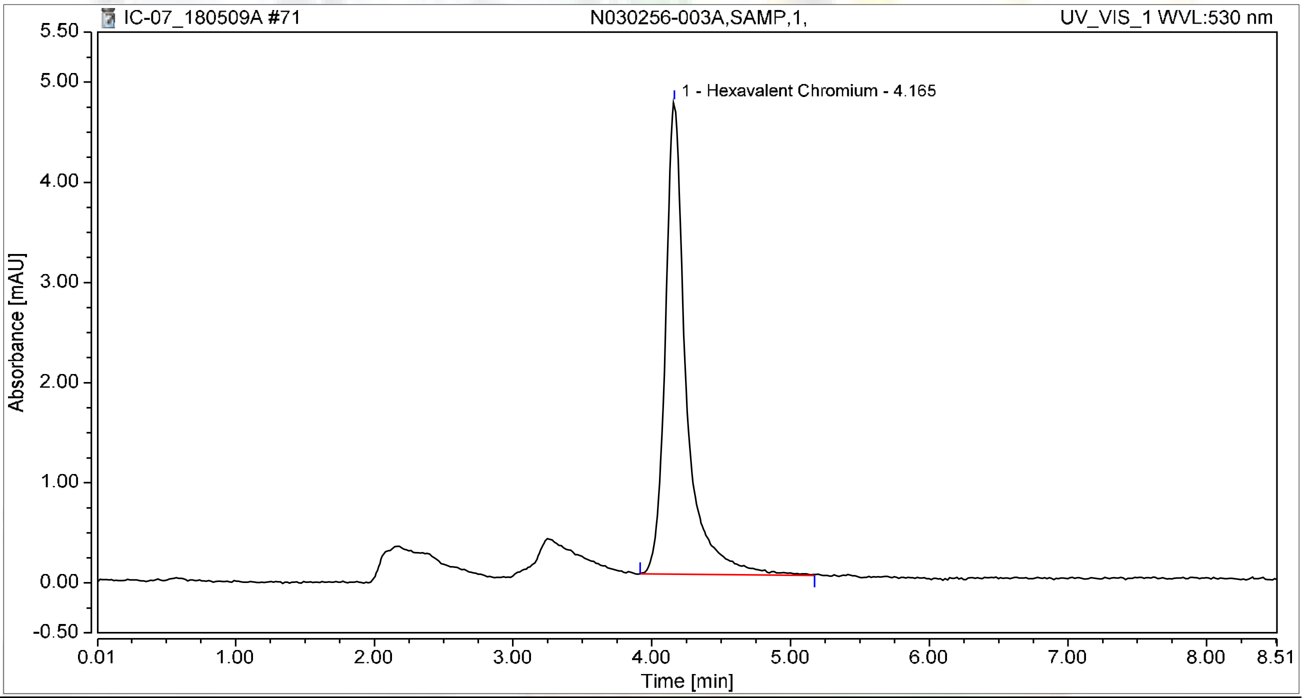
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

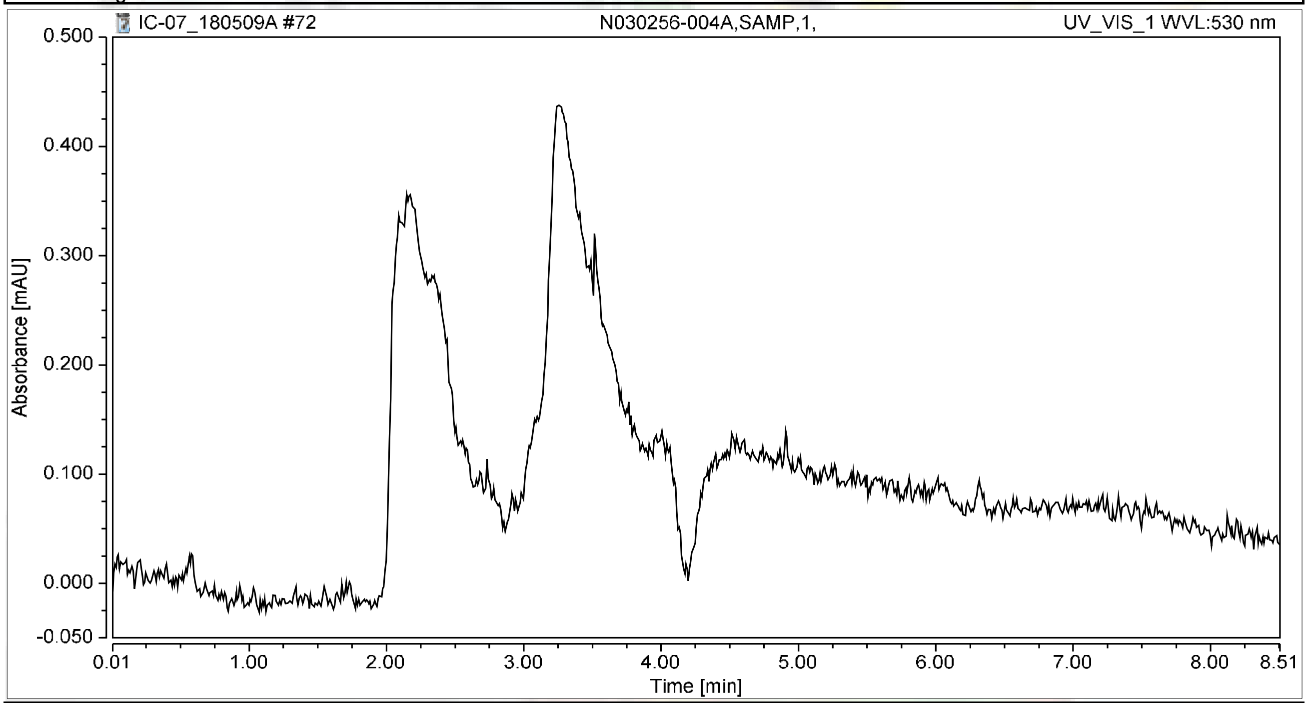
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.827	4.715	100.00	100.00	3.2227
Total:			**0.827**	**4.715**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 18:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

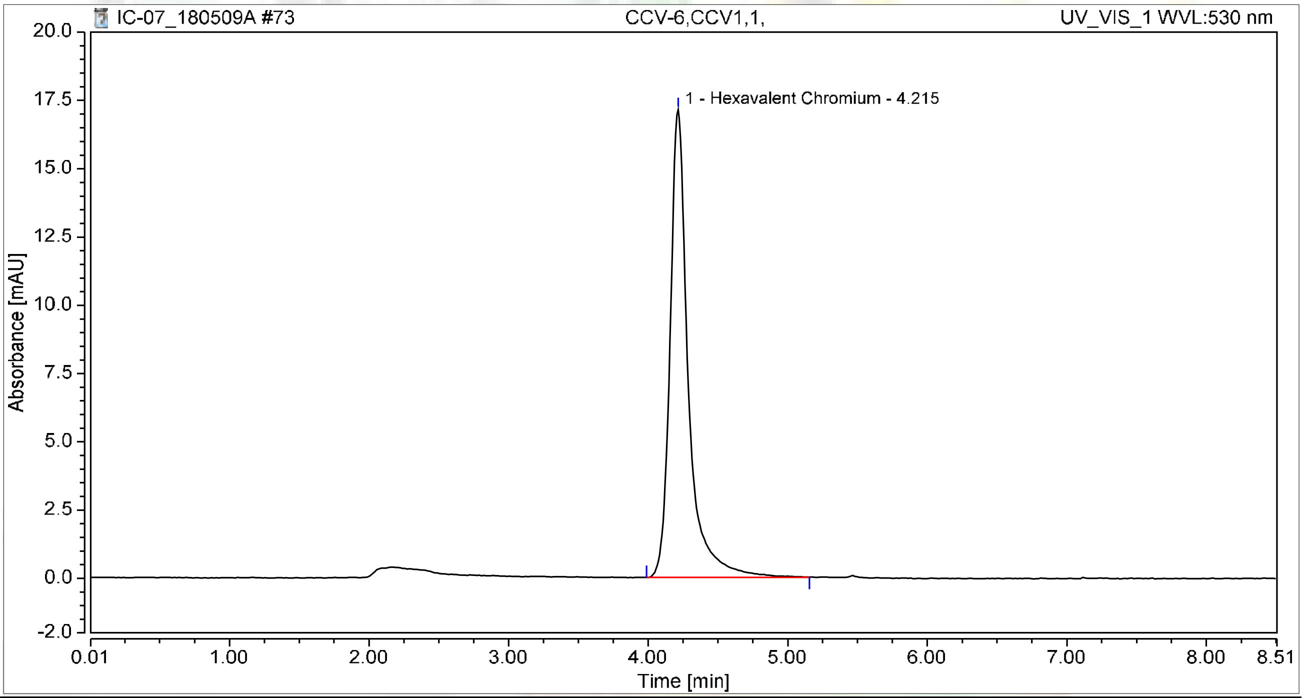
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 19:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

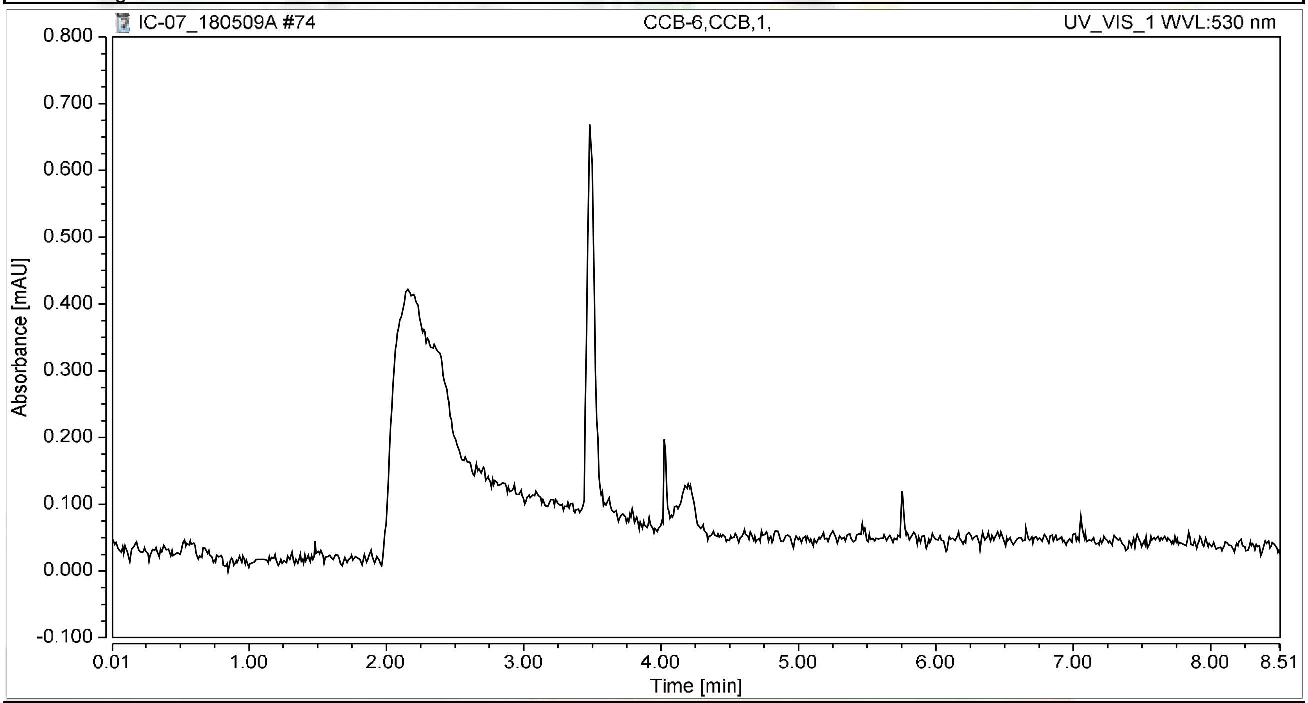
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.600	17.133	100.00	100.00	10.1322
Total:			**2.600**	**17.133**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 19:12**	*Sample Weight:*	**1.0000**

Chromatogram



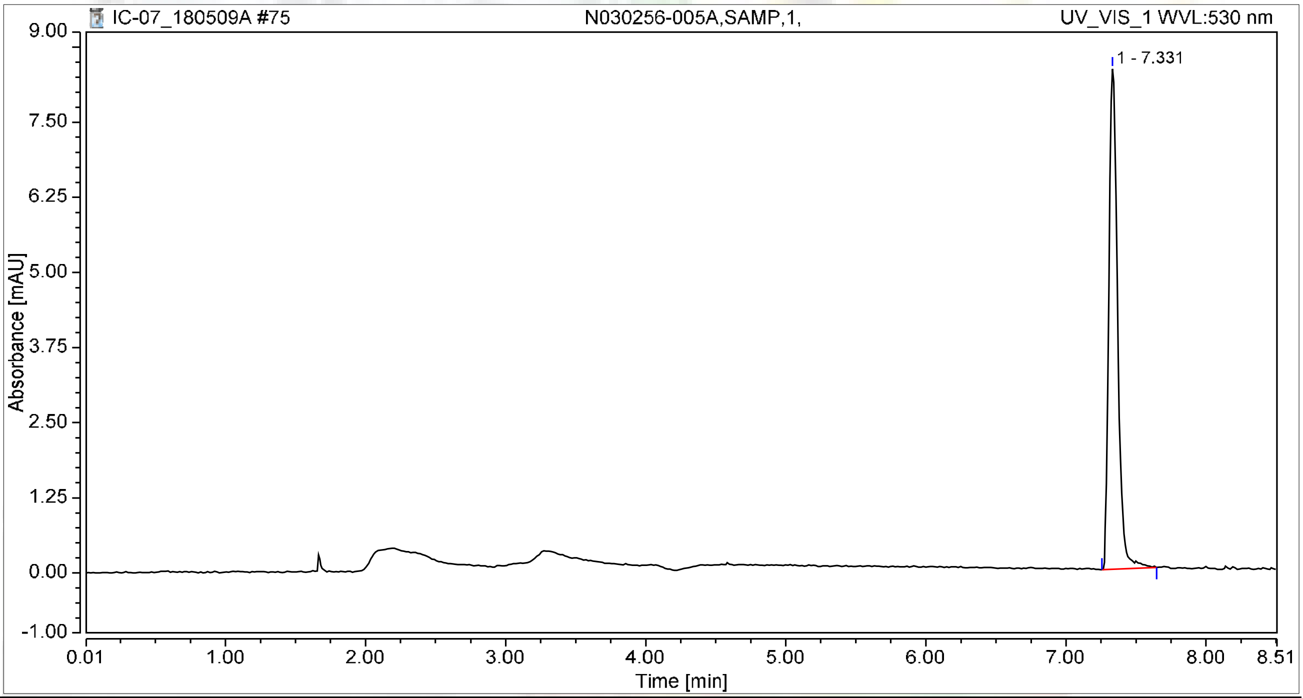
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details			
Injection Name:	**N030256-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 19:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

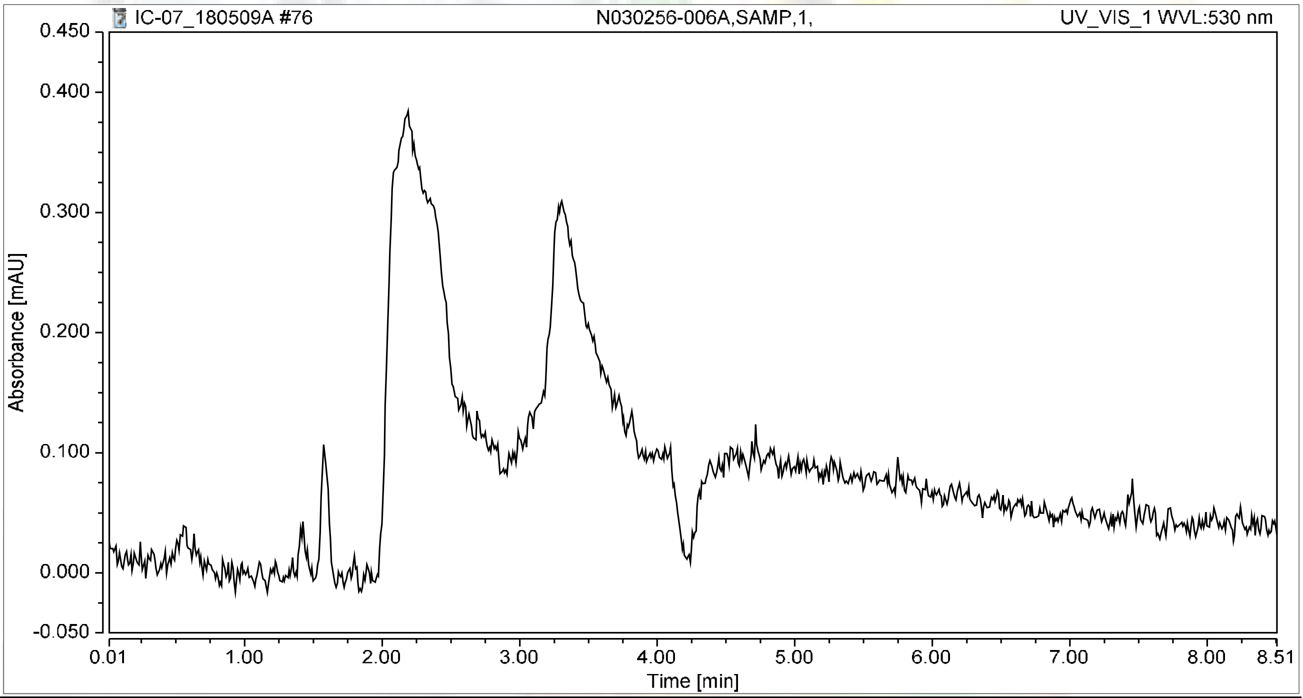
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.331	0.601	8.328	100.00	100.00	n.a.
Total:			**0.601**	**8.328**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 19:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

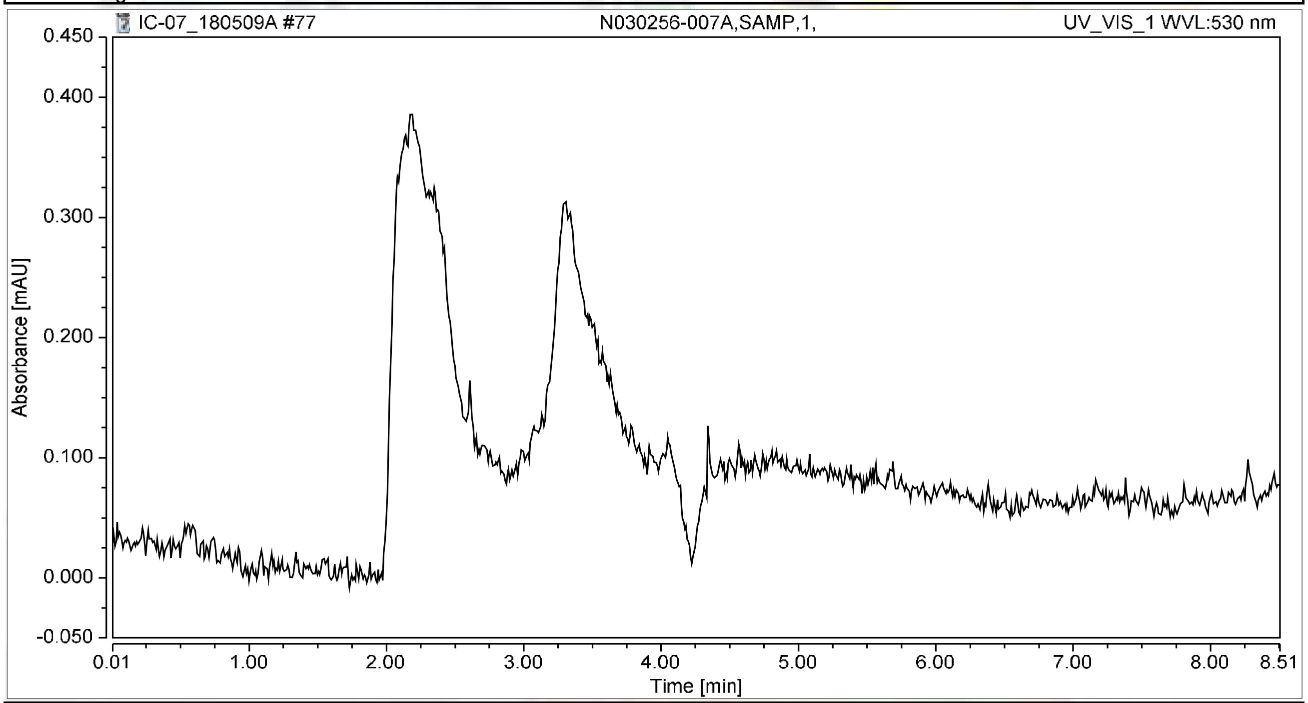
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 19:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

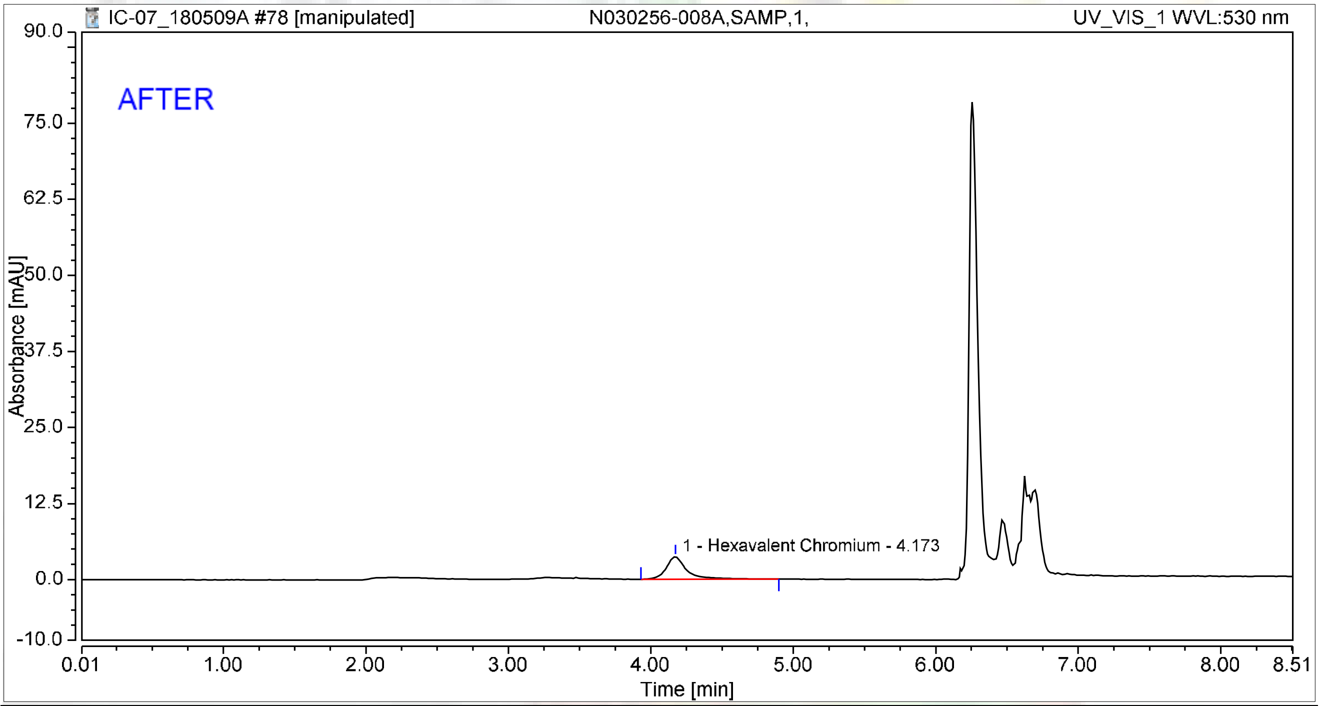
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 19:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.626	3.665	100.00	100.00	2.4381
Total:			**0.626**	**3.665**	**100.00**	**100.00**	

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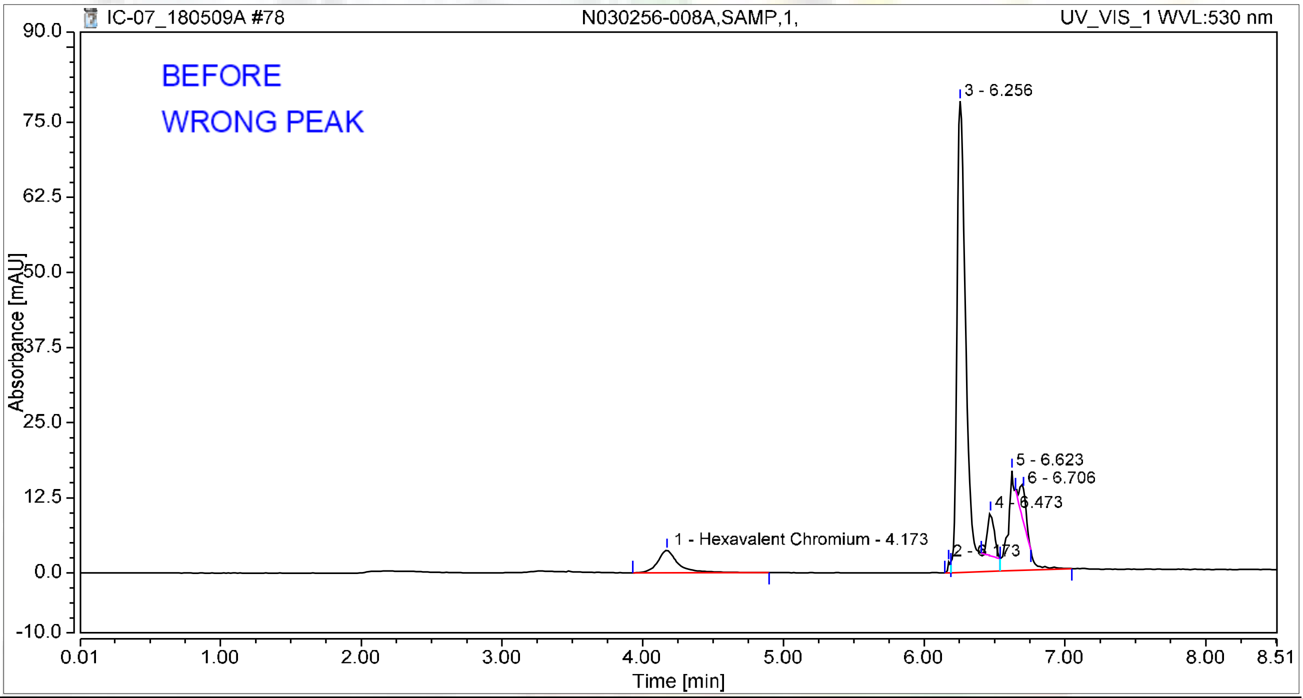
Chromatogram and Results

Injection Details

Injection Name:	**N030256-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 19:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.626	3.665	6.71	3.24	2.4381
2		6.173	0.036	1.811	0.39	1.60	n.a.
3		6.256	6.061	78.395	64.94	69.32	n.a.
4		6.473	0.409	7.052	4.38	6.24	n.a.
5		6.623	1.919	16.630	20.57	14.71	n.a.
6		6.706	0.282	5.530	3.02	4.89	n.a.
Total:			**9.332**	**113.084**	**100.00**	**100.00**	

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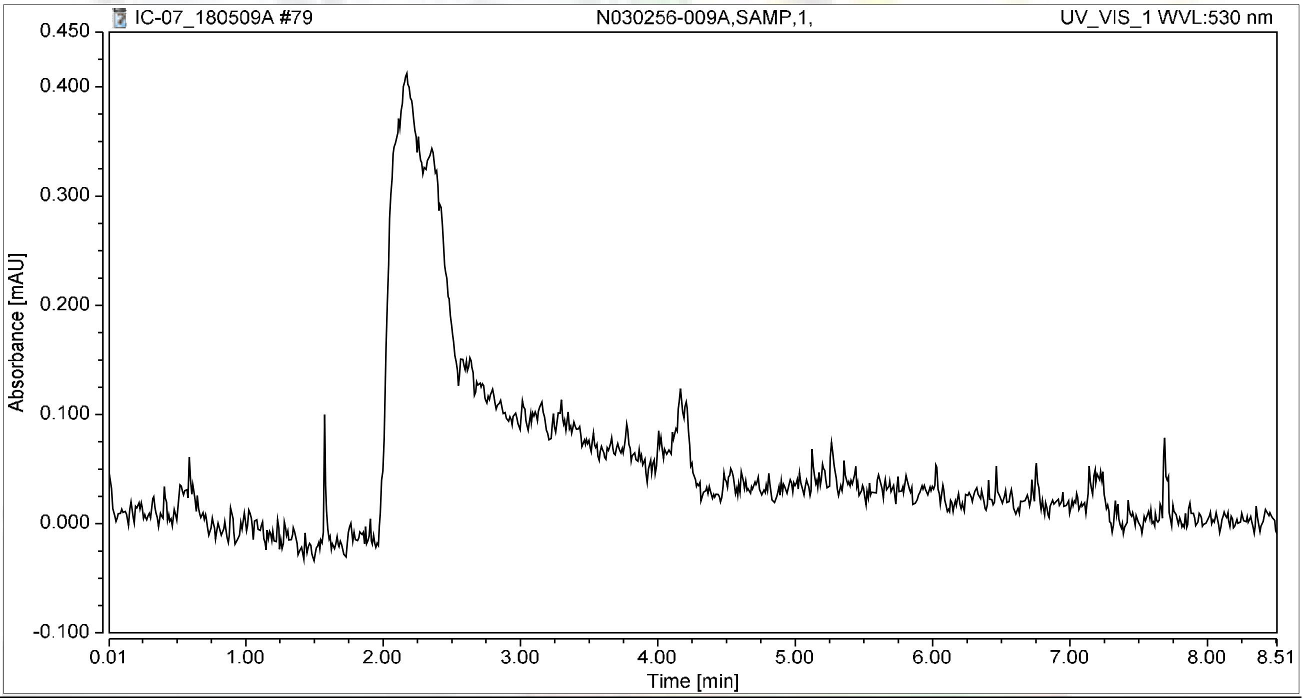
Chromatogram and Results

Injection Details

Injection Name:	**N030256-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 20:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

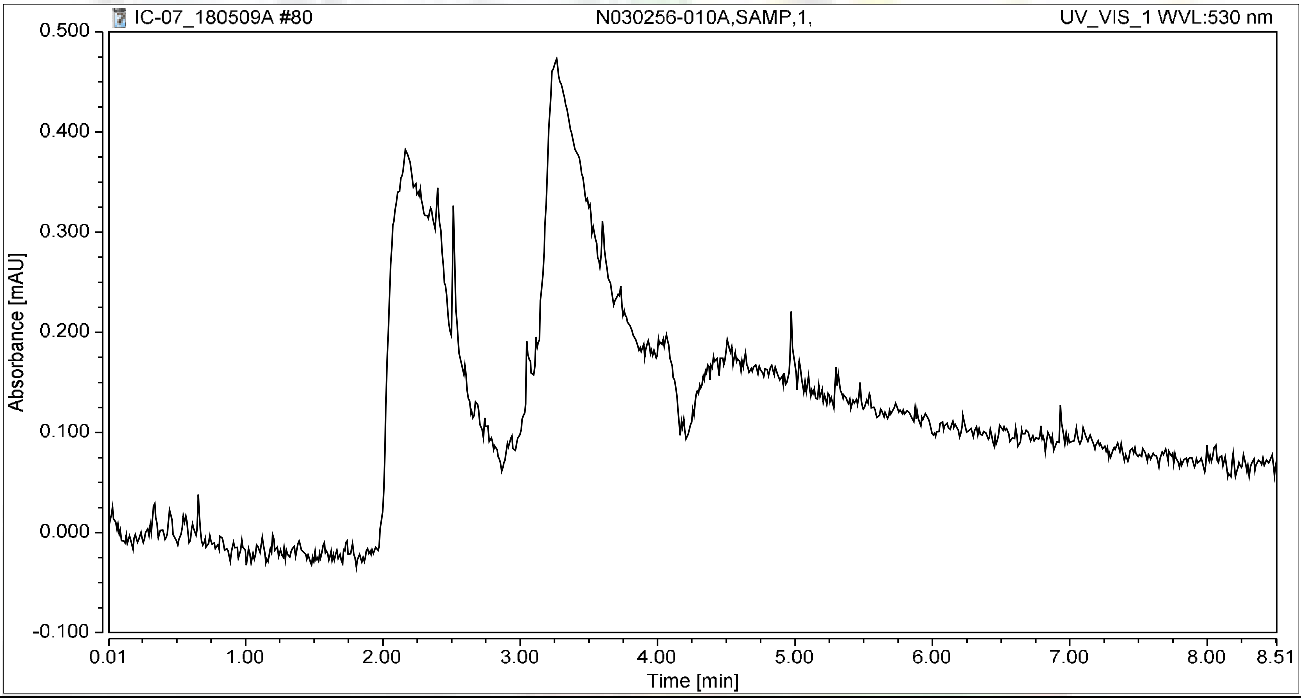
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 20:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

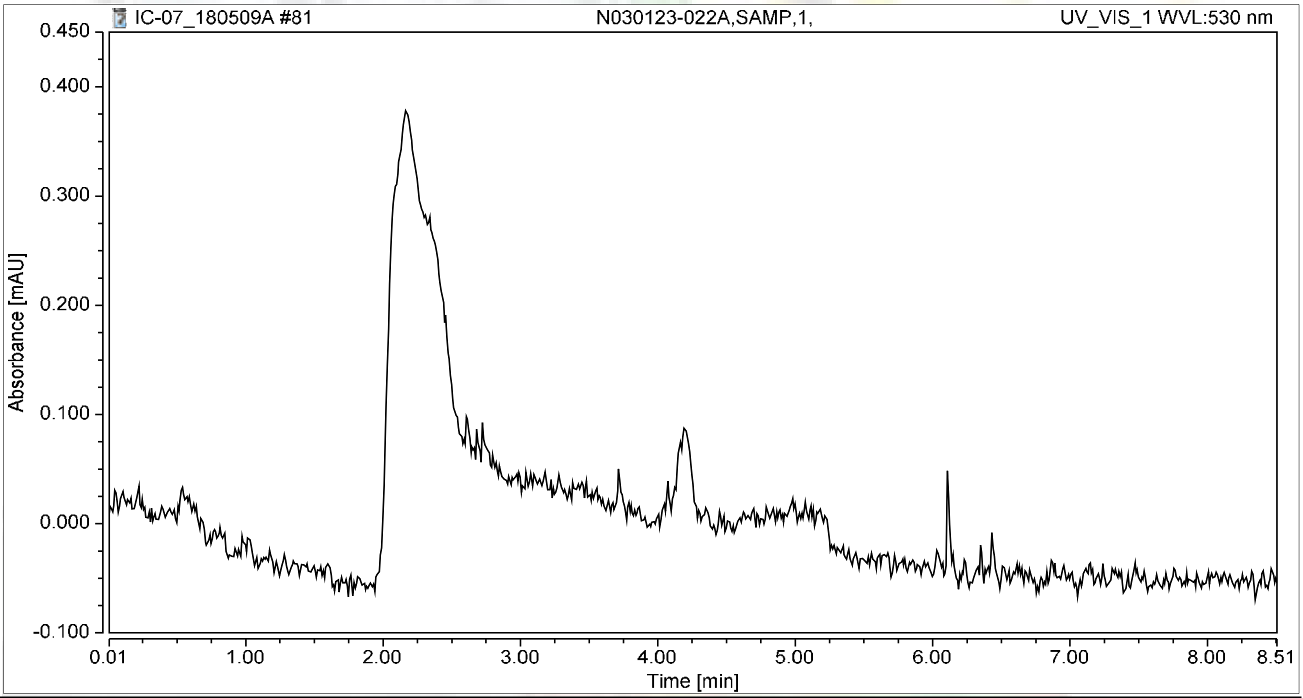
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-022A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 20:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

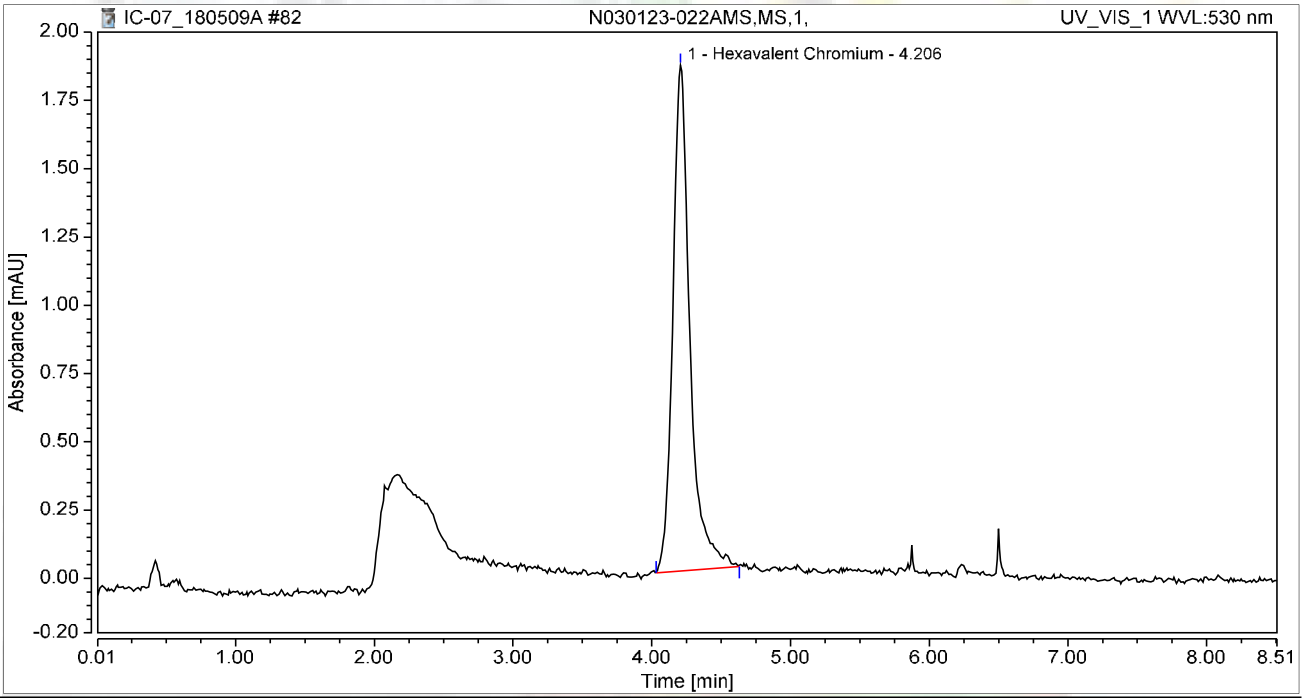
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-022AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 20:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

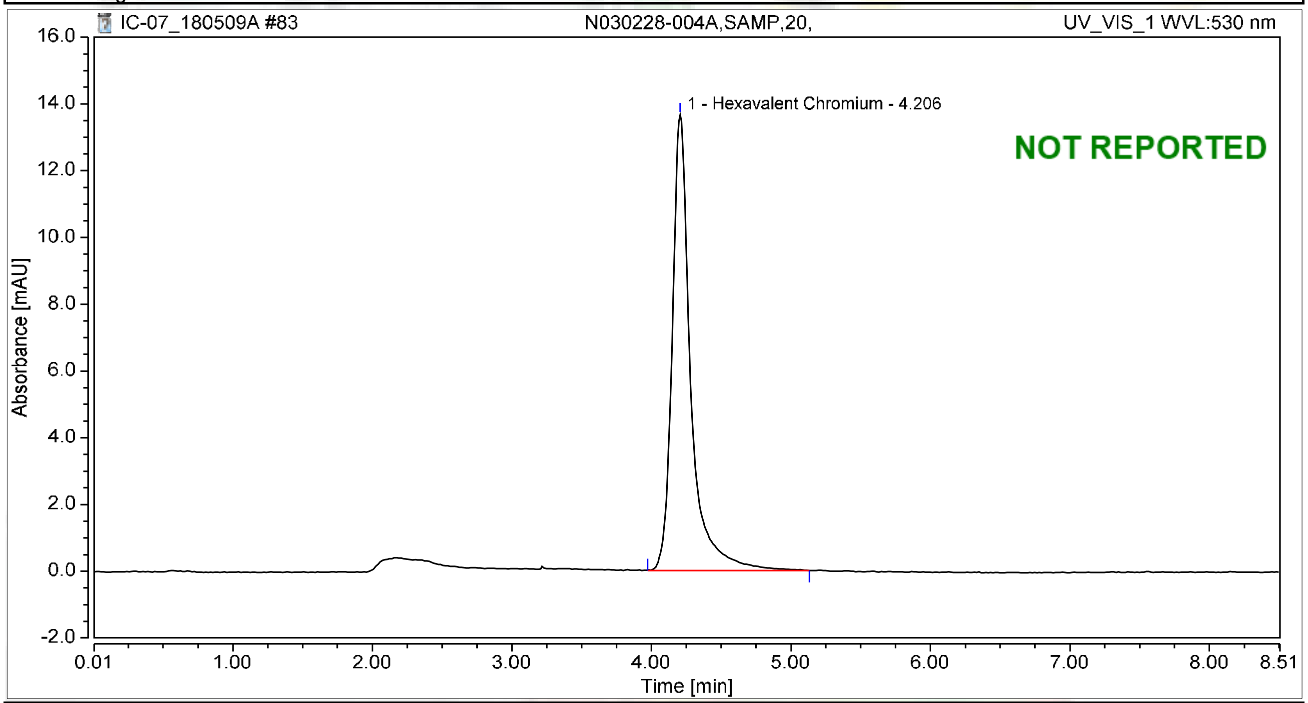
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.265	1.852	100.00	100.00	1.0338
Total:			**0.265**	**1.852**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030228-004A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 20:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

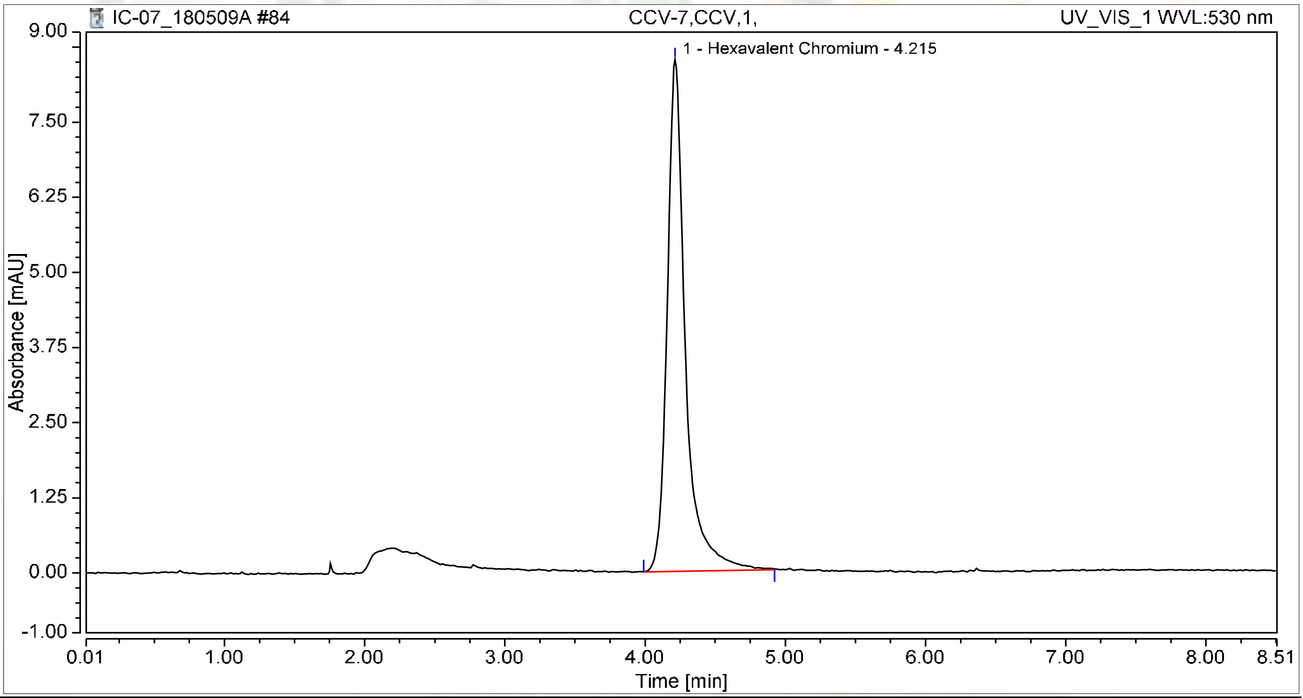
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.106	13.648	100.00	100.00	8.2050
Total:			**2.106**	**13.648**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 20:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

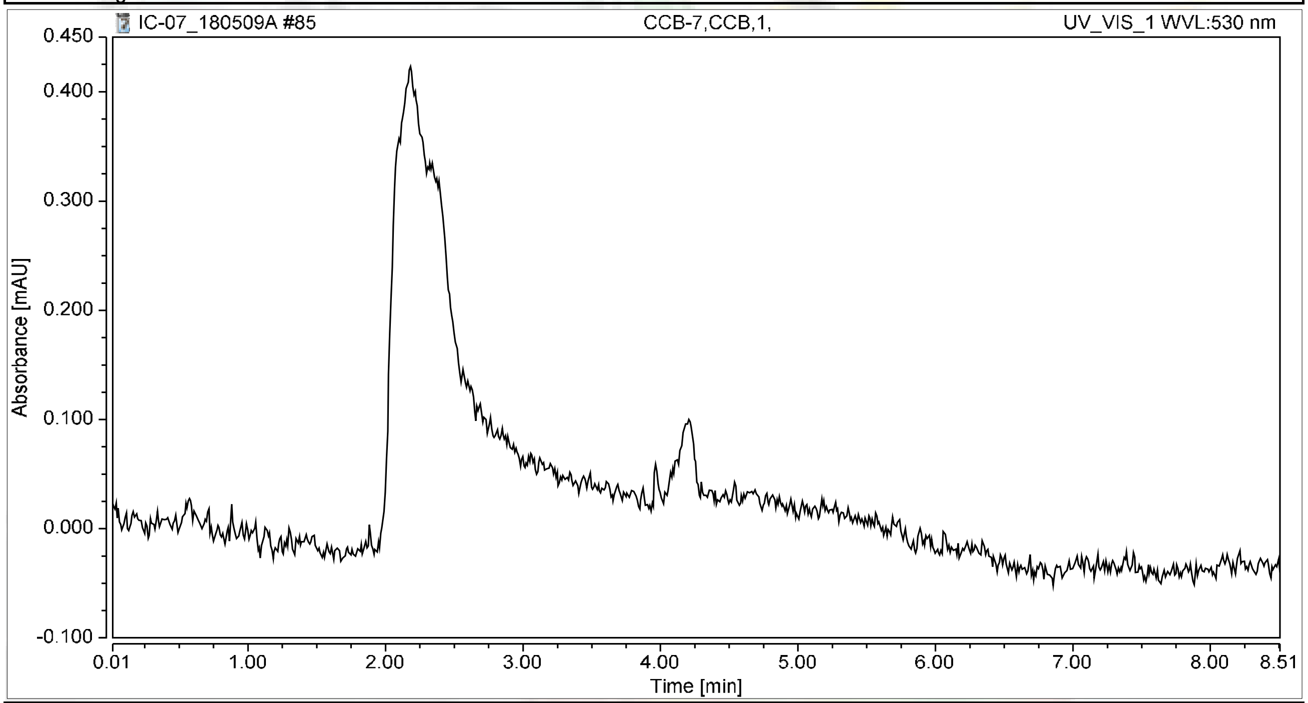
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.281	8.513	100.00	100.00	4.9911
Total:			**1.281**	**8.513**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 20:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

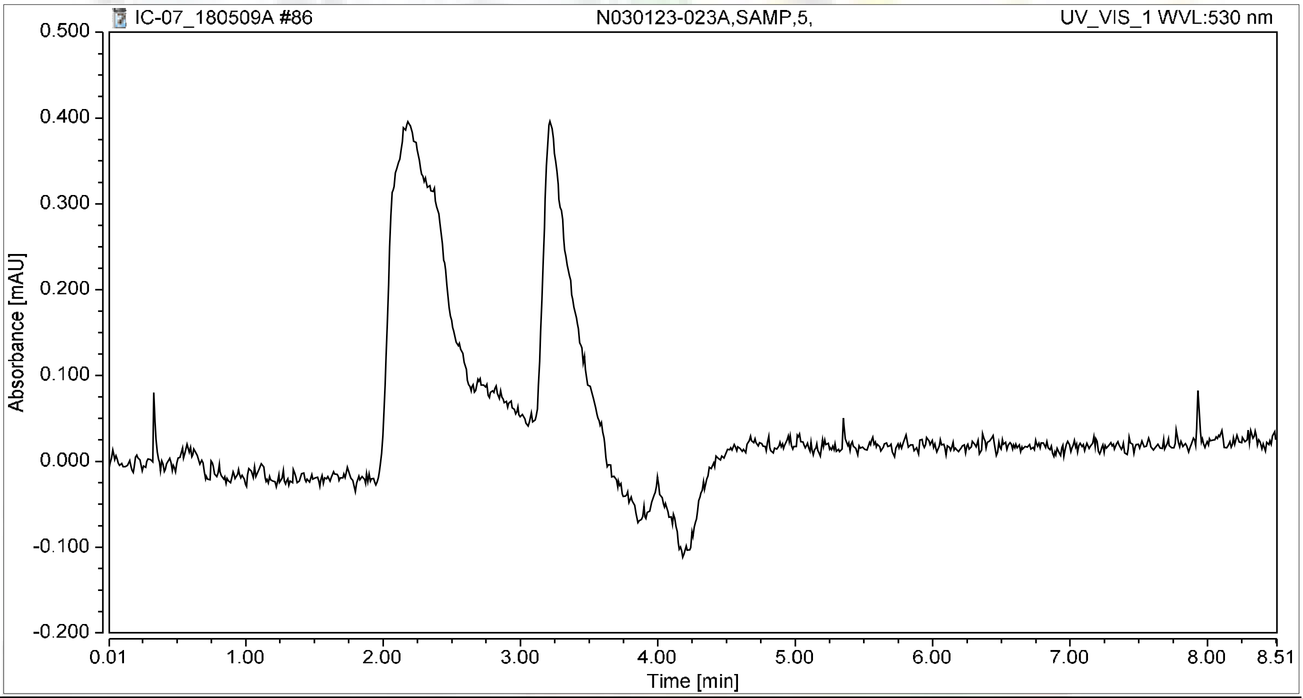
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-023A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 21:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

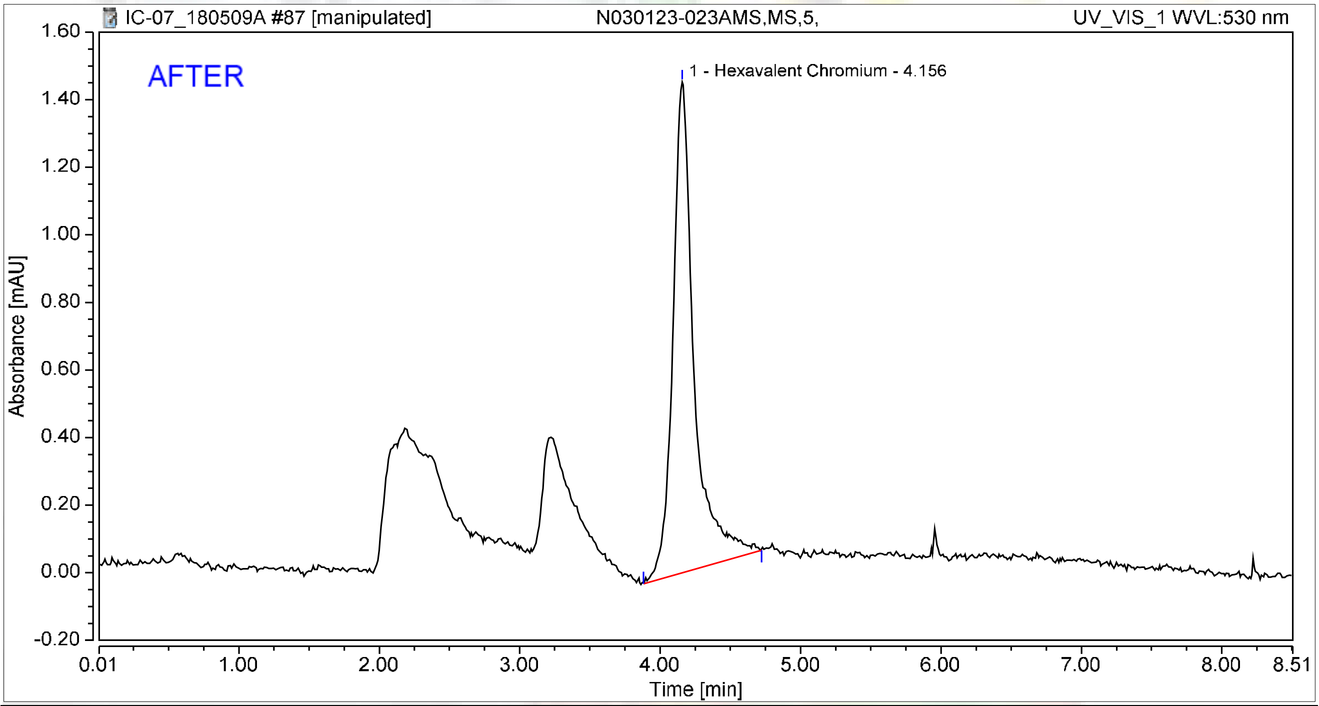
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-023AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 21:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.255	1.452	100.00	100.00	0.9935
Total:			**0.255**	**1.452**	**100.00**	**100.00**	

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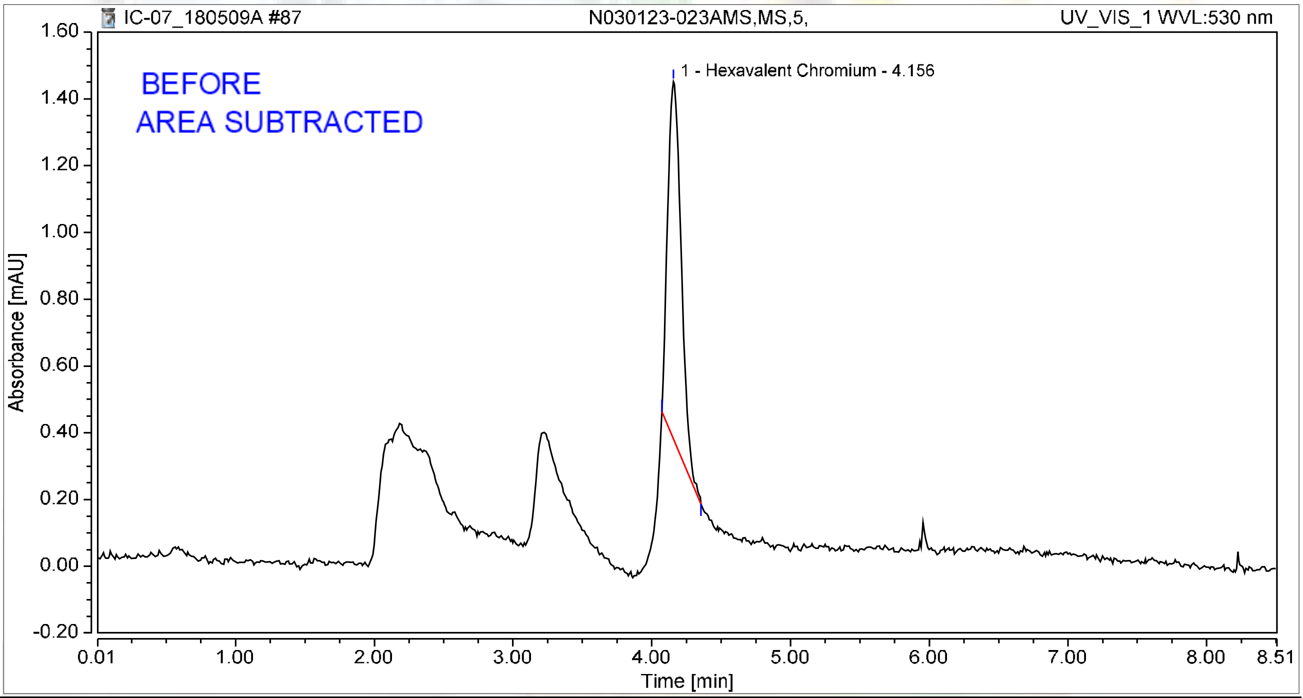
Chromatogram and Results

Injection Details

Injection Name:	**N030123-023AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 21:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.121	1.069	100.00	100.00	0.4726
Total:			**0.121**	**1.069**	**100.00**	**100.00**	

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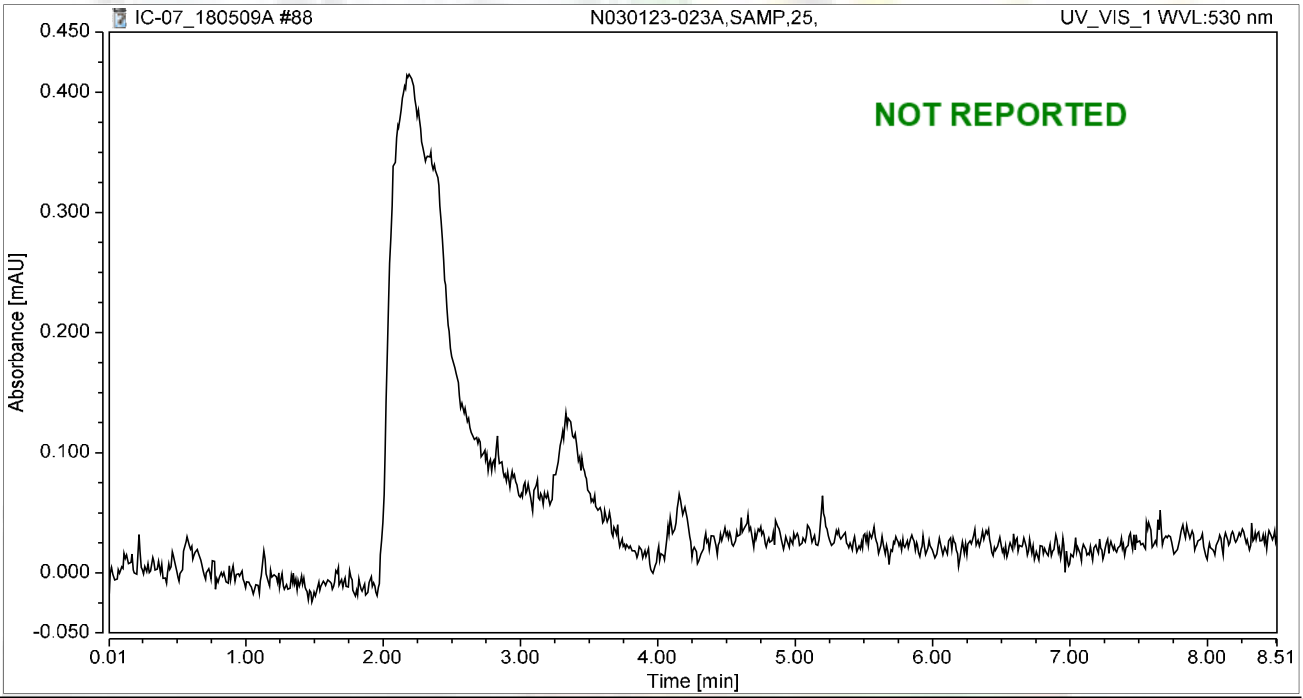
Chromatogram and Results

Injection Details

Injection Name:	**N030123-023A,SAMP,25,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 21:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

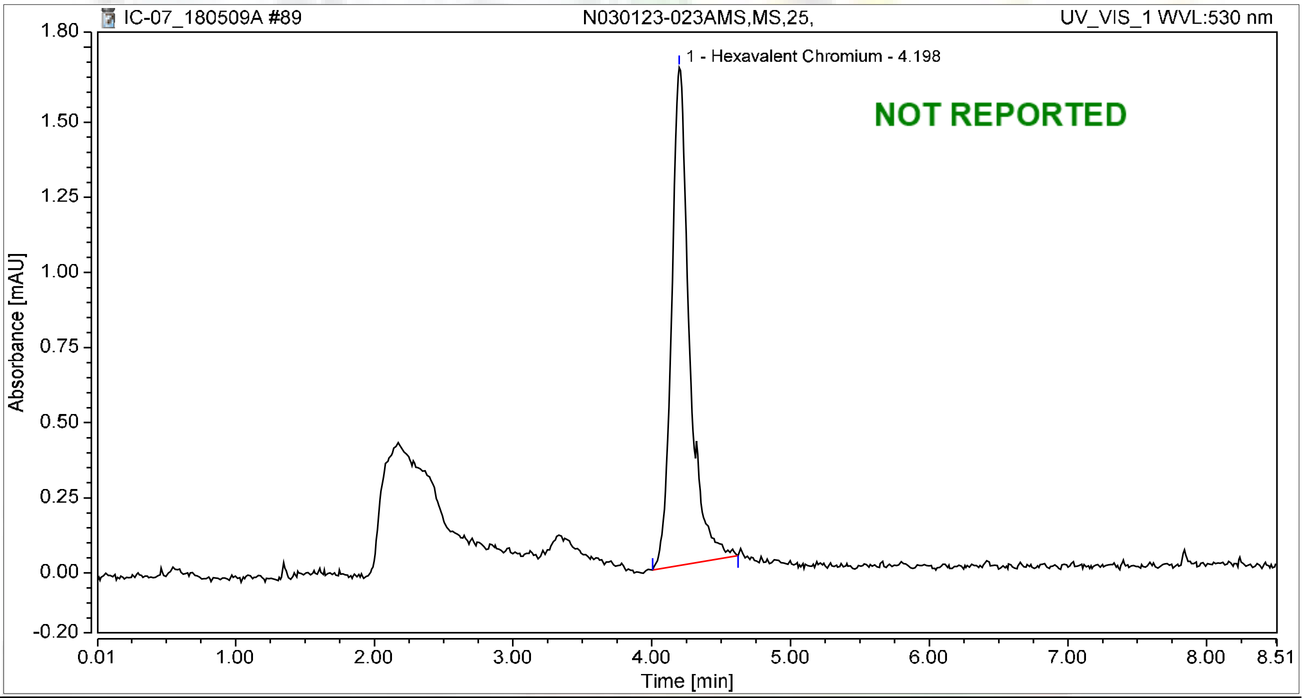
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-023AMS,MS,25,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 21:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

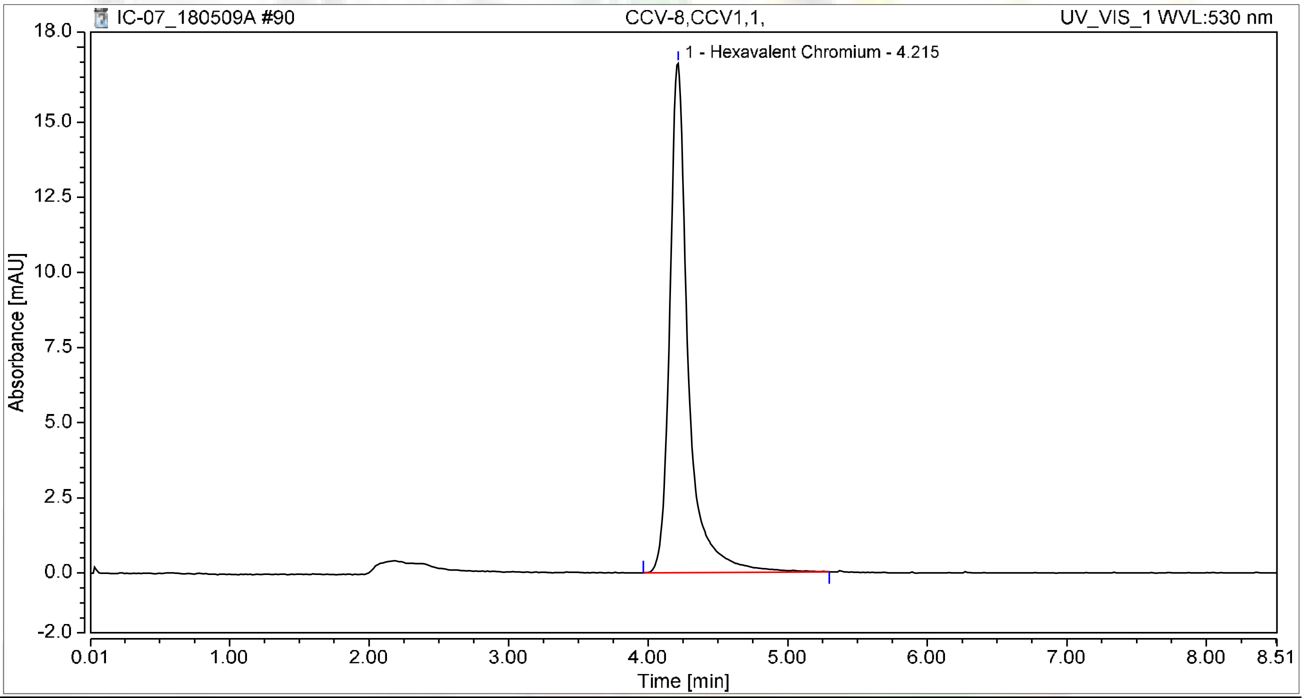
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.249	1.658	100.00	100.00	0.9687
Total:			**0.249**	**1.658**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-8,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 21:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

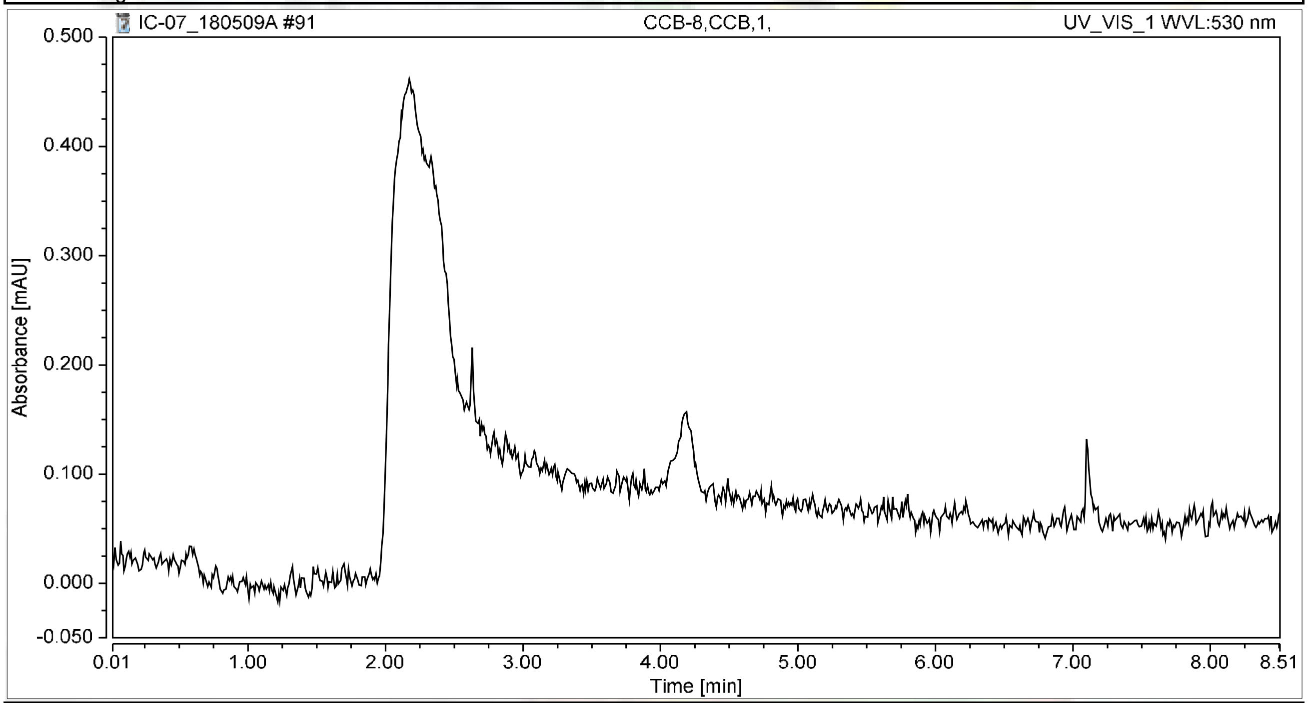
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.605	16.953	100.00	100.00	10.1500
Total:			**2.605**	**16.953**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-8,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 21:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

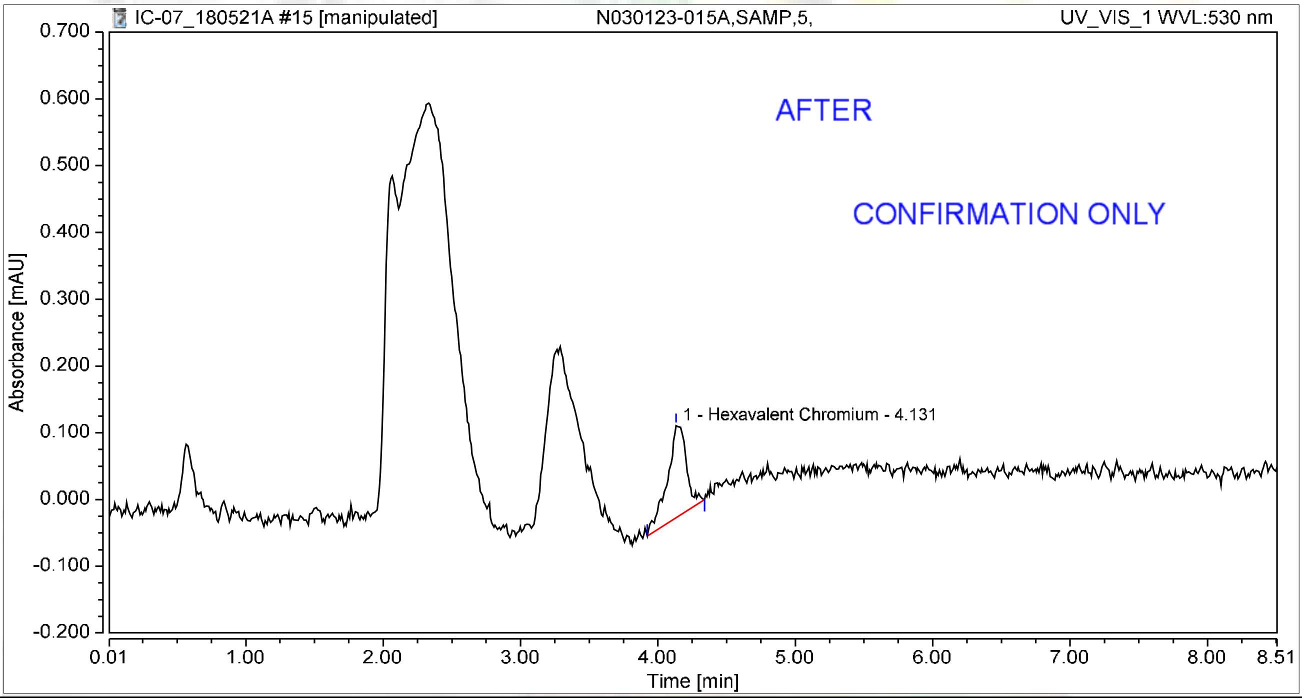
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-015A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.022	0.138	100.00	100.00	0.0848
Total:			**0.022**	**0.138**	**100.00**	**100.00**	

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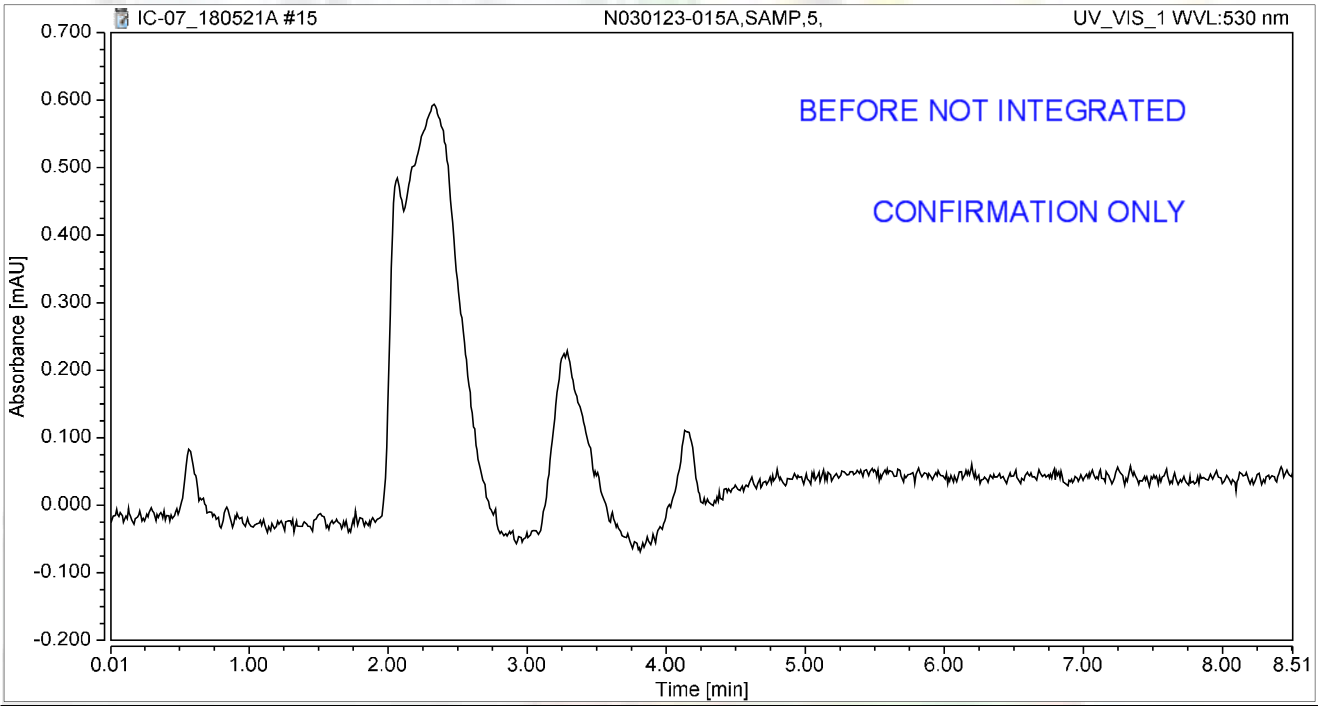
Chromatogram and Results

Injection Details

Injection Name:	**N030123-015A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

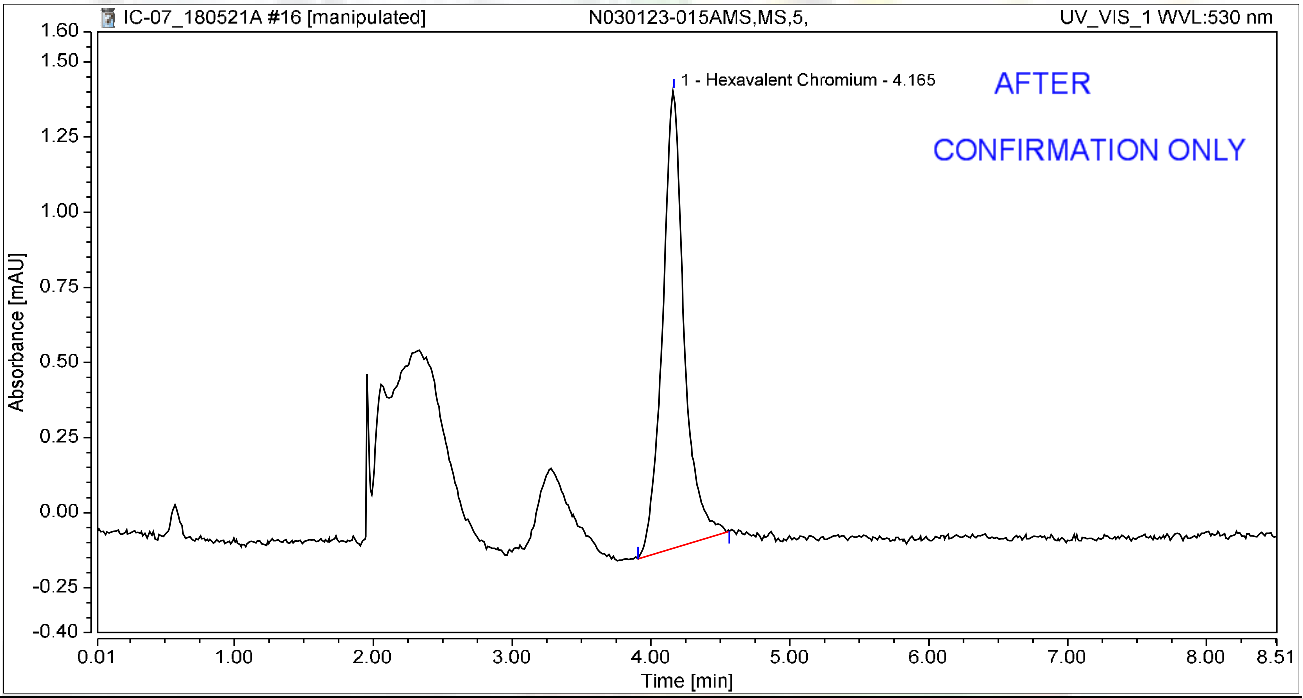
RJB 05/21/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030123-015AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.275	1.521	100.00	100.00	1.0584
Total:			**0.275**	**1.521**	**100.00**	**100.00**	

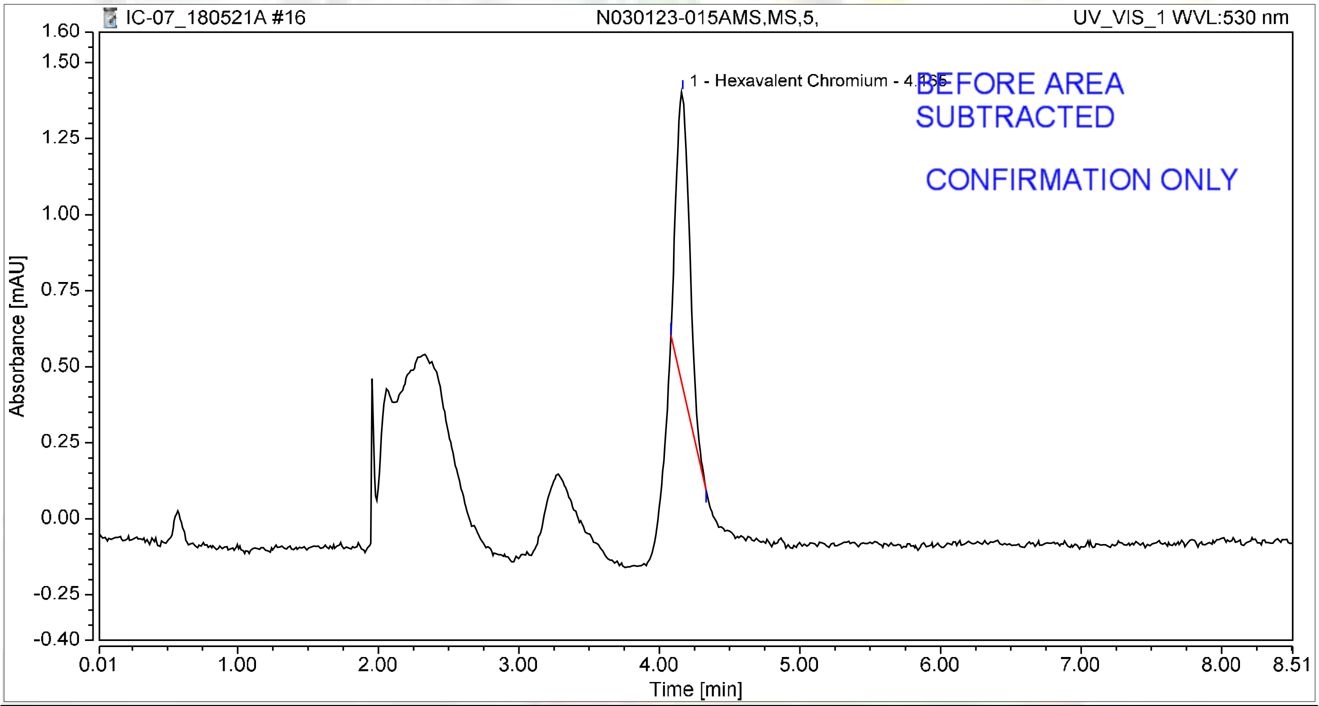
RJB 05/21/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030123-015AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 11:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.107	0.969	100.00	100.00	0.4052
Total:			**0.107**	**0.969**	**100.00**	**100.00**	

RB 05/21/2018

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R124008 **Analyst:** QBM

ASSET #: N030096, N030121, N030123 **Date Analyzed:** 5/11/2018

Method: **4500_NO3**

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.		X				
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec of Nitrate/Nitrite as N in CCV-3 failed, low bias. However, reanalysis passed criteria.

CAR# 2308

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 5/21/2018

2nd Level Reviewer RB 05/21/2018 Date:

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R124118 **Analyst:** QBM

ASSET #: N030123, N030146, N030147 **Date Analyzed:** 5/17/2018

Method: **4500_NO3**

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.		X				
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec of Nitrate/Nitrite as N in CCV-3 failed, low bias. However, reanalysis passed criteria.

CAR # 2326

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 5/21/2018

2nd Level Reviewer RJB 05/21/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N030123-011C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.9457	*	5
	=	4.7285	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 4.7 mg/L

RJB 05/21/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

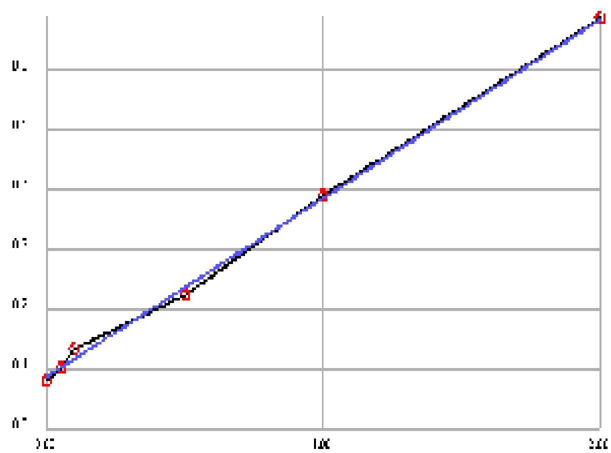
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2988x + 0.0873
Correlation	.999216

Calibrant	Energy	Set	Conc
1	0.0804	0.0000	-0.0231
2	0.1026	0.0500	0.0512
3	0.1324	0.1000	0.1509
4	0.2248	0.5000	0.4602
5	0.3881	1.0000	1.0068
6	0.6860	2.0000	2.0040



Notes:

RB 05/21/2018

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

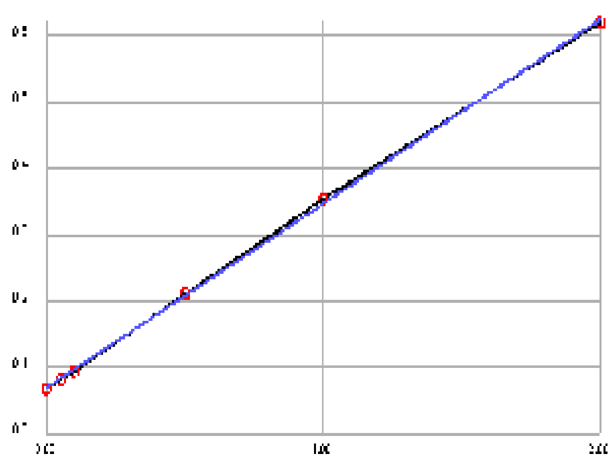
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2772x + 0.0698
Correlation	.999836

Calibrant	Energy	Set	Conc
1	0.0669	0.0000	-0.0103
2	0.0836	0.0500	0.0500
3	0.0950	0.1000	0.0911
4	0.2110	0.5000	0.5095
5	0.3534	1.0000	1.0232
6	0.6204	2.0000	1.9864



Notes:

RJB 05/21/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **ICV** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.494	0.050	0.5000	0	98.8	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **CCV** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.468	0.050	0.5000	0	93.6	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **CCV** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023845**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.515	0.050	0.5000	0	103	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **CCV** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023856**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.471	0.050	0.5000	0	94.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **ICV** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.549	0.050	0.5000	0	110	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **CCV** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.482	0.050	0.5000	0	96.4	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **CCV** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.525	0.050	0.5000	0	105	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **CCV** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.513	0.050	0.5000	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **ICB** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **CCB** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **CCB** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124008**
Client ID: **CCB** Batch ID: **R124008** TestNo: **SM4500-NO3** Analysis Date: **5/11/2018** SeqNo: **3023857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **ICB** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.037	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **CCB** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **CCB** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **CCB** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 05-11-2018 14:23
Time end: 05-11-2018 17:22

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	16:40:22	0.0472		0.1014
2	<BLANK>	16:41:22	0.0040		0.0885
3	<CAL1>	16:42:17	-0.0231	[0]	0.0804
4	<CAL2>	16:43:12	0.0512	[0.05]	0.1026
5	<CAL3>	16:44:13	0.1509	[0.1]	0.1324
6	<CAL4>	16:45:08	0.4602	[0.5]	0.2248
7	<CAL5>	16:46:04	1.0068	[1]	0.3881
8	<CAL6>	16:47:05	2.0040	[2]	0.6860
9	,BLANK,BLANK,1, NOT REPORTED	16:47:59	0.0706		0.1084
10	,ICV,ICV,1,	16:48:55	0.4940		0.2349
11	,ICB,ICB,1,	16:49:56	0.0247		0.0947
12	,MB-H2O,MBLK,1,	16:50:51	0.0107		0.0905
13	,LCS-H2O,LCS,1,	16:51:52	0.5549		0.2531
14	,N030096-001C,SAMP,5,	16:52:48	0.7367		0.3074
15	,N030096-001CDUP,DUP,5,	16:53:43	0.7039		0.2976
16	,N030096-002C,SAMP,20,	16:54:43	0.5308		0.2459
17	,N030096-002CMS,MS,20,	16:55:39	1.1223		0.4226
18	,N030096-002CMSD,MSD,20,	16:56:35	1.0363		0.3969
19	,N030096-003C,SAMP,5,	16:57:36	0.9141		0.3604
20	,N030096-005C,SAMP,20,	16:58:30	0.9057		0.3579
21	,BLANK, NOT REPORTED	16:59:26	-0.0077		0.0850
22	,CCV-1,CCV,1,	17:00:27	0.4679		0.2271
23	,CCB-1,CCB,1,	17:01:22	-0.0305		0.0782
24	,N030096-004C,SAMP,1,	17:02:17	0.0355		0.0979
25	,N030096-006C,SAMP,5,	17:03:18	0.8210		0.3326
26	,N030096-010C,SAMP,20,	17:04:14	0.7996		0.3262

RB 05/21/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N030096-011C,SAMP,10,	17:05:14	0.8883		0.3527
28	,N030096-012C,SAMP,20,	17:06:10	0.8020		0.3269
29	,N030096-013C,SAMP,5,	17:06:53	0.7618		0.3149
30	,N030096-014C,SAMP,20,	17:07:41	0.5777		0.2599
31	,N030096-015C,SAMP,20,	17:08:25	0.9998		0.3860
32	,N030121-002D,SAMP,5,	17:09:13	0.5777		0.2599
33	,BLANK, NOT REPORTED	17:09:56	0.0231		0.0942
34	,CCV-2,CCV,1,	17:10:44	0.5148		0.2411
35	,CCV-2,CCV,1, NOT REPORTED	17:11:28	0.4579		0.2241
36	,CCB-2,CCB,1,	17:12:11	-0.0020		0.0867
37	,N030123-002C,SAMP,1,	17:12:59	0.0197		0.0932
38	,N030123-003C,SAMP,1,	17:13:43	0.0629		0.1061
39	,N030123-004C,SAMP,1,	17:14:25	0.1573		0.1343
40	,N030123-001C,SAMP,5,	17:15:14	0.5988		0.2662
41	,N030123-005C,SAMP,10,	17:15:56	1.0577		0.4033
42	,N030123-006C,SAMP,10,	17:16:40	1.0299		0.3950
43	,N030123-007C,SAMP,10,	17:17:29	0.5037		0.2378
44	,BLANK, NOT REPORTED	17:18:11	-0.0278		0.0790
45	,CCV-3,CCV,1, NOT REPORTED	17:18:54	0.4365		0.2177
46	,CCV-3,CCV,1,	17:19:42	0.4706		0.2279
47	,CCB-3,CCB,1,	17:20:26	-0.0225		0.0806

RB 05/21/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 5/11/2018
Time Analyzed: 2:23 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180504F
Color reagent: R180509C
2% Copper Sulfate: R180504E
Ammonium Hydroxide: CINV-180423A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N030096-001C		8.10							
N030096-002C		7.48							
N030096-003C		8.96							
N030096-004C		6.94							
N030096-005C		7.82							
N030096-006C		7.38							
N030096-010C		8.31							
N030096-011C		7.45							
N030096-012C		7.63							
N030096-013C		7.55							
N030096-014C		8.96							
N030096-015C		8.41							
N030121-002D		8.51							
N030123-001C		8.04							
N030123-002C		7.74							
N030123-003C		7.81							
N030123-004C		8.18							
N030123-005C		7.51							
N030123-006C		7.41							
N030123-007C		7.92							

RJB 05/21/2018

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
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Time start: 05-17-2018 13:28
Time end: 05-17-2018 16:30

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	15:47:50	-0.0070		0.0678
2	<BLANK>	15:48:43	-0.0020		0.0692
3	<CAL1>	15:49:45	-0.0103	[0]	0.0669
4	<CAL2>	15:50:40	0.0500	[0.05]	0.0836
5	<CAL3>	15:51:34	0.0911	[0.1]	0.0950
6	<CAL4>	15:52:36	0.5095	[0.5]	0.2110
7	<CAL5>	15:53:31	1.0232	[1]	0.3534
8	<CAL6>	15:54:27	1.9864	[2]	0.6204
9	,BLANK,BLANK,1, NOT REPORTED	15:55:27	0.1203		0.1031
10	,ICV,ICV,1,	15:56:22	0.5489		0.2219
11	,ICB,ICB,1,	15:57:18	0.0373		0.0801
12	,MB-H2O,MBLK,1,	15:58:18	-0.0106		0.0668
13	,LCS-H2O,LCS,1,	15:59:14	0.4634		0.1982
14	,N030123-011C,SAMP,5,	16:00:10	0.9457		0.3319
15	,N030123-012C,SAMP,5,	16:01:11	0.8984		0.3188
16	,N030123-012CDUP,DUP,5,	16:02:06	0.8927		0.3172
17	,N030123-014C,SAMP,2,	16:03:01	0.6759		0.2571
18	,N030123-008C,SAMP,10,	16:04:03	0.5532		0.2231
19	,N030123-008CMS,MS,10,	16:04:57	0.9933		0.3451
20	,N030123-008CMSD,MSD,10,	16:05:53	1.1116		0.3779
21	,BLANK, NOT REPORTED	16:06:55	0.0334		0.0790
22	,CCV-1,CCV,1,	16:07:50	0.4821		0.2034
23	,CCV-1,CCV,1, NOT REPORTED	16:08:44	0.5604		0.2251
24	,CCB-1,CCB,1,	16:09:46	0.0287		0.0777
25	,N030123-009C,SAMP,1,	16:10:41	0.0247		0.0766
26	,N030123-010C,SAMP,1,	16:11:43	0.0031		0.0706

RB 05/21/2018

			EPA 353.2 NO3 as N ppm	Flags	OD
27	**,N030123-013C,SAMP,1,**	16:12:37	0.0507		0.0838
28	**,N030123-016C,SAMP,1,**	16:13:32	0.0142		0.0737
29	**,N030123-017C,SAMP,1,**	16:14:34	0.0099		0.0725
30	**,N030123-023C,SAMP,1,**	16:15:16	0.0013		0.0701
31	**,N030123-018C,SAMP,2,**	16:16:05	1.1145		0.3787
32	**,N030123-015C,SAMP,2,**	16:16:47	0.7357		0.2737
33	**,N030123-019C,SAMP,2,**	16:17:37	0.8068		0.2934
34	**,BLANK,** NOT REPORTED	16:18:20	0.0301		0.0781
35	**,CCV-2,CCV,1,** NOT REPORTED	16:19:02	0.4370		0.1909
36	**,CCV-2,CCV,1,**	16:19:51	0.5254		0.2154
37	**,CCB-2,CCB,1,**	16:20:33	0.0222		0.0759
38	**,N030147-003C,SAMP,1,**	16:21:17	0.0254		0.0768
39	**,N030147-004C,SAMP,1,**	16:22:05	0.0471		0.0828
40	**,N030147-005C,SAMP,1,**	16:22:48	-0.0013		0.0694
41	**,N030146-009B,SAMP,50,**	16:23:38	0.6124		0.2395
42	**,N030147-001C,SAMP,2,**	16:24:20	1.2570		0.4182
43	**,N030147-002C,SAMP,10,**	16:25:03	0.8764		0.3127
44	**,N030147-006C,SAMP,5,**	16:25:51	0.8707		0.3111
45	**,BLANK,** NOT REPORTED	16:26:35	0.0229		0.0761
46	**,CCV-3,CCV,1,** NOT REPORTED	16:27:17	0.4035		0.1816
47	**,CCV-3,CCV,1,**	16:28:00	0.5132		0.2120
48	**,CCB-3,CCB,1,**	16:28:48	0.0081		0.0720

RB 05/21/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 5/17/2018
Time Analyzed: 1:28 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180504F
Color reagent: R180509C
2% Copper Sulfate: R180504E
Ammonium Hydroxide: CINV-180423A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N030123-008C		7.79							
N030123-009C		7.89							
N030123-010C		8.79							
N030123-011C		8.77							
N030123-012C		8.61							
N030123-013C		8.09							
N030123-014C		8.54							
N030123-015C		8.27							
N030123-016C		8.54							
N030123-017C		8.57							
N030123-018C		7.94							
N030123-019C		8.12							
N030123-023C		8.08							
N030146-009B		8.03							
N030147-001C		8.22							
N030147-002C		8.64							
N030147-003C		8.58							
N030147-004C		7.72							
N030147-005C		8.44							
N030147-006C		7.74							

Advanced Technology Laboratories, Inc.
Book # 1

RB 05/21/2018

CORRECTIVE ACTION DOCUMENTATION

ASSET Laboratories

Corrective Action Report (CAR)

Date Initiated: 16-May-18
Initiated By: Quennie Manimtim

Corrective Action Report ID: 2308
Department: 1WC

Corrective Action Description

CAR Summary: Closing CCV failed, low bias.

Description of Nonconformance: Closing CCV failed, low bias.

Description of Corrective Action: Reanalysis of closing CCV passed criteria.

Performed By: Quennie Manimtim

Completion Date: 16-May-18

Client Notification

Client Notification Required: ~~No~~

Notified By:

Comment:

Quality Assurance Review

Corrective Action: Deficiency

Further Action required by QA: None

Approval and Closure

CAR Closed By: RJB 05/21/2018

Close Date:

QA Reviewed By: RJB 05/21/2018

QA Date:

ASSET Laboratories

Corrective Action Report (CAR)

Date Initiated: 18-May-18
Corrective Action Report ID: 2326
Initiated By: Quennie Manimtim
Department: 1WC

Corrective Action Description

CAR Summary: % Rec of N03/NO2 in Mid and Closing CCV failed.

Description of Nonconformance: % Rec of N03/NO2 in Mid and Closing CCV failed.

Description of Corrective Action: Reanalysis passed criteria for Mid and Closing CCV.

Performed By: Quennie Manimtim
Completion Date: 18-May-18

Client Notification

Client Notification Required: ~~No~~
Notified By:

Comment:

Quality Assurance Review

Corrective Action: Deficiency

Further Action required by QA: None

Approval and Closure

CAR Closed By: RJB 05/21/2018
Close Date:

QA Reviewed By: RJB 05/21/2018
QA Date:

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05

Method Blank

Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)
ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68011 **Instrument ID:** ICPMS-02
ASSET #: N030123 **Analyst:** CEI
Method: **Date Analyzed:** 5/16/2018

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.		X			X	
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

Mn in N030123-016D is OLR. For dilution.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 5/21/18

2nd Level Reviewer [signature] 5/21/2018 Date: ________

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68011
ASSET #: N030123
Instrument ID: ICPMS-02
Analyst: CEI
Method:
Date Analyzed: 5/17/2018

- [ ] EPA 6010B / 200.7
- [X] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			~~X~~		X
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			~~X~~		X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits			X			X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For dilution of Mn in N030123-016D run only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 5/21/18

2nd Level Reviewer 5/21/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N030123-001D** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 94.852 * 5 * (25/25)

Chromium , ug/L = 474.26

Reporting results in two significant figures,

Chromium , ug/L = 470

% RSD SUMMARY

PERCENT RSD SUMMARY: 180516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.096	14.12	15	PASS	0.1	16.79	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.51	4.42	15	PASS	0.55	6.39	15	PASS
Std3-5/50 ppb	ICAL	1	4.99	1.78	15	PASS	5.074	2.81	15	PASS
Std4-10/100 ppb	ICAL	1	10.028	1.19	15	PASS	10.4	1.72	15	PASS
Std5-20/200 ppb	ICAL	1	19.88	0.72	15	PASS	20.35	1.25	15	PASS
Std6-40/400 ppb	ICAL	1	39.85	0.096	15	PASS	40.64	1.27	15	PASS
Std7-100/1000 ppb	ICAL	1	98.061	0.53	15	PASS	99.89	0.45	15	PASS
Std8-200/2000 ppb	ICAL	1	201.01	0.7	15	PASS	199.87	1.26	15	PASS
ICV	ICV	1	10.26	0.24	15	PASS	103.61	1.48	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.032	44.97	15	<PQL
LLICV	CCV1	1	0.99	4.66	20	PASS	0.58	3.81	20	PASS
ICSA1	ICSA	1	0.013	43.55	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.1	0.28	15	PASS	17.82	1.64	15	PASS
CCV1	CCV	1	19.094	0.16	15	PASS	20.36	1.72	15	PASS
CCB1	CCB	1	0.00026	2218.72	15	<PQL	0.0026	173.1	15	<PQL
CCV2	CCV	1	18.76	1.47	15	PASS	20.81	1.54	15	PASS
CCB2	CCB	1	0.016	53.26	15	<PQL	0.064	23.15	15	<PQL
CCV3	CCV	1	18.7	1.29	15	PASS	20.53	0.68	15	PASS
CCB3	CCB	1	0.0043	227.063	15	<PQL	0.013	111.34	15	<PQL
CCV4	CCV	1	18.69	0.49	15	PASS	20.96	1.41	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.046	20.7	15	<PQL
LLCCV1	CCV2	1	0.92	4.073	20	PASS	0.57	8.61	20	PASS
ICSA2	ICSA	1	0.029	11.19	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	18.46	0.85	15	PASS	16.66	0.37	15	PASS
CCV5	CCV	1	18.66	0.52	15	PASS	20.92	1.41	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.016	76.5	15	<PQL
CCV6	CCV	1	18.56	1.0098	15	PASS	20.85	1.17	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.013	44.32	15	<PQL
MB-68011	MBLK	1	<0.000	N/A	15	<PQL	0.0078	108.63	15	<PQL
LCS-68011	LCS	1	9.64	0.9	15	PASS	106.41	0.42	15	PASS
N030123-001D	SAMP	1	449.22	0.57	15	PASS	2.93	2.5	15	PASS
N030123-001D	SAMP	5	94.85	1.19	15	PASS	0.59	8.48	15	PASS
N030123-001D	SAMP	25	19.41	0.45	15	PASS	0.14	9.06	15	PASS
N030123-001D-PS	PS	1	463.33	1.12	15	PASS	95.086	0.14	15	PASS
N030123-001D-PS	PS	5	99.27	0.31	15	PASS	21.0037	0.33	15	PASS
N030123-001D-MS	MS	1	467.73	0.38	15	PASS	95.78	0.5	15	PASS
N030123-001D-MS	MS	5	97.73	0.9	15	PASS	20.52	0.56	15	PASS
N030123-001D-MSD	MSD	1	469.27	1.08	15	PASS	95.22	1.078	15	PASS
CCV7	CCV	1	19.42	1.24	15	PASS	20.5	0.62	15	PASS
CCB7	CCB	1	0.047	13.67	15	PASS	0.019	46.98	15	<PQL

PERCENT RSD SUMMARY: 180516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	1	2.22	20	PASS	0.52	2.77	20	PASS
ICSA3	ICSA	1	0.042	44.34	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.11	1.45	15	PASS	16.54	1.52	15	PASS
N030123-001D-MSD	MSD	5	98.13	1.92	15	PASS	20.6	2.12	15	PASS
N030123-002D	SAMP	1	1.65	4.12	15	PASS	21.35	1.58	15	PASS
N030123-002D	SAMP	5	0.36	1.95	15	PASS	4.65	2.0057	15	PASS
N030123-003D	SAMP	1	1.47	0.31	15	PASS	19.85	0.97	15	PASS
N030123-003D	SAMP	5	0.33	4.75	15	PASS	4.27	1.8	15	PASS
N030123-004D	SAMP	1	66.93	0.83	15	PASS	9.59	1.23	15	PASS
N030123-004D	SAMP	5	14.65	0.6	15	PASS	2.06	1.11	15	PASS
N030123-005D	SAMP	1	140.47	1.52	15	PASS	<0.000	N/A	15	<PQL
N030123-005D	SAMP	5	30.24	0.58	15	PASS	<0.000	N/A	15	<PQL
N030123-006D	SAMP	1	163.77	0.49	15	PASS	1.19	6.14	15	PASS
CCV8	CCV	1	19.53	1.15	15	PASS	20.51	0.81	15	PASS
CCB8	CCB	1	0.017	22.54	15	<PQL	0.0025	172.28	15	<PQL
N030123-006D	SAMP	5	34.54	0.66	15	PASS	0.23	11.85	15	PASS
N030123-007D	SAMP	1	52.83	0.59	15	PASS	<0.000	N/A	15	<PQL
N030123-007D	SAMP	5	11.15	0.68	15	PASS	<0.000	N/A	15	<PQL
N030123-008D	SAMP	1	55.033	1.0048	15	PASS	<0.000	N/A	15	<PQL
N030123-008D	SAMP	5	11.44	1.044	15	PASS	<0.000	N/A	15	<PQL
N030123-009D	SAMP	1	14.47	0.98	15	PASS	37.56	0.76	15	PASS
N030123-009D	SAMP	5	2.95	1.42	15	PASS	9.63	1.4	15	PASS
N030123-010D	SAMP	1	13.9	0.74	15	PASS	28.62	0.64	15	PASS
N030123-010D	SAMP	5	2.9	1.15	15	PASS	7.68	2.14	15	PASS
N030123-011D	SAMP	1	1.3	2.2	15	PASS	45.51	1.11	15	PASS
CCV9	CCV	1	19.48	1.031	15	PASS	20.46	0.23	15	PASS
CCB9	CCB	1	0.0037	62.46	15	<PQL	0.0012	507.29	15	<PQL
N030123-011D	SAMP	5	0.27	4.34	15	PASS	9.56	0.66	15	PASS
N030123-012D	SAMP	1	1.95	2.12	15	PASS	37.15	0.88	15	PASS
N030123-012D	SAMP	5	0.4	3.53	15	PASS	7.75	1.15	15	PASS
N030123-013D	SAMP	1	0.24	8.89	15	PASS	15.83	0.63	15	PASS
N030123-013D	SAMP	5	0.049	35.12	15	<PQL	3.31	3.0038	15	PASS
N030123-014D	SAMP	1	182.28	0.89	15	PASS	104.26	1.37	15	PASS
N030123-014D	SAMP	5	40.14	0.27	15	PASS	22.88	0.36	15	PASS
N030123-015D	SAMP	1	1.032	3.0014	15	PASS	128.94	0.22	15	PASS
N030123-015D	SAMP	5	0.21	4.26	15	PASS	27.18	0.52	15	PASS
N030123-016D	SAMP	1	<0.000	N/A	15	<PQL	1564.7	1.17	15	PASS
CCV10	CCV	1	19.4	0.63	15	PASS	20.73	1.62	15	PASS
CCB10	CCB	1	0.014	9.27	15	PASS	0.021	34.26	15	<PQL
N030123-016D	SAMP	5	<0.000	N/A	15	<PQL	326.56	0.57	15	PASS
N030123-017D	SAMP	1	<0.000	N/A	15	<PQL	605.71	0.64	15	PASS

PERCENT RSD SUMMARY: 180516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030123-017D	SAMP	5	<0.000	N/A	15	<PQL	123.12	0.7	15	PASS
N030123-018D	SAMP	1	0.46	5.12	15	PASS	4.32	2.84	15	PASS
N030123-018D	SAMP	5	0.087	15.16	15	<PQL	0.89	5.36	15	PASS
N030123-019D	SAMP	1	0.97	2.46	15	PASS	146.37	0.99	15	PASS
N030123-019D	SAMP	5	0.19	7.39	15	PASS	31.44	1.14	15	PASS
N030123-023D	SAMP	1	<0.000	N/A	15	<PQL	810.095	1.44	15	PASS
N030123-023D	SAMP	5	<0.000	N/A	15	<PQL	170.43	1.31	15	PASS
CCV11	CCV	1	19.51	0.89	15	PASS	20.58	0.86	15	PASS
CCB11	CCB	1	<0.000	N/A	15	<PQL	0.013	73.12	15	<PQL
LLCCV3	CCV2	1	0.97	3.027	20	PASS	0.55	6.65	20	PASS
ICSA4	ICSA	1	0.031	34.16	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	19.59	1.14	15	PASS	17.0013	0.79	15	PASS

PERCENT RSD SUMMARY: 180516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	12.32	15	PASS	0.08	29.83	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	5.13	15	PASS	0.47	4.78	15	PASS
Std3-5/50 ppb	ICAL	1	4.95	1.086	15	PASS	5.29	6.15	15	PASS
Std4-10/100 ppb	ICAL	1	10.099	1.33	15	PASS	10.13	1.84	15	PASS
Std5-20/200 ppb	ICAL	1	20.082	0.24	15	PASS	21.11	1.73	15	PASS
Std6-40/400 ppb	ICAL	1	39.58	0.75	15	PASS	41.36	1.89	15	PASS
Std7-100/1000 ppb	ICAL	1	99.29	1.38	15	PASS	101.29	4.0099	15	PASS
Std8-200/2000 ppb	ICAL	1	200.43	0.92	15	PASS	198.96	1.11	15	PASS
ICV	ICV	1	10.42	2.17	15	PASS	10.92	1.72	15	PASS
ICB	ICB	1	0.01	34.86	15	<PQL	0.025	93.89	15	<PQL
LLICV	CCV1	1	0.093	13.74	20	PASS	0.48	33.27	20	<PQL
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.0047	381.31	15	<PQL
ICSAB1	ICSAB	1	20.71	3.12	15	PASS	18.97	5.13	15	PASS
CCV1	CCV	1	19.33	2.43	15	PASS	18.7	1.28	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.56	1.18	15	PASS	18.59	0.095	15	PASS
CCB2	CCB	1	0.0074	220.66	15	<PQL	<0.000	N/A	15	<PQL
CCV3	CCV	1	19.12	1.33	15	PASS	18.84	7.43	15	PASS
CCB3	CCB	1	0.0037	60.33	15	<PQL	0.0029	740.036	15	<PQL
CCV4	CCV	1	19.86	0.48	15	PASS	18.031	4.14	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.12	19.21	20	PASS	0.48	27.96	20	<PQL
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.25	0.93	15	PASS	17.48	4.63	15	PASS
CCV5	CCV	1	19.21	1.21	15	PASS	18.13	2.86	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV6	CCV	1	19.27	2.17	15	PASS	18.55	3.78	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.014	103.72	15	<PQL
MB-68011	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-68011	LCS	1	10.015	0.9	15	PASS	10.066	2.44	15	PASS
N030123-001D	SAMP	1	1.67	2.4	15	PASS	4.43	1.14	15	PASS
N030123-001D	SAMP	5	0.37	2.81	15	PASS	1	7.66	15	PASS
N030123-001D	SAMP	25	0.053	23.74	15	<PQL	0.19	43.11	15	<PQL
N030123-001D-PS	PS	1	11.88	0.96	15	PASS	14.13	2.32	15	PASS
N030123-001D-PS	PS	5	2.39	4.5	15	PASS	2.98	6.17	15	PASS
N030123-001D-MS	MS	1	11.55	0.78	15	PASS	13.85	4.53	15	PASS
N030123-001D-MS	MS	5	2.45	1.73	15	PASS	2.93	4.64	15	PASS
N030123-001D-MSD	MSD	1	11.83	2.69	15	PASS	13.97	2.26	15	PASS
CCV7	CCV	1	19.69	1.97	15	PASS	19.22	2.53	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	0.11	5.34	20	PASS	0.54	6.21	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.55	1.99	15	PASS	18.75	3.61	15	PASS
N030123-001D-MSD	MSD	5	2.42	1.56	15	PASS	2.88	3.36	15	PASS
N030123-002D	SAMP	1	5.18	1.51	15	PASS	2	2.57	15	PASS
N030123-002D	SAMP	5	1.063	6.33	15	PASS	0.35	10.81	15	PASS
N030123-003D	SAMP	1	4.91	1.29	15	PASS	2.29	7.7	15	PASS
N030123-003D	SAMP	5	1.013	5.79	15	PASS	0.41	32.17	15	<PQL
N030123-004D	SAMP	1	8.15	3.93	15	PASS	2.61	7.16	15	PASS
N030123-004D	SAMP	5	1.67	2.71	15	PASS	0.44	22.094	15	<PQL
N030123-005D	SAMP	1	1.66	3.55	15	PASS	5.0046	0.67	15	PASS
N030123-005D	SAMP	5	0.37	6.7	15	PASS	1.086	15.82	15	NR!
N030123-006D	SAMP	1	2.62	4.39	15	PASS	6.072	3.44	15	PASS
CCV8	CCV	1	19.54	1.39	15	PASS	19.9	6.78	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	0.031	25.75	15	<PQL
N030123-006D	SAMP	5	0.5	8.63	15	PASS	1.27	16.31	15	NR!
N030123-007D	SAMP	1	1.33	1.47	15	PASS	4.58	3.87	15	PASS
N030123-007D	SAMP	5	0.26	4.43	15	PASS	0.8	20.086	15	NR!
N030123-008D	SAMP	1	1.3	6.4	15	PASS	4.66	1.81	15	PASS
N030123-008D	SAMP	5	0.27	12.32	15	PASS	0.88	16.68	15	NR!
N030123-009D	SAMP	1	7.45	2.16	15	PASS	0.12	20.19	15	<PQL
N030123-009D	SAMP	5	1.53	2.23	15	PASS	<0.000	N/A	15	<PQL
N030123-010D	SAMP	1	7.2	2.7	15	PASS	0.12	56.57	15	<PQL
N030123-010D	SAMP	5	1.51	2.22	15	PASS	0.013	189.98	15	<PQL
N030123-011D	SAMP	1	6.41	2.37	15	PASS	3.24	3.9	15	PASS
CCV9	CCV	1	19.52	0.4	15	PASS	19.76	2.57	15	PASS
CCB9	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N030123-011D	SAMP	5	1.27	2.93	15	PASS	0.69	7.21	15	PASS
N030123-012D	SAMP	1	6.26	2.52	15	PASS	3.7	8.26	15	PASS
N030123-012D	SAMP	5	1.36	5.036	15	PASS	0.75	9.86	15	PASS
N030123-013D	SAMP	1	0.091	14.63	15	PASS	0.18	63.4	15	<PQL
N030123-013D	SAMP	5	0.015	62.56	15	<PQL	0.041	34.7	15	<PQL
N030123-014D	SAMP	1	3.092	7.58	15	PASS	1.96	8.44	15	PASS
N030123-014D	SAMP	5	0.63	1.97	15	PASS	0.33	11.79	15	PASS
N030123-015D	SAMP	1	10.71	3.4	15	PASS	25.27	2.85	15	PASS
N030123-015D	SAMP	5	2.076	2.21	15	PASS	4.62	4.6	15	PASS
N030123-016D	SAMP	1	2.69	3.057	15	PASS	0.27	34.98	15	<PQL
CCV10	CCV	1	19.63	1.75	15	PASS	19.65	3.66	15	PASS
CCB10	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N030123-016D	SAMP	5	0.55	5.52	15	PASS	0.051	32.29	15	<PQL
N030123-017D	SAMP	1	0.064	44.43	15	<PQL	0.043	59.97	15	<PQL

PERCENT RSD SUMMARY: 180516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030123-017D	SAMP	5	0.00026	768.41	15	<PQL	0.027	91.26	15	<PQL
N030123-018D	SAMP	1	8.077	2.72	15	PASS	2.33	2.81	15	PASS
N030123-018D	SAMP	5	1.65	4.85	15	PASS	0.51	11.58	15	PASS
N030123-019D	SAMP	1	10.24	0.79	15	PASS	22.078	1.74	15	PASS
N030123-019D	SAMP	5	2.14	1.67	15	PASS	4.084	7.038	15	PASS
N030123-023D	SAMP	1	3.52	4.64	15	PASS	0.03	101.46	15	<PQL
N030123-023D	SAMP	5	0.73	2.76	15	PASS	0.005	177.81	15	<PQL
CCV11	CCV	1	19.21	0.81	15	PASS	19.72	1.72	15	PASS
CCB11	CCB	1	<0.000	N/A	15	<PQL	<0.000	0	15	PASS
LLCCV3	CCV2	1	0.082	8.94	20	PASS	0.52	2.83	20	PASS
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	20.47	1.1	15	PASS	19.29	1.99	15	PASS

PERCENT RSD SUMMARY: 180516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	1.92	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	3.16	15	PASS
Std3-5/50 ppb	ICAL	1	5.038	1.75	15	PASS
Std4-10/100 ppb	ICAL	1	10.11	0.55	15	PASS
Std5-20/200 ppb	ICAL	1	19.99	1.79	15	PASS
Std6-40/400 ppb	ICAL	1	39.55	1.63	15	PASS
Std7-100/1000 ppb	ICAL	1	99.71	0.65	15	PASS
Std8-200/2000 ppb	ICAL	1	200.23	1.26	15	PASS
ICV	ICV	1	10.67	1.33	15	PASS
ICB	ICB	1	0.057	15.063	15	<PQL
LLICV	CCV1	1	0.56	5.52	20	PASS
ICSA1	ICSA	1	0.062	9.51	15	PASS
ICSAB1	ICSAB	1	22.22	0.79	15	PASS
CCV1	CCV	1	20.26	0.81	15	PASS
CCB1	CCB	1	0.026	49.44	15	<PQL
CCV2	CCV	1	20.73	1.44	15	PASS
CCB2	CCB	1	0.038	14.25	15	PASS
CCV3	CCV	1	20.61	0.87	15	PASS
CCB3	CCB	1	0.021	14.24	15	PASS
CCV4	CCV	1	20.93	1.29	15	PASS
CCB4	CCB	1	0.045	18.52	15	<PQL
LLCCV1	CCV2	1	0.57	6.59	20	PASS
ICSA2	ICSA	1	0.075	9.41	15	PASS
ICSAB2	ICSAB	1	23.4	3.16	15	PASS
CCV5	CCV	1	20.69	0.7	15	PASS
CCB5	CCB	1	0.023	35.4	15	<PQL
CCV6	CCV	1	20.83	0.69	15	PASS
CCB6	CCB	1	0.029	26.85	15	<PQL
MB-68011	MBLK	1	0.0052	145.15	15	<PQL
LCS-68011	LCS	1	10.78	1.26	15	PASS
N030123-001D	SAMP	1	22.0046	0.38	15	PASS
N030123-001D	SAMP	5	4.24	1.44	15	PASS
N030123-001D	SAMP	25	0.84	2.64	15	PASS
N030123-001D-PS	PS	1	34.42	0.64	15	PASS
N030123-001D-PS	PS	5	6.67	1.18	15	PASS
N030123-001D-MS	MS	1	34.026	0.65	15	PASS
N030123-001D-MS	MS	5	6.6	2.24	15	PASS
N030123-001D-MSD	MSD	1	34.043	0.62	15	PASS
CCV7	CCV	1	20.74	0.78	15	PASS
CCB7	CCB	1	0.02	26.53	15	<PQL

PERCENT RSD SUMMARY: 180516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
LLCCV2	CCV2	1	0.52	4.016	20	PASS
ICSA3	ICSA	1	0.054	10.04	15	PASS
ICSAB3	ICSAB	1	23.27	0.22	15	PASS
N030123-001D-MSD	MSD	5	6.64	1.22	15	PASS
N030123-002D	SAMP	1	62.32	0.68	15	PASS
N030123-002D	SAMP	5	11.99	0.85	15	PASS
N030123-003D	SAMP	1	63.37	0.44	15	PASS
N030123-003D	SAMP	5	12.25	1.33	15	PASS
N030123-004D	SAMP	1	59.49	0.97	15	PASS
N030123-004D	SAMP	5	11.44	1.26	15	PASS
N030123-005D	SAMP	1	4.32	0.49	15	PASS
N030123-005D	SAMP	5	0.86	3.13	15	PASS
N030123-006D	SAMP	1	21.44	1.4	15	PASS
CCV8	CCV	1	20.56	0.89	15	PASS
CCB8	CCB	1	0.026	7.17	15	PASS
N030123-006D	SAMP	5	4.11	2.24	15	PASS
N030123-007D	SAMP	1	5.15	1.64	15	PASS
N030123-007D	SAMP	5	1.0052	3.24	15	PASS
N030123-008D	SAMP	1	5.29	1.28	15	PASS
N030123-008D	SAMP	5	1.027	3.3	15	PASS
N030123-009D	SAMP	1	92.23	0.36	15	PASS
N030123-009D	SAMP	5	17.53	1.67	15	PASS
N030123-010D	SAMP	1	87.55	0.59	15	PASS
N030123-010D	SAMP	5	17.072	0.8	15	PASS
N030123-011D	SAMP	1	31.63	1.061	15	PASS
CCV9	CCV	1	20.65	1.23	15	PASS
CCB9	CCB	1	0.036	8.31	15	PASS
N030123-011D	SAMP	5	6.14	1.27	15	PASS
N030123-012D	SAMP	1	30.67	0.31	15	PASS
N030123-012D	SAMP	5	6.062	1.32	15	PASS
N030123-013D	SAMP	1	135.78	1.4	15	PASS
N030123-013D	SAMP	5	27.0039	0.94	15	PASS
N030123-014D	SAMP	1	63.93	0.6	15	PASS
N030123-014D	SAMP	5	12.49	0.66	15	PASS
N030123-015D	SAMP	1	58.8	0.15	15	PASS
N030123-015D	SAMP	5	11.27	1.44	15	PASS
N030123-016D	SAMP	1	21.38	1.63	15	PASS
CCV10	CCV	1	20.48	0.42	15	PASS
CCB10	CCB	1	0.037	15.82	15	<PQL
N030123-016D	SAMP	5	4.14	2.52	15	PASS
N030123-017D	SAMP	1	3.46	0.47	15	PASS

PERCENT RSD SUMMARY: 180516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N030123-017D	SAMP	5	0.61	4.5	15	PASS
N030123-018D	SAMP	1	22.78	0.65	15	PASS
N030123-018D	SAMP	5	4.45	2.42	15	PASS
N030123-019D	SAMP	1	60.39	0.3	15	PASS
N030123-019D	SAMP	5	11.71	0.86	15	PASS
N030123-023D	SAMP	1	66.8	0.47	15	PASS
N030123-023D	SAMP	5	12.92	0.39	15	PASS
CCV11	CCV	1	20.69	0.73	15	PASS
CCB11	CCB	1	0.027	45.26	15	<PQL
LLCCV3	CCV2	1	0.54	4.51	20	PASS
ICSA4	ICSA	1	0.059	4.036	15	PASS
ICSAB4	ICSAB	1	23.5	1.36	15	PASS

PERCENT RSD SUMMARY: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.088	10.24	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	6.12	15	PASS
Std3-5/50 ppb	ICAL	1	5.11	2.97	15	PASS
Std4-10/100 ppb	ICAL	1	10.36	1.68	15	PASS
Std5-20/200 ppb	ICAL	1	20.82	0.27	15	PASS
Std6-40/400 ppb	ICAL	1	40.22	1.46	15	PASS
Std7-100/1000 ppb	ICAL	1	100.91	1.71	15	PASS
Std8-200/2000 ppb	ICAL	1	199.4	0.89	15	PASS
ICV	ICV	1	105.63	0.36	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.52	11.022	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	16.22	1.91	15	PASS
CCV1	CCV	1	20.56	0.45	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.45	1.33	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
CCV3	CCV	1	20.65	2.039	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL
CCV4	CCV	1	20.66	1.14	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL
N030123-016D	SAMP	25	70.24	1.03	15	PASS
CCV5	CCV	1	20.93	0.64	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.57	3.39	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	17.42	1.22	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180516A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0516001.D	RINSE	RINSE	1	05/16/18 12:05 PM
A0516002.D	Cal Blank	IBLK	1	05/16/18 12:11 PM
A0516003.D	Std1-0.1/1 ppb	ICAL	1	05/16/18 12:17 PM
A0516004.D	Std2-0.5/5 ppb	ICAL	1	05/16/18 12:22 PM
A0516005.D	Std3-5/50 ppb	ICAL	1	05/16/18 12:28 PM
A0516006.D	Std4-10/100 ppb	ICAL	1	05/16/18 12:33 PM
A0516007.D	Std5-20/200 ppb	ICAL	1	05/16/18 12:39 PM
A0516008.D	Std6-40/400 ppb	ICAL	1	05/16/18 12:44 PM
A0516009.D	Std7-100/1000 ppb	ICAL	1	05/16/18 12:50 PM
A0516010.D	Std8-200/2000 ppb	ICAL	1	05/16/18 12:57 PM
A0516011.D	ICV	ICV	1	05/16/18 1:02 PM
A0516012.D	ICB	ICB	1	05/16/18 1:08 PM
A0516013.D	LLICV	CCV1	1	05/16/18 1:13 PM
A0516014.D	ICSA1	ICSA	1	05/16/18 1:19 PM
A0516015.D	ICSAB1	ICSAB	1	05/16/18 1:24 PM
A0516016.D	N030090-001B	SAMP	1	05/16/18 1:30 PM
A0516017.D	N030090-001A	SAMP	1	05/16/18 1:36 PM
A0516018.D	N030090-003B	SAMP	1	05/16/18 1:42 PM
A0516019.D	N030090-003A	SAMP	1	05/16/18 1:47 PM
A0516020.D	N030091-020B	SAMP	1	05/16/18 1:53 PM
A0516021.D	N030091-020A	SAMP	1	05/16/18 1:58 PM
A0516022.D	N030096-010D	SAMP	25	05/16/18 2:04 PM
A0516023.D	N030096-010A	SAMP	25	05/16/18 2:10 PM
A0516024.D	MB-68010	MBLK	1	05/16/18 2:11 PM
A0516025.D	LCS-68010	LCS	1	05/16/18 2:18 PM
A0516026.D	CCV1	CCV	1	05/16/18 2:24 PM
A0516027.D	CCB1	CCB	1	05/16/18 2:30 PM
A0516028.D	N030120-001B	SAMP	1	05/16/18 2:35 PM
A0516029.D	N030120-001B	SAMP	5	05/16/18 2:41 PM
A0516030.D	N030120-001B	SAMP	25	05/16/18 2:46 PM
A0516031.D	N030120-001B-PS	PS	1	05/16/18 2:52 PM
A0516032.D	N030120-001B-MS	MS	1	05/16/18 2:58 PM
A0516033.D	N030120-001B-MSD	MSD	1	05/16/18 3:03 PM
A0516034.D	N030120-002B	SAMP	1	05/16/18 3:09 PM
A0516035.D	N030120-002B	SAMP	5	05/16/18 3:14 PM
A0516036.D	N030120-003B	SAMP	1	05/16/18 3:20 PM
A0516037.D	N030120-005B	SAMP	1	05/16/18 3:25 PM
A0516038.D	CCV2	CCV	1	05/16/18 3:31 PM
A0516039.D	CCB2	CCB	1	05/16/18 3:37 PM
A0516040.D	N030120-006B	SAMP	1	05/16/18 3:43 PM
A0516041.D	N030120-006B	SAMP	5	05/16/18 3:48 PM
A0516042.D	N030120-007B	SAMP	1	05/16/18 3:54 PM

INJECTION LOG: 180516A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0516043.D	N030120-007B	SAMP	5	05/16/18 3:59 PM
A0516044.D	N030120-008B	SAMP	1	05/16/18 4:05 PM
A0516045.D	N030120-008B	SAMP	5	05/16/18 4:11 PM
A0516046.D	N030120-009B	SAMP	1	05/16/18 4:16 PM
A0516047.D	N030120-009B	SAMP	5	05/16/18 4:22 PM
A0516048.D	N030120-010B	SAMP	1	05/16/18 4:27 PM
A0516049.D	N030120-010B	SAMP	5	05/16/18 4:33 PM
A0516050.D	CCV3	CCV	1	05/16/18 4:39 PM
A0516051.D	CCB3	CCB	1	05/16/18 4:45 PM
A0516052.D	N030120-011B	SAMP	1	05/16/18 4:51 PM
A0516053.D	N030120-011B	SAMP	5	05/16/18 4:56 PM
A0516054.D	N030120-012B	SAMP	1	05/16/18 5:02 PM
A0516055.D	N030120-013B	SAMP	1	05/16/18 5:07 PM
A0516056.D	N030120-013B	SAMP	5	05/16/18 5:13 PM
A0516057.D	N030120-014B	SAMP	1	05/16/18 5:18 PM
A0516058.D	N030120-014B	SAMP	5	05/16/18 5:24 PM
A0516059.D	N030120-015B	SAMP	1	05/16/18 5:30 PM
A0516060.D	N030120-015B	SAMP	5	05/16/18 5:35 PM
A0516061.D	N030120-016B	SAMP	1	05/16/18 5:41 PM
A0516062.D	CCV4	CCV	1	05/16/18 5:46 PM
A0516063.D	CCB4	CCB	1	05/16/18 5:52 PM
A0516064.D	LLCCV1	CCV2	1	05/16/18 5:57 PM
A0516065.D	ICSA2	ICSA	1	05/16/18 6:03 PM
A0516066.D	ICSAB2	ICSAB	1	05/16/18 6:08 PM
A0516067.D	N030120-016B	SAMP	5	05/16/18 6:14 PM
A0516068.D	N030120-017B	SAMP	1	05/16/18 6:20 PM
A0516069.D	N030120-017B	SAMP	5	05/16/18 6:25 PM
A0516070.D	N030120-018B	SAMP	1	05/16/18 6:31 PM
A0516071.D	N030120-018B	SAMP	5	05/16/18 6:36 PM
A0516072.D	N030120-019B	SAMP	1	05/16/18 6:42 PM
A0516073.D	N030120-019B	SAMP	5	05/16/18 6:48 PM
A0516074.D	N030120-020B	SAMP	1	05/16/18 6:53 PM
A0516075.D	N030120-020B	SAMP	5	05/16/18 6:59 PM
A0516076.D	N030120-001B	SAMP	125	05/16/18 7:04 PM
A0516077.D	CCV5	CCV	1	05/16/18 7:10 PM
A0516078.D	CCB5	CCB	1	05/16/18 7:16 PM
A0516079.D	N030120-001B-PS	PS	25	05/16/18 7:21 PM
A0516080.D	N030120-001B-MS	MS	25	05/16/18 7:27 PM
A0516081.D	N030120-001B-MSD	MSD	25	05/16/18 7:32 PM
A0516082.D	N030120-002B	SAMP	25	05/16/18 7:38 PM
A0516083.D	N030120-005B	SAMP	50	05/16/18 7:43 PM
A0516084.D	N030120-006B	SAMP	10	05/16/18 7:49 PM

INJECTION LOG: 180516A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
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A0516086.D	N030120-016B	SAMP	50	05/16/18 8:00 PM
A0516087.D	N030120-017B	SAMP	50	05/16/18 8:06 PM
A0516088.D	N030120-018B	SAMP	50	05/16/18 8:11 PM
A0516089.D	CCV6	CCV	1	05/16/18 8:17 PM
A0516090.D	CCB6	CCB	1	05/16/18 8:22 PM
A0516091.D	MB-68011	MBLK	1	05/16/18 8:28 PM
A0516092.D	LCS-68011	LCS	1	05/16/18 8:34 PM
A0516093.D	N030123-001D	SAMP	1	05/16/18 8:39 PM
A0516094.D	N030123-001D	SAMP	5	05/16/18 8:45 PM
A0516095.D	N030123-001D	SAMP	25	05/16/18 8:50 PM
A0516096.D	N030123-001D-PS	PS	1	05/16/18 8:56 PM
A0516097.D	N030123-001D-PS	PS	5	05/16/18 9:01 PM
A0516098.D	N030123-001D-MS	MS	1	05/16/18 9:07 PM
A0516099.D	N030123-001D-MS	MS	5	05/16/18 9:12 PM
A0516100.D	N030123-001D-MSD	MSD	1	05/16/18 9:18 PM
A0516101.D	CCV7	CCV	1	05/16/18 9:24 PM
A0516102.D	CCB7	CCB	1	05/16/18 9:29 PM
A0516103.D	LLCCV2	CCV2	1	05/16/18 9:35 PM
A0516104.D	ICSA3	ICSA	1	05/16/18 9:40 PM
A0516105.D	ICSAB3	ICSAB	1	05/16/18 9:46 PM
A0516106.D	N030123-001D-MSD	MSD	5	05/16/18 9:51 PM
A0516107.D	N030123-002D	SAMP	1	05/16/18 9:57 PM
A0516108.D	N030123-002D	SAMP	5	05/16/18 10:02 PM
A0516109.D	N030123-003D	SAMP	1	05/16/18 10:08 PM
A0516110.D	N030123-003D	SAMP	5	05/16/18 10:13 PM
A0516111.D	N030123-004D	SAMP	1	05/16/18 10:19 PM
A0516112.D	N030123-004D	SAMP	5	05/16/18 10:25 PM
A0516113.D	N030123-005D	SAMP	1	05/16/18 10:30 PM
A0516114.D	N030123-005D	SAMP	5	05/16/18 10:36 PM
A0516115.D	N030123-006D	SAMP	1	05/16/18 10:41 PM
A0516116.D	CCV8	CCV	1	05/16/18 10:47 PM
A0516117.D	CCB8	CCB	1	05/16/18 10:52 PM
A0516118.D	N030123-006D	SAMP	5	05/16/18 10:58 PM
A0516119.D	N030123-007D	SAMP	1	05/16/18 11:03 PM
A0516120.D	N030123-007D	SAMP	5	05/16/18 11:09 PM
A0516121.D	N030123-008D	SAMP	1	05/16/18 11:15 PM
A0516122.D	N030123-008D	SAMP	5	05/16/18 11:20 PM
A0516123.D	N030123-009D	SAMP	1	05/16/18 11:26 PM
A0516124.D	N030123-009D	SAMP	5	05/16/18 11:31 PM
A0516125.D	N030123-010D	SAMP	1	05/16/18 11:37 PM
A0516126.D	N030123-010D	SAMP	5	05/16/18 11:42 PM

INJECTION LOG: 180516A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0516127.D	N030123-011D	SAMP	1	05/16/18 11:48 PM
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A0516129.D	CCB9	CCB	1	05/16/18 11:59 PM
A0516130.D	N030123-011D	SAMP	5	05/17/18 12:05 AM
A0516131.D	N030123-012D	SAMP	1	05/17/18 12:10 AM
A0516132.D	N030123-012D	SAMP	5	05/17/18 12:16 AM
A0516133.D	N030123-013D	SAMP	1	05/17/18 12:21 AM
A0516134.D	N030123-013D	SAMP	5	05/17/18 12:27 AM
A0516135.D	N030123-014D	SAMP	1	05/17/18 12:32 AM
A0516136.D	N030123-014D	SAMP	5	05/17/18 12:38 AM
A0516137.D	N030123-015D	SAMP	1	05/17/18 12:43 AM
A0516138.D	N030123-015D	SAMP	5	05/17/18 12:49 AM
A0516139.D	N030123-016D	SAMP	1	05/17/18 12:55 AM
A0516140.D	CCV10	CCV	1	05/17/18 1:00 AM
A0516141.D	CCB10	CCB	1	05/17/18 1:06 AM
A0516142.D	N030123-016D	SAMP	5	05/17/18 1:11 AM
A0516143.D	N030123-017D	SAMP	1	05/17/18 1:17 AM
A0516144.D	N030123-017D	SAMP	5	05/17/18 1:22 AM
A0516145.D	N030123-018D	SAMP	1	05/17/18 1:28 AM
A0516146.D	N030123-018D	SAMP	5	05/17/18 1:33 AM
A0516147.D	N030123-019D	SAMP	1	05/17/18 1:39 AM
A0516148.D	N030123-019D	SAMP	5	05/17/18 1:45 AM
A0516149.D	N030123-023D	SAMP	1	05/17/18 1:50 AM
A0516150.D	N030123-023D	SAMP	5	05/17/18 1:56 AM
A0516151.D	CCV11	CCV	1	05/17/18 2:01 AM
A0516152.D	CCB11	CCB	1	05/17/18 2:07 AM
A0516153.D	LLCCV3	CCV2	1	05/17/18 2:12 AM
A0516154.D	ICSA4	ICSA	1	05/17/18 2:18 AM
A0516155.D	ICSAB4	ICSAB	1	05/17/18 2:23 AM

INJECTION LOG: 180517A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0517001.D	RINSE	RINSE	1	05/17/18 10:04 AM
A0517002.D	Cal Blank	IBLK	1	05/17/18 10:09 AM
A0517003.D	Std1-0.1/1 ppb	ICAL	1	05/17/18 10:15 AM
A0517004.D	Std2-0.5/5 ppb	ICAL	1	05/17/18 10:21 AM
A0517005.D	Std3-5/50 ppb	ICAL	1	05/17/18 10:26 AM
A0517006.D	Std4-10/100 ppb	ICAL	1	05/17/18 10:32 AM
A0517007.D	Std5-20/200 ppb	ICAL	1	05/17/18 10:37 AM
A0517008.D	Std6-40/400 ppb	ICAL	1	05/17/18 10:43 AM
A0517009.D	Std7-100/1000 ppb	ICAL	1	05/17/18 10:48 AM
A0517010.D	Std8-200/2000 ppb	ICAL	1	05/17/18 10:54 AM
A0517011.D	ICV	ICV	1	05/17/18 11:00 AM
A0517012.D	ICB	ICB	1	05/17/18 11:05 AM
A0517013.D	LLICV	CCV1	1	05/17/18 11:11 AM
A0517014.D	ICSA1	ICSA	1	05/17/18 11:16 AM
A0517015.D	ICSAB1	ICSAB	1	05/17/18 11:22 AM
A0517016.D	MB-68012	MBLK	1	05/17/18 11:28 AM
A0517017.D	LCS-68012	LCS	1	05/17/18 11:33 AM
A0517018.D	N030150-001B	SAMP	1	05/17/18 11:42 AM
A0517019.D	N030147-001D	SAMP	1	05/17/18 11:47 AM
A0517020.D	N030147-001D	SAMP	5	05/17/18 11:53 AM
A0517021.D	N030147-001D	SAMP	25	05/17/18 11:58 AM
A0517022.D	N030147-002D	SAMP	1	05/17/18 12:04 PM
A0517023.D	N030147-002D	SAMP	5	05/17/18 12:10 PM
A0517024.D	N030147-002D	SAMP	25	05/17/18 12:16 PM
A0517025.D	N030147-002D-PS	PS	1	05/17/18 12:21 PM
A0517026.D	CCV1	CCV	1	05/17/18 12:27 PM
A0517027.D	CCB1	CCB	1	05/17/18 12:33 PM
A0517028.D	N030147-002D-PS	PS	5	05/17/18 12:38 PM
A0517029.D	N030147-002D-MS	MS	1	05/17/18 12:44 PM
A0517030.D	N030147-002D-MS	MS	5	05/17/18 12:49 PM
A0517031.D	N030147-002D-MSD	MSD	1	05/17/18 12:55 PM
A0517032.D	N030147-002D-MSD	MSD	5	05/17/18 1:00 PM
A0517033.D	N030147-003D	SAMP	1	05/17/18 1:06 PM
A0517034.D	N030147-003D	SAMP	5	05/17/18 1:12 PM
A0517035.D	N030147-004D	SAMP	1	05/17/18 1:17 PM
A0517036.D	N030147-004D	SAMP	5	05/17/18 1:23 PM
A0517037.D	N030147-005D	SAMP	1	05/17/18 1:28 PM
A0517038.D	CCV2	CCV	1	05/17/18 1:34 PM
A0517039.D	CCB2	CCB	1	05/17/18 1:39 PM
A0517040.D	N030147-005D	SAMP	5	05/17/18 1:45 PM
A0517041.D	N030147-006D	SAMP	1	05/17/18 1:51 PM
A0517042.D	N030147-006D	SAMP	5	05/17/18 1:56 PM

INJECTION LOG: 180517A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0517043.D	N030147-007D	SAMP	1	05/17/18 2:02 PM
A0517044.D	N030147-007D	SAMP	25	05/17/18 2:07 PM
A0517045.D	N030147-008D	SAMP	1	05/17/18 2:13 PM
A0517046.D	N030147-008D	SAMP	10	05/17/18 2:19 PM
A0517047.D	N030147-009D	SAMP	1	05/17/18 2:24 PM
A0517048.D	N030147-009D	SAMP	5	05/17/18 2:30 PM
A0517049.D	N030147-010D	SAMP	1	05/17/18 2:35 PM
A0517050.D	CCV3	CCV	1	05/17/18 2:41 PM
A0517051.D	CCB3	CCB	1	05/17/18 2:46 PM
A0517052.D	N030147-010D	SAMP	5	05/17/18 2:52 PM
A0517053.D	N030147-011D	SAMP	1	05/17/18 2:58 PM
A0517054.D	N030147-011D	SAMP	5	05/17/18 3:03 PM
A0517055.D	N030147-012D	SAMP	1	05/17/18 3:09 PM
A0517056.D	N030147-012D	SAMP	5	05/17/18 3:14 PM
A0517057.D	N030147-013C	SAMP	1	05/17/18 3:20 PM
A0517058.D	N030147-013C	SAMP	5	05/17/18 3:26 PM
A0517059.D	N030185-001D	SAMP	1	05/17/18 3:31 PM
A0517060.D	N030185-001D	SAMP	5	05/17/18 3:37 PM
A0517061.D	N030185-002C	SAMP	1	05/17/18 3:42 PM
A0517062.D	CCV4	CCV	1	05/17/18 3:48 PM
A0517063.D	CCB4	CCB	1	05/17/18 3:53 PM
A0517064.D	N030185-002C	SAMP	5	05/17/18 3:59 PM
A0517065.D	N030185-003C	SAMP	1	05/17/18 4:05 PM
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A0517067.D	N030185-004D	SAMP	1	05/17/18 4:17 PM
A0517068.D	N030185-004D	SAMP	5	05/17/18 4:23 PM
A0517069.D	N030185-002C	SAMP	1	05/17/18 4:29 PM
A0517070.D	N030147-007D	SAMP	5	05/17/18 4:34 PM
A0517071.D	N030147-008D	SAMP	5	05/17/18 4:40 PM
A0517072.D	N030304-001A	SAMP	1	05/17/18 4:45 PM
A0517073.D	N030123-016D	SAMP	25	05/17/18 4:51 PM
A0517074.D	CCV5	CCV	1	05/17/18 4:56 PM
A0517075.D	CCB5	CCB	1	05/17/18 5:02 PM
A0517076.D	LLCCV1	CCV2	1	05/17/18 5:08 PM
A0517077.D	ICSA2	ICSA	1	05/17/18 5:13 PM
A0517078.D	ICSAB2	ICSAB	1	05/17/18 5:19 PM
A0517079.D	N030120-003B	SAMP	1	05/17/18 5:23 PM
A0517080.D	N030120-003A	SAMP	1	05/17/18 5:29 PM
A0517081.D	N030120-017B	SAMP	1	05/17/18 5:34 PM
A0517082.D	N030120-017A	SAMP	1	05/17/18 5:40 PM
A0517083.D	N030120-018B	SAMP	1	05/17/18 5:45 PM
A0517084.D	N030120-018A	SAMP	1	05/17/18 5:51 PM

INJECTION LOG: 180517A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
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A0517087.D	MB-68013	MBLK	1	05/17/18 6:08 PM
A0517088.D	LCS-68013	LCS	1	05/17/18 6:13 PM
A0517089.D	CCV6	CCV	1	05/17/18 6:19 PM
A0517090.D	CCB6	CCB	1	05/17/18 6:25 PM
A0517091.D	N030149-001B	SAMP	1	05/17/18 6:30 PM
A0517092.D	N030149-001B	SAMP	5	05/17/18 6:36 PM
A0517093.D	N030149-001B	SAMP	25	05/17/18 6:41 PM
A0517094.D	N030149-001B-PS	PS	1	05/17/18 6:47 PM
A0517095.D	N030149-001B-PS	PS	5	05/17/18 6:52 PM
A0517096.D	N030149-001B-MS	MS	1	05/17/18 6:58 PM
A0517097.D	N030149-001B-MS	MS	5	05/17/18 7:04 PM
A0517098.D	N030149-001B-MSD	MSD	1	05/17/18 7:09 PM
A0517099.D	N030149-001B-MSD	MSD	5	05/17/18 7:15 PM
A0517100.D	N030149-002B	SAMP	1	05/17/18 7:20 PM
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A0517102.D	CCB7	CCB	1	05/17/18 7:32 PM
A0517103.D	N030149-002B	SAMP	5	05/17/18 7:37 PM
A0517104.D	N030149-004B	SAMP	1	05/17/18 7:43 PM
A0517105.D	N030149-005B	SAMP	1	05/17/18 7:48 PM
A0517106.D	N030149-005B	SAMP	5	05/17/18 7:54 PM
A0517107.D	N030149-006B	SAMP	1	05/17/18 7:59 PM
A0517108.D	N030149-006B	SAMP	5	05/17/18 8:05 PM
A0517109.D	N030149-009B	SAMP	1	05/17/18 8:11 PM
A0517110.D	N030149-010B	SAMP	5	05/17/18 8:16 PM
A0517111.D	N030149-011B	SAMP	1	05/17/18 8:22 PM
A0517112.D	N030149-012B	SAMP	5	05/17/18 8:27 PM
A0517113.D	CCV8	CCV	1	05/17/18 8:33 PM
A0517114.D	CCB8	CCB	1	05/17/18 8:38 PM
A0517115.D	LLCCV2	CCV2	1	05/17/18 8:44 PM
A0517116.D	ICSA3	ICSA	1	05/17/18 8:50 PM
A0517117.D	ICSAB3	ICSAB	1	05/17/18 8:55 PM
A0517118.D	N030149-013B	SAMP	1	05/17/18 9:01 PM
A0517119.D	N030149-014B	SAMP	5	05/17/18 9:06 PM
A0517120.D	N030149-015B	SAMP	1	05/17/18 9:12 PM
A0517121.D	N030149-016B	SAMP	1	05/17/18 9:17 PM
A0517122.D	N030149-016B	SAMP	5	05/17/18 9:23 PM
A0517123.D	N030149-016B	SAMP	10	05/17/18 9:29 PM
A0517124.D	N030149-017B	SAMP	1	05/17/18 9:34 PM
A0517125.D	N030149-017B	SAMP	25	05/17/18 9:40 PM
A0517126.D	N030149-022B	SAMP	1	05/17/18 9:45 PM

INJECTION LOG: 180517A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
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A0517129.D	CCB9	CCB	1	05/17/18 10:02 PM
A0517130.D	LCS-68014	LCS	1	05/17/18 10:08 PM
A0517131.D	N030189-001B	SAMP	1	05/17/18 10:13 PM
A0517132.D	N030189-001B	SAMP	5	05/17/18 10:19 PM
A0517133.D	N030189-001B	SAMP	25	05/17/18 10:24 PM
A0517134.D	N030189-001B-PS	PS	1	05/17/18 10:30 PM
A0517135.D	N030189-001B-PS	PS	5	05/17/18 10:36 PM
A0517136.D	N030189-001B-MS	MS	1	05/17/18 10:41 PM
A0517137.D	N030189-001B-MS	MS	5	05/17/18 10:47 PM
A0517138.D	N030189-001B-MSD	MSD	1	05/17/18 10:52 PM
A0517139.D	N030189-001B-MSD	MSD	5	05/17/18 10:58 PM
A0517140.D	CCV10	CCV	1	05/17/18 11:04 PM
A0517141.D	CCB10	CCB	1	05/17/18 11:09 PM
A0517142.D	N030189-002B	SAMP	1	05/17/18 11:15 PM
A0517143.D	N030189-002B	SAMP	5	05/17/18 11:20 PM
A0517144.D	N030189-003B	SAMP	1	05/17/18 11:26 PM
A0517145.D	N030189-003B	SAMP	5	05/17/18 11:31 PM
A0517146.D	N030189-003B	SAMP	10	05/17/18 11:37 PM
A0517147.D	N030189-004B	SAMP	1	05/17/18 11:43 PM
A0517148.D	N030189-005B	SAMP	1	05/17/18 11:48 PM
A0517149.D	N030189-006B	SAMP	1	05/17/18 11:54 PM
A0517150.D	N030189-006B	SAMP	5	05/17/18 11:59 PM
A0517151.D	N030189-007B	SAMP	1	05/18/18 12:05 AM
A0517152.D	CCV11	CCV	1	05/18/18 12:11 AM
A0517153.D	CCB11	CCB	1	05/18/18 12:16 AM
A0517154.D	N030189-007B	SAMP	25	05/18/18 12:22 AM
A0517155.D	N030189-008B	SAMP	1	05/18/18 12:27 AM
A0517156.D	N030189-009B	SAMP	1	05/18/18 12:33 AM
A0517157.D	N030189-009B	SAMP	5	05/18/18 12:38 AM
A0517158.D	N030189-010B	SAMP	1	05/18/18 12:44 AM
A0517159.D	N030189-011B	SAMP	1	05/18/18 12:50 AM
A0517160.D	N030189-011B	SAMP	10	05/18/18 12:55 AM
A0517161.D	N030189-012B	SAMP	1	05/18/18 1:01 AM
A0517162.D	N030189-012B	SAMP	5	05/18/18 1:06 AM
A0517163.D	CCV12	CCV	1	05/18/18 1:12 AM
A0517164.D	CCB12	CCB	1	05/18/18 1:18 AM
A0517165.D	LLCCV3	CCV2	1	05/18/18 1:23 AM
A0517166.D	ICSA4	ICSA	1	05/18/18 1:29 AM
A0517167.D	ICSAB4	ICSAB	1	05/18/18 1:34 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/8/2018 6:50:55 P**
Prep End Date: **5/9/2018 8:00:00 A**
Prep Batch **68011** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/21/2018
Initials/ Date: 5/21/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**01-24**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68011	Aqueous		25	☐	0	0	25	1.000		
MB-68011	Aqueous		25	☐	0	0	25	1.000		
N030123-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-002D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-003D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-004D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-005D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-006D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-007D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-008D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-009D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-010D	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/8/2018 6:50:55 P**
Prep End Date: **5/9/2018 8:00:00 A**
Prep Batch **68011** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/21/2018
Initials/ Date: 5/21/2018
Technician **Claire Ignacio**

Prep Factor Units **mL / mL** Temp. (°C): **94.8** Location: **01-24**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N030123-011D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-012D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-013D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-014D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-015D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-016D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-017D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-018D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-019D	Groundwater	<2	25	☐	0	0	25	1.000		
N030123-023D	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 16 May 2018 09:33:33 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	213220.00	0.00	
24	Mg	112404000.00	0.00	
25	Mg	15148300.00	0.00	
26	Mg	17535000.00	0.00	
59	Co	533070.00	0.00	
115	In	1179250.00	0.00	
206	Pb	198598.00	0.00	
207	Pb	173857.00	0.00	
208	Pb	428614.00	0.00	

RSD (%)

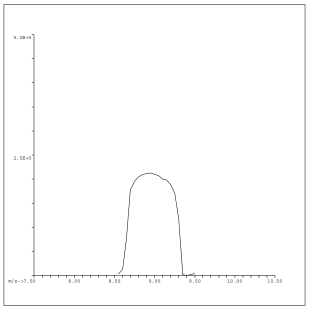
Element		Actual	Required	Flag
9	Be	0.41	5.00	
24	Mg	0.58	5.00	
25	Mg	0.28	5.00	
26	Mg	0.68	5.00	
59	Co	0.77	5.00	
115	In	0.72	5.00	
206	Pb	1.08	5.00	
207	Pb	0.66	5.00	
208	Pb	0.42	5.00	

Ion Ratio

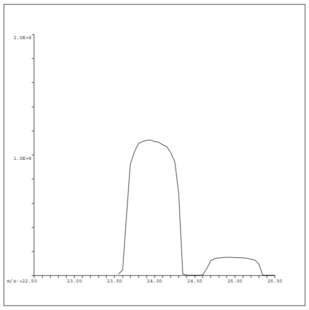
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

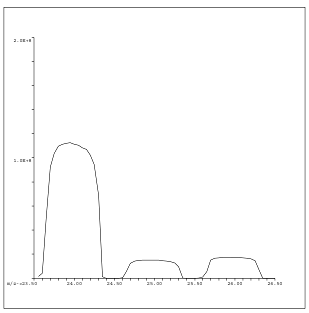
Element	Actual	Required	Flag



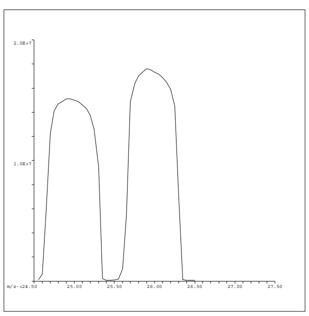
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



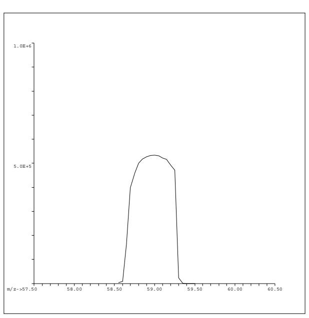
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



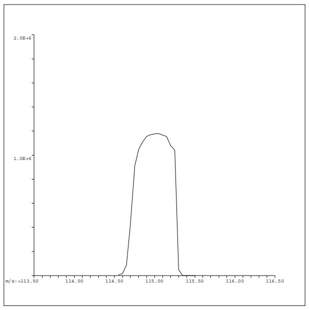
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



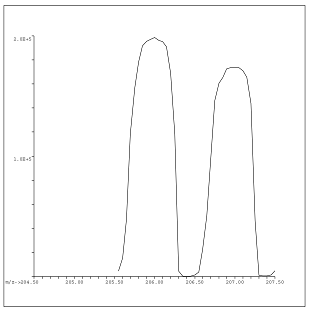
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



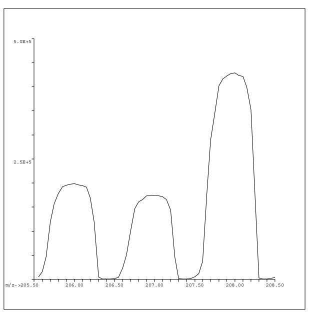
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



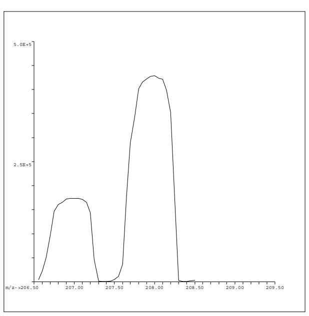
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 17 May 2018 09:22:59 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	127748.00	0.00	
24	Mg	430517.00	0.00	
25	Mg	56639.50	0.00	
26	Mg	64723.10	0.00	
59	Co	444129.00	0.00	
115	In	745989.00	0.00	
206	Pb	199429.00	0.00	
207	Pb	172927.00	0.00	
208	Pb	425514.00	0.00	

RSD (%)

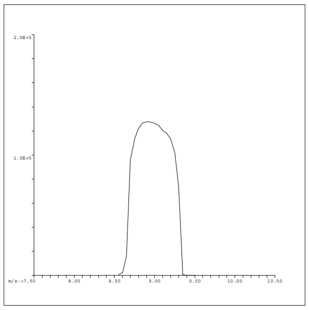
Element		Actual	Required	Flag
9	Be	0.56	5.00	
24	Mg	3.22	5.00	
25	Mg	3.55	5.00	
26	Mg	4.16	5.00	
59	Co	0.87	5.00	
115	In	0.87	5.00	
206	Pb	0.57	5.00	
207	Pb	0.65	5.00	
208	Pb	0.95	5.00	

Ion Ratio

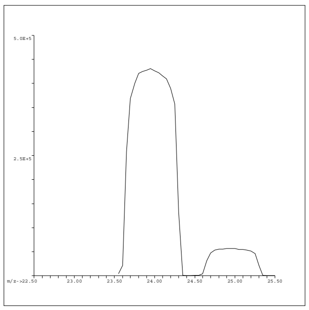
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

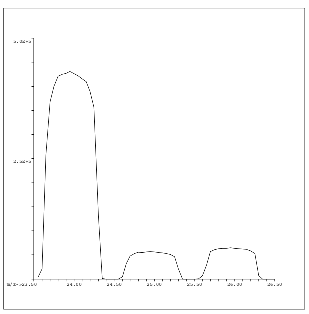
Element	Actual	Required	Flag



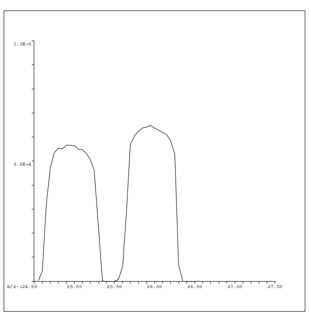
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



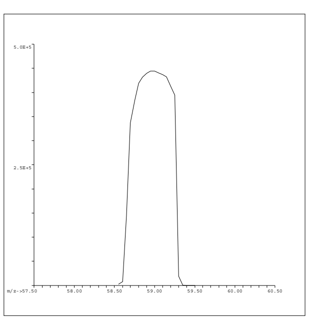
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



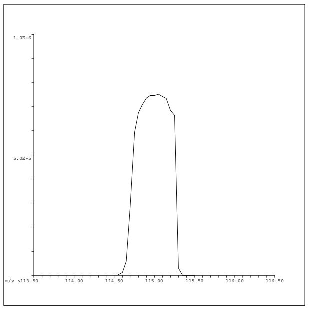
25 Mg
Mass Calib.
Actual: 24.90
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



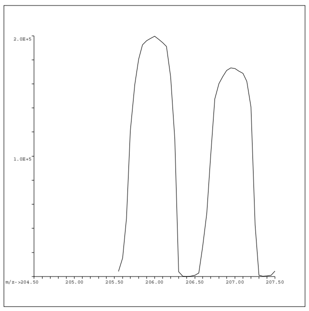
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



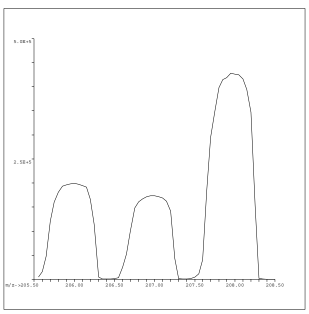
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



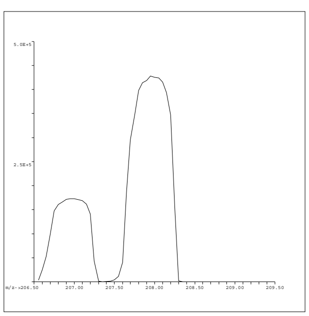
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180516A

Instrument ID: ICPMS-02

Analyte	Data File	A0516002.D	A0516003.D	A0516004.D	A0516005.D	A0516006.D	A0516007.D	A0516008.D	A0516009.D	A0516010.D	
	Acq. Date-Time	05/16/2018 12:11 PM	05/16/2018 12:17 PM	05/16/2018 12:22 PM	05/16/2018 12:28 PM	05/16/2018 12:33 PM	05/16/2018 12:39 PM	05/16/2018 12:44 PM	05/16/2018 12:50 PM	05/16/2018 12:57 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	82260.6		84975.1	84028.1	83830.5	84412.1	84014.6	83658.7	71437.8	
55 Mn [2]	CPS	114.9		1851.1	16043.9	32681.8	64310.2	127682.8	312356.9	533568.6	1.0000
52 Cr [2]	CPS	255.4		3784.8	34460.3	68884.2	137235	273586.4	669968.2	1172413.9	0.9999
72 Ge (ISTD) [1]	CPS	57485.1		58569	59189.8	59707.3	58950.5	59447.6	58557.6	46433.3	
78 Se [1]	CPS	3.3		103.3	1144.5	2209.1	4539.7	8967.3	21629.5	33686.9	0.9999
72 Ge (ISTD) [2]	CPS	50868.7	52475.1	52913.1	51805.1	52011.2	51919.8	52103.8	51447.2	43814.1	
75 As [2]	CPS	23.6	93.3	359.6	3335	6801.9	13478.9	26632.8	65938.4	113323.8	1.0000
103 Rh (ISTD) [2]	CPS	1683135.8		1722865.9	1698120.8	1706400.3	1710844.3	1716343.4	1676837.3	1436064.3	
95 Mo [2]	CPS	36.7		2080.2	19593.8	39478.2	78206.8	155199.1	382230.9	657349.5	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MWST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180517A

Instrument ID: ICPMS-02

Analyte	Data File	A0517002.D	A0517004.D	A0517005.D	A0517006.D	A0517007.D	A0517008.D	A0517009.D	A0517010.D	
	Acq. Date-Time	05/17/2018 10:09 AM	05/17/2018 10:21 AM	05/17/2018 10:26 AM	05/17/2018 10:32 AM	05/17/2018 10:37 AM	05/17/2018 10:43 AM	05/17/2018 10:48 AM	05/17/2018 10:54 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	66634.9	66636	64661.6	64497.3	62331.6	63640.1	62762.1	61992.7	
55 Mn [2]	CPS	168.8	1462.5	12569.7	25255.6	48895.5	96263.5	237981	464316.2	1.0

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MWST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

Nancy for 5/21/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028914**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.418	0.10	10.00	0	104	90	110				
Manganese	103.611	0.50	100.0	0	104	90	110				
Molybdenum	10.673	0.50	10.00	0	107	90	110				
Selenium	10.920	0.50	10.00	0	109	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.093	0.10	0.1000	0	92.8	80	120				
Manganese	0.577	0.50	0.5000	0	115	80	120				
Molybdenum	0.562	0.50	0.5000	0	112	80	120				
Selenium	0.482	0.50	0.5000	0	96.5	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.331	0.10	20.00	0	96.7	90	110				
Manganese	20.356	0.50	20.00	0	102	90	110				
Molybdenum	20.260	0.50	20.00	0	101	90	110				
Selenium	18.696	0.50	20.00	0	93.5	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.565	0.10	20.00	0	97.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.810	0.50	20.00	0	104	90	110				
Molybdenum	20.726	0.50	20.00	0	104	90	110				
Selenium	18.585	0.50	20.00	0	92.9	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.116	0.10	20.00	0	95.6	90	110				
Manganese	20.533	0.50	20.00	0	103	90	110				
Molybdenum	20.608	0.50	20.00	0	103	90	110				
Selenium	18.838	0.50	20.00	0	94.2	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.856	0.10	20.00	0	99.3	90	110				
Manganese	20.958	0.50	20.00	0	105	90	110				
Molybdenum	20.933	0.50	20.00	0	105	90	110				
Selenium	18.031	0.50	20.00	0	90.2	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.120	0.10	0.1000	0	120	70	130				
Manganese	0.568	0.50	0.5000	0	114	70	130				
Molybdenum	0.570	0.50	0.5000	0	114	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.479	0.50	0.5000	0	95.7	70	130				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.213	0.10	20.00	0	96.1	90	110				
Manganese	20.923	0.50	20.00	0	105	90	110				
Molybdenum	20.692	0.50	20.00	0	103	90	110				
Selenium	18.126	0.50	20.00	0	90.6	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.268	0.10	20.00	0	96.3	90	110				
Manganese	20.848	0.50	20.00	0	104	90	110				
Molybdenum	20.825	0.50	20.00	0	104	90	110				
Selenium	18.547	0.50	20.00	0	92.7	90	110				

Sample ID **CCV7** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3029004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.694	0.10	20.00	0	98.5	90	110				
Manganese	20.496	0.50	20.00	0	102	90	110				
Molybdenum	20.739	0.50	20.00	0	104	90	110				
Selenium	19.218	0.50	20.00	0	96.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030123
Project:	PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3029006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.106	0.10	0.1000	0	106	70	130				
Manganese	0.519	0.50	0.5000	0	104	70	130				
Molybdenum	0.522	0.50	0.5000	0	104	70	130				
Selenium	0.543	0.50	0.5000	0	109	70	130				

Sample ID **CCV8** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3029019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.539	0.10	20.00	0	97.7	90	110				
Manganese	20.507	0.50	20.00	0	103	90	110				
Molybdenum	20.563	0.50	20.00	0	103	90	110				
Selenium	19.897	0.50	20.00	0	99.5	90	110				

Sample ID **CCV9** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3029031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.524	0.10	20.00	0	97.6	90	110				
Manganese	20.458	0.50	20.00	0	102	90	110				
Molybdenum	20.652	0.50	20.00	0	103	90	110				
Selenium	19.763	0.50	20.00	0	98.8	90	110				

Sample ID **CCV10** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3029043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.631	0.10	20.00	0	98.2	90	110				
Manganese	20.731	0.50	20.00	0	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV10** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3029043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.481	0.50	20.00	0	102	90	110				
Selenium	19.647	0.50	20.00	0	98.2	90	110				

Sample ID **CCV11** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3029054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.215	0.10	20.00	0	96.1	90	110				
Manganese	20.584	0.50	20.00	0	103	90	110				
Molybdenum	20.695	0.50	20.00	0	103	90	110				
Selenium	19.718	0.50	20.00	0	98.6	90	110				

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3029056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.082	0.10	0.1000	0	81.9	70	130				
Manganese	0.547	0.50	0.5000	0	109	70	130				
Molybdenum	0.537	0.50	0.5000	0	107	70	130				
Selenium	0.516	0.50	0.5000	0	103	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124122**
Client ID: **ICV**	Batch ID: **R124122**	TestNo: **EPA 6020**		Analysis Date: **5/17/2018**	SeqNo: **3030761**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.552	0.10	10.00	0	106	90	110				
Manganese	105.632	0.50	100.0	0	106	90	110				
Molybdenum	10.661	0.50	10.00	0	107	90	110				
Selenium	10.431	0.50	10.00	0	104	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124122**
Client ID: **ZZZZZZ**	Batch ID: **R124122**	TestNo: **EPA 6020**		Analysis Date: **5/17/2018**	SeqNo: **3030763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.098	0.10	0.1000	0	97.9	80	120				
Manganese	0.517	0.50	0.5000	0	103	80	120				
Molybdenum	0.492	0.50	0.5000	0	98.5	80	120				
Selenium	0.513	0.50	0.5000	0	103	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124122**
Client ID: **CCV**	Batch ID: **R124122**	TestNo: **EPA 6020**		Analysis Date: **5/17/2018**	SeqNo: **3030776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.074	0.10	20.00	0	100	90	110				
Manganese	20.556	0.50	20.00	0	103	90	110				
Molybdenum	20.010	0.50	20.00	0	100	90	110				
Selenium	19.835	0.50	20.00	0	99.2	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124122**
Client ID: **CCV**	Batch ID: **R124122**	TestNo: **EPA 6020**		Analysis Date: **5/17/2018**	SeqNo: **3030788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.664	0.10	20.00	0	98.3	90	110				
Manganese	20.453	0.50	20.00	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.371	0.50	20.00	0	102	90	110				
Selenium	20.037	0.50	20.00	0	100	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.733	0.10	20.00	0	98.7	90	110				
Manganese	20.647	0.50	20.00	0	103	90	110				
Molybdenum	20.107	0.50	20.00	0	101	90	110				
Selenium	20.119	0.50	20.00	0	101	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030812**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.817	0.10	20.00	0	99.1	90	110				
Manganese	20.660	0.50	20.00	0	103	90	110				
Molybdenum	20.340	0.50	20.00	0	102	90	110				
Selenium	21.084	0.50	20.00	0	105	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.530	0.10	20.00	0	97.7	90	110				
Manganese	20.928	0.50	20.00	0	105	90	110				
Molybdenum	20.690	0.50	20.00	0	103	90	110				
Selenium	19.728	0.50	20.00	0	98.6	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	~~ND~~ 0.07160	0.10	0.1000	0	~~0~~ 71.6%	70	130				~~S~~
Manganese	0.567	0.50	0.5000	0	113	70	130				
Molybdenum	0.544	0.50	0.5000	0	109	70	130				
Selenium	0.509	0.50	0.5000	0	102	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 5/21/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID ICV	SampType: ICV	TestCode: 6020DIS_CrP	Units: µg/L	Prep Date:	RunNo: 124102
Client ID: ICV	Batch ID: R124102	TestNo: EPA 6020		Analysis Date: 5/16/2018	SeqNo: 3028769

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.263	1.0	10.00	0	103	90	110				

Sample ID LLICV	SampType: CCV1	TestCode: 6020DIS_CrP	Units: µg/L	Prep Date:	RunNo: 124102
Client ID: ZZZZZZ	Batch ID: R124102	TestNo: EPA 6020		Analysis Date: 5/16/2018	SeqNo: 3028771

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.992	1.0	1.000	0	99.2	80	120				

Sample ID CCV1	SampType: CCV	TestCode: 6020DIS_CrP	Units: µg/L	Prep Date:	RunNo: 124102
Client ID: CCV	Batch ID: R124102	TestNo: EPA 6020		Analysis Date: 5/16/2018	SeqNo: 3028784

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.094	1.0	20.00	0	95.5	90	110				

Sample ID CCV2	SampType: CCV	TestCode: 6020DIS_CrP	Units: µg/L	Prep Date:	RunNo: 124102
Client ID: CCV	Batch ID: R124102	TestNo: EPA 6020		Analysis Date: 5/16/2018	SeqNo: 3028796

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.763	1.0	20.00	0	93.8	90	110				

Sample ID CCV3	SampType: CCV	TestCode: 6020DIS_CrP	Units: µg/L	Prep Date:	RunNo: 124102
Client ID: CCV	Batch ID: R124102	TestNo: EPA 6020		Analysis Date: 5/16/2018	SeqNo: 3028808

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.696	1.0	20.00	0	93.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124102**
Client ID: **CCV**	Batch ID: **R124102**	TestNo: **EPA 6020**		Analysis Date: **5/16/2018**	SeqNo: **3028820**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.695	1.0	20.00	0	93.5	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124102**
Client ID: **ZZZZZZ**	Batch ID: **R124102**	TestNo: **EPA 6020**		Analysis Date: **5/16/2018**	SeqNo: **3028822**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.922	1.0	1.000	0	92.2	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124102**
Client ID: **CCV**	Batch ID: **R124102**	TestNo: **EPA 6020**		Analysis Date: **5/16/2018**	SeqNo: **3028835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.660	1.0	20.00	0	93.3	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124102**
Client ID: **CCV**	Batch ID: **R124102**	TestNo: **EPA 6020**		Analysis Date: **5/16/2018**	SeqNo: **3028847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.557	1.0	20.00	0	92.8	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124102**
Client ID: **CCV**	Batch ID: **R124102**	TestNo: **EPA 6020**		Analysis Date: **5/16/2018**	SeqNo: **3028859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.424	1.0	20.00	0	97.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.997	1.0	1.000	0	99.7	70	130				

Sample ID **CCV8** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.535	1.0	20.00	0	97.7	90	110				

Sample ID **CCV9** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.477	1.0	20.00	0	97.4	90	110				

Sample ID **CCV10** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3028898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.403	1.0	20.00	0	97.0	90	110				

Sample ID **CCV11** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCV** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3028909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.515	1.0	20.00	0	97.6	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV3** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3028911**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.971	1.0	1.000	0	97.1	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028954**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028966**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California		
Work Order:	N030123		
Project:	PG&E Topock - GMP, RC000753.801D		

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB7** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3029005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB8** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3029020**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB9** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3029032**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB10** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3029044**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB11** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3029055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California		
Work Order:	N030123		
Project:	PG&E Topock - GMP, RC000753.801D	**TestCode:**	**6020_DIS**

ANALYTICAL QC SUMMARY REPORT

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030813**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028785**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028809**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB7** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB8** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB9** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB10** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3028899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB11** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **CCB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3028910**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICSA** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICSAB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.707	0.10	20.00	0	104	80	120				
Manganese	17.818	0.50	20.00	0	89.1	80	120				
Molybdenum	22.225	0.50	20.00	0	111	80	120				
Selenium	18.972	0.50	20.00	0	94.9	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICSA** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICSAB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.250	0.10	20.00	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICSAB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	16.659	0.50	20.00	0	83.3	80	120				
Molybdenum	23.403	0.50	20.00	0	117	80	120				
Selenium	17.481	0.50	20.00	0	87.4	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICSA** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3029007**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICSAB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3029008**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.545	0.10	20.00	0	103	80	120				
Manganese	16.539	0.50	20.00	0	82.7	80	120				
Molybdenum	23.273	0.50	20.00	0	116	80	120				
Selenium	18.746	0.50	20.00	0	93.7	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICSA** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3029057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030123
Project:	PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**

Client ID: **ICSA** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3029057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **ICSAB4** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**

Client ID: **ICSAB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3029058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.468	0.10	20.00	0	102	80	120				
Manganese	17.001	0.50	20.00	0	85.0	80	120				
Molybdenum	23.500	0.50	20.00	0	117	80	120				
Selenium	19.292	0.50	20.00	0	96.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSA** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSAB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.334	0.10	20.00	0	107	80	120				
Manganese	16.221	0.50	20.00	0	81.1	80	120				
Molybdenum	22.828	0.50	20.00	0	114	80	120				
Selenium	20.399	0.50	20.00	0	102	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSA** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSAB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.413	0.10	20.00	0	112	80	120				
Manganese	17.422	0.50	20.00	0	87.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSAB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	23.806	0.50	20.00	0	119	80	120				
Selenium	18.419	0.50	20.00	0	92.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICSA** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028772**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICSAB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.103	1.0	20.00	0	101	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICSA** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICSAB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.459	1.0	20.00	0	92.3	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICSA** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028862**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICSAB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/16/2018** SeqNo: **3028863**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.110	1.0	20.00	0	95.6	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICSA** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3028912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB4** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ICSAB** Batch ID: **R124102** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3028913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.589	1.0	20.00	0	97.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	82260.6	82260.6	100	PASS	70-125	50868.7	50868.7	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	85470.8	82260.6	103.9	PASS	70-125	52475.1	50868.7	103.16	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	84975.1	82260.6	103.3	PASS	70-125	52913.1	50868.7	104.02	PASS	70-125
Std3-5/50 ppb	ICAL	1	84028.1	82260.6	102.15	PASS	70-125	51805.1	50868.7	101.84	PASS	70-125
Std4-10/100 ppb	ICAL	1	83830.5	82260.6	101.91	PASS	70-125	52011.2	50868.7	102.25	PASS	70-125
Std5-20/200 ppb	ICAL	1	84412.1	82260.6	102.62	PASS	70-125	51919.8	50868.7	102.07	PASS	70-125
Std6-40/400 ppb	ICAL	1	84014.6	82260.6	102.13	PASS	70-125	52103.8	50868.7	102.43	PASS	70-125
Std7-100/1000 ppb	ICAL	1	83658.7	82260.6	101.7	PASS	70-125	51447.2	50868.7	101.14	PASS	70-125
Std8-200/2000 ppb	ICAL	1	71437.8	82260.6	86.84	PASS	70-125	43814.1	50868.7	86.13	PASS	70-125
ICV	ICV	1	80144.9	82260.6	97.43	PASS	70-125	49160.3	50868.7	96.64	PASS	70-125
ICB	ICB	1	82614.3	82260.6	100.43	PASS	70-125	50726.1	50868.7	99.72	PASS	70-125
LLICV	CCV1	1	82299.4	82260.6	100.05	PASS	70-125	50844.2	50868.7	99.95	PASS	70-125
ICSA1	ICSA	1	89444.9	82260.6	108.73	PASS	70-125	51319	50868.7	100.89	PASS	70-125
ICSAB1	ICSAB	1	89452.8	82260.6	108.74	PASS	70-125	52057.1	50868.7	102.34	PASS	70-125
CCV1	CCV	1	79032.9	82260.6	96.076	PASS	70-125	51849.7	50868.7	101.93	PASS	70-125
CCB1	CCB	1	76709.9	82260.6	93.25	PASS	70-125	49448.9	50868.7	97.21	PASS	70-125
CCV2	CCV	1	81906.8	82260.6	99.57	PASS	70-125	53418	50868.7	105.01	PASS	70-125
CCB2	CCB	1	77093.9	82260.6	93.72	PASS	70-125	50714.9	50868.7	99.7	PASS	70-125
CCV3	CCV	1	77192.1	82260.6	93.84	PASS	70-125	51523	50868.7	101.29	PASS	70-125
CCB3	CCB	1	74122	82260.6	90.11	PASS	70-125	49561.5	50868.7	97.43	PASS	70-125
CCV4	CCV	1	73590.2	82260.6	89.46	PASS	70-125	49137.9	50868.7	96.6	PASS	70-125
CCB4	CCB	1	69555.4	82260.6	84.55	PASS	70-125	47152.3	50868.7	92.69	PASS	70-125
LLCCV1	CCV2	1	69476.3	82260.6	84.46	PASS	70-125	46943.7	50868.7	92.28	PASS	70-125
ICSA2	ICSA	1	75535.8	82260.6	91.83	PASS	70-125	48058	50868.7	94.47	PASS	70-125
ICSAB2	ICSAB	1	82883.4	82260.6	100.76	PASS	70-125	52237.5	50868.7	102.69	PASS	70-125
CCV5	CCV	1	73294.8	82260.6	89.1	PASS	70-125	49988.3	50868.7	98.27	PASS	70-125
CCB5	CCB	1	67255.2	82260.6	81.76	PASS	70-125	45904.3	50868.7	90.24	PASS	70-125
CCV6	CCV	1	68746.9	82260.6	83.57	PASS	70-125	46762.1	50868.7	91.93	PASS	70-125
CCB6	CCB	1	66201	82260.6	80.48	PASS	70-125	44893.5	50868.7	88.25	PASS	70-125
MB-68011	MBLK	1	65270.6	82260.6	79.35	PASS	70-125	44611.7	50868.7	87.7	PASS	70-125
LCS-68011	LCS	1	66745.1	82260.6	81.14	PASS	70-125	45684.7	50868.7	89.81	PASS	70-125
N030123-001D	SAMP	1	71244.9	82260.6	86.61	PASS	70-125	43290.3	50868.7	85.1	PASS	70-125
N030123-001D	SAMP	5	78979.2	82260.6	96.011	PASS	70-125	50396.6	50868.7	99.072	PASS	70-125
N030123-001D	SAMP	25	81405.2	82260.6	98.96	PASS	70-125	52732.5	50868.7	103.66	PASS	70-125
N030123-001D-PS	PS	1	80152.7	82260.6	97.44	PASS	70-125	47719.2	50868.7	93.81	PASS	70-125
N030123-001D-PS	PS	5	84055.2	82260.6	102.18	PASS	70-125	53113.8	50868.7	104.41	PASS	70-125
N030123-001D-MS	MS	1	81084.5	82260.6	98.57	PASS	70-125	48702.3	50868.7	95.74	PASS	70-125
N030123-001D-MS	MS	5	83677.5	82260.6	101.72	PASS	70-125	52606.4	50868.7	103.42	PASS	70-125
N030123-001D-MSD	MSD	1	80772.5	82260.6	98.19	PASS	70-125	48267.7	50868.7	94.89	PASS	70-125
CCV7	CCV	1	85128.2	82260.6	103.49	PASS	70-125	56106.9	50868.7	110.3	PASS	70-125
CCB7	CCB	1	81329	82260.6	98.87	PASS	70-125	53683.5	50868.7	105.53	PASS	70-125

INTERNAL STANDARD: 180516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
LLCCV2	CCV2	1	79902.7	82260.6	97.13	PASS	70-125	52854	50868.7	103.9	PASS	70-125
ICSA3	ICSA	1	87961.5	82260.6	106.93	PASS	70-125	55764.8	50868.7	109.62	PASS	70-125
ICSAB3	ICSAB	1	90762	82260.6	110.33	PASS	70-125	57395.8	50868.7	112.83	PASS	70-125
N030123-001D-MSD	MSD	5	86259.4	82260.6	104.86	PASS	70-125	54425.9	50868.7	106.99	PASS	70-125
N030123-002D	SAMP	1	75154	82260.6	91.36	PASS	70-125	44072.7	50868.7	86.64	PASS	70-125
N030123-002D	SAMP	5	84658.2	82260.6	102.91	PASS	70-125	53335.4	50868.7	104.85	PASS	70-125
N030123-003D	SAMP	1	76860.5	82260.6	93.44	PASS	70-125	44792.2	50868.7	88.055	PASS	70-125
N030123-003D	SAMP	5	87332.5	82260.6	106.17	PASS	70-125	54473.9	50868.7	107.09	PASS	70-125
N030123-004D	SAMP	1	79648.3	82260.6	96.82	PASS	70-125	47076.3	50868.7	92.54	PASS	70-125
N030123-004D	SAMP	5	87561.6	82260.6	106.44	PASS	70-125	55481.5	50868.7	109.07	PASS	70-125
N030123-005D	SAMP	1	87731.5	82260.6	106.65	PASS	70-125	56044.3	50868.7	110.17	PASS	70-125
N030123-005D	SAMP	5	90059.3	82260.6	109.48	PASS	70-125	58707.1	50868.7	115.41	PASS	70-125
N030123-006D	SAMP	1	86157.8	82260.6	104.74	PASS	70-125	55553.9	50868.7	109.21	PASS	70-125
CCV8	CCV	1	87475.1	82260.6	106.34	PASS	70-125	58284.8	50868.7	114.58	PASS	70-125
CCB8	CCB	1	83193.1	82260.6	101.13	PASS	70-125	56200.7	50868.7	110.48	PASS	70-125
N030123-006D	SAMP	5	82818.8	82260.6	100.68	PASS	70-125	55112.4	50868.7	108.34	PASS	70-125
N030123-007D	SAMP	1	81617.3	82260.6	99.22	PASS	70-125	53458.2	50868.7	105.09	PASS	70-125
N030123-007D	SAMP	5	81852.9	82260.6	99.5	PASS	70-125	54974.3	50868.7	108.07	PASS	70-125
N030123-008D	SAMP	1	78610	82260.6	95.56	PASS	70-125	51786.2	50868.7	101.8	PASS	70-125
N030123-008D	SAMP	5	77534.9	82260.6	94.26	PASS	70-125	52022.4	50868.7	102.27	PASS	70-125
N030123-009D	SAMP	1	70325.5	82260.6	85.49	PASS	70-125	41246.1	50868.7	81.083	PASS	70-125
N030123-009D	SAMP	5	84763	82260.6	103.04	PASS	70-125	53719	50868.7	105.6	PASS	70-125
N030123-010D	SAMP	1	73237.8	82260.6	89.031	PASS	70-125	43126.5	50868.7	84.78	PASS	70-125
N030123-010D	SAMP	5	87515.8	82260.6	106.39	PASS	70-125	55448	50868.7	109	PASS	70-125
N030123-011D	SAMP	1	89400.4	82260.6	108.68	PASS	70-125	58036	50868.7	114.09	PASS	70-125
CCV9	CCV	1	87805.3	82260.6	106.74	PASS	70-125	59063	50868.7	116.11	PASS	70-125
CCB9	CCB	1	82033.6	82260.6	99.72	PASS	70-125	54577.6	50868.7	107.29	PASS	70-125
N030123-011D	SAMP	5	81081.6	82260.6	98.57	PASS	70-125	54675.6	50868.7	107.48	PASS	70-125
N030123-012D	SAMP	1	81329.6	82260.6	98.87	PASS	70-125	53944.2	50868.7	106.05	PASS	70-125
N030123-012D	SAMP	5	82690.3	82260.6	100.52	PASS	70-125	55513.8	50868.7	109.13	PASS	70-125
N030123-013D	SAMP	1	83586.1	82260.6	101.61	PASS	70-125	56613.2	50868.7	111.29	PASS	70-125
N030123-013D	SAMP	5	83098.2	82260.6	101.02	PASS	70-125	55683.5	50868.7	109.47	PASS	70-125
N030123-014D	SAMP	1	71703.4	82260.6	87.17	PASS	70-125	42204.1	50868.7	82.97	PASS	70-125
N030123-014D	SAMP	5	81377.3	82260.6	98.93	PASS	70-125	51274.5	50868.7	100.8	PASS	70-125
N030123-015D	SAMP	1	77552.5	82260.6	94.28	PASS	70-125	47060.8	50868.7	92.51	PASS	70-125
N030123-015D	SAMP	5	83754.4	82260.6	101.82	PASS	70-125	53342.1	50868.7	104.86	PASS	70-125
N030123-016D	SAMP	1	72647.5	82260.6	88.31	PASS	70-125	42765.8	50868.7	84.071	PASS	70-125
CCV10	CCV	1	82196.7	82260.6	99.92	PASS	70-125	55125.7	50868.7	108.37	PASS	70-125
CCB10	CCB	1	75870.9	82260.6	92.23	PASS	70-125	51134.1	50868.7	100.52	PASS	70-125
N030123-016D	SAMP	5	75540.4	82260.6	91.83	PASS	70-125	48762.5	50868.7	95.86	PASS	70-125
N030123-017D	SAMP	1	64767.2	82260.6	78.73	PASS	70-125	39364.9	50868.7	77.39	PASS	70-125

INTERNAL STANDARD: 180516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030123-017D	SAMP	5	79913.6	82260.6	97.15	PASS	70-125	51386	50868.7	101.02	PASS	70-125
N030123-018D	SAMP	1	83637.5	82260.6	101.67	PASS	70-125	54171.6	50868.7	106.49	PASS	70-125
N030123-018D	SAMP	5	80633.9	82260.6	98.023	PASS	70-125	54259.9	50868.7	106.67	PASS	70-125
N030123-019D	SAMP	1	72435.4	82260.6	88.056	PASS	70-125	44946	50868.7	88.36	PASS	70-125
N030123-019D	SAMP	5	76405.2	82260.6	92.88	PASS	70-125	49739.7	50868.7	97.78	PASS	70-125
N030123-023D	SAMP	1	70191.5	82260.6	85.33	PASS	70-125	42936.2	50868.7	84.41	PASS	70-125
N030123-023D	SAMP	5	76683.1	82260.6	93.22	PASS	70-125	50058.4	50868.7	98.41	PASS	70-125
CCV11	CCV	1	82044.8	82260.6	99.74	PASS	70-125	55992.1	50868.7	110.07	PASS	70-125
CCB11	CCB	1	75564.6	82260.6	91.86	PASS	70-125	51232.1	50868.7	100.71	PASS	70-125
LLCCV3	CCV2	1	74881.4	82260.6	91.029	PASS	70-125	50304.9	50868.7	98.89	PASS	70-125
ICSA4	ICSA	1	78744.8	82260.6	95.73	PASS	70-125	51547.5	50868.7	101.33	PASS	70-125
ICSAB4	ICSAB	1	80672.9	82260.6	98.07	PASS	70-125	52245.5	50868.7	102.71	PASS	70-125

INTERNAL STANDARD: 180516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	57485.1	57485.1	100	PASS	70-125	1683135.8	1683135.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	60196.8	57485.1	104.72	PASS	70-125	1732577.6	1683135.8	102.94	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	58569	57485.1	101.89	PASS	70-125	1722865.9	1683135.8	102.36	PASS	70-125
Std3-5/50 ppb	ICAL	1	59189.8	57485.1	102.97	PASS	70-125	1698120.8	1683135.8	100.89	PASS	70-125
Std4-10/100 ppb	ICAL	1	59707.3	57485.1	103.87	PASS	70-125	1706400.3	1683135.8	101.38	PASS	70-125
Std5-20/200 ppb	ICAL	1	58950.5	57485.1	102.55	PASS	70-125	1710844.3	1683135.8	101.65	PASS	70-125
Std6-40/400 ppb	ICAL	1	59447.6	57485.1	103.41	PASS	70-125	1716343.4	1683135.8	101.97	PASS	70-125
Std7-100/1000 ppb	ICAL	1	58557.6	57485.1	101.87	PASS	70-125	1676837.3	1683135.8	99.63	PASS	70-125
Std8-200/2000 ppb	ICAL	1	46433.3	57485.1	80.77	PASS	70-125	1436064.3	1683135.8	85.32	PASS	70-125
ICV	ICV	1	55878.6	57485.1	97.21	PASS	70-125	1603377.2	1683135.8	95.26	PASS	70-125
ICB	ICB	1	59186.9	57485.1	102.96	PASS	70-125	1658801.5	1683135.8	98.55	PASS	70-125
LLICV	CCV1	1	58513	57485.1	101.79	PASS	70-125	1663942.5	1683135.8	98.86	PASS	70-125
ICSA1	ICSA	1	59327	57485.1	103.2	PASS	70-125	1557392.9	1683135.8	92.53	PASS	70-125
ICSAB1	ICSAB	1	54017.9	57485.1	93.97	PASS	70-125	1595640.5	1683135.8	94.8	PASS	70-125
CCV1	CCV	1	64873.8	57485.1	112.85	PASS	70-125	1567815.6	1683135.8	93.15	PASS	70-125
CCB1	CCB	1	62579.5	57485.1	108.86	PASS	70-125	1513166.5	1683135.8	89.9	PASS	70-125
CCV2	CCV	1	68686.8	57485.1	119.49	PASS	70-125	1579599.9	1683135.8	93.85	PASS	70-125
CCB2	CCB	1	65228.5	57485.1	113.47	PASS	70-125	1517778.4	1683135.8	90.18	PASS	70-125
CCV3	CCV	1	66817.2	57485.1	116.23	PASS	70-125	1493507.4	1683135.8	88.73	PASS	70-125
CCB3	CCB	1	64839	57485.1	112.79	PASS	70-125	1455639	1683135.8	86.48	PASS	70-125
CCV4	CCV	1	66787.9	57485.1	116.18	PASS	70-125	1443356.6	1683135.8	85.75	PASS	70-125
CCB4	CCB	1	62344.9	57485.1	108.45	PASS	70-125	1391372.1	1683135.8	82.67	PASS	70-125
LLCCV1	CCV2	1	62761	57485.1	109.18	PASS	70-125	1389692.1	1683135.8	82.57	PASS	70-125
ICSA2	ICSA	1	63540.6	57485.1	110.53	PASS	70-125	1271505.6	1683135.8	75.54	PASS	70-125
ICSAB2	ICSAB	1	70251.2	57485.1	122.21	PASS	70-125	1403762.8	1683135.8	83.4	PASS	70-125
CCV5	CCV	1	67697.2	57485.1	117.76	PASS	70-125	1450116	1683135.8	86.16	PASS	70-125
CCB5	CCB	1	62508.8	57485.1	108.74	PASS	70-125	1337277.3	1683135.8	79.45	PASS	70-125
CCV6	CCV	1	62448.8	57485.1	108.63	PASS	70-125	1380533.8	1683135.8	82.022	PASS	70-125
CCB6	CCB	1	60286.1	57485.1	104.87	PASS	70-125	1309660.3	1683135.8	77.81	PASS	70-125
MB-68011	MBLK	1	59450.8	57485.1	103.42	PASS	70-125	1344873.6	1683135.8	79.9	PASS	70-125
LCS-68011	LCS	1	59162	57485.1	102.92	PASS	70-125	1339644.7	1683135.8	79.59	PASS	70-125
N030123-001D	SAMP	1	56424.7	57485.1	98.16	PASS	70-125	1107563.8	1683135.8	65.8	NR!	70-125
N030123-001D	SAMP	5	65365.6	57485.1	113.71	PASS	70-125	1394483.9	1683135.8	82.85	PASS	70-125
N030123-001D	SAMP	25	69138.8	57485.1	120.27	PASS	70-125	1492616.7	1683135.8	88.68	PASS	70-125
N030123-001D-PS	PS	1	59182.3	57485.1	102.95	PASS	70-125	1222924	1683135.8	72.66	PASS	70-125
N030123-001D-PS	PS	5	67229.6	57485.1	116.95	PASS	70-125	1467992.1	1683135.8	87.22	PASS	70-125
N030123-001D-MS	MS	1	58440.7	57485.1	101.66	PASS	70-125	1248418.2	1683135.8	74.17	PASS	70-125
N030123-001D-MS	MS	5	65398	57485.1	113.77	PASS	70-125	1464472.6	1683135.8	87.009	PASS	70-125
N030123-001D-MSD	MSD	1	57708.1	57485.1	100.39	PASS	70-125	1247912.3	1683135.8	74.14	PASS	70-125
CCV7	CCV	1	69540.7	57485.1	120.97	PASS	70-125	1664828	1683135.8	98.91	PASS	70-125
CCB7	CCB	1	66762.3	57485.1	116.14	PASS	70-125	1589924.7	1683135.8	94.46	PASS	70-125

INTERNAL STANDARD: 180516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
LLCCV2	CCV2	1	65412.4	57485.1	113.79	PASS	70-125	1588195.4	1683135.8	94.36	PASS	70-125
ICSA3	ICSA	1	67606.6	57485.1	117.61	PASS	70-125	1536664.1	1683135.8	91.3	PASS	70-125
ICSAB3	ICSAB	1	70321.6	57485.1	122.33	PASS	70-125	1566322.2	1683135.8	93.06	PASS	70-125
N030123-001D-MSD	MSD	5	68644.3	57485.1	119.41	PASS	70-125	1530322.3	1683135.8	90.92	PASS	70-125
N030123-002D	SAMP	1	49519	57485.1	86.14	PASS	70-125	1090858.6	1683135.8	64.81	NR!	70-125
N030123-002D	SAMP	5	61978	57485.1	107.82	PASS	70-125	1459229.7	1683135.8	86.7	PASS	70-125
N030123-003D	SAMP	1	50419.5	57485.1	87.71	PASS	70-125	1120716.3	1683135.8	66.59	NR!	70-125
N030123-003D	SAMP	5	62751	57485.1	109.16	PASS	70-125	1507833.3	1683135.8	89.58	PASS	70-125
N030123-004D	SAMP	1	50611.3	57485.1	88.042	PASS	70-125	1169538.1	1683135.8	69.49	NR!	70-125
N030123-004D	SAMP	5	63677.8	57485.1	110.77	PASS	70-125	1520234.7	1683135.8	90.32	PASS	70-125
N030123-005D	SAMP	1	64827.9	57485.1	112.77	PASS	70-125	1553888.3	1683135.8	92.32	PASS	70-125
N030123-005D	SAMP	5	67525.4	57485.1	117.47	PASS	70-125	1665377.1	1683135.8	98.94	PASS	70-125
N030123-006D	SAMP	1	63513.9	57485.1	110.49	PASS	70-125	1517235.3	1683135.8	90.14	PASS	70-125
CCV8	CCV	1	68964.8	57485.1	119.97	PASS	70-125	1755961.2	1683135.8	104.33	PASS	70-125
CCB8	CCB	1	65086.7	57485.1	113.22	PASS	70-125	1674605.5	1683135.8	99.49	PASS	70-125
N030123-006D	SAMP	5	63598.7	57485.1	110.64	PASS	70-125	1586355.1	1683135.8	94.25	PASS	70-125
N030123-007D	SAMP	1	62055.9	57485.1	107.95	PASS	70-125	1514524.9	1683135.8	89.98	PASS	70-125
N030123-007D	SAMP	5	63783.9	57485.1	110.96	PASS	70-125	1567950.9	1683135.8	93.16	PASS	70-125
N030123-008D	SAMP	1	58969.2	57485.1	102.58	PASS	70-125	1447638.7	1683135.8	86.008	PASS	70-125
N030123-008D	SAMP	5	60797	57485.1	105.76	PASS	70-125	1495128.9	1683135.8	88.83	PASS	70-125
N030123-009D	SAMP	1	43030.8	57485.1	74.86	PASS	70-125	1015325.1	1683135.8	60.32	NR!	70-125
N030123-009D	SAMP	5	59565.9	57485.1	103.62	PASS	70-125	1470869.8	1683135.8	87.39	PASS	70-125
N030123-010D	SAMP	1	46235.1	57485.1	80.43	PASS	70-125	1074580.5	1683135.8	63.84	NR!	70-125
N030123-010D	SAMP	5	62891.5	57485.1	109.4	PASS	70-125	1522730.1	1683135.8	90.47	PASS	70-125
N030123-011D	SAMP	1	67554.3	57485.1	117.52	PASS	70-125	1625530.6	1683135.8	96.58	PASS	70-125
CCV9	CCV	1	70283.9	57485.1	122.26	PASS	70-125	1755225.4	1683135.8	104.28	PASS	70-125
CCB9	CCB	1	64584.9	57485.1	112.35	PASS	70-125	1635590	1683135.8	97.18	PASS	70-125
N030123-011D	SAMP	5	64286.8	57485.1	111.83	PASS	70-125	1581153	1683135.8	93.94	PASS	70-125
N030123-012D	SAMP	1	62594	57485.1	108.89	PASS	70-125	1524496.3	1683135.8	90.57	PASS	70-125
N030123-012D	SAMP	5	65390.2	57485.1	113.75	PASS	70-125	1598300.7	1683135.8	94.96	PASS	70-125
N030123-013D	SAMP	1	65308.6	57485.1	113.61	PASS	70-125	1541938.3	1683135.8	91.61	PASS	70-125
N030123-013D	SAMP	5	64195.5	57485.1	111.67	PASS	70-125	1615979.5	1683135.8	96.01	PASS	70-125
N030123-014D	SAMP	1	44314.1	57485.1	77.088	PASS	70-125	1064375.6	1683135.8	63.24	NR!	70-125
N030123-014D	SAMP	5	57705.9	57485.1	100.38	PASS	70-125	1429199.2	1683135.8	84.91	PASS	70-125
N030123-015D	SAMP	1	51320.4	57485.1	89.28	PASS	70-125	1194179.6	1683135.8	70.95	PASS	70-125
N030123-015D	SAMP	5	59699.7	57485.1	103.85	PASS	70-125	1473786.8	1683135.8	87.56	PASS	70-125
N030123-016D	SAMP	1	45655.7	57485.1	79.42	PASS	70-125	1098475.5	1683135.8	65.26	NR!	70-125
CCV10	CCV	1	63671.3	57485.1	110.76	PASS	70-125	1660920.4	1683135.8	98.68	PASS	70-125
CCB10	CCB	1	59844.6	57485.1	104.1	PASS	70-125	1552512.9	1683135.8	92.24	PASS	70-125
N030123-016D	SAMP	5	54539.3	57485.1	94.88	PASS	70-125	1362454.3	1683135.8	80.95	PASS	70-125
N030123-017D	SAMP	1	41470.1	57485.1	72.14	PASS	70-125	1012640.7	1683135.8	60.16	NR!	70-125

INTERNAL STANDARD: 180516A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030123-017D	SAMP	5	56510.6	57485.1	98.3	PASS	70-125	1434545.2	1683135.8	85.23	PASS	70-125
N030123-018D	SAMP	1	64334.7	57485.1	111.92	PASS	70-125	1542067.6	1683135.8	91.62	PASS	70-125
N030123-018D	SAMP	5	62988.4	57485.1	109.57	PASS	70-125	1578481.6	1683135.8	93.78	PASS	70-125
N030123-019D	SAMP	1	47784	57485.1	83.12	PASS	70-125	1133677.6	1683135.8	67.36	NR!	70-125
N030123-019D	SAMP	5	56960	57485.1	99.087	PASS	70-125	1361496.7	1683135.8	80.89	PASS	70-125
N030123-023D	SAMP	1	46655.3	57485.1	81.16	PASS	70-125	1095503.8	1683135.8	65.087	NR!	70-125
N030123-023D	SAMP	5	58073.7	57485.1	101.02	PASS	70-125	1387645.6	1683135.8	82.44	PASS	70-125
CCV11	CCV	1	64068.2	57485.1	111.45	PASS	70-125	1661918.8	1683135.8	98.74	PASS	70-125
CCB11	CCB	1	59890.3	57485.1	104.18	PASS	70-125	1562513.4	1683135.8	92.83	PASS	70-125
LLCCV3	CCV2	1	58445.2	57485.1	101.67	PASS	70-125	1553940.9	1683135.8	92.32	PASS	70-125
ICSA4	ICSA	1	58214.4	57485.1	101.27	PASS	70-125	1467207.7	1683135.8	87.17	PASS	70-125
ICSAB4	ICSAB	1	59618.3	57485.1	103.71	PASS	70-125	1465126	1683135.8	87.047	PASS	70-125

INTERNAL STANDARD: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	66634.9	66634.9	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	67856.4	66634.9	101.83	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	66636	66634.9	100	PASS	70-125
Std3-5/50 ppb	ICAL	1	64661.6	66634.9	97.039	PASS	70-125
Std4-10/100 ppb	ICAL	1	64497.3	66634.9	96.79	PASS	70-125
Std5-20/200 ppb	ICAL	1	62331.6	66634.9	93.54	PASS	70-125
Std6-40/400 ppb	ICAL	1	63640.1	66634.9	95.51	PASS	70-125
Std7-100/1000 ppb	ICAL	1	62762.1	66634.9	94.19	PASS	70-125
Std8-200/2000 ppb	ICAL	1	61992.7	66634.9	93.033	PASS	70-125
ICV	ICV	1	60144.8	66634.9	90.26	PASS	70-125
ICB	ICB	1	60510.4	66634.9	90.81	PASS	70-125
LLICV	CCV1	1	60518	66634.9	90.82	PASS	70-125
ICSA1	ICSA	1	68418.5	66634.9	102.68	PASS	70-125
ICSAB1	ICSAB	1	70943.4	66634.9	106.47	PASS	70-125
CCV1	CCV	1	63059.7	66634.9	94.63	PASS	70-125
CCB1	CCB	1	59043	66634.9	88.61	PASS	70-125
CCV2	CCV	1	78346.5	66634.9	117.58	PASS	70-125
CCB2	CCB	1	73641.8	66634.9	110.52	PASS	70-125
CCV3	CCV	1	70817.3	66634.9	106.28	PASS	70-125
CCB3	CCB	1	65619.7	66634.9	98.48	PASS	70-125
CCV4	CCV	1	69537.6	66634.9	104.36	PASS	70-125
CCB4	CCB	1	64484.2	66634.9	96.77	PASS	70-125
N030123-016D	SAMP	25	60808.3	66634.9	91.26	PASS	70-125
CCV5	CCV	1	59095.5	66634.9	88.69	PASS	70-125
CCB5	CCB	1	55835.4	66634.9	83.79	PASS	70-125
LLCCV1	CCV2	1	52757.5	66634.9	79.17	PASS	70-125
ICSA2	ICSA	1	60128.1	66634.9	90.24	PASS	70-125
ICSAB2	ICSAB	1	68067.2	66634.9	102.15	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water | **Dilution Test Summary**

Work Order No.: N030123
Test Method: EPA 6020
Analysis Date: 5/16/2018

Matrix: Groundwater
Batch No.: 68011

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Mn and Se'. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030123-001D DT 5X	Arsenic	ug/L	1.869951	NA	1.665039	12.31%	10
N030123-001D DT 25X	Chromium	ug/L	485.2653	PASS	474.2598	2.32%	10
N030123-001D DT 5X	Manganese	ug/L	2.952494	NA	2.928219	0.83%	10
N030123-001D DT 25X	Molybdenum	ug/L	21.057	PASS	21.20714	0.71%	10
N030123-001D DT 5X	Selenium	ug/L	4.980523	NA	4.429349	12.44%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030123-001D-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3028999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.877	0.10	10.00	1.665	102	80	120				
Manganese	95.086	0.50	100.0	2.928	92.2	80	120				
Selenium	14.134	0.50	10.00	4.429	97.1	80	120				

Sample ID **N030123-001D-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3029000**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	33.359	2.5	10.00	21.21	122	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030123
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N030123-001D-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124102**
Client ID: **ZZZZZZ** Batch ID: **68011** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/16/2018** SeqNo: **3028855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	496.346	5.0	10.00	474.3	221	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

May 22, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030147

RE: PG&E Topock - GMP, RC000753.801D

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 03, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.801D
Lab Order:	N030147

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for most of the samples due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N030147-002D-MS and N030147-002D-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801D
Lab Order: N030147
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030147-001A	MW-59-100-Q218	Groundwater	5/3/2018 11:52:00 AM	5/3/2018	5/22/2018
N030147-001B	MW-59-100-Q218	Groundwater	5/3/2018 11:52:00 AM	5/3/2018	5/22/2018
N030147-001C	MW-59-100-Q218	Groundwater	5/3/2018 11:52:00 AM	5/3/2018	5/22/2018
N030147-001D	MW-59-100-Q218	Groundwater	5/3/2018 11:52:00 AM	5/3/2018	5/22/2018
N030147-002A	MW-57-070-Q218	Groundwater	5/3/2018 1:08:00 PM	5/3/2018	5/22/2018
N030147-002B	MW-57-070-Q218	Groundwater	5/3/2018 1:08:00 PM	5/3/2018	5/22/2018
N030147-002C	MW-57-070-Q218	Groundwater	5/3/2018 1:08:00 PM	5/3/2018	5/22/2018
N030147-002D	MW-57-070-Q218	Groundwater	5/3/2018 1:08:00 PM	5/3/2018	5/22/2018
N030147-003A	MW-57-185-LF_D-Q218	Groundwater	5/3/2018 10:15:00 AM	5/3/2018	5/22/2018
N030147-003B	MW-57-185-LF_D-Q218	Groundwater	5/3/2018 10:15:00 AM	5/3/2018	5/22/2018
N030147-003C	MW-57-185-LF_D-Q218	Groundwater	5/3/2018 10:15:00 AM	5/3/2018	5/22/2018
N030147-003D	MW-57-185-LF_D-Q218	Groundwater	5/3/2018 10:15:00 AM	5/3/2018	5/22/2018
N030147-004A	MW-57-185-LF_S-Q218	Groundwater	5/3/2018 9:29:00 AM	5/3/2018	5/22/2018
N030147-004B	MW-57-185-LF_S-Q218	Groundwater	5/3/2018 9:29:00 AM	5/3/2018	5/22/2018
N030147-004C	MW-57-185-LF_S-Q218	Groundwater	5/3/2018 9:29:00 AM	5/3/2018	5/22/2018
N030147-004D	MW-57-185-LF_S-Q218	Groundwater	5/3/2018 9:29:00 AM	5/3/2018	5/22/2018
N030147-005A	MW-57-185-3V-Q218	Groundwater	5/3/2018 12:25:00 PM	5/3/2018	5/22/2018
N030147-005B	MW-57-185-3V-Q218	Groundwater	5/3/2018 12:25:00 PM	5/3/2018	5/22/2018
N030147-005C	MW-57-185-3V-Q218	Groundwater	5/3/2018 12:25:00 PM	5/3/2018	5/22/2018
N030147-005D	MW-57-185-3V-Q218	Groundwater	5/3/2018 12:25:00 PM	5/3/2018	5/22/2018
N030147-006A	MW-70-105-Q218	Groundwater	5/3/2018 2:39:00 PM	5/3/2018	5/22/2018
N030147-006B	MW-70-105-Q218	Groundwater	5/3/2018 2:39:00 PM	5/3/2018	5/22/2018
N030147-006C	MW-70-105-Q218	Groundwater	5/3/2018 2:39:00 PM	5/3/2018	5/22/2018
N030147-006D	MW-70-105-Q218	Groundwater	5/3/2018 2:39:00 PM	5/3/2018	5/22/2018
N030147-007A	MW-70BR-225-3V-Q218	Groundwater	5/3/2018 1:01:00 PM	5/3/2018	5/22/2018
N030147-007B	MW-70BR-225-3V-Q218	Groundwater	5/3/2018 1:01:00 PM	5/3/2018	5/22/2018
N030147-007C	MW-70BR-225-3V-Q218	Groundwater	5/3/2018 1:01:00 PM	5/3/2018	5/22/2018
N030147-007D	MW-70BR-225-3V-Q218	Groundwater	5/3/2018 1:01:00 PM	5/3/2018	5/22/2018
N030147-008A	MW-70BR-225-LF-Q218	Groundwater	5/3/2018 10:20:00 AM	5/3/2018	5/22/2018

CLIENT:	ARCADIS U.S., Inc. - California	
Project:	PG&E Topock - GMP, RC000753.801D	**Work Order Sample Summary**
Lab Order:	N030147	
Contract No:		

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030147-008B	MW-70BR-225-LF-Q218	Groundwater	5/3/2018 10:20:00 AM	5/3/2018	5/22/2018
N030147-008C	MW-70BR-225-LF-Q218	Groundwater	5/3/2018 10:20:00 AM	5/3/2018	5/22/2018
N030147-008D	MW-70BR-225-LF-Q218	Groundwater	5/3/2018 10:20:00 AM	5/3/2018	5/22/2018
N030147-009A	MW-37D-Q218	Groundwater	5/3/2018 3:08:00 PM	5/3/2018	5/22/2018
N030147-009B	MW-37D-Q218	Groundwater	5/3/2018 3:08:00 PM	5/3/2018	5/22/2018
N030147-009C	MW-37D-Q218	Groundwater	5/3/2018 3:08:00 PM	5/3/2018	5/22/2018
N030147-009D	MW-37D-Q218	Groundwater	5/3/2018 3:08:00 PM	5/3/2018	5/22/2018
N030147-010A	MW-58BR-Q218	Groundwater	5/3/2018 2:57:00 PM	5/3/2018	5/22/2018
N030147-010B	MW-58BR-Q218	Groundwater	5/3/2018 2:57:00 PM	5/3/2018	5/22/2018
N030147-010C	MW-58BR-Q218	Groundwater	5/3/2018 2:57:00 PM	5/3/2018	5/22/2018
N030147-010D	MW-58BR-Q218	Groundwater	5/3/2018 2:57:00 PM	5/3/2018	5/22/2018
N030147-011A	MW-62-110-Q218	Groundwater	5/3/2018 3:50:00 PM	5/3/2018	5/22/2018
N030147-011B	MW-62-110-Q218	Groundwater	5/3/2018 3:50:00 PM	5/3/2018	5/22/2018
N030147-011C	MW-62-110-Q218	Groundwater	5/3/2018 3:50:00 PM	5/3/2018	5/22/2018
N030147-011D	MW-62-110-Q218	Groundwater	5/3/2018 3:50:00 PM	5/3/2018	5/22/2018
N030147-012A	MW-62-190-Q218	Groundwater	5/3/2018 4:05:00 PM	5/3/2018	5/22/2018
N030147-012B	MW-62-190-Q218	Groundwater	5/3/2018 4:05:00 PM	5/3/2018	5/22/2018
N030147-012C	MW-62-190-Q218	Groundwater	5/3/2018 4:05:00 PM	5/3/2018	5/22/2018
N030147-012D	MW-62-190-Q218	Groundwater	5/3/2018 4:05:00 PM	5/3/2018	5/22/2018
N030147-013A	MW-48-Q218	Groundwater	5/3/2018 1:55:00 PM	5/3/2018	5/22/2018
N030147-013B	MW-48-Q218	Groundwater	5/3/2018 1:55:00 PM	5/3/2018	5/22/2018
N030147-013C	MW-48-Q218	Groundwater	5/3/2018 1:55:00 PM	5/3/2018	5/22/2018
N030147-014A	MW-719-Q218	Groundwater	5/3/2018 2:05:00 PM	5/3/2018	5/22/2018
N030147-015A	MW-720-Q218	Groundwater	5/3/2018 3:30:00 PM	5/3/2018	5/22/2018
N030147-016A	MW-721-Q218	Groundwater	5/3/2018 4:00:00 PM	5/3/2018	5/22/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 11:52:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180504E** QC Batch: **R123873** PrepDate Analyst: **LR**							
Specific Conductance	11000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	2500	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 10:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_S-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 9:29:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180504E** QC Batch: **R123873** PrepDate Analyst: **LR**							
Specific Conductance	17000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 12:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180504E** QC Batch: **R123873** PrepDate Analyst: **LR**							
Specific Conductance	18000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:39:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	3300	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-LF-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 10:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	12000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:57:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	7800	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180504E** QC Batch: **R123873** PrepDate							Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 4:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-48-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030147-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123873**
Client ID: **ZZZZZZ** Batch ID: **R123873** TestNo: **EPA 120.1** Analysis Date: **5/4/2018** SeqNo: **3017855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11250.000	0.10						11280	0.266	2	

Sample ID **N030185-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123873**
Client ID: **ZZZZZZ** Batch ID: **R123873** TestNo: **EPA 120.1** Analysis Date: **5/4/2018** SeqNo: **3017869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	19160.000	0.10						19190	0.156	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

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ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 11:52:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180511A** QC Batch: **R124051** PrepDate Analyst: **RAB**							
Hexavalent Chromium	2800	17	100		µg/L	500	5/11/2018 10:22 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018** Analyst: **CEI**							
Chromium	3000	3.2	25		µg/L	25	5/17/2018 11:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030147
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030147-002

Client Sample ID: MW-57-070-Q218
Collection Date: 5/3/2018 1:08:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180511A** QC Batch: **R124051**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	340	3.3	20		µg/L	100	5/11/2018 10:41 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			EPA 6020				
RunID: **NV00922-ICP7_180517A** QC Batch: **68012**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	360	0.65	5.0		µg/L	5	5/17/2018 12:10 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 10:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180511A**	QC Batch: **R124051**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	4.8	0.17	1.0		µg/L	5	5/11/2018 11:00 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	4.7	0.13	1.0		µg/L	1	5/17/2018 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

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Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_S-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 9:29:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180511A** QC Batch: **R124051**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	5.3	0.17	1.0		µg/L	5	5/11/2018 11:48 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180517A** QC Batch: **68012**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	5.2	0.13	1.0		µg/L	1	5/17/2018 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 12:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180511A** QC Batch: **R124051**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	7.7	0.17	1.0		µg/L	5	5/11/2018 12:06 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180517A** QC Batch: **68012**				PrepDate	**5/8/2018**		Analyst: **CEI**
Chromium	7.5	0.13	1.0		µg/L	1	5/17/2018 01:28 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:39:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180511A**	QC Batch: **R124051**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	160	0.66	4.0		µg/L	20	5/11/2018 12:25 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	150	0.13	1.0		µg/L	1	5/17/2018 01:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180511A** QC Batch: **R124051** PrepDate Analyst: **RAB**							
Hexavalent Chromium	1800	6.6	40		µg/L	200	5/11/2018 12:44 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018** Analyst: **CEI**							
Chromium	1800	3.2	25		µg/L	25	5/17/2018 02:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-LF-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 10:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180511A** QC Batch: **R124051** PrepDate							Analyst: **RAB**
Hexavalent Chromium	1300	6.6	40		µg/L	200	5/11/2018 01:03 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018**							Analyst: **CEI**
Chromium	1300	1.3	10		µg/L	10	5/17/2018 02:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180511A**	QC Batch: **R124051**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	7.4	0.17	1.0		µg/L	5	5/11/2018 01:41 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	7.1	0.13	1.0		µg/L	1	5/17/2018 02:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:57:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180515A**	QC Batch: **R124086**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	9.3	0.033	0.20		µg/L	1	5/15/2018 02:25 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	9.2	0.13	1.0		µg/L	1	5/17/2018 02:35 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180511A** QC Batch: **R124051**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/11/2018 02:19 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180517A** QC Batch: **68012**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 02:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 4:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180511A**	QC Batch: **R124051**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/11/2018 02:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 03:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-48-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180511A** QC Batch: **R124051**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/11/2018 02:57 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A** QC Batch: **68012**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 03:20 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-719-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180511A**	QC Batch: **R124051**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/11/2018 03:35 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-720-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180511A** QC Batch: **R124051** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/11/2018 03:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-721-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
				EPA 218.6			
RunID: **NV00922-IC7_180511A**	QC Batch: **R124051**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/11/2018 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
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CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R124051** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **PBW** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R124051** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **LCSW** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.182	0.20	5.000	0	104	90	110				

Sample ID **N030147-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5487.400	100	2500	2787	108	90	110				

Sample ID **N030147-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	871.250	20	500.0	341.6	106	90	110				

Sample ID **N030147-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.827	1.0	5.000	4.822	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030147-002AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	864.580	20	500.0	341.6	105	90	110	871.2	0.769	20	

Sample ID **N030147-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.332	1.0	5.000	5.300	101	90	110				

Sample ID **N030147-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.838	1.0	5.000	7.652	104	90	110				

Sample ID **N030147-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	264.318	4.0	100.0	160.3	104	90	110				

Sample ID **N030147-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2840.840	40	1000	1781	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030147-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2382.200	40	1000	1310	107	90	110				

Sample ID **N030147-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.499	1.0	5.000	7.398	102	90	110				

Sample ID **N030147-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.231	1.0	5.000	0	105	90	110				

Sample ID **N030147-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.711	1.0	5.000	0	94.2	90	110				

Sample ID **N030147-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.871	1.0	5.000	0	97.4	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030147-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.221	0.20	1.000	0.1483	107	90	110				

Sample ID **N030147-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.166	0.20	1.000	0.1410	102	90	110				

Sample ID **N030147-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.076	0.20	1.000	0	108	90	110				

Sample ID **N030147-006ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026102**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	161.552	4.0						160.3	0.802	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R124086** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **PBW** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R124086** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **LCSW** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.121	0.20	5.000	0	102	90	110				

Sample ID **N030189-011ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **ZZZZZZ** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.186	0.20						0.1909	0	20	

Sample ID **N030189-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **ZZZZZZ** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.249	0.20	1.000	0.1909	106	90	110				

Sample ID **N030189-011AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **ZZZZZZ** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.256	0.20	1.000	0.1909	107	90	110	1.248	0.623	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030147-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **ZZZZZZ** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.513	0.20	5.000	9.323	104	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-68012** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **PBW** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3031089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-68012** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **LCSW** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3031090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.497	1.0	10.00	0	105	85	115				

Sample ID **N030147-002D-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3031103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	386.556	5.0	10.00	355.3	312	75	125				S

Sample ID **N030147-002D-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3031105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	359.612	5.0	10.00	355.3	42.8	75	125	386.6	7.22	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 11:52:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180517B**	QC Batch: **R124118**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	2.5	0.063	0.10		mg/L	2	5/17/2018

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180517B**	QC Batch: **R124118**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	8.8	0.32	0.50		mg/L	10	5/17/2018

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 10:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_S-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 9:29:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 12:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-005		

NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:39:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	4.4	0.16	0.25		mg/L	5	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180518C** QC Batch: **R124137** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	3.6	0.16	0.25		mg/L	5	5/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-LF-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 10:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180518C** QC Batch: **R124137** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	3.1	0.16	0.25		mg/L	5	5/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180518C**	QC Batch: **R124137**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.44	0.032	0.050		mg/L	1	5/18/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:57:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180518C** QC Batch: **R124137**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.87	0.032	0.050		mg/L	1	5/18/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180518C** QC Batch: **R124137** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/18/2018

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 4:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180518C** QC Batch: **R124137** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124118** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **PBW** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124118** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **LCSW** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.463	0.050	0.5000	0	92.7	85	115				

Sample ID **N030123-012CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **ZZZZZZ** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	4.464	0.25						4.492	0.636	20	

Sample ID **N030123-008CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **ZZZZZZ** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.933	0.50	5.000	5.532	88.0	75	125				

Sample ID **N030123-008CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **ZZZZZZ** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	11.116	0.50	5.000	5.532	112	75	125	9.933	11.2	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124137**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:				RunNo: **124137**		
Client ID: **PBW**	Batch ID: **R124137**	TestNo: **SM4500-NO3**		Analysis Date: **5/18/2018**				SeqNo: **3031741**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124137**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:				RunNo: **124137**		
Client ID: **LCSW**	Batch ID: **R124137**	TestNo: **SM4500-NO3**		Analysis Date: **5/18/2018**				SeqNo: **3031742**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.515	0.050	0.5000	0	103	85	115				

Sample ID **N030186-002CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:				RunNo: **124137**		
Client ID: **ZZZZZZ**	Batch ID: **R124137**	TestNo: **SM4500-NO3**		Analysis Date: **5/18/2018**				SeqNo: **3031748**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.601	0.25	2.500	2.659	118	75	125				

Sample ID **N030186-002CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:				RunNo: **124137**		
Client ID: **ZZZZZZ**	Batch ID: **R124137**	TestNo: **SM4500-NO3**		Analysis Date: **5/18/2018**				SeqNo: **3031749**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.260	0.25	2.500	2.659	104	75	125	5.601	6.28	20	

Sample ID **N030186-001CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:				RunNo: **124137**		
Client ID: **ZZZZZZ**	Batch ID: **R124137**	TestNo: **SM4500-NO3**		Analysis Date: **5/18/2018**				SeqNo: **3031753**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.036	0.050						0.04570	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ANALYTICAL RESULTS

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Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 11:52:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	5/17/2018 11:47 AM
Manganese	1.4	0.26	0.50		µg/L	1	5/17/2018 11:47 AM
Molybdenum	7.3	1.1	2.5		µg/L	5	5/17/2018 11:53 AM
Selenium	2.8	0.36	0.50		µg/L	1	5/17/2018 11:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate	**5/8/2018**		Analyst: **CEI**
Arsenic	1.2	0.081	0.10		µg/L	1	5/17/2018 12:04 PM
Manganese	1.6	0.26	0.50		µg/L	1	5/17/2018 12:04 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	5/17/2018 12:04 PM
Selenium	3.5	0.36	0.50		µg/L	1	5/17/2018 12:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030147
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030147-003

Client Sample ID: MW-57-185-LF_D-Q218
Collection Date: 5/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**				PrepDate **5/8/2018**		Analyst: **CEI**
Arsenic	4.2	0.081	0.10		µg/L	1	5/17/2018 01:06 PM
Manganese	12	0.26	0.50		µg/L	1	5/17/2018 01:06 PM
Molybdenum	86	1.1	2.5		µg/L	5	5/17/2018 01:12 PM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 01:06 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_S-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 9:29:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-004		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	3.3	0.081	0.10		µg/L	1	5/17/2018 01:17 PM
Manganese	6.2	0.26	0.50		µg/L	1	5/17/2018 01:17 PM
Molybdenum	84	1.1	2.5		µg/L	5	5/17/2018 01:23 PM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 12:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-005		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	13	0.081	0.10		µg/L	1	5/17/2018 01:28 PM
Manganese	240	1.3	2.5		µg/L	5	5/17/2018 01:45 PM
Molybdenum	91	1.1	2.5		µg/L	5	5/17/2018 01:45 PM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 01:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:39:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A** QC Batch: **68012**				PrepDate **5/8/2018**			Analyst: **CEI**
Arsenic	4.0	0.081	0.10		µg/L	1	5/17/2018 01:51 PM
Manganese	1.5	0.26	0.50		µg/L	1	5/17/2018 01:51 PM
Molybdenum	71	0.21	0.50		µg/L	1	5/17/2018 01:51 PM
Selenium	4.9	0.36	0.50		µg/L	1	5/17/2018 01:51 PM

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-007		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.9	0.081	0.10		µg/L	1	5/17/2018 02:02 PM
Manganese	1.2	0.26	0.50		µg/L	1	5/17/2018 02:02 PM
Molybdenum	19	1.1	2.5		µg/L	5	5/17/2018 04:34 PM
Selenium	2.5	0.36	0.50		µg/L	1	5/17/2018 02:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030147
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030147-008

Client Sample ID: MW-70BR-225-LF-Q218
Collection Date: 5/3/2018 10:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Arsenic	1.5	0.081	0.10		µg/L	1	5/17/2018 02:13 PM
Manganese	12	0.26	0.50		µg/L	1	5/17/2018 02:13 PM
Molybdenum	20	1.1	2.5		µg/L	5	5/17/2018 04:40 PM
Selenium	2.4	0.36	0.50		µg/L	1	5/17/2018 02:13 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A / **EPA 6020**							
RunID: **NV00922-ICP7_180517A** QC Batch: **68012**					PrepDate **5/8/2018**		Analyst: **CEI**
Molybdenum	53	1.1	2.5		µg/L	5	5/17/2018 02:30 PM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 02:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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ORELAP/NELAP Cert 4046

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:57:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-010		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.7	0.081	0.10		µg/L	1	5/17/2018 02:35 PM
Manganese	280	1.3	2.5		µg/L	5	5/17/2018 02:52 PM
Molybdenum	26	0.21	0.50		µg/L	1	5/17/2018 02:35 PM
Selenium	1.9	0.36	0.50		µg/L	1	5/17/2018 02:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A** QC Batch: **68012**				PrepDate **5/8/2018**			Analyst: **CEI**
Arsenic	4.4	0.081	0.10		µg/L	1	5/17/2018 02:58 PM
Manganese	160	0.26	0.50		µg/L	1	5/17/2018 02:58 PM
Molybdenum	70	1.1	2.5		µg/L	5	5/17/2018 03:03 PM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 02:58 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 4:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Arsenic	1.4	0.081	0.10		µg/L	1	5/17/2018 03:09 PM
Manganese	820	1.3	2.5		µg/L	5	5/17/2018 03:14 PM
Molybdenum	48	1.1	2.5		µg/L	5	5/17/2018 03:14 PM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 03:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-68012** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **PBW** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-68012** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **LCSW** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.359	0.10	10.00	0	104	85	115				
Manganese	104.400	0.50	100.0	0	104	85	115				
Molybdenum	10.498	0.50	10.00	0	105	85	115				
Selenium	10.106	0.50	10.00	0	101	85	115				

Sample ID **N030147-002D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.422	0.10	10.00	1.248	102	75	125				
Manganese	100.592	0.50	100.0	1.604	99.0	75	125				
Molybdenum	17.033	0.50	10.00	5.016	120	75	125				
Selenium	12.946	0.50	10.00	3.516	94.3	75	125				

Sample ID **N030147-002D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.401	0.10	10.00	1.248	102	75	125	11.42	0.186	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030147-002D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	101.279	0.50	100.0	1.604	99.7	75	125	100.6	0.681	20	
Molybdenum	17.213	0.50	10.00	5.016	122	75	125	17.03	1.05	20	
Selenium	12.423	0.50	10.00	3.516	89.1	75	125	12.95	4.12	20	

Qualifiers:

B Analyte detected in the associated Method Blank
E Value above quantitation range
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike/Surrogate outside of limits due to matrix interference
Calculations are based on raw values

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Gantt Jeffers
Title: Geologist II
Signature: [signature] Date: 5/3/2018
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - GMP
Project Number: RC000753.801D

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
Signature: [signature] Date: 5/3/2018

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:

QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:

Sample Receipt Condition (Y / N):
1. Chilled ✓
2. Headspace ✓
3. Container Intact ✓
4. Seal Present ✓
5. IR number 4
6. Method of Cooling: ICE
Sample Temp: 2.4°C / 3.2°C
Courier:
Tracking No.:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Analyses (container):
- A: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly
- B: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly
- C: Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly
- D: Specific Conductance (EPA 120.1) — 1 liter poly
- E: Total Dissolved Solids (SM92540) — 1 liter poly
- F: Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly
- G: Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 — 125 mL poly
- H: Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 — 500 mL poly
- I: Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 — 500 mL poly
- J: Dissolved metals (SW6010B FF) (Cr); HNO3 — 500 mL poly
- K: Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 — 500 mL poly
- L: Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 — 500 mL poly

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	A	B	C	D	E	F	G	H	I	J	K	L	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030147 - 01	MW-59-100-Q218	5/3/2018	11:52		X			X			X	X					E	4	P	BNS	
2	- 02	MW-57-070-Q218	5/3/2018	13:08		X			X			X	X					E	4	P	BNS	
3	- 03	MW-57-185-LF_D-Q218	5/3/2018	10:15		X			X			X	X					E	4	P	BNS	
4	- 04	MW-57-185-LF_S-Q218	5/3/2018	9:29		X			X			X	X					E	4	P	BNS	
5	- 05	MW-57-185-3V-Q218	5/3/2018	12:25		X			X			X	X					E	4	P	BNS	
6	- 06	MW-70-105-Q218	5/3/2018	14:39		X			X			X	X					E	4	P	BNS	
7	- 07	MW-70BR-225-3V-Q218	5/3/2018	13:01		X			X			X	X					E	4	P	BNS	
8	- 08	MW-70BR-225-LF-Q218	5/3/2018	10:20		X			X			X	X					E	4	P	BNS	
9	- 09	MW-37D-Q218	5/3/2018	15:08		X			X			X		X				E	4	P	BNS	
10	- 10	MW-58BR-Q218	5/3/2018	14:57		X			X			X	X					E	4	P	BNS	

Relinquished by (Signature and Printed Name): [signature] Date/Time: 5/3/18 1700
Received by (Signature and Printed Name): [signature] Date/Time: 5/3/18 17:00
Relinquished by (Signature and Printed Name): [signature] Date/Time: 5/3/18 19:00
Received by (Signature and Printed Name): [signature] Date/Time: 5/3/18 19:00
Relinquished by (Signature and Printed Name): Date/Time:
Received by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)
- A < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

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ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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Nevada: 3151 W. Post Road, Las Vegas, NV 89118
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www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com, daniel.moore@critigen.com	Address:
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com / P.O.#:
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 / Fax:
Title: Geologist II	Phone: 916-786-3302 / Fax:	
Signature: [signature] Date: 5/3/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*	
Project Name: PG&E Topock - GMP	Signature: [signature] Date: 5/3/2018	
Project Number: RC000753.801D		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y/N
1. Chilled	✓
2. Headspace	✓
3. Container Intact	✓
4. Seal Present	✓
5. IR number	2
6. Method of Cooling: ICE	
Sample Temp: 2.4°C/3.2°C	
Courier:	
Tracking No.:	

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly	Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly	Specific Conductance (EPA 120.1) — 1 liter poly	Total Dissolved Solids (SM92540) — 1 liter poly	Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 — 125 mL poly	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 — 500 mL poly	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 — 500 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030147 - 11	MW-62-110-Q218	5/3/2018	15:50		X			X			X	X					E	4	P	BNS	
2	- 12	MW-62-190-Q218	5/3/2018	16:05		X			X			X	X					E	4	P	BNS	
3	- 13	MW-48-Q218	5/3/2018	13:55		X			X						X			E	3	P	BN	
4	- 14	MW-719-Q218	5/3/2018	14:05		X												E	1	P	B	
5	- 15	MW-720-Q218	5/3/2018	15:30		X												E	1	P	B	
6	- 16	MW-721-Q218	5/3/2018	16:00		X												E	1	P	B	
7																						
8																						
9																						
10																						

Relinquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
[signature]	5/3/18 1700	[signature]	5/3/18 17:00
[signature]	5/3/18 19:00	[signature]	5/3/18 19:00

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 5/3/2018 Workorder: N030147

Rep sample Temp (Deg C): 2.4/3.2 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

For: [signature] 5/10/2018

Checklist Completed By: DA

Reviewed By: [signature] 05/15/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/1/2018 6:08 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>, Kalib Sumter <Kalib.Sumter@critigen.com>, Dan Moore <Daniel.Moore@critigen.com>

Hi Yoandra,
Method 6020 is acceptable.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, April 30, 2018 8:48 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)

Hi Laura,

Please kindly check the attached COCs. Some samples are requested to be analyzed for As, Cr, Mn, Mo and Se by 6010.

Please kindly confirm if they can be analyzed by 6020 instead of 6010, as we have been doing before.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

ASSET Laboratories

WORK ORDER Summary

04-May-18

WorkOrder: N030147

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/3/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030147-001A	MW-59-100-Q218	5/3/2018 11:52:00 AM	5/17/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-001B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-001C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-001D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-002A	MW-57-070-Q218	5/3/2018 1:08:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-002B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-002C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-002D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-003A	MW-57-185-LF_D-Q218	5/3/2018 10:15:00 AM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-003B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-003C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-003D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-004A	MW-57-185-LF_S-Q218	5/3/2018 9:29:00 AM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-004B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-004C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-May-18

WorkOrder: N030147

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/3/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030147-004D	MW-57-185-LF_S-Q218	5/3/2018 9:29:00 AM	5/17/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-005A	MW-57-185-3V-Q218	5/3/2018 12:25:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-005B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-005C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-005D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-006A	MW-70-105-Q218	5/3/2018 2:39:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-006B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-006C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-006D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-007A	MW-70BR-225-3V-Q218	5/3/2018 1:01:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-007B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-007C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-007D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-May-18

WorkOrder: N030147

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/3/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030147-008A	MW-70BR-225-LF-Q218	5/3/2018 10:20:00 AM	5/17/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-008B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-008C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-008D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-009A	MW-37D-Q218	5/3/2018 3:08:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-009B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-009C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-009D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-010A	MW-58BR-Q218	5/3/2018 2:57:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-010B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-010C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-010D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-011A	MW-62-110-Q218	5/3/2018 3:50:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-011B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-011C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-May-18

WorkOrder: N030147

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/3/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030147-011D	MW-62-110-Q218	5/3/2018 3:50:00 PM	5/17/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-012A	MW-62-190-Q218	5/3/2018 4:05:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-012B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-012C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-012D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-013A	MW-48-Q218	5/3/2018 1:55:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-013B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-013C			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-014A	MW-719-Q218	5/3/2018 2:05:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-015A	MW-720-Q218	5/3/2018 3:30:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-016A	MW-721-Q218	5/3/2018 4:00:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-017A	FOLDER	5/17/2018	5/17/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/17/2018		Folder	Folder	☐	☐	☐	LAB
			5/17/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.801D

ASSET Laboratories Work Order:

N030147

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N030147

May 22, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030147

RE: PG&E Topock - GMP, RC000753.801D

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 03, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.801D
Lab Order:	N030147

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for some samples due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for most of the samples due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N030147-002D-MS and N030147-002D-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *22-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801D
Lab Order: N030147
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030147-001A	MW-59-100-Q218	Groundwater	5/3/2018 11:52:00 AM	5/3/2018	5/22/2018
N030147-001B	MW-59-100-Q218	Groundwater	5/3/2018 11:52:00 AM	5/3/2018	5/22/2018
N030147-001C	MW-59-100-Q218	Groundwater	5/3/2018 11:52:00 AM	5/3/2018	5/22/2018
N030147-001D	MW-59-100-Q218	Groundwater	5/3/2018 11:52:00 AM	5/3/2018	5/22/2018
N030147-002A	MW-57-070-Q218	Groundwater	5/3/2018 1:08:00 PM	5/3/2018	5/22/2018
N030147-002B	MW-57-070-Q218	Groundwater	5/3/2018 1:08:00 PM	5/3/2018	5/22/2018
N030147-002C	MW-57-070-Q218	Groundwater	5/3/2018 1:08:00 PM	5/3/2018	5/22/2018
N030147-002D	MW-57-070-Q218	Groundwater	5/3/2018 1:08:00 PM	5/3/2018	5/22/2018
N030147-003A	MW-57-185-LF_D-Q218	Groundwater	5/3/2018 10:15:00 AM	5/3/2018	5/22/2018
N030147-003B	MW-57-185-LF_D-Q218	Groundwater	5/3/2018 10:15:00 AM	5/3/2018	5/22/2018
N030147-003C	MW-57-185-LF_D-Q218	Groundwater	5/3/2018 10:15:00 AM	5/3/2018	5/22/2018
N030147-003D	MW-57-185-LF_D-Q218	Groundwater	5/3/2018 10:15:00 AM	5/3/2018	5/22/2018
N030147-004A	MW-57-185-LF_S-Q218	Groundwater	5/3/2018 9:29:00 AM	5/3/2018	5/22/2018
N030147-004B	MW-57-185-LF_S-Q218	Groundwater	5/3/2018 9:29:00 AM	5/3/2018	5/22/2018
N030147-004C	MW-57-185-LF_S-Q218	Groundwater	5/3/2018 9:29:00 AM	5/3/2018	5/22/2018
N030147-004D	MW-57-185-LF_S-Q218	Groundwater	5/3/2018 9:29:00 AM	5/3/2018	5/22/2018
N030147-005A	MW-57-185-3V-Q218	Groundwater	5/3/2018 12:25:00 PM	5/3/2018	5/22/2018
N030147-005B	MW-57-185-3V-Q218	Groundwater	5/3/2018 12:25:00 PM	5/3/2018	5/22/2018
N030147-005C	MW-57-185-3V-Q218	Groundwater	5/3/2018 12:25:00 PM	5/3/2018	5/22/2018
N030147-005D	MW-57-185-3V-Q218	Groundwater	5/3/2018 12:25:00 PM	5/3/2018	5/22/2018
N030147-006A	MW-70-105-Q218	Groundwater	5/3/2018 2:39:00 PM	5/3/2018	5/22/2018
N030147-006B	MW-70-105-Q218	Groundwater	5/3/2018 2:39:00 PM	5/3/2018	5/22/2018
N030147-006C	MW-70-105-Q218	Groundwater	5/3/2018 2:39:00 PM	5/3/2018	5/22/2018
N030147-006D	MW-70-105-Q218	Groundwater	5/3/2018 2:39:00 PM	5/3/2018	5/22/2018
N030147-007A	MW-70BR-225-3V-Q218	Groundwater	5/3/2018 1:01:00 PM	5/3/2018	5/22/2018
N030147-007B	MW-70BR-225-3V-Q218	Groundwater	5/3/2018 1:01:00 PM	5/3/2018	5/22/2018
N030147-007C	MW-70BR-225-3V-Q218	Groundwater	5/3/2018 1:01:00 PM	5/3/2018	5/22/2018
N030147-007D	MW-70BR-225-3V-Q218	Groundwater	5/3/2018 1:01:00 PM	5/3/2018	5/22/2018
N030147-008A	MW-70BR-225-LF-Q218	Groundwater	5/3/2018 10:20:00 AM	5/3/2018	5/22/2018

CLIENT:	ARCADIS U.S., Inc. - California	
Project:	PG&E Topock - GMP, RC000753.801D	**Work Order Sample Summary**
Lab Order:	N030147	
Contract No:		

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030147-008B	MW-70BR-225-LF-Q218	Groundwater	5/3/2018 10:20:00 AM	5/3/2018	5/22/2018
N030147-008C	MW-70BR-225-LF-Q218	Groundwater	5/3/2018 10:20:00 AM	5/3/2018	5/22/2018
N030147-008D	MW-70BR-225-LF-Q218	Groundwater	5/3/2018 10:20:00 AM	5/3/2018	5/22/2018
N030147-009A	MW-37D-Q218	Groundwater	5/3/2018 3:08:00 PM	5/3/2018	5/22/2018
N030147-009B	MW-37D-Q218	Groundwater	5/3/2018 3:08:00 PM	5/3/2018	5/22/2018
N030147-009C	MW-37D-Q218	Groundwater	5/3/2018 3:08:00 PM	5/3/2018	5/22/2018
N030147-009D	MW-37D-Q218	Groundwater	5/3/2018 3:08:00 PM	5/3/2018	5/22/2018
N030147-010A	MW-58BR-Q218	Groundwater	5/3/2018 2:57:00 PM	5/3/2018	5/22/2018
N030147-010B	MW-58BR-Q218	Groundwater	5/3/2018 2:57:00 PM	5/3/2018	5/22/2018
N030147-010C	MW-58BR-Q218	Groundwater	5/3/2018 2:57:00 PM	5/3/2018	5/22/2018
N030147-010D	MW-58BR-Q218	Groundwater	5/3/2018 2:57:00 PM	5/3/2018	5/22/2018
N030147-011A	MW-62-110-Q218	Groundwater	5/3/2018 3:50:00 PM	5/3/2018	5/22/2018
N030147-011B	MW-62-110-Q218	Groundwater	5/3/2018 3:50:00 PM	5/3/2018	5/22/2018
N030147-011C	MW-62-110-Q218	Groundwater	5/3/2018 3:50:00 PM	5/3/2018	5/22/2018
N030147-011D	MW-62-110-Q218	Groundwater	5/3/2018 3:50:00 PM	5/3/2018	5/22/2018
N030147-012A	MW-62-190-Q218	Groundwater	5/3/2018 4:05:00 PM	5/3/2018	5/22/2018
N030147-012B	MW-62-190-Q218	Groundwater	5/3/2018 4:05:00 PM	5/3/2018	5/22/2018
N030147-012C	MW-62-190-Q218	Groundwater	5/3/2018 4:05:00 PM	5/3/2018	5/22/2018
N030147-012D	MW-62-190-Q218	Groundwater	5/3/2018 4:05:00 PM	5/3/2018	5/22/2018
N030147-013A	MW-48-Q218	Groundwater	5/3/2018 1:55:00 PM	5/3/2018	5/22/2018
N030147-013B	MW-48-Q218	Groundwater	5/3/2018 1:55:00 PM	5/3/2018	5/22/2018
N030147-013C	MW-48-Q218	Groundwater	5/3/2018 1:55:00 PM	5/3/2018	5/22/2018
N030147-014A	MW-719-Q218	Groundwater	5/3/2018 2:05:00 PM	5/3/2018	5/22/2018
N030147-015A	MW-720-Q218	Groundwater	5/3/2018 3:30:00 PM	5/3/2018	5/22/2018
N030147-016A	MW-721-Q218	Groundwater	5/3/2018 4:00:00 PM	5/3/2018	5/22/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 11:52:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	11000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	2500	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 10:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	17000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_S-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 9:29:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180504E** QC Batch: **R123873** PrepDate Analyst: **LR**							
Specific Conductance	17000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 12:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:39:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	3300	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-LF-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 10:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180504E** QC Batch: **R123873** PrepDate Analyst: **LR**							
Specific Conductance	12000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180504E** QC Batch: **R123873** PrepDate							Analyst: **LR**
Specific Conductance	14000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:57:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180504E** QC Batch: **R123873** PrepDate							Analyst: **LR**
Specific Conductance	7800	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180504E** QC Batch: **R123873** PrepDate							Analyst: **LR**
Specific Conductance	13000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 4:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180504E** QC Batch: **R123873** PrepDate							Analyst: **LR**
Specific Conductance	18000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030147
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030147-013

Client Sample ID: MW-48-Q218
Collection Date: 5/3/2018 1:55:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030147-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123873**
Client ID: **ZZZZZZ** Batch ID: **R123873** TestNo: **EPA 120.1** Analysis Date: **5/4/2018** SeqNo: **3017855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11250.000	0.10						11280	0.266	2	

Sample ID **N030185-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123873**
Client ID: **ZZZZZZ** Batch ID: **R123873** TestNo: **EPA 120.1** Analysis Date: **5/4/2018** SeqNo: **3017869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	19160.000	0.10						19190	0.156	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 11:52:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180511A**	QC Batch: **R124051**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2800	17	100		µg/L	500	5/11/2018 10:22 AM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	3000	3.2	25		µg/L	25	5/17/2018 11:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180511A**	QC Batch: **R124051**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	340	3.3	20		µg/L	100	5/11/2018 10:41 AM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	360	0.65	5.0		µg/L	5	5/17/2018 12:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 10:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180511A** QC Batch: **R124051** PrepDate							Analyst: **RAB**
Hexavalent Chromium	4.8	0.17	1.0		µg/L	5	5/11/2018 11:00 AM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018**							Analyst: **CEI**
Chromium	4.7	0.13	1.0		µg/L	1	5/17/2018 01:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_S-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 9:29:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180511A** QC Batch: **R124051**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	5.3	0.17	1.0		µg/L	5	5/11/2018 11:48 AM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180517A** QC Batch: **68012**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	5.2	0.13	1.0		µg/L	1	5/17/2018 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 12:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180511A**	QC Batch: **R124051**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	7.7	0.17	1.0		µg/L	5	5/11/2018 12:06 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	7.5	0.13	1.0		µg/L	1	5/17/2018 01:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:39:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180511A**	QC Batch: **R124051**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	160	0.66	4.0		µg/L	20	5/11/2018 12:25 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	150	0.13	1.0		µg/L	1	5/17/2018 01:51 PM

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180511A** QC Batch: **R124051** PrepDate Analyst: **RAB**							
Hexavalent Chromium	1800	6.6	40		µg/L	200	5/11/2018 12:44 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018** Analyst: **CEI**							
Chromium	1800	3.2	25		µg/L	25	5/17/2018 02:07 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-LF-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 10:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180511A**	QC Batch: **R124051**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1300	6.6	40		µg/L	200	5/11/2018 01:03 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	1300	1.3	10		µg/L	10	5/17/2018 02:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180511A** QC Batch: **R124051** PrepDate							Analyst: **RAB**
Hexavalent Chromium	7.4	0.17	1.0		µg/L	5	5/11/2018 01:41 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018**							Analyst: **CEI**
Chromium	7.1	0.13	1.0		µg/L	1	5/17/2018 02:24 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:57:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180515A**	QC Batch: **R124086**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	9.3	0.033	0.20		µg/L	1	5/15/2018 02:25 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	9.2	0.13	1.0		µg/L	1	5/17/2018 02:35 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180511A** QC Batch: **R124051** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/11/2018 02:19 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018** Analyst: **CEI**							
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 02:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 4:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180511A** QC Batch: **R124051** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/11/2018 02:38 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 03:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-48-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:55:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180511A** QC Batch: **R124051**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/11/2018 02:57 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180517A** QC Batch: **68012**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 03:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-719-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180511A** QC Batch: **R124051** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/11/2018 03:35 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-720-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180511A** QC Batch: **R124051**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/11/2018 03:56 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-721-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-016		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180511A**	QC Batch: **R124051**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/11/2018 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030147
Project:	PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R124051** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **PBW** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R124051** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **LCSW** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.182	0.20	5.000	0	104	90	110				

Sample ID **N030147-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5487.400	100	2500	2787	108	90	110				

Sample ID **N030147-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	871.250	20	500.0	341.6	106	90	110				

Sample ID **N030147-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.827	1.0	5.000	4.822	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030147-002AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026065**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	864.580	20	500.0	341.6	105	90	110	871.2	0.769	20	

Sample ID **N030147-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026069**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.332	1.0	5.000	5.300	101	90	110				

Sample ID **N030147-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026071**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.838	1.0	5.000	7.652	104	90	110				

Sample ID **N030147-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	264.318	4.0	100.0	160.3	104	90	110				

Sample ID **N030147-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2840.840	40	1000	1781	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030147-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2382.200	40	1000	1310	107	90	110				

Sample ID **N030147-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026081**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.499	1.0	5.000	7.398	102	90	110				

Sample ID **N030147-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.231	1.0	5.000	0	105	90	110				

Sample ID **N030147-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.711	1.0	5.000	0	94.2	90	110				

Sample ID **N030147-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.871	1.0	5.000	0	97.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030147-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.221	0.20	1.000	0.1483	107	90	110				

Sample ID **N030147-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.166	0.20	1.000	0.1410	102	90	110				

Sample ID **N030147-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.076	0.20	1.000	0	108	90	110				

Sample ID **N030147-006ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026102**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	161.552	4.0						160.3	0.802	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R124086** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **PBW** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R124086** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **LCSW** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.121	0.20	5.000	0	102	90	110				

Sample ID **N030189-011ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **ZZZZZZ** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.186	0.20						0.1909	0	20	

Sample ID **N030189-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **ZZZZZZ** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.249	0.20	1.000	0.1909	106	90	110				

Sample ID **N030189-011AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **ZZZZZZ** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.256	0.20	1.000	0.1909	107	90	110	1.248	0.623	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030147-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **ZZZZZZ** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.513	0.20	5.000	9.323	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-68012**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**		Prep Date: **5/8/2018**		RunNo: **124122**			
Client ID: **PBW**	Batch ID: **68012**	TestNo: **EPA 6020**	**EPA 3010A**		Analysis Date: **5/17/2018**		SeqNo: **3031089**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-68012**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**		Prep Date: **5/8/2018**		RunNo: **124122**			
Client ID: **LCSW**	Batch ID: **68012**	TestNo: **EPA 6020**	**EPA 3010A**		Analysis Date: **5/17/2018**		SeqNo: **3031090**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.497	1.0	10.00	0	105	85	115				

Sample ID **N030147-002D-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**		Prep Date: **5/8/2018**		RunNo: **124122**			
Client ID: **ZZZZZZ**	Batch ID: **68012**	TestNo: **EPA 6020**	**EPA 3010A**		Analysis Date: **5/17/2018**		SeqNo: **3031103**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	386.556	5.0	10.00	355.3	312	75	125				S

Sample ID **N030147-002D-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**		Prep Date: **5/8/2018**		RunNo: **124122**			
Client ID: **ZZZZZZ**	Batch ID: **68012**	TestNo: **EPA 6020**	**EPA 3010A**		Analysis Date: **5/17/2018**		SeqNo: **3031105**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	359.612	5.0	10.00	355.3	42.8	75	125	386.6	7.22	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 11:52:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	2.5	0.063	0.10		mg/L	2	5/17/2018

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

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3151 W. Post Rd., Las Vegas, NV 89118
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ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	8.8	0.32	0.50		mg/L	10	5/17/2018

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ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_D-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 10:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_S-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 9:29:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180517B** QC Batch: **R124118** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 12:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180517B**	QC Batch: **R124118**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/17/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:39:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180517B** QC Batch: **R124118**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	4.4	0.16	0.25		mg/L	5	5/17/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180518C**	QC Batch: **R124137**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	3.6	0.16	0.25		mg/L	5	5/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-LF-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 10:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180518C** QC Batch: **R124137**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	3.1	0.16	0.25		mg/L	5	5/18/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180518C** QC Batch: **R124137** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.44	0.032	0.050		mg/L	1	5/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:57:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180518C** QC Batch: **R124137** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.87	0.032	0.050		mg/L	1	5/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180518C**	QC Batch: **R124137**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 4:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180518C**	QC Batch: **R124137**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/18/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124118**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **124118**
Client ID: **PBW**	Batch ID: **R124118**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2018**	SeqNo: **3030134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124118**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **124118**
Client ID: **LCSW**	Batch ID: **R124118**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2018**	SeqNo: **3030135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.463	0.050	0.5000	0	92.7	85	115				

Sample ID **N030123-012CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **124118**
Client ID: **ZZZZZZ**	Batch ID: **R124118**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2018**	SeqNo: **3030138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	4.464	0.25						4.492	0.636	20	

Sample ID **N030123-008CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **124118**
Client ID: **ZZZZZZ**	Batch ID: **R124118**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2018**	SeqNo: **3030141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	9.933	0.50	5.000	5.532	88.0	75	125				

Sample ID **N030123-008CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **124118**
Client ID: **ZZZZZZ**	Batch ID: **R124118**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2018**	SeqNo: **3030142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	11.116	0.50	5.000	5.532	112	75	125	9.933	11.2	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124137** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **PBW** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124137** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **LCSW** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.515	0.050	0.5000	0	103	85	115				

Sample ID **N030186-002CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ZZZZZZ** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.601	0.25	2.500	2.659	118	75	125				

Sample ID **N030186-002CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ZZZZZZ** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.260	0.25	2.500	2.659	104	75	125	5.601	6.28	20	

Sample ID **N030186-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ZZZZZZ** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.036	0.050						0.04570	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030147
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030147-001

Client Sample ID: MW-59-100-Q218
Collection Date: 5/3/2018 11:52:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**				PrepDate **5/8/2018**		Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	5/17/2018 11:47 AM
Manganese	1.4	0.26	0.50		µg/L	1	5/17/2018 11:47 AM
Molybdenum	7.3	1.1	2.5		µg/L	5	5/17/2018 11:53 AM
Selenium	2.8	0.36	0.50		µg/L	1	5/17/2018 11:47 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-070-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate	**5/8/2018**		Analyst: **CEI**
Arsenic	1.2	0.081	0.10		µg/L	1	5/17/2018 12:04 PM
Manganese	1.6	0.26	0.50		µg/L	1	5/17/2018 12:04 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	5/17/2018 12:04 PM
Selenium	3.5	0.36	0.50		µg/L	1	5/17/2018 12:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030147
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030147-003

Client Sample ID: MW-57-185-LF_D-Q218
Collection Date: 5/3/2018 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate	**5/8/2018**		Analyst: **CEI**
Arsenic	4.2	0.081	0.10		µg/L	1	5/17/2018 01:06 PM
Manganese	12	0.26	0.50		µg/L	1	5/17/2018 01:06 PM
Molybdenum	86	1.1	2.5		µg/L	5	5/17/2018 01:12 PM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 01:06 PM

Qualifiers:
B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-LF_S-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 9:29:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Arsenic	3.3	0.081	0.10		µg/L	1	5/17/2018 01:17 PM
Manganese	6.2	0.26	0.50		µg/L	1	5/17/2018 01:17 PM
Molybdenum	84	1.1	2.5		µg/L	5	5/17/2018 01:23 PM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 01:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-3V-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 12:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-005		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	13	0.081	0.10		µg/L	1	5/17/2018 01:28 PM
Manganese	240	1.3	2.5		µg/L	5	5/17/2018 01:45 PM
Molybdenum	91	1.1	2.5		µg/L	5	5/17/2018 01:45 PM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 01:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030147
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030147-006

Client Sample ID: MW-70-105-Q218
Collection Date: 5/3/2018 2:39:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**				PrepDate **5/8/2018**		Analyst: **CEI**
Arsenic	4.0	0.081	0.10		µg/L	1	5/17/2018 01:51 PM
Manganese	1.5	0.26	0.50		µg/L	1	5/17/2018 01:51 PM
Molybdenum	71	0.21	0.50		µg/L	1	5/17/2018 01:51 PM
Selenium	4.9	0.36	0.50		µg/L	1	5/17/2018 01:51 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-3V-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 1:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Arsenic	1.9	0.081	0.10		µg/L	1	5/17/2018 02:02 PM
Manganese	1.2	0.26	0.50		µg/L	1	5/17/2018 02:02 PM
Molybdenum	19	1.1	2.5		µg/L	5	5/17/2018 04:34 PM
Selenium	2.5	0.36	0.50		µg/L	1	5/17/2018 02:02 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-LF-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 10:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-008		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	1.5	0.081	0.10		µg/L	1	5/17/2018 02:13 PM
Manganese	12	0.26	0.50		µg/L	1	5/17/2018 02:13 PM
Molybdenum	20	1.1	2.5		µg/L	5	5/17/2018 04:40 PM
Selenium	2.4	0.36	0.50		µg/L	1	5/17/2018 02:13 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**				PrepDate **5/8/2018**		Analyst: **CEI**
Molybdenum	53	1.1	2.5		µg/L	5	5/17/2018 02:30 PM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 02:24 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 2:57:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Arsenic	1.7	0.081	0.10		µg/L	1	5/17/2018 02:35 PM
Manganese	280	1.3	2.5		µg/L	5	5/17/2018 02:52 PM
Molybdenum	26	0.21	0.50		µg/L	1	5/17/2018 02:35 PM
Selenium	1.9	0.36	0.50		µg/L	1	5/17/2018 02:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 3:50:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate	**5/8/2018**		Analyst: **CEI**
Arsenic	4.4	0.081	0.10		µg/L	1	5/17/2018 02:58 PM
Manganese	160	0.26	0.50		µg/L	1	5/17/2018 02:58 PM
Molybdenum	70	1.1	2.5		µg/L	5	5/17/2018 03:03 PM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 02:58 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *22-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q218
Lab Order:	N030147	**Collection Date:**	5/3/2018 4:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030147-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Arsenic	1.4	0.081	0.10		µg/L	1	5/17/2018 03:09 PM
Manganese	820	1.3	2.5		µg/L	5	5/17/2018 03:14 PM
Molybdenum	48	1.1	2.5		µg/L	5	5/17/2018 03:14 PM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 03:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID MB-68012	SampType: MBLK	TestCode: 6020_DIS	Units: µg/L	Prep Date: 5/8/2018	RunNo: 124122						
Client ID: PBW	Batch ID: 68012	TestNo: EPA 6020	EPA 3010A	Analysis Date: 5/17/2018	SeqNo: 3030766						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID LCS-68012	SampType: LCS	TestCode: 6020_DIS	Units: µg/L	Prep Date: 5/8/2018	RunNo: 124122						
Client ID: LCSW	Batch ID: 68012	TestNo: EPA 6020	EPA 3010A	Analysis Date: 5/17/2018	SeqNo: 3030767						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.359	0.10	10.00	0	104	85	115				
Manganese	104.400	0.50	100.0	0	104	85	115				
Molybdenum	10.498	0.50	10.00	0	105	85	115				
Selenium	10.106	0.50	10.00	0	101	85	115				

Sample ID N030147-002D-MS	SampType: MS	TestCode: 6020_DIS	Units: µg/L	Prep Date: 5/8/2018	RunNo: 124122						
Client ID: ZZZZZZ	Batch ID: 68012	TestNo: EPA 6020	EPA 3010A	Analysis Date: 5/17/2018	SeqNo: 3030779						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.422	0.10	10.00	1.248	102	75	125				
Manganese	100.592	0.50	100.0	1.604	99.0	75	125				
Molybdenum	17.033	0.50	10.00	5.016	120	75	125				
Selenium	12.946	0.50	10.00	3.516	94.3	75	125				

Sample ID N030147-002D-MSD	SampType: MSD	TestCode: 6020_DIS	Units: µg/L	Prep Date: 5/8/2018	RunNo: 124122						
Client ID: ZZZZZZ	Batch ID: 68012	TestNo: EPA 6020	EPA 3010A	Analysis Date: 5/17/2018	SeqNo: 3030781						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.401	0.10	10.00	1.248	102	75	125	11.42	0.186	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030147-002D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	101.279	0.50	100.0	1.604	99.7	75	125	100.6	0.681	20	
Molybdenum	17.213	0.50	10.00	5.016	122	75	125	17.03	1.05	20	
Selenium	12.423	0.50	10.00	3.516	89.1	75	125	12.95	4.12	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

SAMPLE RECEIVING ITEMS

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302
Fax:
Submitted By: Gantt Jeffers
Title: Geologist II
Signature: [signature] Date: 5/3/2018
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - GMP
Project Number: RC000753.801D

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone: 916-786-3302
Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
Signature: [signature] Date: 5/3/2018

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com
P.O.#
Phone: 949-727-1400, ext 200
Fax:

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition

	Y	N
1. Chilled	✓	
2. Headspace		✓
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	4	

6. Method of Cooling: ICE
Sample Temp: 2.4°C / 3.2°C
Courier:
Tracking No.:

Matrix

Ground	x	Sediment
Potable		Soil
NPDES		Other Solid
Surface		

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM92540) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030147 - 01	MW-59-100-Q218	5/3/2018	11:52		X			X			X	X					E	4	P	BNS	
2	- 02	MW-57-070-Q218	5/3/2018	13:08		X			X			X	X					E	4	P	BNS	
3	- 03	MW-57-185-LF_D-Q218	5/3/2018	10:15		X			X			X	X					E	4	P	BNS	
4	- 04	MW-57-185-LF_S-Q218	5/3/2018	9:29		X			X			X	X					E	4	P	BNS	
5	- 05	MW-57-185-3V-Q218	5/3/2018	12:25		X			X			X	X					E	4	P	BNS	
6	- 06	MW-70-105-Q218	5/3/2018	14:39		X			X			X	X					E	4	P	BNS	
7	- 07	MW-70BR-225-3V-Q218	5/3/2018	13:01		X			X			X	X					E	4	P	BNS	
8	- 08	MW-70BR-225-LF-Q218	5/3/2018	10:20		X			X			X	X					E	4	P	BNS	
9	- 09	MW-37D-Q218	5/3/2018	15:08		X			X			X		X				E	4	P	BNS	
10	- 10	MW-58BR-Q218	5/3/2018	14:57		X			X			X	X					E	4	P	BNS	

Reliquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
[signature]	5/3/18 1700	[signature]	5/3/18 17:00
[signature]	5/3/18 19:00	[signature]	5/3/18 19:00

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302
Fax:
Submitted By: Gantt Jeffers
Title: Geologist II
Signature: [signature] Date: 5/3/2018
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - GMP
Project Number: RC000753.801D

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone: 916-786-3302
Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
Signature: [signature] Date: 5/3/2018

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com
P.O.#
Phone: 949-727-1400, ext 200
Fax:

EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:

QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:

Sample Receipt Condition (Y/N):
1. Chilled ✓
2. Headspace
3. Container Intact ✓
4. Seal Present ✓
5. IR number
6. Method of Cooling: ICE
Sample Temp: 2.4°C/3.2°C
Courier:
Tracking No.:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Analyses (columns A–L):
- A: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 mL poly
- B: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 2x250 mL poly
- C: Bromide, Sulfate, Chloride (EPA 300.0) — 1 liter poly
- D: Specific Conductance (EPA 120.1) — 1 liter poly
- E: Total Dissolved Solids (SM92540) — 1 liter poly
- F: Alkalinity, Total as CaCO3 (SM2320B) — 1 liter poly
- G: Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 — 125 mL poly
- H: Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 — 500 mL poly
- I: Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 — 500 mL poly
- J: Dissolved metals (SW6010B FF) (Cr); HNO3 — 500 mL poly
- K: Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 — 500 mL poly
- L: Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 — 500 mL poly

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	A	B	C	D	E	F	G	H	I	J	K	L	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030147 - 11	MW-62-110-Q218	5/3/2018	15:50		X			X			X	X					E	4	P	BNS	
2	- 12	MW-62-190-Q218	5/3/2018	16:05		X			X			X	X					E	4	P	BNS	
3	- 13	MW-48-Q218	5/3/2018	13:55		X			X						X			E	3	P	BN	
4	- 14	MW-719-Q218	5/3/2018	14:05		X												E	1	P	B	
5	- 15	MW-720-Q218	5/3/2018	15:30		X												E	1	P	B	
6	- 16	MW-721-Q218	5/3/2018	16:00		X												E	1	P	B	
7																						
8																						
9																						
10																						

Reliquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
[signature]	5/3/18 1700	[signature]	5/3/18 17:00
[signature]	5/3/18 19:00	[signature]	5/3/18 19:00

Turn Around Time (TAT)
- A < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
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9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	$(NH_4)_2SO_4/NH_4OH$	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 5/3/2018 Workorder: N030147

Rep sample Temp (Deg C): 2.4/3.2 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: DA For: [signature] 5/10/2018

Reviewed By: [signature] 05/15/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/1/2018 6:08 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>, Kalib Sumter <Kalib.Sumter@critigen.com>, Dan Moore <Daniel.Moore@critigen.com>

Hi Yoandra,
Method 6020 is acceptable.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, April 30, 2018 8:48 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)

Hi Laura,

Please kindly check the attached COCs. Some samples are requested to be analyzed for As, Cr, Mn, Mo and Se by 6010.

Please kindly confirm if they can be analyzed by 6020 instead of 6010, as we have been doing before.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

ASSET Laboratories

WORK ORDER Summary

04-May-18

WorkOrder: N030147

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/3/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030147-001A	MW-59-100-Q218	5/3/2018 11:52:00 AM	5/17/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-001B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-001C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-001D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-002A	MW-57-070-Q218	5/3/2018 1:08:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-002B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-002C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-002D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-003A	MW-57-185-LF_D-Q218	5/3/2018 10:15:00 AM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-003B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-003C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-003D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-004A	MW-57-185-LF_S-Q218	5/3/2018 9:29:00 AM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-004B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-004C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-May-18

WorkOrder: N030147

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/3/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030147-004D	MW-57-185-LF_S-Q218	5/3/2018 9:29:00 AM	5/17/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-005A	MW-57-185-3V-Q218	5/3/2018 12:25:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-005B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-005C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-005D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-006A	MW-70-105-Q218	5/3/2018 2:39:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-006B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-006C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-006D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-007A	MW-70BR-225-3V-Q218	5/3/2018 1:01:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-007B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-007C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-007D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-May-18

WorkOrder: N030147

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/3/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030147-008A	MW-70BR-225-LF-Q218	5/3/2018 10:20:00 AM	5/17/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-008B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-008C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-008D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-009A	MW-37D-Q218	5/3/2018 3:08:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-009B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-009C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-009D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-010A	MW-58BR-Q218	5/3/2018 2:57:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-010B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-010C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-010D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-011A	MW-62-110-Q218	5/3/2018 3:50:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-011B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-011C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-May-18

WorkOrder: N030147

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/3/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030147-011D	MW-62-110-Q218	5/3/2018 3:50:00 PM	5/17/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-012A	MW-62-190-Q218	5/3/2018 4:05:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-012B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-012C			5/17/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030147-012D			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-013A	MW-48-Q218	5/3/2018 1:55:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-013B			5/17/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
N030147-013C			5/17/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030147-014A	MW-719-Q218	5/3/2018 2:05:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-015A	MW-720-Q218	5/3/2018 3:30:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-016A	MW-721-Q218	5/3/2018 4:00:00 PM	5/17/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030147-017A	FOLDER	5/17/2018	5/17/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/17/2018		Folder	Folder	☐	☐	☐	LAB
			5/17/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N030147

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123873 **Analyst:** LSR

ASSET #: N030147 **Date Analyzed:** 5/4/2018

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 5/9/2018

2nd Level Reviewer RB 05/22/2018 Date:

LOGBOOK DATA,
QUANTITATION REPORT and/or
SPECTRA

Conductivity Logbook

Date: 5/3/18 1400
Analyst: LSR

CONT'D

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV-180108A	9.93 @23.1C	% Rec: (90-110%)
1412	180131A	1415 @23.1°C	
9987	180108B	10020 @23.0°C	
99601	180201A	99500 @23.0°C	

	Sample ID	Matrix	Reading	Comments
1	N030123-018B	H2O	861 @20.2°C	
2	19B		12660 @20.3°C	
3	23B		13100 @20.0C	
4	23BDUP		13700 @20.0°C	
5				
6				
7				
8				
9	1413 uS/cm	CINV-171121C	1477 @20.2°C	
10	10000	180108C	10350 @21.2°C	2% LR 5/3/18
Dup	99672	171215A	99400 @21.2°C	Accept: 10% water, 20% soil
Std Chk:				% Rec: (90-110%)

Date: 5/4/18 1515
Analyst: LSR

Lidia Ramit 5/9/2018
RB 05/22/2018

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV-180108A	9.80 @21.9°C	% Rec: (90-110%)
1412	180131A	1438 @22.1°C	
9987	180108B	10020 @22.2°C	
99601	180201A	98300 @22.3°C	

	Sample ID	Matrix	Reading	Comments
1	N030147-001B	H2O	11280 @21.4°C	
2	1BDUP		11250 @21.6°C	STD CHK
3	2B		2510 @21.5°C	1413 CINV-171121C
4	3B		17110 @21.8°C	= 1468 @21.0°C
5	4B		16940 @21.8°C	10000 CINV 180108C
6	5B		17530 @21.8°C	= 10210 @21.3°C
7	6B		3340 @21.7°C	99672 CINV171215A
8	7B		12800 @21.8C	= 100200 @21.8°C
9	8B		11960 @21.8C	
10	9B		13800 @20.9C	2% LR 5/4/18
~~Dup~~	10B		7850 @21.7°C	Accept: ~~10% water, 20%~~ soil
Std Chk:				% Rec: (90-110%)

Date: 5/4/18 1515

Analyst: LSR

CONTD

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV-180108A	9.80 @ 21.9°C	% Rec: (90-110%)
1412	180131A	1438 @ 22.1°C	
9987	180108B	10020 @ 22.2°C	
99601	180201A	9830 @ 22.3°C	

	Sample ID	Matrix	Reading	Comments
1	N030147-011B	H2O	13470 @21.8°C	
2	12B		18410 @ 21.2°C	STD CHK:
3	13B		15270 @21.5°C	1413 CINV171121C
4	N030185-001B		19190 @21.0°C	= 1476 @ 21.3°C
5	1BDUP		19160 @ 20.9°C	10000 CINV180108C
6	2B		3940 @ 20.9°C	= 10370 @ 21.6°C
7	3B		5040 @ 20.9°C	99672 CINV171215A
8	4B		15340 @20.9°C	= 99500 @ 22.1°C
9	N030186-001B		1813 @ 20.9°C	
10	2B		7240 @ 20.8°C	2% uc 5/4/18
Dup				Accept: ~~10% water, 20% soil~~
	Std Chk:			% Rec: (90-110%)

Date: 5/7/18 1400

Analyst: LSR

Julia Ramit 5/9/2018

RB 05/22/2018

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV-180108A	9.87 @ 23.8°C	% Rec: (90-110%)
1412	180131A	1428 @ 23.8°C	
9987	180108B	10040 @ 23.7°C	
99601	180201A	99800 @ 23.8°C	

	Sample ID	Matrix	Reading	Comments
1	N030212-001B	H2O	33.3 @ 22.9°C	
2	1BDUP		33.4 @ 22.7°C	
3				
4				
5				
6				
7				
8	1413 uS/cm	CINV-171121C	1440 @24.4°C	
9	10000	180108C	10050 @ 24.2°C	
10	99672	171215A	98600 @ 24.2°C	2% uc 5/7/18
Dup				Accept: ~~10% water, 20% soil~~
	Std Chk:			% Rec: (90-110%)

Logbook # 6

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R124051
ASSET #: N030147

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 5/11/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ___________

		Ist Level Review			2nd Level Review		
		Y	N	N/A	Y	N	N/A
Initial Calibration and Initial Calibration Verification							
1.	ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2.	Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3.	ICV within ± 10% of expected value.	X					
Continuing Calibration							
4.	CCV after every 10 injections and at the end of analysis sequence.	X					
5.	CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6.	Calibration blanks run after ICV and CCV?	X					
7.	Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8.	Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9.	Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information							
10.	All samples are within linear range.	X					
11.	All samples pH within 9.3-9.7 when analyzed?	X					
12.	Duplicate sample injections for every sample. (7199 only)			X			
13.	For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X		~~X~~			
14.	For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15.	For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16.	For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17.	For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18.	For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19.	EPA 3060A digestion performed on solid samples (7199 only)			X			
20.	Are all peaks within RT window, ± 0.2 min?	X					
21.	Are all samples analyzed within hold time?	X					
22.	For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items							
23.	Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24.	LCS compounds are within control limits.	X					
25.	MS/MSD, RPD's are within control limits.	X					
26.	Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information							
27.	Runlog complete and included in package.	X					
28.	Extraction log complete and included in package (if applicable)			X			
29.	All manual integrations initialed, date and reasons included.	X					
30.	Before and after manual integration chromatogram included in the package	X					
31.	All samples and QC raw data present in package.	X					
Preliminary Report							
32.	Does the raw data match the preliminary report?	X					
33.	Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34	Is the QC summary report present and complete?	X					

Comments:

Dilution was necessary in N030147-003A/004A/005A/009A/011A/012A/013A due to matrix interference.

SECOND LEVEL REVIEW:

		Y	N	N/A
1.	All assigned sample(s) analyzed			
2.	Matrix / units correct			
3.	Is QC present and complete?			
4.	Are analytical results correct? (dilutions,calculations)			
5.	Is first level review correct and complete?			

1st Level Reviewer rba Date: 5/18/2018

2nd Level Reviewer RB 05/22/2018 Date: ___________

IC ARCUS
REV 2.0
011416

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R124086
ASSET #: N030147

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 5/15/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ___________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			✓		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X			✓		
3. ICV within ± 10% of expected value.	X			✓		
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X			✓		
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X			✓		
6. Calibration blanks run after ICV and CCV?	X			✓		
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X			✓		
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			✓		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X			✓		
Sample Information						
10. All samples are within linear range.	X			✓		
11. All samples pH within 9.3-9.7 when analyzed?	X			✓		
12. Duplicate sample injections for every sample. (7199 only)			X			✓
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X		~~X~~	✓		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			✓
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			✓
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			✓		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			✓
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			✓		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			✓
20. Are all peaks within RT window, ± 0.2 min?	X			✓		
21. Are all samples analyzed within hold time?	X			✓		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			✓
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			✓		
24. LCS compounds are within control limits.	X			✓		
25. MS/MSD, RPD's are within control limits.	X			✓		
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			✓
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			✓		
28. Extraction log complete and included in package (if applicable)			X			✓
29. All manual integrations initialed, date and reasons included.	X			✓		
30. Before and after manual integration chromatogram included in the package	X			✓		
31. All samples and QC raw data present in package.	X			✓		
Preliminary Report						
32. Does the raw data match the preliminary report?	X			✓		
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			✓		
34 Is the QC summary report present and complete?	X			✓		

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	✓		
2. Matrix / units correct	✓		
3. Is QC present and complete?	✓		
4. Are analytical results correct? (dilutions,calculations)	✓		
5. Is first level review correct and complete?	✓		

1st Level Reviewer rba Date: 5/18/2018

2nd Level Reviewer RB 05/22/2018 Date: ________

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}\text{, µg/L} = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N030147-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}\text{, µg/L} = 5.5741 * 500$$

$$Cr^{+6}\text{, µg/L} = 2787.05$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}\text{, µg/L} = 2800}$$

rba 5/18/2018

ANALYSIS RUN LOG

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	04/30/18 10:42 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/30/18 10:52 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/30/18 11:01 AM	Reported
13	MB-R123727	MBLK	1	Hexavalent Chromium	04/30/18 11:11 AM	Reported
14	LCS-R123727	LCS	1	Hexavalent Chromium	04/30/18 11:20 AM	Reported
15	N030044-001A	SAMP	5	Hexavalent Chromium	04/30/18 11:30 AM	Reported
16	N030044-001AMS	MS	5	Hexavalent Chromium	04/30/18 11:39 AM	Reported
17	N030044-002A	SAMP	5	Hexavalent Chromium	04/30/18 11:49 AM	Reported
18	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 11:58 AM	Not Reported
19	N030044-003A	SAMP	5	Hexavalent Chromium	04/30/18 12:08 PM	Reported
20	N030044-003AMS	MS	5	Hexavalent Chromium	04/30/18 12:17 PM	Reported
21	N030044-004A	SAMP	1000	Hexavalent Chromium	04/30/18 12:26 PM	Reported
22	N030044-004AMS	MS	1000	Hexavalent Chromium	04/30/18 12:36 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/30/18 12:45 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/30/18 12:55 PM	Reported
25	N030044-005A	SAMP	50	Hexavalent Chromium	04/30/18 1:04 PM	Reported
26	N030044-005AMS	MS	50	Hexavalent Chromium	04/30/18 1:14 PM	Reported
27	N030044-006A	SAMP	200	Hexavalent Chromium	04/30/18 1:23 PM	Reported
28	N030044-006AMS	MS	200	Hexavalent Chromium	04/30/18 1:33 PM	Reported
29	N030044-007A	SAMP	200	Hexavalent Chromium	04/30/18 1:42 PM	Reported
30	N030044-007AMS	MS	200	Hexavalent Chromium	04/30/18 1:52 PM	Reported
31	N030044-008A	SAMP	1000	Hexavalent Chromium	04/30/18 2:01 PM	Reported
32	N030044-008AMS	MS	1000	Hexavalent Chromium	04/30/18 2:10 PM	Reported
33	N030044-009A	SAMP	50	Hexavalent Chromium	04/30/18 2:20 PM	Reported
34	N030044-009AMS	MS	50	Hexavalent Chromium	04/30/18 2:29 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/30/18 2:39 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/30/18 2:48 PM	Reported
37	N030044-010A	SAMP	1	Hexavalent Chromium	04/30/18 2:58 PM	Reported
38	N030044-010AMS	MS	1	Hexavalent Chromium	04/30/18 3:07 PM	Reported
39	N030044-011A	SAMP	1	Hexavalent Chromium	04/30/18 3:17 PM	Reported
40	N030044-011AMS	MS	1	Hexavalent Chromium	04/30/18 3:26 PM	Reported
41	N030044-001ADUP	DUP	5	Hexavalent Chromium	04/30/18 3:36 PM	Reported
42	N030044-004AMSD	MSD	1000	Hexavalent Chromium	04/30/18 3:45 PM	Reported

rba 5/6/2018

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 3:55 PM	Reported
44	N029859-008A	SAMP	1	Hexavalent Chromium	04/30/18 4:06 PM	Not Reported
45	N029859-008AMS	MS	1	Hexavalent Chromium	04/30/18 4:17 PM	Not Reported
46	N029859-009A	SAMP	1	Hexavalent Chromium	04/30/18 4:26 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/30/18 4:36 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/30/18 4:45 PM	Reported
49	N029859-009AMS	MS	1	Hexavalent Chromium	04/30/18 4:55 PM	Not Reported
50	N029859-011A	SAMP	1	Hexavalent Chromium	04/30/18 5:04 PM	Not Reported
51	N029859-011AMS	MS	1	Hexavalent Chromium	04/30/18 5:14 PM	Not Reported
52	CCV-4	CCV	1	Hexavalent Chromium	04/30/18 5:23 PM	Reported
53	CCB-4	CCB	1	Hexavalent Chromium	04/30/18 5:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180430A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**30/Apr/18 18:19:59**
No. of Injections:	**56**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		04/30/2018 10:42	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/30/2018 10:52	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/30/2018 11:01	Finished	ICB R180418A
13	MB-H2O,MBLK,1,	13	1000	Unknown		04/30/2018 11:11	Finished	MB R180418A
14	LCS-H2O,LCS,1,	14	1000	Unknown		04/30/2018 11:20	Finished	LCS, IWST-180129B
15	N030044-001A,SAMF	15	1000	Unknown		04/30/2018 11:30	Finished	SAMP,2>10mL
16	N030044-001AMS,MS	16	1000	Unknown		04/30/2018 11:39	Finished	MS (5ppb), IWST-180129B,2>1
17	N030044-002A,SAMF	17	1000	Unknown		04/30/2018 11:49	Finished	SAMP,2>10mL
18	N030044-002AMS,MS	18	1000	Unknown		04/30/2018 11:58	Finished	MS (5ppb), IWST-180129B,2>1
19	N030044-003A,SAMF	19	1000	Unknown		04/30/2018 12:08	Finished	SAMP,2>10mL
20	N030044-003AMS,MS	20	1000	Unknown		04/30/2018 12:17	Finished	MS (5ppb), IWST-180129B,2>1
21	N030044-004A,SAMF	21	1000	Unknown		04/30/2018 12:26	Finished	SAMP,0.01>10mL
22	N030044-004AMS,MS	22	1000	Unknown		04/30/2018 12:36	Finished	MS (5ppb), IWST-180129B,0.0
23	CCV-1,CCV1,1,	23	1000	Unknown		04/30/2018 12:45	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	24	1000	Unknown		04/30/2018 12:55	Finished	CCB R180418A
25	N030044-005A,SAMF	25	1000	Unknown		04/30/2018 13:04	Finished	SAMP,0.2>10mL
26	N030044-005AMS,MS	26	1000	Unknown		04/30/2018 13:14	Finished	MS (5ppb), IWST-180129B,0.2
27	N030044-006A,SAMF	27	1000	Unknown		04/30/2018 13:23	Finished	SAMP,0.05>10mL
28	N030044-006AMS,MS	28	1000	Unknown		04/30/2018 13:33	Finished	MS (5ppb), IWST-180129B,0.0
29	N030044-007A,SAMF	29	1000	Unknown		04/30/2018 13:42	Finished	SAMP,0.05>10mL
30	N030044-007AMS,MS	30	1000	Unknown		04/30/2018 13:52	Finished	MS (5ppb), IWST-180129B,0.0
31	N030044-008A,SAMF	31	1000	Unknown		04/30/2018 14:01	Finished	SAMP,0.01>10mL
32	N030044-008AMS,MS	32	1000	Unknown		04/30/2018 14:10	Finished	MS (5ppb), IWST-180129B,0.0
33	N030044-009A,SAMF	33	1000	Unknown		04/30/2018 14:20	Finished	SAMP,0.2>10mL
34	N030044-009AMS,MS	34	1000	Unknown		04/30/2018 14:29	Finished	MS (5ppb), IWST-180129B,0.2
35	CCV-2,CCV,1,	35	1000	Unknown		04/30/2018 14:39	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	36	1000	Unknown		04/30/2018 14:48	Finished	CCB R180418A
37	N030044-010A,SAMF	37	1000	Unknown		04/30/2018 14:58	Finished	SAMP,10mL
38	N030044-010AMS,MS	38	1000	Unknown		04/30/2018 15:07	Finished	MS (1ppb), IWST-180129B,10
39	N030044-011A,SAMF	39	1000	Unknown		04/30/2018 15:17	Finished	SAMP,10mL
40	N030044-011AMS,MS	40	1000	Unknown		04/30/2018 15:26	Finished	MS (1ppb), IWST-180129B,10
41	N030044-001ADUP,D	41	1000	Unknown		04/30/2018 15:36	Finished	DUP,2>10mL
42	N030044-004AMSD,M	42	1000	Unknown		04/30/2018 15:45	Finished	MSD (5ppb), IWST-180129B,0.
43	N030044-002AMS,MS	43	1000	Unknown		04/30/2018 15:55	Finished	MS (5ppb), IWST-180129B,2>1
44	N029859-008A,SAMF	1	1000	Unknown		04/30/2018 16:06	Finished	SAMP,10mL
45	N029859-008AMS,MS	2	1000	Unknown		04/30/2018 16:17	Finished	MS (1ppb), IWST-180129B,10
46	N029859-009A,SAMF	3	1000	Unknown		04/30/2018 16:26	Finished	SAMP,10mL
47	CCV-3,CCV1,1,	4	1000	Unknown		04/30/2018 16:36	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	5	1000	Unknown		04/30/2018 16:45	Finished	CCB R180418A
49	N029859-009AMS,MS	6	1000	Unknown		04/30/2018 16:55	Finished	MS (1ppb), IWST-180129B,10
50	N029859-011A,SAMF	7	1000	Unknown		04/30/2018 17:04	Finished	SAMP,10mL
51	N029859-011AMS,MS	8	1000	Unknown		04/30/2018 17:14	Finished	MS (1ppb), IWST-180129B,10
52	CCV-4,CCV,1,	9	1000	Unknown		04/30/2018 17:23	Finished	CCV @5ppb, IWST-180129A
53	CCB-4,CCB,1,	10	1000	Unknown		04/30/2018 17:33	Finished	CCB R180418A
54	SHUTDOWN	11	1000	Unknown		04/30/2018 17:42	Finished	
55	Eluent: R180430A	12	1000	Unknown		n.a.	Finished	Eluent
56	PCR: R180430B	13	1000	Unknown		n.a.	Finished	Post-Column Reagent

jba 5/6/2018

INJECTION LOG: 180511A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/11/18 9:15 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	05/11/18 9:26 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/11/18 9:35 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	05/11/18 9:45 AM	Reported
14	MB-R124051	MBLK	1	Hexavalent Chromium	05/11/18 9:54 AM	Reported
15	LCS-R124051	LCS	1	Hexavalent Chromium	05/11/18 10:03 AM	Reported
16	N030295-001A	SAMP	200	Hexavalent Chromium	05/11/18 10:13 AM	Not Reported
17	N030147-001A	SAMP	500	Hexavalent Chromium	05/11/18 10:22 AM	Reported
18	N030147-001AMS	MS	500	Hexavalent Chromium	05/11/18 10:32 AM	Reported
19	N030147-002A	SAMP	100	Hexavalent Chromium	05/11/18 10:41 AM	Reported
20	N030147-002AMS	MS	100	Hexavalent Chromium	05/11/18 10:51 AM	Reported
21	N030147-003A	SAMP	5	Hexavalent Chromium	05/11/18 11:00 AM	Reported
22	N030147-003AMS	MS	5	Hexavalent Chromium	05/11/18 11:10 AM	Reported
23	N030147-002AMSD	MSD	100	Hexavalent Chromium	05/11/18 11:19 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	05/11/18 11:29 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	05/11/18 11:38 AM	Reported
26	N030147-004A	SAMP	5	Hexavalent Chromium	05/11/18 11:48 AM	Reported
27	N030147-004AMS	MS	5	Hexavalent Chromium	05/11/18 11:57 AM	Reported
28	N030147-005A	SAMP	5	Hexavalent Chromium	05/11/18 12:06 PM	Reported
29	N030147-005AMS	MS	5	Hexavalent Chromium	05/11/18 12:16 PM	Reported
30	N030147-006A	SAMP	20	Hexavalent Chromium	05/11/18 12:25 PM	Reported
31	N030147-006AMS	MS	20	Hexavalent Chromium	05/11/18 12:35 PM	Reported
32	N030147-007A	SAMP	200	Hexavalent Chromium	05/11/18 12:44 PM	Reported
33	N030147-007AMS	MS	200	Hexavalent Chromium	05/11/18 12:54 PM	Reported
34	N030147-008A	SAMP	200	Hexavalent Chromium	05/11/18 1:03 PM	Reported
35	N030147-008AMS	MS	200	Hexavalent Chromium	05/11/18 1:13 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	05/11/18 1:22 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	05/11/18 1:32 PM	Reported
38	N030147-009A	SAMP	5	Hexavalent Chromium	05/11/18 1:41 PM	Reported
39	N030147-009AMS	MS	5	Hexavalent Chromium	05/11/18 1:51 PM	Reported
40	N030147-010A	SAMP	5	Hexavalent Chromium	05/11/18 2:00 PM	Not Reported
41	N030147-010AMS	MS	5	Hexavalent Chromium	05/11/18 2:09 PM	Not Reported
42	N030147-011A	SAMP	5	Hexavalent Chromium	05/11/18 2:19 PM	Reported

INJECTION LOG: 180511A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030147-011AMS	MS	5	Hexavalent Chromium	05/11/18 2:28 PM	Reported
44	N030147-012A	SAMP	5	Hexavalent Chromium	05/11/18 2:38 PM	Reported
45	N030147-012AMS	MS	5	Hexavalent Chromium	05/11/18 2:47 PM	Reported
46	N030147-013A	SAMP	5	Hexavalent Chromium	05/11/18 2:57 PM	Reported
47	N030147-013AMS	MS	5	Hexavalent Chromium	05/11/18 3:06 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	05/11/18 3:16 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	05/11/18 3:25 PM	Reported
50	N030147-014A	SAMP	1	Hexavalent Chromium	05/11/18 3:35 PM	Reported
51	N030147-014AMS	MS	1	Hexavalent Chromium	05/11/18 3:47 PM	Reported
52	N030147-015A	SAMP	1	Hexavalent Chromium	05/11/18 3:56 PM	Reported
53	N030147-015AMS	MS	1	Hexavalent Chromium	05/11/18 4:06 PM	Reported
54	N030147-016A	SAMP	1	Hexavalent Chromium	05/11/18 4:15 PM	Reported
55	N030147-016AMS	MS	1	Hexavalent Chromium	05/11/18 4:24 PM	Reported
56	N030147-003A	SAMP	1	Hexavalent Chromium	05/11/18 4:34 PM	Not Reported
57	N030147-003AMS	MS	1	Hexavalent Chromium	05/11/18 4:43 PM	Not Reported
58	N030147-004A	SAMP	1	Hexavalent Chromium	05/11/18 4:53 PM	Not Reported
59	N030147-004AMS	MS	1	Hexavalent Chromium	05/11/18 5:02 PM	Not Reported
60	CCV-5	CCV	1	Hexavalent Chromium	05/11/18 5:12 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	05/11/18 5:21 PM	Reported
62	N030147-005A	SAMP	1	Hexavalent Chromium	05/11/18 5:31 PM	Not Reported
63	N030147-005AMS	MS	1	Hexavalent Chromium	05/11/18 5:40 PM	Not Reported
64	N030147-009A	SAMP	1	Hexavalent Chromium	05/11/18 5:50 PM	Not Reported
65	N030147-009AMS	MS	1	Hexavalent Chromium	05/11/18 5:59 PM	Not Reported
66	N030147-011A	SAMP	1	Hexavalent Chromium	05/11/18 6:09 PM	Not Reported
67	N030147-011AMS	MS	1	Hexavalent Chromium	05/11/18 6:18 PM	Not Reported
68	N030147-012A	SAMP	1	Hexavalent Chromium	05/11/18 6:27 PM	Not Reported
69	N030147-012AMS	MS	1	Hexavalent Chromium	05/11/18 6:37 PM	Not Reported
70	N030147-013A	SAMP	1	Hexavalent Chromium	05/11/18 6:46 PM	Not Reported
71	N030147-013AMS	MS	1	Hexavalent Chromium	05/11/18 6:56 PM	Not Reported
72	CCV-6	CCV1	1	Hexavalent Chromium	05/11/18 7:05 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	05/11/18 7:15 PM	Reported
74	N030147-006ADUP	DUP	20	Hexavalent Chromium	05/11/18 7:24 PM	Reported
75	N030295-006A	SAMP	1000	Hexavalent Chromium	05/11/18 7:34 PM	Not Reported
76	CCV-7	CCV	1	Hexavalent Chromium	05/11/18 7:43 PM	Reported
77	CCB-7	CCB	1	Hexavalent Chromium	05/11/18 7:53 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180511A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**11/May/18 20:23:22**
No. of Injections:	**80**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/11/2018 09:15	Finished	BLANK
11	CCV-1,CCV,1,	2	1000	Unknown		05/11/2018 09:26	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	3	1000	Unknown		05/11/2018 09:35	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	4	1000	Unknown		05/11/2018 09:45	Finished	CCB R180409B
14	MB-H2O,MBLK,1,	5	1000	Unknown		05/11/2018 09:54	Finished	MB R180409B
15	LCS-H2O,LCS,1,	6	1000	Unknown		05/11/2018 10:03	Finished	LCS, IWST-180129B
16	N030295-001A,SAMP	7	1000	Unknown		05/11/2018 10:13	Finished	SAMP,0.05>10mL
17	N030147-001A,SAMP	8	1000	Unknown		05/11/2018 10:22	Finished	SAMP,0.02>10mL
18	N030147-001AMS,MS	9	1000	Unknown		05/11/2018 10:32	Finished	MS (5ppb), IWST-180129B,0.0
19	N030147-002A,SAMP	10	1000	Unknown		05/11/2018 10:41	Finished	SAMP,0.1>10mL
20	N030147-002AMS,MS	11	1000	Unknown		05/11/2018 10:51	Finished	MS (5ppb), IWST-180129B,0.1
21	N030147-003A,SAMP	12	1000	Unknown		05/11/2018 11:00	Finished	SAMP,2>10mL
22	N030147-003AMS,MS	13	1000	Unknown		05/11/2018 11:10	Finished	MS (1ppb), IWST-180129B,2>1
23	N030147-002AMSD,M	14	1000	Unknown		05/11/2018 11:19	Finished	MSD (5ppb), IWST-180129B,0.
24	CCV-2,CCV1,1,	15	1000	Unknown		05/11/2018 11:29	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	16	1000	Unknown		05/11/2018 11:38	Finished	CCB R180409B
26	N030147-004A,SAMP	17	1000	Unknown		05/11/2018 11:48	Finished	SAMP,2>10mL
27	N030147-004AMS,MS	18	1000	Unknown		05/11/2018 11:57	Finished	MS (1ppb), IWST-180129B,2>1
28	N030147-005A,SAMP	19	1000	Unknown		05/11/2018 12:06	Finished	SAMP,2>10mL
29	N030147-005AMS,MS	20	1000	Unknown		05/11/2018 12:16	Finished	MS (1ppb), IWST-180129B,2>1
30	N030147-006A,SAMP	21	1000	Unknown		05/11/2018 12:25	Finished	SAMP,0.5>10mL
31	N030147-006AMS,MS	22	1000	Unknown		05/11/2018 12:35	Finished	MS (5ppb), IWST-180129B,0.5
32	N030147-007A,SAMP	23	1000	Unknown		05/11/2018 12:44	Finished	SAMP,005>10mL
33	N030147-007AMS,MS	24	1000	Unknown		05/11/2018 12:54	Finished	MS (5ppb), IWST-180129B,0.0
34	N030147-008A,SAMP	25	1000	Unknown		05/11/2018 13:03	Finished	SAMP,005>10mL
35	N030147-008AMS,MS	26	1000	Unknown		05/11/2018 13:13	Finished	MS (5ppb), IWST-180129B,0.0
36	CCV-3,CCV,1,	27	1000	Unknown		05/11/2018 13:22	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	28	1000	Unknown		05/11/2018 13:32	Finished	CCB R180409B
38	N030147-009A,SAMP	29	1000	Unknown		05/11/2018 13:41	Finished	SAMP,2>10mL
39	N030147-009AMS,MS	30	1000	Unknown		05/11/2018 13:51	Finished	MS (1ppb), IWST-180129B,2>1
40	N030147-010A,SAMP	31	1000	Unknown		05/11/2018 14:00	Finished	SAMP,2>10mL
41	N030147-010AMS,MS	32	1000	Unknown		05/11/2018 14:09	Finished	MS (1ppb), IWST-180129B,2>1
42	N030147-011A,SAMP	33	1000	Unknown		05/11/2018 14:19	Finished	SAMP,2>10mL
43	N030147-011AMS,MS	34	1000	Unknown		05/11/2018 14:28	Finished	MS (1ppb), IWST-180129B,2>1
44	N030147-012A,SAMP	35	1000	Unknown		05/11/2018 14:38	Finished	SAMP,2>10mL
45	N030147-012AMS,MS	36	1000	Unknown		05/11/2018 14:47	Finished	MS (1ppb), IWST-180129B,2>1
46	N030147-013A,SAMP	37	1000	Unknown		05/11/2018 14:57	Finished	SAMP,2>10mL
47	N030147-013AMS,MS	38	1000	Unknown		05/11/2018 15:06	Finished	MS (1ppb), IWST-180129B,2>1
48	CCV-4,CCV1,1,	39	1000	Unknown		05/11/2018 15:16	Finished	CCV @10ppb, IWST-180129A
49	CCB-4,CCB,1,	40	1000	Unknown		05/11/2018 15:25	Finished	CCB R180409B
50	N030147-014A,SAMP	1	1000	Unknown		05/11/2018 15:35	Finished	SAMP,10mL
51	N030147-014AMS,MS	2	1000	Unknown		05/11/2018 15:47	Finished	MS (1ppb), IWST-180129B,10
52	N030147-015A,SAMP	3	1000	Unknown		05/11/2018 15:56	Finished	SAMP,10mL
53	N030147-015AMS,MS	4	1000	Unknown		05/11/2018 16:06	Finished	MS (1ppb), IWST-180129B,10
54	N030147-016A,SAMP	5	1000	Unknown		05/11/2018 16:15	Finished	SAMP,10mL
55	N030147-016AMS,MS	6	1000	Unknown		05/11/2018 16:24	Finished	MS (1ppb), IWST-180129B,10
56	N030147-003A,SAMP	7	1000	Unknown		05/11/2018 16:34	Finished	SAMP,10mL
57	N030147-003AMS,MS	8	1000	Unknown		05/11/2018 16:43	Finished	MS (1ppb), IWST-180129B,10
58	N030147-004A,SAMP	9	1000	Unknown		05/11/2018 16:53	Finished	SAMP,10mL
59	N030147-004AMS,MS	10	1000	Unknown		05/11/2018 17:02	Finished	MS (1ppb), IWST-180129B,10
60	CCV-5,CCV,1,	11	1000	Unknown		05/11/2018 17:12	Finished	CCV @5ppb, IWST-180129A

61	CCB-5,CCB,1,	12	1000	Unknown		05/11/2018 17:21	Finished	CCB R180418A
62	N030147-005A,SAMF	13	1000	Unknown		05/11/2018 17:31	Finished	SAMP,10mL
63	N030147-005AMS,MS	14	1000	Unknown		05/11/2018 17:40	Finished	MS (1ppb), IWST-180129B,10
64	N030147-009A,SAMF	15	1000	Unknown		05/11/2018 17:50	Finished	SAMP,10mL
65	N030147-009AMS,MS	16	1000	Unknown		05/11/2018 17:59	Finished	MS (1ppb), IWST-180129B,10
66	N030147-011A,SAMF	17	1000	Unknown		05/11/2018 18:09	Finished	SAMP,10mL
67	N030147-011AMS,MS	18	1000	Unknown		05/11/2018 18:18	Finished	MS (1ppb), IWST-180129B,10
68	N030147-012A,SAMF	19	1000	Unknown		05/11/2018 18:27	Finished	SAMP,10mL
69	N030147-012AMS,MS	20	1000	Unknown		05/11/2018 18:37	Finished	MS (1ppb), IWST-180129B,10
70	N030147-013A,SAMF	21	1000	Unknown		05/11/2018 18:46	Finished	SAMP,10mL
71	N030147-013AMS,MS	22	1000	Unknown		05/11/2018 18:56	Finished	MS (1ppb), IWST-180129B,10
72	CCV-6,CCV1,1,	23	1000	Unknown		05/11/2018 19:05	Finished	CCV @10ppb, IWST-180129A
73	CCB-6,CCB,1,	24	1000	Unknown		05/11/2018 19:15	Finished	CCB R180409B
74	N030147-006ADUP,D	25	1000	Unknown		05/11/2018 19:24	Finished	DUP,0.5>10mL
75	N030295-006A,SAMF	26	1000	Unknown		05/11/2018 19:34	Finished	SAMP,0.01>10mL
76	CCV-7,CCV,1,	27	1000	Unknown		05/11/2018 19:43	Finished	CCV @5ppb, IWST-180129A
77	CCB-7,CCB,1,	28	1000	Unknown		05/11/2018 19:53	Finished	CCB R180409B
78	SHUTDOWN	29	1000	Unknown		05/11/2018 20:02	Finished	
79	Eluent: R180509A	30	1000	Unknown		n.a.	Finished	Eluent
80	PCR: R180509B	31	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180515A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/15/18 12:40 PM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/15/18 12:51 PM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/15/18 1:00 PM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/15/18 1:09 PM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/15/18 1:19 PM	Reported
15	MB-R124086	MBLK	1	Hexavalent Chromium	05/15/18 1:28 PM	Reported
16	LCS-R124086	LCS	1	Hexavalent Chromium	05/15/18 1:38 PM	Reported
17	N030189-011A	SAMP	1	Hexavalent Chromium	05/15/18 1:47 PM	Reported
18	N030189-011ADUP	DUP	1	Hexavalent Chromium	05/15/18 1:57 PM	Reported
19	N030189-011AMS	MS	1	Hexavalent Chromium	05/15/18 2:06 PM	Reported
20	N030189-011AMSD	MSD	1	Hexavalent Chromium	05/15/18 2:16 PM	Reported
21	N030147-010A	SAMP	1	Hexavalent Chromium	05/15/18 2:25 PM	Reported
22	N030147-010AMS	MS	1	Hexavalent Chromium	05/15/18 2:35 PM	Reported
23	N030091-020A	SAMP	1	Hexavalent Chromium	05/15/18 2:44 PM	Not Reported
24	N030091-020AMS	MS	1	Hexavalent Chromium	05/15/18 2:54 PM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/15/18 3:03 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/15/18 3:12 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180515A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**16/May/18 08:47:10**
No. of Injections:	**29**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/15/2018 12:40	Finished	BLANK
11	BLANK	2	1000	Unknown		05/15/2018 12:51	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		05/15/2018 13:00	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/15/2018 13:09	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		05/15/2018 13:19	Finished	CCB R180409B
15	MB-H2O,MBLK,1,	6	1000	Unknown		05/15/2018 13:28	Finished	MB R180409B
16	LCS-H2O,LCS,1,	7	1000	Unknown		05/15/2018 13:38	Finished	LCS, IWST-180129B
17	N030189-011A,SAMP	8	1000	Unknown		05/15/2018 13:47	Finished	SAMP,10mL
18	N030189-011ADUP,D	9	1000	Unknown		05/15/2018 13:57	Finished	DUP,10mL
19	N030189-011AMS,MS	10	1000	Unknown		05/15/2018 14:06	Finished	MS (1ppb), IWST-180129B,10
20	N030189-011AMSD,M	11	1000	Unknown		05/15/2018 14:16	Finished	MSD (1ppb), IWST-180129B,1(
21	N030147-010A,SAMP	12	1000	Unknown		05/15/2018 14:25	Finished	SAMP,10mL
22	N030147-010AMS,MS	13	1000	Unknown		05/15/2018 14:35	Finished	MS (5ppb), IWST-180129B,10
23	N030091-020A,SAMP	14	1000	Unknown		05/15/2018 14:44	Finished	SAMP,10mL
24	N030091-020AMS,MS	15	1000	Unknown		05/15/2018 14:54	Finished	MS (1ppb), IWST-180129B,10
25	CCV-2,CCV1,1,	16	1000	Unknown		05/15/2018 15:03	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	17	1000	Unknown		05/15/2018 15:12	Finished	CCB R180418A
27	SHUTDOWN	20	1000	Unknown		05/15/2018 15:56	Finished	
28	Eluent: R180515A	20	1000	Unknown		n.a.	Finished	Eluent
29	PCR: R180515B	21	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 5/4/18
Time Prepared: 0817H / 1652
Prepared By: NBA

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: R180504A
NH4OH + NH4SO4 buffer: R180409B / R180418A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030143-001A	9.56	–	~250ml	~250ml		
2)	N030188-007C	2.83	9.48	↓	↓	+0.2ml R1804(18A / 10ml FV	
3)							
4)							
5)							
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 5/7/18
Time Prepared: 1358H
Prepared By: NBA

Slope: 98.07
pH4: 4.02 @25.0°C
7: 7.01 @25.0°C
10: 10.02 @25.0°C
CV: 7.02 @25.0°C

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: R1805 09A
NH4OH + NH4SO4 buffer: R1804 09B

6N NaOH: R1712 29A / R1805 15A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030147-001A	9.20	9.60	~250ml	~250ml	+5 drops 6N NaOH	
2)	2A	9.21	9.57			+5 " "	
3)	3A	9.59	–				
4)	4A	9.64	–				
5)	5A	9.51	–				
6)	6A	9.43	–				
7)	7A	9.50	–				
8)	8A	9.51	–				
9)	9A	9.49	–				
10)	10A	9.53	–				
11)	11A	9.42	–				
12)	12A	9.37	–				
13)	13A	9.43	–				
14)	14A	9.68	–				
15)	15A	9.67	–				
	16A	9.67	–	↓	↓		

Logbook No. 14

nba 5/18/2018

RB 05/22/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/30/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0607	0.2618	1.2924	2.5813	3.8731	5.1050	0.9999

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

RJB 05/22/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

ASSET LABORATORIES

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ICV** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3026050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.194	0.20	5.000	0	104	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3026051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **CCV** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.027	0.20	5.000	0	101	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.225	0.20	0.2000	0	113	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026066**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.106	0.20	10.00	0	101	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **CCV** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.091	0.20	5.000	0	102	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.123	0.20	10.00	0	101	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **CCV** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.007	0.20	5.000	0	100	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ZZZZZZ** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.201	0.20	10.00	0	102	95	105				

Sample ID **CCV-7** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **CCV** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.941	0.20	5.000	0	98.8	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **ICV** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3027444**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.194	0.20	5.000	0	104	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **ZZZZZZ** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3027445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **CCV** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.950	0.20	5.000	0	99.0	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **ZZZZZZ** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.224	0.20	0.2000	0	112	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **ZZZZZZ** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.086	0.20	10.00	0	101	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **ICB** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3026052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **CCB** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **CCB** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026067**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **CCB** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **CCB** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026091**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **CCB** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **CCB** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124051**
Client ID: **CCB** Batch ID: **R124051** TestNo: **EPA 218.6** Analysis Date: **5/11/2018** SeqNo: **3026104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **ICB** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3027446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **CCB** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124086**
Client ID: **CCB** Batch ID: **R124086** TestNo: **EPA 218.6** Analysis Date: **5/15/2018** SeqNo: **3027459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/11/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.206		
CCV-2	4.206		
CCV-3	4.206		
CCV-4	4.206		
CCV-5	4.206		
CCV-6	4.206		
CCV-7	4.206		
Average	4.206		
Actual RT Window	4.126 -	4.286	
Applied RT Window	4.006 -	4.406	
MB-R124051	N.A.		N.A.
LCS-R124051	4.198		PASS
N030295-001A	4.206		PASS
N030147-001A	4.198		PASS
N030147-001AMS	4.206		PASS
N030147-002A	4.198		PASS
N030147-002AMS	4.206		PASS
N030147-003A	4.131		PASS
N030147-003AMS	4.140		PASS
N030147-002AMSD	4.206		PASS
N030147-004A	4.140		PASS
N030147-004AMS	4.140		PASS
N030147-005A	4.131		PASS
N030147-005AMS	4.140		PASS
N030147-006A	4.190		PASS
N030147-006AMS	4.206		PASS
N030147-007A	4.206		PASS
N030147-007AMS	4.206		PASS
N030147-008A	4.206		PASS
N030147-008AMS	4.206		PASS

RB 05/22/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/11/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.206		
CCV-2	4.206		
CCV-3	4.206		
CCV-4	4.206		
CCV-5	4.206		
CCV-6	4.206		
CCV-7	4.206		
Average	4.206		
Actual RT Window	4.126 -	4.286	
Applied RT Window	4.006 -	4.406	
N030147-009A	4.156		PASS
N030147-009AMS	4.156		PASS
N030147-010A	4.181		PASS
N030147-010AMS	4.181		PASS
N030147-011A	N.A.		N.A.
N030147-011AMS	4.156		PASS
N030147-012A	N.A.		N.A.
N030147-012AMS	4.131		PASS
N030147-013A	N.A.		N.A.
N030147-013AMS	4.131		PASS
N030147-014A	4.198		PASS
N030147-014AMS	4.206		PASS
N030147-015A	4.206		PASS
N030147-015AMS	4.206		PASS
N030147-016A	N.A.		N.A.
N030147-016AMS	4.206		PASS
N030147-003A	N.A.		N.A.
N030147-003AMS	N.A.		N.A.
N030147-004A	N.A.		N.A.
N030147-004AMS	4.165		PASS
N030147-005A	N.A.		N.A.

RB 05/22/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/11/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.206		
CCV-2	4.206		
CCV-3	4.206		
CCV-4	4.206		
CCV-5	4.206		
CCV-6	4.206		
CCV-7	4.206		
Average	4.206		
Actual RT Window	4.126 -	4.286	
Applied RT Window	4.006 -	4.406	
N030147-005AMS	N.A.		N.A.
N030147-009A	3.831		FAIL
N030147-009AMS	3.823		FAIL
N030147-011A	N.A.		N.A.
N030147-011AMS	3.848		FAIL
N030147-012A	N.A.		N.A.
N030147-012AMS	N.A.		N.A.
N030147-013A	N.A.		N.A.
N030147-013AMS	N.A.		N.A.
N030147-006ADUP	4.206		PASS
N030295-006A	4.215		PASS

RJB 05/22/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/15/2018

Sample Name	Retention Time	Evaluation
ICV	4.248	
CCV-1	4.206	
CCV-2	4.206	

Average	4.206	
Actual RT Window	4.126 -	4.286
Applied RT Window	4.006 -	4.406

MB-R124086	N.A.	N.A.
LCS-R124086	4.206	PASS
N030189-011A	4.198	PASS
N030189-011ADUP	4.198	PASS
N030189-011AMS	4.198	PASS
N030189-011AMSD	4.198	PASS
N030147-010A	4.031	PASS
N030147-010AMS	4.031	PASS
N030091-020A	4.173	PASS
N030091-020AMS	4.190	PASS

RB 05/22/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2018 (1st Quarter)

Method Name:	**Hexavalent Chromium by IC**	Matrix:	**WATER**
Method Number:	EPA Method 218.6/7199	Unit:	µg/L
Analysis Date(s):	3/21/2018		
Analyst:	Ria Abes		

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.116

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.201	**100**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	04/30/18 10:42 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/30/18 10:52 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/30/18 11:01 AM	Reported
13	MB-R123727	MBLK	1	Hexavalent Chromium	04/30/18 11:11 AM	Reported
14	LCS-R123727	LCS	1	Hexavalent Chromium	04/30/18 11:20 AM	Reported
15	N030044-001A	SAMP	5	Hexavalent Chromium	04/30/18 11:30 AM	Reported
16	N030044-001AMS	MS	5	Hexavalent Chromium	04/30/18 11:39 AM	Reported
17	N030044-002A	SAMP	5	Hexavalent Chromium	04/30/18 11:49 AM	Reported
18	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 11:58 AM	Not Reported
19	N030044-003A	SAMP	5	Hexavalent Chromium	04/30/18 12:08 PM	Reported
20	N030044-003AMS	MS	5	Hexavalent Chromium	04/30/18 12:17 PM	Reported
21	N030044-004A	SAMP	1000	Hexavalent Chromium	04/30/18 12:26 PM	Reported
22	N030044-004AMS	MS	1000	Hexavalent Chromium	04/30/18 12:36 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/30/18 12:45 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/30/18 12:55 PM	Reported
25	N030044-005A	SAMP	50	Hexavalent Chromium	04/30/18 1:04 PM	Reported
26	N030044-005AMS	MS	50	Hexavalent Chromium	04/30/18 1:14 PM	Reported
27	N030044-006A	SAMP	200	Hexavalent Chromium	04/30/18 1:23 PM	Reported
28	N030044-006AMS	MS	200	Hexavalent Chromium	04/30/18 1:33 PM	Reported
29	N030044-007A	SAMP	200	Hexavalent Chromium	04/30/18 1:42 PM	Reported
30	N030044-007AMS	MS	200	Hexavalent Chromium	04/30/18 1:52 PM	Reported
31	N030044-008A	SAMP	1000	Hexavalent Chromium	04/30/18 2:01 PM	Reported
32	N030044-008AMS	MS	1000	Hexavalent Chromium	04/30/18 2:10 PM	Reported
33	N030044-009A	SAMP	50	Hexavalent Chromium	04/30/18 2:20 PM	Reported
34	N030044-009AMS	MS	50	Hexavalent Chromium	04/30/18 2:29 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/30/18 2:39 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/30/18 2:48 PM	Reported
37	N030044-010A	SAMP	1	Hexavalent Chromium	04/30/18 2:58 PM	Reported
38	N030044-010AMS	MS	1	Hexavalent Chromium	04/30/18 3:07 PM	Reported
39	N030044-011A	SAMP	1	Hexavalent Chromium	04/30/18 3:17 PM	Reported
40	N030044-011AMS	MS	1	Hexavalent Chromium	04/30/18 3:26 PM	Reported
41	N030044-001ADUP	DUP	5	Hexavalent Chromium	04/30/18 3:36 PM	Reported
42	N030044-004AMSD	MSD	1000	Hexavalent Chromium	04/30/18 3:45 PM	Reported

rba 5/6/2018

Nancy 5/7/2018

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 3:55 PM	Reported
44	N029859-008A	SAMP	1	Hexavalent Chromium	04/30/18 4:06 PM	Not Reported
45	N029859-008AMS	MS	1	Hexavalent Chromium	04/30/18 4:17 PM	Not Reported
46	N029859-009A	SAMP	1	Hexavalent Chromium	04/30/18 4:26 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/30/18 4:36 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/30/18 4:45 PM	Reported
49	N029859-009AMS	MS	1	Hexavalent Chromium	04/30/18 4:55 PM	Not Reported
50	N029859-011A	SAMP	1	Hexavalent Chromium	04/30/18 5:04 PM	Not Reported
51	N029859-011AMS	MS	1	Hexavalent Chromium	04/30/18 5:14 PM	Not Reported
52	CCV-4	CCV	1	Hexavalent Chromium	04/30/18 5:23 PM	Reported
53	CCB-4	CCB	1	Hexavalent Chromium	04/30/18 5:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180430A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**30/Apr/18 18:19:59**
No. of Injections:	**56**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		04/30/2018 10:42	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/30/2018 10:52	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/30/2018 11:01	Finished	ICB R180418A
13	MB-H2O,MBLK,1,	13	1000	Unknown		04/30/2018 11:11	Finished	MB R180418A
14	LCS-H2O,LCS,1,	14	1000	Unknown		04/30/2018 11:20	Finished	LCS, IWST-180129B
15	N030044-001A,SAMF	15	1000	Unknown		04/30/2018 11:30	Finished	SAMP,2>10mL
16	N030044-001AMS,MS	16	1000	Unknown		04/30/2018 11:39	Finished	MS (5ppb), IWST-180129B,2>1
17	N030044-002A,SAMF	17	1000	Unknown		04/30/2018 11:49	Finished	SAMP,2>10mL
18	N030044-002AMS,MS	18	1000	Unknown		04/30/2018 11:58	Finished	MS (5ppb), IWST-180129B,2>1
19	N030044-003A,SAMF	19	1000	Unknown		04/30/2018 12:08	Finished	SAMP,2>10mL
20	N030044-003AMS,MS	20	1000	Unknown		04/30/2018 12:17	Finished	MS (5ppb), IWST-180129B,2>1
21	N030044-004A,SAMF	21	1000	Unknown		04/30/2018 12:26	Finished	SAMP,0.01>10mL
22	N030044-004AMS,MS	22	1000	Unknown		04/30/2018 12:36	Finished	MS (5ppb), IWST-180129B,0.0
23	CCV-1,CCV1,1,	23	1000	Unknown		04/30/2018 12:45	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	24	1000	Unknown		04/30/2018 12:55	Finished	CCB R180418A
25	N030044-005A,SAMF	25	1000	Unknown		04/30/2018 13:04	Finished	SAMP,0.2>10mL
26	N030044-005AMS,MS	26	1000	Unknown		04/30/2018 13:14	Finished	MS (5ppb), IWST-180129B,0.2
27	N030044-006A,SAMF	27	1000	Unknown		04/30/2018 13:23	Finished	SAMP,0.05>10mL
28	N030044-006AMS,MS	28	1000	Unknown		04/30/2018 13:33	Finished	MS (5ppb), IWST-180129B,0.0
29	N030044-007A,SAMF	29	1000	Unknown		04/30/2018 13:42	Finished	SAMP,0.05>10mL
30	N030044-007AMS,MS	30	1000	Unknown		04/30/2018 13:52	Finished	MS (5ppb), IWST-180129B,0.0
31	N030044-008A,SAMF	31	1000	Unknown		04/30/2018 14:01	Finished	SAMP,0.01>10mL
32	N030044-008AMS,MS	32	1000	Unknown		04/30/2018 14:10	Finished	MS (5ppb), IWST-180129B,0.0
33	N030044-009A,SAMF	33	1000	Unknown		04/30/2018 14:20	Finished	SAMP,0.2>10mL
34	N030044-009AMS,MS	34	1000	Unknown		04/30/2018 14:29	Finished	MS (5ppb), IWST-180129B,0.2
35	CCV-2,CCV,1,	35	1000	Unknown		04/30/2018 14:39	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	36	1000	Unknown		04/30/2018 14:48	Finished	CCB R180418A
37	N030044-010A,SAMF	37	1000	Unknown		04/30/2018 14:58	Finished	SAMP,10mL
38	N030044-010AMS,MS	38	1000	Unknown		04/30/2018 15:07	Finished	MS (1ppb), IWST-180129B,10
39	N030044-011A,SAMF	39	1000	Unknown		04/30/2018 15:17	Finished	SAMP,10mL
40	N030044-011AMS,MS	40	1000	Unknown		04/30/2018 15:26	Finished	MS (1ppb), IWST-180129B,10
41	N030044-001ADUP,D	41	1000	Unknown		04/30/2018 15:36	Finished	DUP,2>10mL
42	N030044-004AMSD,M	42	1000	Unknown		04/30/2018 15:45	Finished	MSD (5ppb), IWST-180129B,0.
43	N030044-002AMS,MS	43	1000	Unknown		04/30/2018 15:55	Finished	MS (5ppb), IWST-180129B,2>1
44	N029859-008A,SAMF	1	1000	Unknown		04/30/2018 16:06	Finished	SAMP,10mL
45	N029859-008AMS,MS	2	1000	Unknown		04/30/2018 16:17	Finished	MS (1ppb), IWST-180129B,10
46	N029859-009A,SAMF	3	1000	Unknown		04/30/2018 16:26	Finished	SAMP,10mL
47	CCV-3,CCV1,1,	4	1000	Unknown		04/30/2018 16:36	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	5	1000	Unknown		04/30/2018 16:45	Finished	CCB R180418A
49	N029859-009AMS,MS	6	1000	Unknown		04/30/2018 16:55	Finished	MS (1ppb), IWST-180129B,10
50	N029859-011A,SAMF	7	1000	Unknown		04/30/2018 17:04	Finished	SAMP,10mL
51	N029859-011AMS,MS	8	1000	Unknown		04/30/2018 17:14	Finished	MS (1ppb), IWST-180129B,10
52	CCV-4,CCV,1,	9	1000	Unknown		04/30/2018 17:23	Finished	CCV @5ppb, IWST-180129A
53	CCB-4,CCB,1,	10	1000	Unknown		04/30/2018 17:33	Finished	CCB R180418A
54	SHUTDOWN	11	1000	Unknown		04/30/2018 17:42	Finished	
55	Eluent: R180430A	12	1000	Unknown		n.a.	Finished	Eluent
56	PCR: R180430B	13	1000	Unknown		n.a.	Finished	Post-Column Reagent

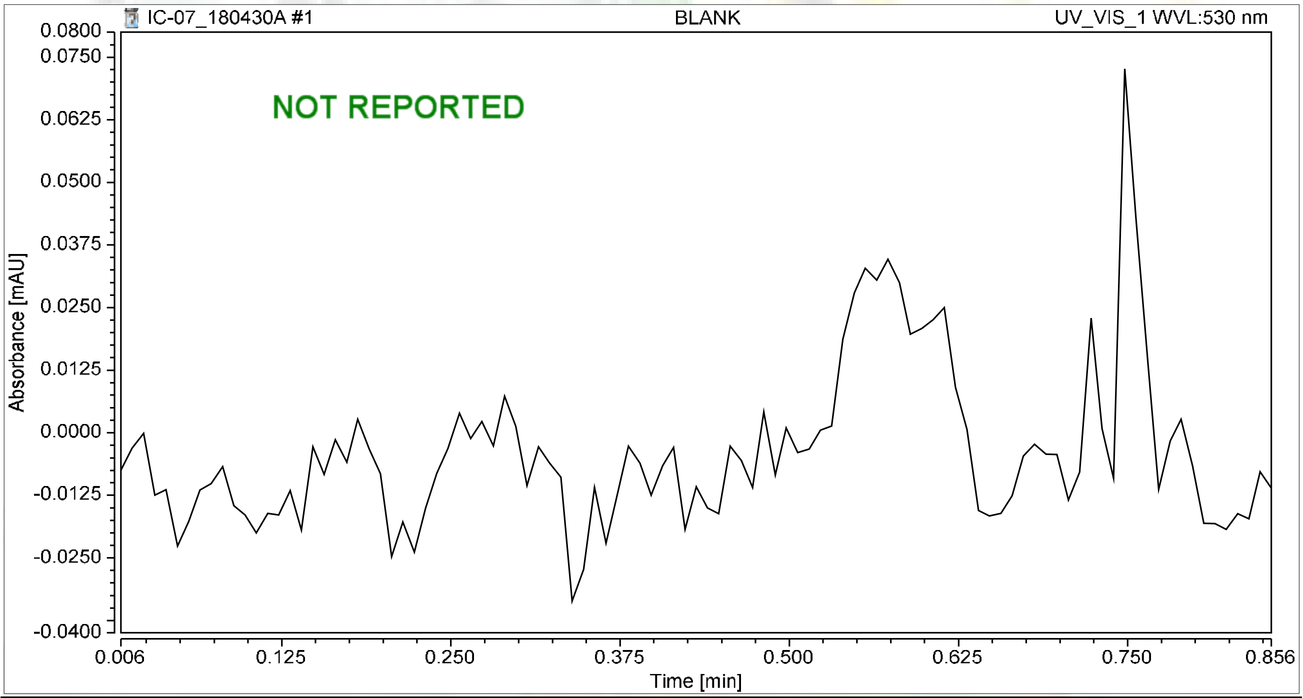
rba 5/6/2018

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.85**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

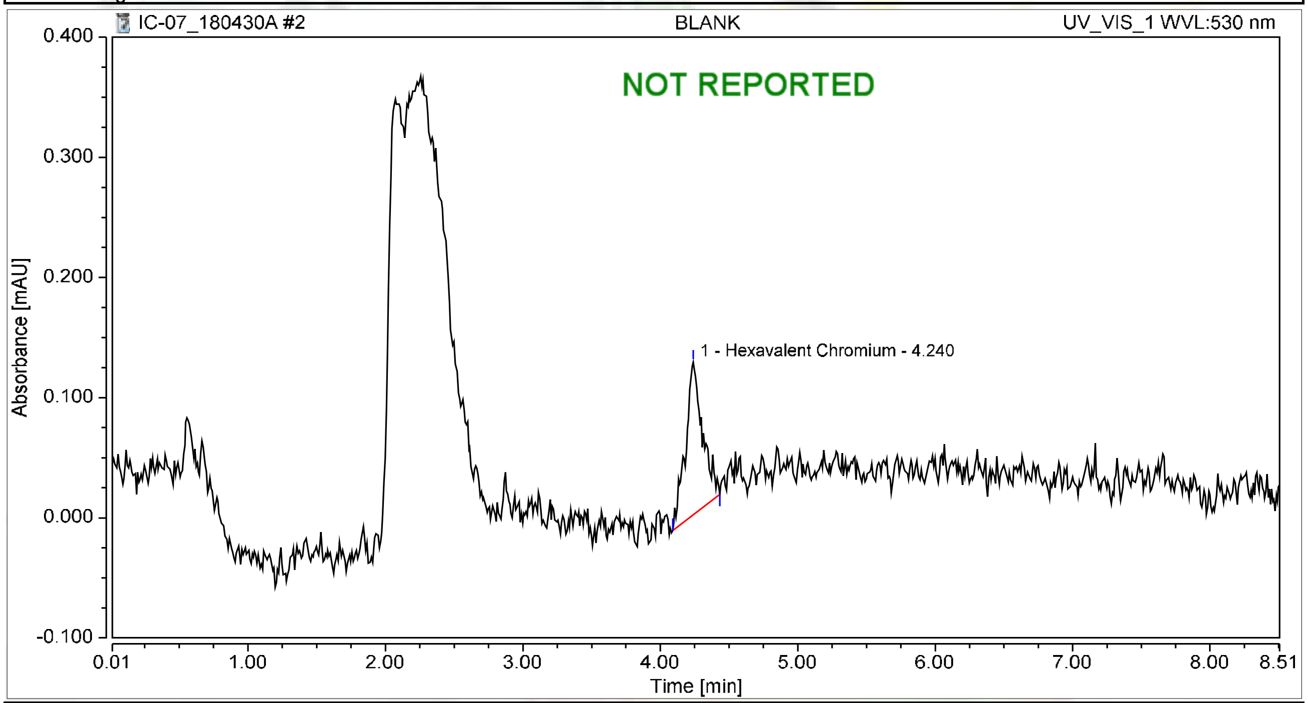
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

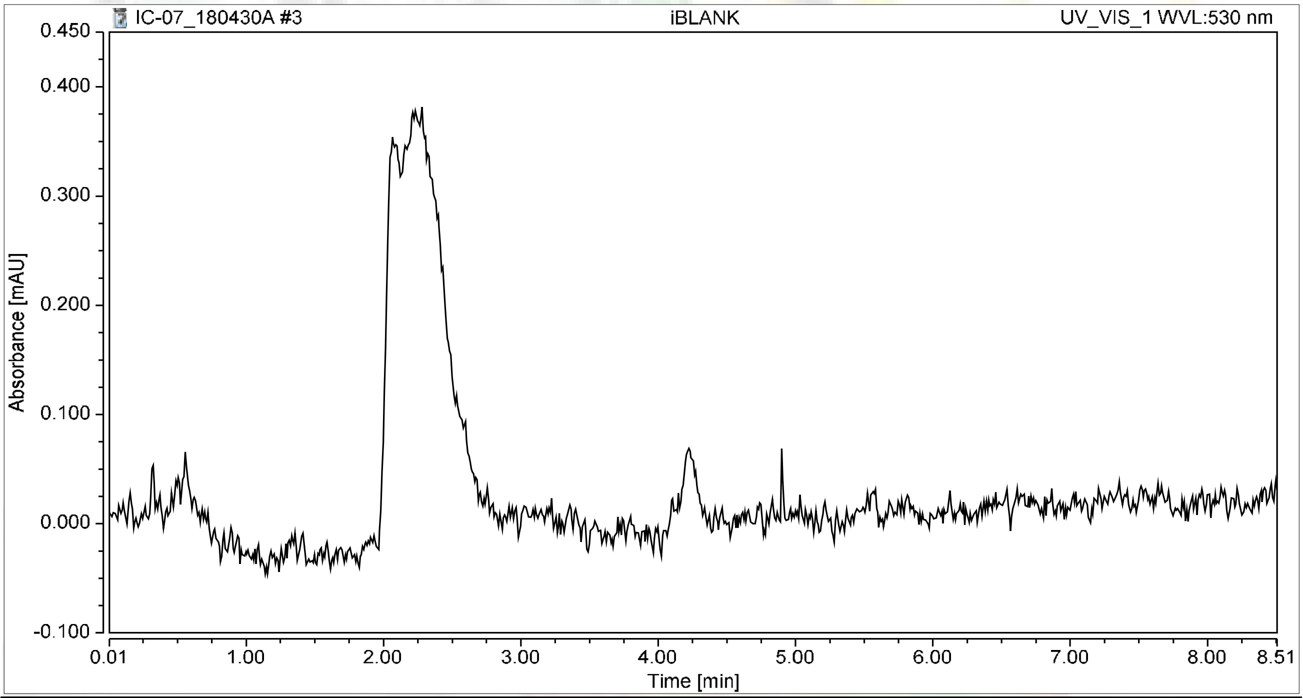
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.018	0.127	100.00	100.00	0.0705
Total:			**0.018**	**0.127**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

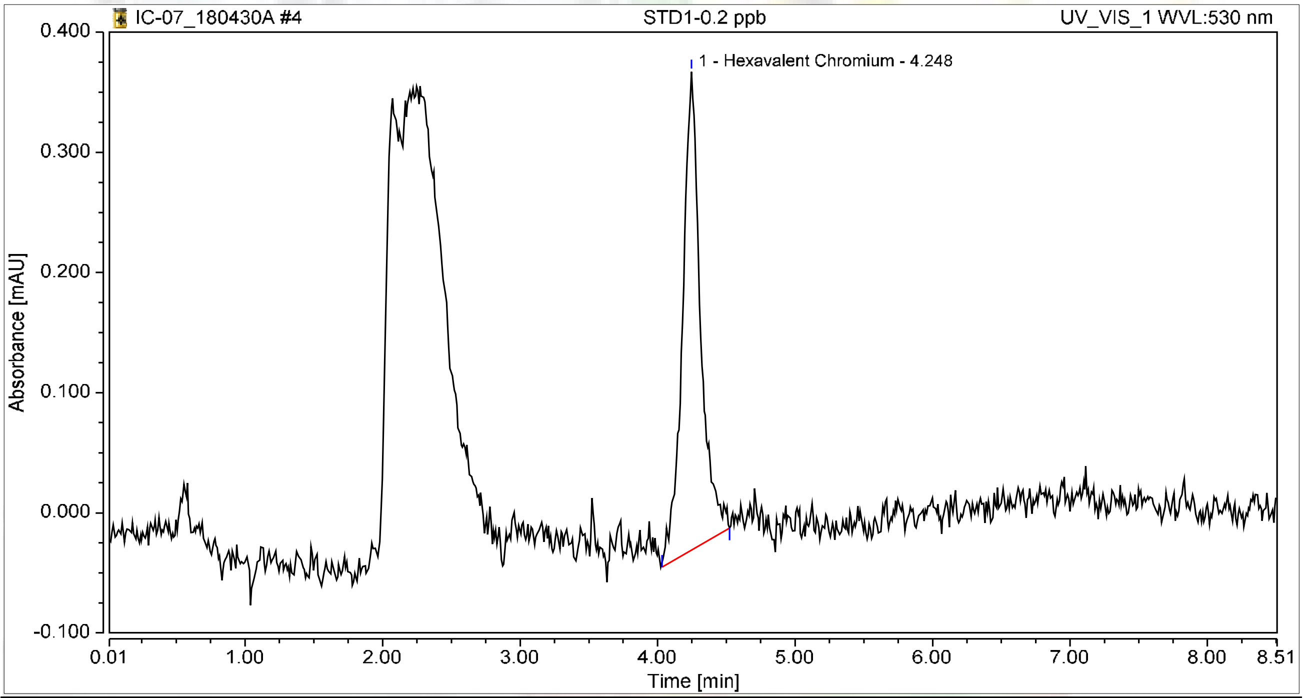
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

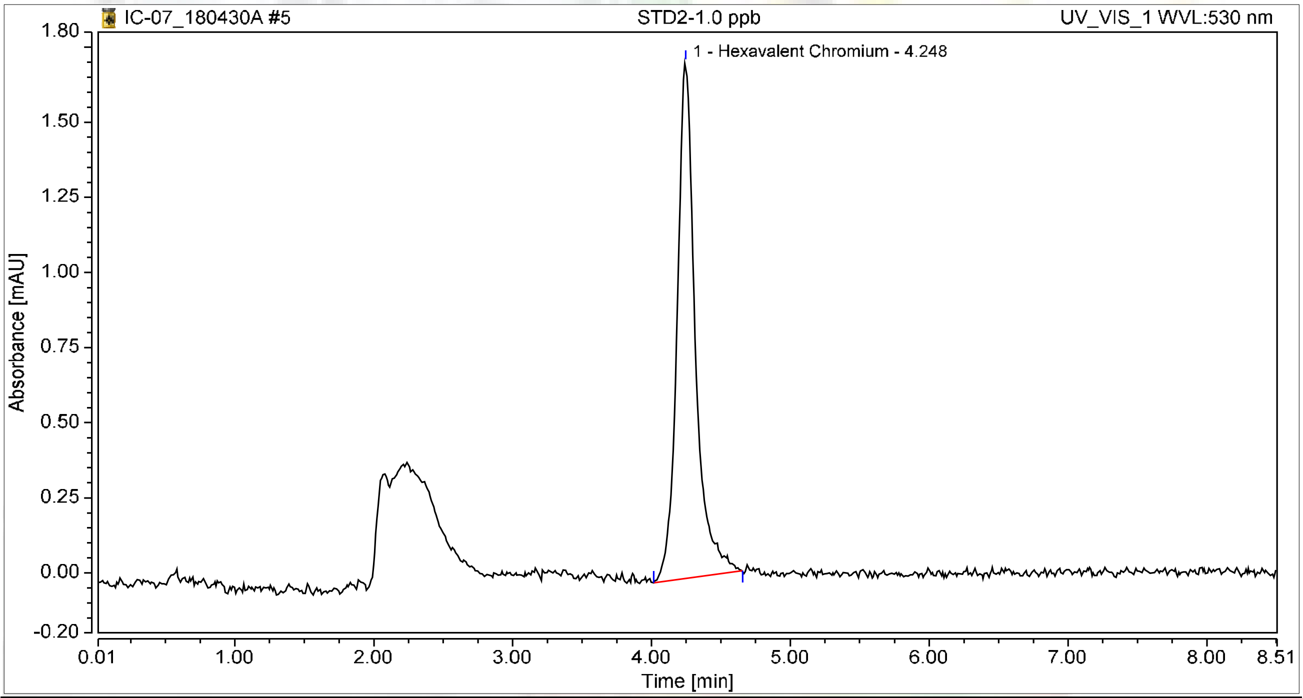
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.061	0.398	100.00	100.00	0.2363
Total:			**0.061**	**0.398**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

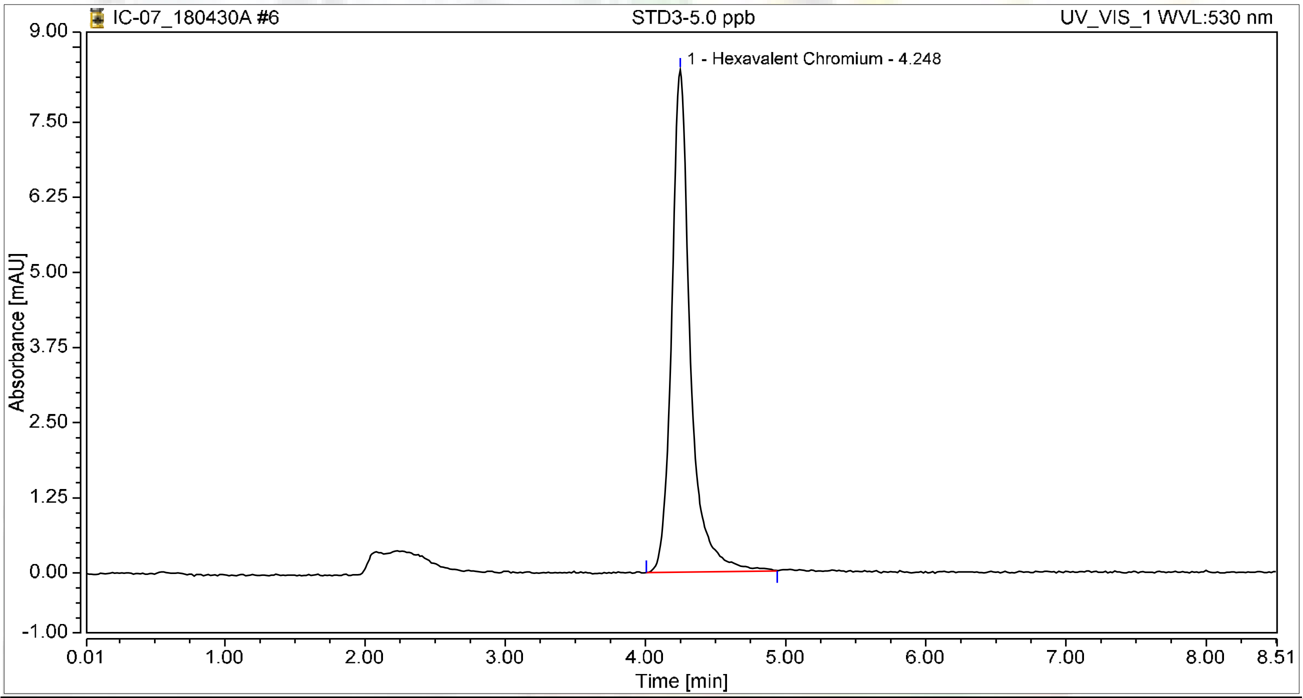
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.262	1.718	100.00	100.00	1.0201
Total:			**0.262**	**1.718**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

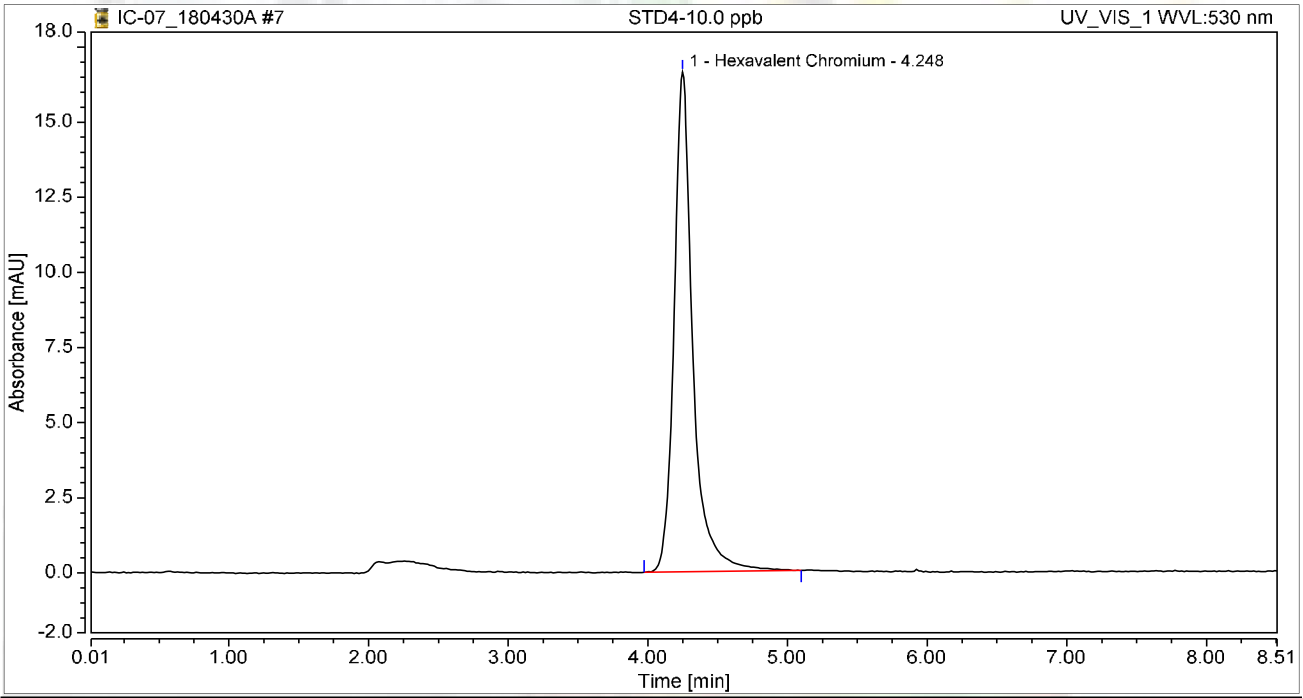
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.292	8.359	100.00	100.00	5.0360
Total:			**1.292**	**8.359**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

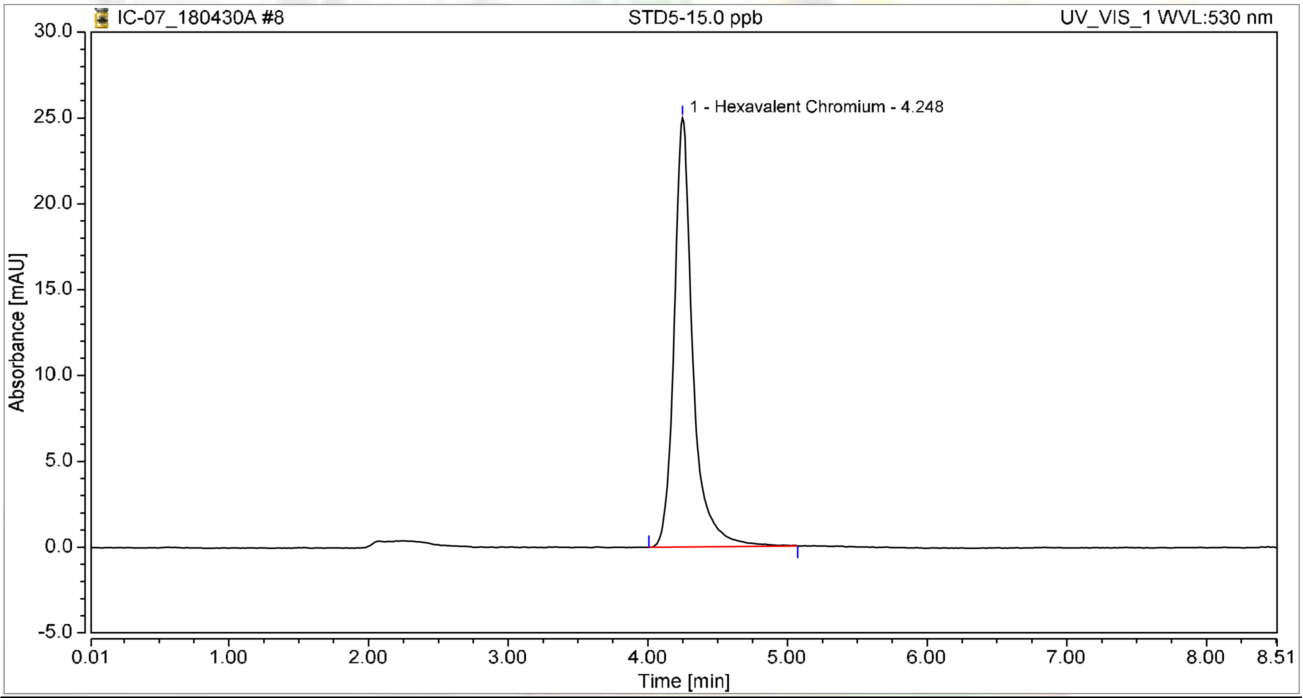
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.581	16.640	100.00	100.00	10.0583
Total:			**2.581**	**16.640**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

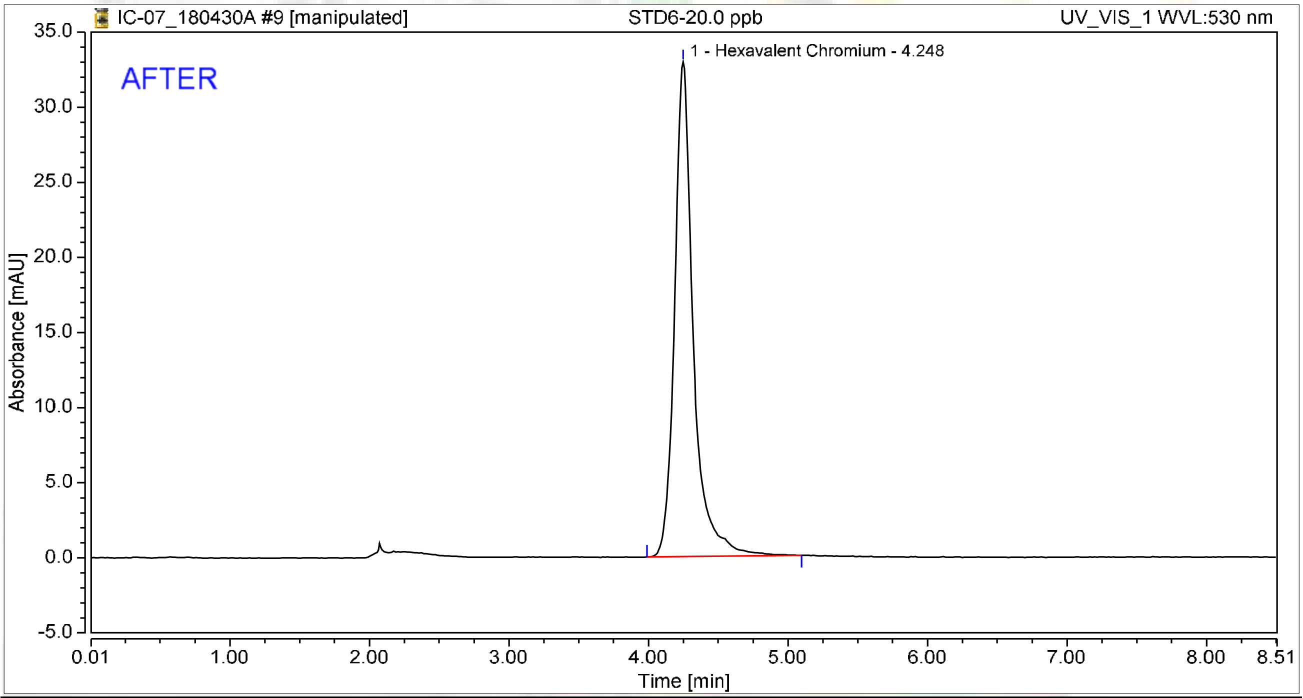
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.873	25.002	100.00	100.00	15.0915
Total:			**3.873**	**25.002**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.105	32.932	100.00	100.00	19.8919
Total:			**5.105**	**32.932**	**100.00**	**100.00**	

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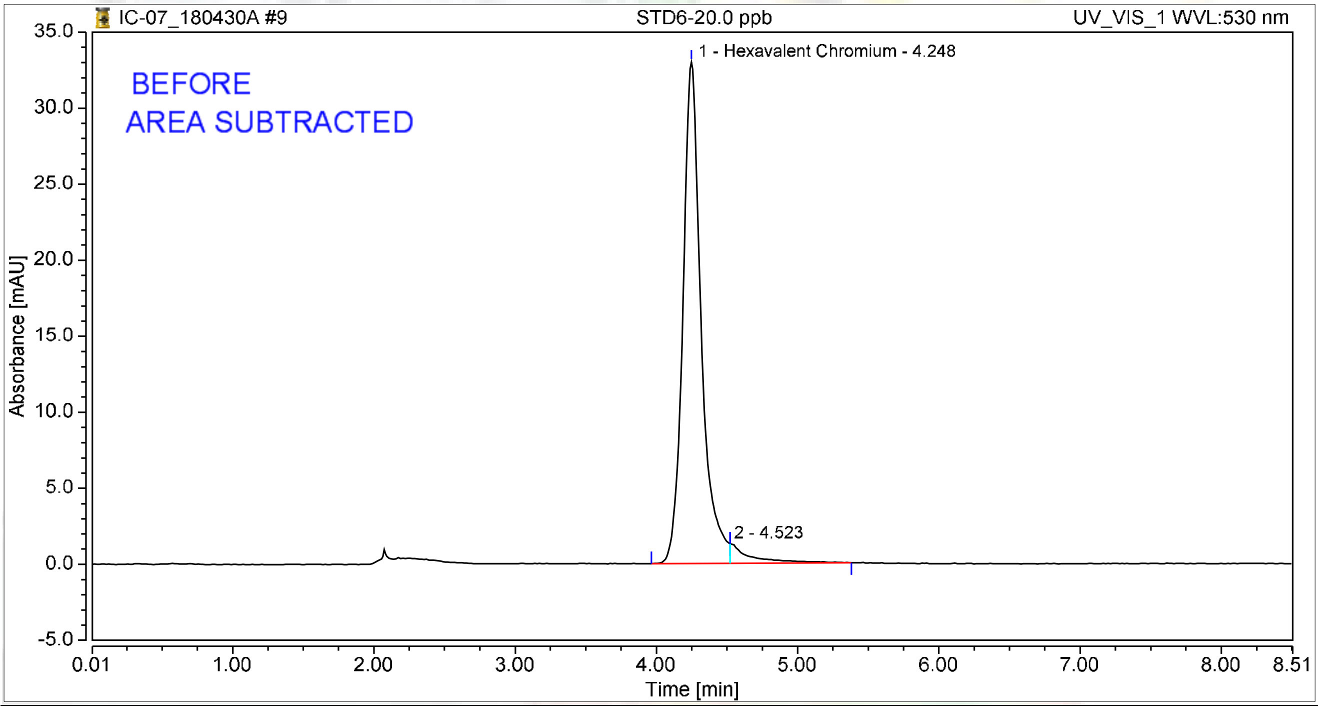
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	4.957	32.968	95.88	96.27	19.6162
2		4.523	0.213	1.278	4.12	3.73	n.a.
Total:			**5.170**	**34.246**	**100.00**	**100.00**	

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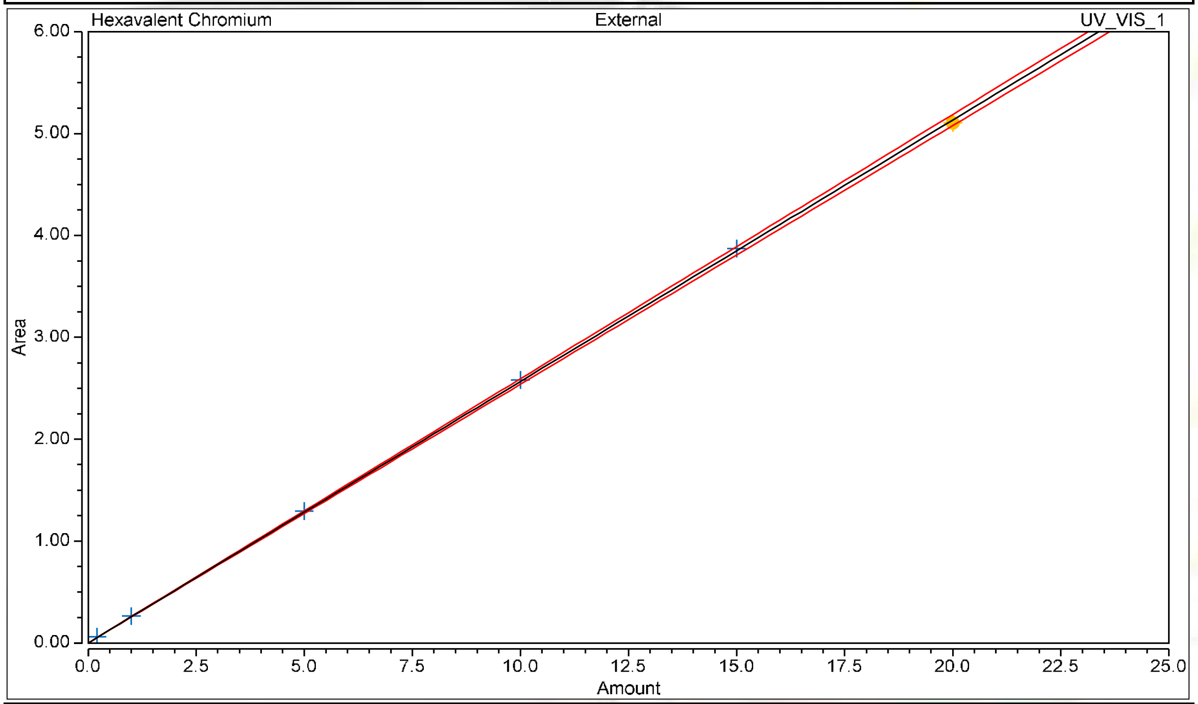
Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2566
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99992

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

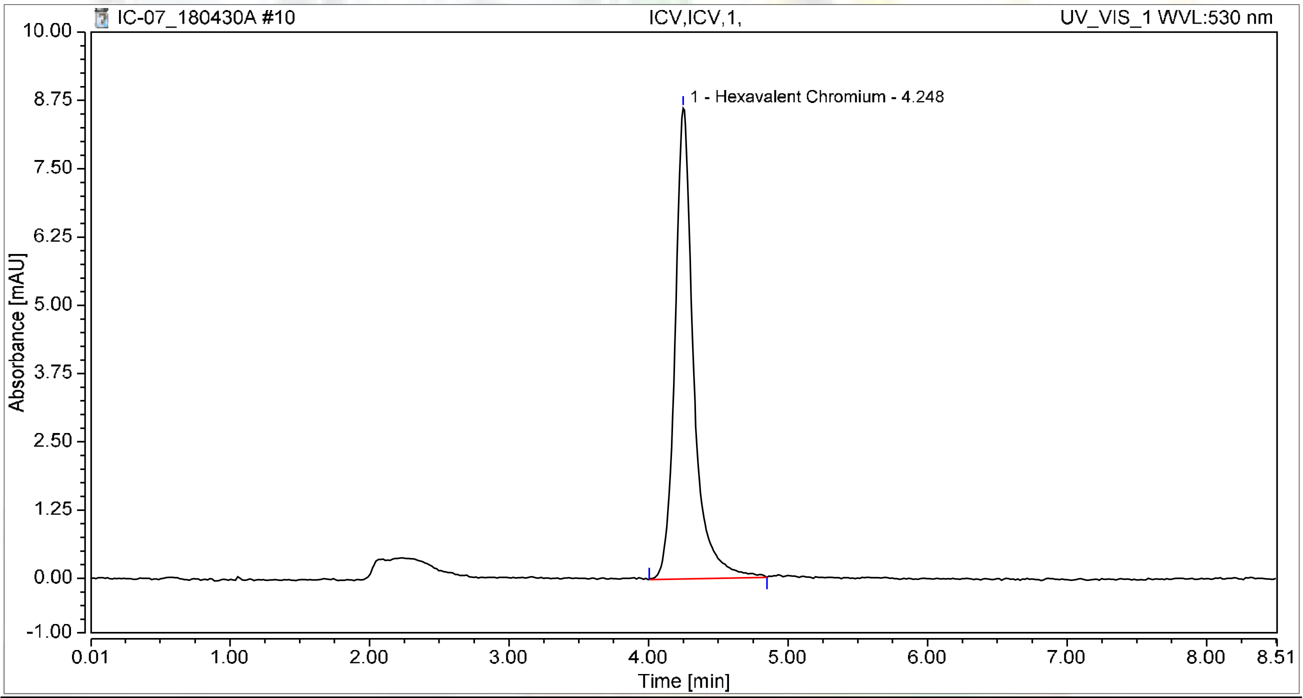
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0607	0.061	0.398
5	STD2-1.0 ppb	02	1.0000	0.2618	0.262	1.718
6	STD3-5.0 ppb	03	5.0000	1.2924	1.292	8.359
7	STD4-10.0 ppb	04	10.0000	2.5813	2.581	16.640
8	STD5-15.0 ppb	05	15.0000	3.8731	3.873	25.002
9	STD6-20.0 ppb	06	20.0000	5.1050	5.105	32.932

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

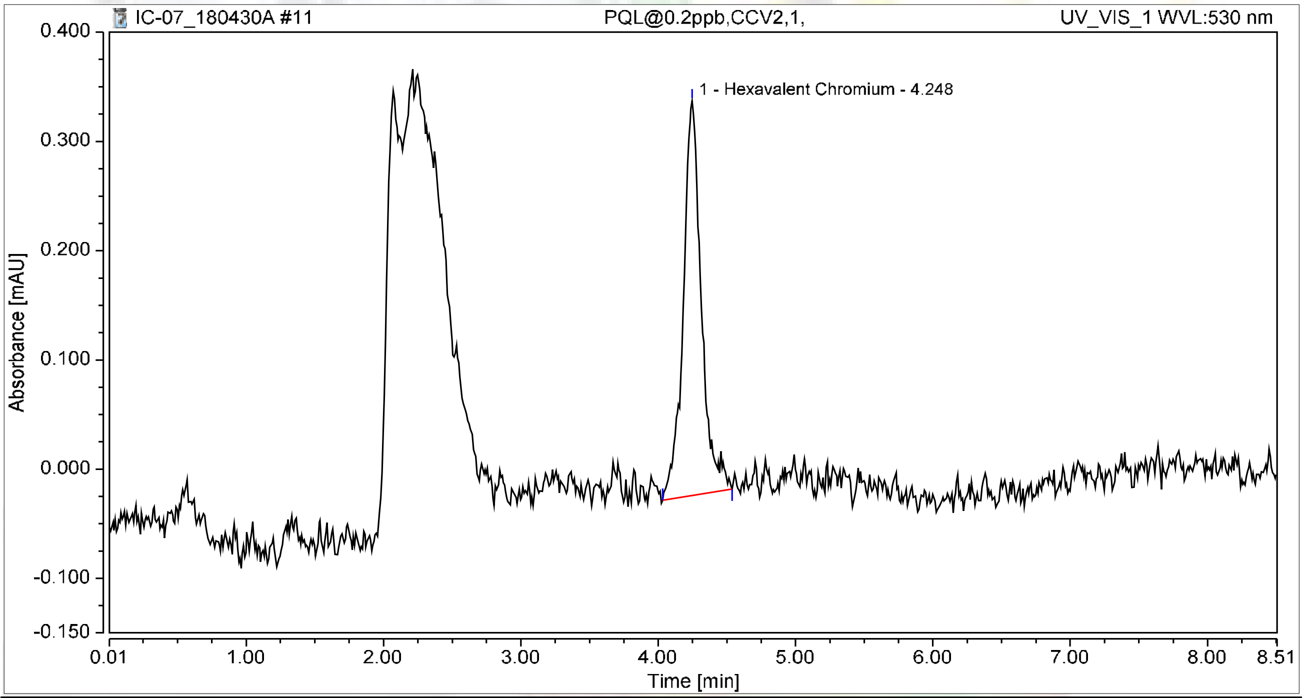
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.333	8.618	100.00	100.00	5.1938
Total:			**1.333**	**8.618**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

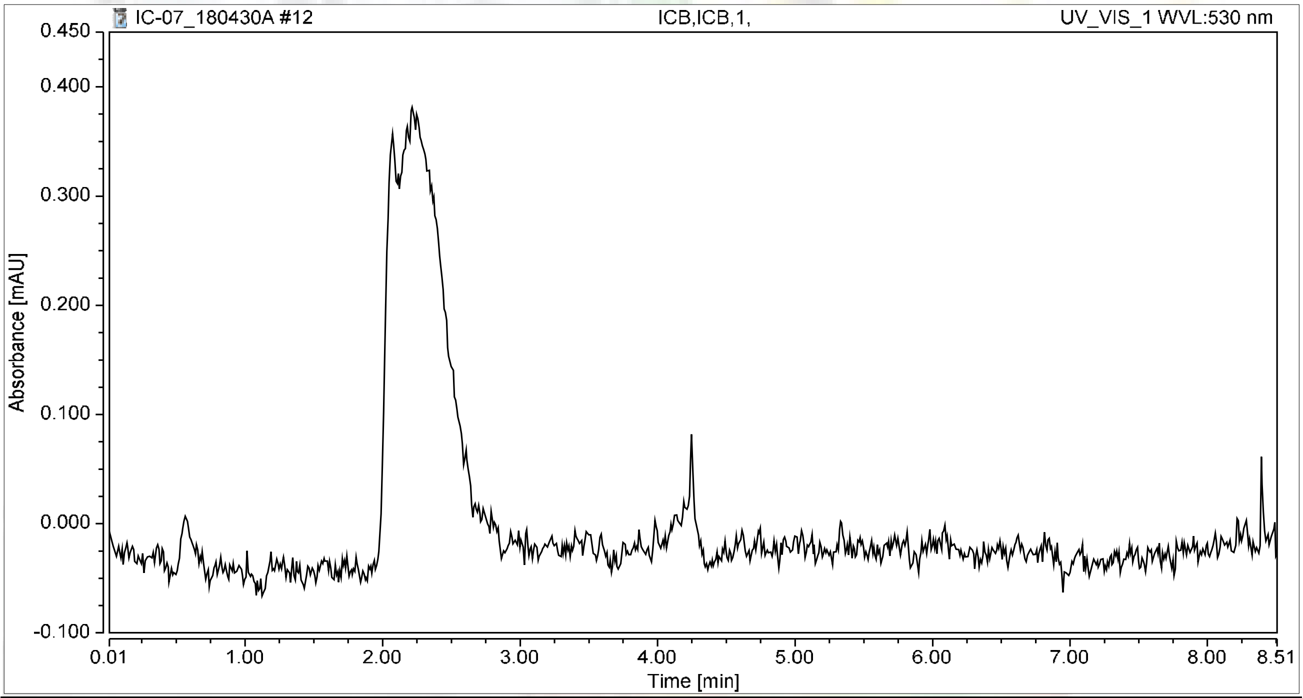
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.055	0.361	100.00	100.00	0.2153
Total:			**0.055**	**0.361**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180511A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/11/18 9:15 AM	Not Reported
11	CCV-1	CCV	1	Hexavalent Chromium	05/11/18 9:26 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/11/18 9:35 AM	Reported
13	CCB-1	CCB	1	Hexavalent Chromium	05/11/18 9:45 AM	Reported
14	MB-R124051	MBLK	1	Hexavalent Chromium	05/11/18 9:54 AM	Reported
15	LCS-R124051	LCS	1	Hexavalent Chromium	05/11/18 10:03 AM	Reported
16	N030295-001A	SAMP	200	Hexavalent Chromium	05/11/18 10:13 AM	Not Reported
17	N030147-001A	SAMP	500	Hexavalent Chromium	05/11/18 10:22 AM	Reported
18	N030147-001AMS	MS	500	Hexavalent Chromium	05/11/18 10:32 AM	Reported
19	N030147-002A	SAMP	100	Hexavalent Chromium	05/11/18 10:41 AM	Reported
20	N030147-002AMS	MS	100	Hexavalent Chromium	05/11/18 10:51 AM	Reported
21	N030147-003A	SAMP	5	Hexavalent Chromium	05/11/18 11:00 AM	Reported
22	N030147-003AMS	MS	5	Hexavalent Chromium	05/11/18 11:10 AM	Reported
23	N030147-002AMSD	MSD	100	Hexavalent Chromium	05/11/18 11:19 AM	Reported
24	CCV-2	CCV1	1	Hexavalent Chromium	05/11/18 11:29 AM	Reported
25	CCB-2	CCB	1	Hexavalent Chromium	05/11/18 11:38 AM	Reported
26	N030147-004A	SAMP	5	Hexavalent Chromium	05/11/18 11:48 AM	Reported
27	N030147-004AMS	MS	5	Hexavalent Chromium	05/11/18 11:57 AM	Reported
28	N030147-005A	SAMP	5	Hexavalent Chromium	05/11/18 12:06 PM	Reported
29	N030147-005AMS	MS	5	Hexavalent Chromium	05/11/18 12:16 PM	Reported
30	N030147-006A	SAMP	20	Hexavalent Chromium	05/11/18 12:25 PM	Reported
31	N030147-006AMS	MS	20	Hexavalent Chromium	05/11/18 12:35 PM	Reported
32	N030147-007A	SAMP	200	Hexavalent Chromium	05/11/18 12:44 PM	Reported
33	N030147-007AMS	MS	200	Hexavalent Chromium	05/11/18 12:54 PM	Reported
34	N030147-008A	SAMP	200	Hexavalent Chromium	05/11/18 1:03 PM	Reported
35	N030147-008AMS	MS	200	Hexavalent Chromium	05/11/18 1:13 PM	Reported
36	CCV-3	CCV	1	Hexavalent Chromium	05/11/18 1:22 PM	Reported
37	CCB-3	CCB	1	Hexavalent Chromium	05/11/18 1:32 PM	Reported
38	N030147-009A	SAMP	5	Hexavalent Chromium	05/11/18 1:41 PM	Reported
39	N030147-009AMS	MS	5	Hexavalent Chromium	05/11/18 1:51 PM	Reported
40	N030147-010A	SAMP	5	Hexavalent Chromium	05/11/18 2:00 PM	Not Reported
41	N030147-010AMS	MS	5	Hexavalent Chromium	05/11/18 2:09 PM	Not Reported
42	N030147-011A	SAMP	5	Hexavalent Chromium	05/11/18 2:19 PM	Reported

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RB 05/22/2018

INJECTION LOG: 180511A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030147-011AMS	MS	5	Hexavalent Chromium	05/11/18 2:28 PM	Reported
44	N030147-012A	SAMP	5	Hexavalent Chromium	05/11/18 2:38 PM	Reported
45	N030147-012AMS	MS	5	Hexavalent Chromium	05/11/18 2:47 PM	Reported
46	N030147-013A	SAMP	5	Hexavalent Chromium	05/11/18 2:57 PM	Reported
47	N030147-013AMS	MS	5	Hexavalent Chromium	05/11/18 3:06 PM	Reported
48	CCV-4	CCV1	1	Hexavalent Chromium	05/11/18 3:16 PM	Reported
49	CCB-4	CCB	1	Hexavalent Chromium	05/11/18 3:25 PM	Reported
50	N030147-014A	SAMP	1	Hexavalent Chromium	05/11/18 3:35 PM	Reported
51	N030147-014AMS	MS	1	Hexavalent Chromium	05/11/18 3:47 PM	Reported
52	N030147-015A	SAMP	1	Hexavalent Chromium	05/11/18 3:56 PM	Reported
53	N030147-015AMS	MS	1	Hexavalent Chromium	05/11/18 4:06 PM	Reported
54	N030147-016A	SAMP	1	Hexavalent Chromium	05/11/18 4:15 PM	Reported
55	N030147-016AMS	MS	1	Hexavalent Chromium	05/11/18 4:24 PM	Reported
56	N030147-003A	SAMP	1	Hexavalent Chromium	05/11/18 4:34 PM	Not Reported
57	N030147-003AMS	MS	1	Hexavalent Chromium	05/11/18 4:43 PM	Not Reported
58	N030147-004A	SAMP	1	Hexavalent Chromium	05/11/18 4:53 PM	Not Reported
59	N030147-004AMS	MS	1	Hexavalent Chromium	05/11/18 5:02 PM	Not Reported
60	CCV-5	CCV	1	Hexavalent Chromium	05/11/18 5:12 PM	Reported
61	CCB-5	CCB	1	Hexavalent Chromium	05/11/18 5:21 PM	Reported
62	N030147-005A	SAMP	1	Hexavalent Chromium	05/11/18 5:31 PM	Not Reported
63	N030147-005AMS	MS	1	Hexavalent Chromium	05/11/18 5:40 PM	Not Reported
64	N030147-009A	SAMP	1	Hexavalent Chromium	05/11/18 5:50 PM	Not Reported
65	N030147-009AMS	MS	1	Hexavalent Chromium	05/11/18 5:59 PM	Not Reported
66	N030147-011A	SAMP	1	Hexavalent Chromium	05/11/18 6:09 PM	Not Reported
67	N030147-011AMS	MS	1	Hexavalent Chromium	05/11/18 6:18 PM	Not Reported
68	N030147-012A	SAMP	1	Hexavalent Chromium	05/11/18 6:27 PM	Not Reported
69	N030147-012AMS	MS	1	Hexavalent Chromium	05/11/18 6:37 PM	Not Reported
70	N030147-013A	SAMP	1	Hexavalent Chromium	05/11/18 6:46 PM	Not Reported
71	N030147-013AMS	MS	1	Hexavalent Chromium	05/11/18 6:56 PM	Not Reported
72	CCV-6	CCV1	1	Hexavalent Chromium	05/11/18 7:05 PM	Reported
73	CCB-6	CCB	1	Hexavalent Chromium	05/11/18 7:15 PM	Reported
74	N030147-006ADUP	DUP	20	Hexavalent Chromium	05/11/18 7:24 PM	Reported
75	N030295-006A	SAMP	1000	Hexavalent Chromium	05/11/18 7:34 PM	Not Reported
76	CCV-7	CCV	1	Hexavalent Chromium	05/11/18 7:43 PM	Reported
77	CCB-7	CCB	1	Hexavalent Chromium	05/11/18 7:53 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180511A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**11/May/18 20:23:22**
No. of Injections:	**80**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/11/2018 09:15	Finished	BLANK
11	CCV-1,CCV,1,	2	1000	Unknown		05/11/2018 09:26	Finished	CCV @5ppb, IWST-180129A
12	PQL@0.2ppb,CCV2,1	3	1000	Unknown		05/11/2018 09:35	Finished	PQL @ 0.2ppb
13	CCB-1,CCB,1,	4	1000	Unknown		05/11/2018 09:45	Finished	CCB R180409B
14	MB-H2O,MBLK,1,	5	1000	Unknown		05/11/2018 09:54	Finished	MB R180409B
15	LCS-H2O,LCS,1,	6	1000	Unknown		05/11/2018 10:03	Finished	LCS, IWST-180129B
16	N030295-001A,SAMF	7	1000	Unknown		05/11/2018 10:13	Finished	SAMP,0.05>10mL
17	N030147-001A,SAMF	8	1000	Unknown		05/11/2018 10:22	Finished	SAMP,0.02>10mL
18	N030147-001AMS,MS	9	1000	Unknown		05/11/2018 10:32	Finished	MS (5ppb), IWST-180129B,0.0
19	N030147-002A,SAMF	10	1000	Unknown		05/11/2018 10:41	Finished	SAMP,0.1>10mL
20	N030147-002AMS,MS	11	1000	Unknown		05/11/2018 10:51	Finished	MS (5ppb), IWST-180129B,0.1
21	N030147-003A,SAMF	12	1000	Unknown		05/11/2018 11:00	Finished	SAMP,2>10mL
22	N030147-003AMS,MS	13	1000	Unknown		05/11/2018 11:10	Finished	MS (1ppb), IWST-180129B,2>1
23	N030147-002AMSD,M	14	1000	Unknown		05/11/2018 11:19	Finished	MSD (5ppb), IWST-180129B,0.
24	CCV-2,CCV1,1,	15	1000	Unknown		05/11/2018 11:29	Finished	CCV @10ppb, IWST-180129A
25	CCB-2,CCB,1,	16	1000	Unknown		05/11/2018 11:38	Finished	CCB R180409B
26	N030147-004A,SAMF	17	1000	Unknown		05/11/2018 11:48	Finished	SAMP,2>10mL
27	N030147-004AMS,MS	18	1000	Unknown		05/11/2018 11:57	Finished	MS (1ppb), IWST-180129B,2>1
28	N030147-005A,SAMF	19	1000	Unknown		05/11/2018 12:06	Finished	SAMP,2>10mL
29	N030147-005AMS,MS	20	1000	Unknown		05/11/2018 12:16	Finished	MS (1ppb), IWST-180129B,2>1
30	N030147-006A,SAMF	21	1000	Unknown		05/11/2018 12:25	Finished	SAMP,0.5>10mL
31	N030147-006AMS,MS	22	1000	Unknown		05/11/2018 12:35	Finished	MS (5ppb), IWST-180129B,0.5
32	N030147-007A,SAMF	23	1000	Unknown		05/11/2018 12:44	Finished	SAMP,005>10mL
33	N030147-007AMS,MS	24	1000	Unknown		05/11/2018 12:54	Finished	MS (5ppb), IWST-180129B,0.0
34	N030147-008A,SAMF	25	1000	Unknown		05/11/2018 13:03	Finished	SAMP,005>10mL
35	N030147-008AMS,MS	26	1000	Unknown		05/11/2018 13:13	Finished	MS (5ppb), IWST-180129B,0.0
36	CCV-3,CCV,1,	27	1000	Unknown		05/11/2018 13:22	Finished	CCV @5ppb, IWST-180129A
37	CCB-3,CCB,1,	28	1000	Unknown		05/11/2018 13:32	Finished	CCB R180409B
38	N030147-009A,SAMF	29	1000	Unknown		05/11/2018 13:41	Finished	SAMP,2>10mL
39	N030147-009AMS,MS	30	1000	Unknown		05/11/2018 13:51	Finished	MS (1ppb), IWST-180129B,2>1
40	N030147-010A,SAMF	31	1000	Unknown		05/11/2018 14:00	Finished	SAMP,2>10mL
41	N030147-010AMS,MS	32	1000	Unknown		05/11/2018 14:09	Finished	MS (1ppb), IWST-180129B,2>1
42	N030147-011A,SAMF	33	1000	Unknown		05/11/2018 14:19	Finished	SAMP,2>10mL
43	N030147-011AMS,MS	34	1000	Unknown		05/11/2018 14:28	Finished	MS (1ppb), IWST-180129B,2>1
44	N030147-012A,SAMF	35	1000	Unknown		05/11/2018 14:38	Finished	SAMP,2>10mL
45	N030147-012AMS,MS	36	1000	Unknown		05/11/2018 14:47	Finished	MS (1ppb), IWST-180129B,2>1
46	N030147-013A,SAMF	37	1000	Unknown		05/11/2018 14:57	Finished	SAMP,2>10mL
47	N030147-013AMS,MS	38	1000	Unknown		05/11/2018 15:06	Finished	MS (1ppb), IWST-180129B,2>1
48	CCV-4,CCV1,1,	39	1000	Unknown		05/11/2018 15:16	Finished	CCV @10ppb, IWST-180129A
49	CCB-4,CCB,1,	40	1000	Unknown		05/11/2018 15:25	Finished	CCB R180409B
50	N030147-014A,SAMF	1	1000	Unknown		05/11/2018 15:35	Finished	SAMP,10mL
51	N030147-014AMS,MS	2	1000	Unknown		05/11/2018 15:47	Finished	MS (1ppb), IWST-180129B,10
52	N030147-015A,SAMF	3	1000	Unknown		05/11/2018 15:56	Finished	SAMP,10mL
53	N030147-015AMS,MS	4	1000	Unknown		05/11/2018 16:06	Finished	MS (1ppb), IWST-180129B,10
54	N030147-016A,SAMF	5	1000	Unknown		05/11/2018 16:15	Finished	SAMP,10mL
55	N030147-016AMS,MS	6	1000	Unknown		05/11/2018 16:24	Finished	MS (1ppb), IWST-180129B,10
56	N030147-003A,SAMF	7	1000	Unknown		05/11/2018 16:34	Finished	SAMP,10mL
57	N030147-003AMS,MS	8	1000	Unknown		05/11/2018 16:43	Finished	MS (1ppb), IWST-180129B,10
58	N030147-004A,SAMF	9	1000	Unknown		05/11/2018 16:53	Finished	SAMP,10mL
59	N030147-004AMS,MS	10	1000	Unknown		05/11/2018 17:02	Finished	MS (1ppb), IWST-180129B,10
60	CCV-5,CCV,1,	11	1000	Unknown		05/11/2018 17:12	Finished	CCV @5ppb, IWST-180129A

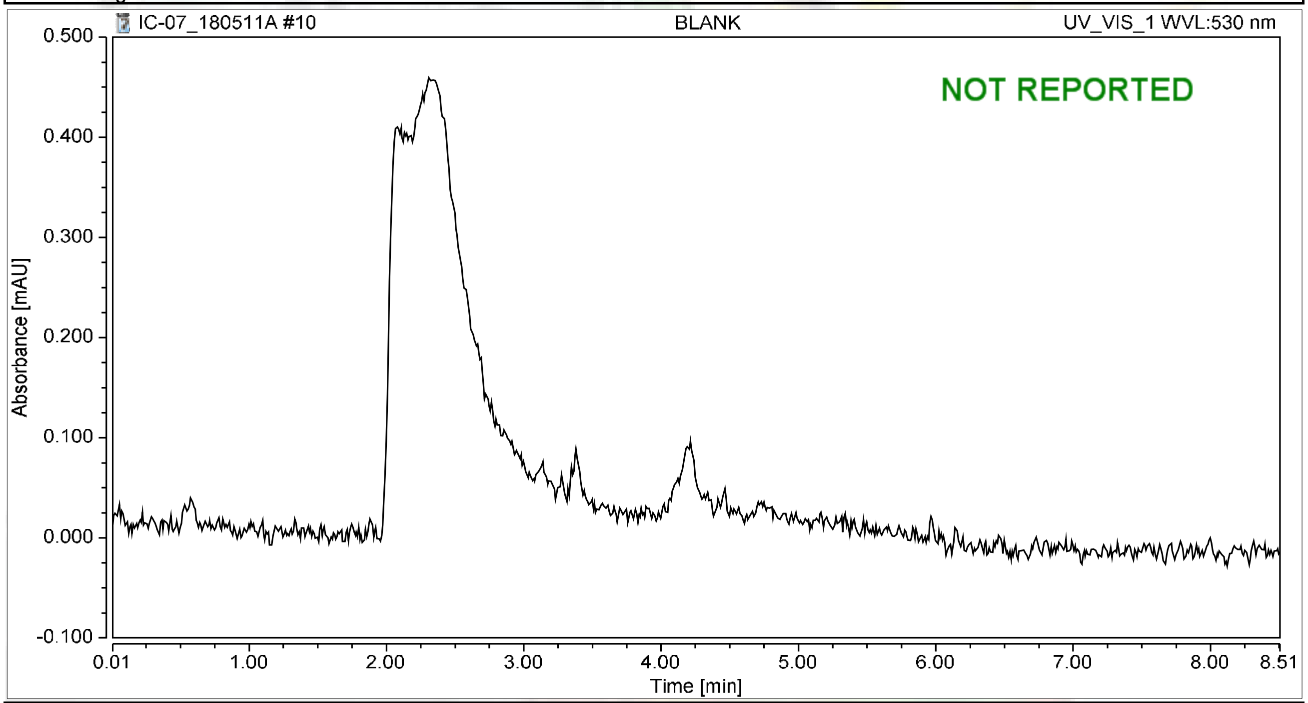
61	CCB-5,CCB,1,	12	1000	Unknown		05/11/2018 17:21	Finished	CCB R180418A
62	N030147-005A,SAMF	13	1000	Unknown		05/11/2018 17:31	Finished	SAMP,10mL
63	N030147-005AMS,MS	14	1000	Unknown		05/11/2018 17:40	Finished	MS (1ppb), IWST-180129B,10
64	N030147-009A,SAMF	15	1000	Unknown		05/11/2018 17:50	Finished	SAMP,10mL
65	N030147-009AMS,MS	16	1000	Unknown		05/11/2018 17:59	Finished	MS (1ppb), IWST-180129B,10
66	N030147-011A,SAMF	17	1000	Unknown		05/11/2018 18:09	Finished	SAMP,10mL
67	N030147-011AMS,MS	18	1000	Unknown		05/11/2018 18:18	Finished	MS (1ppb), IWST-180129B,10
68	N030147-012A,SAMF	19	1000	Unknown		05/11/2018 18:27	Finished	SAMP,10mL
69	N030147-012AMS,MS	20	1000	Unknown		05/11/2018 18:37	Finished	MS (1ppb), IWST-180129B,10
70	N030147-013A,SAMF	21	1000	Unknown		05/11/2018 18:46	Finished	SAMP,10mL
71	N030147-013AMS,MS	22	1000	Unknown		05/11/2018 18:56	Finished	MS (1ppb), IWST-180129B,10
72	CCV-6,CCV1,1,	23	1000	Unknown		05/11/2018 19:05	Finished	CCV @10ppb, IWST-180129A
73	CCB-6,CCB,1,	24	1000	Unknown		05/11/2018 19:15	Finished	CCB R180409B
74	N030147-006ADUP,D	25	1000	Unknown		05/11/2018 19:24	Finished	DUP,0.5>10mL
75	N030295-006A,SAMF	26	1000	Unknown		05/11/2018 19:34	Finished	SAMP,0.01>10mL
76	CCV-7,CCV,1,	27	1000	Unknown		05/11/2018 19:43	Finished	CCV @5ppb, IWST-180129A
77	CCB-7,CCB,1,	28	1000	Unknown		05/11/2018 19:53	Finished	CCB R180409B
78	SHUTDOWN	29	1000	Unknown		05/11/2018 20:02	Finished	
79	Eluent: R180509A	30	1000	Unknown		n.a.	Finished	Eluent
80	PCR: R180509B	31	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 09:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

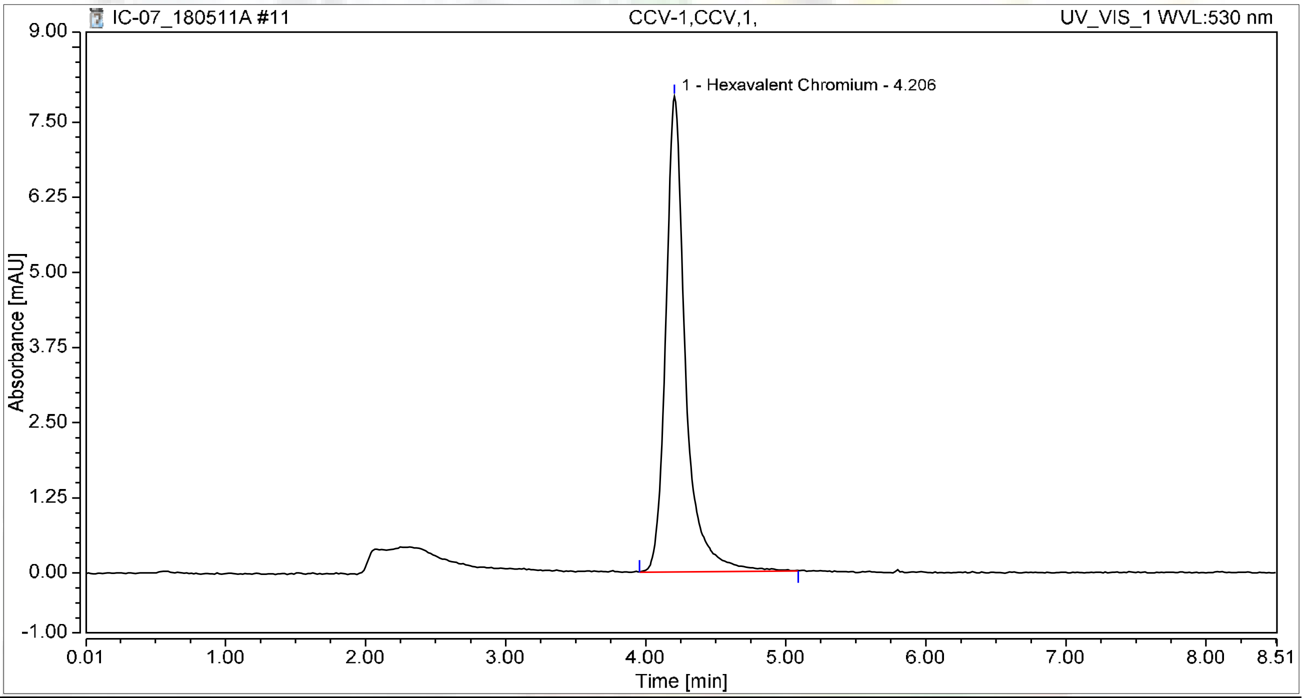
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 09:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

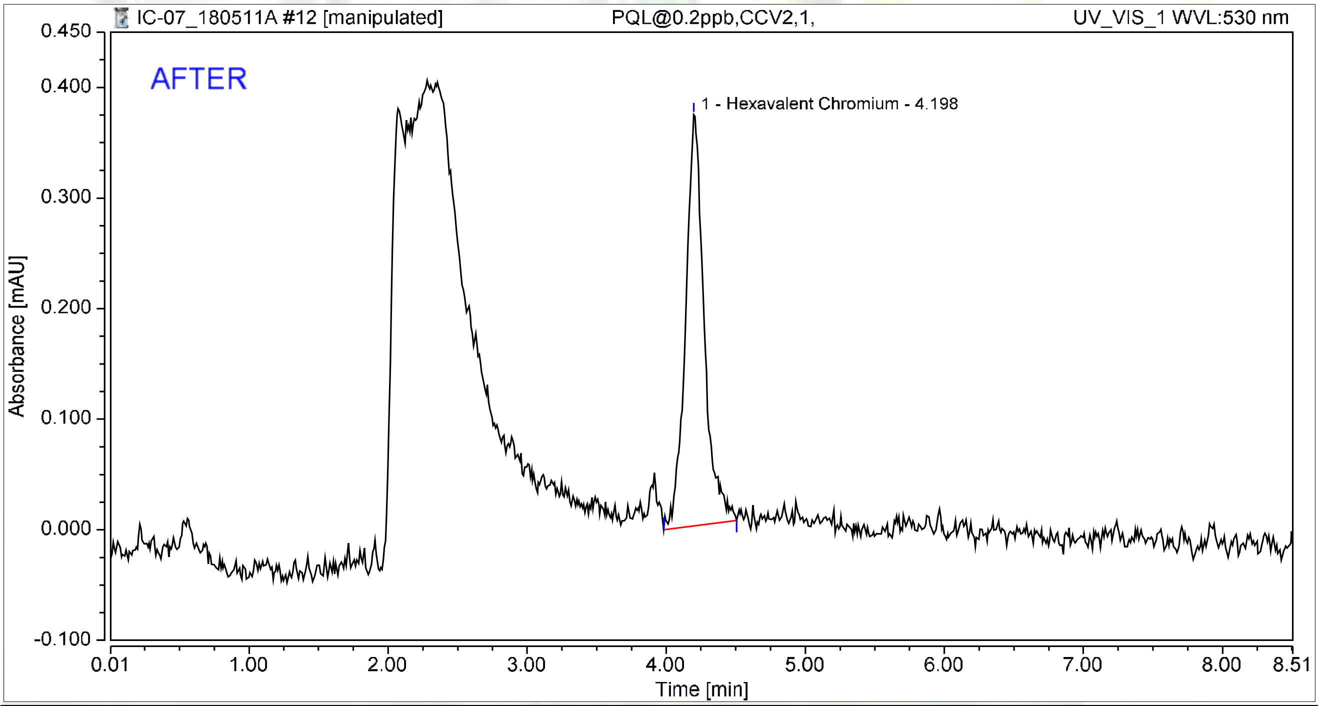
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.290	7.911	100.00	100.00	5.0274
Total:			**1.290**	**7.911**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 09:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.058	0.372	100.00	100.00	0.2253
Total:			**0.058**	**0.372**	**100.00**	**100.00**	

rba 5/18/2018

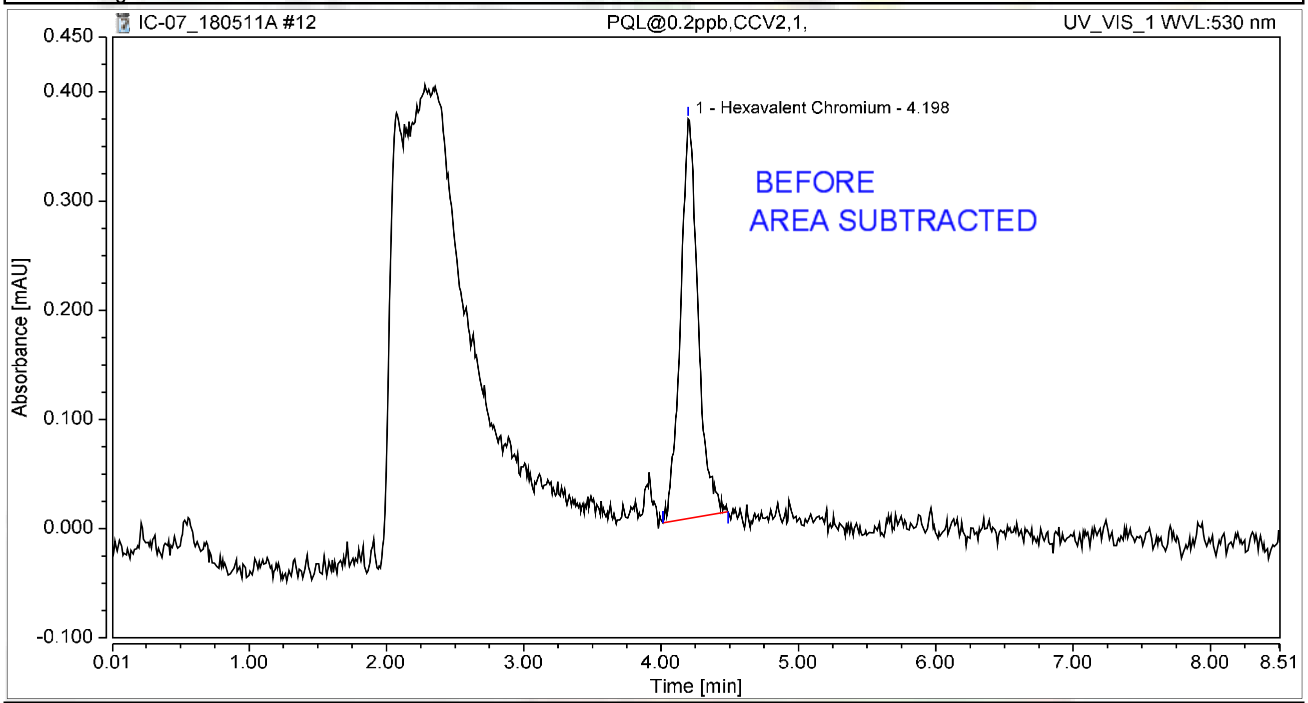
RB 05/22/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 09:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.055	0.366	100.00	100.00	0.2127
Total:			**0.055**	**0.366**	**100.00**	**100.00**	

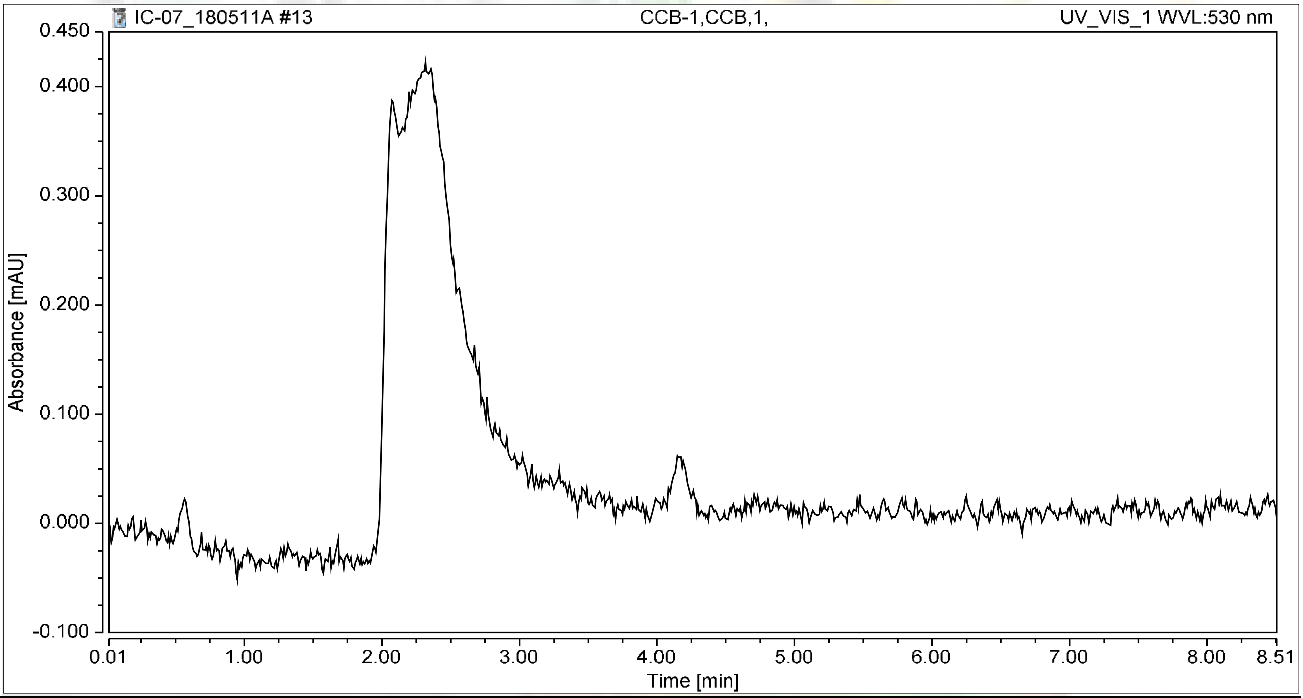
rba 5/18/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 09:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

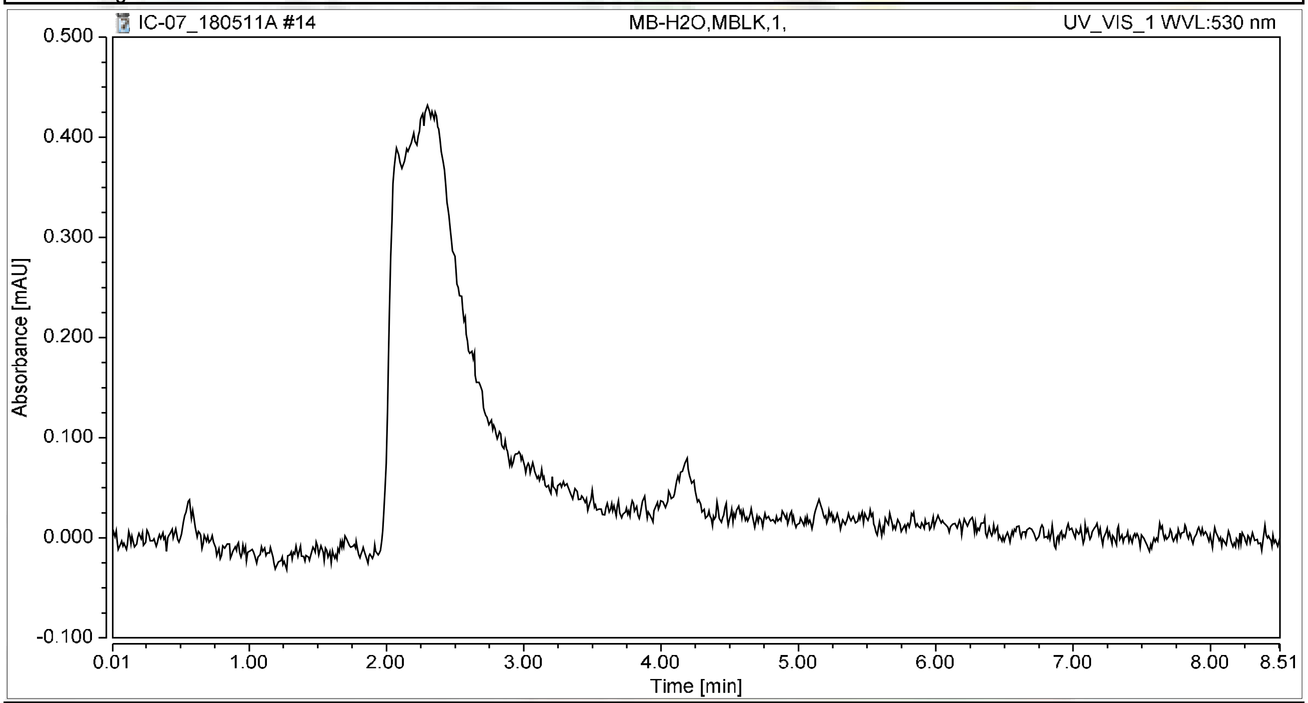
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

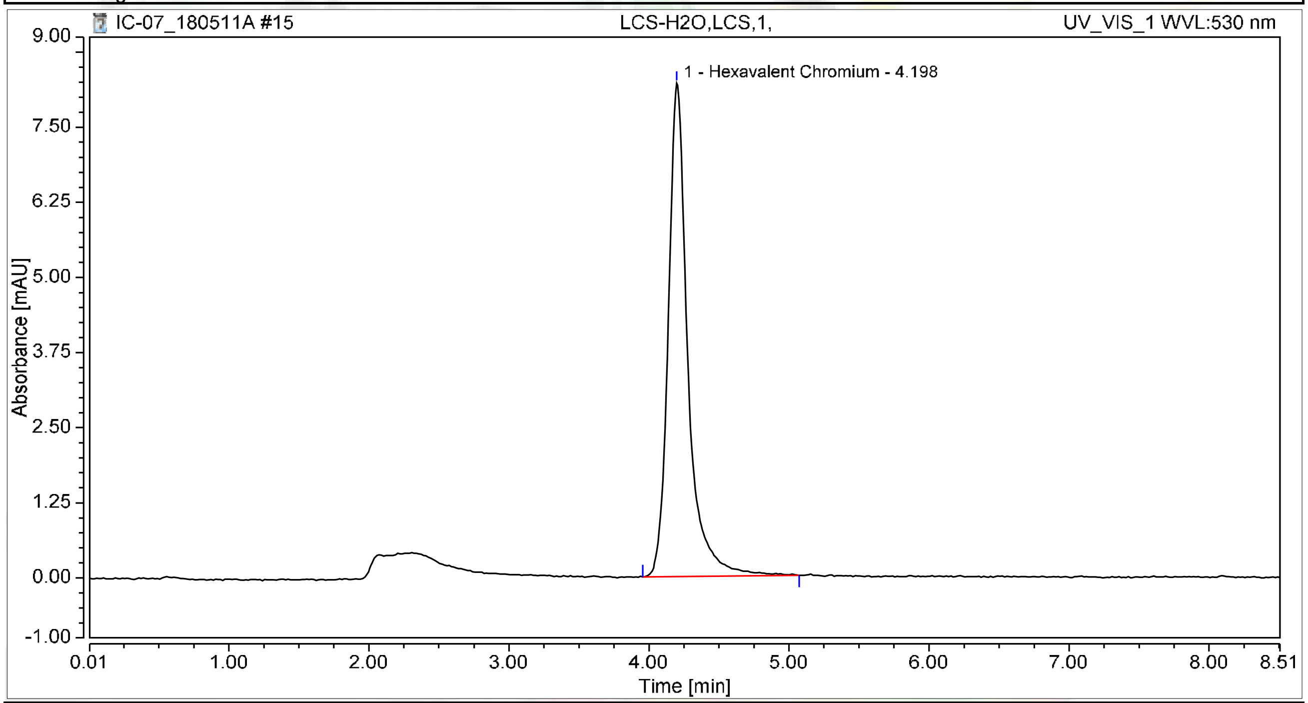
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 10:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

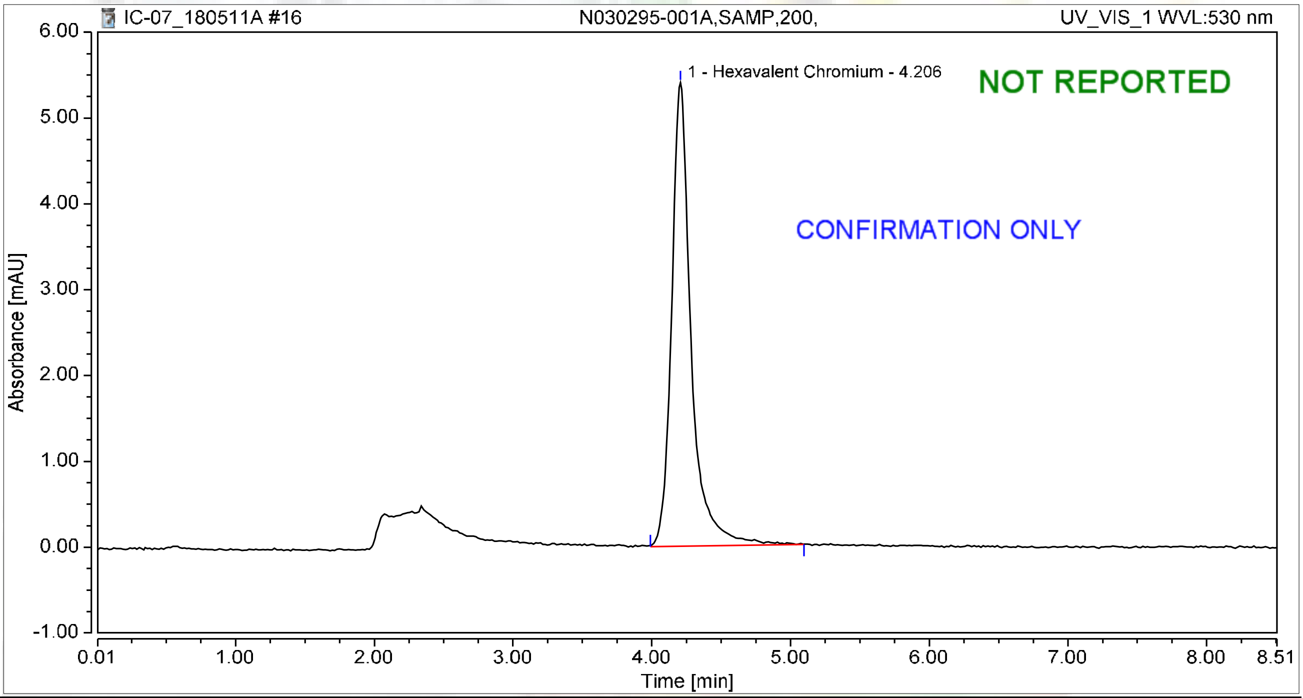
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.330	8.209	100.00	100.00	5.1823
Total:			**1.330**	**8.209**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030295-001A,SAMP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 10:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

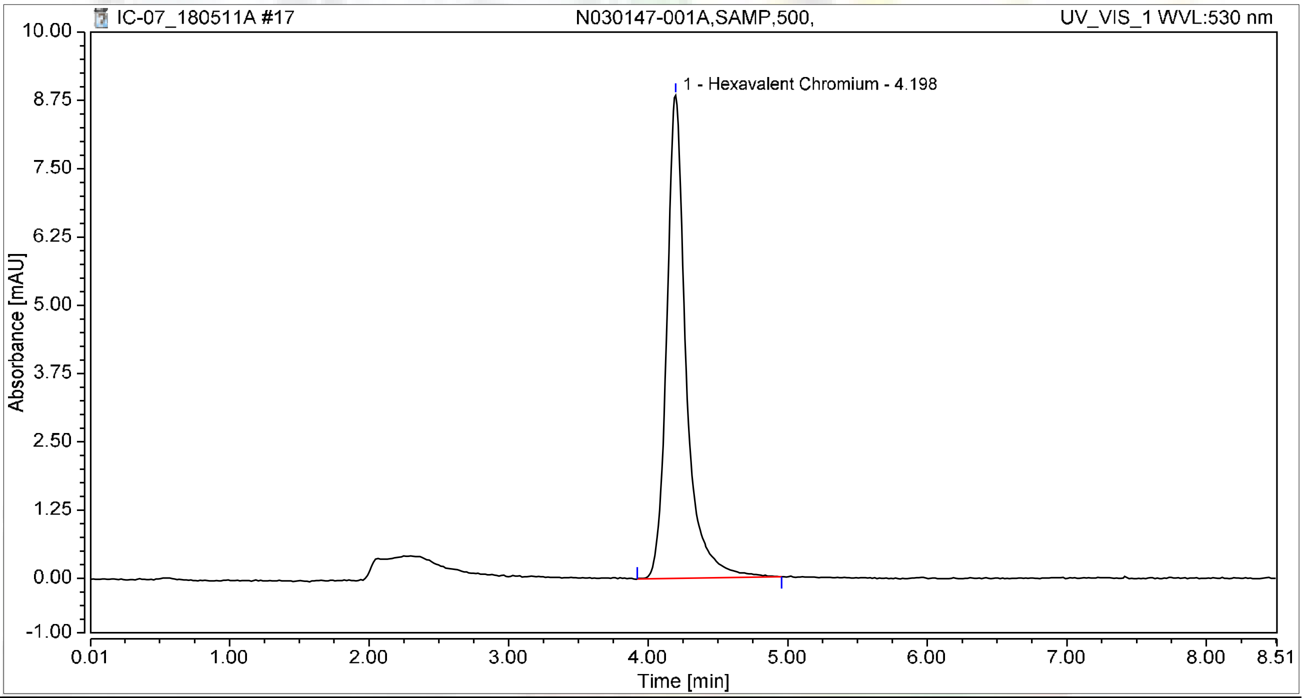
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.881	5.398	100.00	100.00	3.4344
Total:			**0.881**	**5.398**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-001A,SAMP,500,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 10:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

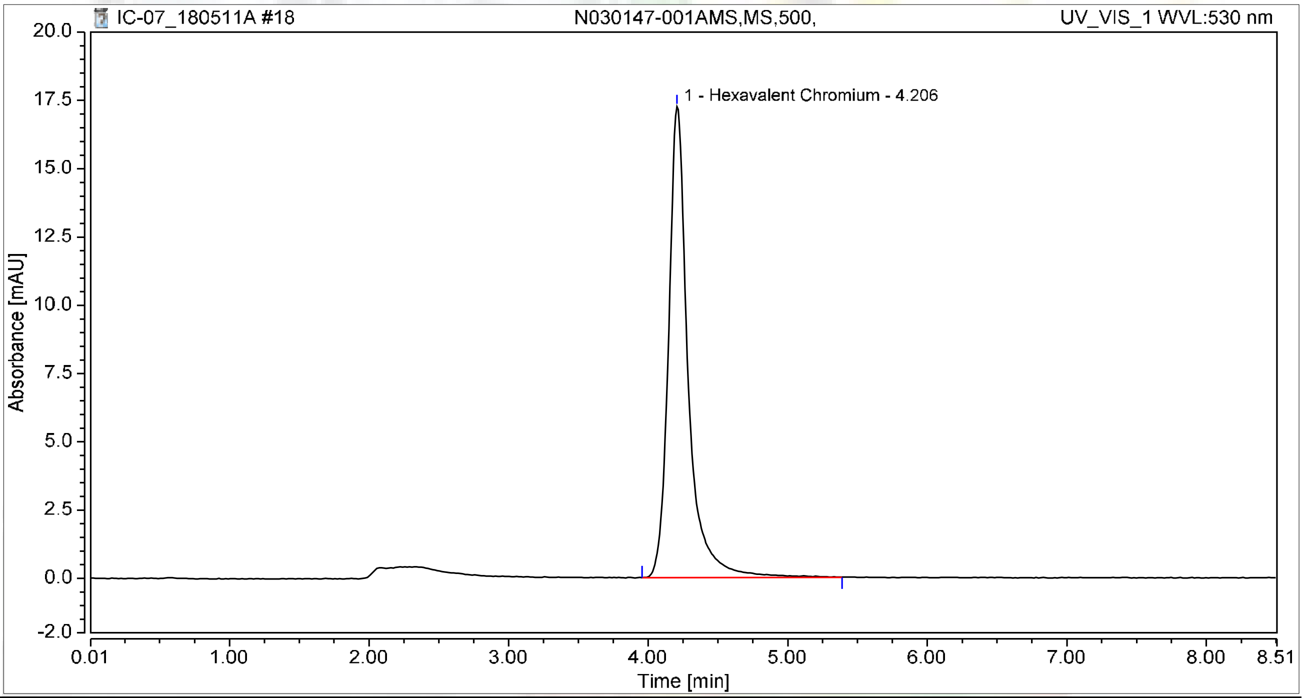
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.431	8.845	100.00	100.00	5.5741
Total:			**1.431**	**8.845**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-001AMS,MS,500,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 10:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

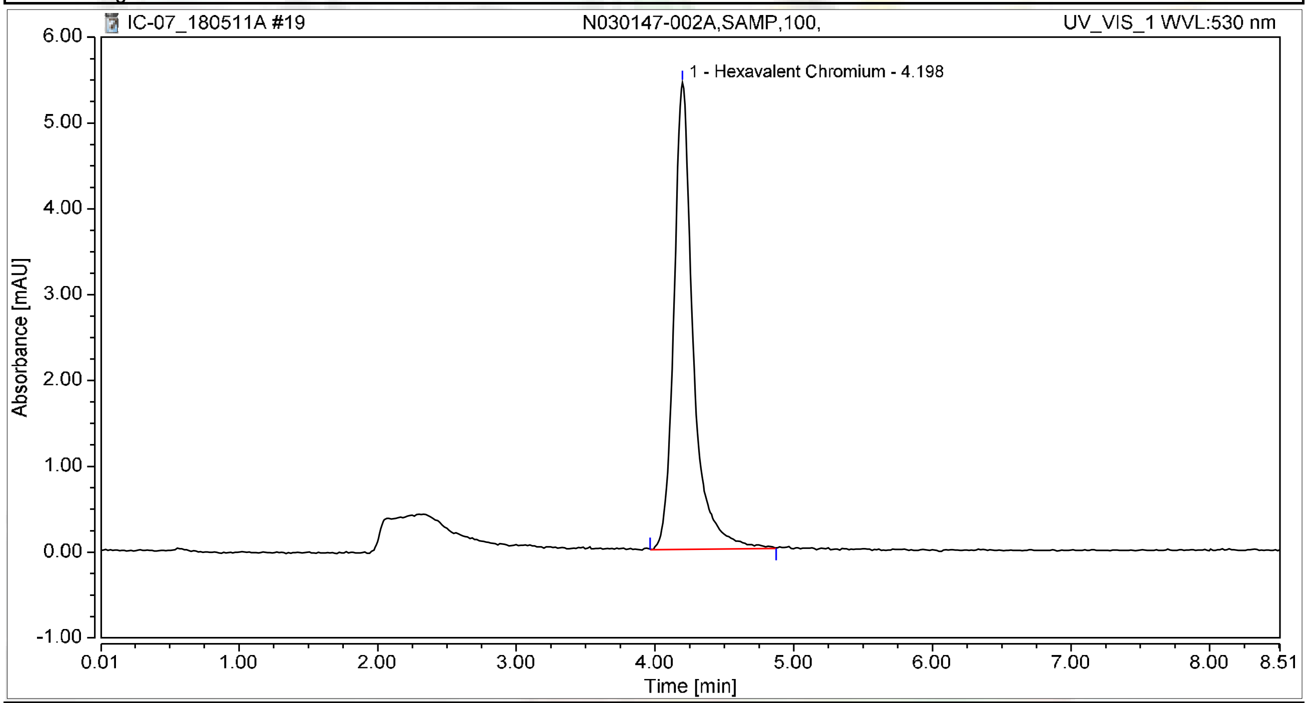
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.817	17.252	100.00	100.00	10.9748
Total:			**2.817**	**17.252**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-002A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 10:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

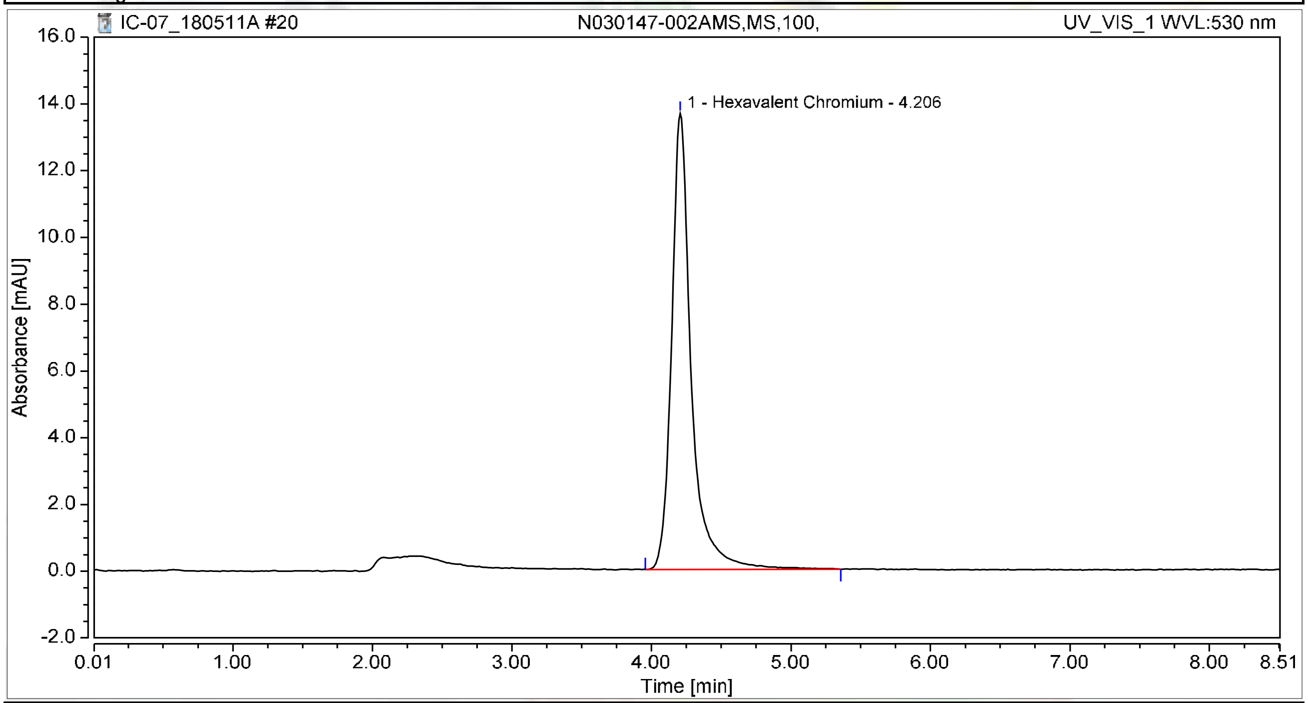
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.877	5.435	100.00	100.00	3.4156
Total:			**0.877**	**5.435**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-002AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 10:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

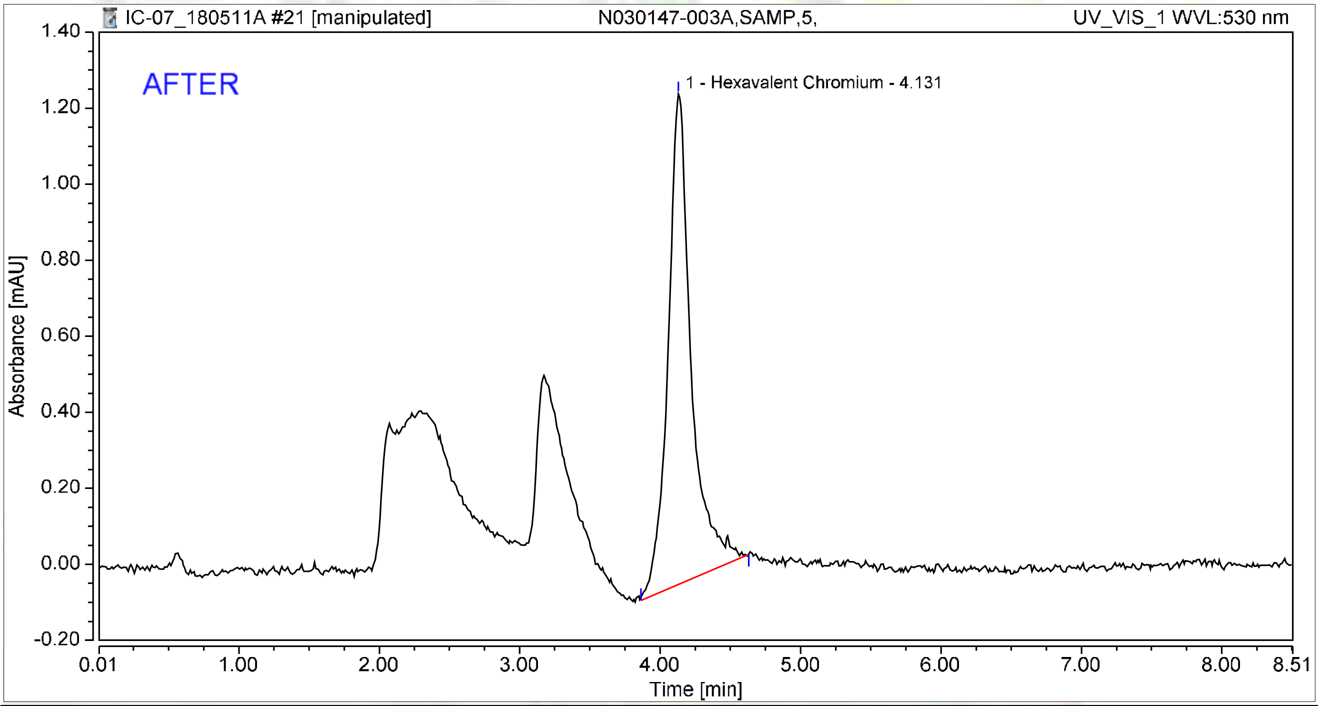
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.236	13.661	100.00	100.00	8.7125
Total:			**2.236**	**13.661**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-003A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 11:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.248	1.290	100.00	100.00	0.9645
Total:			**0.248**	**1.290**	**100.00**	**100.00**	

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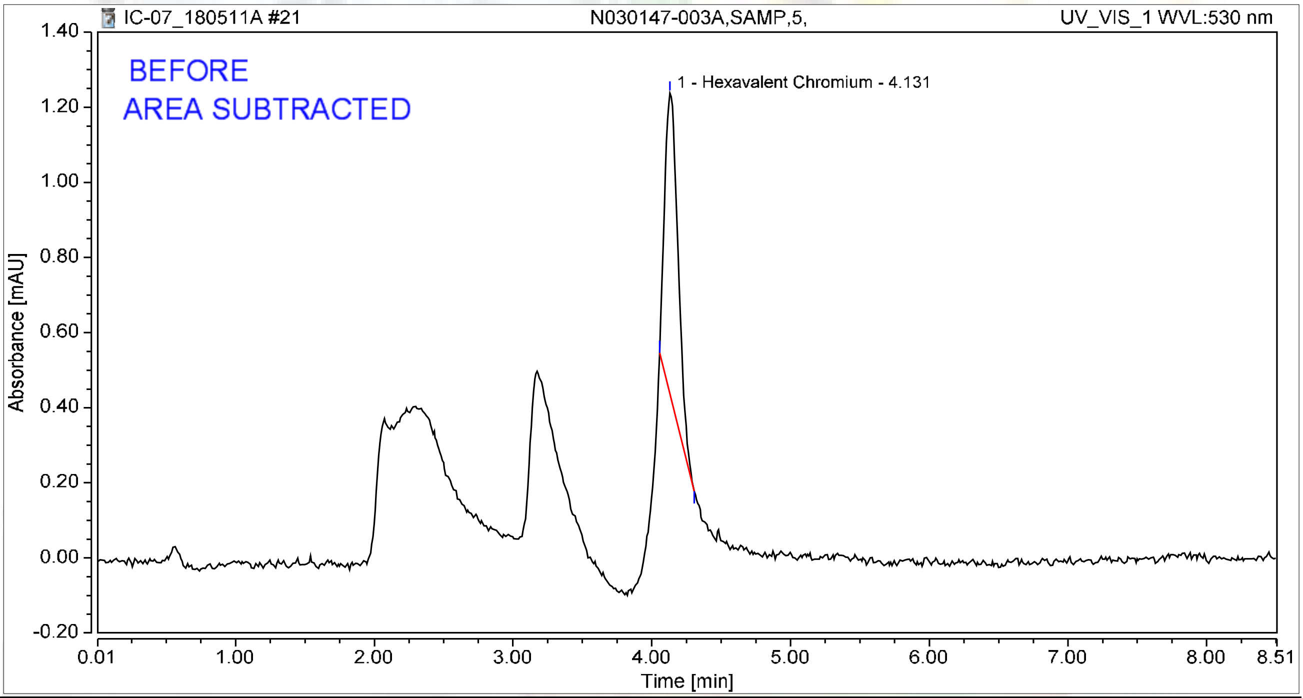
Chromatogram and Results

Injection Details

Injection Name:	**N030147-003A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 11:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.090	0.802	100.00	100.00	0.3505
Total:			**0.090**	**0.802**	**100.00**	**100.00**	

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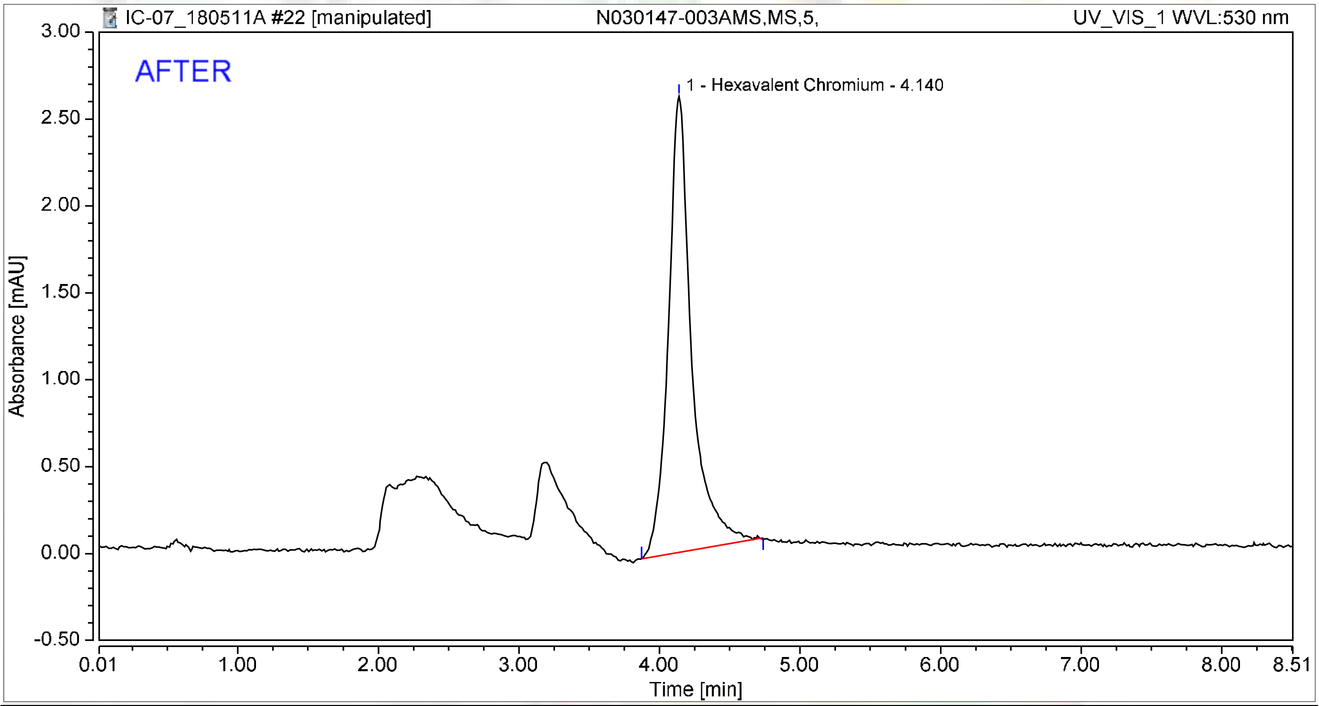
Chromatogram and Results

Injection Details

Injection Name:	**N030147-003AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.504	2.625	100.00	100.00	1.9654
Total:			**0.504**	**2.625**	**100.00**	**100.00**	

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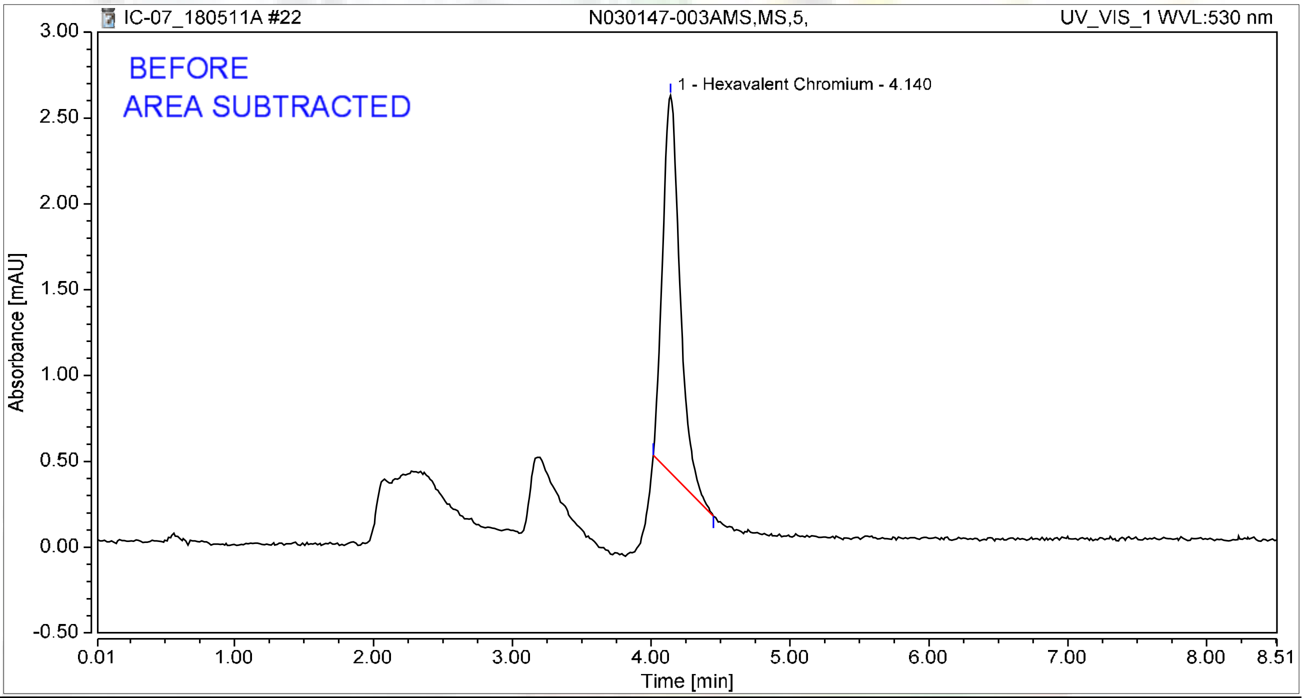
Chromatogram and Results

Injection Details

Injection Name:	**N030147-003AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.321	2.198	100.00	100.00	1.2493
Total:			**0.321**	**2.198**	**100.00**	**100.00**	

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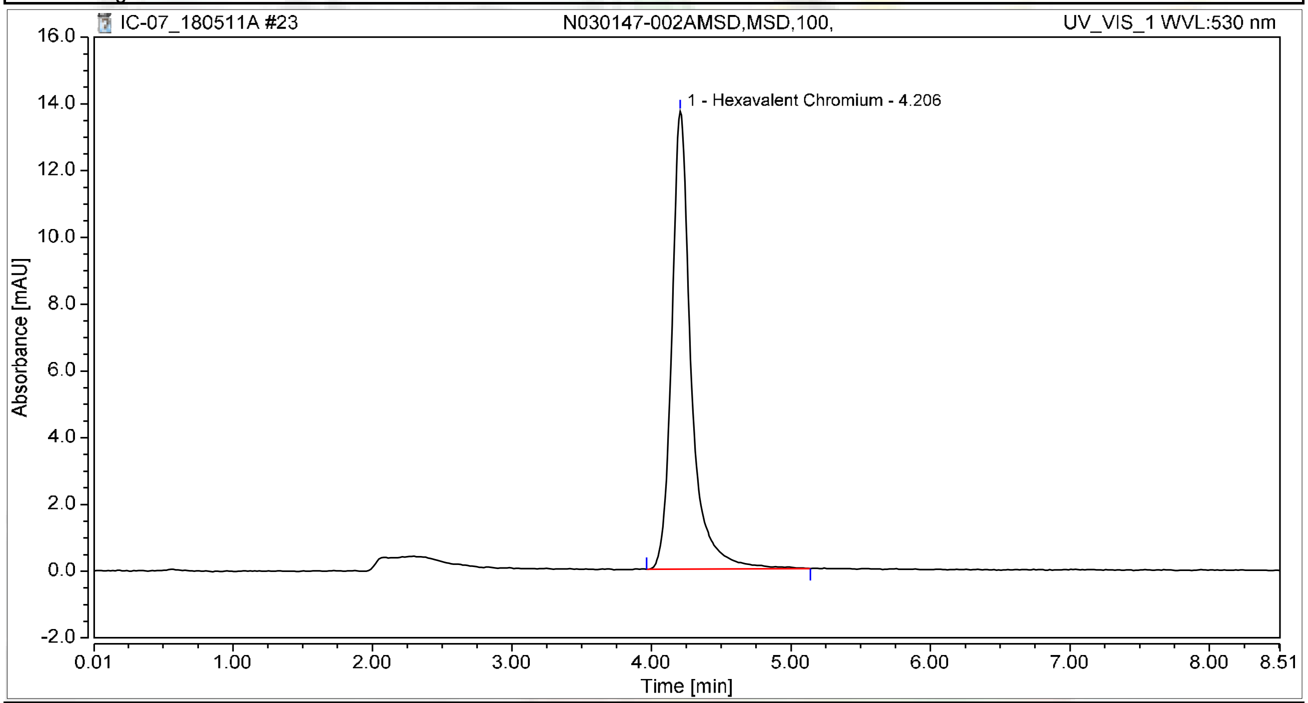
Chromatogram and Results

Injection Details

Injection Name:	**N030147-002AMSD,MSD,100,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 11:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

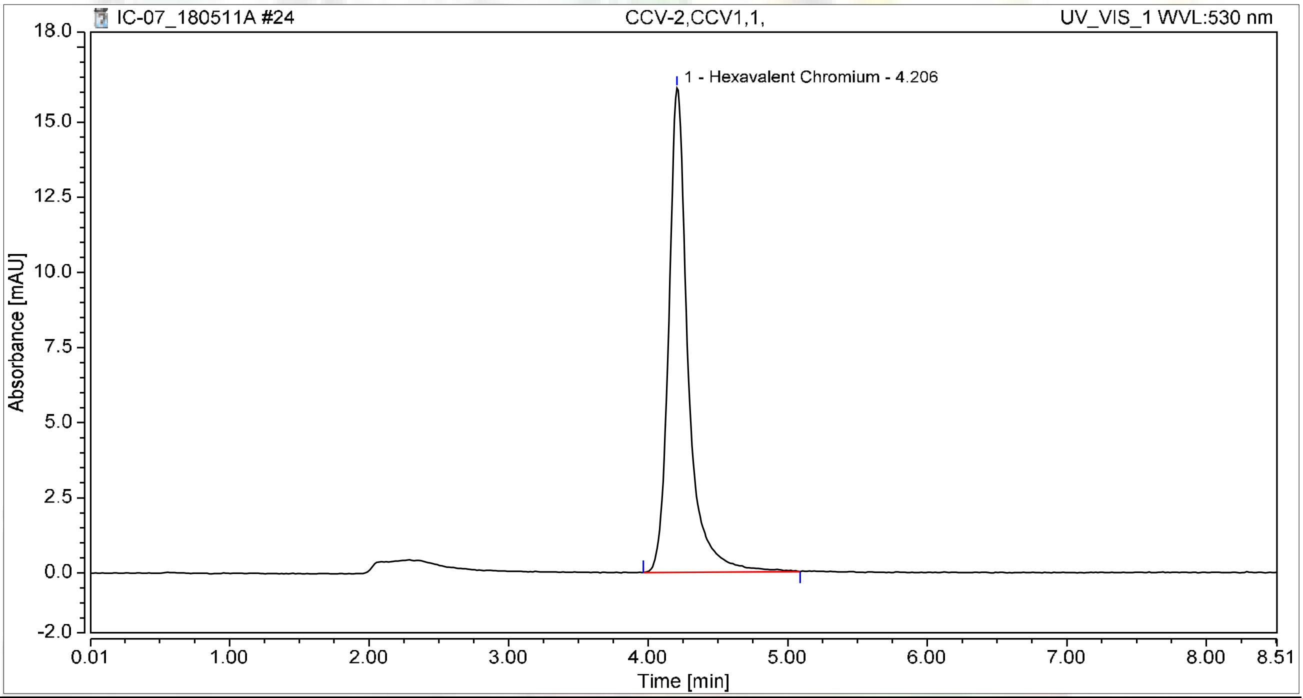
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.219	13.713	100.00	100.00	8.6458
Total:			**2.219**	**13.713**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 11:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

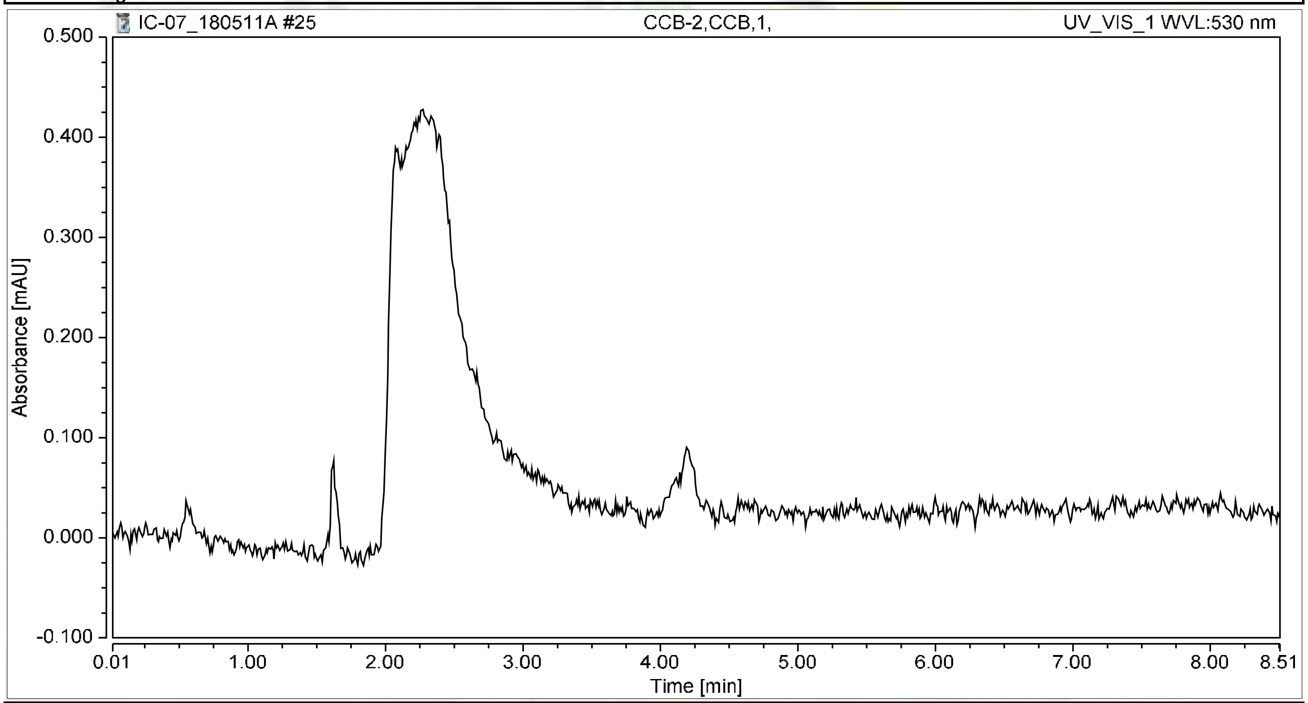
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.594	16.107	100.00	100.00	10.1059
Total:			**2.594**	**16.107**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 11:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

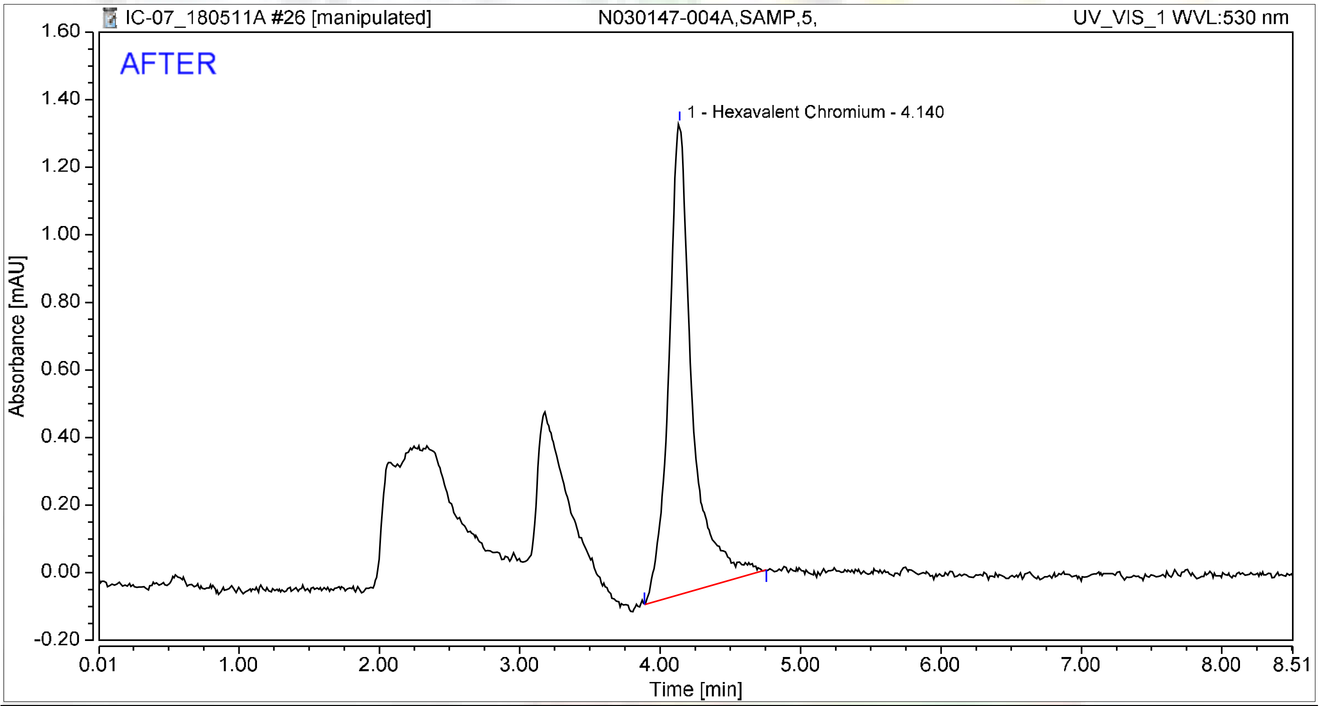
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 11:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.272	1.393	100.00	100.00	1.0599
Total:			**0.272**	**1.393**	**100.00**	**100.00**	

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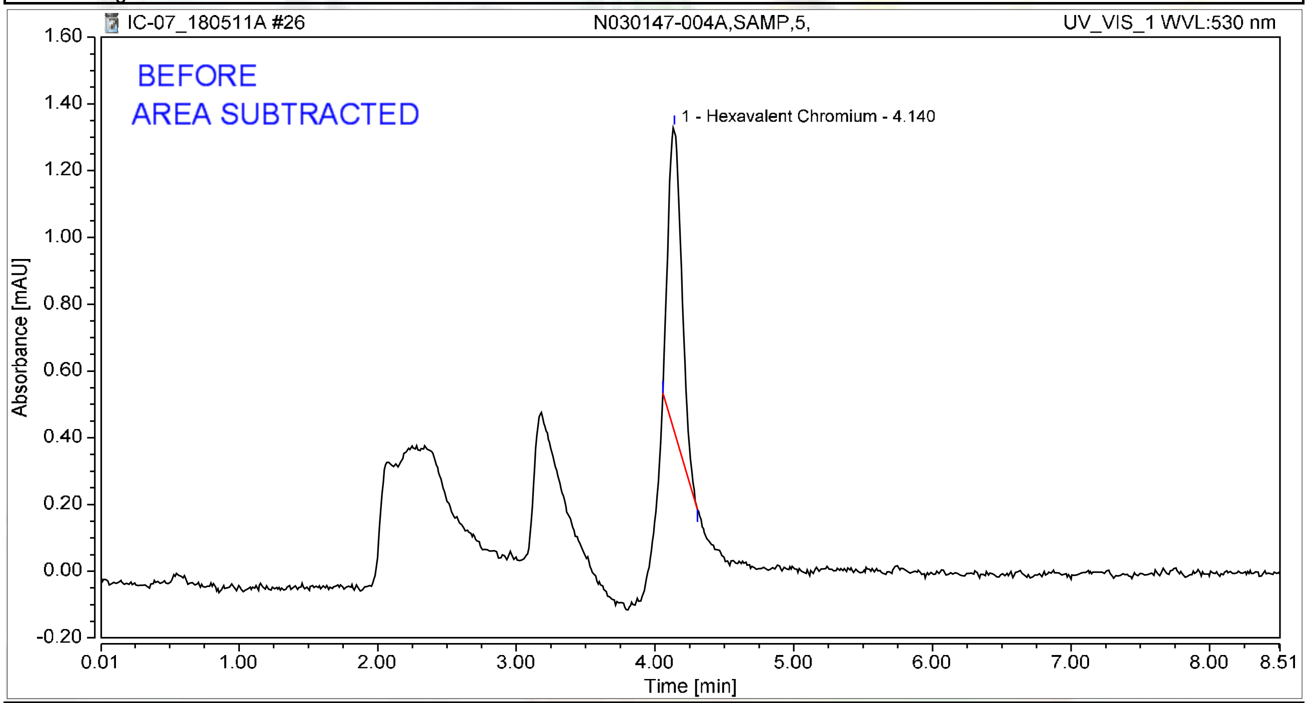
Chromatogram and Results

Injection Details

Injection Name:	**N030147-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 11:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.104	0.912	100.00	100.00	0.4048
Total:			**0.104**	**0.912**	**100.00**	**100.00**	

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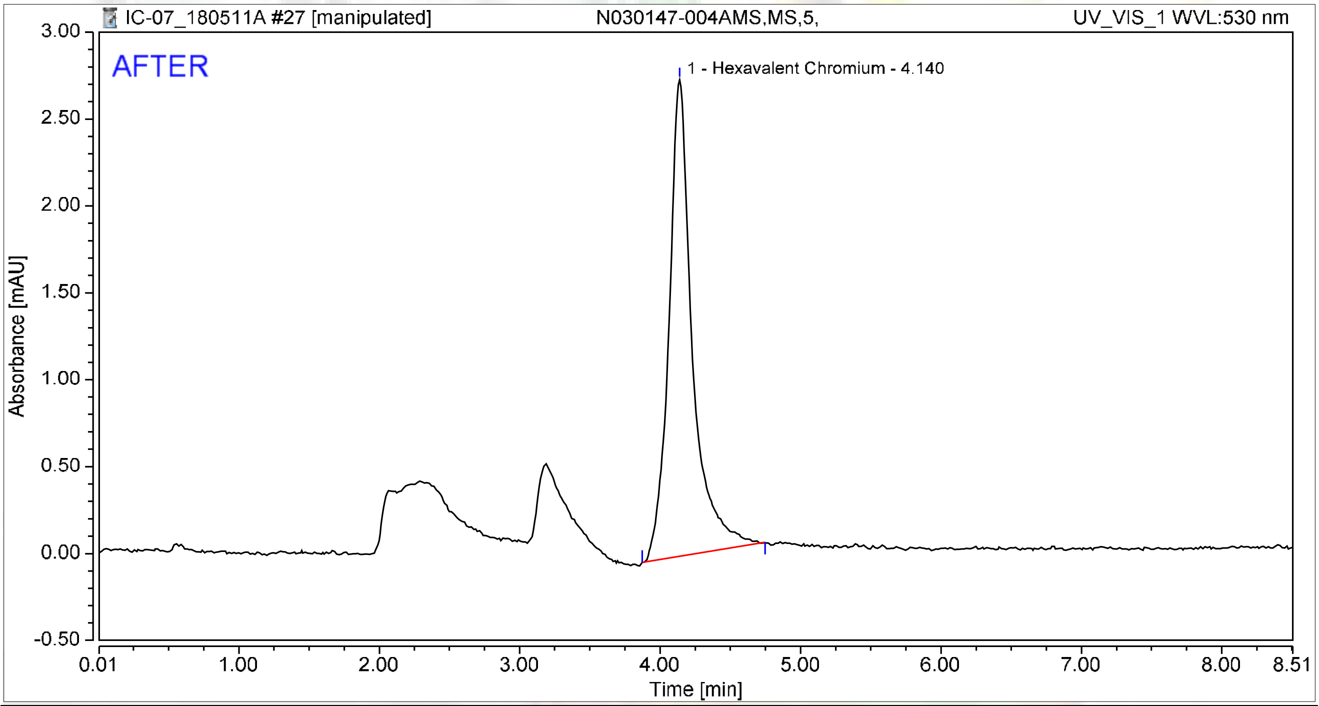
Chromatogram and Results

Injection Details

Injection Name:	**N030147-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 11:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.530	2.742	100.00	100.00	2.0664
Total:			**0.530**	**2.742**	**100.00**	**100.00**	

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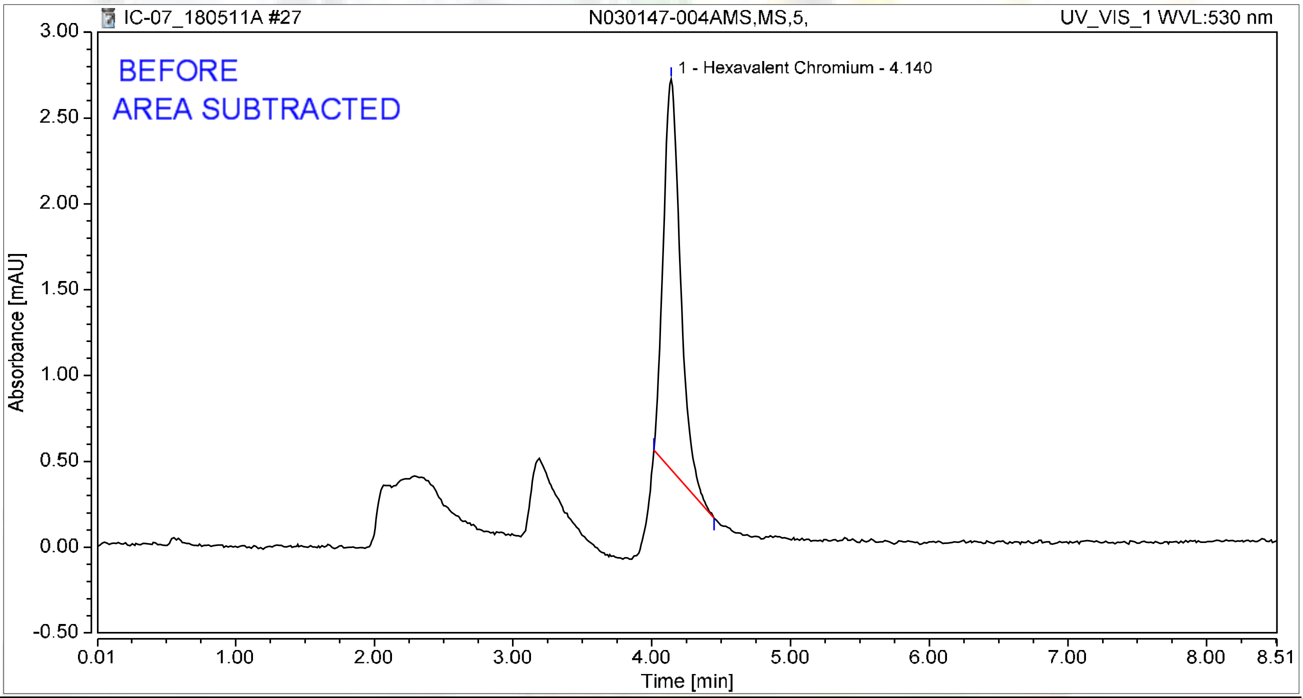
Chromatogram and Results

Injection Details

Injection Name:	**N030147-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 11:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.329	2.275	100.00	100.00	1.2809
Total:			**0.329**	**2.275**	**100.00**	**100.00**	

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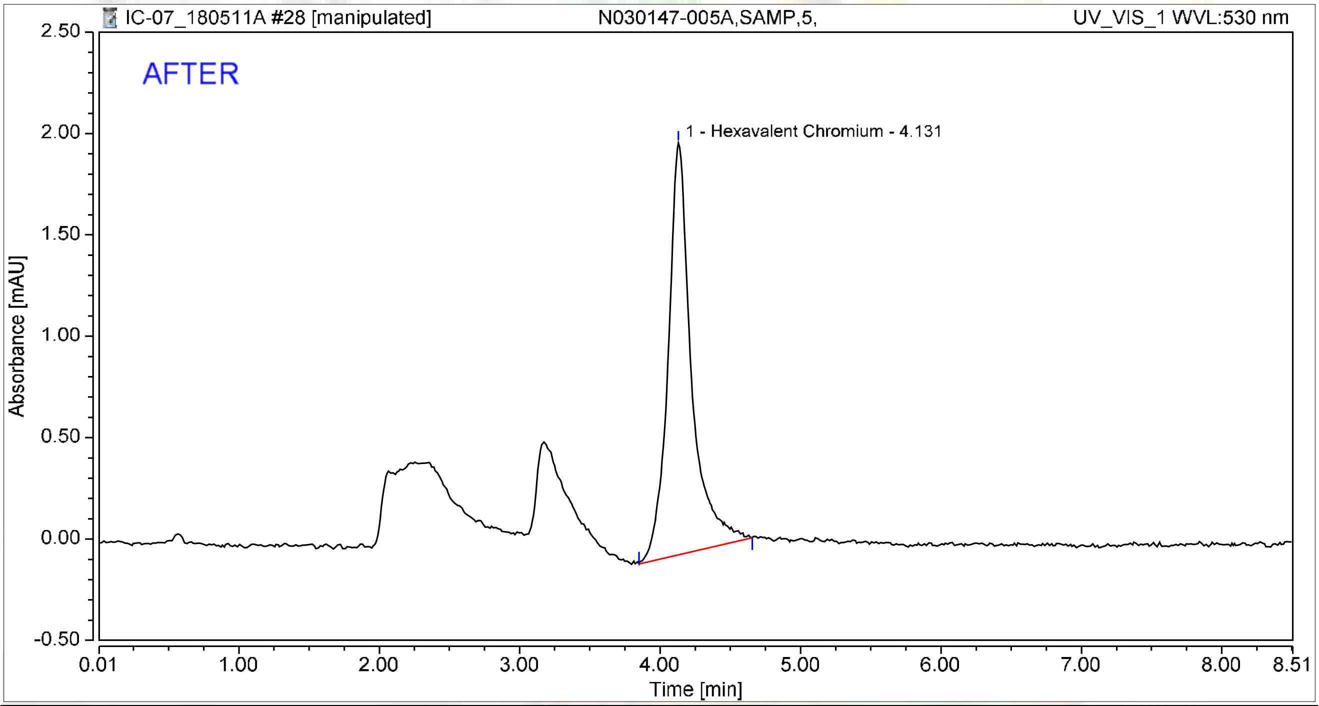
Chromatogram and Results

Injection Details

Injection Name:	**N030147-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 12:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.393	2.031	100.00	100.00	1.5303
Total:			**0.393**	**2.031**	**100.00**	**100.00**	

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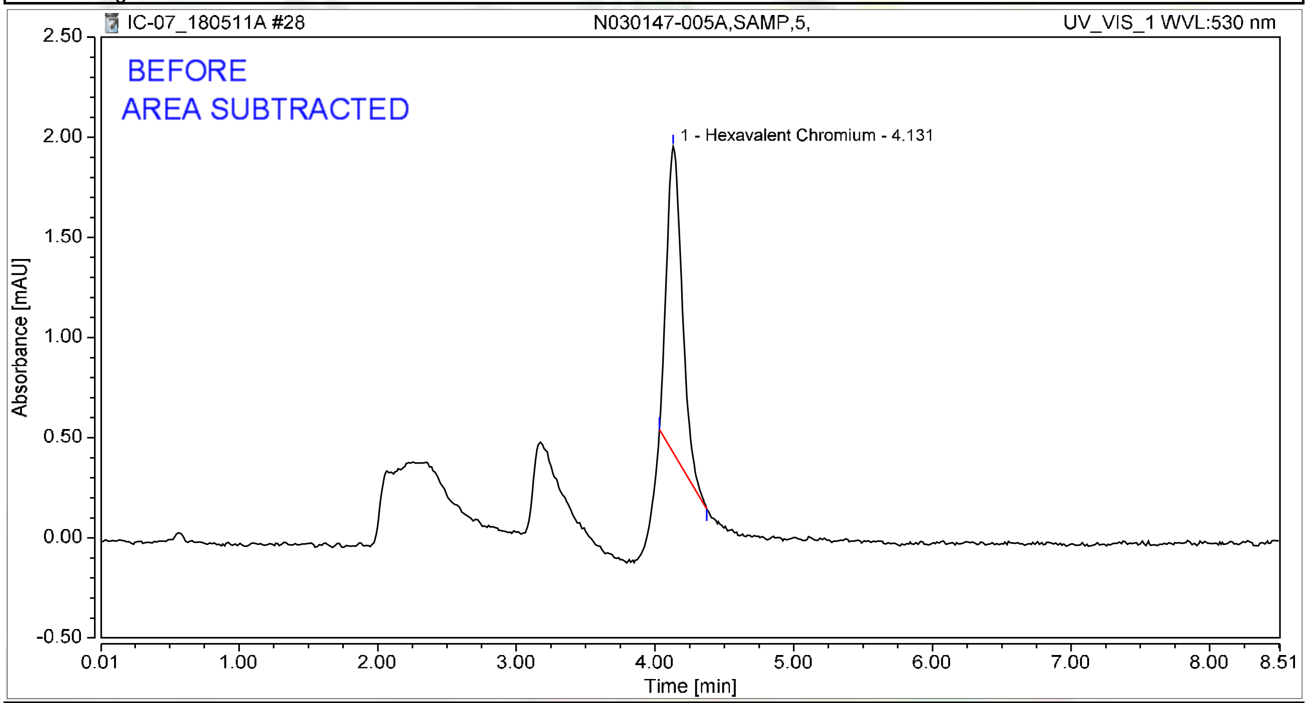
Chromatogram and Results

Injection Details

Injection Name:	**N030147-005A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 12:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.200	1.529	100.00	100.00	0.7787
Total:			**0.200**	**1.529**	**100.00**	**100.00**	

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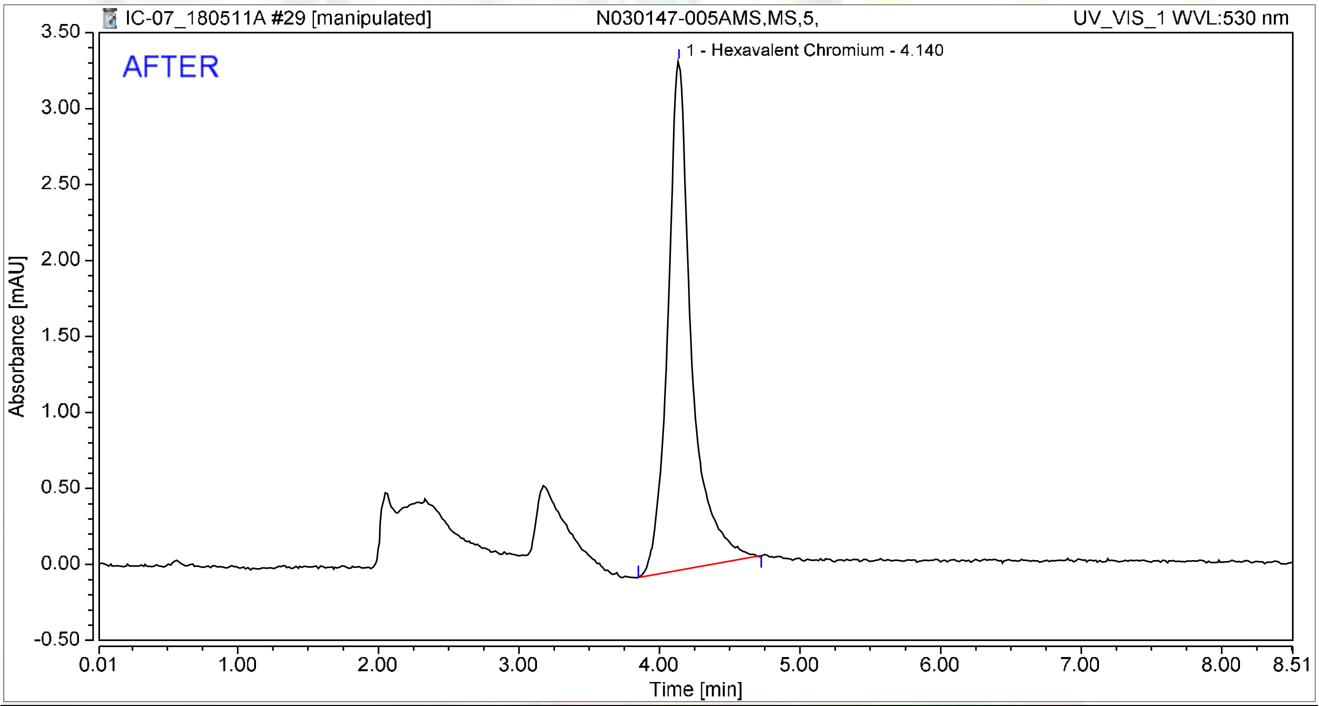
Chromatogram and Results

Injection Details

Injection Name:	**N030147-005AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 12:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.659	3.348	100.00	100.00	2.5676
Total:			**0.659**	**3.348**	**100.00**	**100.00**	

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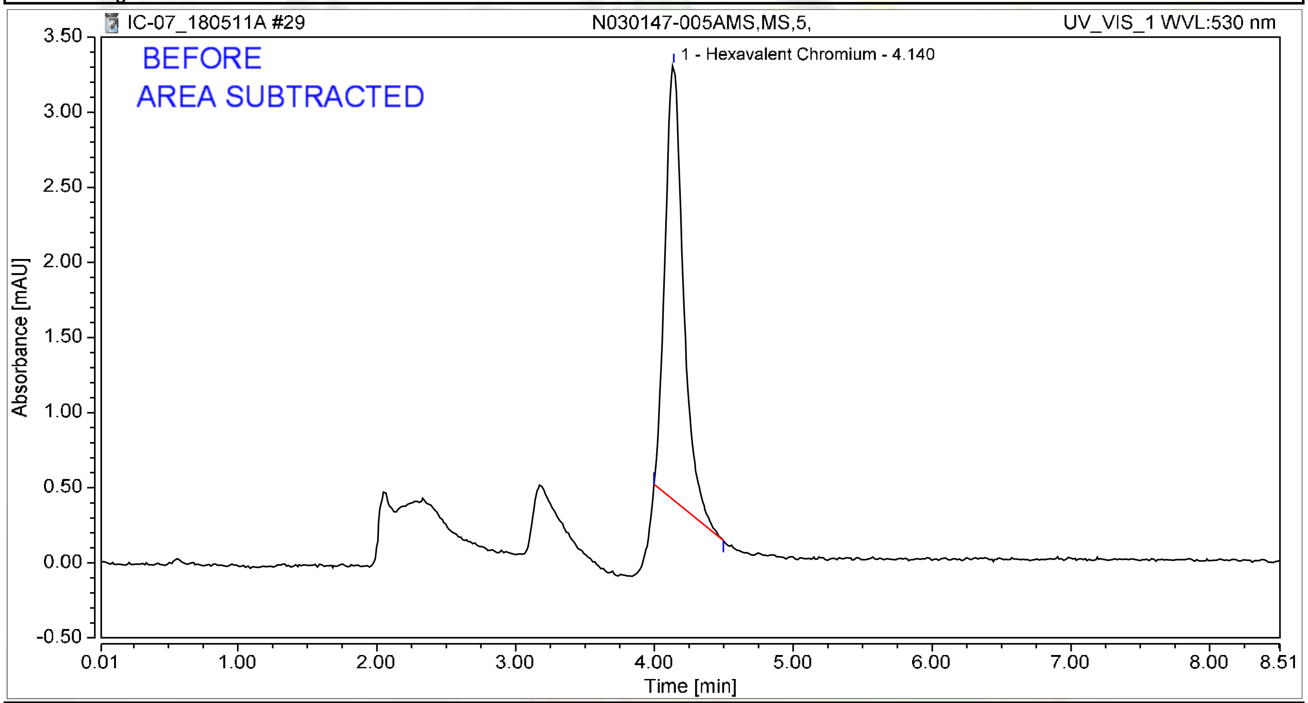
Chromatogram and Results

Injection Details

Injection Name:	**N030147-005AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 12:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.445	2.892	100.00	100.00	1.7348
Total:			**0.445**	**2.892**	**100.00**	**100.00**	

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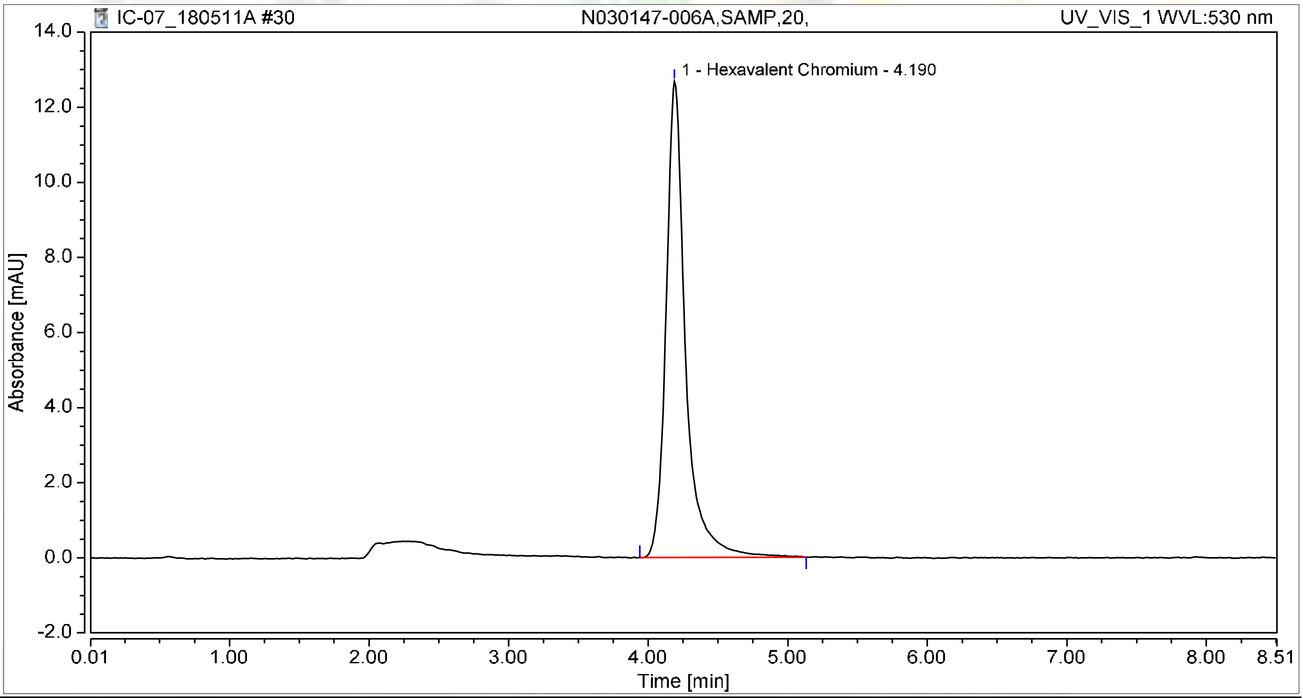
Chromatogram and Results

Injection Details

Injection Name:	**N030147-006A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 12:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

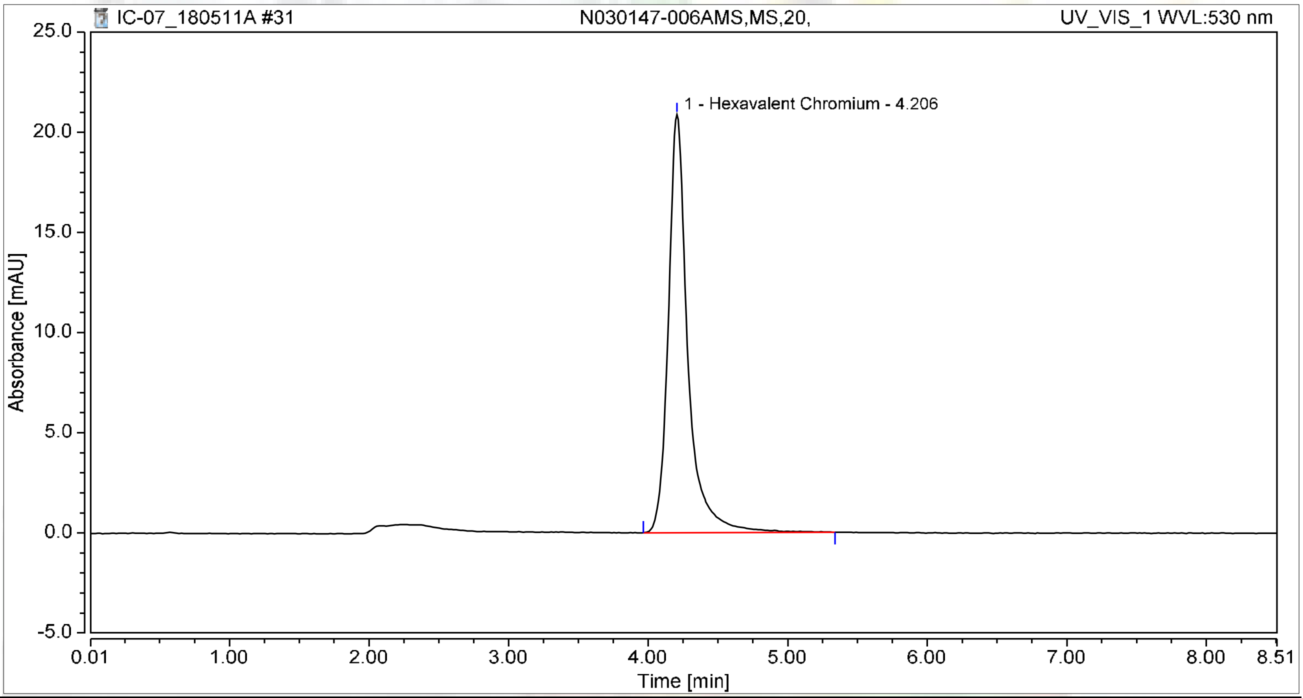
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	2.056	12.683	100.00	100.00	8.0131
Total:			**2.056**	**12.683**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-006AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 12:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

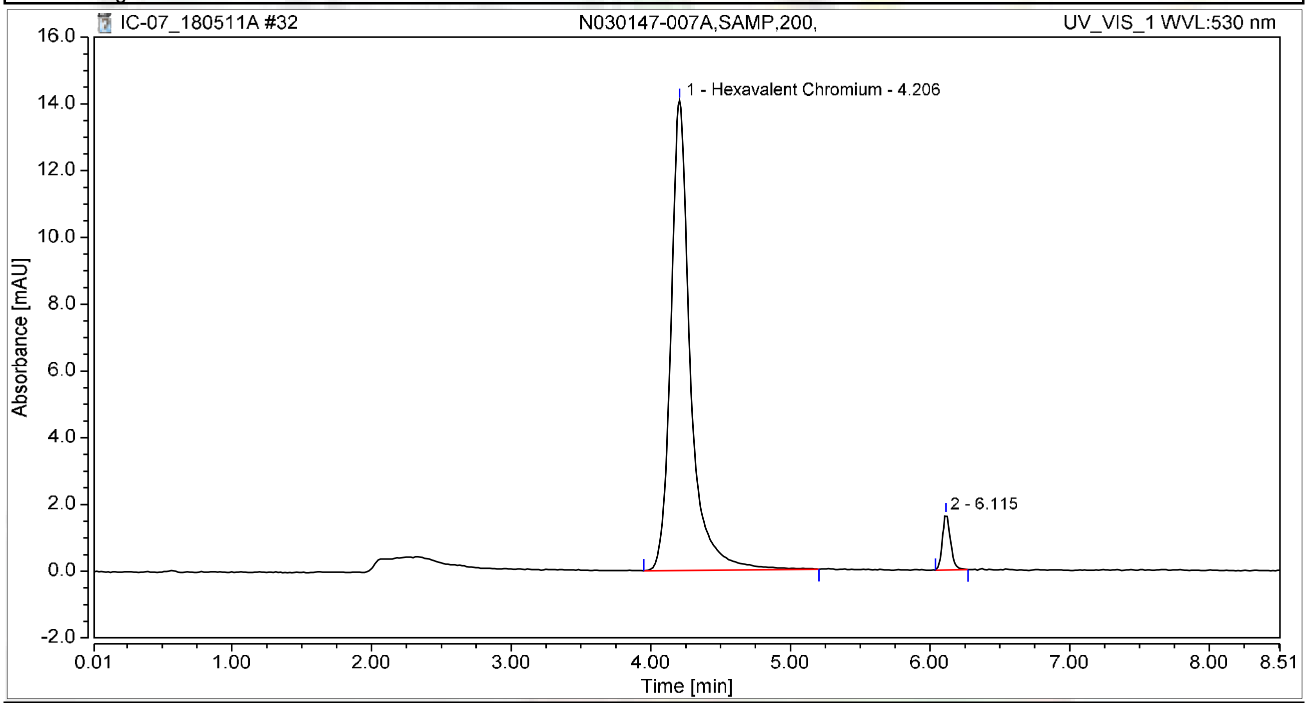
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	3.392	20.865	100.00	100.00	13.2159
Total:			**3.392**	**20.865**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-007A,SAMP,200,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 12:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

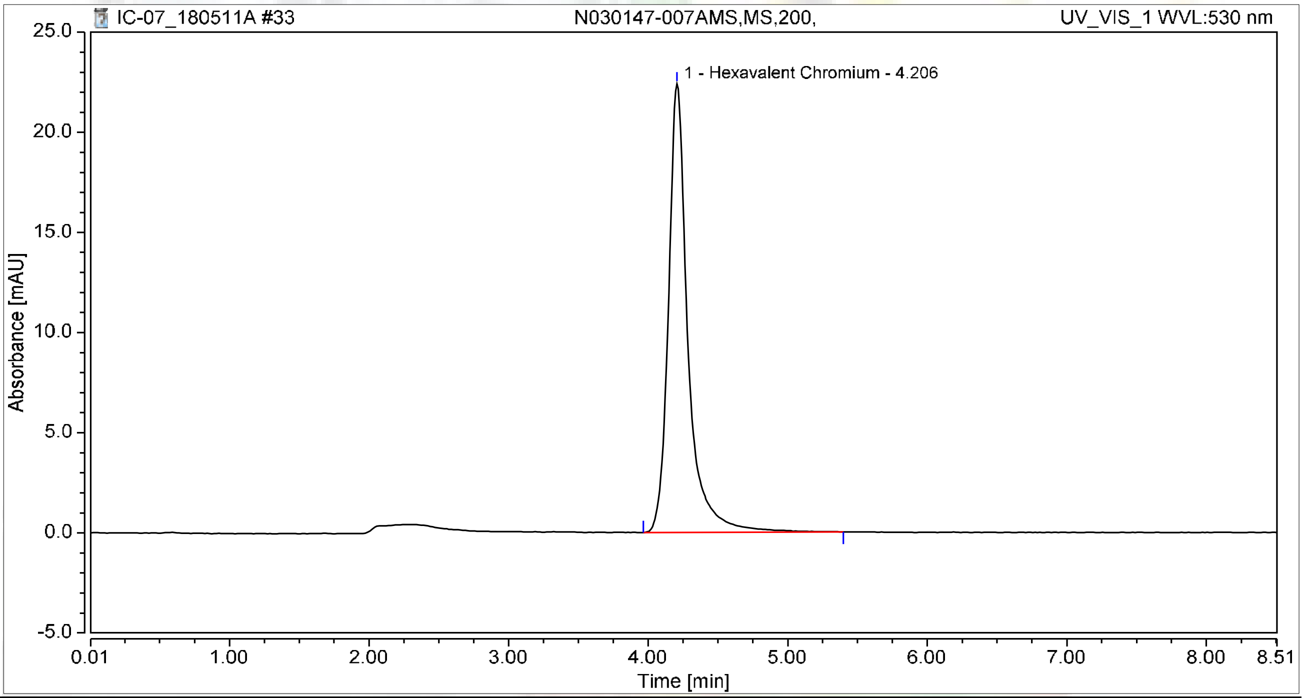
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.285	14.074	95.33	89.52	8.9045
2		6.115	0.112	1.648	4.67	10.48	n.a.
Total:			**2.397**	**15.722**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-007AMS,MS,200,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 12:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

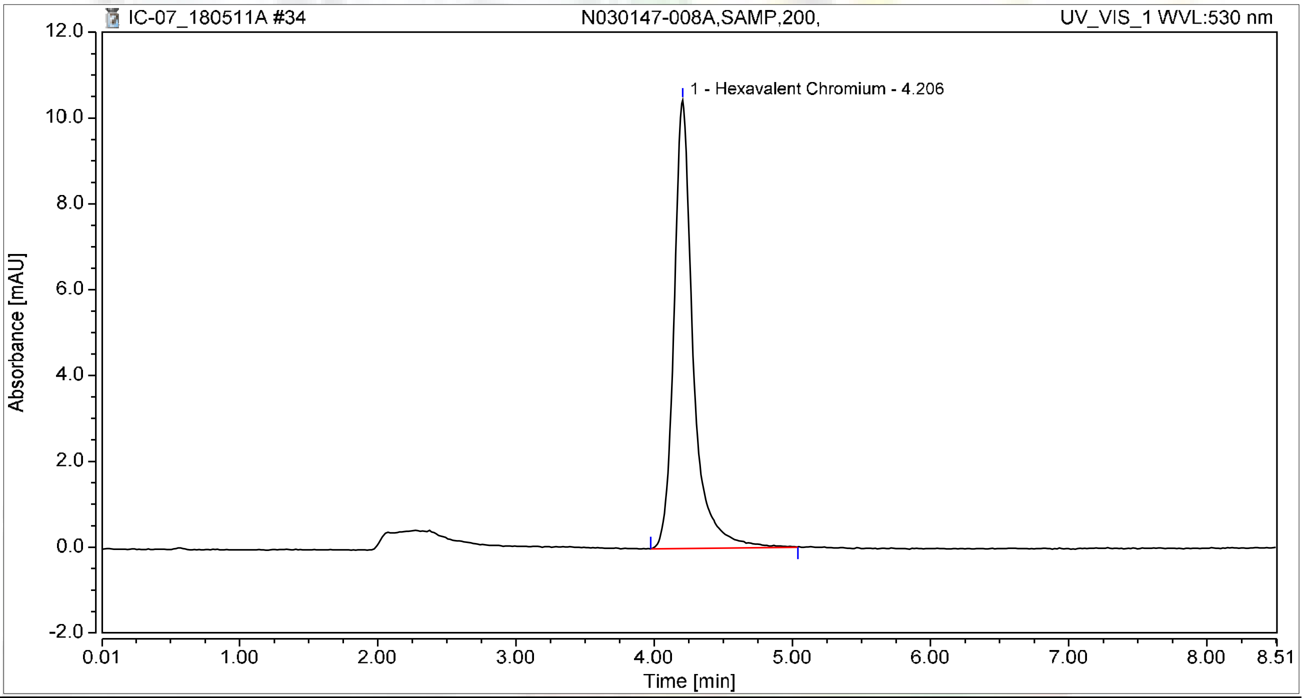
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	3.645	22.393	100.00	100.00	14.2042
Total:			**3.645**	**22.393**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-008A,SAMP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 13:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

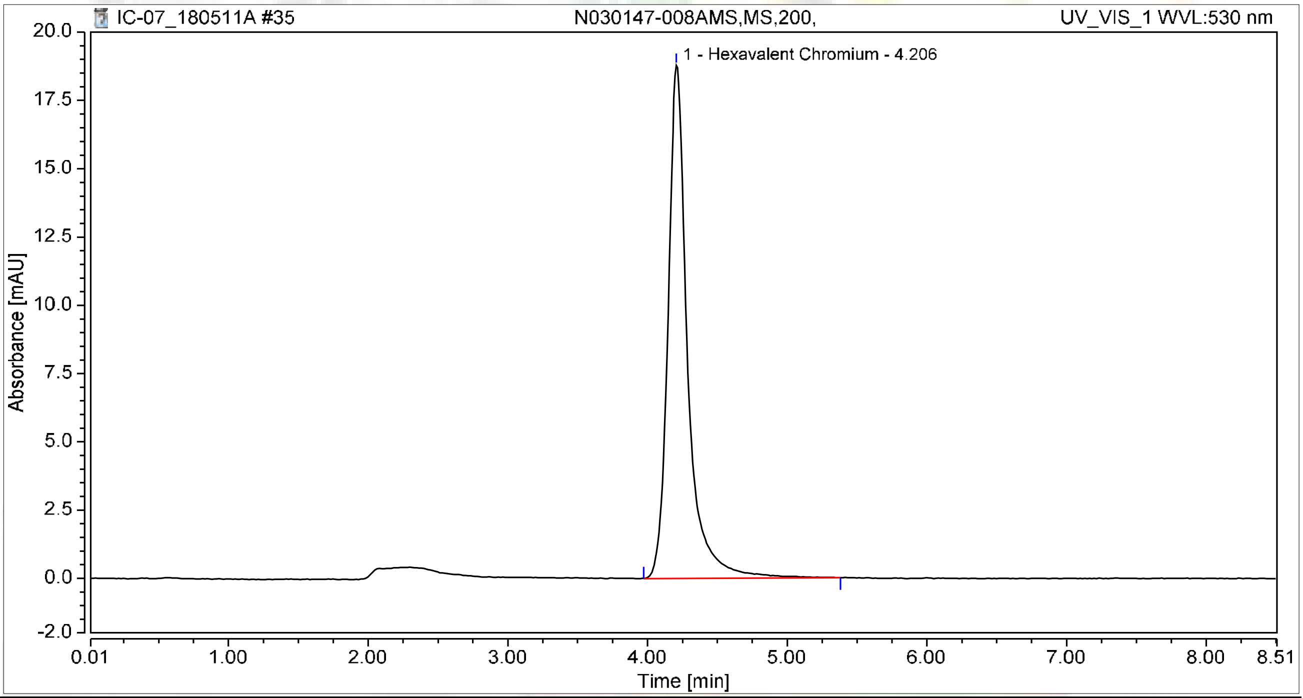
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.681	10.450	100.00	100.00	6.5513
Total:			**1.681**	**10.450**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-008AMS,MS,200,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 13:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

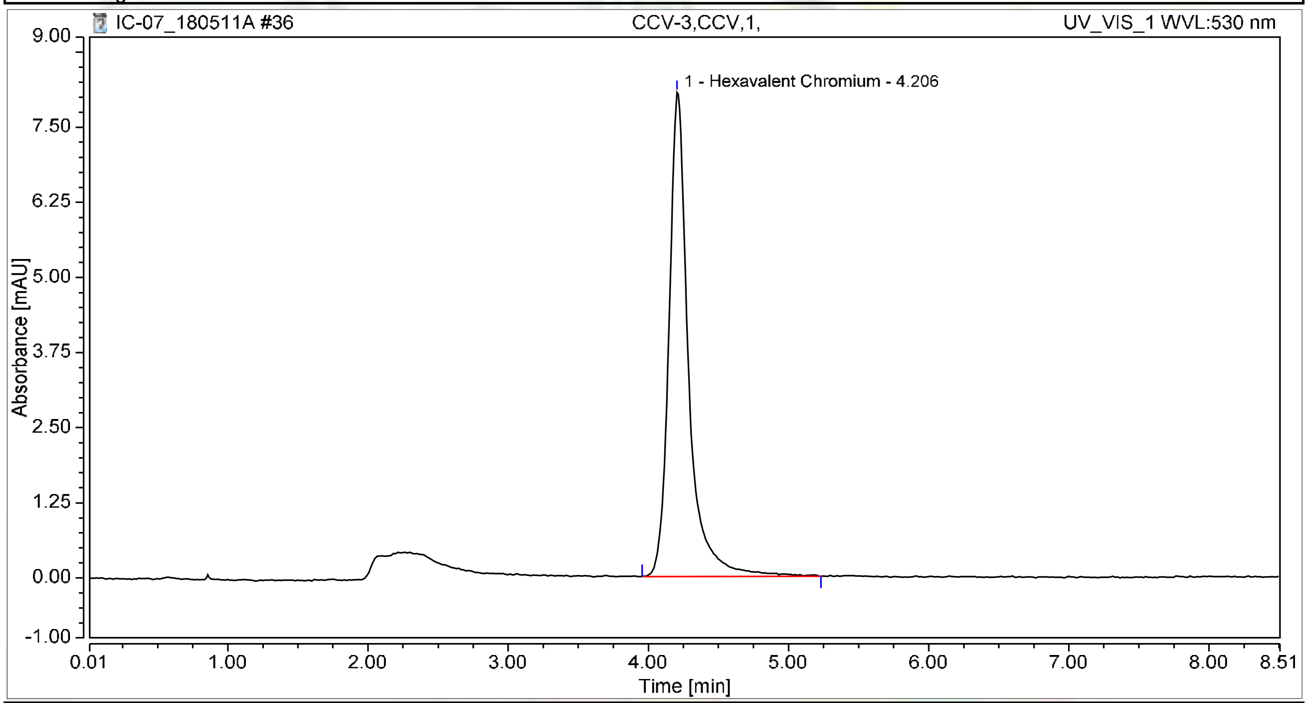
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	3.057	18.789	100.00	100.00	11.9110
Total:			**3.057**	**18.789**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 13:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

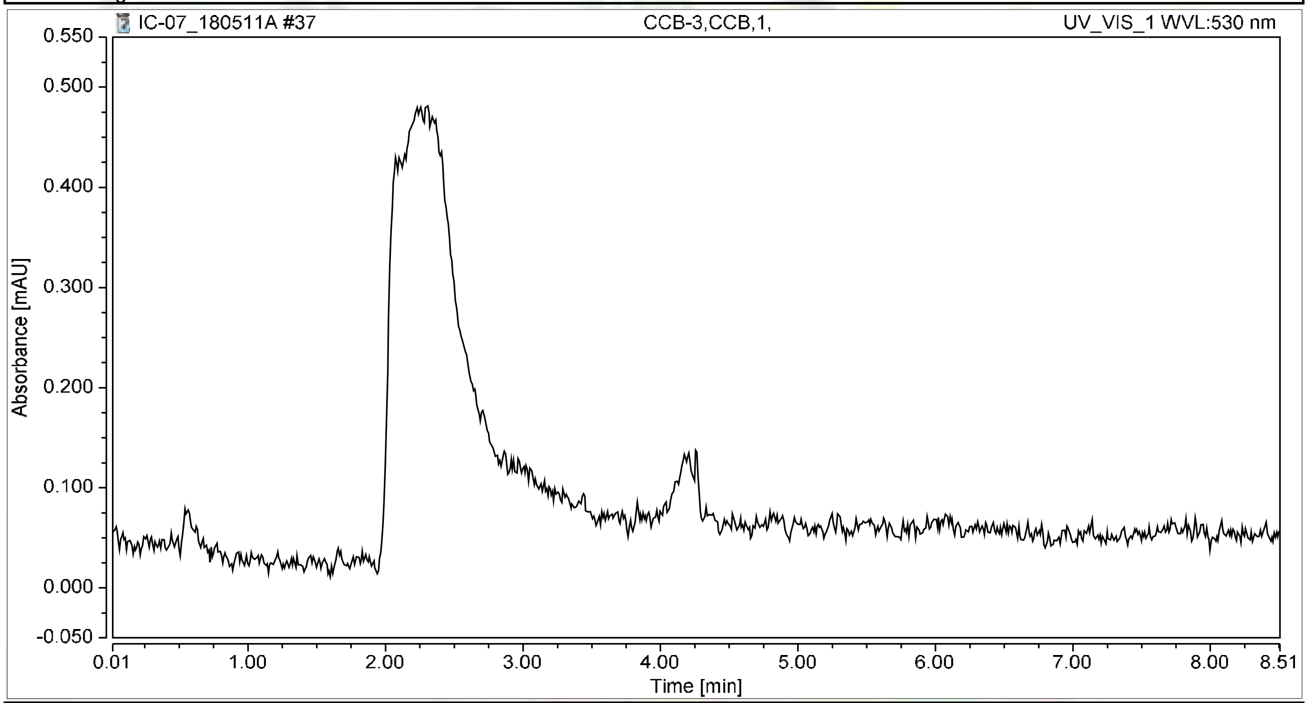
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.306	8.056	100.00	100.00	5.0906
Total:			**1.306**	**8.056**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 13:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

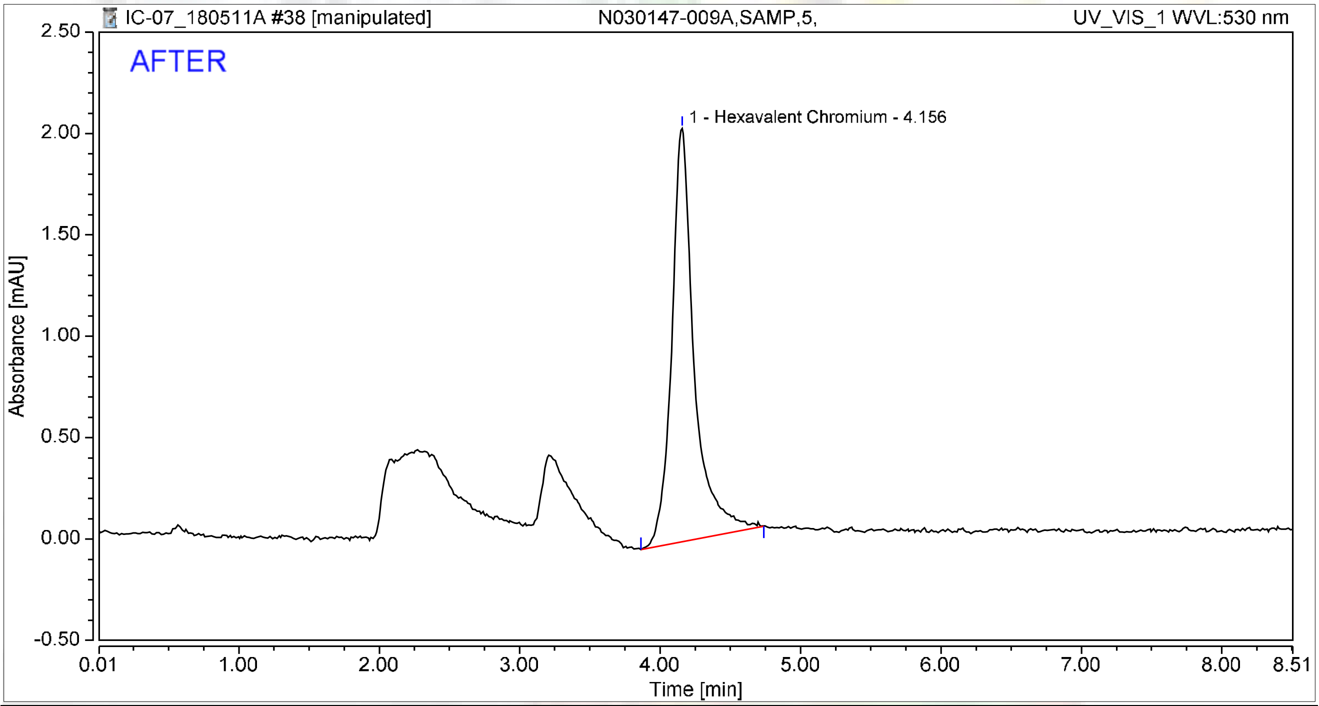
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-009A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 13:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.380	2.039	100.00	100.00	1.4796
Total:			**0.380**	**2.039**	**100.00**	**100.00**	

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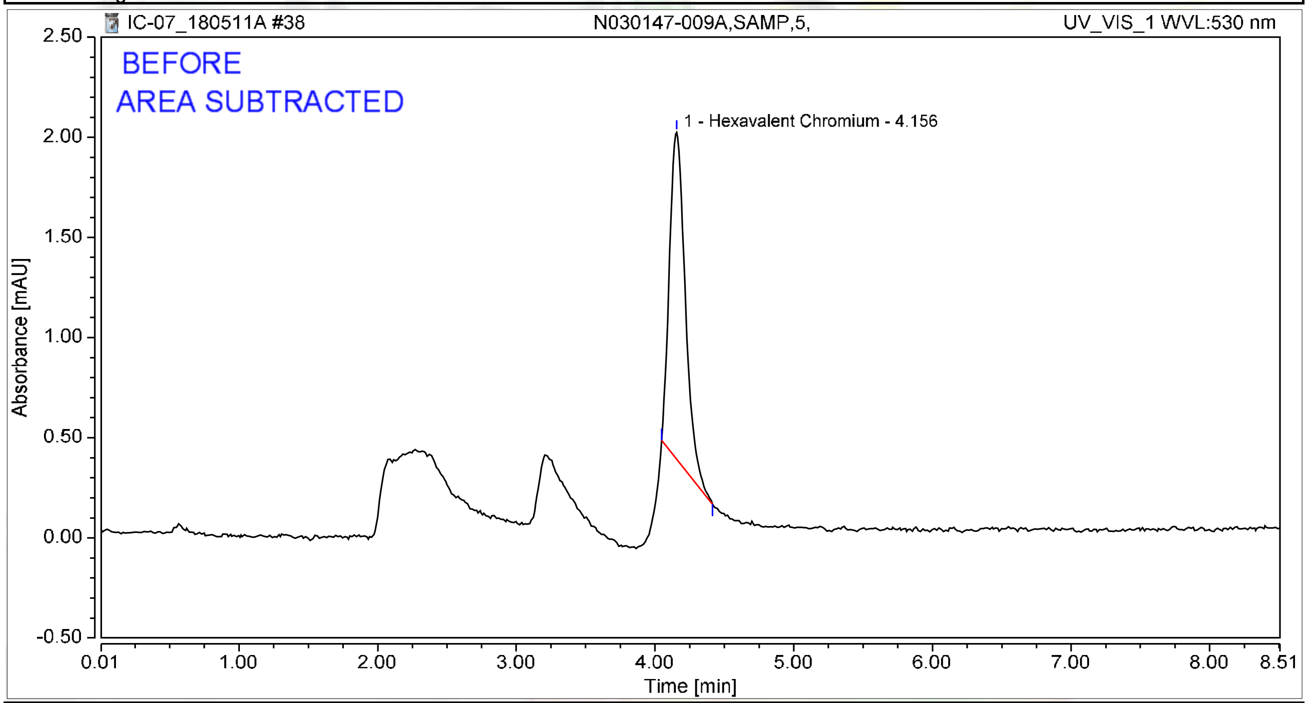
Chromatogram and Results

Injection Details

Injection Name:	**N030147-009A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 13:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.217	1.633	100.00	100.00	0.8444
Total:			**0.217**	**1.633**	**100.00**	**100.00**	

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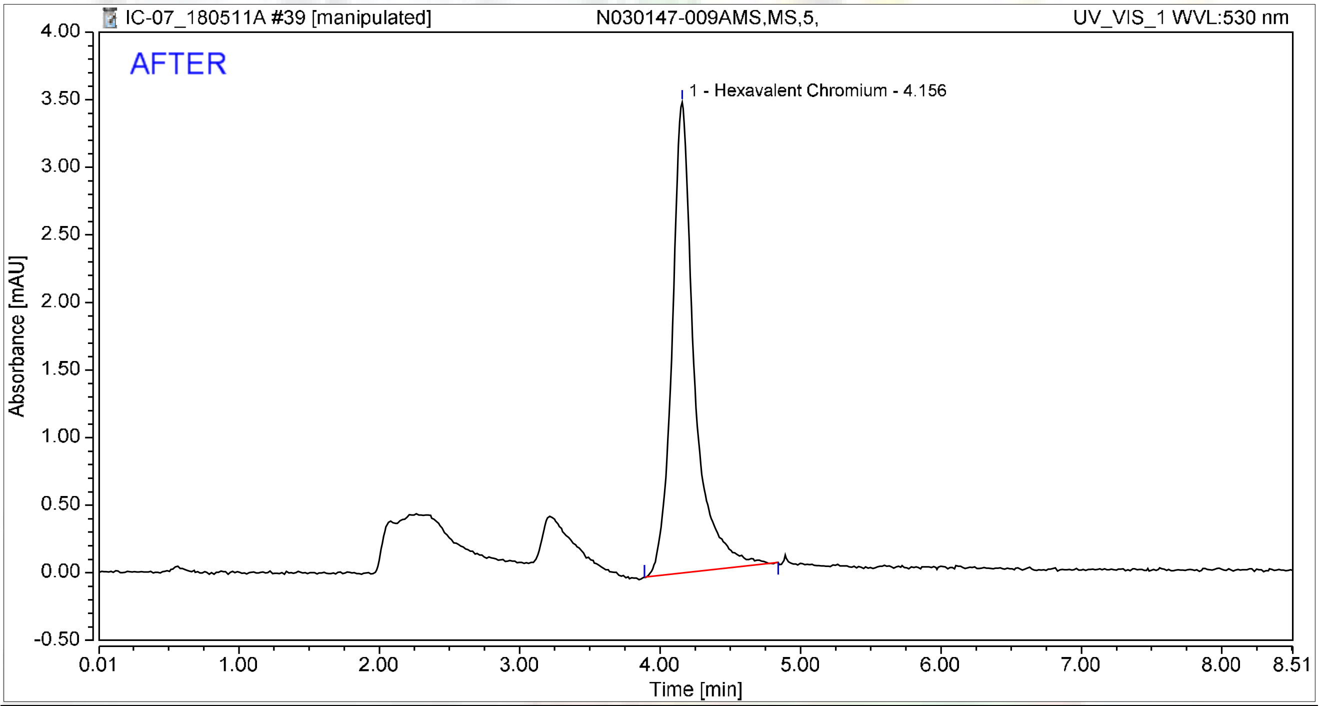
Chromatogram and Results

Injection Details

Injection Name:	**N030147-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 13:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.642	3.482	100.00	100.00	2.4997
Total:			**0.642**	**3.482**	**100.00**	**100.00**	

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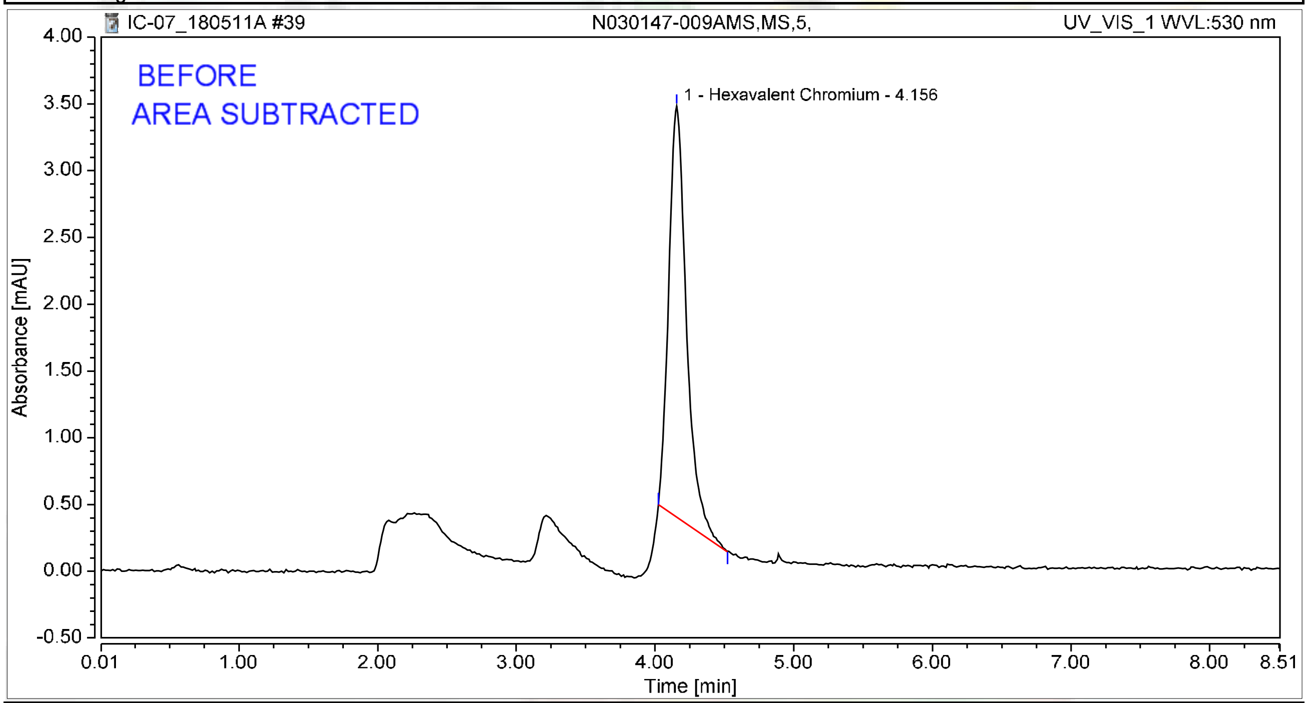
Chromatogram and Results

Injection Details

Injection Name:	**N030147-009AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 13:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.457	3.079	100.00	100.00	1.7814
Total:			**0.457**	**3.079**	**100.00**	**100.00**	

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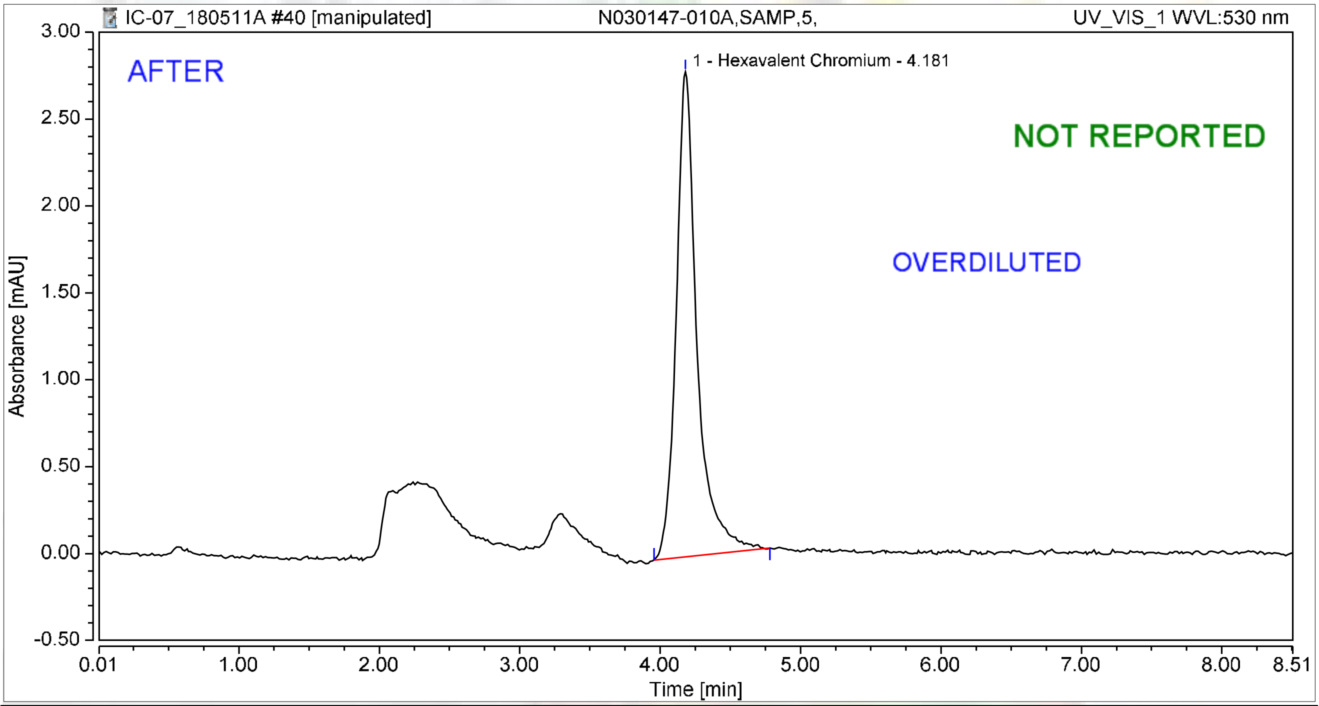
Chromatogram and Results

Injection Details

Injection Name:	**N030147-010A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 14:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

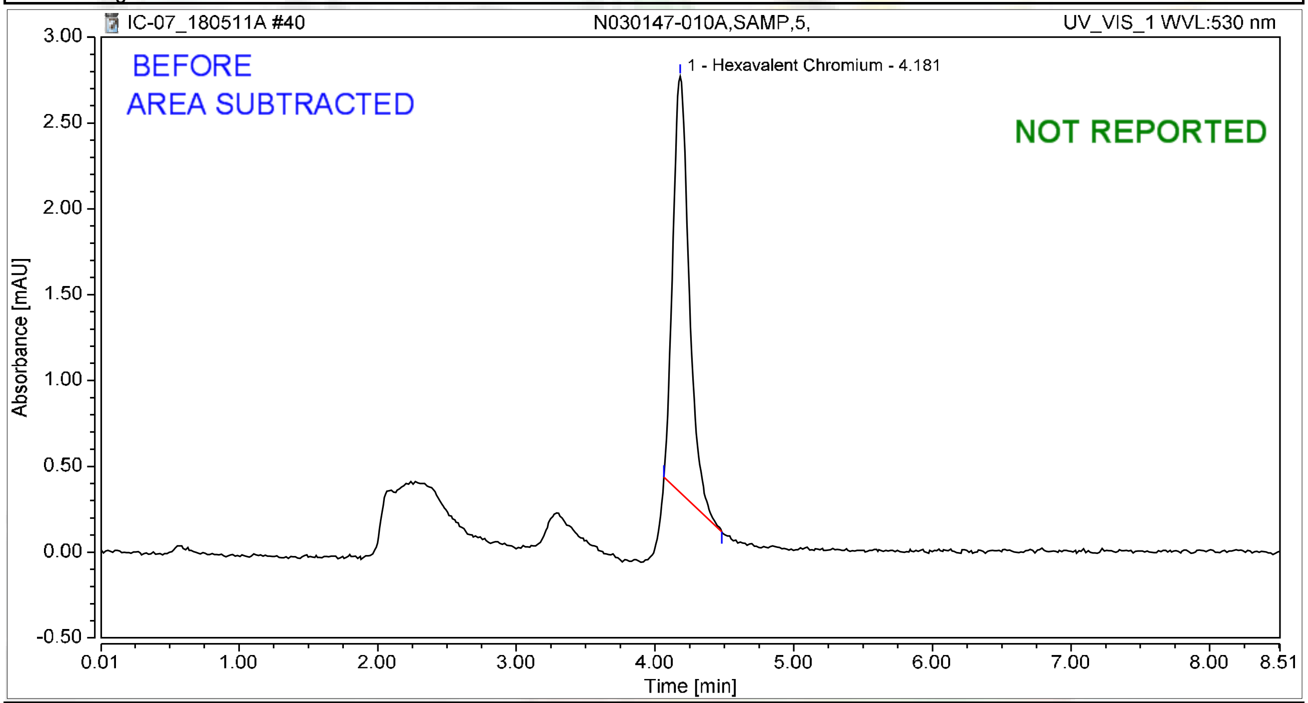
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.479	2.789	100.00	100.00	1.8651
Total:			**0.479**	**2.789**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-010A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 14:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.332	2.423	100.00	100.00	1.2925
Total:			**0.332**	**2.423**	**100.00**	**100.00**	

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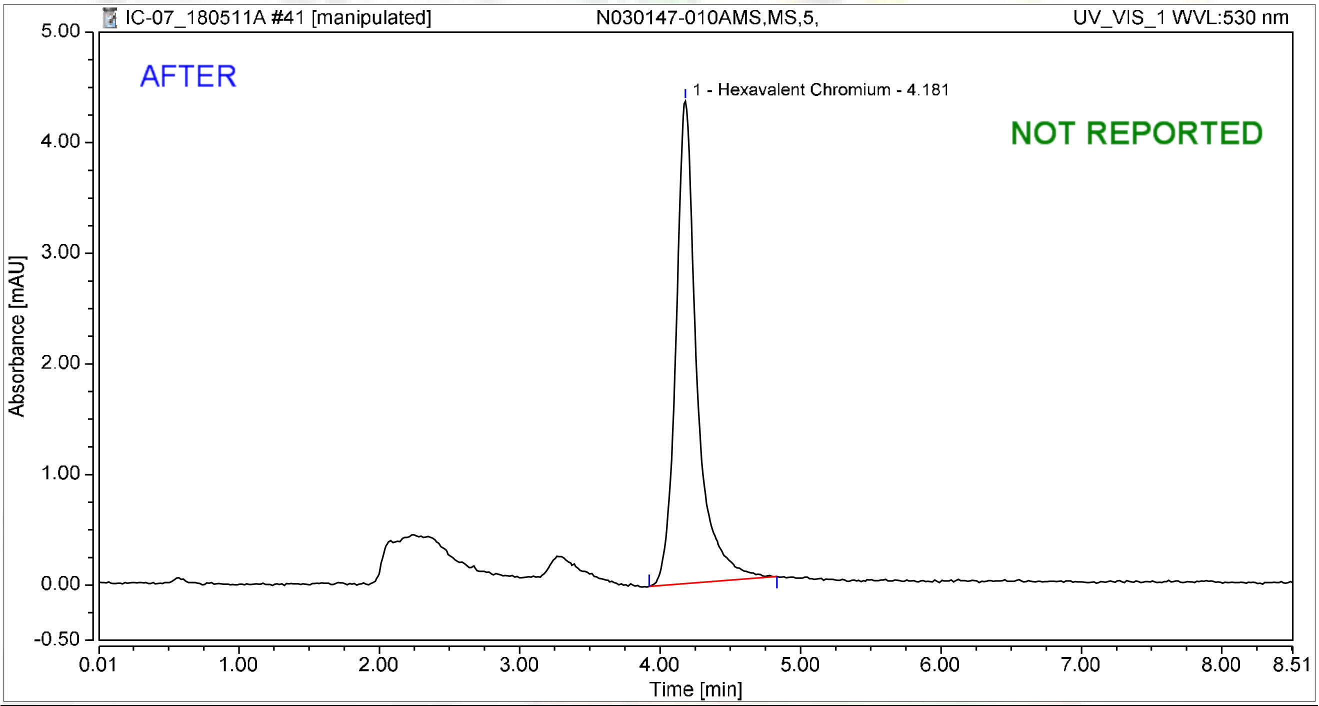
Chromatogram and Results

Injection Details

Injection Name:	**N030147-010AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 14:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.758	4.362	100.00	100.00	2.9552
Total:			**0.758**	**4.362**	**100.00**	**100.00**	

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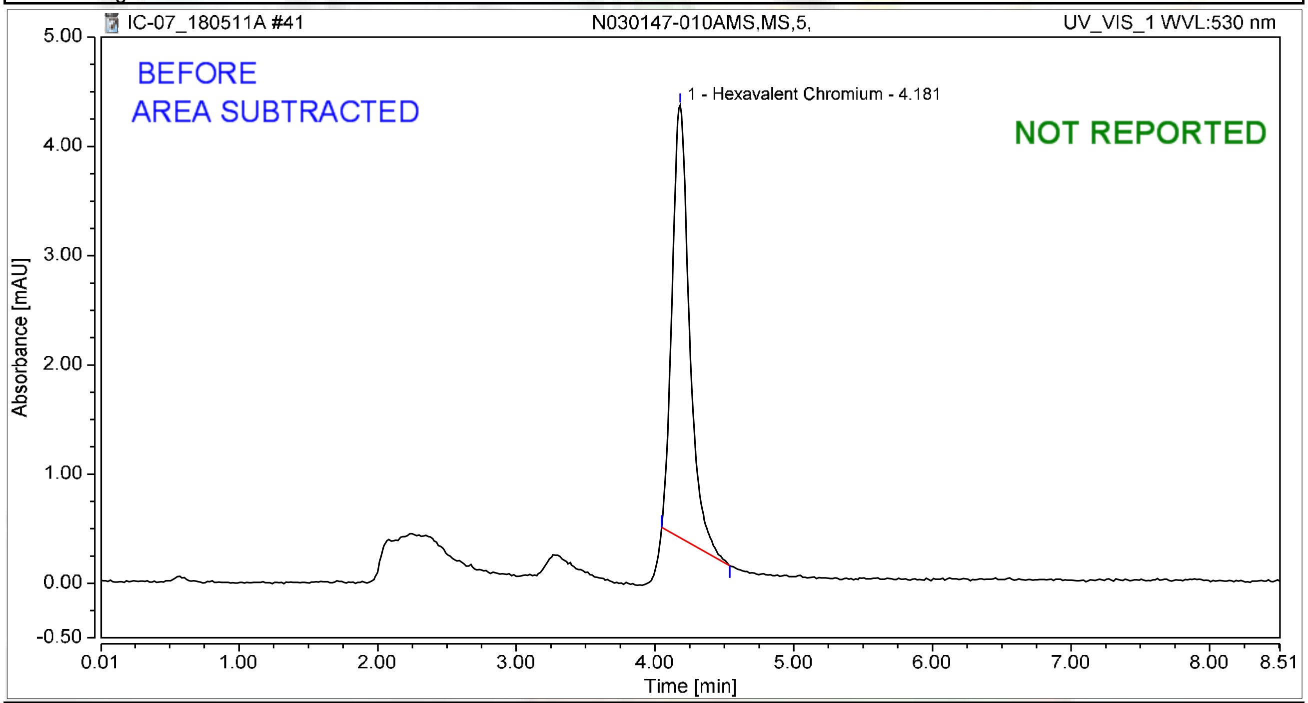
Chromatogram and Results

Injection Details

Injection Name:	**N030147-010AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 14:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.576	3.958	100.00	100.00	2.2463
Total:			**0.576**	**3.958**	**100.00**	**100.00**	

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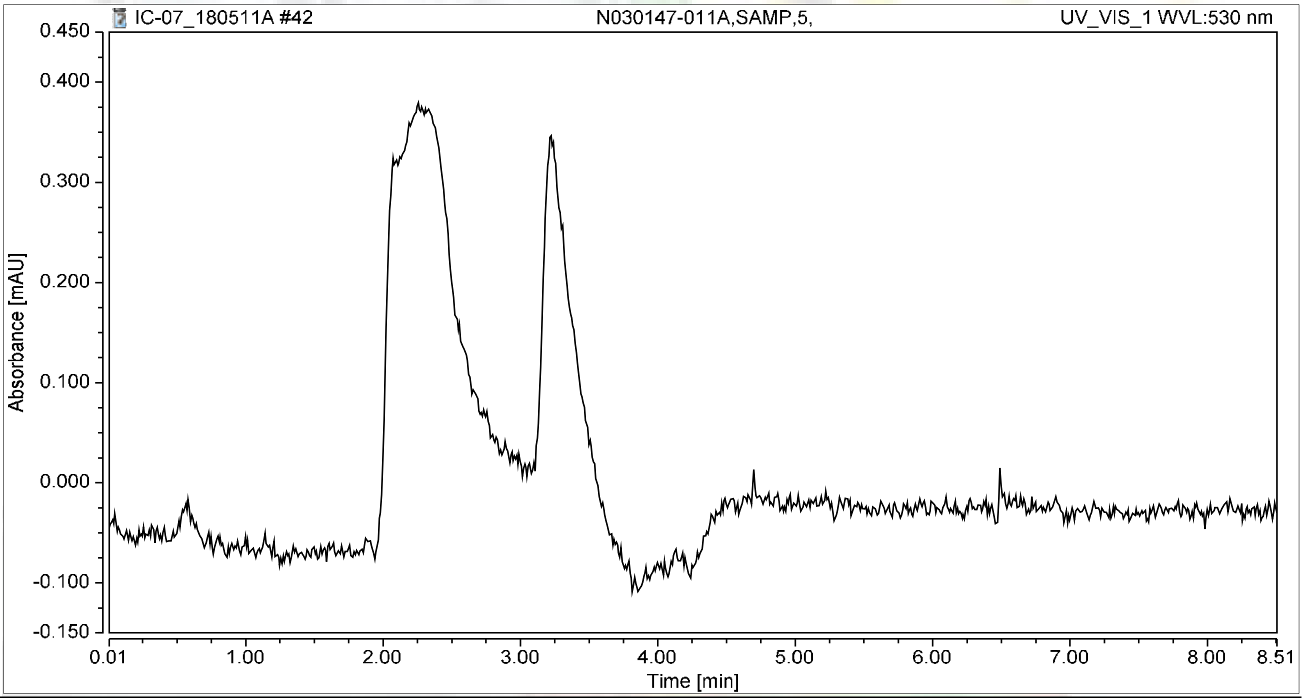
Chromatogram and Results

Injection Details

Injection Name:	**N030147-011A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 14:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

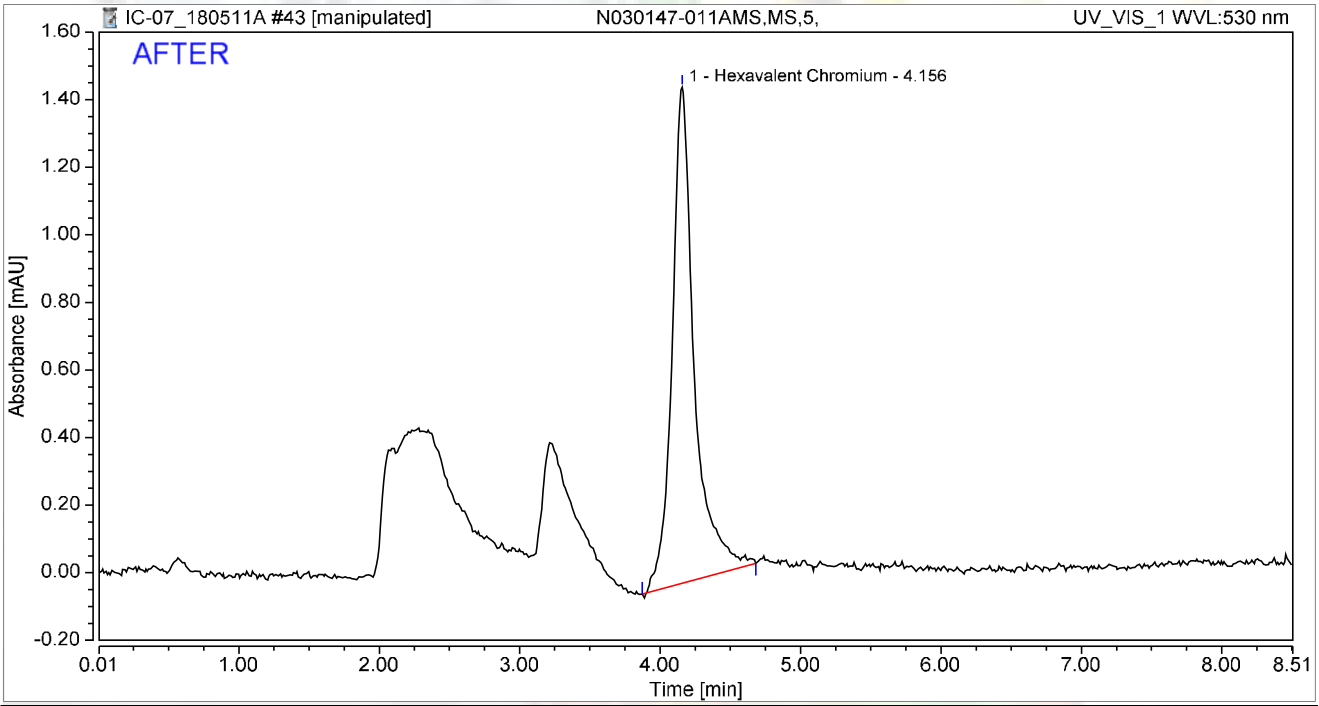
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-011AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 14:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.268	1.468	100.00	100.00	1.0461
Total:			**0.268**	**1.468**	**100.00**	**100.00**	

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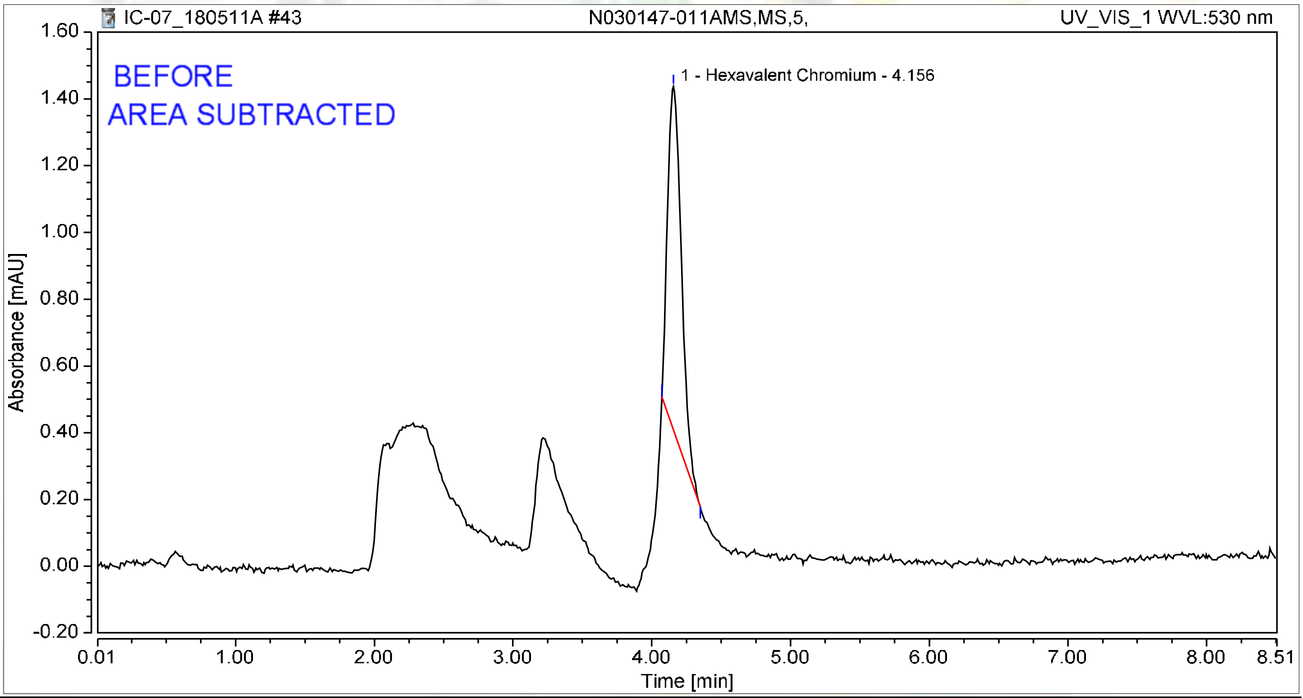
Chromatogram and Results

Injection Details

Injection Name:	**N030147-011AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 14:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.119	1.029	100.00	100.00	0.4639
Total:			**0.119**	**1.029**	**100.00**	**100.00**	

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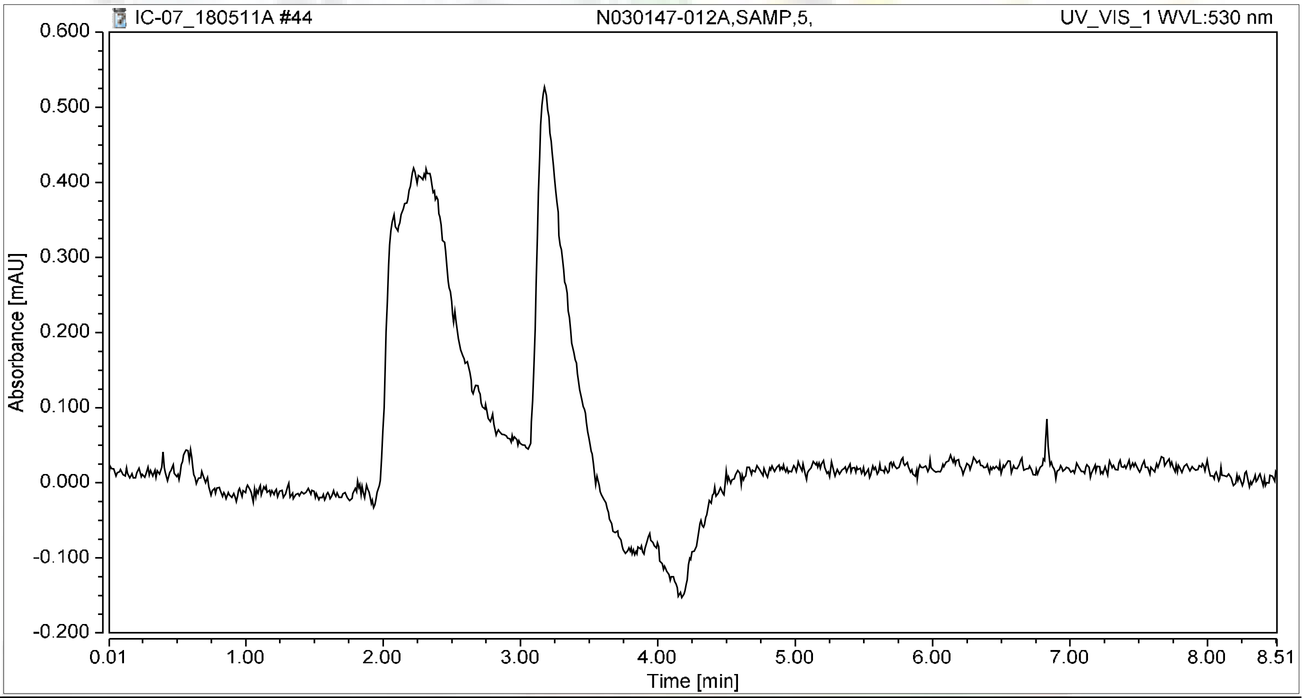
Chromatogram and Results

Injection Details

Injection Name:	**N030147-012A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 14:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

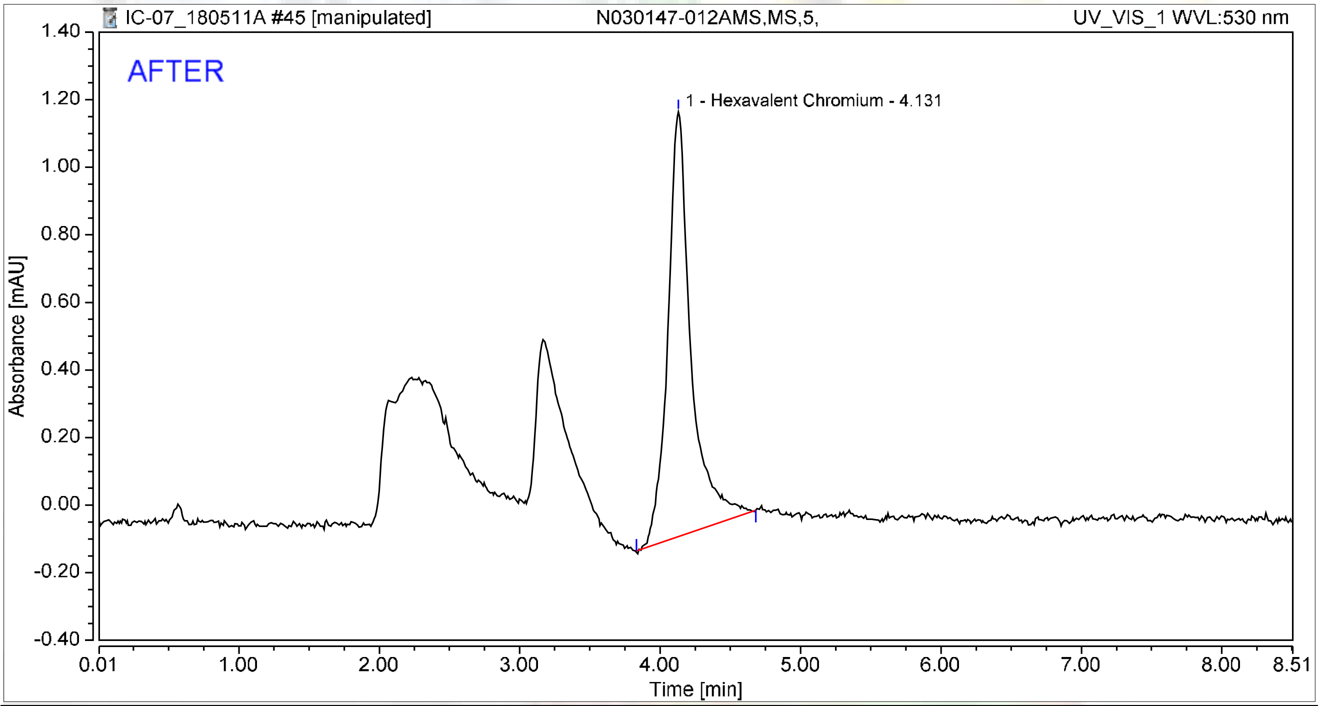
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-012AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 14:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.242	1.257	100.00	100.00	0.9422
Total:			**0.242**	**1.257**	**100.00**	**100.00**	

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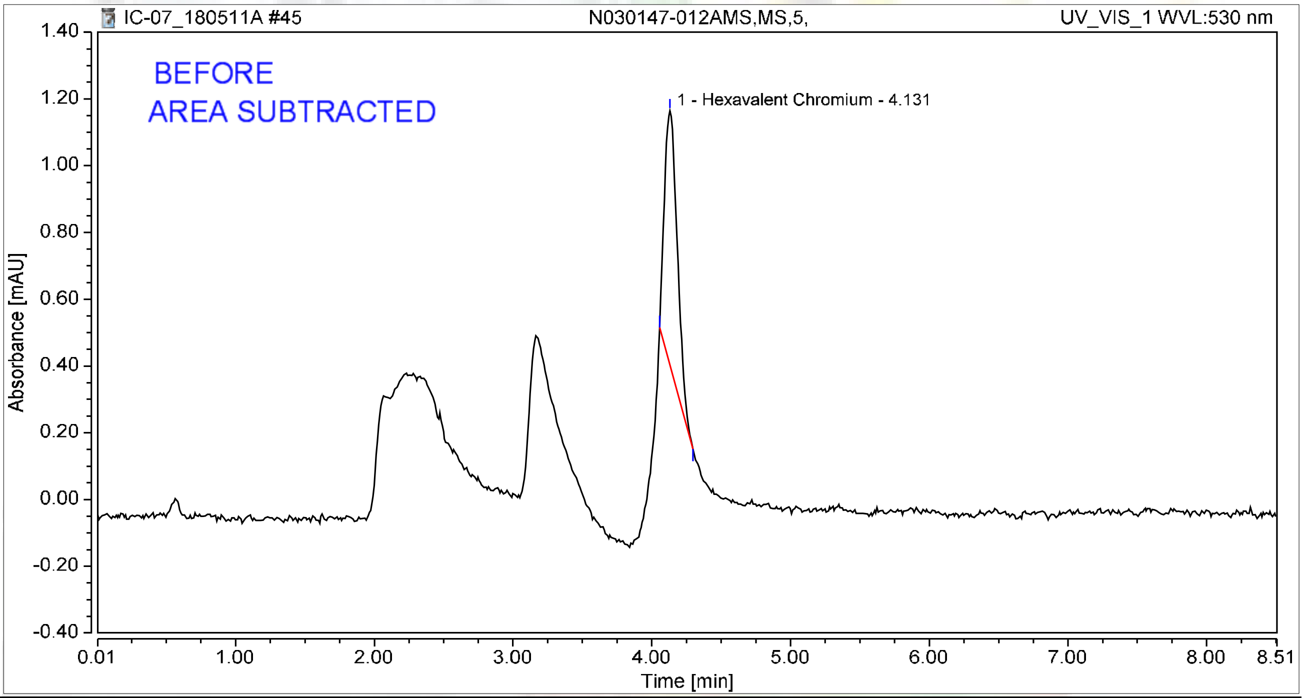
Chromatogram and Results

Injection Details

Injection Name:	**N030147-012AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 14:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.082	0.762	100.00	100.00	0.3187
Total:			**0.082**	**0.762**	**100.00**	**100.00**	

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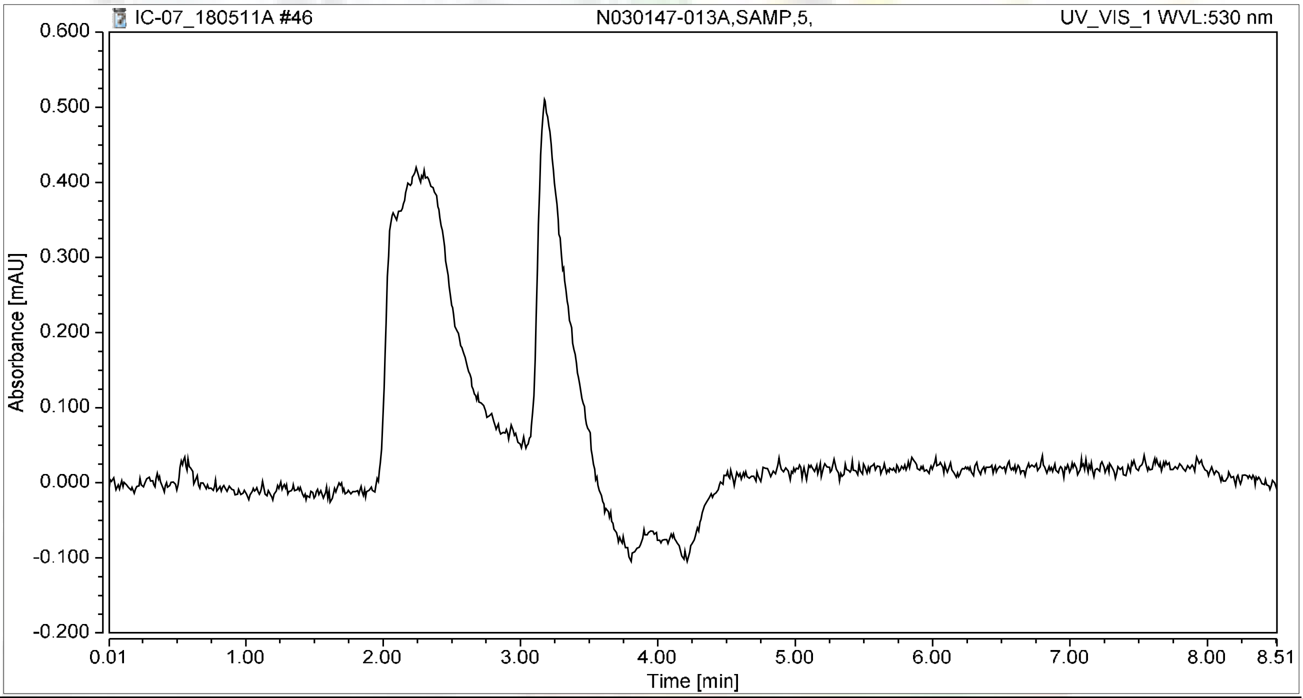
Chromatogram and Results

Injection Details

Injection Name:	**N030147-013A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 14:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

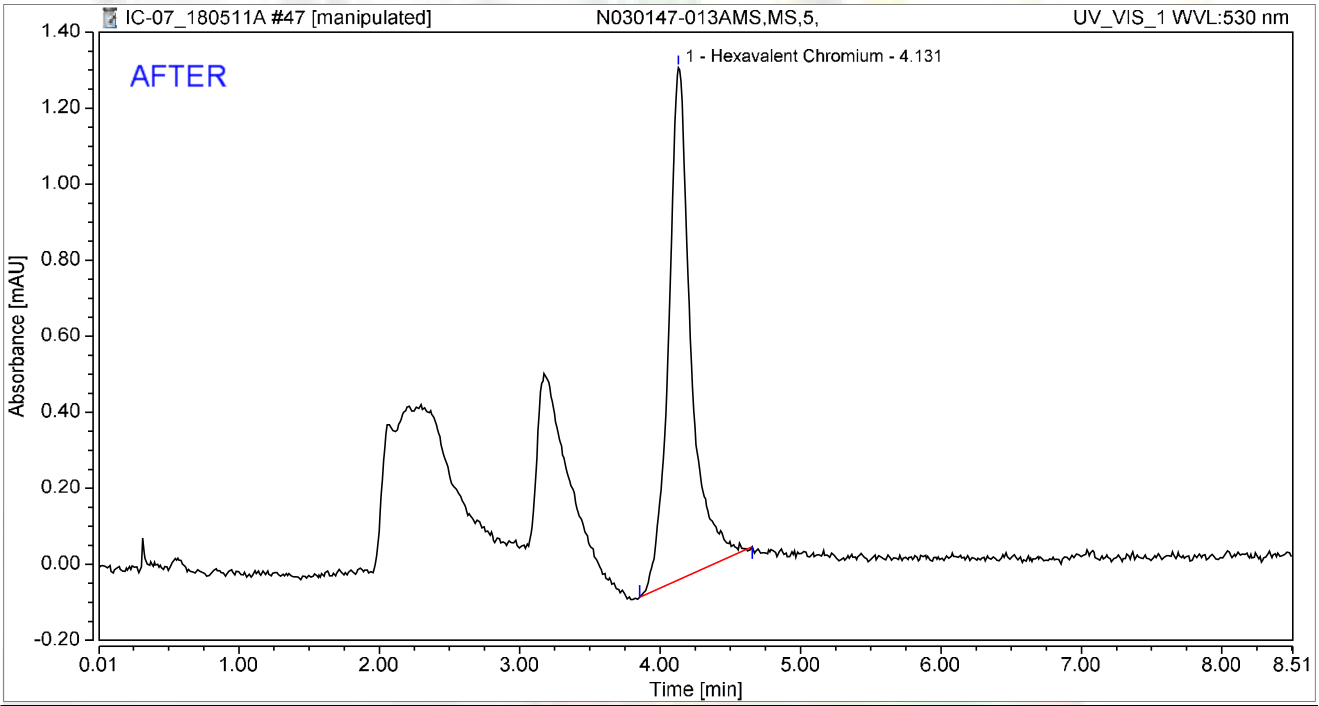
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-013AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 15:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.250	1.348	100.00	100.00	0.9741
Total:			**0.250**	**1.348**	**100.00**	**100.00**	

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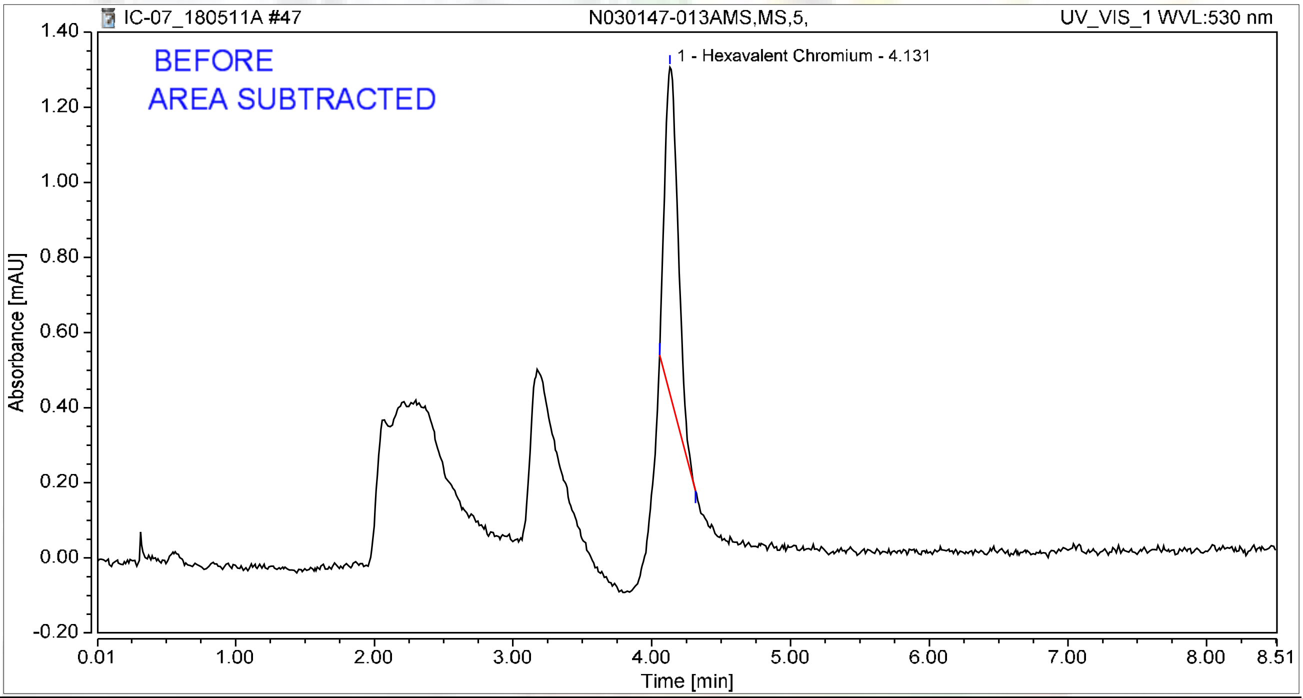
Chromatogram and Results

Injection Details

Injection Name:	**N030147-013AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 15:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.098	0.872	100.00	100.00	0.3838
Total:			**0.098**	**0.872**	**100.00**	**100.00**	

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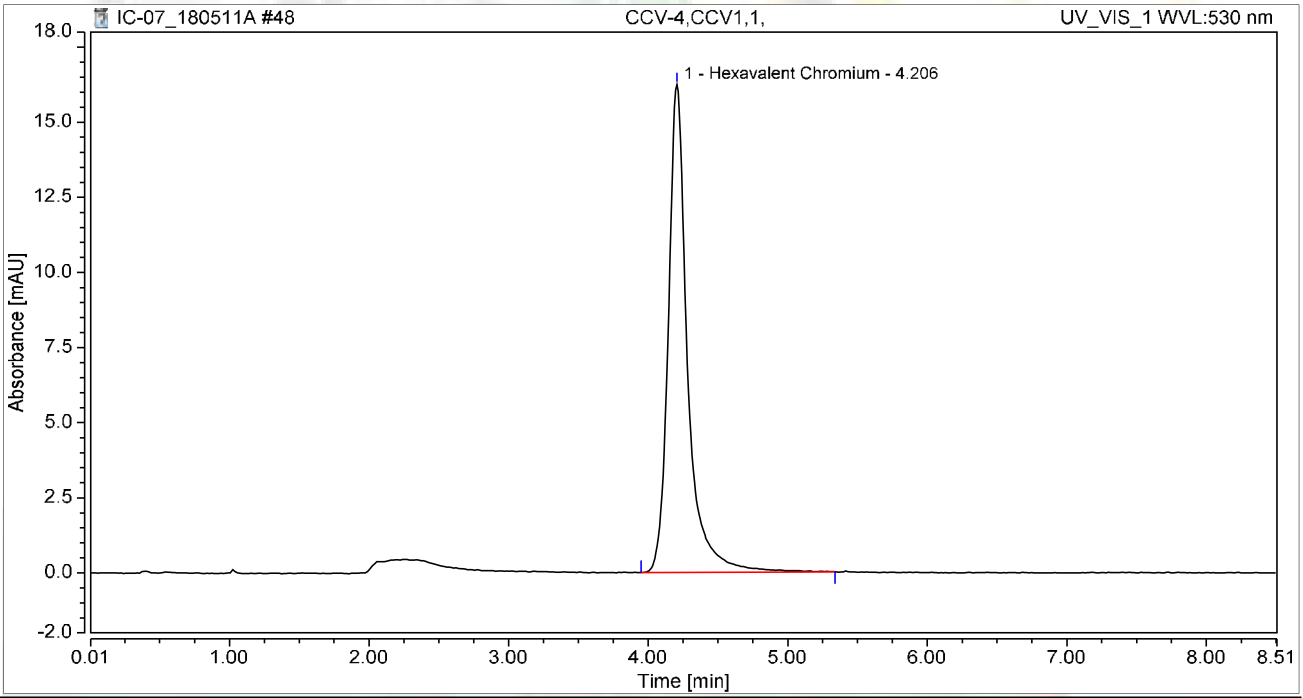
Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 15:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

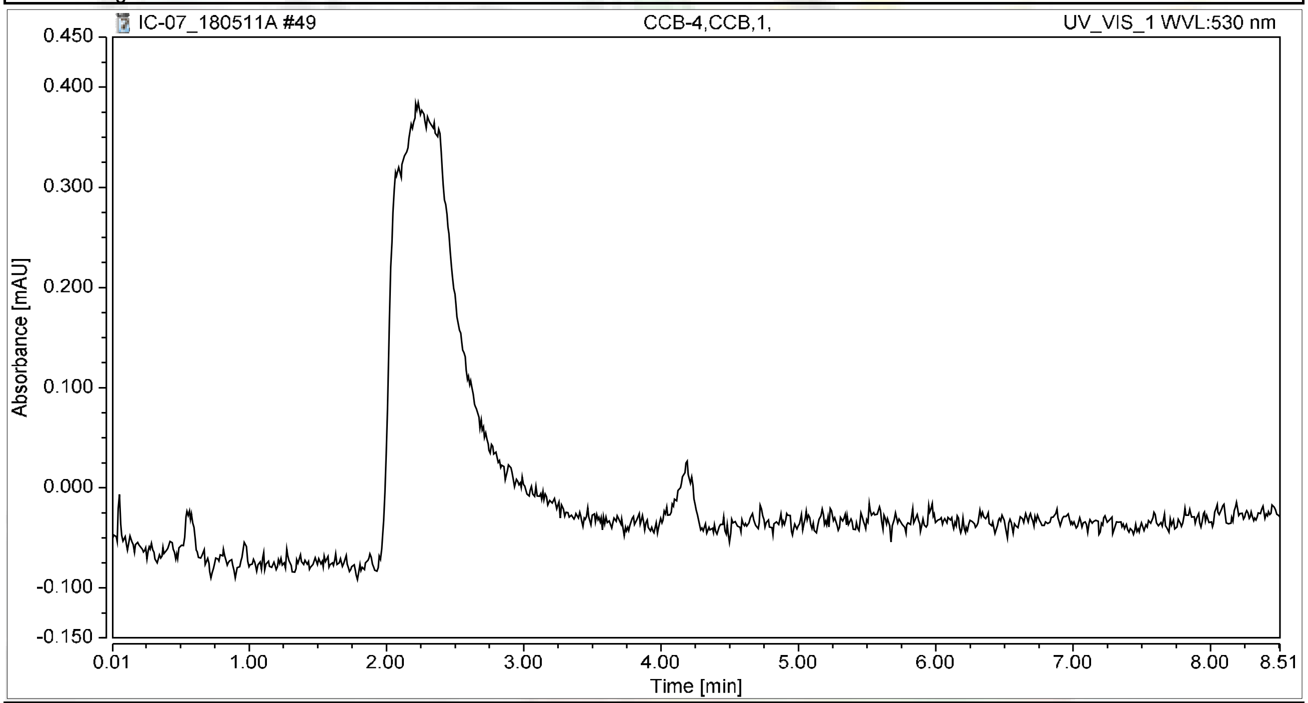
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.598	16.240	100.00	100.00	10.1233
Total:			**2.598**	**16.240**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 15:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

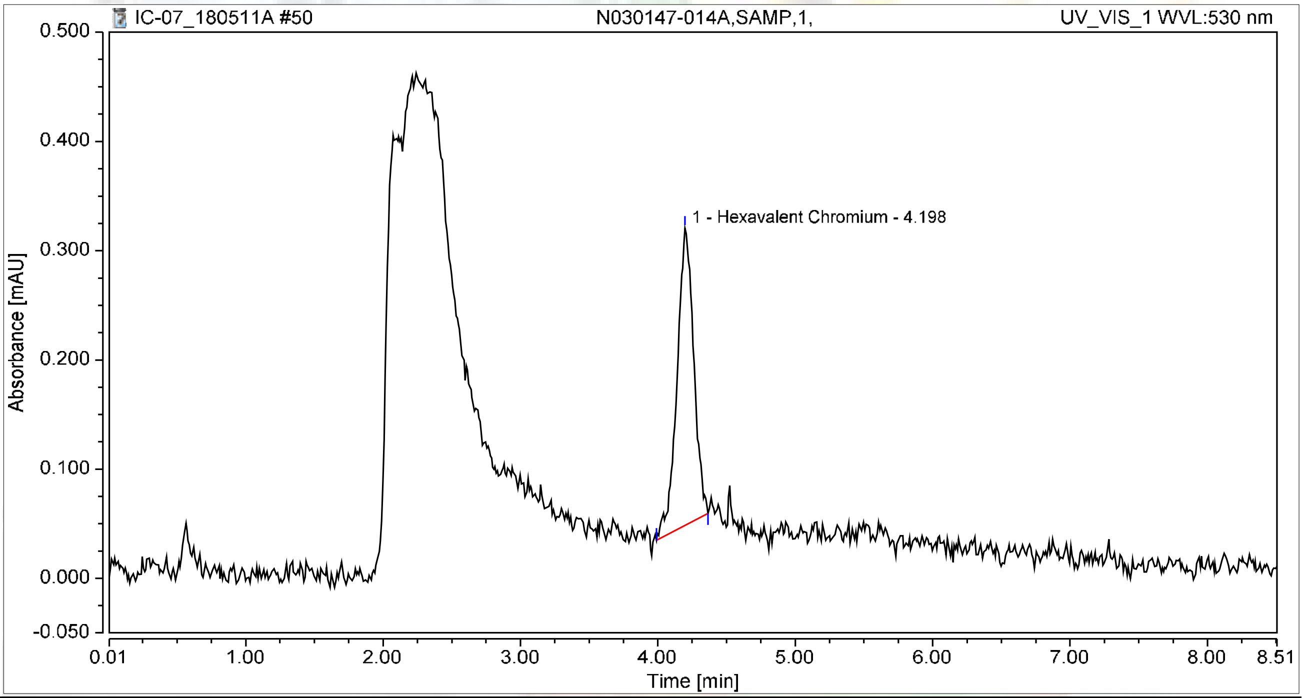
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 15:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

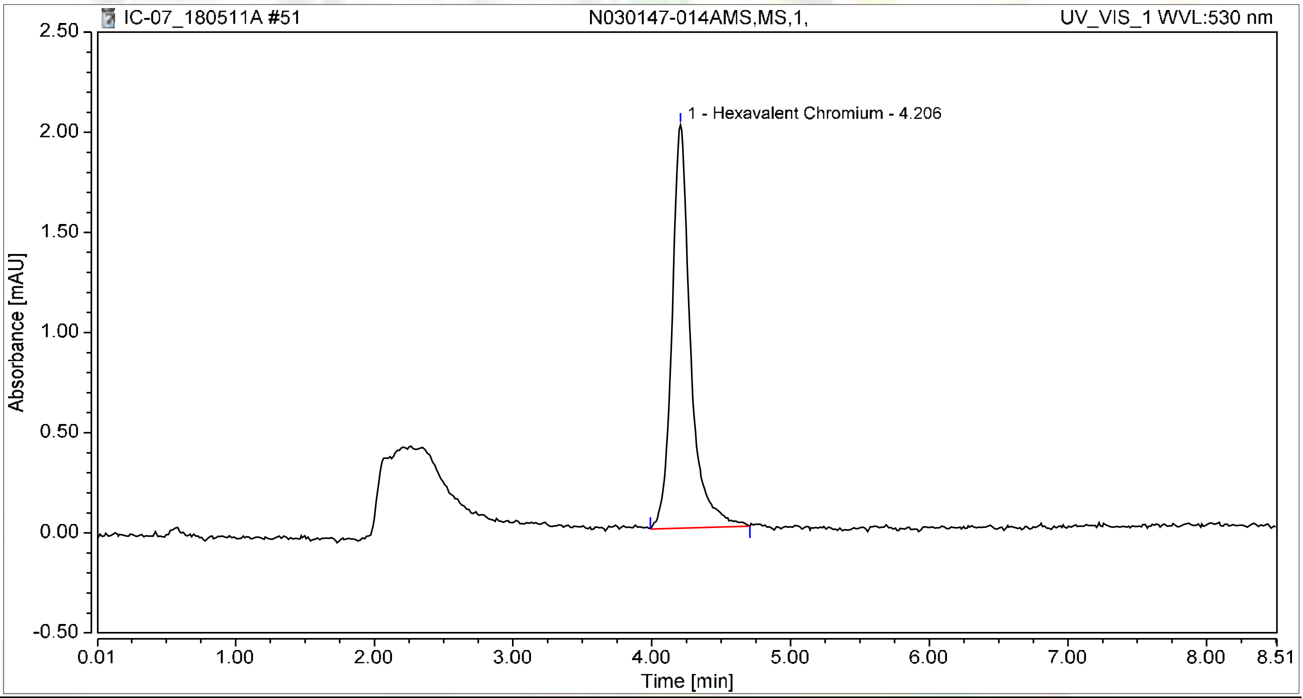
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.038	0.272	100.00	100.00	0.1483
Total:			**0.038**	**0.272**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 15:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

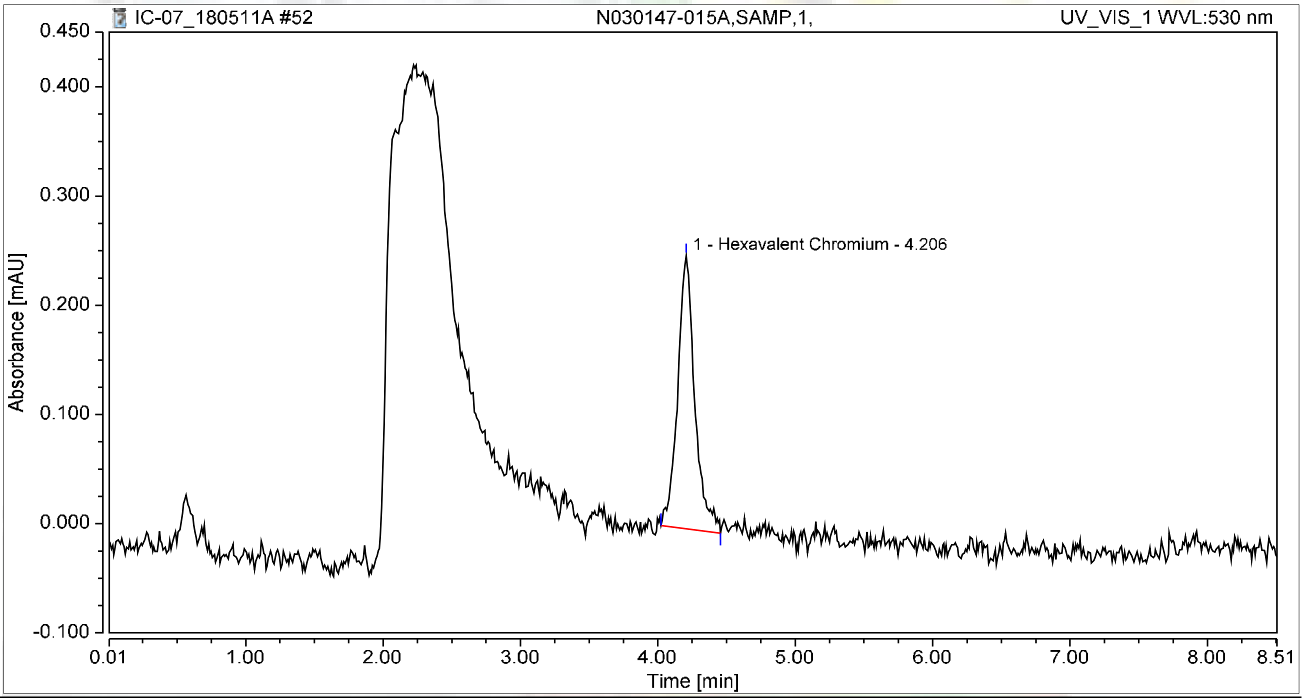
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.313	2.013	100.00	100.00	1.2207
Total:			**0.313**	**2.013**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 15:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

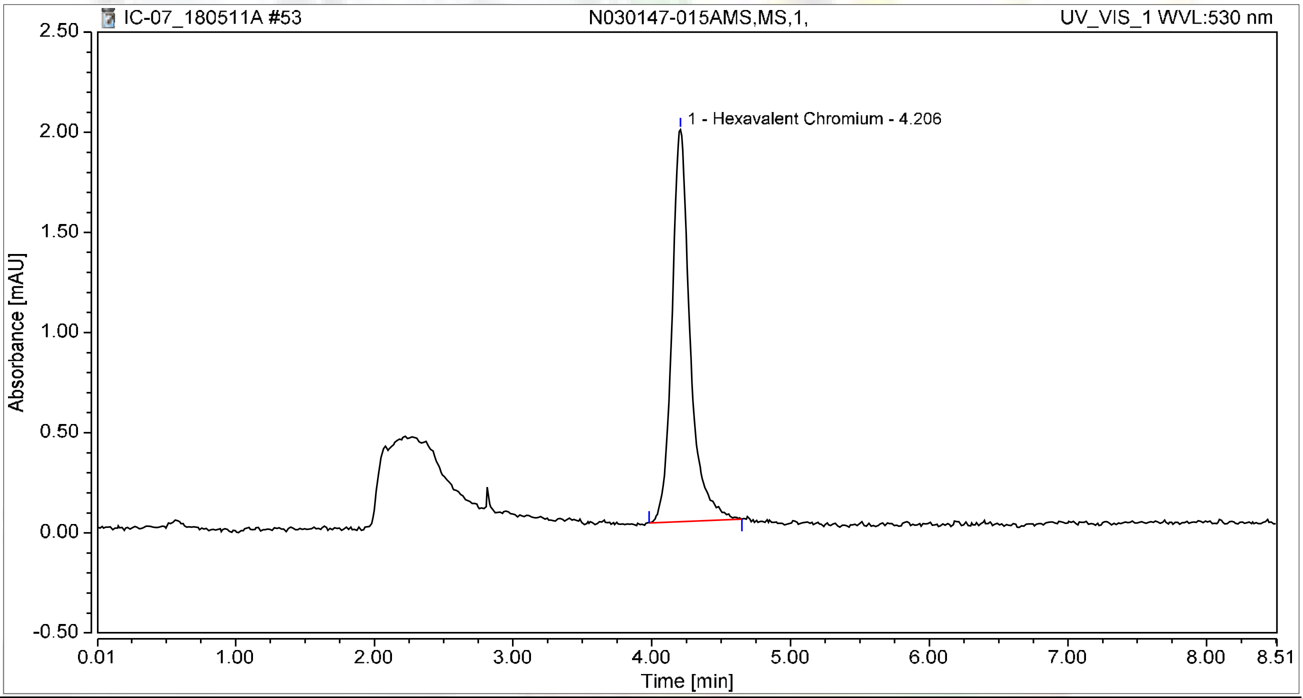
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.036	0.250	100.00	100.00	0.1410
Total:			**0.036**	**0.250**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 16:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

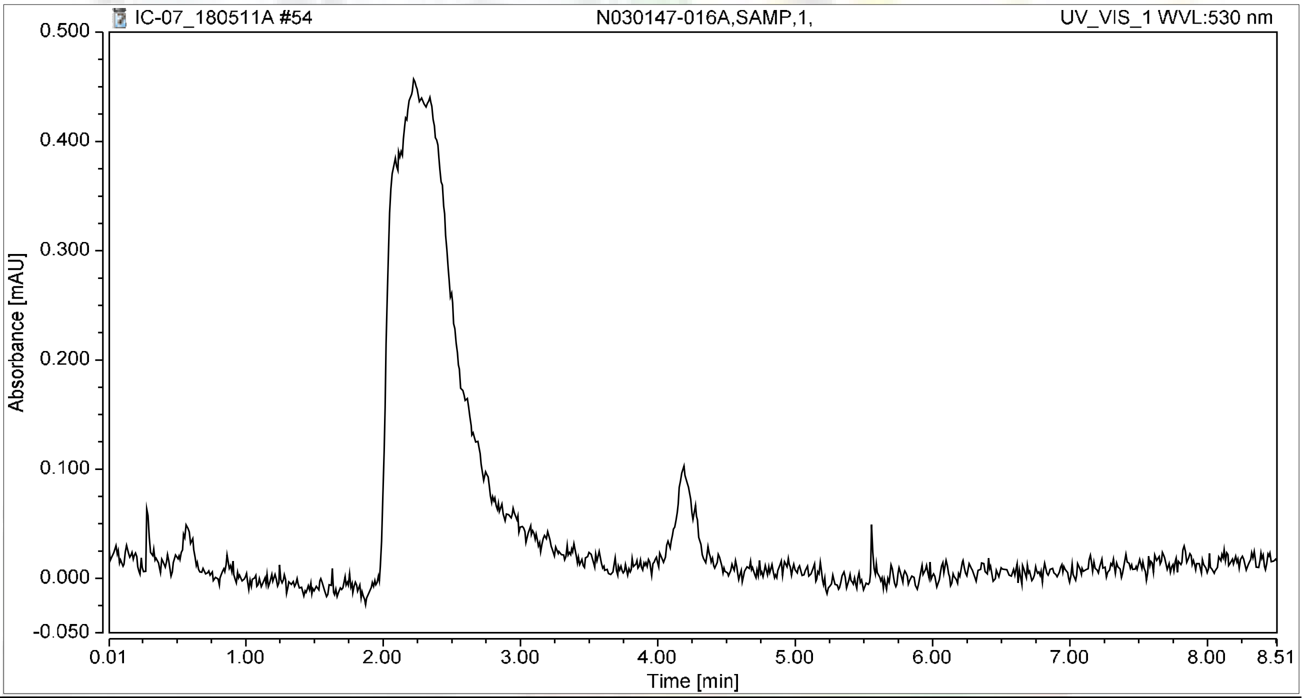
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.299	1.958	100.00	100.00	1.1658
Total:			**0.299**	**1.958**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-016A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

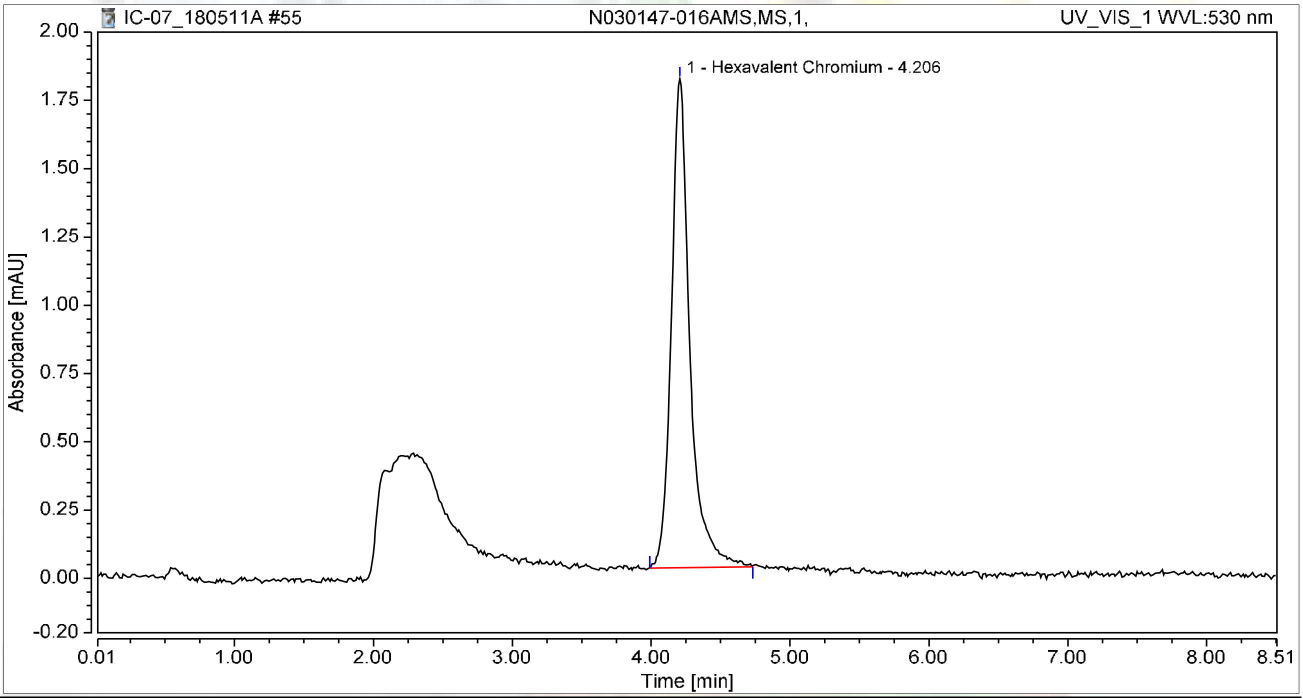
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-016AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 16:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

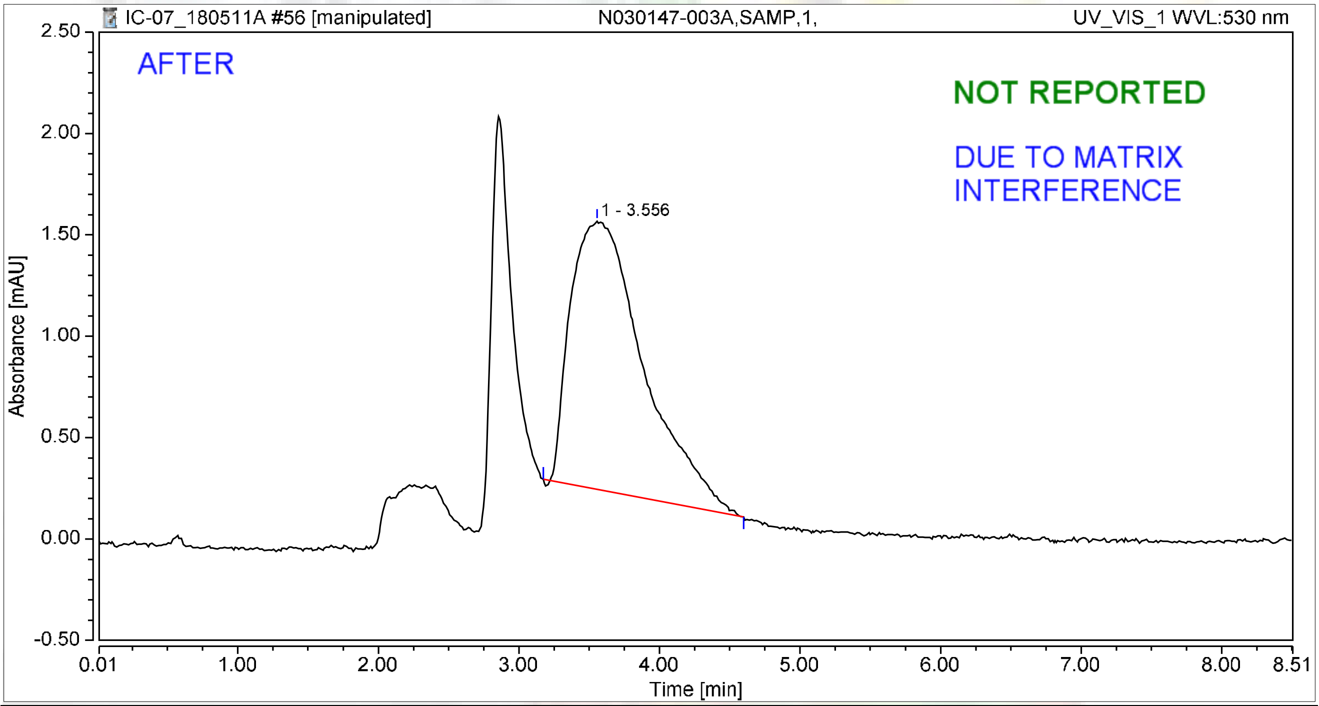
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.276	1.790	100.00	100.00	1.0764
Total:			**0.276**	**1.790**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-003A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 16:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.556	0.797	1.322	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.797**	**1.322**	**100.00**	**100.00**	

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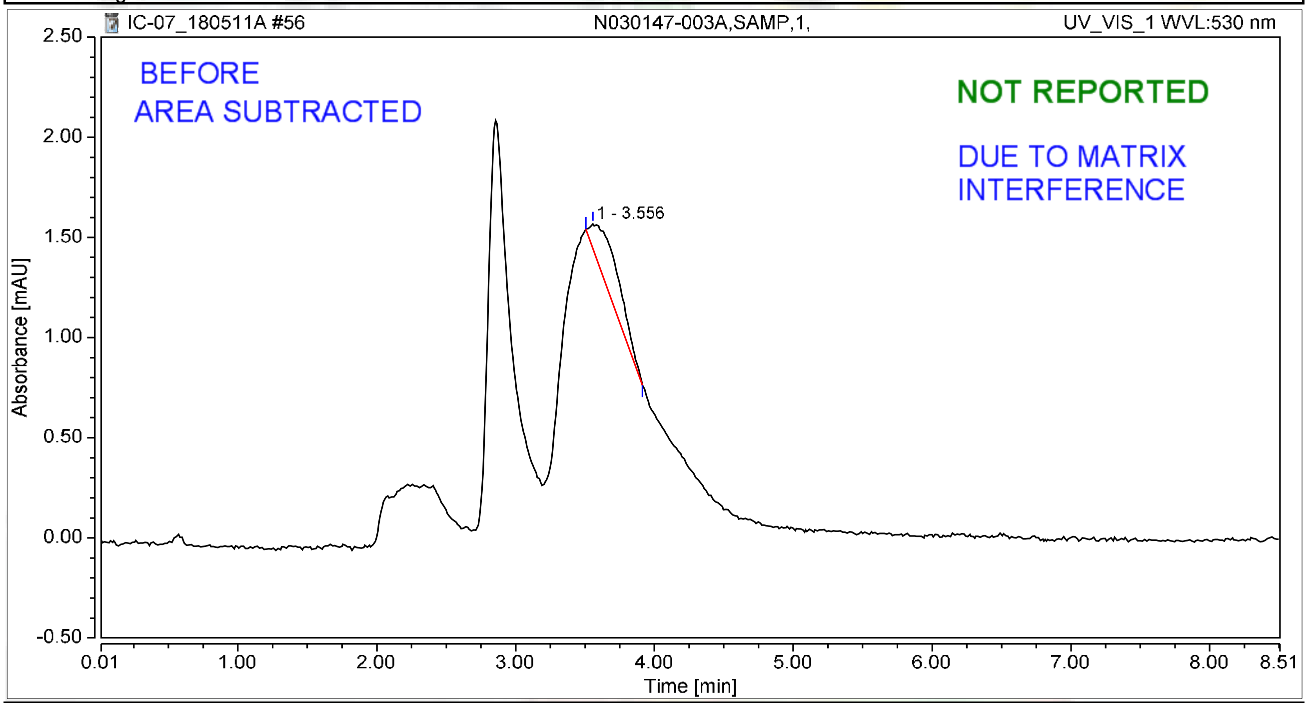
Chromatogram and Results

Injection Details

Injection Name:	**N030147-003A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 16:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.556	0.056	0.121	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.056**	**0.121**	**100.00**	**100.00**	

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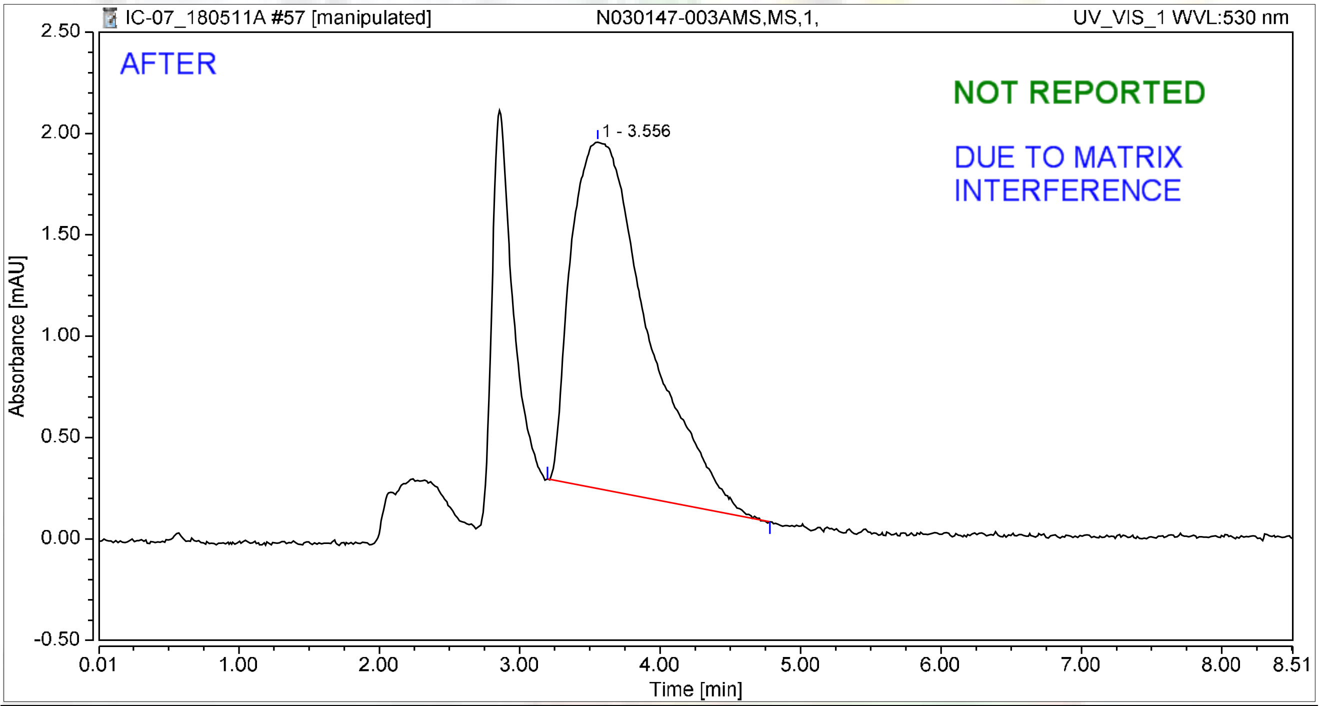
Chromatogram and Results

Injection Details

Injection Name:	**N030147-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 16:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.556	1.085	1.708	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.085**	**1.708**	**100.00**	**100.00**	

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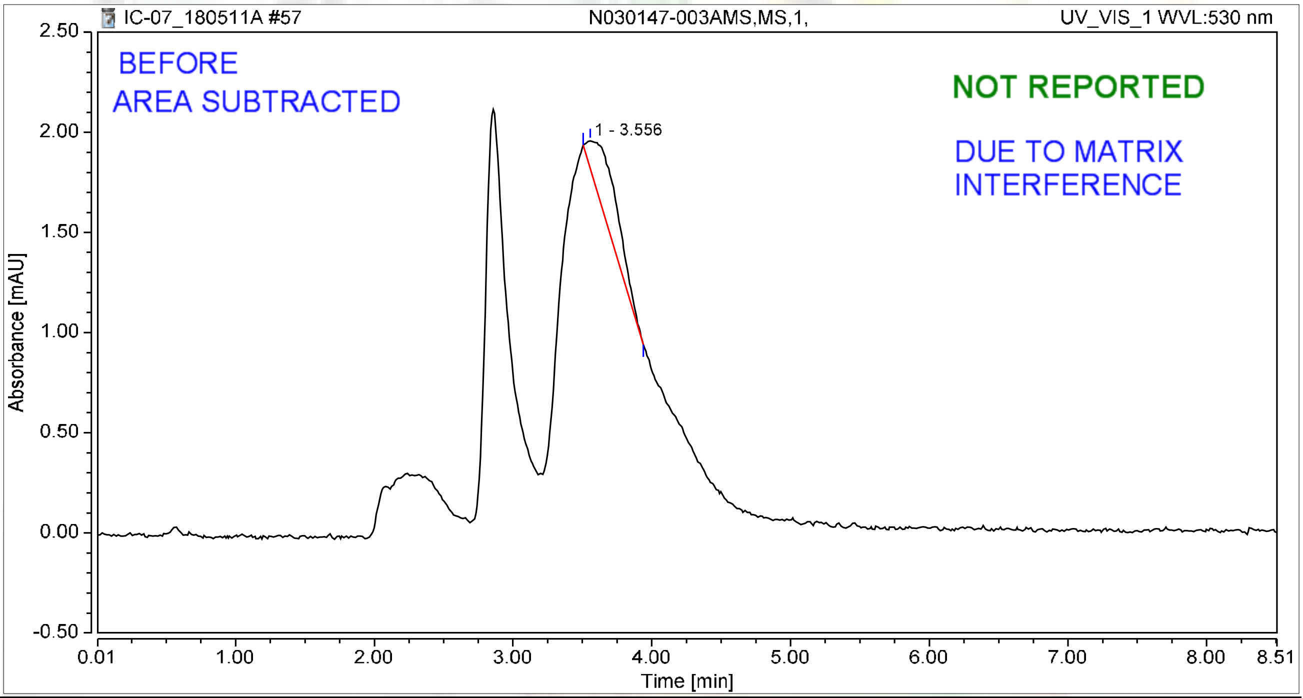
Chromatogram and Results

Injection Details

Injection Name:	**N030147-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 16:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.556	0.071	0.136	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.071**	**0.136**	**100.00**	**100.00**	

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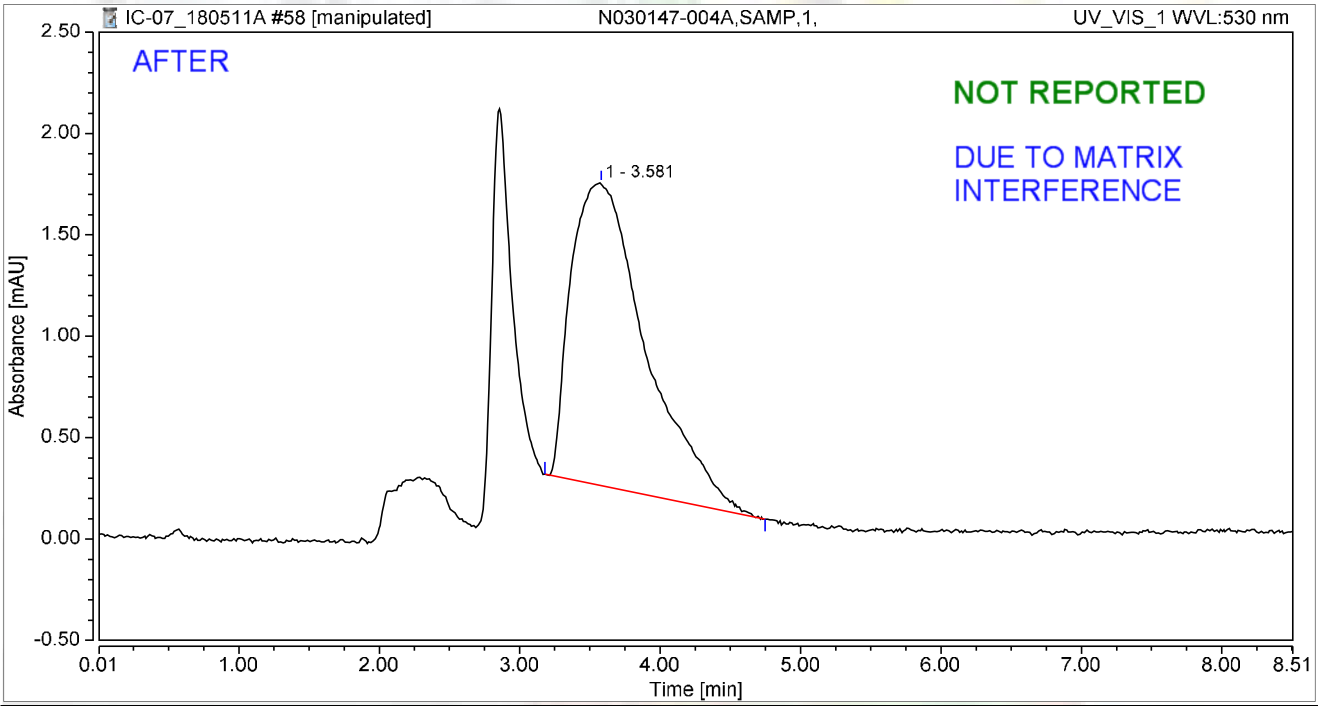
Chromatogram and Results

Injection Details

Injection Name:	**N030147-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 16:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.581	0.921	1.492	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.921**	**1.492**	**100.00**	**100.00**	

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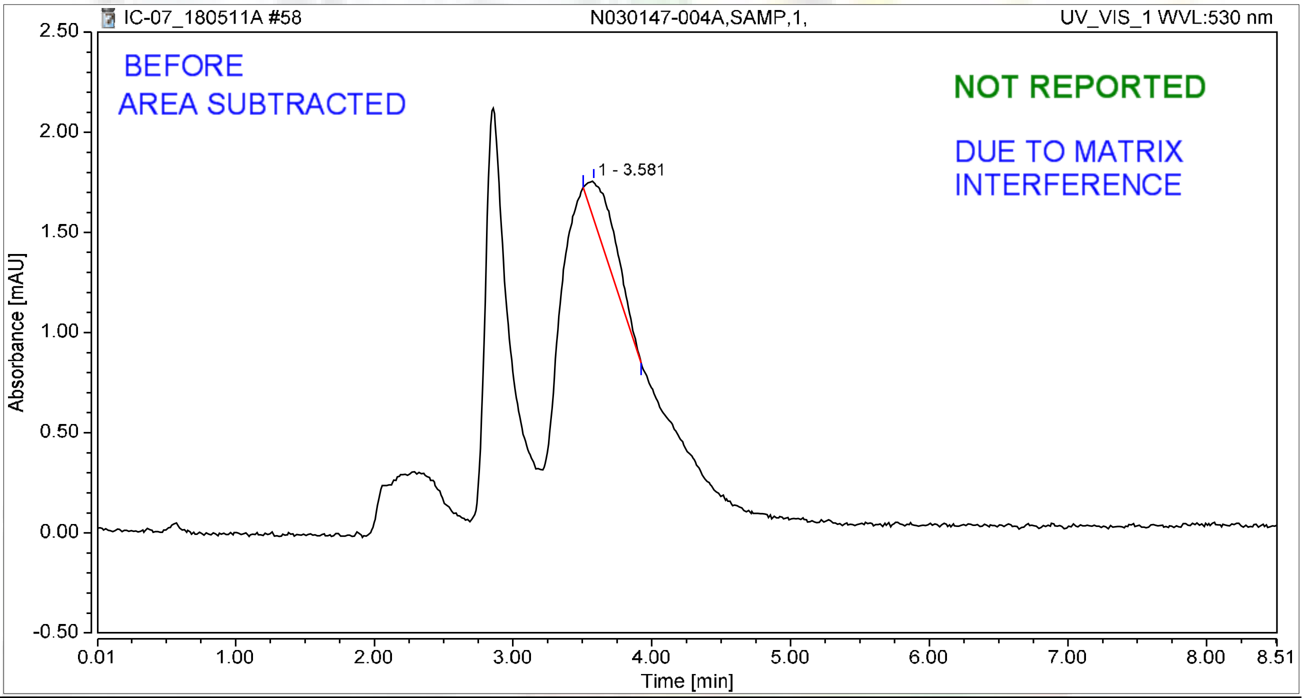
Chromatogram and Results

Injection Details

Injection Name:	**N030147-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 16:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.581	0.062	0.188	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.062**	**0.188**	**100.00**	**100.00**	

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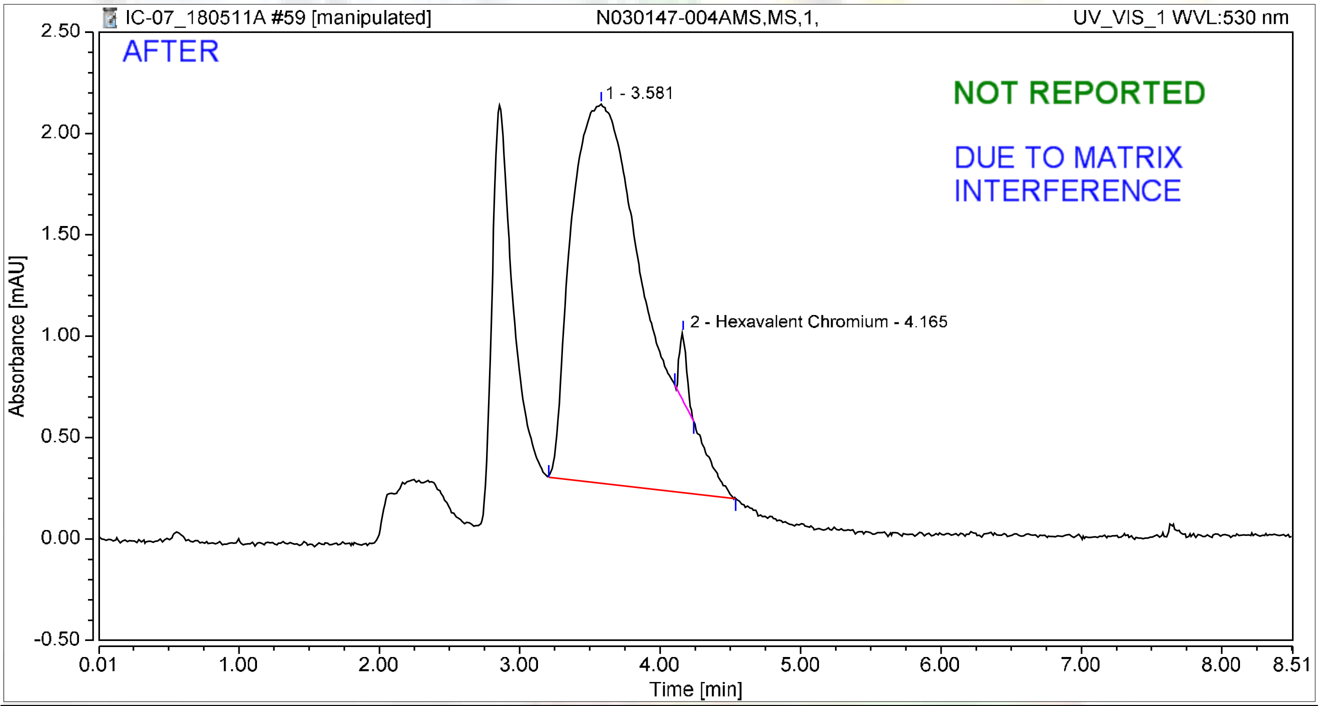
Chromatogram and Results

Injection Details

Injection Name:	**N030147-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 17:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.581	1.163	1.869	98.35	84.77	n.a.
2	Hexavalent Chromium	4.165	0.019	0.336	1.65	15.23	0.0760
Total:			**1.182**	**2.205**	**100.00**	**100.00**	

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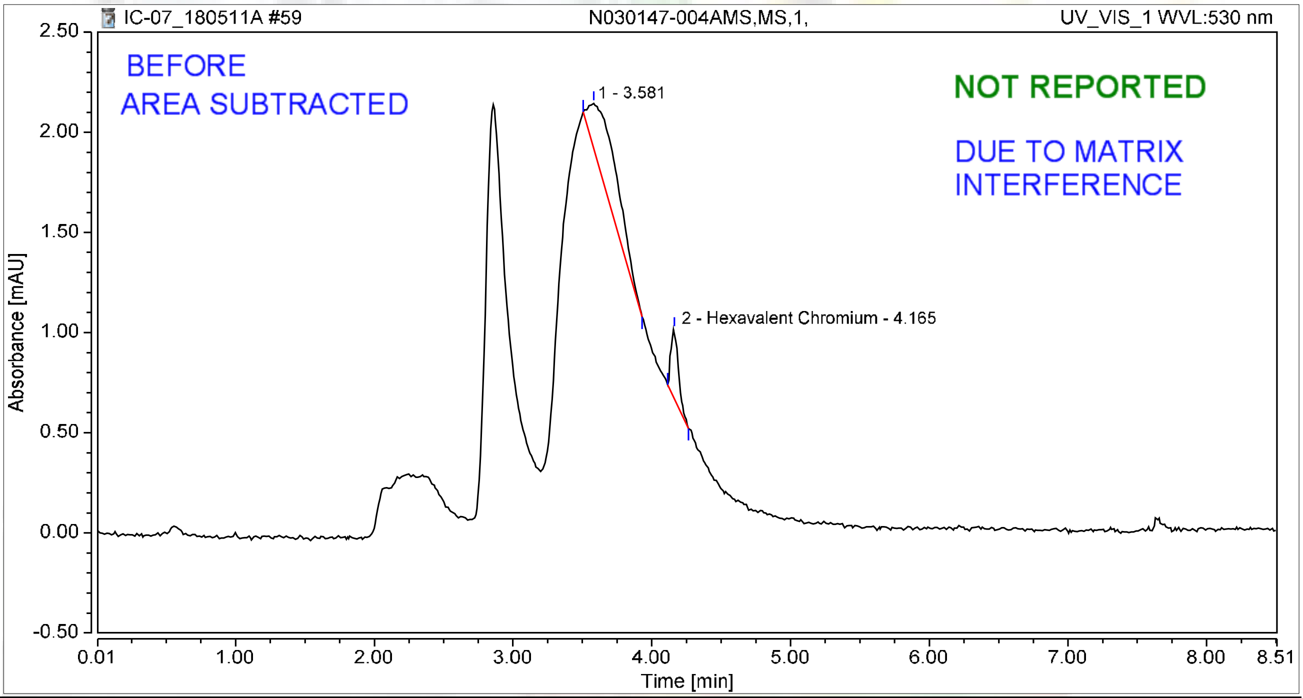
Chromatogram and Results

Injection Details

Injection Name:	**N030147-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 17:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.581	0.076	0.223	77.78	38.92	n.a.
2	Hexavalent Chromium	4.165	0.022	0.350	22.22	61.08	0.0849
Total:			**0.098**	**0.572**	**100.00**	**100.00**	

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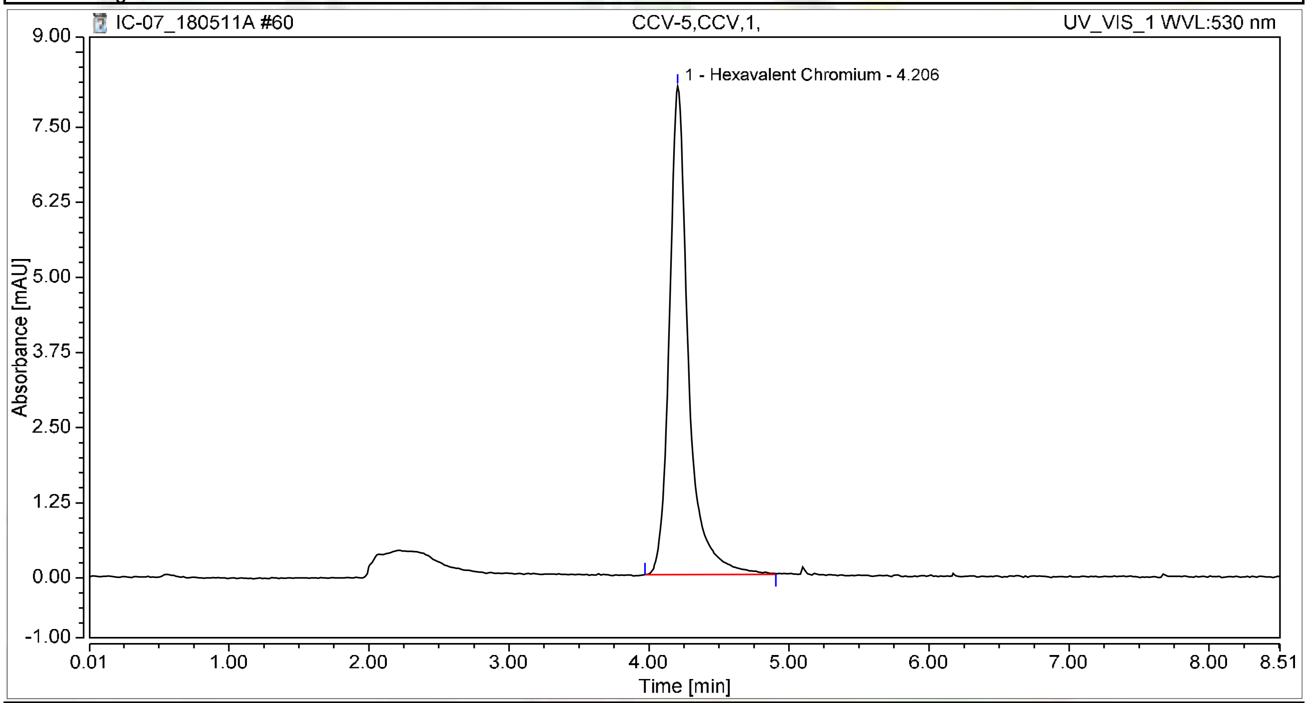
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 17:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

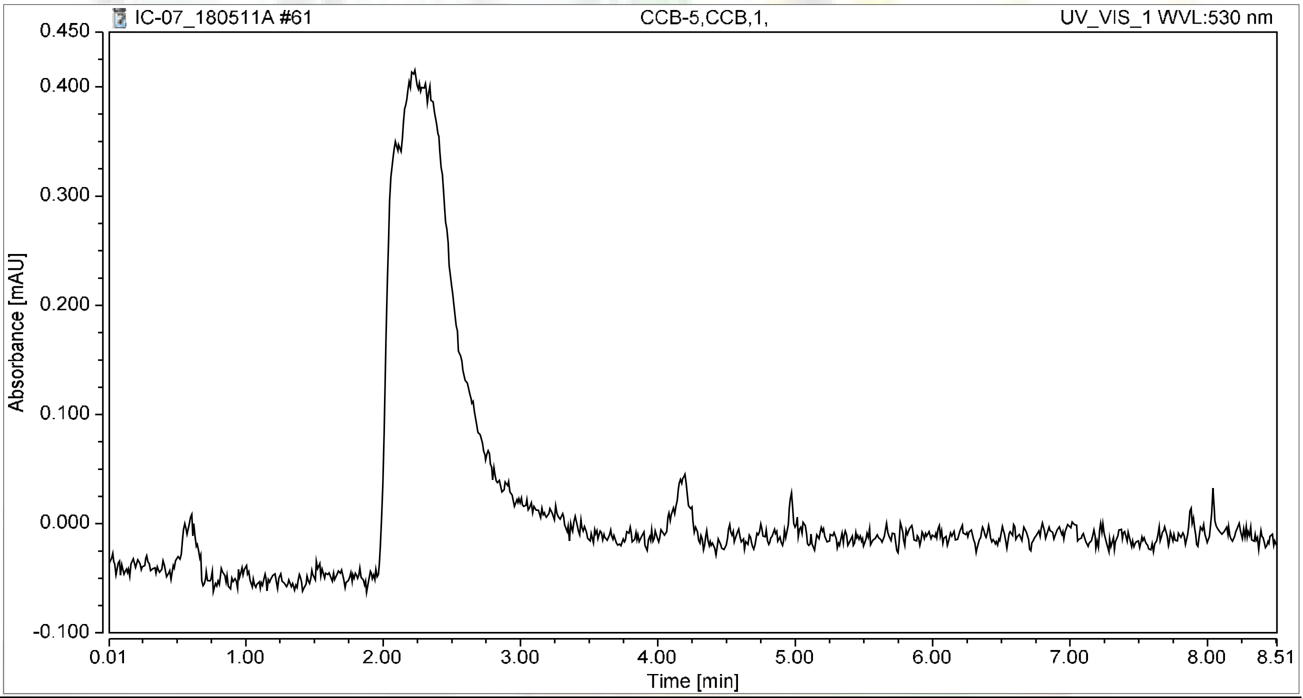
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.285	8.129	100.00	100.00	5.0073
Total:			**1.285**	**8.129**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

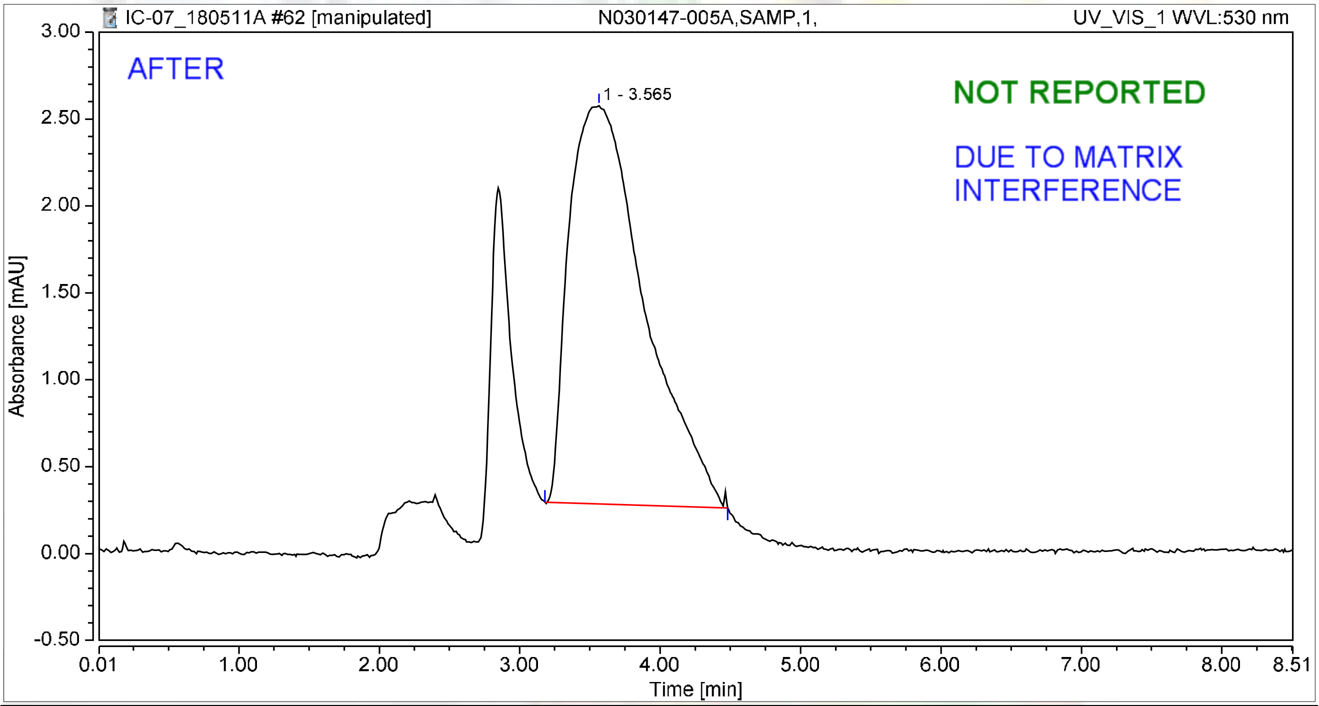
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.565	1.426	2.292	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.426**	**2.292**	**100.00**	**100.00**	

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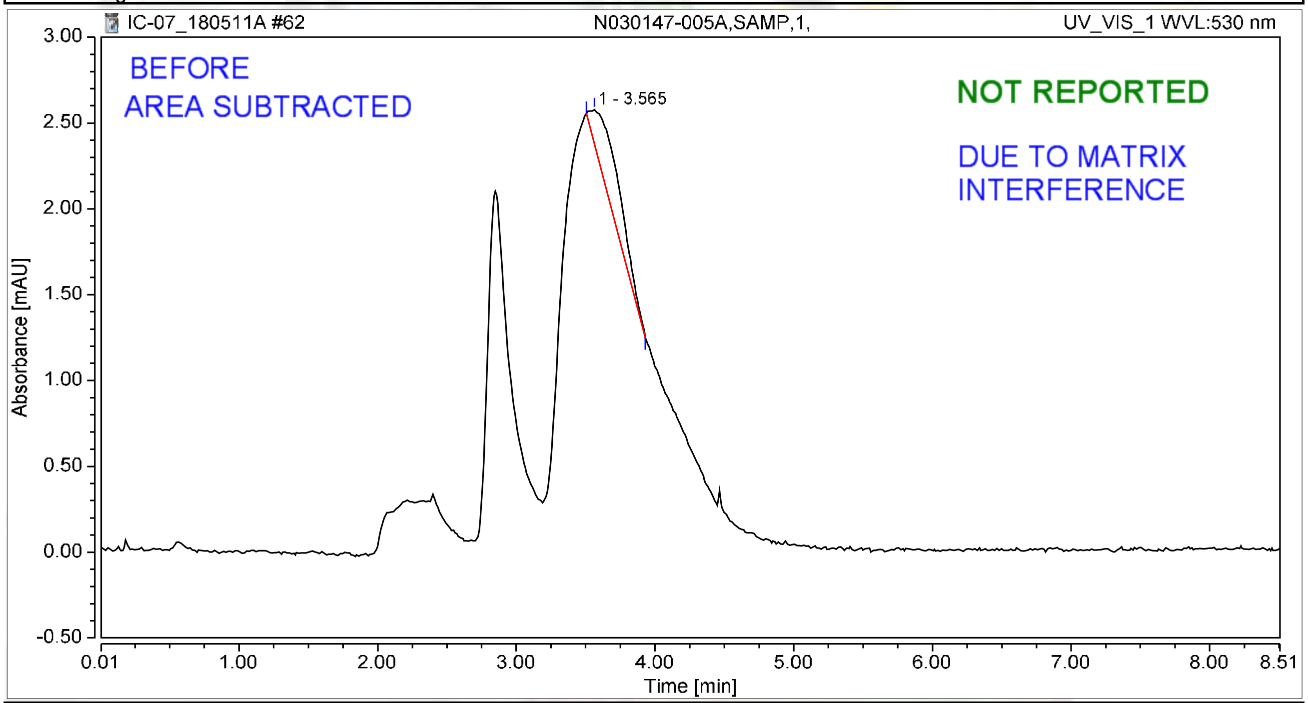
Chromatogram and Results

Injection Details

Injection Name:	**N030147-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.565	0.082	0.201	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.082**	**0.201**	**100.00**	**100.00**	

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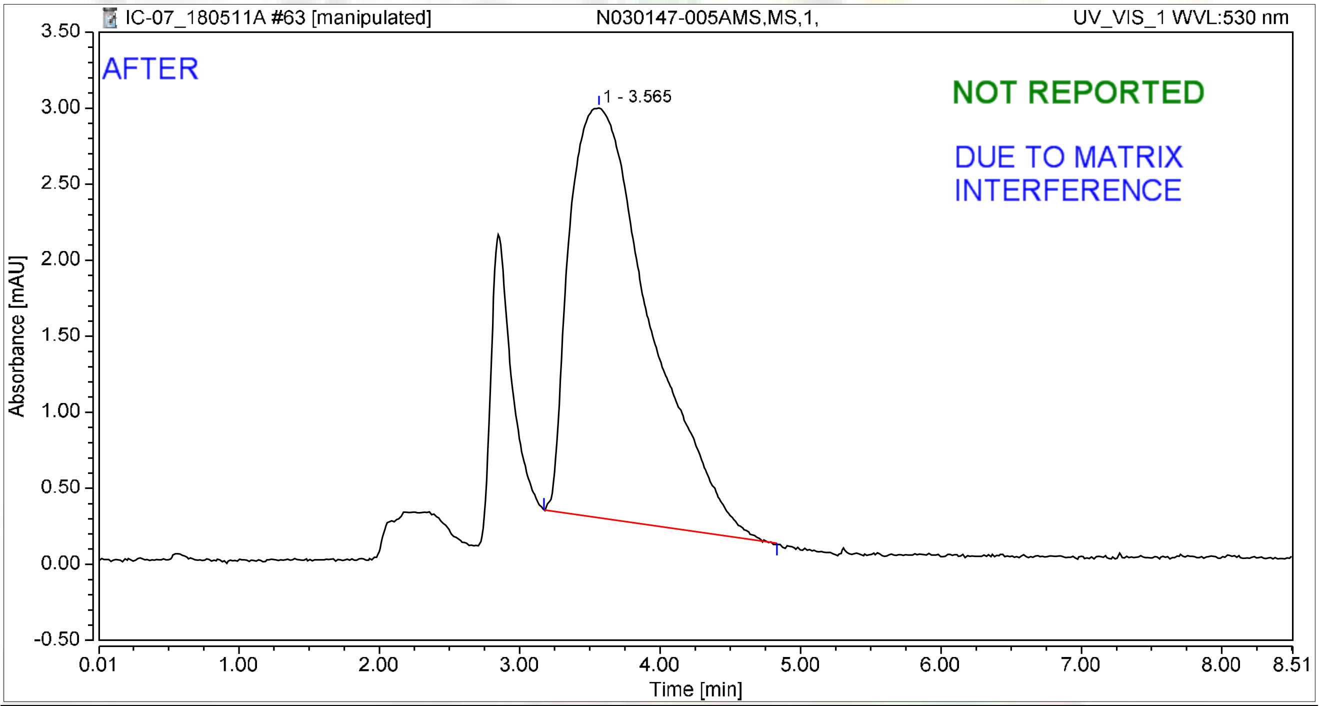
Chromatogram and Results

Injection Details

Injection Name:	**N030147-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 17:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.565	1.799	2.697	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.799**	**2.697**	**100.00**	**100.00**	

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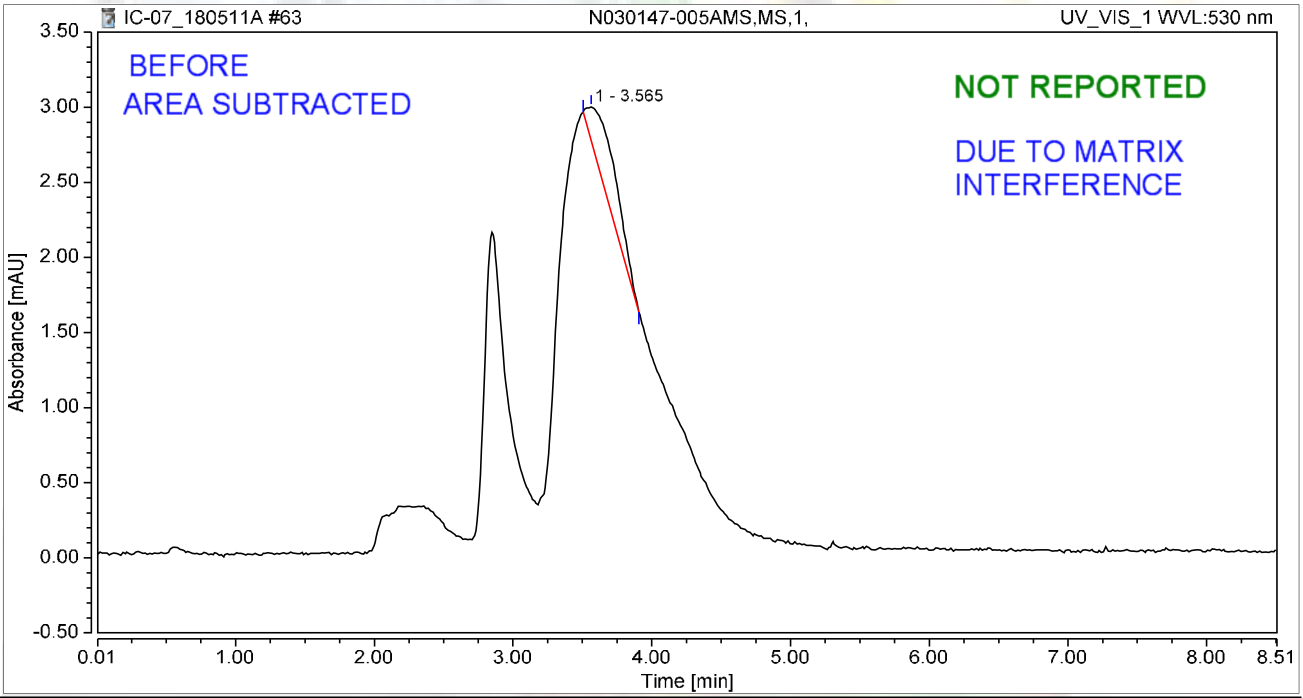
Chromatogram and Results

Injection Details

Injection Name:	**N030147-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 17:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.565	0.094	0.228	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.094**	**0.228**	**100.00**	**100.00**	

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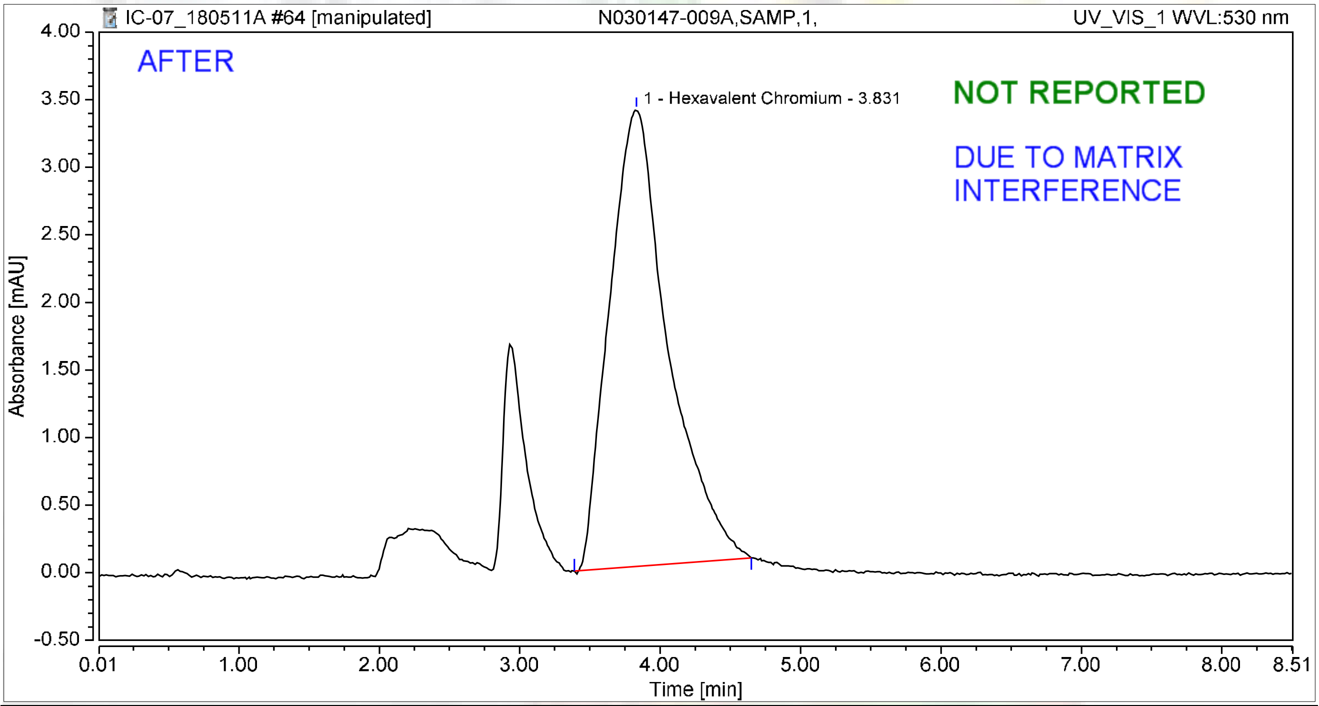
Chromatogram and Results

Injection Details

Injection Name:	**N030147-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 17:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.831	1.633	3.377	100.00	100.00	6.3611
Total:			**1.633**	**3.377**	**100.00**	**100.00**	

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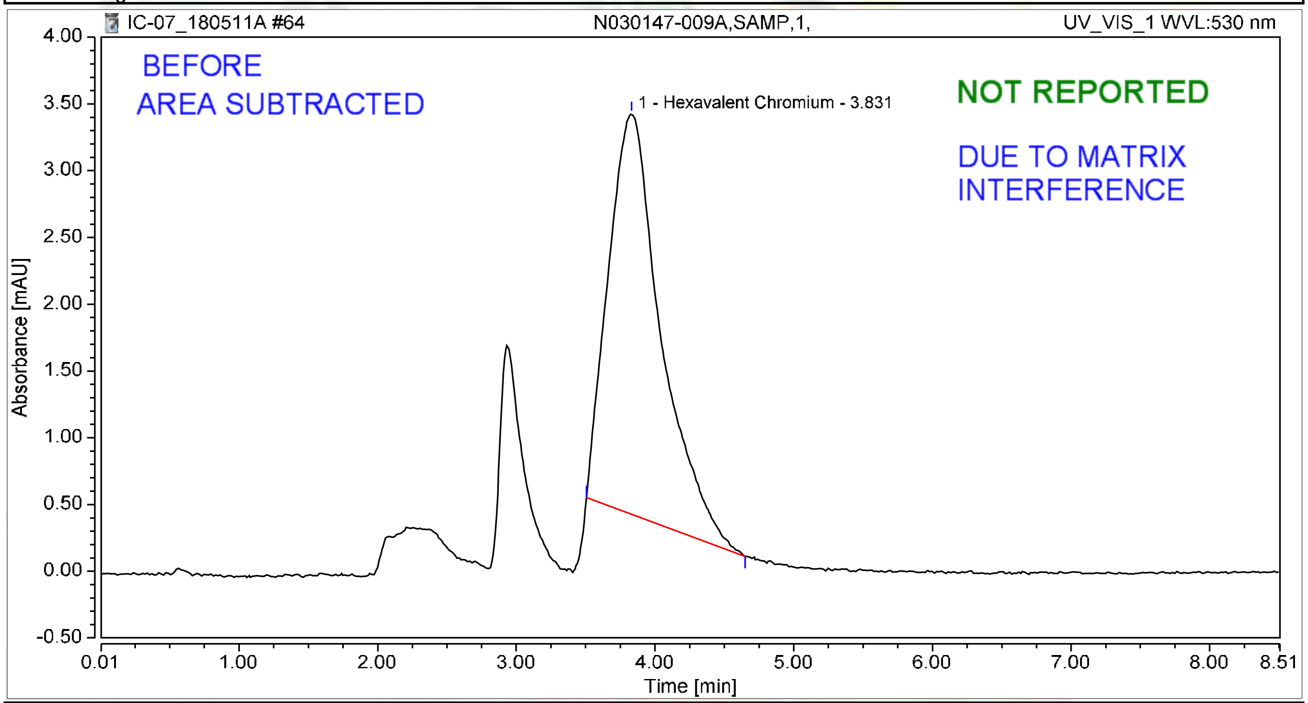
Chromatogram and Results

Injection Details

Injection Name:	**N030147-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 17:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.831	1.315	2.999	100.00	100.00	5.1234
Total:			**1.315**	**2.999**	**100.00**	**100.00**	

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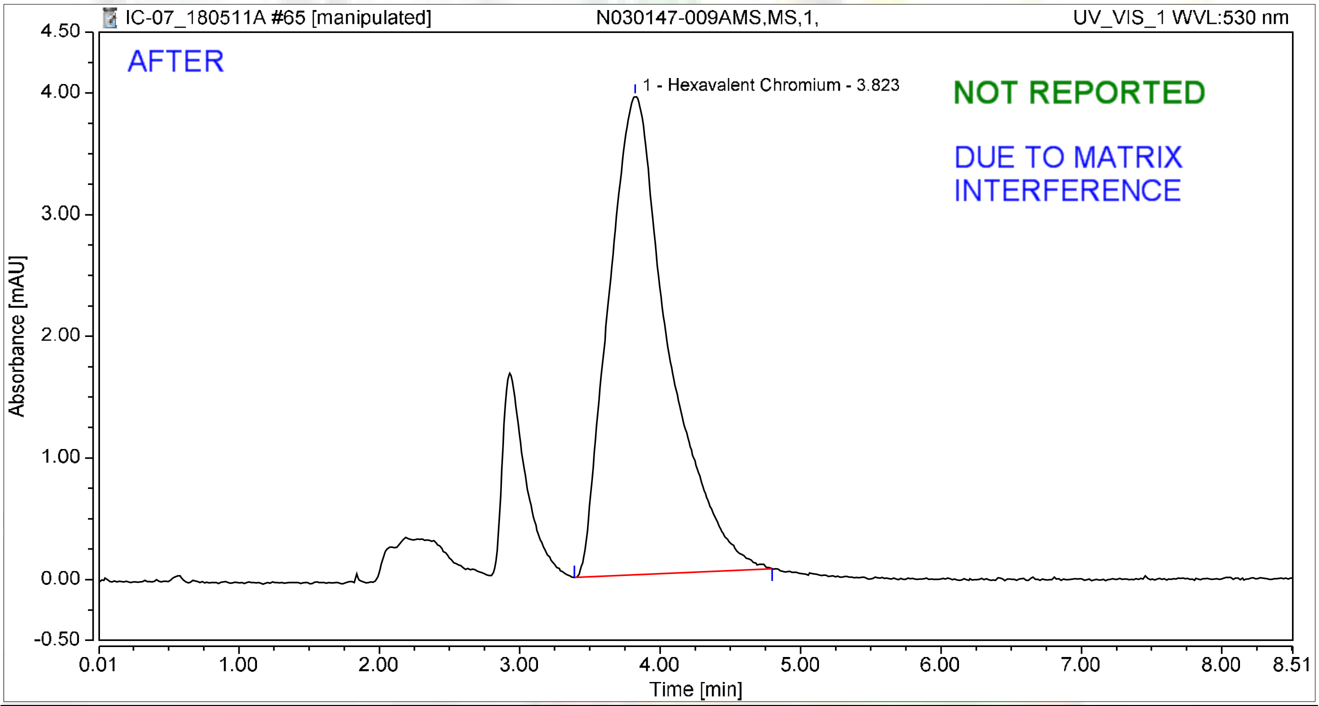
Chromatogram and Results

Injection Details

Injection Name:	**N030147-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 17:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.823	1.946	3.934	100.00	100.00	7.5838
Total:			**1.946**	**3.934**	**100.00**	**100.00**	

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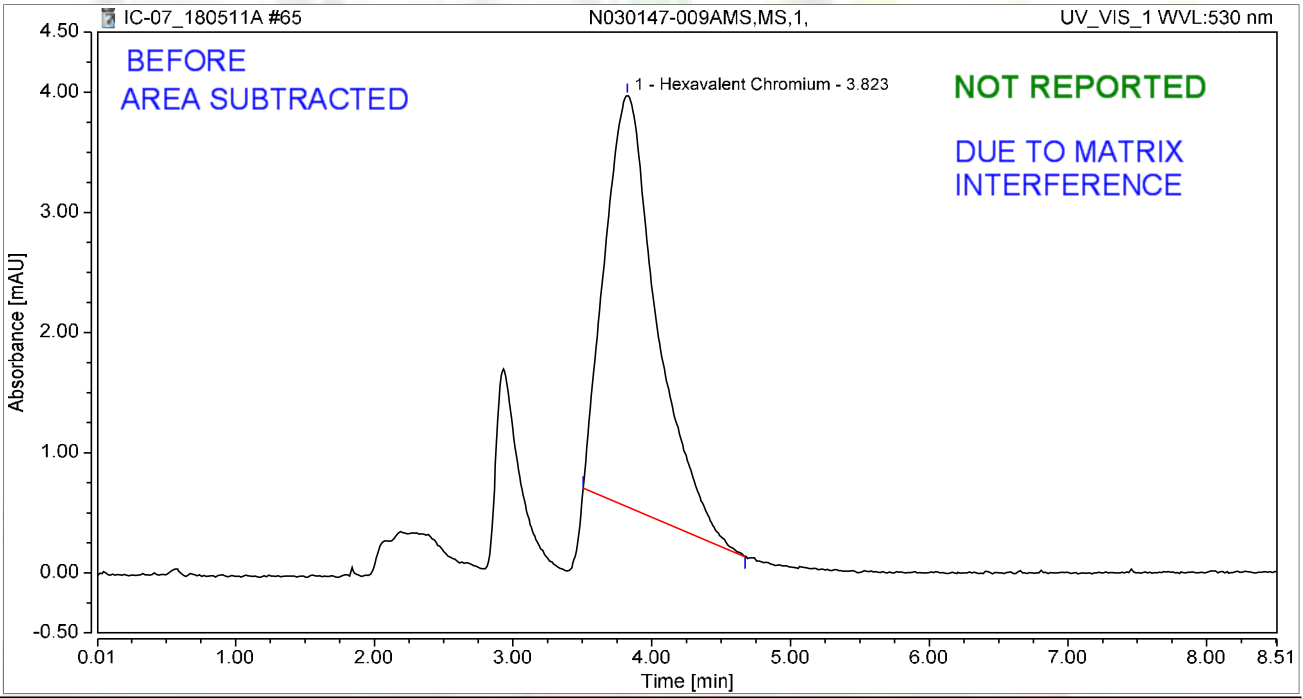
Chromatogram and Results

Injection Details

Injection Name:	**N030147-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 17:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.823	1.491	3.423	100.00	100.00	5.8112
Total:			**1.491**	**3.423**	**100.00**	**100.00**	

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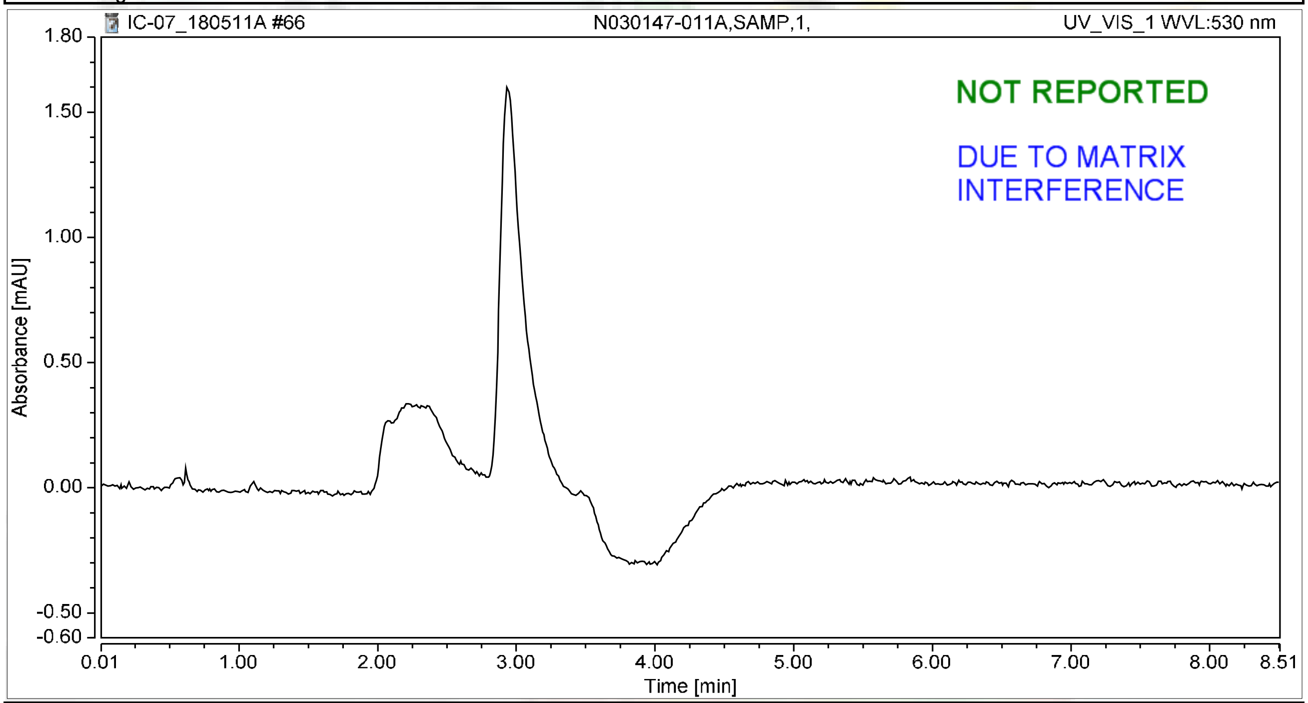
Chromatogram and Results

Injection Details

Injection Name:	**N030147-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 18:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

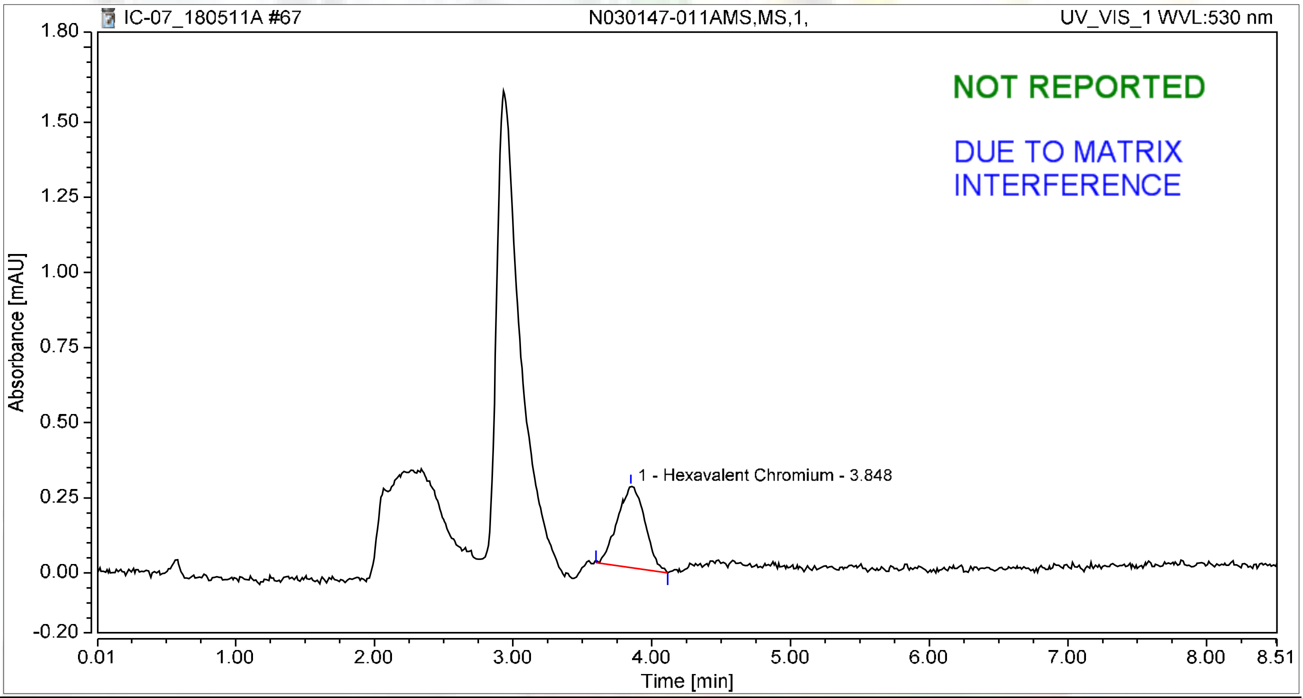
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 18:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

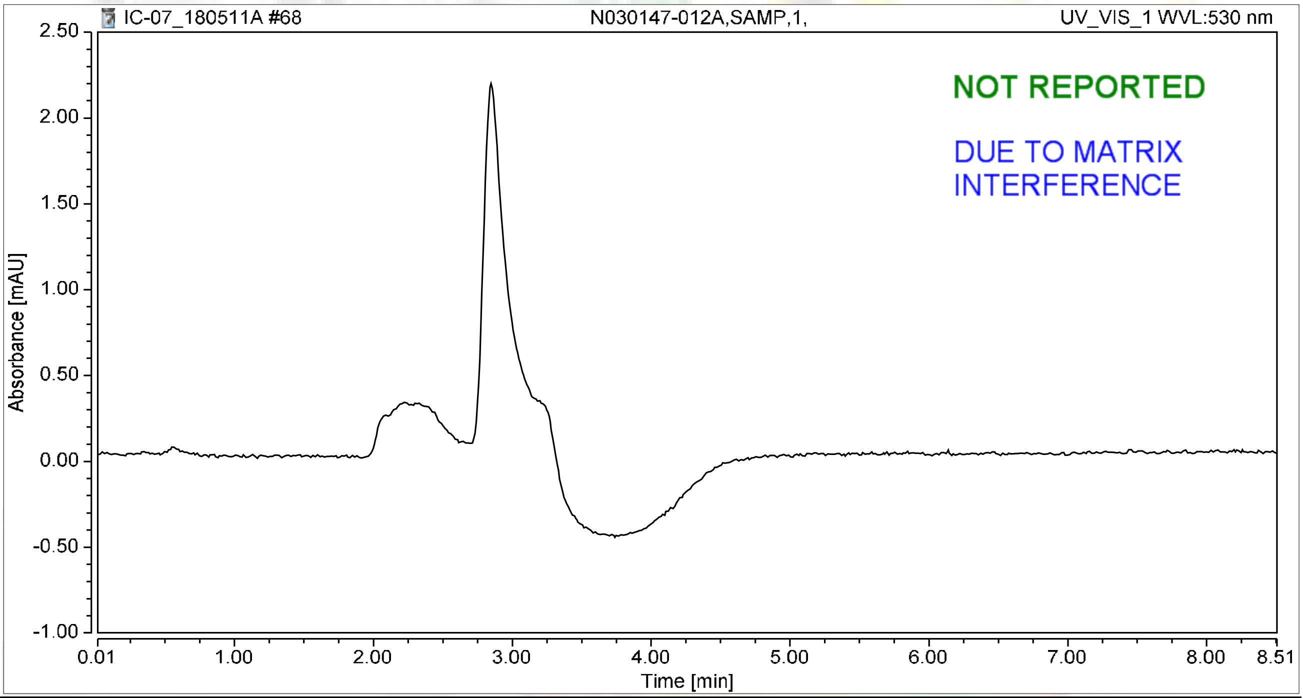
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.848	0.062	0.270	100.00	100.00	0.2432
Total:			**0.062**	**0.270**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-012A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 18:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

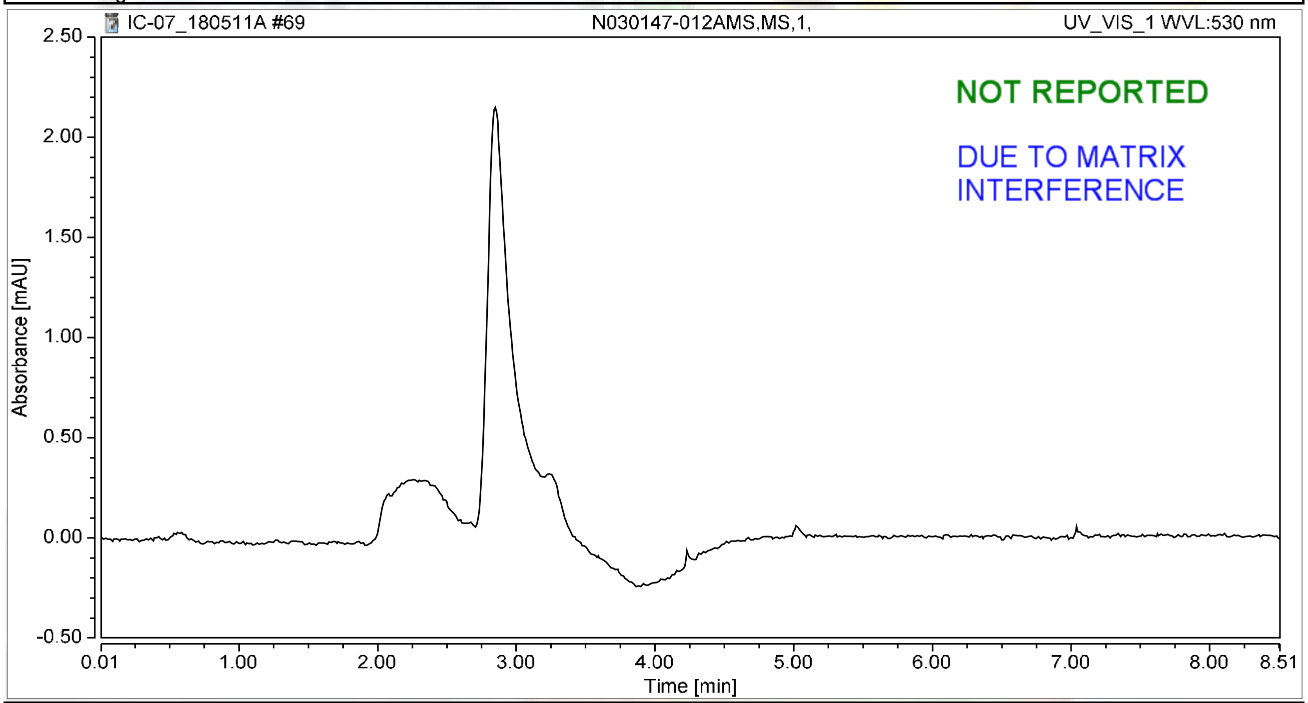
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 18:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

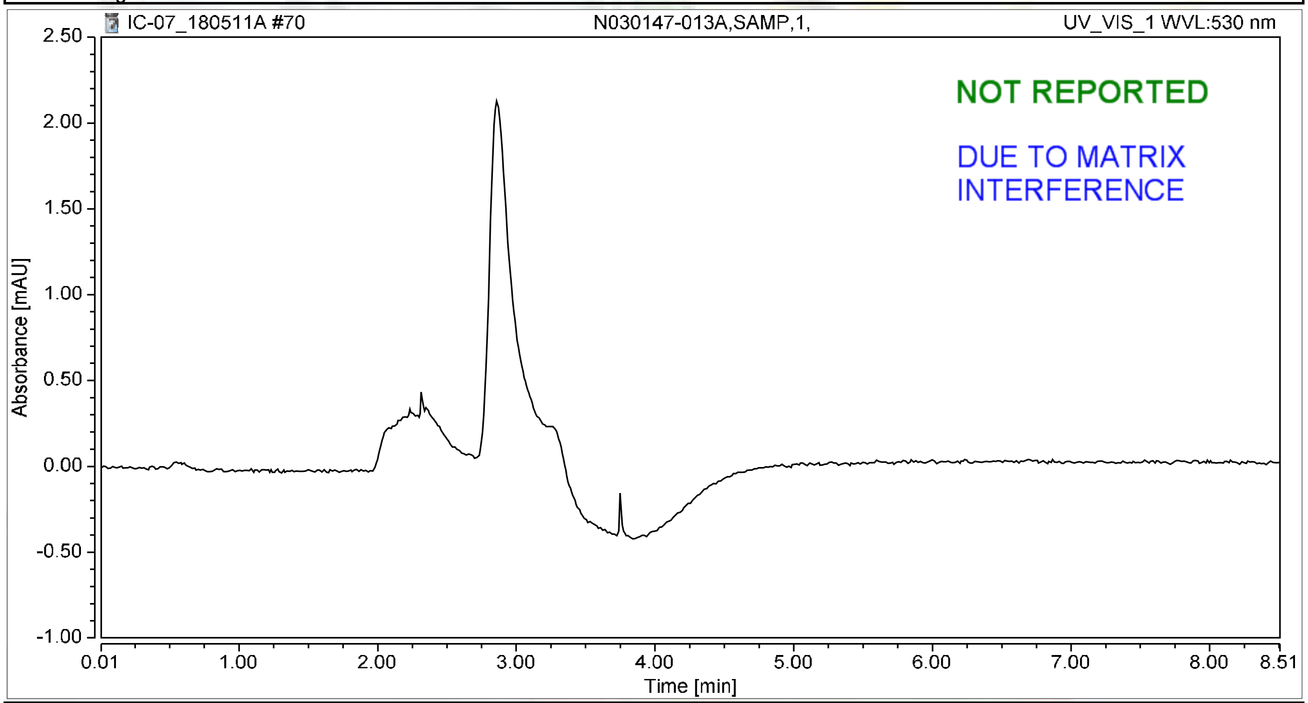
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 18:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

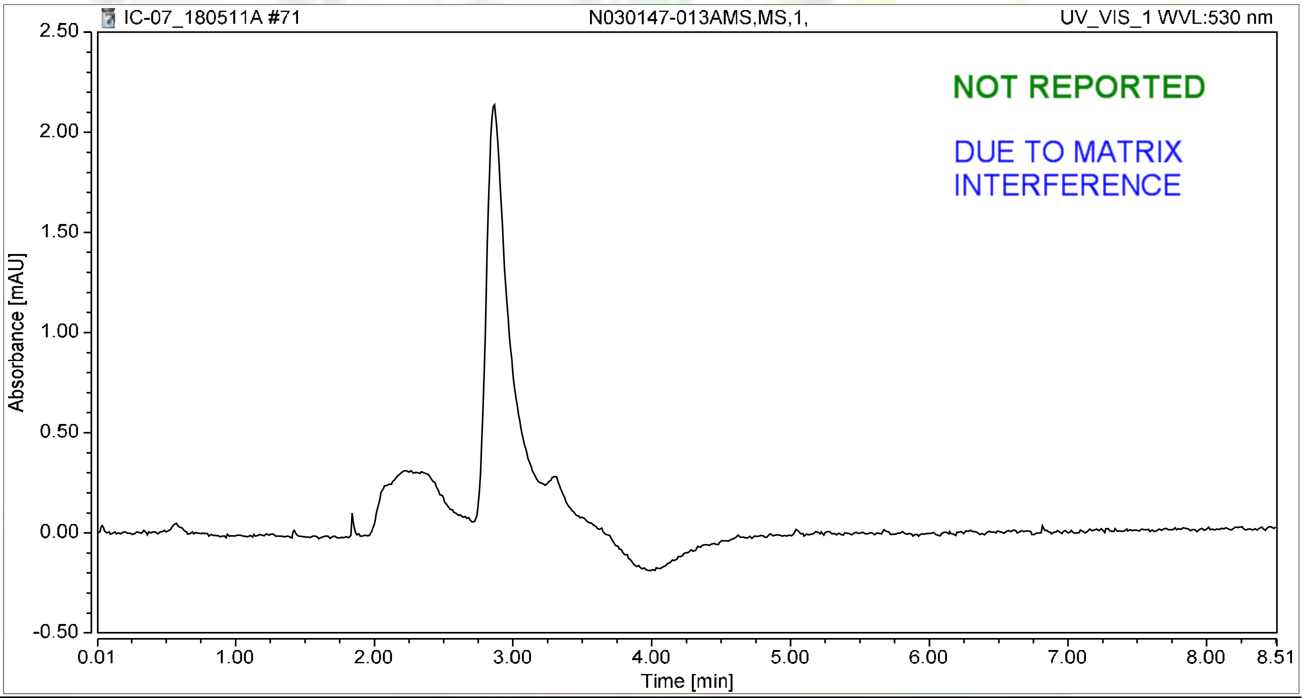
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 18:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

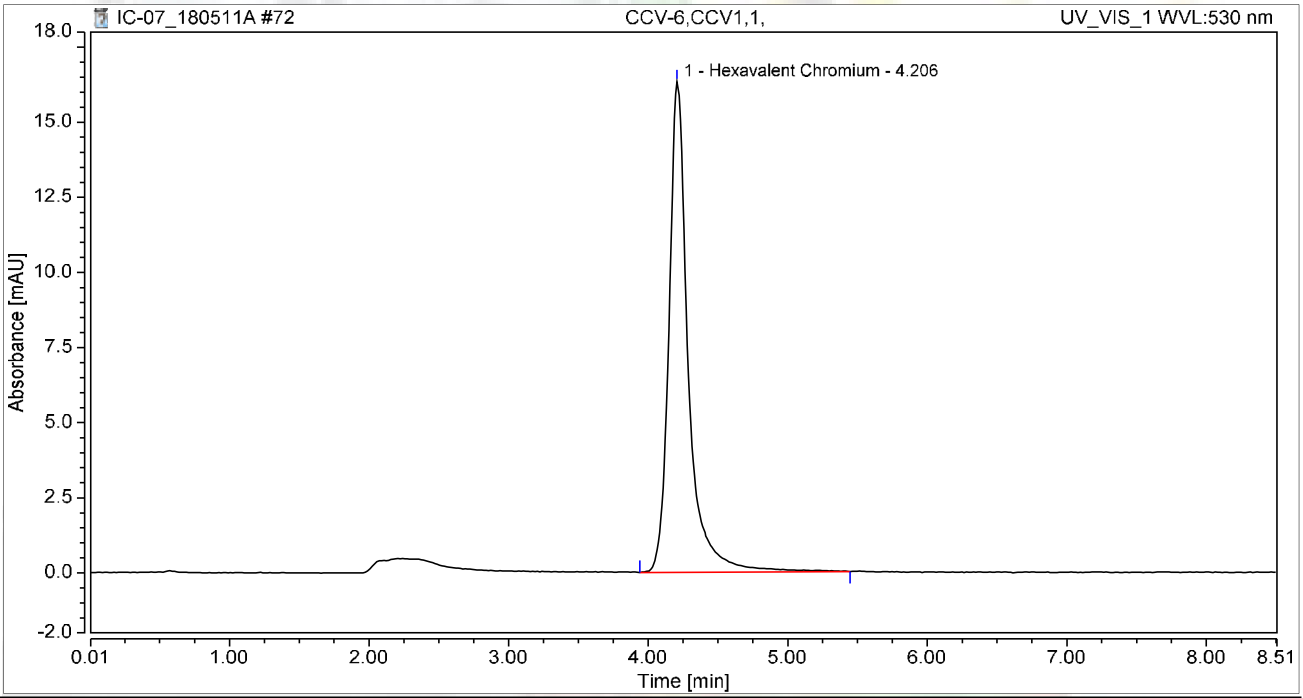
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 19:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

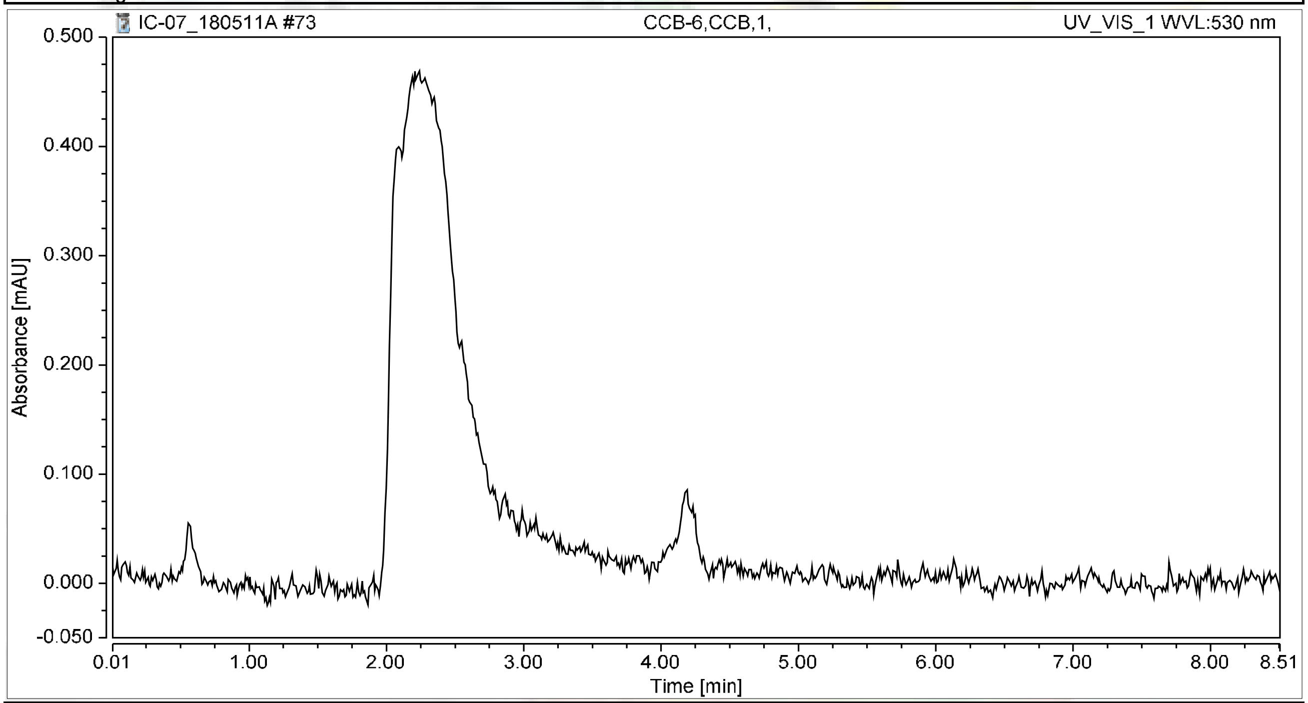
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.618	16.322	100.00	100.00	10.2011
Total:			**2.618**	**16.322**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 19:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

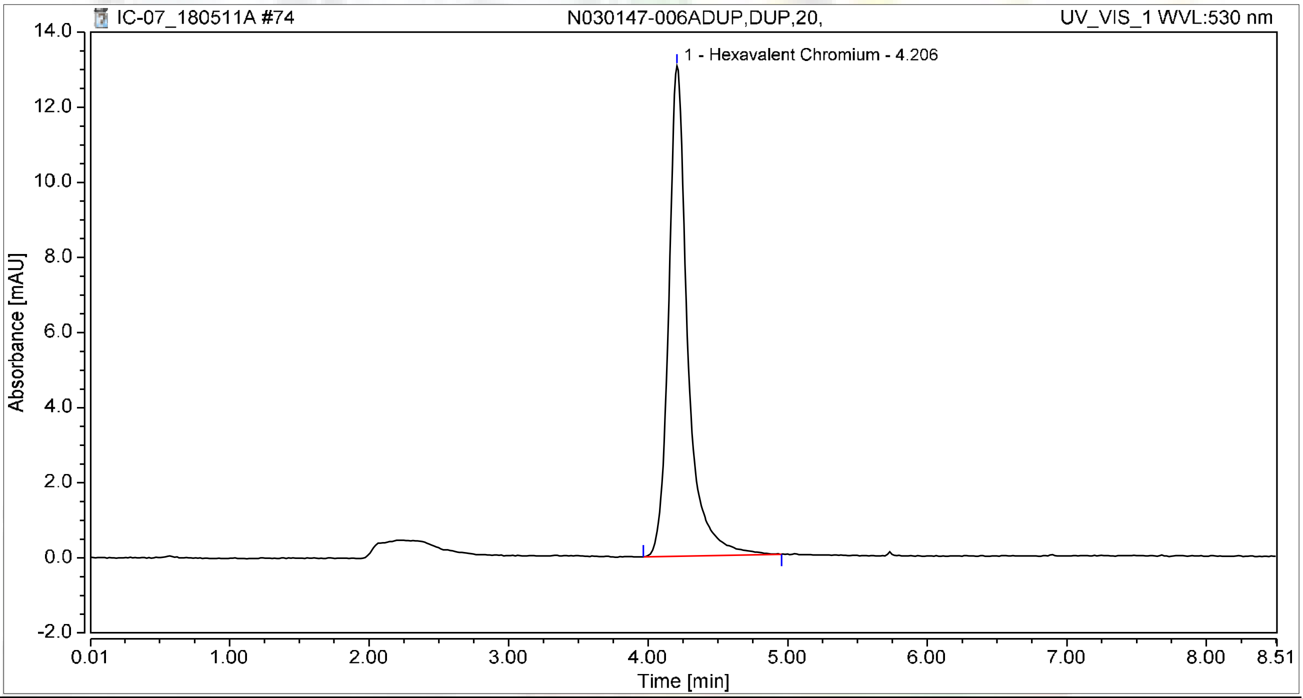
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-006ADUP,DUP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

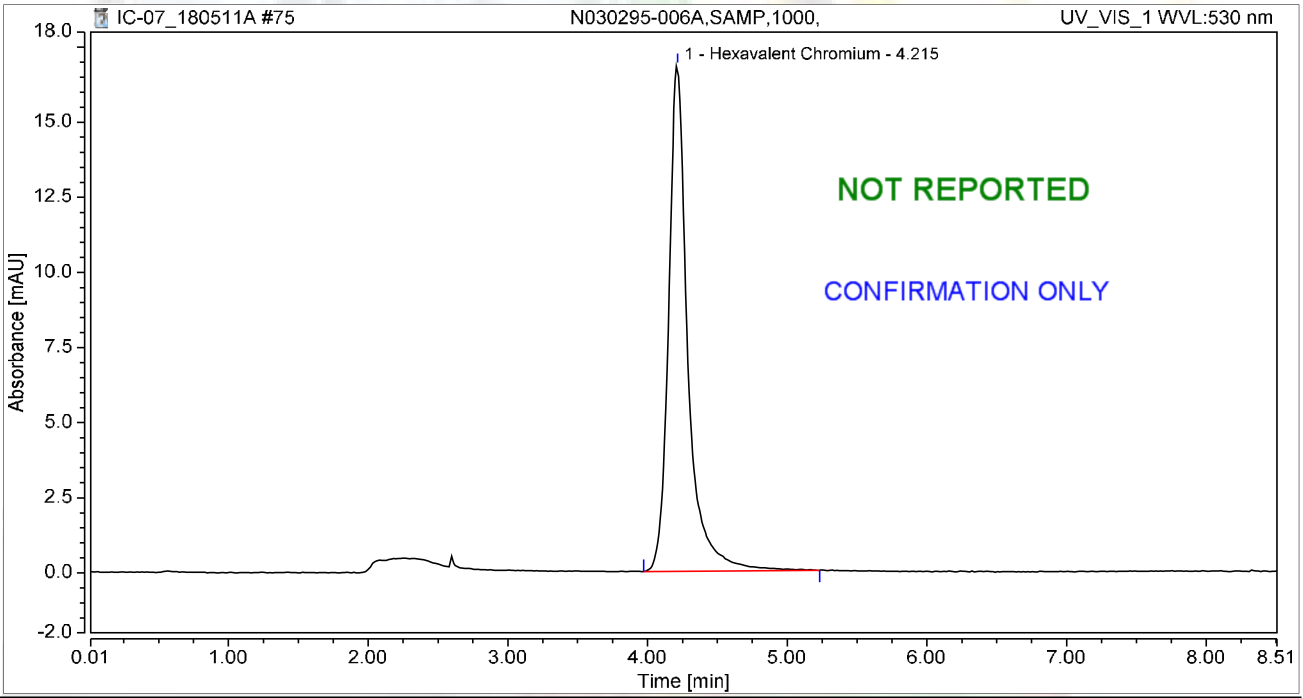
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.073	13.053	100.00	100.00	8.0776
Total:			**2.073**	**13.053**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030295-006A,SAMP,1000,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 19:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

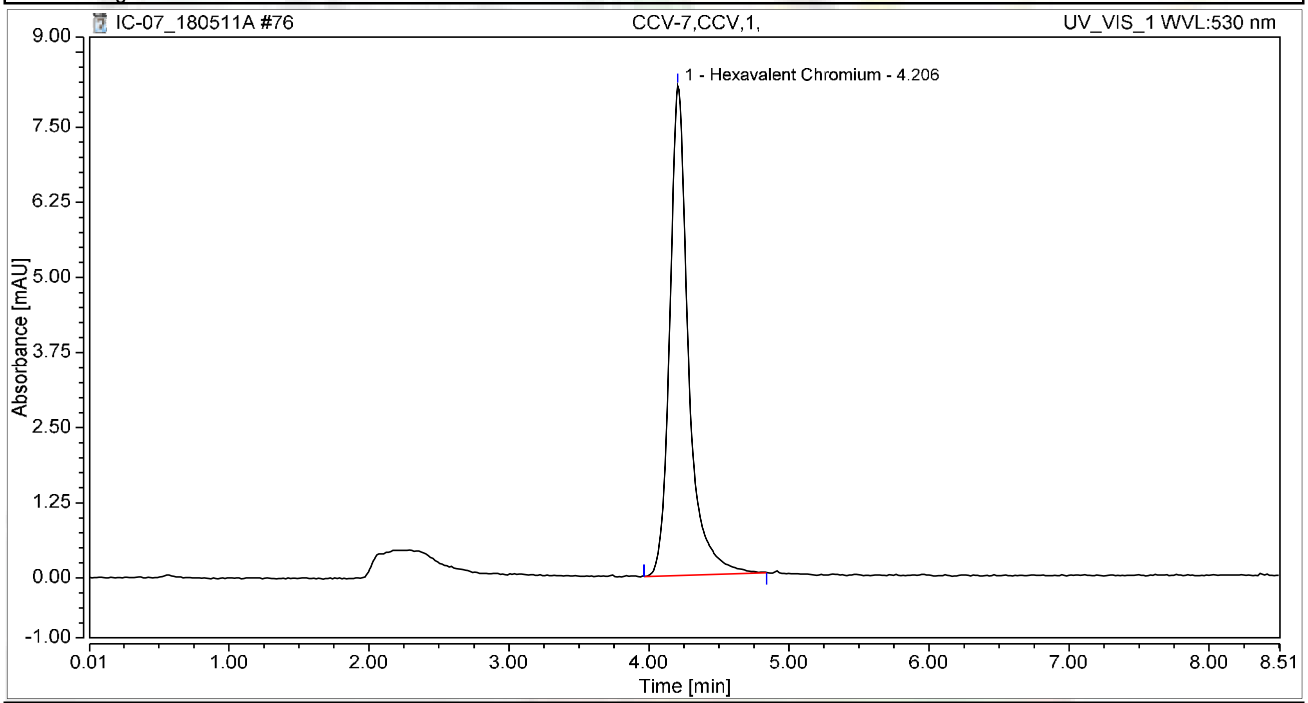
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.690	16.844	100.00	100.00	10.4804
Total:			**2.690**	**16.844**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 19:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

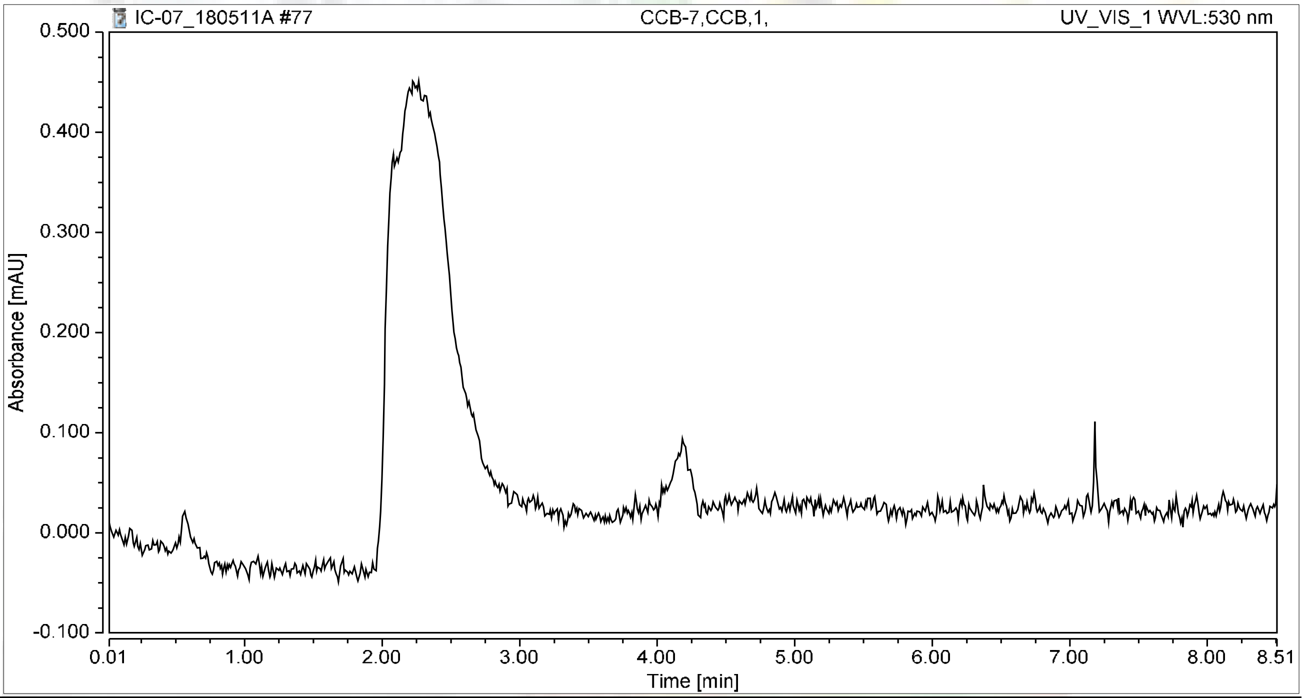
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.268	8.152	100.00	100.00	4.9411
Total:			**1.268**	**8.152**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/18 19:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180515A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/15/18 12:40 PM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/15/18 12:51 PM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/15/18 1:00 PM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/15/18 1:09 PM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/15/18 1:19 PM	Reported
15	MB-R124086	MBLK	1	Hexavalent Chromium	05/15/18 1:28 PM	Reported
16	LCS-R124086	LCS	1	Hexavalent Chromium	05/15/18 1:38 PM	Reported
17	N030189-011A	SAMP	1	Hexavalent Chromium	05/15/18 1:47 PM	Reported
18	N030189-011ADUP	DUP	1	Hexavalent Chromium	05/15/18 1:57 PM	Reported
19	N030189-011AMS	MS	1	Hexavalent Chromium	05/15/18 2:06 PM	Reported
20	N030189-011AMSD	MSD	1	Hexavalent Chromium	05/15/18 2:16 PM	Reported
21	N030147-010A	SAMP	1	Hexavalent Chromium	05/15/18 2:25 PM	Reported
22	N030147-010AMS	MS	1	Hexavalent Chromium	05/15/18 2:35 PM	Reported
23	N030091-020A	SAMP	1	Hexavalent Chromium	05/15/18 2:44 PM	Not Reported
24	N030091-020AMS	MS	1	Hexavalent Chromium	05/15/18 2:54 PM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/15/18 3:03 PM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/15/18 3:12 PM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_180515A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**16/May/18 08:47:10**
No. of Injections:	**29**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/15/2018 12:40	Finished	BLANK
11	BLANK	2	1000	Unknown		05/15/2018 12:51	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		05/15/2018 13:00	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/15/2018 13:09	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		05/15/2018 13:19	Finished	CCB R180409B
15	MB-H2O,MBLK,1,	6	1000	Unknown		05/15/2018 13:28	Finished	MB R180409B
16	LCS-H2O,LCS,1,	7	1000	Unknown		05/15/2018 13:38	Finished	LCS, IWST-180129B
17	N030189-011A,SAMP	8	1000	Unknown		05/15/2018 13:47	Finished	SAMP,10mL
18	N030189-011ADUP,D	9	1000	Unknown		05/15/2018 13:57	Finished	DUP,10mL
19	N030189-011AMS,MS	10	1000	Unknown		05/15/2018 14:06	Finished	MS (1ppb), IWST-180129B,10
20	N030189-011AMSD,M	11	1000	Unknown		05/15/2018 14:16	Finished	MSD (1ppb), IWST-180129B,10
21	N030147-010A,SAMP	12	1000	Unknown		05/15/2018 14:25	Finished	SAMP,10mL
22	N030147-010AMS,MS	13	1000	Unknown		05/15/2018 14:35	Finished	MS (5ppb), IWST-180129B,10
23	N030091-020A,SAMP	14	1000	Unknown		05/15/2018 14:44	Finished	SAMP,10mL
24	N030091-020AMS,MS	15	1000	Unknown		05/15/2018 14:54	Finished	MS (1ppb), IWST-180129B,10
25	CCV-2,CCV1,1,	16	1000	Unknown		05/15/2018 15:03	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	17	1000	Unknown		05/15/2018 15:12	Finished	CCB R180418A
27	SHUTDOWN	20	1000	Unknown		05/15/2018 15:56	Finished	
28	Eluent: R180515A	20	1000	Unknown		n.a.	Finished	Eluent
29	PCR: R180515B	21	1000	Unknown		n.a.	Finished	Post-Column Reagent

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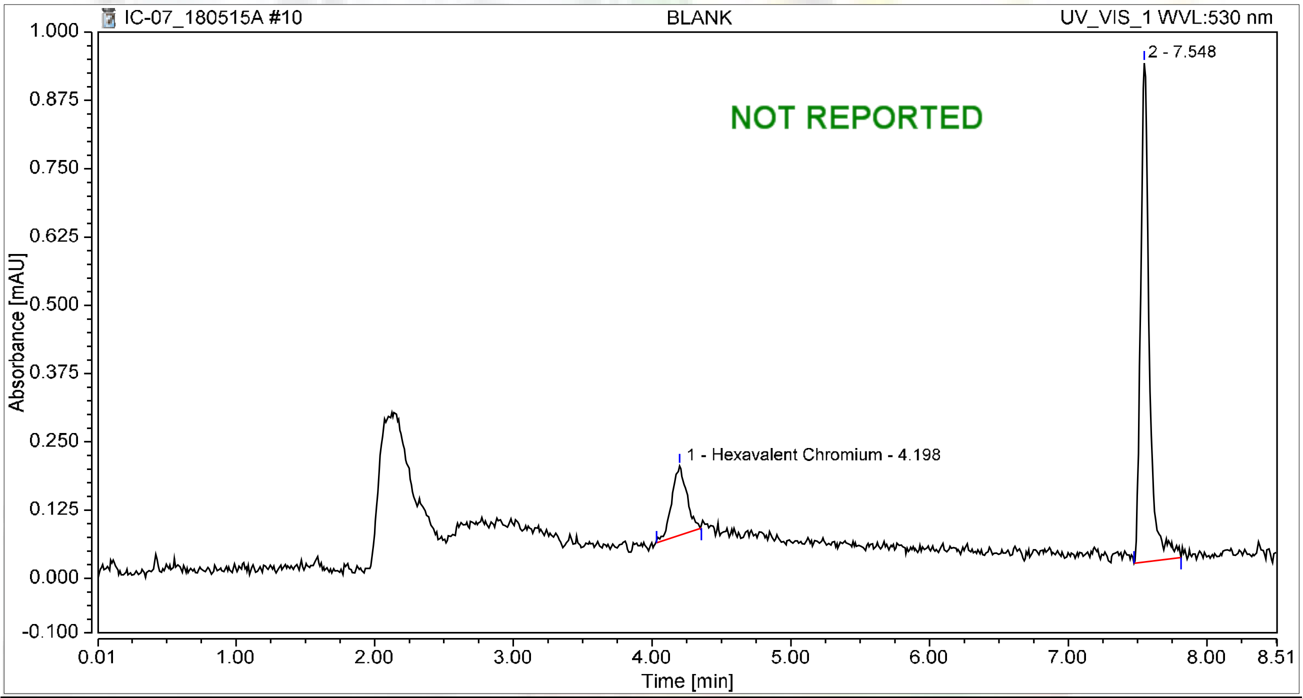
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 12:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

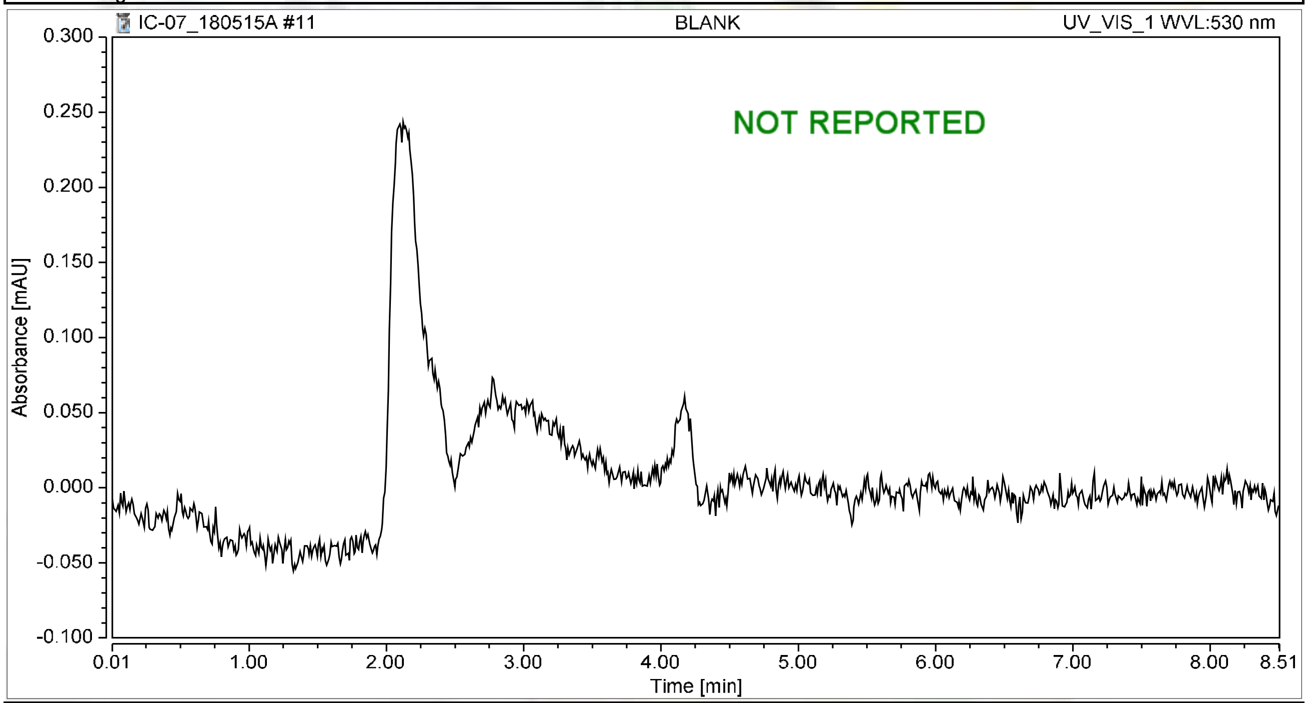
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.016	0.127	19.35	12.22	0.0620
2		7.548	0.066	0.914	80.65	87.78	n.a.
Total:			**0.082**	**1.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 12:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

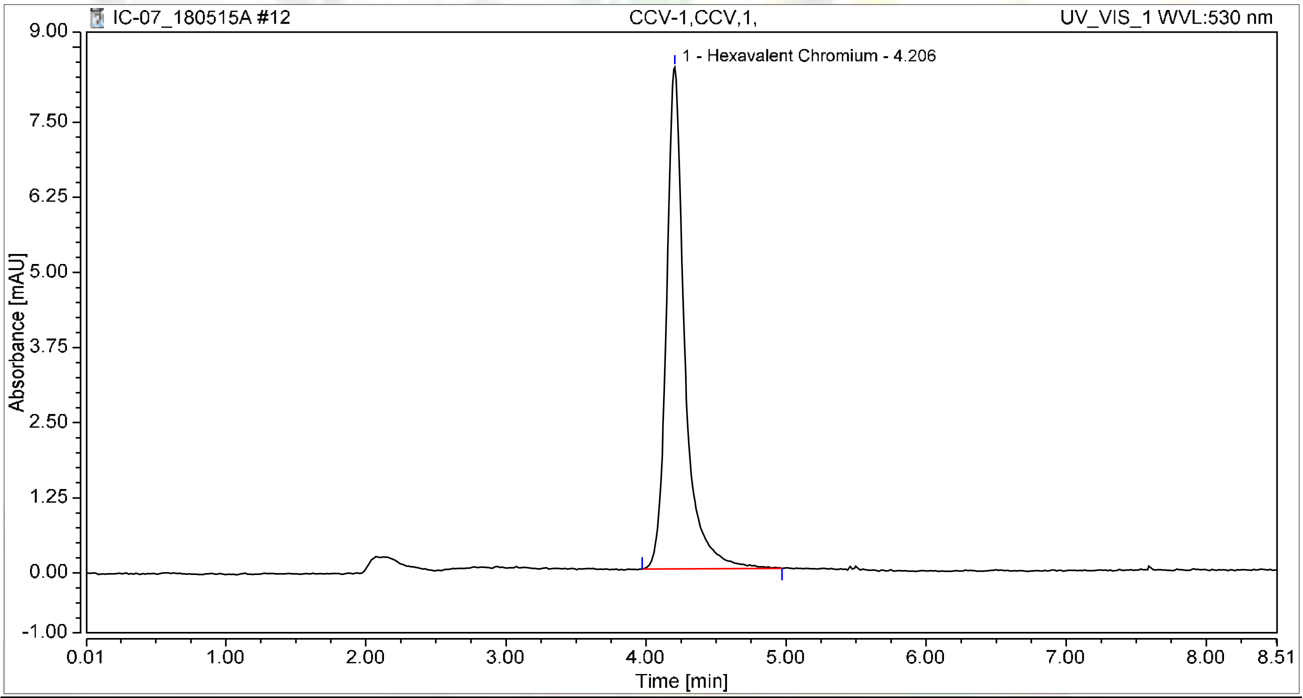
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 13:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

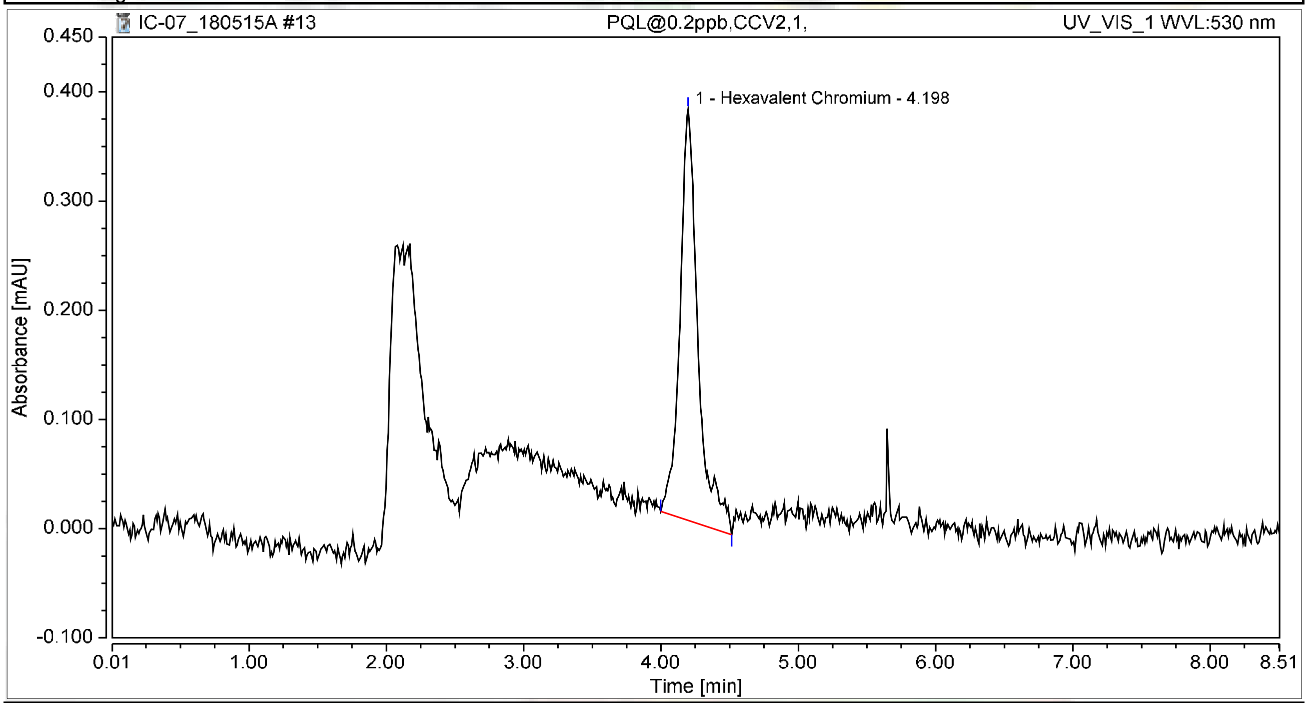
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.270	8.354	100.00	100.00	4.9504
Total:			**1.270**	**8.354**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 13:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

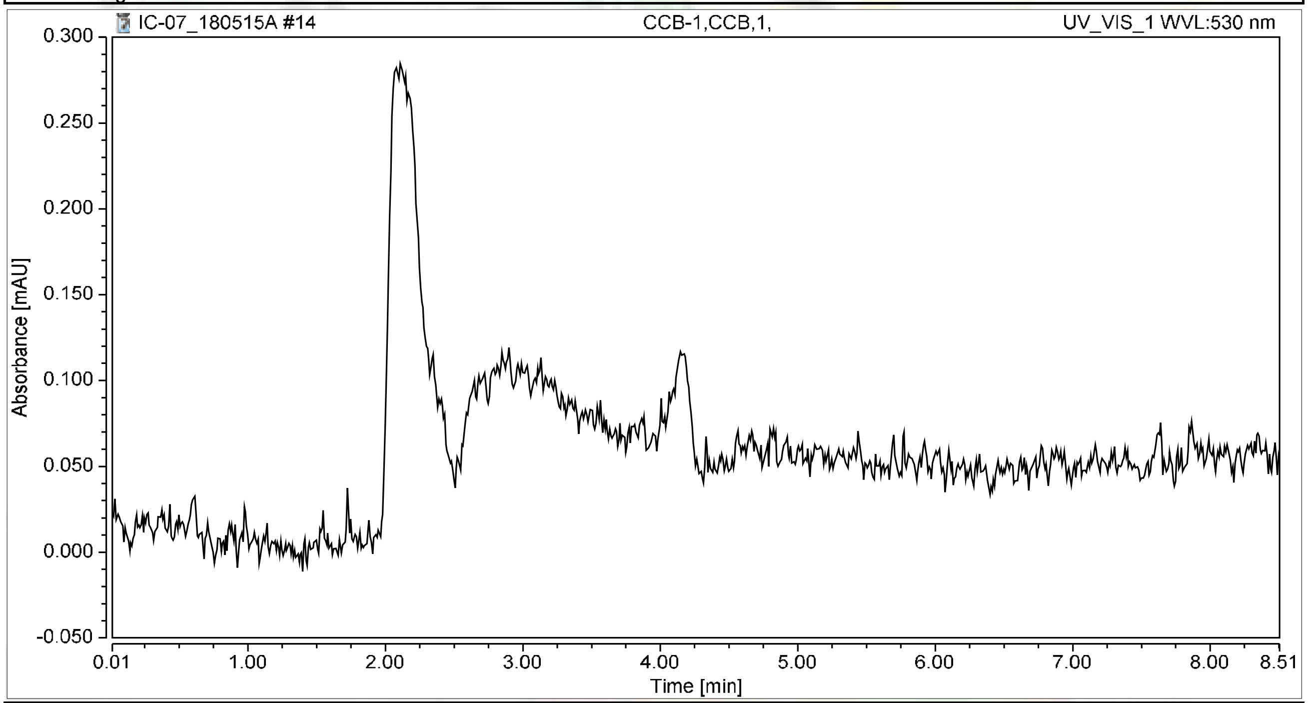
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.057	0.376	100.00	100.00	0.2237
Total:			**0.057**	**0.376**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 13:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

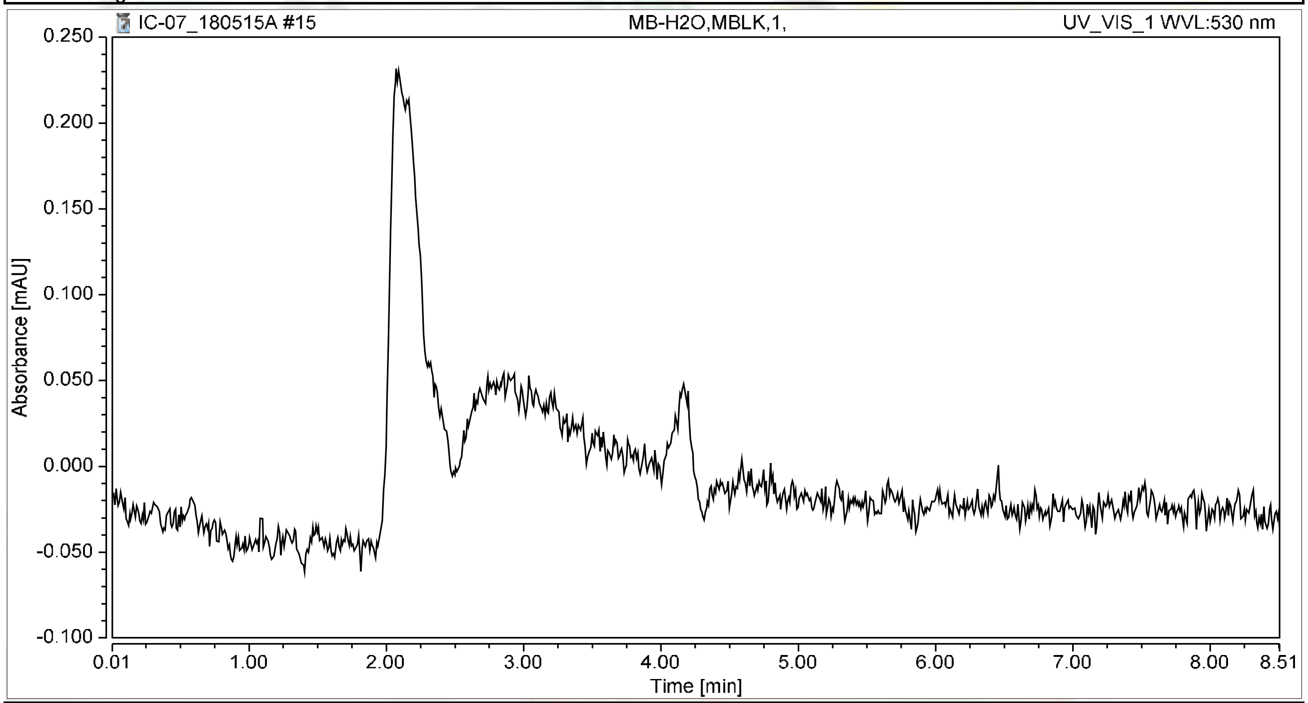
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 13:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

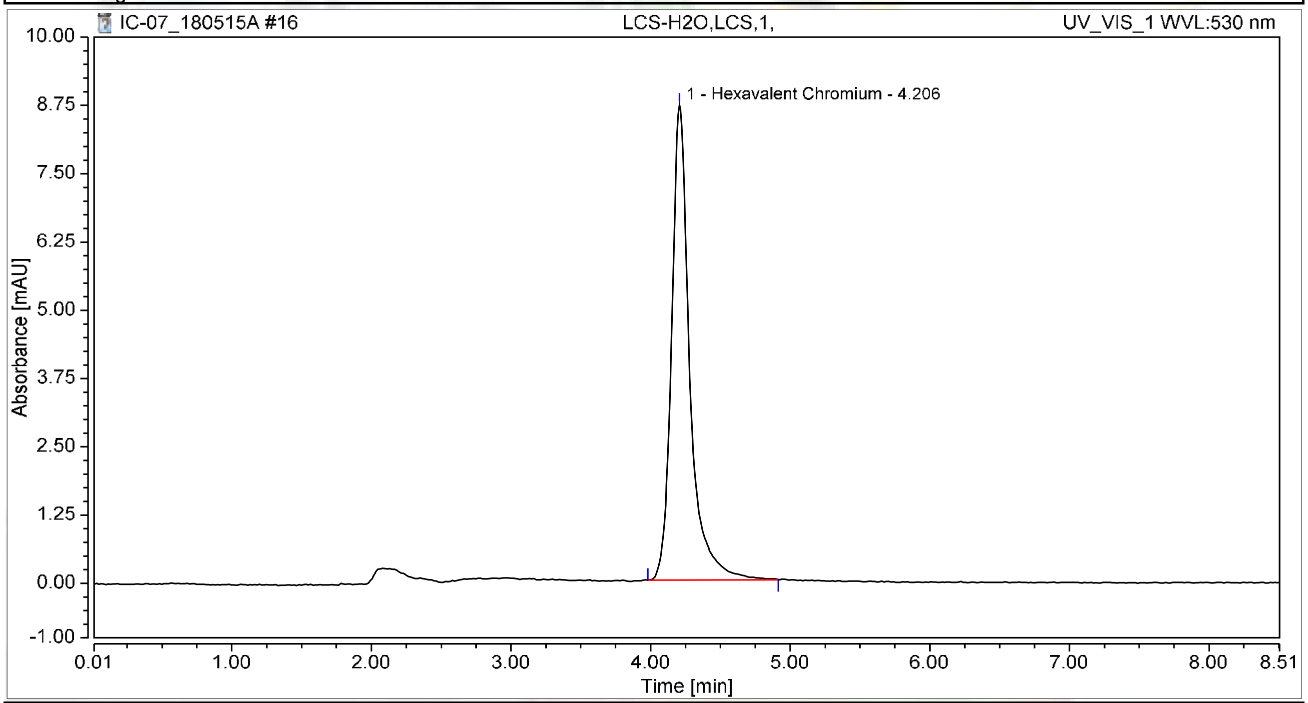
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 13:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

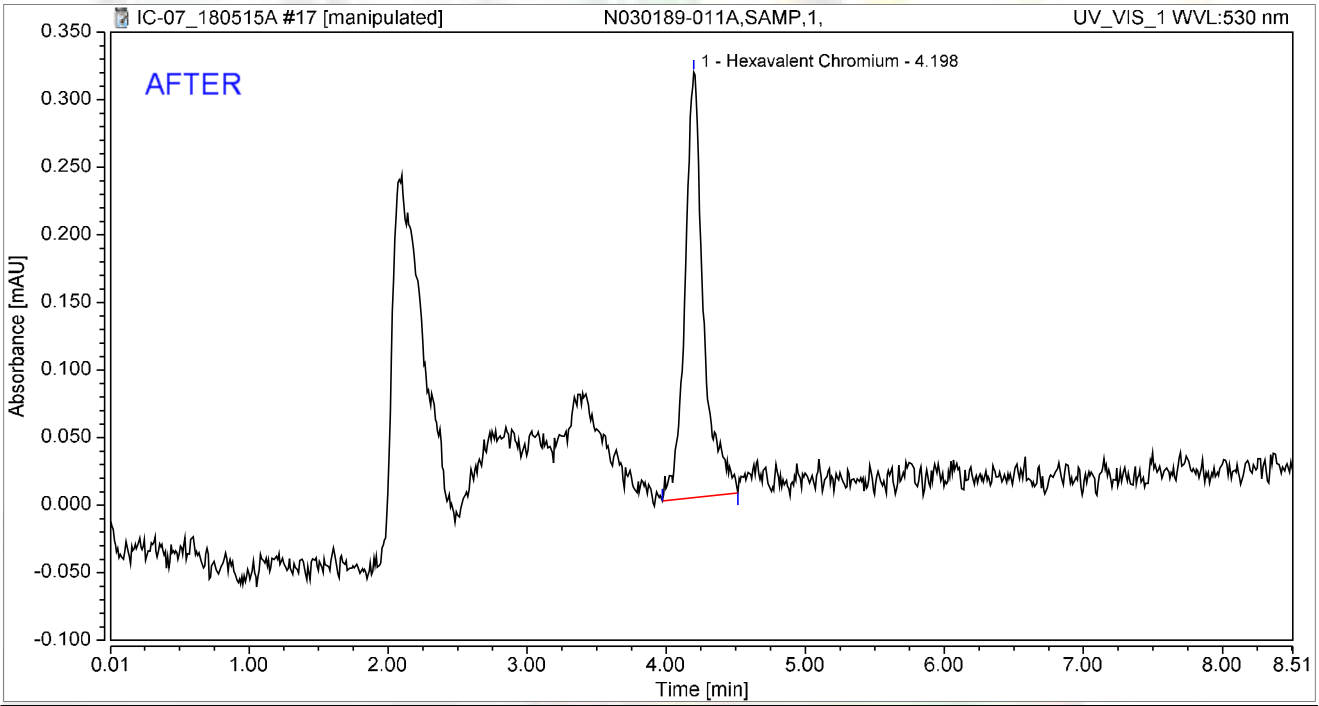
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.314	8.698	100.00	100.00	5.1206
Total:			**1.314**	**8.698**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030189-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 13:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.049	0.315	100.00	100.00	0.1909
Total:			**0.049**	**0.315**	**100.00**	**100.00**	

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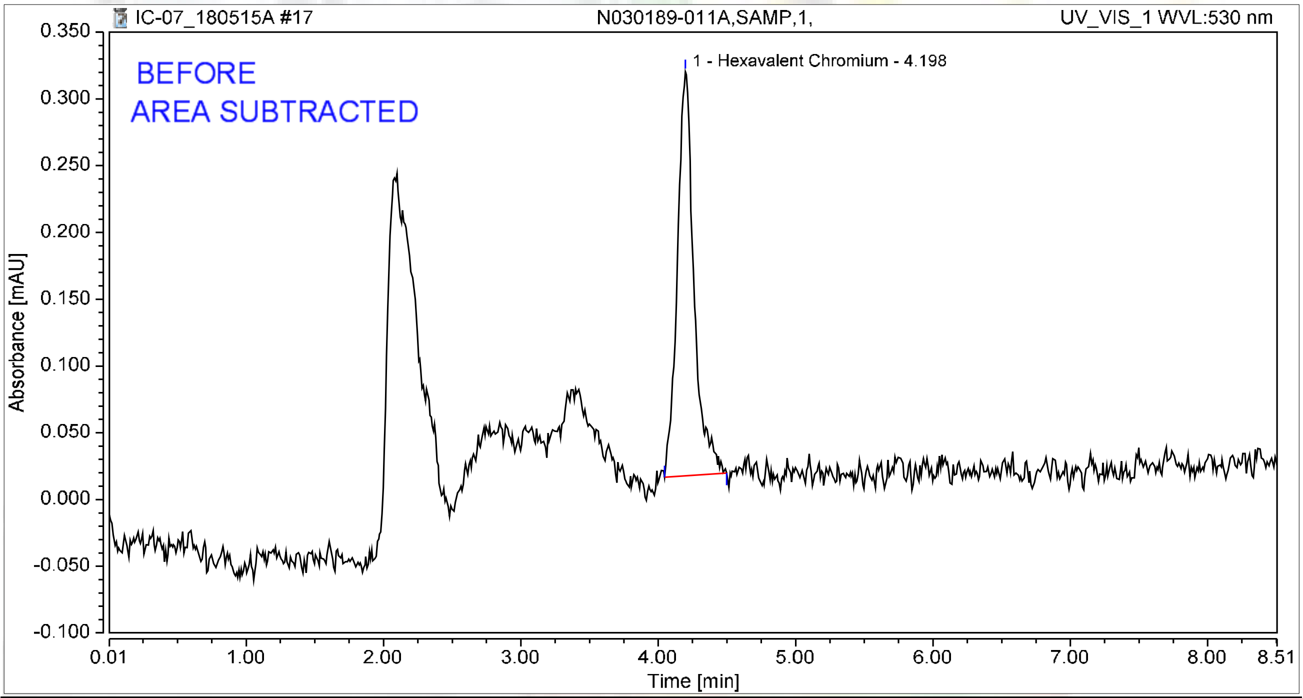
Chromatogram and Results

Injection Details

Injection Name:	**N030189-011A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 13:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.043	0.303	100.00	100.00	0.1661
Total:			**0.043**	**0.303**	**100.00**	**100.00**	

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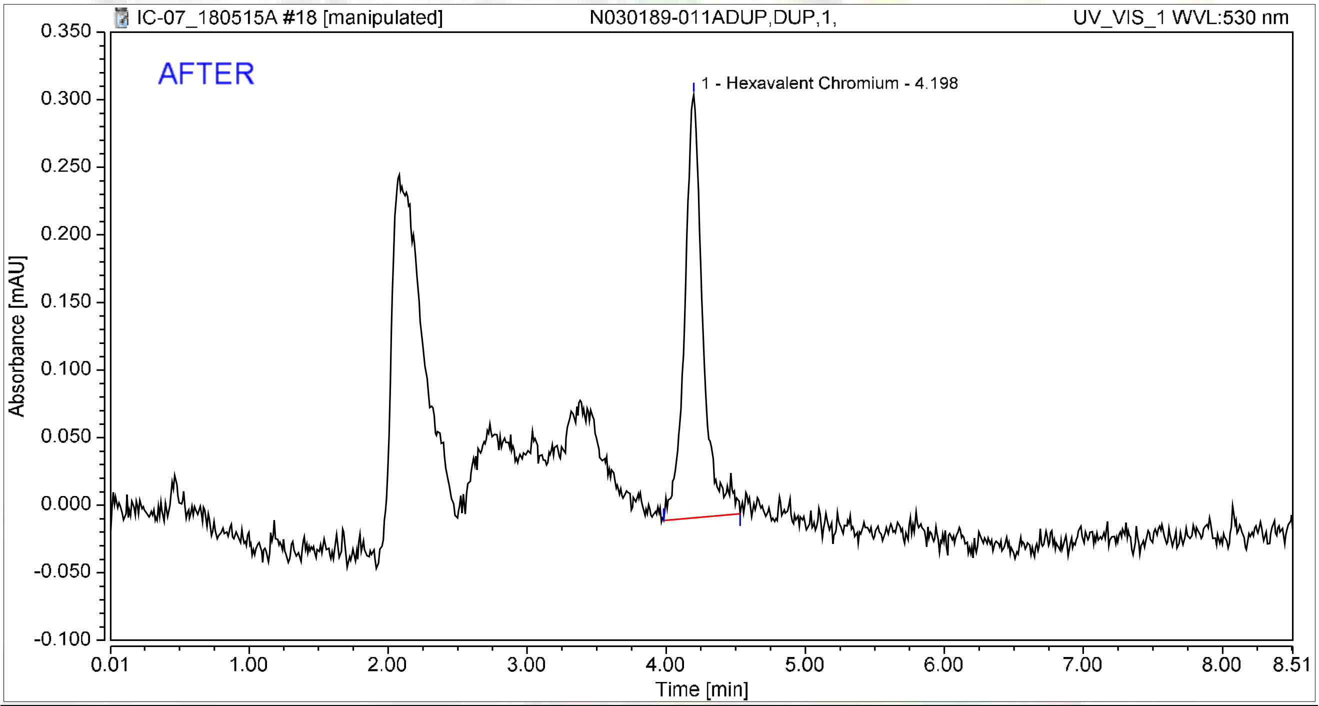
Chromatogram and Results

Injection Details

Injection Name:	**N030189-011ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 13:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.048	0.313	100.00	100.00	0.1860
Total:			**0.048**	**0.313**	**100.00**	**100.00**	

rba 5/18/2018

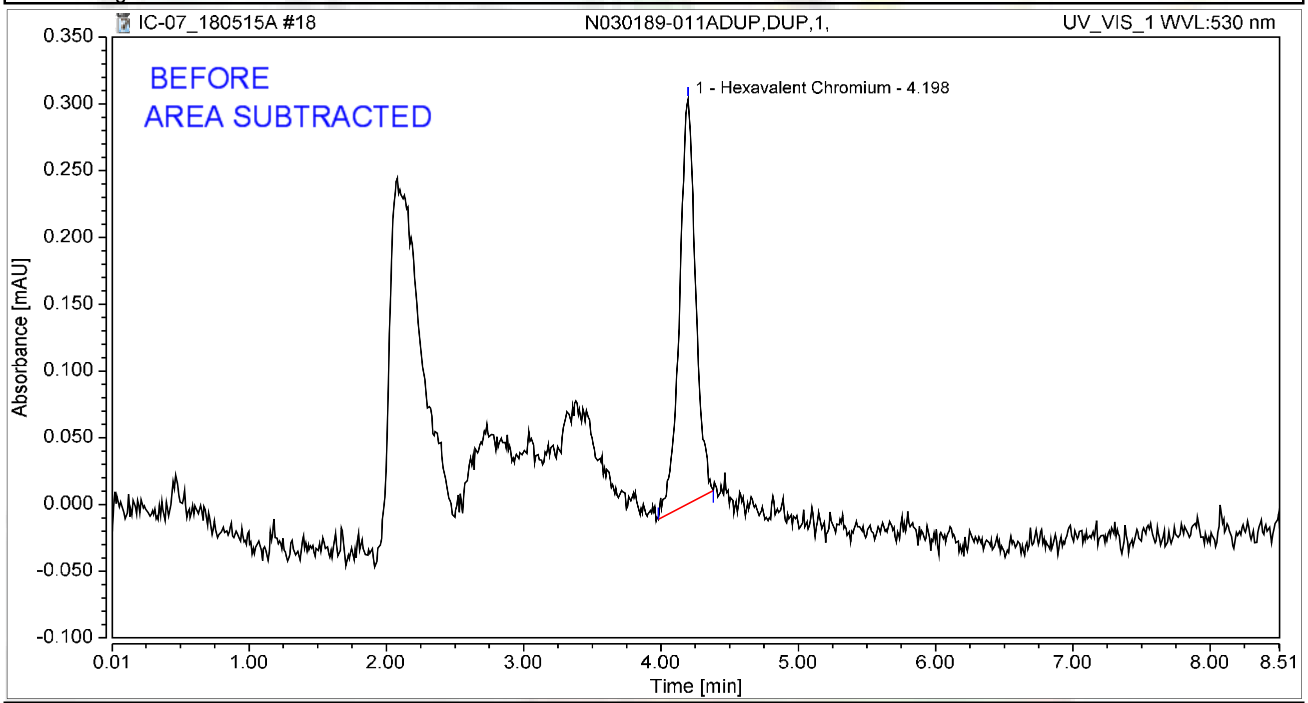
RB 05/22/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030189-011ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 13:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.042	0.303	100.00	100.00	0.1625
Total:			**0.042**	**0.303**	**100.00**	**100.00**	

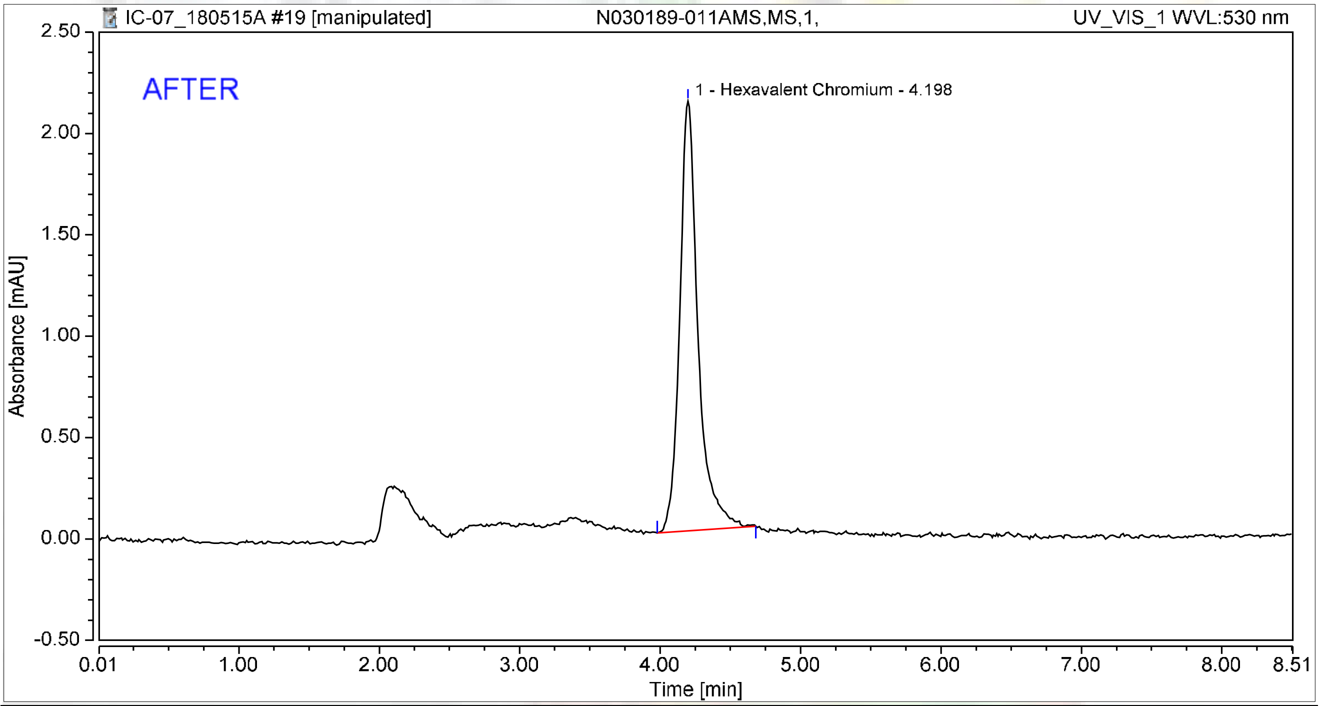
rba 5/18/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030189-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 14:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.320	2.120	100.00	100.00	1.2485
Total:			**0.320**	**2.120**	**100.00**	**100.00**	

rba 5/18/2018

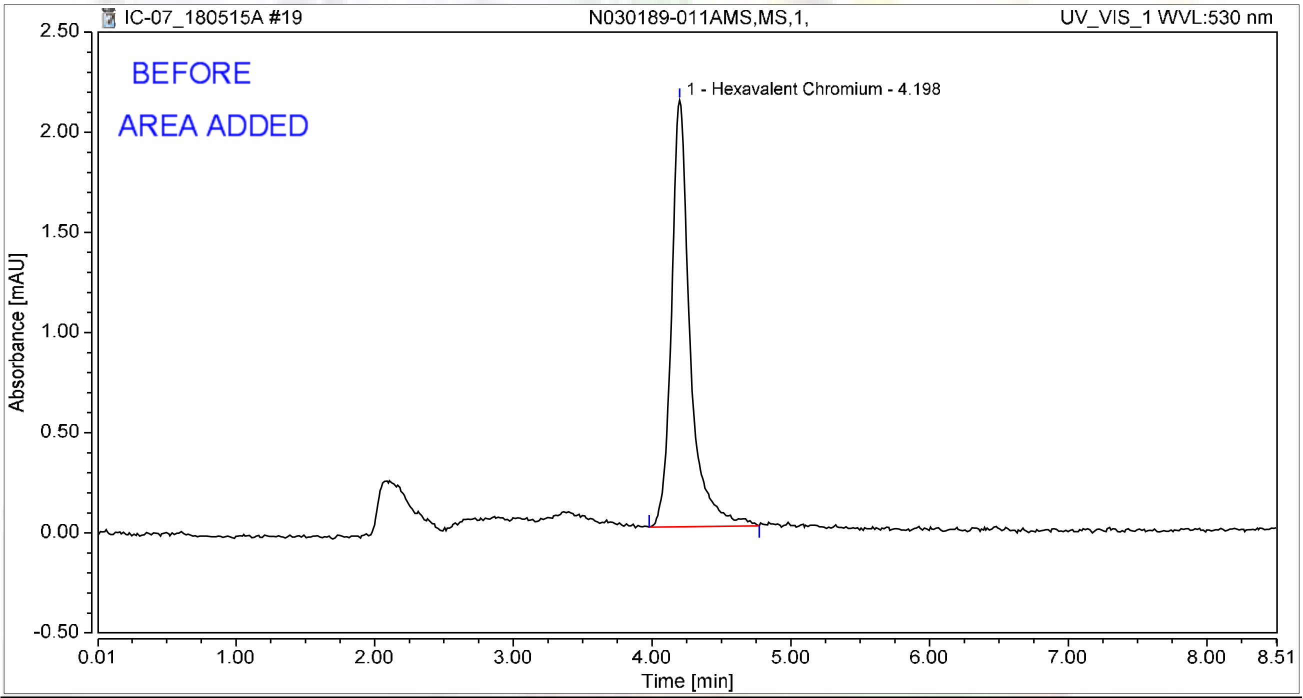
RB 05/22/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030189-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 14:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.332	2.128	100.00	100.00	1.2923
Total:			**0.332**	**2.128**	**100.00**	**100.00**	

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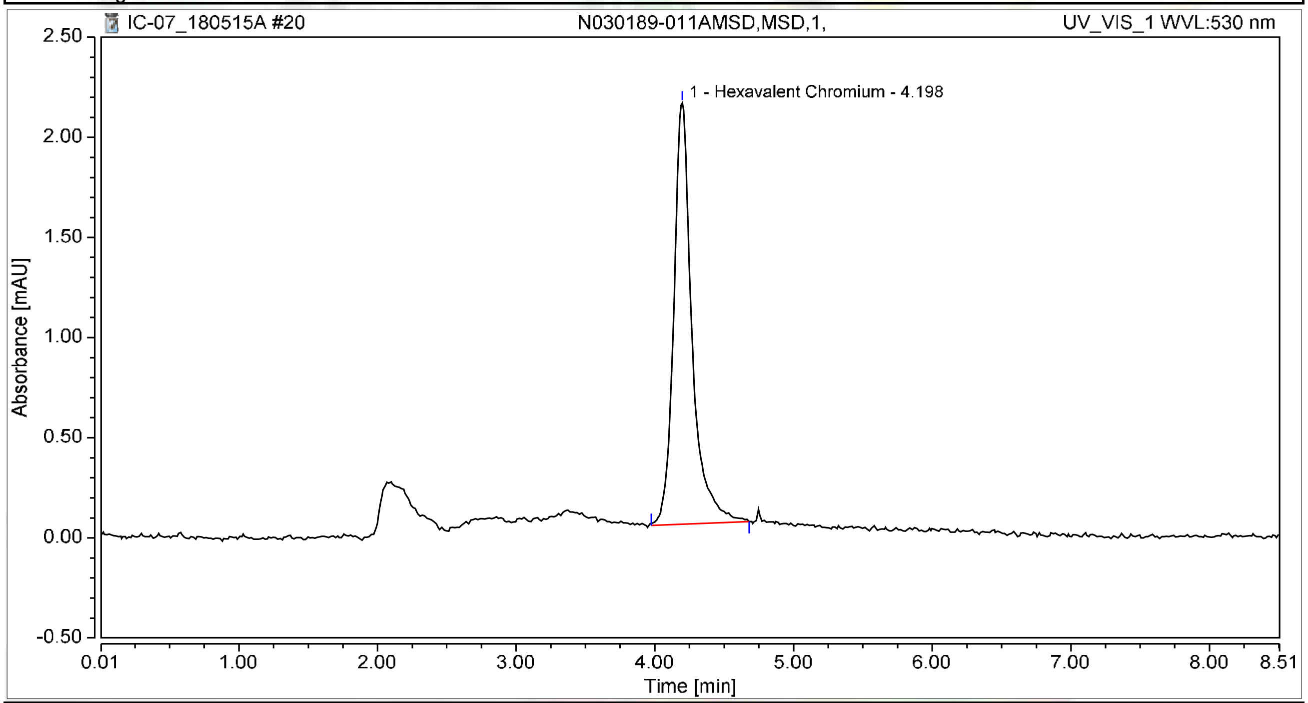
Chromatogram and Results

Injection Details

Injection Name:	**N030189-011AMSD,MSD,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 14:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

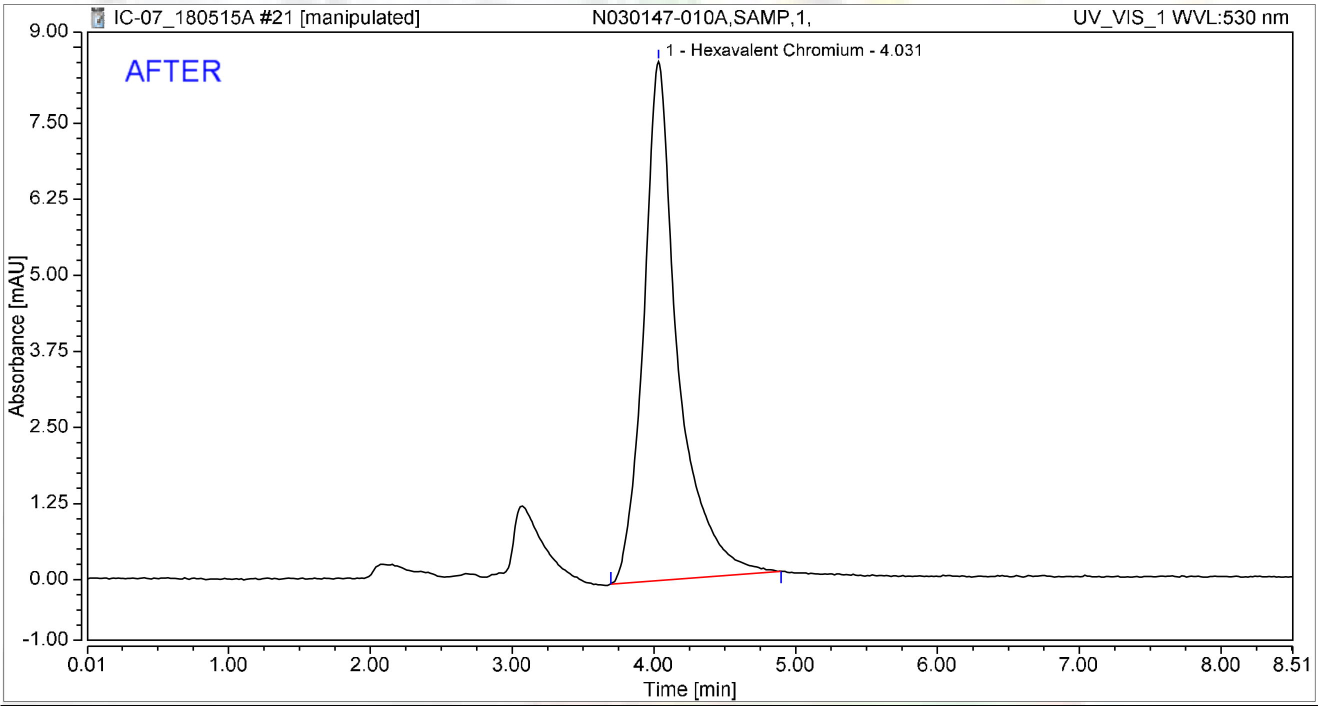
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.322	2.102	100.00	100.00	1.2563
Total:			**0.322**	**2.102**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030147-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 14:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	2.393	8.533	100.00	100.00	9.3227
Total:			**2.393**	**8.533**	**100.00**	**100.00**	

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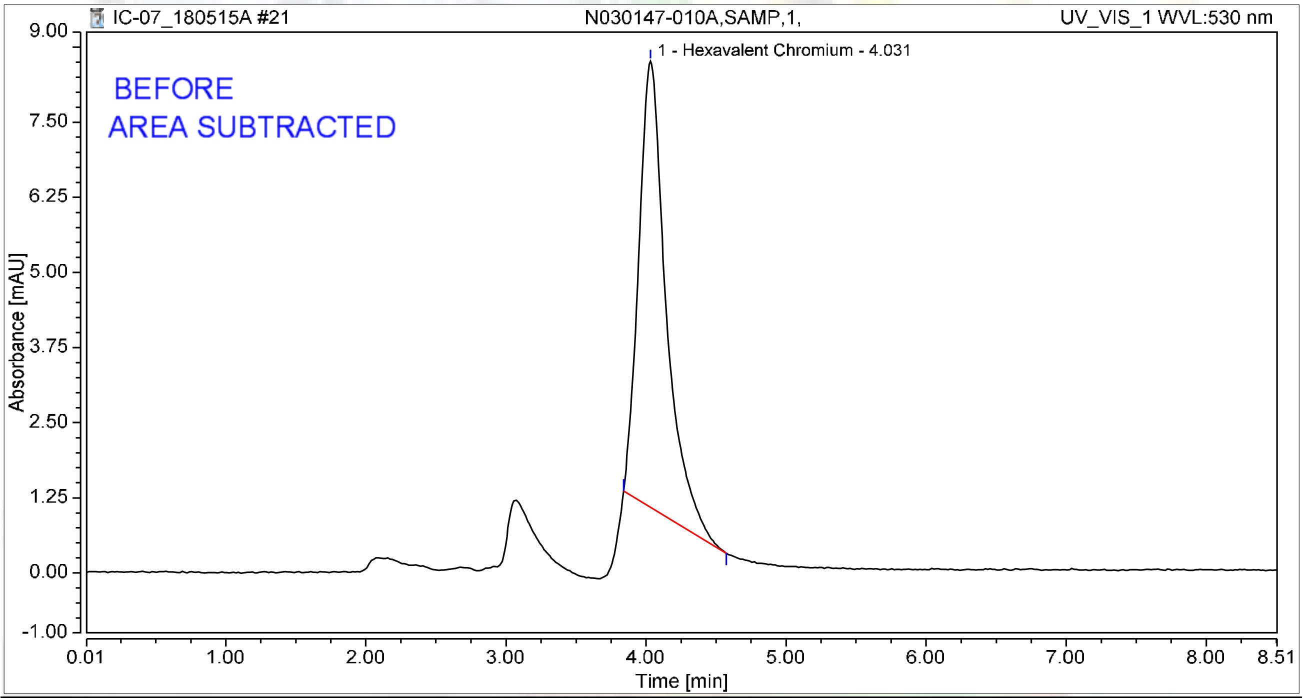
Chromatogram and Results

Injection Details

Injection Name:	**N030147-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 14:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	1.682	7.422	100.00	100.00	6.5556
Total:			**1.682**	**7.422**	**100.00**	**100.00**	

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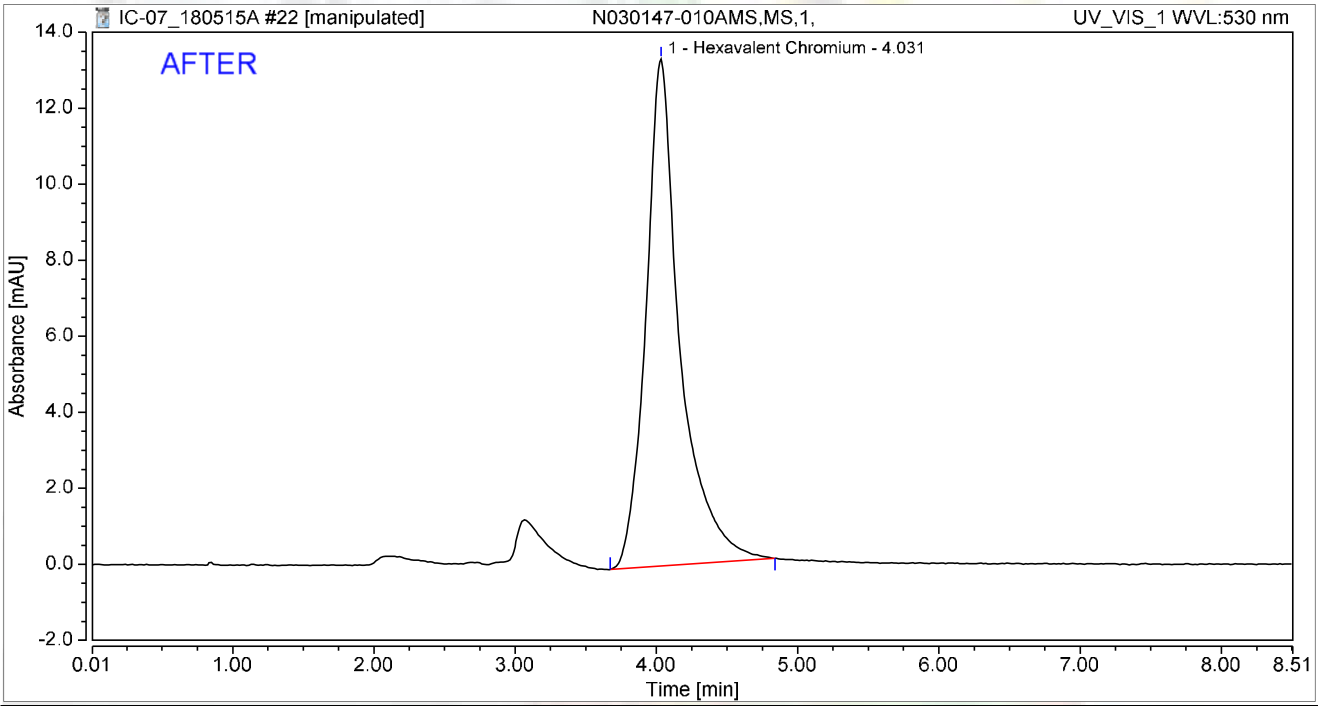
Chromatogram and Results

Injection Details

Injection Name:	**N030147-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 14:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	3.725	13.333	100.00	100.00	14.5128
Total:			**3.725**	**13.333**	**100.00**	**100.00**	

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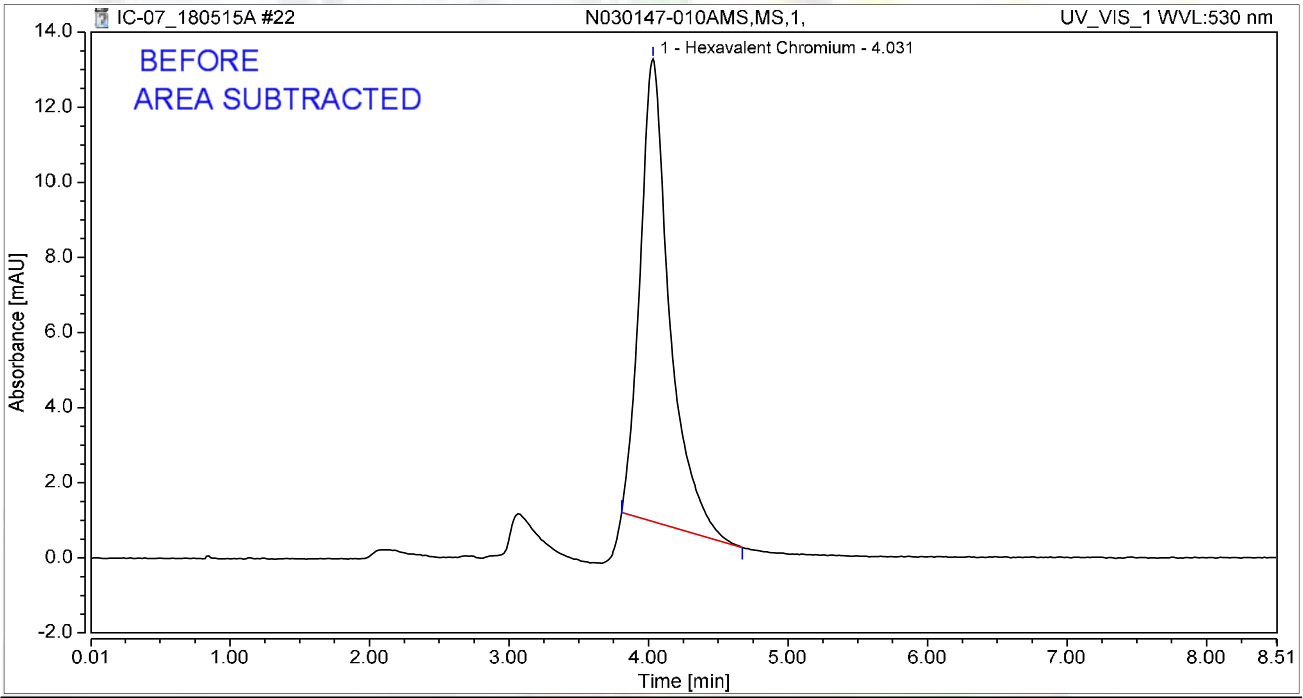
Chromatogram and Results

Injection Details

Injection Name:	**N030147-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 14:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	3.029	12.322	100.00	100.00	11.8044
Total:			**3.029**	**12.322**	**100.00**	**100.00**	

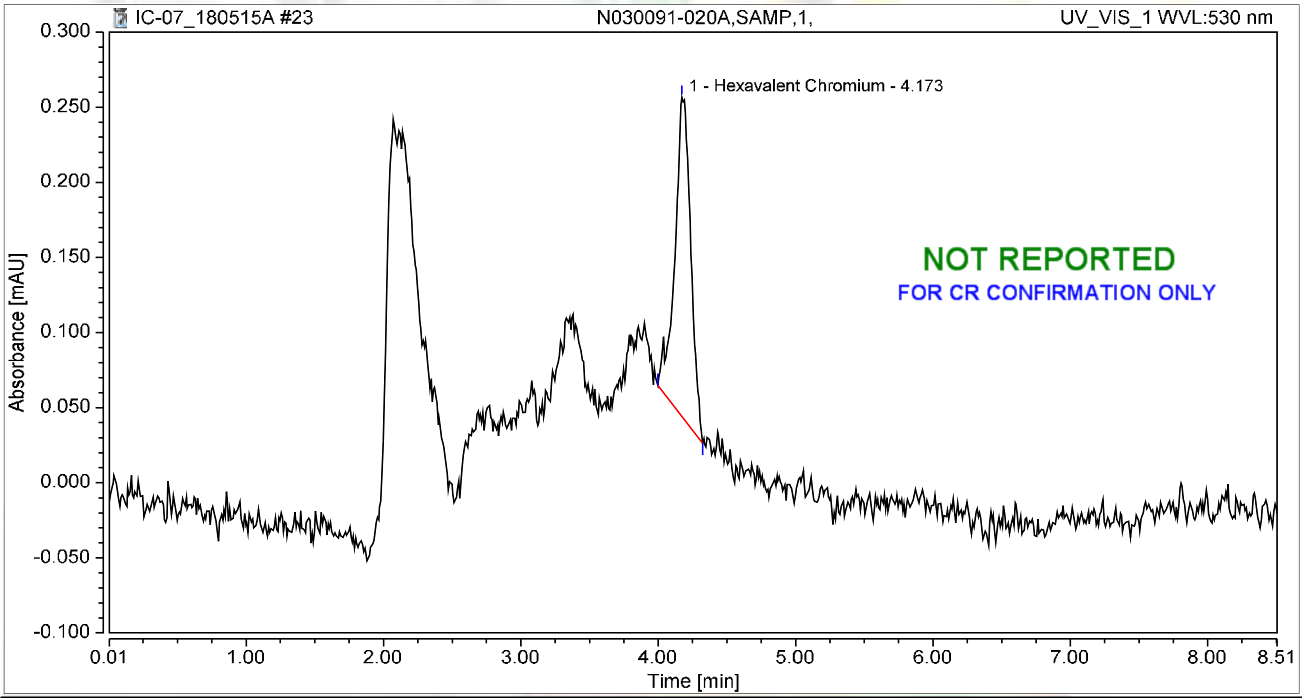
rba 5/18/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030091-020A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 14:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

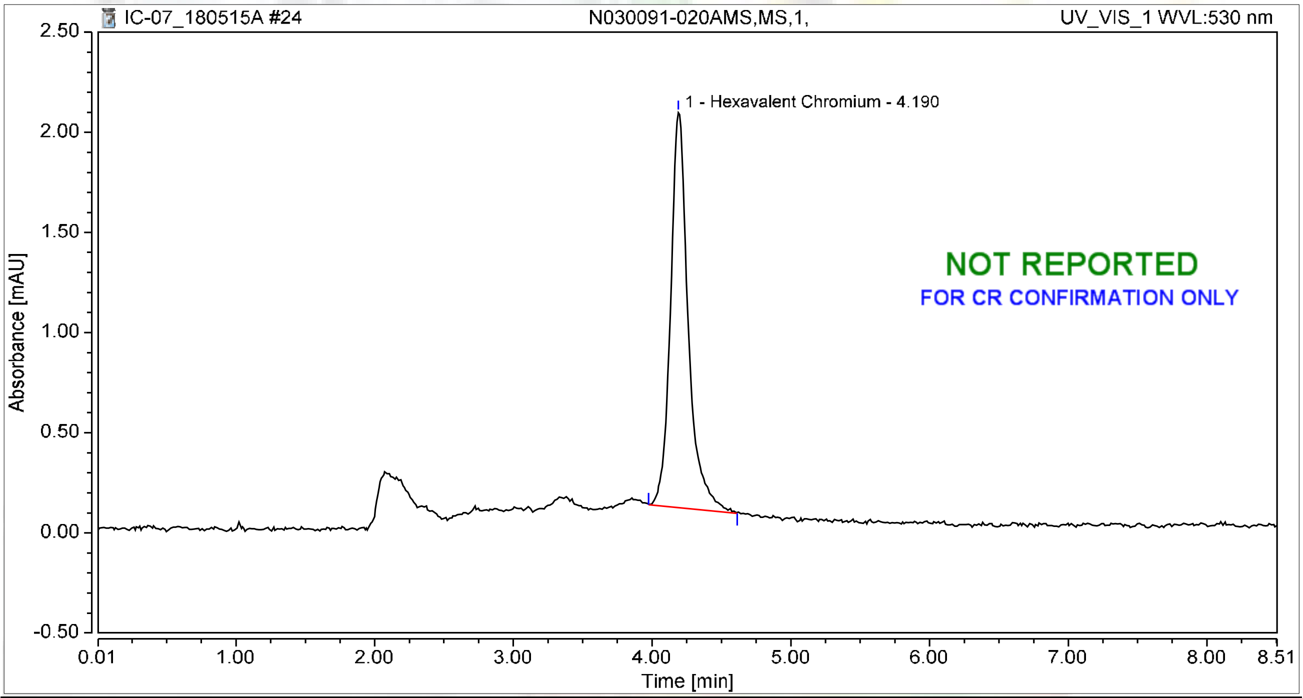
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.029	0.213	100.00	100.00	0.1122
Total:			**0.029**	**0.213**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030091-020AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

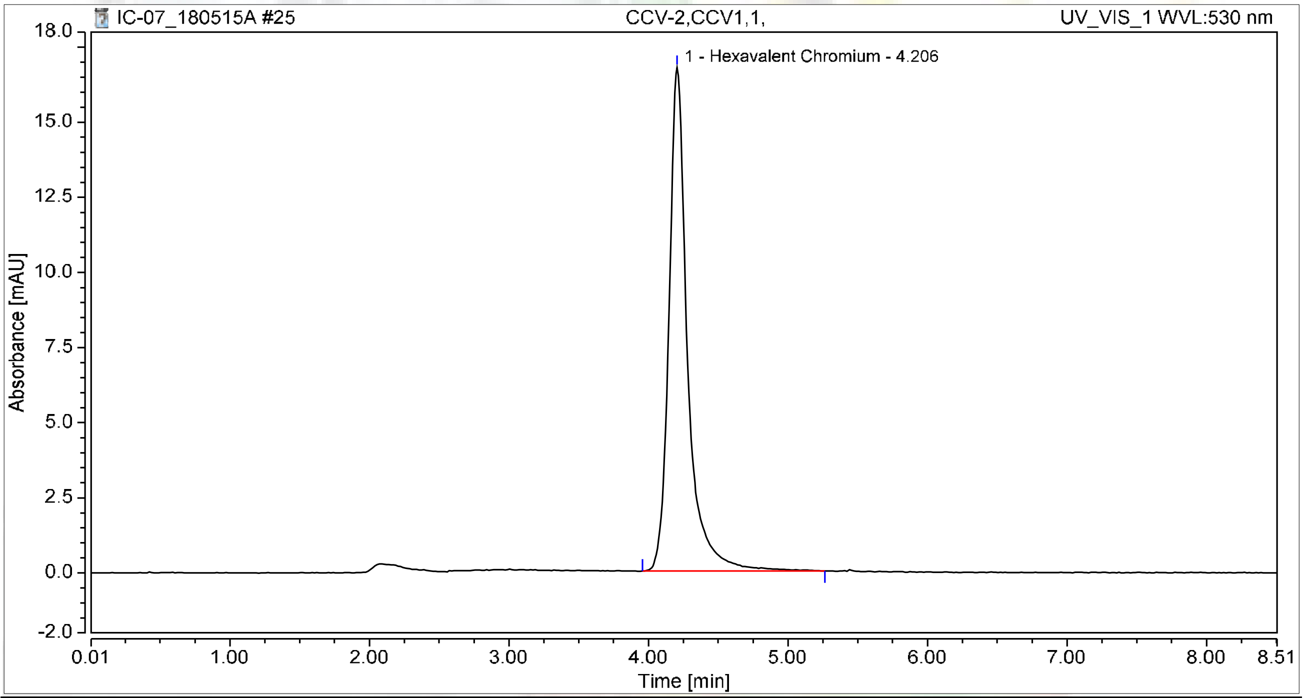
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.293	1.972	100.00	100.00	1.1402
Total:			**0.293**	**1.972**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 15:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

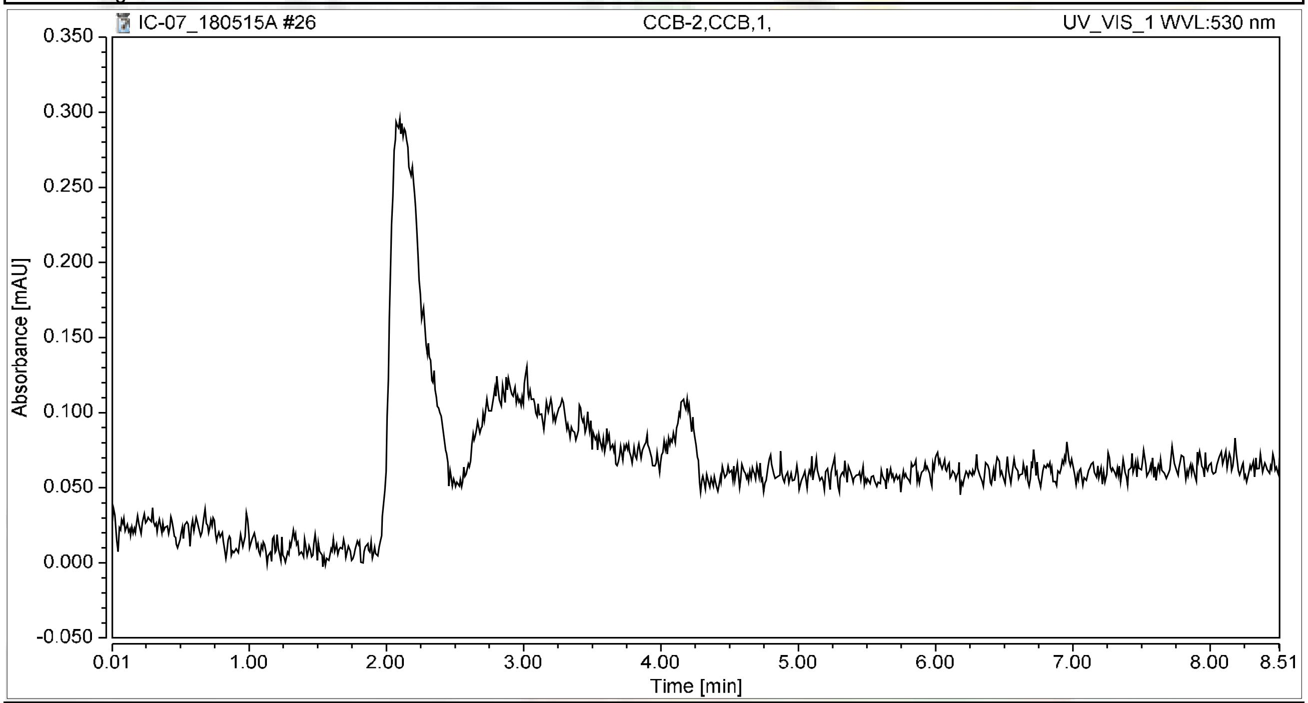
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.588	16.758	100.00	100.00	10.0862
Total:			**2.588**	**16.758**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/18 15:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R124118 **Analyst:** QBM

ASSET #: N030123, N030146, N030147 **Date Analyzed:** 5/17/2018

Method: **4500_NO3**

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.		X				
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec of Nitrate/Nitrite as N in CCV-3 failed, low bias. However, reanalysis passed criteria.

CAR# 2326

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 5/22/2018

2nd Level Reviewer RB 05/22/2018 Date:

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R124137 **Analyst:** QBM

ASSET #: N030147, N030185, N030186, N030188 **Date Analyzed:** 5/18/2018

Method: **4500_NO3**

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 5/22/2018

2nd Level Reviewer RB 05/22/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N030147-007C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.7125	*	5
	=	3.5625	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N	**=**	**3.6**	**mg/L**

RJB 05/22/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

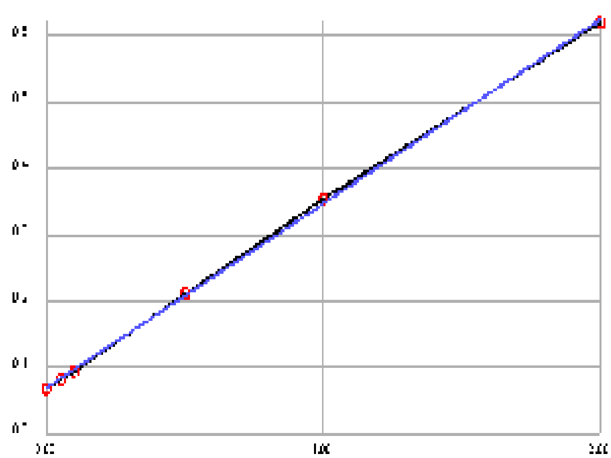
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2772x + 0.0698
Correlation	.999836

Calibrant	Energy	Set	Conc
1	0.0669	0.0000	-0.0103
2	0.0836	0.0500	0.0500
3	0.0950	0.1000	0.0911
4	0.2110	0.5000	0.5095
5	0.3534	1.0000	1.0232
6	0.6204	2.0000	1.9864



Notes:

RB 05/22/2018

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

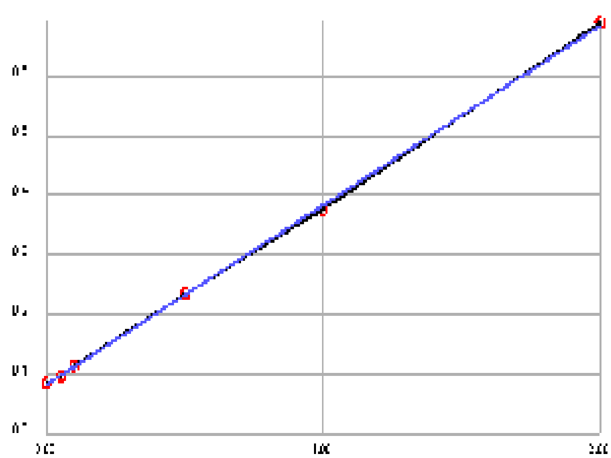
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.301x + 0.0834
Correlation	.999805

Calibrant	Energy	Set	Conc
1	0.0858	0.0000	0.0081
2	0.0984	0.0500	0.0500
3	0.1144	0.1000	0.1032
4	0.2354	0.5000	0.5052
5	0.3753	1.0000	0.9700
6	0.6894	2.0000	2.0136



Notes:

05/22/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **ICV** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.549	0.050	0.5000	0	110	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **CCV** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.482	0.050	0.5000	0	96.4	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **CCV** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.525	0.050	0.5000	0	105	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **CCV** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.513	0.050	0.5000	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **124137**
Client ID: **ICV**	Batch ID: **R124137**	TestNo: **SM4500-NO3**		Analysis Date: **5/18/2018**	SeqNo: **3031739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.535	0.050	0.5000	0	107	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **124137**
Client ID: **CCV**	Batch ID: **R124137**	TestNo: **SM4500-NO3**		Analysis Date: **5/18/2018**	SeqNo: **3031750**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.508	0.050	0.5000	0	102	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **124137**
Client ID: **CCV**	Batch ID: **R124137**	TestNo: **SM4500-NO3**		Analysis Date: **5/18/2018**	SeqNo: **3031762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.462	0.050	0.5000	0	92.4	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **124137**
Client ID: **CCV**	Batch ID: **R124137**	TestNo: **SM4500-NO3**		Analysis Date: **5/18/2018**	SeqNo: **3031770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **ICB** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.037	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **CCB** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **CCB** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124118**
Client ID: **CCB** Batch ID: **R124118** TestNo: **SM4500-NO3** Analysis Date: **5/17/2018** SeqNo: **3030167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ICB** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **CCB** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **CCB** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **CCB** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031772**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

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Las Vegas, NV. 89118
702-307-2659
702-307-2691
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Time start: 05-17-2018 13:28
Time end: 05-17-2018 16:30

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	15:47:50	-0.0070		0.0678
2	<BLANK>	15:48:43	-0.0020		0.0692
3	<CAL1>	15:49:45	-0.0103	[0]	0.0669
4	<CAL2>	15:50:40	0.0500	[0.05]	0.0836
5	<CAL3>	15:51:34	0.0911	[0.1]	0.0950
6	<CAL4>	15:52:36	0.5095	[0.5]	0.2110
7	<CAL5>	15:53:31	1.0232	[1]	0.3534
8	<CAL6>	15:54:27	1.9864	[2]	0.6204
9	,BLANK,BLANK,1, NOT REPORTED	15:55:27	0.1203		0.1031
10	,ICV,ICV,1,	15:56:22	0.5489		0.2219
11	,ICB,ICB,1,	15:57:18	0.0373		0.0801
12	,MB-H2O,MBLK,1,	15:58:18	-0.0106		0.0668
13	,LCS-H2O,LCS,1,	15:59:14	0.4634		0.1982
14	,N030123-011C,SAMP,5,	16:00:10	0.9457		0.3319
15	,N030123-012C,SAMP,5,	16:01:11	0.8984		0.3188
16	,N030123-012CDUP,DUP,5,	16:02:06	0.8927		0.3172
17	,N030123-014C,SAMP,2,	16:03:01	0.6759		0.2571
18	,N030123-008C,SAMP,10,	16:04:03	0.5532		0.2231
19	,N030123-008CMS,MS,10,	16:04:57	0.9933		0.3451
20	,N030123-008CMSD,MSD,10,	16:05:53	1.1116		0.3779
21	,BLANK, NOT REPORTED	16:06:55	0.0334		0.0790
22	,CCV-1,CCV,1,	16:07:50	0.4821		0.2034
23	,CCV-1,CCV,1, NOT REPORTED	16:08:44	0.5604		0.2251
24	,CCB-1,CCB,1,	16:09:46	0.0287		0.0777
25	,N030123-009C,SAMP,1,	16:10:41	0.0247		0.0766
26	,N030123-010C,SAMP,1,	16:11:43	0.0031		0.0706

RB 05/22/2018

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N030123-013C,SAMP,1,	16:12:37	0.0507		0.0838
28	,N030123-016C,SAMP,1,	16:13:32	0.0142		0.0737
29	,N030123-017C,SAMP,1,	16:14:34	0.0099		0.0725
30	,N030123-023C,SAMP,1,	16:15:16	0.0013		0.0701
31	,N030123-018C,SAMP,2,	16:16:05	1.1145		0.3787
32	,N030123-015C,SAMP,2,	16:16:47	0.7357		0.2737
33	,N030123-019C,SAMP,2,	16:17:37	0.8068		0.2934
34	,BLANK, NOT REPORTED	16:18:20	0.0301		0.0781
35	,CCV-2,CCV,1, NOT REPORTED	16:19:02	0.4370		0.1909
36	,CCV-2,CCV,1,	16:19:51	0.5254		0.2154
37	,CCB-2,CCB,1,	16:20:33	0.0222		0.0759
38	,N030147-003C,SAMP,1,	16:21:17	0.0254		0.0768
39	,N030147-004C,SAMP,1,	16:22:05	0.0471		0.0828
40	,N030147-005C,SAMP,1,	16:22:48	-0.0013		0.0694
41	,N030146-009B,SAMP,50,	16:23:38	0.6124		0.2395
42	,N030147-001C,SAMP,2,	16:24:20	1.2570		0.4182
43	,N030147-002C,SAMP,10,	16:25:03	0.8764		0.3127
44	,N030147-006C,SAMP,5,	16:25:51	0.8707		0.3111
45	,BLANK, NOT REPORTED	16:26:35	0.0229		0.0761
46	,CCV-3,CCV,1, NOT REPORTED	16:27:17	0.4035		0.1816
47	,CCV-3,CCV,1,	16:28:00	0.5132		0.2120
48	,CCB-3,CCB,1,	16:28:48	0.0081		0.0720

RB 05/22/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 5/17/2018
Time Analyzed: 1:28 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180504F
Color reagent: R180509C
2% Copper Sulfate: R180504E
Ammonium Hydroxide: CINV-180423A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N030123-008C		7.79							
N030123-009C		7.89							
N030123-010C		8.79							
N030123-011C		8.77							
N030123-012C		8.61							
N030123-013C		8.09							
N030123-014C		8.54							
N030123-015C		8.27							
N030123-016C		8.54							
N030123-017C		8.57							
N030123-018C		7.94							
N030123-019C		8.12							
N030123-023C		8.08							
N030146-009B		8.03							
N030147-001C		8.22							
N030147-002C		8.64							
N030147-003C		8.58							
N030147-004C		7.72							
N030147-005C		8.44							
N030147-006C		7.74							

RJB 05/22/2018

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Time start: 05-18-2018 16:39
Time end: 05-18-2018 19:34

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	18:53:25	0.0078		0.0857
2	<BLANK>	18:54:19	0.0088		0.0860
3	<CAL1>	18:55:20	0.0081	[0]	0.0858
4	<CAL2>	18:56:16	0.0500	[0.05]	0.0984
5	<CAL3>	18:57:17	0.1032	[0.1]	0.1144
6	<CAL4>	18:58:11	0.5052	[0.5]	0.2354
7	<CAL5>	18:59:07	0.9700	[1]	0.3753
8	<CAL6>	19:00:02	2.0136	[2]	0.6894
9	,BLANK,BLANK,1, NOT REPORTED	19:01:02	0.0347		0.0938
10	,ICV,ICV,1,	19:01:58	0.5347		0.2443
11	,ICB,ICB,1,	19:02:59	0.0048		0.0848
12	,MB-H2O,MBLK,1,	19:03:55	0.0058		0.0851
13	,LCS-H2O,LCS,1,	19:04:49	0.5145		0.2382
14	,N030147-007C,SAMP,5,	19:05:50	0.7125		0.2978
15	,N030147-008C,SAMP,5,	19:06:46	0.6268		0.2720
16	,N030147-009C,SAMP,1,	19:07:40	0.4374		0.2150
17	,N030147-010C,SAMP,1,	19:08:42	0.8726		0.3460
18	,N030186-002C,SAMP,5,	19:09:37	0.5318		0.2434
19	,N030186-002CMS,MS,5,	19:10:33	1.1202		0.4205
20	,N030186-002CMSD,MSD,5,	19:11:33	1.0520		0.4000
21	,BLANK, NOT REPORTED	19:12:29	0.0277		0.0917
22	,CCV-1,CCV,1,	19:13:24	0.5082		0.2363
23	,CCB-1,CCB,1,	19:14:25	0.0154		0.0880
24	,N030186-001C,SAMP,1,	19:15:20	0.0457		0.0971
25	,N030186-001CDUP,DUP,1,	19:16:16	0.0357		0.0941
26	,N030147-011C,SAMP,1,	19:17:17	0.0224		0.0901

RB 05/22/2018

			EPA 353.2 NO3 as N ppm	Flags	OD
27	**,N030147-012C,SAMP,1,**	19:18:11	0.0490		0.0981
28	**,N030185-001C,SAMP,1,**	19:19:01	0.4410		0.2161
29	**,N030185-004C,SAMP,1,**	19:19:43	0.5308		0.2431
30	**,N030188-006B,SAMP,5,**	19:20:33	0.5540		0.2501
31	**,N030188-007B,SAMP,1,**	19:21:16	0.8773		0.3474
32	**,N030188-008B,SAMP,10,**	19:21:58	0.7012		0.2944
33	**,BLANK,** NOT REPORTED	19:22:48	0.0121		0.0870
34	**,CCV-2,CCV,1,** NOT REPORTED	19:23:30	0.4597		0.2217
35	**,CCV-2,CCV,1,**	19:24:13	0.4620		0.2224
36	**,CCB-2,CCB,1,**	19:25:01	0.0045		0.0847
37	**,N030188-005B,SAMP,1,**	19:25:45	0.0257		0.0911
38	**,N030188-003B,SAMP,1,**	19:26:28	0.6773		0.2872
39	**,N030188-004B,SAMP,1,**	19:27:16	0.0988		0.1131
40	**,N030188-010A,SAMP,1,**	19:28:00	0.2184		0.1491
41	**,N030188-009B,SAMP,5,**	19:28:48	0.9740		0.3765
42	**,N030188-011B,SAMP,5,**	19:29:31	1.0969		0.4135
43	**,BLANK,** NOT REPORTED	19:30:13	0.0340		0.0936
44	**,CCV-3,CCV,1,**	19:30:57	0.5105		0.2370
45	**,CCV-3,CCV,1,** NOT REPORTED	19:31:46	0.4321		0.2134
46	**,CCB-3,CCB,1,**	19:32:28	0.0194		0.0892

RB 05/22/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 5/18/2018
Time Analyzed: 4:39 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180504F
Color reagent: R180509C
2% Copper Sulfate: R180504E
Ammonium Hydroxide: CINV-180423A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N030147-007C		8.24							
N030147-008C		8.73							
N030147-009C		8.38							
N030147-010C		8.03							
N030147-011C		7.92							
N030147-012C		8.02							
N030185-001C		8.19							
N030185-004C		7.56							
N030186-001C		7.52							
N030186-002C		8.28							
N030188-003B		8.09							
N030188-004B		8.01							
N030188-005B		8.30							
N030188-006B		7.19							
N030188-007B		7.43							
N030188-008B		7.00							
N030188-009B		6.42							
N030188-010A		7.35							
N030188-011B		6.20							

Advanced Technology Laboratories, Inc.
Book # 1

RB 05/22/2018

CORRECTIVE ACTION DOCUMENTATION

ASSET Laboratories

Corrective Action Report (CAR)

Date Initiated: 18-May-18 **Corrective Action Report ID:** 2326

Initiated By: Quennie Manimtim **Department:** 1WC

Corrective Action Description

CAR Summary: % Rec of N03/NO2 in Mid and Closing CCV failed.

Description of Nonconformance: % Rec of N03/NO2 in Mid and Closing CCV failed.

Description of Corrective Action: Reanalysis passed criteria for Mid and Closing CCV.

Performed By: Quennie Manimtim **Completion Date:** 18-May-18

Client Notification

Client Notification Required: ~~No~~ **Notified By:**

Comment:

Quality Assurance Review

Corrective Action: Deficiency

Further Action required by QA: None

Approval and Closure

CAR Closed By: RJB 05/22/2018 Close Date:

QA Reviewed By: RJB 05/22/2018 QA Date:

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6020
Dissolved

METALS ARCUS
REV 1.0
071116

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68012 **Instrument ID:** ICPMS-02
ASSET #: N030147 **Analyst:** CEI
Method: **Date Analyzed:** 5/17/2018

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Cr in N030147-002D PS/MS/MSD failed. However, LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed	/		
2. Matrix / units correct	/		
3. Does batch meet QC requirements?	/		
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)	/		
5. Is first level review correct and complete?	/		

1st Level Reviewer CEI Date: 5/21/18
2nd Level Reviewer [signature] 5/21/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N030147-001D** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 119.361 * 25 * (25/25)

Chromium , ug/L = 2984.025

Reporting results in two significant figures,

Chromium , ug/L = 3000

% RSD SUMMARY

PERCENT RSD SUMMARY: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.08	15.93	15	<PQL	0.088	10.24	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	3.84	15	PASS	0.52	6.12	15	PASS
Std3-5/50 ppb	ICAL	1	5.25	1.51	15	PASS	5.11	2.97	15	PASS
Std4-10/100 ppb	ICAL	1	10.31	0.48	15	PASS	10.36	1.68	15	PASS
Std5-20/200 ppb	ICAL	1	20.77	1.2	15	PASS	20.82	0.27	15	PASS
Std6-40/400 ppb	ICAL	1	40.48	1.28	15	PASS	40.22	1.46	15	PASS
Std7-100/1000 ppb	ICAL	1	101	1.41	15	PASS	100.91	1.71	15	PASS
Std8-200/2000 ppb	ICAL	1	199.31	0.96	15	PASS	199.4	0.89	15	PASS
ICV	ICV	1	10.58	1.43	15	PASS	105.63	0.36	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.047	2.037	20	PASS	0.52	11.022	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.33	1.86	15	PASS	16.22	1.91	15	PASS
MB-68012	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-68012	LCS	1	10.5	2.16	15	PASS	104.4	1.058	15	PASS
N030150-001B	SAMP	1	28.84	1.049	15	PASS	0.33	6.77	15	PASS
N030147-001D	SAMP	1	2808.55	1.064	15	PASS	1.36	0.64	15	PASS
N030147-001D	SAMP	5	623.62	0.84	15	PASS	0.27	4.76	15	PASS
N030147-001D	SAMP	25	119.36	0.43	15	PASS	0.045	24.1	15	<PQL
N030147-002D	SAMP	1	352.23	1.51	15	PASS	1.6	3.71	15	PASS
N030147-002D	SAMP	5	71.067	0.89	15	PASS	0.32	14.63	15	PASS
N030147-002D	SAMP	25	14.73	2.22	15	PASS	0.067	14.99	15	PASS
N030147-002D-PS	PS	1	346.045	1.73	15	PASS	99.14	1.6	15	PASS
CCV1	CCV	1	20.49	1.83	15	PASS	20.56	0.45	15	PASS
CCB1	CCB	1	0.034	10.16	15	PASS	<0.000	N/A	15	<PQL
N030147-002D-PS	PS	5	72.16	0.31	15	PASS	21.95	0.77	15	PASS
N030147-002D-MS	MS	1	346.047	1.51	15	PASS	100.59	1.85	15	PASS
N030147-002D-MS	MS	5	77.31	1.37	15	PASS	23.86	2.48	15	PASS
N030147-002D-MSD	MSD	1	346.11	2.056	15	PASS	101.28	1.41	15	PASS
N030147-002D-MSD	MSD	5	71.92	0.55	15	PASS	22.55	1.57	15	PASS
N030147-003D	SAMP	1	4.66	0.95	15	PASS	12.0057	2.39	15	PASS
N030147-003D	SAMP	5	0.98	5	15	PASS	2.56	2.86	15	PASS
N030147-004D	SAMP	1	5.19	1.34	15	PASS	6.23	0.27	15	PASS
N030147-004D	SAMP	5	1.098	2.12	15	PASS	1.27	0.81	15	PASS
N030147-005D	SAMP	1	7.45	1.046	15	PASS	218.66	0.19	15	PASS
CCV2	CCV	1	19.93	1.022	15	PASS	20.45	1.33	15	PASS
CCB2	CCB	1	0.0016	460.84	15	<PQL	<0.000	N/A	15	<PQL
N030147-005D	SAMP	5	1.62	2.65	15	PASS	47.98	0.33	15	PASS
N030147-006D	SAMP	1	146.79	1.034	15	PASS	1.46	2.65	15	PASS
N030147-006D	SAMP	5	31.028	1.41	15	PASS	0.28	4.85	15	PASS

PERCENT RSD SUMMARY: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030147-007D	SAMP	1	1777.28	1.024	15	PASS	1.19	4.77	15	PASS
N030147-007D	SAMP	25	73.79	0.28	15	PASS	0.02	16.36	15	<PQL
N030147-008D	SAMP	1	1213.97	0.46	15	PASS	11.7	1.77	15	PASS
N030147-008D	SAMP	10	126.17	0.97	15	PASS	1.26	3.44	15	PASS
N030147-009D	SAMP	1	7.087	0.74	15	PASS	2.72	1.72	15	PASS
N030147-009D	SAMP	5	1.58	1.94	15	PASS	0.55	2.89	15	PASS
N030147-010D	SAMP	1	9.23	1.54	15	PASS	253.24	1.37	15	PASS
CCV3	CCV	1	19.94	1.0039	15	PASS	20.65	2.039	15	PASS
CCB3	CCB	1	0.047	20.81	15	<PQL	<0.000	N/A	15	<PQL
N030147-010D	SAMP	5	2.037	0.54	15	PASS	55.69	0.33	15	PASS
N030147-011D	SAMP	1	<0.000	N/A	15	<PQL	161.98	0.46	15	PASS
N030147-011D	SAMP	5	<0.000	N/A	15	<PQL	35.41	1.14	15	PASS
N030147-012D	SAMP	1	<0.000	N/A	15	<PQL	811.16	2.12	15	PASS
N030147-012D	SAMP	5	<0.000	N/A	15	<PQL	163.83	1.4	15	PASS
N030147-013C	SAMP	1	<0.000	N/A	15	<PQL	21.058	0.9	15	PASS
N030147-013C	SAMP	5	<0.000	N/A	15	<PQL	4.92	4.096	15	PASS
N030185-001D	SAMP	1	<0.000	N/A	15	<PQL	72.71	0.39	15	PASS
N030185-001D	SAMP	5	<0.000	N/A	15	<PQL	15.83	1.21	15	PASS
N030185-002C	SAMP	1	150.59	0.9	15	PASS	3.16	3.44	15	PASS
CCV4	CCV	1	20.033	0.54	15	PASS	20.66	1.14	15	PASS
CCB4	CCB	1	0.0046	185.26	15	<PQL	<0.000	N/A	15	<PQL
N030185-002C	SAMP	5	30.48	0.26	15	PASS	0.7	6.29	15	PASS
N030185-003C	SAMP	1	140.78	0.38	15	PASS	5.66	1.41	15	PASS
N030185-003C	SAMP	5	30.25	0.81	15	PASS	1.24	4.22	15	PASS
N030185-004D	SAMP	1	321.4	0.81	15	PASS	125.82	0.7	15	PASS
N030185-004D	SAMP	5	68.012	0.63	15	PASS	28.15	0.75	15	PASS
N030185-002C	SAMP	1	144.67	0.43	15	PASS	3.094	2.58	15	PASS
N030147-007D	SAMP	5	373.84	2.34	15	PASS	0.2	5.57	15	PASS
N030147-008D	SAMP	5	265.16	1.73	15	PASS	2.52	0.77	15	PASS
N030304-001A	SAMP	1	3.8	1.47	15	PASS	<0.000	N/A	15	<PQL
N030123-016D	SAMP	25	0.034	24.17	15	<PQL	70.24	1.03	15	PASS
CCV5	CCV	1	20.086	0.64	15	PASS	20.93	0.64	15	PASS
CCB5	CCB	1	0.035	41.3	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.1	4.31	20	PASS	0.57	3.39	20	PASS
ICSA2	ICSA	1	0.045	32.59	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.8	1.11	15	PASS	17.42	1.22	15	PASS

PERCENT RSD SUMMARY: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.097	24.34	15	<PQL	0.072	62.76	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	4.65	15	PASS	0.51	29.82	15	NR!
Std3-5/50 ppb	ICAL	1	5.11	0.68	15	PASS	5.094	6.91	15	PASS
Std4-10/100 ppb	ICAL	1	10.013	1.96	15	PASS	10.61	2.39	15	PASS
Std5-20/200 ppb	ICAL	1	20.003	2.6	15	PASS	20.29	3.54	15	PASS
Std6-40/400 ppb	ICAL	1	40.88	0.86	15	PASS	40.57	4.089	15	PASS
Std7-100/1000 ppb	ICAL	1	101.14	1.12	15	PASS	99.42	0.68	15	PASS
Std8-200/2000 ppb	ICAL	1	199.25	1.73	15	PASS	200.12	1.28	15	PASS
ICV	ICV	1	10.55	1.79	15	PASS	10.43	3.62	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.047	50.14	15	<PQL
LLICV	CCV1	1	0.098	24.31	20	<PQL	0.51	9.8	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.012	149.97	15	<PQL
ICSAB1	ICSAB	1	21.33	0.74	15	PASS	20.4	4.5	15	PASS
MB-68012	MBLK	1	<0.000	N/A	15	<PQL	0.0055	367.89	15	<PQL
LCS-68012	LCS	1	10.36	0.52	15	PASS	10.11	8.04	15	PASS
N030150-001B	SAMP	1	1.39	0.43	15	PASS	0.13	43.94	15	<PQL
N030147-001D	SAMP	1	2.17	6.065	15	PASS	2.78	2.58	15	PASS
N030147-001D	SAMP	5	0.46	10.66	15	PASS	0.56	29.93	15	NR!
N030147-001D	SAMP	25	0.062	30.83	15	<PQL	0.21	21.7	15	<PQL
N030147-002D	SAMP	1	1.25	5.74	15	PASS	3.52	10.57	15	PASS
N030147-002D	SAMP	5	0.21	16.47	15	NR!	0.72	7.85	15	PASS
N030147-002D	SAMP	25	0.032	79.4	15	<PQL	0.12	65.78	15	<PQL
N030147-002D-PS	PS	1	11.53	1.45	15	PASS	13.38	1.64	15	PASS
CCV1	CCV	1	20.074	2.12	15	PASS	19.84	2.83	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0071	324.43	15	<PQL
N030147-002D-PS	PS	5	2.4	5.16	15	PASS	3.31	5.48	15	PASS
N030147-002D-MS	MS	1	11.42	2.33	15	PASS	12.95	0.52	15	PASS
N030147-002D-MS	MS	5	2.67	3.21	15	PASS	3.26	10.19	15	PASS
N030147-002D-MSD	MSD	1	11.4	3.97	15	PASS	12.42	0.32	15	PASS
N030147-002D-MSD	MSD	5	2.33	5.25	15	PASS	2.5	12.32	15	PASS
N030147-003D	SAMP	1	4.22	1.19	15	PASS	0.41	44.26	15	<PQL
N030147-003D	SAMP	5	0.85	6.59	15	PASS	0.063	105.41	15	<PQL
N030147-004D	SAMP	1	3.28	6.2	15	PASS	0.32	19.42	15	<PQL
N030147-004D	SAMP	5	0.66	3.34	15	PASS	0.061	91.096	15	<PQL
N030147-005D	SAMP	1	12.65	2.33	15	PASS	0.35	20.83	15	<PQL
CCV2	CCV	1	19.66	1.48	15	PASS	20.037	4.92	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.015	60.088	15	<PQL
N030147-005D	SAMP	5	2.59	1.67	15	PASS	0.15	17.98	15	<PQL
N030147-006D	SAMP	1	4	0.46	15	PASS	4.86	10.66	15	PASS
N030147-006D	SAMP	5	0.85	5.6	15	PASS	1.16	20.88	15	NR!

PERCENT RSD SUMMARY: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030147-007D	SAMP	1	1.93	7.88	15	PASS	2.5	9.12	15	PASS
N030147-007D	SAMP	25	0.062	56.079	15	<PQL	0.076	26.75	15	<PQL
N030147-008D	SAMP	1	1.48	1.72	15	PASS	2.44	7.42	15	PASS
N030147-008D	SAMP	10	0.11	19.18	15	NR!	0.21	28.85	15	<PQL
N030147-009D	SAMP	1	3.37	4.56	15	PASS	0.42	18.23	15	<PQL
N030147-009D	SAMP	5	0.66	5.44	15	PASS	0.086	41.79	15	<PQL
N030147-010D	SAMP	1	1.71	6.54	15	PASS	1.87	10.93	15	PASS
CCV3	CCV	1	19.73	1.57	15	PASS	20.12	1.051	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.0057	180.98	15	<PQL
N030147-010D	SAMP	5	0.36	3.86	15	PASS	0.39	20.39	15	<PQL
N030147-011D	SAMP	1	4.44	1.83	15	PASS	0.19	39.63	15	<PQL
N030147-011D	SAMP	5	0.9	3.28	15	PASS	0.018	154.98	15	<PQL
N030147-012D	SAMP	1	1.42	11.68	15	PASS	0.074	103.14	15	<PQL
N030147-012D	SAMP	5	0.23	10.63	15	PASS	0.044	65.27	15	<PQL
N030147-013C	SAMP	1	1.46	4.96	15	PASS	0.18	44.18	15	<PQL
N030147-013C	SAMP	5	0.29	14.84	15	PASS	0.044	107.37	15	<PQL
N030185-001D	SAMP	1	2.25	5.35	15	PASS	0.42	15.55	15	<PQL
N030185-001D	SAMP	5	0.42	3.87	15	PASS	0.036	126.37	15	<PQL
N030185-002C	SAMP	1	1.53	8.6	15	PASS	2.2	10.84	15	PASS
CCV4	CCV	1	19.82	1	15	PASS	21.084	1.68	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N030185-002C	SAMP	5	0.32	12.48	15	PASS	0.45	4.57	15	PASS
N030185-003C	SAMP	1	1.65	3.9	15	PASS	2.28	9.81	15	PASS
N030185-003C	SAMP	5	0.37	12.16	15	PASS	0.32	19.88	15	<PQL
N030185-004D	SAMP	1	3.24	3.8	15	PASS	1.1	25.39	15	NR!
N030185-004D	SAMP	5	0.68	2.95	15	PASS	0.32	24.31	15	<PQL
N030185-002C	SAMP	1	1.6	2.039	15	PASS	2.46	4.94	15	PASS
N030147-007D	SAMP	5	0.36	7.21	15	PASS	0.63	13.067	15	PASS
N030147-008D	SAMP	5	0.25	10.2	15	PASS	0.5	24.72	15	NR!
N030304-001A	SAMP	1	4.54	2.18	15	PASS	1.026	20.31	15	NR!
N030123-016D	SAMP	25	0.085	12.7	15	PASS	0.0068	165.7	15	<PQL
CCV5	CCV	1	19.53	0.8	15	PASS	19.73	2.98	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.034	58.13	15	<PQL
LLCCV1	CCV2	1	0.072	25.4	20	<PQL	0.51	30.73	20	NR!
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.0065	169.072	15	<PQL
ICSAB2	ICSAB	1	22.41	0.56	15	PASS	18.42	4.41	15	PASS

PERCENT RSD SUMMARY: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.091	2.37	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.5	3.13	15	PASS
Std3-5/50 ppb	ICAL	1	5.037	1.64	15	PASS
Std4-10/100 ppb	ICAL	1	9.83	0.78	15	PASS
Std5-20/200 ppb	ICAL	1	19.74	0.56	15	PASS
Std6-40/400 ppb	ICAL	1	39.46	0.59	15	PASS
Std7-100/1000 ppb	ICAL	1	99.99	0.46	15	PASS
Std8-200/2000 ppb	ICAL	1	200.14	0.74	15	PASS
ICV	ICV	1	10.66	1.89	15	PASS
ICB	ICB	1	0.065	12.65	15	PASS
LLICV	CCV1	1	0.49	5.21	20	PASS
ICSA1	ICSA	1	0.067	17.11	15	<PQL
ICSAB1	ICSAB	1	22.83	0.98	15	PASS
MB-68012	MBLK	1	0.04	13.89	15	PASS
LCS-68012	LCS	1	10.5	1.42	15	PASS
N030150-001B	SAMP	1	2.8	1.48	15	PASS
N030147-001D	SAMP	1	7.42	1.11	15	PASS
N030147-001D	SAMP	5	1.45	2.38	15	PASS
N030147-001D	SAMP	25	0.28	12.87	15	PASS
N030147-002D	SAMP	1	5.016	3.57	15	PASS
N030147-002D	SAMP	5	0.97	0.9	15	PASS
N030147-002D	SAMP	25	0.18	9.52	15	PASS
N030147-002D-PS	PS	1	17.013	0.72	15	PASS
CCV1	CCV	1	20.0096	1.083	15	PASS
CCB1	CCB	1	0.023	39.84	15	<PQL
N030147-002D-PS	PS	5	3.41	0.89	15	PASS
N030147-002D-MS	MS	1	17.033	0.71	15	PASS
N030147-002D-MS	MS	5	3.91	2.79	15	PASS
N030147-002D-MSD	MSD	1	17.21	1.36	15	PASS
N030147-002D-MSD	MSD	5	3.5	0.43	15	PASS
N030147-003D	SAMP	1	88.49	1.025	15	PASS
N030147-003D	SAMP	5	17.12	3.062	15	PASS
N030147-004D	SAMP	1	91.54	0.22	15	PASS
N030147-004D	SAMP	5	16.89	0.96	15	PASS
N030147-005D	SAMP	1	92.71	0.36	15	PASS
CCV2	CCV	1	20.37	0.63	15	PASS
CCB2	CCB	1	0.051	20.32	15	<PQL
N030147-005D	SAMP	5	18.12	1.017	15	PASS
N030147-006D	SAMP	1	71.093	1.083	15	PASS
N030147-006D	SAMP	5	14.26	0.69	15	PASS

PERCENT RSD SUMMARY: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N030147-007D	SAMP	1	19.86	0.87	15	PASS
N030147-007D	SAMP	25	0.74	4.58	15	PASS
N030147-008D	SAMP	1	20.29	0.59	15	PASS
N030147-008D	SAMP	10	1.86	2.29	15	PASS
N030147-009D	SAMP	1	57.25	0.51	15	PASS
N030147-009D	SAMP	5	10.62	0.53	15	PASS
N030147-010D	SAMP	1	26.39	1.19	15	PASS
CCV3	CCV	1	20.11	1.61	15	PASS
CCB3	CCB	1	0.043	31.65	15	<PQL
N030147-010D	SAMP	5	5.11	4.66	15	PASS
N030147-011D	SAMP	1	72.67	0.36	15	PASS
N030147-011D	SAMP	5	14.017	2.15	15	PASS
N030147-012D	SAMP	1	49.49	1.092	15	PASS
N030147-012D	SAMP	5	9.65	1.52	15	PASS
N030147-013C	SAMP	1	11.32	1.38	15	PASS
N030147-013C	SAMP	5	2.28	2.95	15	PASS
N030185-001D	SAMP	1	94.96	0.41	15	PASS
N030185-001D	SAMP	5	18.55	0.53	15	PASS
N030185-002C	SAMP	1	10.36	0.75	15	PASS
CCV4	CCV	1	20.34	1.28	15	PASS
CCB4	CCB	1	0.041	28.35	15	<PQL
N030185-002C	SAMP	5	2.022	3.16	15	PASS
N030185-003C	SAMP	1	11.14	1.91	15	PASS
N030185-003C	SAMP	5	2.22	8.2	15	PASS
N030185-004D	SAMP	1	23.46	0.77	15	PASS
N030185-004D	SAMP	5	4.9	2.67	15	PASS
N030185-002C	SAMP	1	10.4	1.62	15	PASS
N030147-007D	SAMP	5	3.73	2.82	15	PASS
N030147-008D	SAMP	5	4.068	3.075	15	PASS
N030304-001A	SAMP	1	5.22	2.19	15	PASS
N030123-016D	SAMP	25	0.81	3.12	15	PASS
CCV5	CCV	1	20.69	2.83	15	PASS
CCB5	CCB	1	0.021	42	15	<PQL
LLCCV1	CCV2	1	0.54	6.55	20	PASS
ICSA2	ICSA	1	0.047	16.65	15	<PQL
ICSAB2	ICSAB	1	23.81	1.49	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180517A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0517001.D	RINSE	RINSE	1	05/17/18 10:04 AM
A0517002.D	Cal Blank	IBLK	1	05/17/18 10:09 AM
A0517003.D	Std1-0.1/1 ppb	ICAL	1	05/17/18 10:15 AM
A0517004.D	Std2-0.5/5 ppb	ICAL	1	05/17/18 10:21 AM
A0517005.D	Std3-5/50 ppb	ICAL	1	05/17/18 10:26 AM
A0517006.D	Std4-10/100 ppb	ICAL	1	05/17/18 10:32 AM
A0517007.D	Std5-20/200 ppb	ICAL	1	05/17/18 10:37 AM
A0517008.D	Std6-40/400 ppb	ICAL	1	05/17/18 10:43 AM
A0517009.D	Std7-100/1000 ppb	ICAL	1	05/17/18 10:48 AM
A0517010.D	Std8-200/2000 ppb	ICAL	1	05/17/18 10:54 AM
A0517011.D	ICV	ICV	1	05/17/18 11:00 AM
A0517012.D	ICB	ICB	1	05/17/18 11:05 AM
A0517013.D	LLICV	CCV1	1	05/17/18 11:11 AM
A0517014.D	ICSA1	ICSA	1	05/17/18 11:16 AM
A0517015.D	ICSAB1	ICSAB	1	05/17/18 11:22 AM
A0517016.D	MB-68012	MBLK	1	05/17/18 11:28 AM
A0517017.D	LCS-68012	LCS	1	05/17/18 11:33 AM
A0517018.D	N030150-001B	SAMP	1	05/17/18 11:42 AM
A0517019.D	N030147-001D	SAMP	1	05/17/18 11:47 AM
A0517020.D	N030147-001D	SAMP	5	05/17/18 11:53 AM
A0517021.D	N030147-001D	SAMP	25	05/17/18 11:58 AM
A0517022.D	N030147-002D	SAMP	1	05/17/18 12:04 PM
A0517023.D	N030147-002D	SAMP	5	05/17/18 12:10 PM
A0517024.D	N030147-002D	SAMP	25	05/17/18 12:16 PM
A0517025.D	N030147-002D-PS	PS	1	05/17/18 12:21 PM
A0517026.D	CCV1	CCV	1	05/17/18 12:27 PM
A0517027.D	CCB1	CCB	1	05/17/18 12:33 PM
A0517028.D	N030147-002D-PS	PS	5	05/17/18 12:38 PM
A0517029.D	N030147-002D-MS	MS	1	05/17/18 12:44 PM
A0517030.D	N030147-002D-MS	MS	5	05/17/18 12:49 PM
A0517031.D	N030147-002D-MSD	MSD	1	05/17/18 12:55 PM
A0517032.D	N030147-002D-MSD	MSD	5	05/17/18 1:00 PM
A0517033.D	N030147-003D	SAMP	1	05/17/18 1:06 PM
A0517034.D	N030147-003D	SAMP	5	05/17/18 1:12 PM
A0517035.D	N030147-004D	SAMP	1	05/17/18 1:17 PM
A0517036.D	N030147-004D	SAMP	5	05/17/18 1:23 PM
A0517037.D	N030147-005D	SAMP	1	05/17/18 1:28 PM
A0517038.D	CCV2	CCV	1	05/17/18 1:34 PM
A0517039.D	CCB2	CCB	1	05/17/18 1:39 PM
A0517040.D	N030147-005D	SAMP	5	05/17/18 1:45 PM
A0517041.D	N030147-006D	SAMP	1	05/17/18 1:51 PM
A0517042.D	N030147-006D	SAMP	5	05/17/18 1:56 PM

INJECTION LOG: 180517A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0517043.D	N030147-007D	SAMP	1	05/17/18 2:02 PM
A0517044.D	N030147-007D	SAMP	25	05/17/18 2:07 PM
A0517045.D	N030147-008D	SAMP	1	05/17/18 2:13 PM
A0517046.D	N030147-008D	SAMP	10	05/17/18 2:19 PM
A0517047.D	N030147-009D	SAMP	1	05/17/18 2:24 PM
A0517048.D	N030147-009D	SAMP	5	05/17/18 2:30 PM
A0517049.D	N030147-010D	SAMP	1	05/17/18 2:35 PM
A0517050.D	CCV3	CCV	1	05/17/18 2:41 PM
A0517051.D	CCB3	CCB	1	05/17/18 2:46 PM
A0517052.D	N030147-010D	SAMP	5	05/17/18 2:52 PM
A0517053.D	N030147-011D	SAMP	1	05/17/18 2:58 PM
A0517054.D	N030147-011D	SAMP	5	05/17/18 3:03 PM
A0517055.D	N030147-012D	SAMP	1	05/17/18 3:09 PM
A0517056.D	N030147-012D	SAMP	5	05/17/18 3:14 PM
A0517057.D	N030147-013C	SAMP	1	05/17/18 3:20 PM
A0517058.D	N030147-013C	SAMP	5	05/17/18 3:26 PM
A0517059.D	N030185-001D	SAMP	1	05/17/18 3:31 PM
A0517060.D	N030185-001D	SAMP	5	05/17/18 3:37 PM
A0517061.D	N030185-002C	SAMP	1	05/17/18 3:42 PM
A0517062.D	CCV4	CCV	1	05/17/18 3:48 PM
A0517063.D	CCB4	CCB	1	05/17/18 3:53 PM
A0517064.D	N030185-002C	SAMP	5	05/17/18 3:59 PM
A0517065.D	N030185-003C	SAMP	1	05/17/18 4:05 PM
A0517066.D	N030185-003C	SAMP	5	05/17/18 4:12 PM
A0517067.D	N030185-004D	SAMP	1	05/17/18 4:17 PM
A0517068.D	N030185-004D	SAMP	5	05/17/18 4:23 PM
A0517069.D	N030185-002C	SAMP	1	05/17/18 4:29 PM
A0517070.D	N030147-007D	SAMP	5	05/17/18 4:34 PM
A0517071.D	N030147-008D	SAMP	5	05/17/18 4:40 PM
A0517072.D	N030304-001A	SAMP	1	05/17/18 4:45 PM
A0517073.D	N030123-016D	SAMP	25	05/17/18 4:51 PM
A0517074.D	CCV5	CCV	1	05/17/18 4:56 PM
A0517075.D	CCB5	CCB	1	05/17/18 5:02 PM
A0517076.D	LLCCV1	CCV2	1	05/17/18 5:08 PM
A0517077.D	ICSA2	ICSA	1	05/17/18 5:13 PM
A0517078.D	ICSAB2	ICSAB	1	05/17/18 5:19 PM
A0517079.D	N030120-003B	SAMP	1	05/17/18 5:23 PM
A0517080.D	N030120-003A	SAMP	1	05/17/18 5:29 PM
A0517081.D	N030120-017B	SAMP	1	05/17/18 5:34 PM
A0517082.D	N030120-017A	SAMP	1	05/17/18 5:40 PM
A0517083.D	N030120-018B	SAMP	1	05/17/18 5:45 PM
A0517084.D	N030120-018A	SAMP	1	05/17/18 5:51 PM

INJECTION LOG: 180517A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0517085.D	N030186-001B	SAMP	1	05/17/18 5:57 PM
A0517086.D	N030186-001A	SAMP	1	05/17/18 6:02 PM
A0517087.D	MB-68013	MBLK	1	05/17/18 6:08 PM
A0517088.D	LCS-68013	LCS	1	05/17/18 6:13 PM
A0517089.D	CCV6	CCV	1	05/17/18 6:19 PM
A0517090.D	CCB6	CCB	1	05/17/18 6:25 PM
A0517091.D	N030149-001B	SAMP	1	05/17/18 6:30 PM
A0517092.D	N030149-001B	SAMP	5	05/17/18 6:36 PM
A0517093.D	N030149-001B	SAMP	25	05/17/18 6:41 PM
A0517094.D	N030149-001B-PS	PS	1	05/17/18 6:47 PM
A0517095.D	N030149-001B-PS	PS	5	05/17/18 6:52 PM
A0517096.D	N030149-001B-MS	MS	1	05/17/18 6:58 PM
A0517097.D	N030149-001B-MS	MS	5	05/17/18 7:04 PM
A0517098.D	N030149-001B-MSD	MSD	1	05/17/18 7:09 PM
A0517099.D	N030149-001B-MSD	MSD	5	05/17/18 7:15 PM
A0517100.D	N030149-002B	SAMP	1	05/17/18 7:20 PM
A0517101.D	CCV7	CCV	1	05/17/18 7:26 PM
A0517102.D	CCB7	CCB	1	05/17/18 7:32 PM
A0517103.D	N030149-002B	SAMP	5	05/17/18 7:37 PM
A0517104.D	N030149-004B	SAMP	1	05/17/18 7:43 PM
A0517105.D	N030149-005B	SAMP	1	05/17/18 7:48 PM
A0517106.D	N030149-005B	SAMP	5	05/17/18 7:54 PM
A0517107.D	N030149-006B	SAMP	1	05/17/18 7:59 PM
A0517108.D	N030149-006B	SAMP	5	05/17/18 8:05 PM
A0517109.D	N030149-009B	SAMP	1	05/17/18 8:11 PM
A0517110.D	N030149-010B	SAMP	5	05/17/18 8:16 PM
A0517111.D	N030149-011B	SAMP	1	05/17/18 8:22 PM
A0517112.D	N030149-012B	SAMP	5	05/17/18 8:27 PM
A0517113.D	CCV8	CCV	1	05/17/18 8:33 PM
A0517114.D	CCB8	CCB	1	05/17/18 8:38 PM
A0517115.D	LLCCV2	CCV2	1	05/17/18 8:44 PM
A0517116.D	ICSA3	ICSA	1	05/17/18 8:50 PM
A0517117.D	ICSAB3	ICSAB	1	05/17/18 8:55 PM
A0517118.D	N030149-013B	SAMP	1	05/17/18 9:01 PM
A0517119.D	N030149-014B	SAMP	5	05/17/18 9:06 PM
A0517120.D	N030149-015B	SAMP	1	05/17/18 9:12 PM
A0517121.D	N030149-016B	SAMP	1	05/17/18 9:17 PM
A0517122.D	N030149-016B	SAMP	5	05/17/18 9:23 PM
A0517123.D	N030149-016B	SAMP	10	05/17/18 9:29 PM
A0517124.D	N030149-017B	SAMP	1	05/17/18 9:34 PM
A0517125.D	N030149-017B	SAMP	25	05/17/18 9:40 PM
A0517126.D	N030149-022B	SAMP	1	05/17/18 9:45 PM

INJECTION LOG: 180517A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0517127.D	MB-68014	MBLK	1	05/17/18 9:51 PM
A0517128.D	CCV9	CCV	1	05/17/18 9:56 PM
A0517129.D	CCB9	CCB	1	05/17/18 10:02 PM
A0517130.D	LCS-68014	LCS	1	05/17/18 10:08 PM
A0517131.D	N030189-001B	SAMP	1	05/17/18 10:13 PM
A0517132.D	N030189-001B	SAMP	5	05/17/18 10:19 PM
A0517133.D	N030189-001B	SAMP	25	05/17/18 10:24 PM
A0517134.D	N030189-001B-PS	PS	1	05/17/18 10:30 PM
A0517135.D	N030189-001B-PS	PS	5	05/17/18 10:36 PM
A0517136.D	N030189-001B-MS	MS	1	05/17/18 10:41 PM
A0517137.D	N030189-001B-MS	MS	5	05/17/18 10:47 PM
A0517138.D	N030189-001B-MSD	MSD	1	05/17/18 10:52 PM
A0517139.D	N030189-001B-MSD	MSD	5	05/17/18 10:58 PM
A0517140.D	CCV10	CCV	1	05/17/18 11:04 PM
A0517141.D	CCB10	CCB	1	05/17/18 11:09 PM
A0517142.D	N030189-002B	SAMP	1	05/17/18 11:15 PM
A0517143.D	N030189-002B	SAMP	5	05/17/18 11:20 PM
A0517144.D	N030189-003B	SAMP	1	05/17/18 11:26 PM
A0517145.D	N030189-003B	SAMP	5	05/17/18 11:31 PM
A0517146.D	N030189-003B	SAMP	10	05/17/18 11:37 PM
A0517147.D	N030189-004B	SAMP	1	05/17/18 11:43 PM
A0517148.D	N030189-005B	SAMP	1	05/17/18 11:48 PM
A0517149.D	N030189-006B	SAMP	1	05/17/18 11:54 PM
A0517150.D	N030189-006B	SAMP	5	05/17/18 11:59 PM
A0517151.D	N030189-007B	SAMP	1	05/18/18 12:05 AM
A0517152.D	CCV11	CCV	1	05/18/18 12:11 AM
A0517153.D	CCB11	CCB	1	05/18/18 12:16 AM
A0517154.D	N030189-007B	SAMP	25	05/18/18 12:22 AM
A0517155.D	N030189-008B	SAMP	1	05/18/18 12:27 AM
A0517156.D	N030189-009B	SAMP	1	05/18/18 12:33 AM
A0517157.D	N030189-009B	SAMP	5	05/18/18 12:38 AM
A0517158.D	N030189-010B	SAMP	1	05/18/18 12:44 AM
A0517159.D	N030189-011B	SAMP	1	05/18/18 12:50 AM
A0517160.D	N030189-011B	SAMP	10	05/18/18 12:55 AM
A0517161.D	N030189-012B	SAMP	1	05/18/18 1:01 AM
A0517162.D	N030189-012B	SAMP	5	05/18/18 1:06 AM
A0517163.D	CCV12	CCV	1	05/18/18 1:12 AM
A0517164.D	CCB12	CCB	1	05/18/18 1:18 AM
A0517165.D	LLCCV3	CCV2	1	05/18/18 1:23 AM
A0517166.D	ICSA4	ICSA	1	05/18/18 1:29 AM
A0517167.D	ICSAB4	ICSAB	1	05/18/18 1:34 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/8/2018 6:51:34 P**
Prep End Date: **5/9/2018 8:00:00 A**
Prep Batch **68012** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/21/2018
Initials/ Date: 5/21/2018
Technician: **Claire Ignacio**

Prep Factor Units: **mL / mL** Temp. (°C): **94.7** Location: **02-10**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68012	Aqueous		25	☐	0	0	25	1.000		
MB-68012	Aqueous		25	☐	0	0	25	1.000		
N030147-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-002D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-002D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-002D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-003D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-004D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-005D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-006D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-007D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-008D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-009D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-010D	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/8/2018 6:51:34 P**
Prep End Date: **5/9/2018 8:00:00 A**
Prep Batch **68012** Prep Code: **3010_W_MSDI**

Reviewed/ Date: Nancy 5/21/2018
Initials/ Date: 5/21/2018
Technician: **Claire Ignacio**

Prep Factor Units: **mL / mL** Temp. (°C): **94.7** Location: **02-10**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N030147-011D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-012D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-013C	Groundwater	<2	25	☐	0	0	25	1.000		
N030150-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N030185-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N030185-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N030185-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N030185-004D	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

INSTRUMENT TUNING CHECK

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 17 May 2018 09:22:59 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	127748.00	0.00	
24	Mg	430517.00	0.00	
25	Mg	56639.50	0.00	
26	Mg	64723.10	0.00	
59	Co	444129.00	0.00	
115	In	745989.00	0.00	
206	Pb	199429.00	0.00	
207	Pb	172927.00	0.00	
208	Pb	425514.00	0.00	

RSD (%)

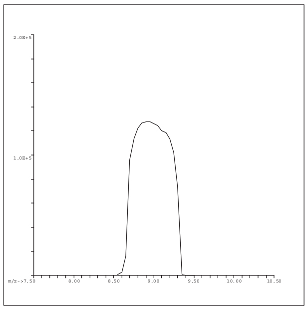
Element		Actual	Required	Flag
9	Be	0.56	5.00	
24	Mg	3.22	5.00	
25	Mg	3.55	5.00	
26	Mg	4.16	5.00	
59	Co	0.87	5.00	
115	In	0.87	5.00	
206	Pb	0.57	5.00	
207	Pb	0.65	5.00	
208	Pb	0.95	5.00	

Ion Ratio

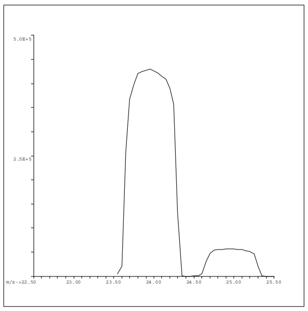
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

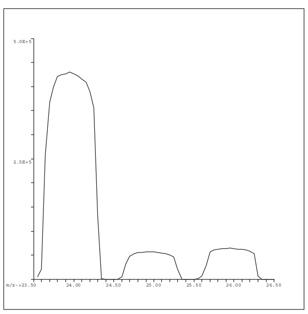
Element	Actual	Required	Flag



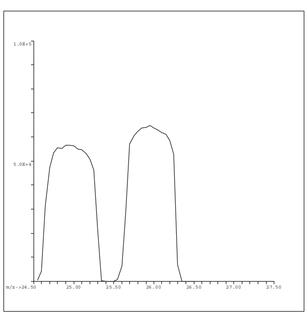
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



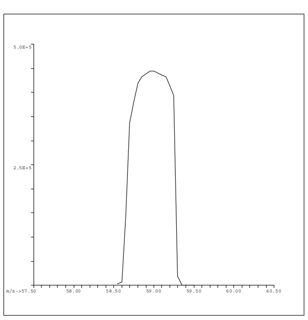
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



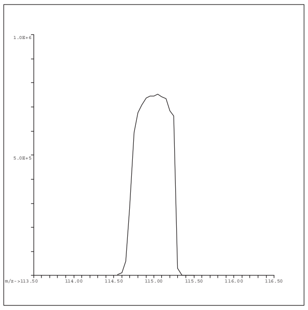
25 Mg
Mass Calib.
Actual: 24.90
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



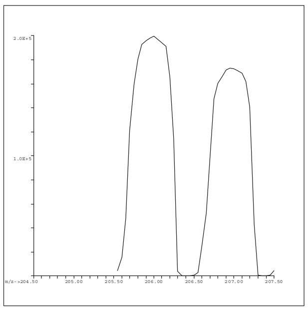
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



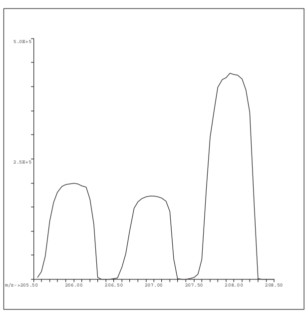
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



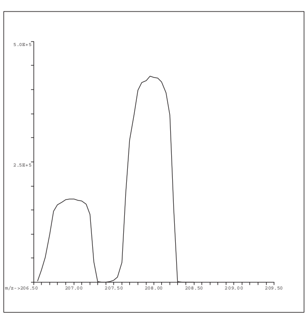
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

~~1.0000~~

INITIAL CALIBRATION SUMMARY: 180517A

Instrument ID: ICPMS-02

Analyte	Data File	A0517002.D	A0517003.D	A0517004.D	A0517005.D	A0517006.D	A0517007.D	A0517008.D	A0517009.D	A0517010.D	
	Acq. Date-Time	05/17/2018 10:09 AM	05/17/2018 10:15 AM	05/17/2018 10:21 AM	05/17/2018 10:26 AM	05/17/2018 10:32 AM	05/17/2018 10:37 AM	05/17/2018 10:43 AM	05/17/2018 10:48 AM	05/17/2018 10:54 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	66634.9		66636	64661.6	64497.3	62331.6	63640.1	62762.1	61992.7	
55 Mn [2]	CPS	168.8		1462.5	12569.7	25255.6	48895.5	96263.5	237981	464316.2	1.0000
52 Cr [2]	CPS	295.3		2996.8	27534.1	53605.2	104146.4	206920.4	508746.4	991382.2	1.0000
72 Ge (ISTD) [1]	CPS	48870.4		48759.1	48920.7	47975.7	46838	46558.3	46026.8	45749.2	
78 Se [1]	CPS	1.1		92.2	919	1875.7	3502.7	6960.7	16858.3	33726.9	1.0000
72 Ge (ISTD) [2]	CPS	45115.4	45968.8	44568.2	44589.4	44060.1	43378.4	43291.5	43027.5	42725.7	
75 As [2]	CPS	30.7	87.1	304.5	2876.3	5542.8	10869.4	22144.4	54409.1	106398.2	1.0000
103 Rh (ISTD) [2]	CPS	1493389.3		1526844.1	1490798.5	1494199.1	1457399.2	1466843.3	1433474.9	1414580.7	
95 Mo [2]	CPS	63.3		1767.9	16887.2	32970.2	64529.9	129750.7	321238.8	634404.7	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MWST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030761**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.552	0.10	10.00	0	106	90	110				
Manganese	105.632	0.50	100.0	0	106	90	110				
Molybdenum	10.661	0.50	10.00	0	107	90	110				
Selenium	10.431	0.50	10.00	0	104	90	110				

Sample ID: **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.098	0.10	0.1000	0	97.9	80	120				
Manganese	0.517	0.50	0.5000	0	103	80	120				
Molybdenum	0.492	0.50	0.5000	0	98.5	80	120				
Selenium	0.513	0.50	0.5000	0	103	80	120				

Sample ID: **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.074	0.10	20.00	0	100	90	110				
Manganese	20.556	0.50	20.00	0	103	90	110				
Molybdenum	20.010	0.50	20.00	0	100	90	110				
Selenium	19.835	0.50	20.00	0	99.2	90	110				

Sample ID: **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.664	0.10	20.00	0	98.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.453	0.50	20.00	0	102	90	110				
Molybdenum	20.371	0.50	20.00	0	102	90	110				
Selenium	20.037	0.50	20.00	0	100	90	110				

Sample ID: **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.733	0.10	20.00	0	98.7	90	110				
Manganese	20.647	0.50	20.00	0	103	90	110				
Molybdenum	20.107	0.50	20.00	0	101	90	110				
Selenium	20.119	0.50	20.00	0	101	90	110				

Sample ID: **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030812**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.817	0.10	20.00	0	99.1	90	110				
Manganese	20.660	0.50	20.00	0	103	90	110				
Molybdenum	20.340	0.50	20.00	0	102	90	110				
Selenium	21.084	0.50	20.00	0	105	90	110				

Sample ID: **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.530	0.10	20.00	0	97.7	90	110				
Manganese	20.928	0.50	20.00	0	105	90	110				
Molybdenum	20.690	0.50	20.00	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.728	0.50	20.00	0	98.6	90	110				

Sample ID: **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0716 ~~ND~~	0.10	0.1000	0	71.6% ~~0~~	70	130				~~S~~
Manganese	0.567	0.50	0.5000	0	113	70	130				
Molybdenum	0.544	0.50	0.5000	0	109	70	130				
Selenium	0.509	0.50	0.5000	0	102	70	130				

Nancy for 5/21/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.581	1.0	10.00	0	106	90	110				

Sample ID: **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.047	1.0	1.000	0	105	80	120				

Sample ID: **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.489	1.0	20.00	0	102	90	110				

Sample ID: **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.926	1.0	20.00	0	99.6	90	110				

Sample ID: **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.944	1.0	20.00	0	99.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.033	1.0	20.00	0	100	90	110				

Sample ID: **CCV5** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.086	1.0	20.00	0	100	90	110				

Sample ID: **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.104	1.0	1.000	0	110	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **CCB4** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030813**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **CCB5** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124122**
Client ID: **ICB**	Batch ID: **R124122**	TestNo: **EPA 6020**		Analysis Date: **5/17/2018**	SeqNo: **3031085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124122**
Client ID: **CCB**	Batch ID: **R124122**	TestNo: **EPA 6020**		Analysis Date: **5/17/2018**	SeqNo: **3031100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124122**
Client ID: **CCB**	Batch ID: **R124122**	TestNo: **EPA 6020**		Analysis Date: **5/17/2018**	SeqNo: **3031112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124122**
Client ID: **CCB**	Batch ID: **R124122**	TestNo: **EPA 6020**		Analysis Date: **5/17/2018**	SeqNo: **3031124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **124122**
Client ID: **CCB**	Batch ID: **R124122**	TestNo: **EPA 6020**		Analysis Date: **5/17/2018**	SeqNo: **3031136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **CCB5** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSA** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSAB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.334	0.10	20.00	0	107	80	120				
Manganese	16.221	0.50	20.00	0	81.1	80	120				
Molybdenum	22.828	0.50	20.00	0	114	80	120				
Selenium	20.399	0.50	20.00	0	102	80	120				

Sample ID: **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSA** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID: **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSAB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.413	0.10	20.00	0	112	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID: **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSAB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	17.422	0.50	20.00	0	87.1	80	120				
Molybdenum	23.806	0.50	20.00	0	119	80	120				
Selenium	18.419	0.50	20.00	0	92.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSA** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSAB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.329	1.0	20.00	0	102	80	120				

Sample ID: **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSA** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSAB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.804	1.0	20.00	0	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	66634.9	66634.9	100	PASS	70-125	45115.4	45115.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	67856.4	66634.9	101.83	PASS	70-125	45968.8	45115.4	101.89	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	66636	66634.9	100	PASS	70-125	44568.2	45115.4	98.79	PASS	70-125
Std3-5/50 ppb	ICAL	1	64661.6	66634.9	97.039	PASS	70-125	44589.4	45115.4	98.83	PASS	70-125
Std4-10/100 ppb	ICAL	1	64497.3	66634.9	96.79	PASS	70-125	44060.1	45115.4	97.66	PASS	70-125
Std5-20/200 ppb	ICAL	1	62331.6	66634.9	93.54	PASS	70-125	43378.4	45115.4	96.15	PASS	70-125
Std6-40/400 ppb	ICAL	1	63640.1	66634.9	95.51	PASS	70-125	43291.5	45115.4	95.96	PASS	70-125
Std7-100/1000 ppb	ICAL	1	62762.1	66634.9	94.19	PASS	70-125	43027.5	45115.4	95.37	PASS	70-125
Std8-200/2000 ppb	ICAL	1	61992.7	66634.9	93.033	PASS	70-125	42725.7	45115.4	94.7	PASS	70-125
ICV	ICV	1	60144.8	66634.9	90.26	PASS	70-125	41827.6	45115.4	92.71	PASS	70-125
ICB	ICB	1	60510.4	66634.9	90.81	PASS	70-125	42130.5	45115.4	93.38	PASS	70-125
LLICV	CCV1	1	60518	66634.9	90.82	PASS	70-125	41511.4	45115.4	92.012	PASS	70-125
ICSA1	ICSA	1	68418.5	66634.9	102.68	PASS	70-125	44349.8	45115.4	98.3	PASS	70-125
ICSAB1	ICSAB	1	70943.4	66634.9	106.47	PASS	70-125	46138.2	45115.4	102.27	PASS	70-125
MB-68012	MBLK	1	68557	66634.9	102.88	PASS	70-125	46528.2	45115.4	103.13	PASS	70-125
LCS-68012	LCS	1	64240.8	66634.9	96.41	PASS	70-125	43898.5	45115.4	97.3	PASS	70-125
N030150-001B	SAMP	1	58310.2	66634.9	87.51	PASS	70-125	38997.4	45115.4	86.44	PASS	70-125
N030147-001D	SAMP	1	62406.3	66634.9	93.65	PASS	70-125	38810.2	45115.4	86.024	PASS	70-125
N030147-001D	SAMP	5	66274.4	66634.9	99.46	PASS	70-125	43551.1	45115.4	96.53	PASS	70-125
N030147-001D	SAMP	25	69029	66634.9	103.59	PASS	70-125	46231.6	45115.4	102.47	PASS	70-125
N030147-002D	SAMP	1	66646.9	66634.9	100.02	PASS	70-125	43539.9	45115.4	96.51	PASS	70-125
N030147-002D	SAMP	5	65809.1	66634.9	98.76	PASS	70-125	44335.3	45115.4	98.27	PASS	70-125
N030147-002D	SAMP	25	65649.8	66634.9	98.52	PASS	70-125	44404.4	45115.4	98.42	PASS	70-125
N030147-002D-PS	PS	1	63987.7	66634.9	96.027	PASS	70-125	42959.5	45115.4	95.22	PASS	70-125
CCV1	CCV	1	63059.7	66634.9	94.63	PASS	70-125	43642.5	45115.4	96.74	PASS	70-125
CCB1	CCB	1	59043	66634.9	88.61	PASS	70-125	40900.8	45115.4	90.66	PASS	70-125
N030147-002D-PS	PS	5	57567.9	66634.9	86.39	PASS	70-125	39906.2	45115.4	88.45	PASS	70-125
N030147-002D-MS	MS	1	59388.7	66634.9	89.13	PASS	70-125	40091	45115.4	88.86	PASS	70-125
N030147-002D-MS	MS	5	57614.9	66634.9	86.46	PASS	70-125	40282.7	45115.4	89.29	PASS	70-125
N030147-002D-MSD	MSD	1	57621.4	66634.9	86.47	PASS	70-125	39887.3	45115.4	88.41	PASS	70-125
N030147-002D-MSD	MSD	5	55030.3	66634.9	82.58	PASS	70-125	39373.9	45115.4	87.27	PASS	70-125
N030147-003D	SAMP	1	56476.3	66634.9	84.75	PASS	70-125	34956	45115.4	77.48	PASS	70-125
N030147-003D	SAMP	5	68010.2	66634.9	102.06	PASS	70-125	44346.5	45115.4	98.3	PASS	70-125
N030147-004D	SAMP	1	63236.1	66634.9	94.9	PASS	70-125	38169.8	45115.4	84.6	PASS	70-125
N030147-004D	SAMP	5	70731.5	66634.9	106.15	PASS	70-125	45419.5	45115.4	100.67	PASS	70-125
N030147-005D	SAMP	1	63437	66634.9	95.2	PASS	70-125	38217.6	45115.4	84.71	PASS	70-125
CCV2	CCV	1	78346.5	66634.9	117.58	PASS	70-125	53279.9	45115.4	118.1	PASS	70-125
CCB2	CCB	1	73641.8	66634.9	110.52	PASS	70-125	50016.3	45115.4	110.86	PASS	70-125
N030147-005D	SAMP	5	68062.7	66634.9	102.14	PASS	70-125	43585.6	45115.4	96.61	PASS	70-125
N030147-006D	SAMP	1	71378.6	66634.9	107.12	PASS	70-125	46179.3	45115.4	102.36	PASS	70-125
N030147-006D	SAMP	5	71059.6	66634.9	106.64	PASS	70-125	46844.6	45115.4	103.83	PASS	70-125

INTERNAL STANDARD: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030147-007D	SAMP	1	60910.7	66634.9	91.41	PASS	70-125	37374.7	45115.4	82.84	PASS	70-125
N030147-007D	SAMP	25	70840.4	66634.9	106.31	PASS	70-125	46785.5	45115.4	103.7	PASS	70-125
N030147-008D	SAMP	1	62937.2	66634.9	94.45	PASS	70-125	38496.2	45115.4	85.33	PASS	70-125
N030147-008D	SAMP	10	69892.5	66634.9	104.89	PASS	70-125	45586.5	45115.4	101.04	PASS	70-125
N030147-009D	SAMP	1	62646.1	66634.9	94.014	PASS	70-125	37845.7	45115.4	83.89	PASS	70-125
N030147-009D	SAMP	5	69470.5	66634.9	104.26	PASS	70-125	45256.8	45115.4	100.31	PASS	70-125
N030147-010D	SAMP	1	68183.2	66634.9	102.32	PASS	70-125	42310.1	45115.4	93.78	PASS	70-125
CCV3	CCV	1	70817.3	66634.9	106.28	PASS	70-125	47804.1	45115.4	105.96	PASS	70-125
CCB3	CCB	1	65619.7	66634.9	98.48	PASS	70-125	44800.1	45115.4	99.3	PASS	70-125
N030147-010D	SAMP	5	64722.8	66634.9	97.13	PASS	70-125	43424	45115.4	96.25	PASS	70-125
N030147-011D	SAMP	1	59552.4	66634.9	89.37	PASS	70-125	37765.6	45115.4	83.71	PASS	70-125
N030147-011D	SAMP	5	70050.8	66634.9	105.13	PASS	70-125	45779.4	45115.4	101.47	PASS	70-125
N030147-012D	SAMP	1	57911.3	66634.9	86.91	PASS	70-125	35730.9	45115.4	79.2	PASS	70-125
N030147-012D	SAMP	5	67230.2	66634.9	100.89	PASS	70-125	43609.1	45115.4	96.66	PASS	70-125
N030147-013C	SAMP	1	60498.4	66634.9	90.79	PASS	70-125	35727.6	45115.4	79.19	PASS	70-125
N030147-013C	SAMP	5	68109.5	66634.9	102.21	PASS	70-125	44674.1	45115.4	99.022	PASS	70-125
N030185-001D	SAMP	1	58139.8	66634.9	87.25	PASS	70-125	35011.8	45115.4	77.6	PASS	70-125
N030185-001D	SAMP	5	66862.3	66634.9	100.34	PASS	70-125	43759.3	45115.4	96.99	PASS	70-125
N030185-002C	SAMP	1	50049.2	66634.9	75.11	PASS	70-125	34059.7	45115.4	75.49	PASS	70-125
CCV4	CCV	1	69537.6	66634.9	104.36	PASS	70-125	48016.8	45115.4	106.43	PASS	70-125
CCB4	CCB	1	64484.2	66634.9	96.77	PASS	70-125	44440.2	45115.4	98.5	PASS	70-125
N030185-002C	SAMP	5	63066.6	66634.9	94.64	PASS	70-125	43049.7	45115.4	95.42	PASS	70-125
N030185-003C	SAMP	1	59931.9	66634.9	89.94	PASS	70-125	39782.5	45115.4	88.18	PASS	70-125
N030185-003C	SAMP	5	62954.8	66634.9	94.48	PASS	70-125	43250.2	45115.4	95.87	PASS	70-125
N030185-004D	SAMP	1	56261	66634.9	84.43	PASS	70-125	35513.7	45115.4	78.72	PASS	70-125
N030185-004D	SAMP	5	63227	66634.9	94.89	PASS	70-125	41539.3	45115.4	92.073	PASS	70-125
N030185-002C	SAMP	1	64474.2	66634.9	96.76	PASS	70-125	41845.6	45115.4	92.75	PASS	70-125
N030147-007D	SAMP	5	62219.9	66634.9	93.37	PASS	70-125	41398.8	45115.4	91.76	PASS	70-125
N030147-008D	SAMP	5	63613	66634.9	95.46	PASS	70-125	42516.3	45115.4	94.24	PASS	70-125
N030304-001A	SAMP	1	63053.9	66634.9	94.63	PASS	70-125	43806.2	45115.4	97.098	PASS	70-125
N030123-016D	SAMP	25	60808.3	66634.9	91.26	PASS	70-125	41601.6	45115.4	92.21	PASS	70-125
CCV5	CCV	1	59095.5	66634.9	88.69	PASS	70-125	41812	45115.4	92.68	PASS	70-125
CCB5	CCB	1	55835.4	66634.9	83.79	PASS	70-125	39396.2	45115.4	87.32	PASS	70-125
LLCCV1	CCV2	1	52757.5	66634.9	79.17	PASS	70-125	37344.6	45115.4	82.78	PASS	70-125
ICSA2	ICSA	1	60128.1	66634.9	90.24	PASS	70-125	40752.6	45115.4	90.33	PASS	70-125
ICSAB2	ICSAB	1	68067.2	66634.9	102.15	PASS	70-125	38203.3	45115.4	84.68	PASS	70-125

INTERNAL STANDARD: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	48870.4	48870.4	100	PASS	70-125	1493389.3	1493389.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	49904.7	48870.4	102.12	PASS	70-125	1528384.3	1493389.3	102.34	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	48759.1	48870.4	99.77	PASS	70-125	1526844.1	1493389.3	102.24	PASS	70-125
Std3-5/50 ppb	ICAL	1	48920.7	48870.4	100.1	PASS	70-125	1490798.5	1493389.3	99.83	PASS	70-125
Std4-10/100 ppb	ICAL	1	47975.7	48870.4	98.17	PASS	70-125	1494199.1	1493389.3	100.05	PASS	70-125
Std5-20/200 ppb	ICAL	1	46838	48870.4	95.84	PASS	70-125	1457399.2	1493389.3	97.59	PASS	70-125
Std6-40/400 ppb	ICAL	1	46558.3	48870.4	95.27	PASS	70-125	1466843.3	1493389.3	98.22	PASS	70-125
Std7-100/1000 ppb	ICAL	1	46026.8	48870.4	94.18	PASS	70-125	1433474.9	1493389.3	95.99	PASS	70-125
Std8-200/2000 ppb	ICAL	1	45749.2	48870.4	93.61	PASS	70-125	1414580.7	1493389.3	94.72	PASS	70-125
ICV	ICV	1	45313.7	48870.4	92.72	PASS	70-125	1420163.6	1493389.3	95.097	PASS	70-125
ICB	ICB	1	45083.1	48870.4	92.25	PASS	70-125	1408820.7	1493389.3	94.34	PASS	70-125
LLICV	CCV1	1	45901.9	48870.4	93.93	PASS	70-125	1413001.4	1493389.3	94.62	PASS	70-125
ICSA1	ICSA	1	48186.3	48870.4	98.6	PASS	70-125	1375285.3	1493389.3	92.092	PASS	70-125
ICSAB1	ICSAB	1	49788.9	48870.4	101.88	PASS	70-125	1390183.8	1493389.3	93.089	PASS	70-125
MB-68012	MBLK	1	51378	48870.4	105.13	PASS	70-125	1538710.8	1493389.3	103.04	PASS	70-125
LCS-68012	LCS	1	48990.8	48870.4	100.25	PASS	70-125	1477438.5	1493389.3	98.93	PASS	70-125
N030150-001B	SAMP	1	40308.3	48870.4	82.48	PASS	70-125	1174158.5	1493389.3	78.62	PASS	70-125
N030147-001D	SAMP	1	40210.3	48870.4	82.28	PASS	70-125	1025551.6	1493389.3	68.67	NR!	70-125
N030147-001D	SAMP	5	46280.7	48870.4	94.7	PASS	70-125	1255659.9	1493389.3	84.081	PASS	70-125
N030147-001D	SAMP	25	51260	48870.4	104.89	PASS	70-125	1414342.2	1493389.3	94.71	PASS	70-125
N030147-002D	SAMP	1	48848.4	48870.4	99.95	PASS	70-125	1261914.8	1493389.3	84.5	PASS	70-125
N030147-002D	SAMP	5	48499.4	48870.4	99.24	PASS	70-125	1392545.7	1493389.3	93.25	PASS	70-125
N030147-002D	SAMP	25	48738.1	48870.4	99.73	PASS	70-125	1440084.5	1493389.3	96.43	PASS	70-125
N030147-002D-PS	PS	1	47517.6	48870.4	97.23	PASS	70-125	1220780.9	1493389.3	81.75	PASS	70-125
CCV1	CCV	1	48888.5	48870.4	100.04	PASS	70-125	1434701.8	1493389.3	96.07	PASS	70-125
CCB1	CCB	1	45984.3	48870.4	94.094	PASS	70-125	1364934.2	1493389.3	91.4	PASS	70-125
N030147-002D-PS	PS	5	44501.5	48870.4	91.06	PASS	70-125	1217591.1	1493389.3	81.53	PASS	70-125
N030147-002D-MS	MS	1	45549.8	48870.4	93.21	PASS	70-125	1153953.4	1493389.3	77.27	PASS	70-125
N030147-002D-MS	MS	5	45637.9	48870.4	93.39	PASS	70-125	1183268.5	1493389.3	79.23	PASS	70-125
N030147-002D-MSD	MSD	1	46518.2	48870.4	95.19	PASS	70-125	1123181.1	1493389.3	75.21	PASS	70-125
N030147-002D-MSD	MSD	5	45007.3	48870.4	92.095	PASS	70-125	1159453.8	1493389.3	77.64	PASS	70-125
N030147-003D	SAMP	1	37537.1	48870.4	76.81	PASS	70-125	918778	1493389.3	61.52	NR!	70-125
N030147-003D	SAMP	5	48369.1	48870.4	98.97	PASS	70-125	1254804.3	1493389.3	84.024	PASS	70-125
N030147-004D	SAMP	1	39383.8	48870.4	80.59	PASS	70-125	982240.2	1493389.3	65.77	NR!	70-125
N030147-004D	SAMP	5	49165.7	48870.4	100.6	PASS	70-125	1336557.4	1493389.3	89.5	PASS	70-125
N030147-005D	SAMP	1	39425	48870.4	80.67	PASS	70-125	974619.8	1493389.3	65.26	NR!	70-125
CCV2	CCV	1	58443.1	48870.4	119.59	PASS	70-125	1659249.8	1493389.3	111.11	PASS	70-125
CCB2	CCB	1	56047.2	48870.4	114.69	PASS	70-125	1587677	1493389.3	106.31	PASS	70-125
N030147-005D	SAMP	5	48931.9	48870.4	100.13	PASS	70-125	1226178	1493389.3	82.11	PASS	70-125
N030147-006D	SAMP	1	50915.9	48870.4	104.19	PASS	70-125	1371398.1	1493389.3	91.83	PASS	70-125
N030147-006D	SAMP	5	53367.8	48870.4	109.2	PASS	70-125	1439262	1493389.3	96.38	PASS	70-125

INTERNAL STANDARD: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030147-007D	SAMP	1	39195.6	48870.4	80.2	PASS	70-125	987410.4	1493389.3	66.12	NR!	70-125
N030147-007D	SAMP	25	51534.2	48870.4	105.45	PASS	70-125	1405434.6	1493389.3	94.11	PASS	70-125
N030147-008D	SAMP	1	40914.2	48870.4	83.72	PASS	70-125	1027162.7	1493389.3	68.78	NR!	70-125
N030147-008D	SAMP	10	50439.5	48870.4	103.21	PASS	70-125	1364488.7	1493389.3	91.37	PASS	70-125
N030147-009D	SAMP	1	39851.7	48870.4	81.55	PASS	70-125	997747.2	1493389.3	66.81	NR!	70-125
N030147-009D	SAMP	5	48928.7	48870.4	100.12	PASS	70-125	1337242.8	1493389.3	89.54	PASS	70-125
N030147-010D	SAMP	1	45309.2	48870.4	92.71	PASS	70-125	1141534.8	1493389.3	76.44	PASS	70-125
CCV3	CCV	1	52715.7	48870.4	107.87	PASS	70-125	1518007.5	1493389.3	101.65	PASS	70-125
CCB3	CCB	1	50871.1	48870.4	104.09	PASS	70-125	1441722.4	1493389.3	96.54	PASS	70-125
N030147-010D	SAMP	5	48283.3	48870.4	98.8	PASS	70-125	1279252	1493389.3	85.66	PASS	70-125
N030147-011D	SAMP	1	39586.4	48870.4	81.003	PASS	70-125	977258.4	1493389.3	65.44	NR!	70-125
N030147-011D	SAMP	5	50155.4	48870.4	102.63	PASS	70-125	1315400.1	1493389.3	88.082	PASS	70-125
N030147-012D	SAMP	1	37506	48870.4	76.75	PASS	70-125	925574.2	1493389.3	61.98	NR!	70-125
N030147-012D	SAMP	5	48121.6	48870.4	98.47	PASS	70-125	1213491.6	1493389.3	81.26	PASS	70-125
N030147-013C	SAMP	1	38395.8	48870.4	78.57	PASS	70-125	947325.6	1493389.3	63.43	NR!	70-125
N030147-013C	SAMP	5	48840.5	48870.4	99.94	PASS	70-125	1217429	1493389.3	81.52	PASS	70-125
N030185-001D	SAMP	1	37418.1	48870.4	76.57	PASS	70-125	905389.5	1493389.3	60.63	NR!	70-125
N030185-001D	SAMP	5	49255.2	48870.4	100.79	PASS	70-125	1207885.2	1493389.3	80.88	PASS	70-125
N030185-002C	SAMP	1	34212.2	48870.4	70.006	PASS	70-125	980149.7	1493389.3	65.63	NR!	70-125
CCV4	CCV	1	54494.9	48870.4	111.51	PASS	70-125	1494360.7	1493389.3	100.07	PASS	70-125
CCB4	CCB	1	50877.9	48870.4	104.11	PASS	70-125	1414685.3	1493389.3	94.73	PASS	70-125
N030185-002C	SAMP	5	49179.2	48870.4	100.63	PASS	70-125	1220249.5	1493389.3	81.71	PASS	70-125
N030185-003C	SAMP	1	43497.7	48870.4	89.006	PASS	70-125	1085147.3	1493389.3	72.66	PASS	70-125
N030185-003C	SAMP	5	49625.3	48870.4	101.54	PASS	70-125	1238660.1	1493389.3	82.94	PASS	70-125
N030185-004D	SAMP	1	37674.3	48870.4	77.09	PASS	70-125	922395	1493389.3	61.77	NR!	70-125
N030185-004D	SAMP	5	46251.7	48870.4	94.64	PASS	70-125	1150773.5	1493389.3	77.058	PASS	70-125
N030185-002C	SAMP	1	47013.9	48870.4	96.2	PASS	70-125	1162543.3	1493389.3	77.85	PASS	70-125
N030147-007D	SAMP	5	46310.7	48870.4	94.76	PASS	70-125	1157407.2	1493389.3	77.5	PASS	70-125
N030147-008D	SAMP	5	46763.2	48870.4	95.69	PASS	70-125	1186882.9	1493389.3	79.48	PASS	70-125
N030304-001A	SAMP	1	49207.1	48870.4	100.69	PASS	70-125	1305676.2	1493389.3	87.43	PASS	70-125
N030123-016D	SAMP	25	46602.9	48870.4	95.36	PASS	70-125	1209202.4	1493389.3	80.97	PASS	70-125
CCV5	CCV	1	47673.8	48870.4	97.55	PASS	70-125	1301755.6	1493389.3	87.17	PASS	70-125
CCB5	CCB	1	44514.7	48870.4	91.087	PASS	70-125	1195921.6	1493389.3	80.081	PASS	70-125
LLCCV1	CCV2	1	40408.6	48870.4	82.69	PASS	70-125	1183780.7	1493389.3	79.27	PASS	70-125
ICSA2	ICSA	1	47304.9	48870.4	96.8	PASS	70-125	1168599.7	1493389.3	78.25	PASS	70-125
ICSAB2	ICSAB	1	41553.6	48870.4	85.028	PASS	70-125	1121536.1	1493389.3	75.1	PASS	70-125

SERIAL DILUTION/ POST DIGESTION SPIKE

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N030147

Test Method: EPA 6020

Analysis Date: 5/17/2018

Matrix: Groundwater

Batch No.: 68012

Instrument ID: ICP-MS #2

Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Mn, Mo and Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030147-002D DT 5X	Arsenic	ug/L	1.04719	NA	1.247794	16.08%	10
N030147-002D DT 25X	Chromium	ug/L	368.206	PASS	355.333	3.62%	10
N030147-002D DT 5X	Manganese	ug/L	1.58078	NA	1.603954	1.44%	10
N030147-002D DT 5X	Molybdenum	ug/L	4.846588	NA	5.016076	3.38%	10
N030147-002D DT 5X	Selenium	ug/L	3.60746	NA	3.516039	2.60%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030147-002D-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030775**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.529	0.10	10.00	1.248	103	80	120	1.248	161	0	
Manganese	99.139	0.50	100.0	1.604	97.5	80	120	1.604	194	0	
Molybdenum	17.013	0.50	10.00	5.016	120	80	120	5.016	109	0	
Selenium	13.381	0.50	10.00	3.516	98.7	80	120	3.516	117	0	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030147
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID: **N030147-002D-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3031101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	360.790	5.0	10.00	355.3	54.6	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8

Digestion Method: EPA 3010A

Date of Analysis: 9/25,10/2,11/3/17

Digestion Date: 9/21, 9/28,10/9/17

Instrument Name: ICPMS2

Analysts: MEI

Matrix: Water

Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

May 29, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030185

RE: PG&E Topock - GMP, RC000753.801D

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 04, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - GMP, RC000753.801D
Lab Order:	N030185

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N030185-001due to matrix interference. Sample was analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Sample was reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 300.0:

Dilution was necessary for samples N030185-002 and -003 due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N030185-001, -002 and -004 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N030147-002D-MS and N030147-002D-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *29-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801D
Lab Order: N030185
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030185-001A	MW-41D-Q218	Groundwater	5/4/2018 8:10:00 AM	5/4/2018	5/29/2018
N030185-001B	MW-41D-Q218	Groundwater	5/4/2018 8:10:00 AM	5/4/2018	5/29/2018
N030185-001C	MW-41D-Q218	Groundwater	5/4/2018 8:10:00 AM	5/4/2018	5/29/2018
N030185-001D	MW-41D-Q218	Groundwater	5/4/2018 8:10:00 AM	5/4/2018	5/29/2018
N030185-002A	TW-02D-Q218	Groundwater	5/4/2018 11:30:00 AM	5/4/2018	5/29/2018
N030185-002B	TW-02D-Q218	Groundwater	5/4/2018 11:30:00 AM	5/4/2018	5/29/2018
N030185-002C	TW-02D-Q218	Groundwater	5/4/2018 11:30:00 AM	5/4/2018	5/29/2018
N030185-003A	MW-910-Q218	Groundwater	5/4/2018 11:40:00 AM	5/4/2018	5/29/2018
N030185-003B	MW-910-Q218	Groundwater	5/4/2018 11:40:00 AM	5/4/2018	5/29/2018
N030185-003C	MW-910-Q218	Groundwater	5/4/2018 11:40:00 AM	5/4/2018	5/29/2018
N030185-004A	MW-61-110-Q218	Groundwater	5/4/2018 9:06:00 AM	5/4/2018	5/29/2018
N030185-004B	MW-61-110-Q218	Groundwater	5/4/2018 9:06:00 AM	5/4/2018	5/29/2018
N030185-004C	MW-61-110-Q218	Groundwater	5/4/2018 9:06:00 AM	5/4/2018	5/29/2018
N030185-004D	MW-61-110-Q218	Groundwater	5/4/2018 9:06:00 AM	5/4/2018	5/29/2018
N030185-005A	MW-722-Q218	Groundwater	5/4/2018 9:00:00 AM	5/4/2018	5/29/2018
N030185-006A	MW-723-Q218	Groundwater	5/4/2018 9:30:00 AM	5/4/2018	5/29/2018
N030185-007A	MW-724-Q218	Groundwater	5/4/2018 9:15:00 AM	5/4/2018	5/29/2018

CLIENT: ARCADIS U.S., Inc. - California

Lab Order: N030185

Project: PG&E Topock - GMP, RC000753.801D

Lab ID: N030185-001

Client Sample ID: MW-41D-Q218

Collection Date: 5/4/2018 8:10:00 AM

Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180504E** QC Batch: **R123873** PrepDate							Analyst: **LR**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	3900	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	5000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030185
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030185-004

Client Sample ID: MW-61-110-Q218
Collection Date: 5/4/2018 9:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	15000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030147-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123873**
Client ID: **ZZZZZZ** Batch ID: **R123873** TestNo: **EPA 120.1** Analysis Date: **5/4/2018** SeqNo: **3017855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11250.000	0.10						11280	0.266	2	

Sample ID **N030185-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123873**
Client ID: **ZZZZZZ** Batch ID: **R123873** TestNo: **EPA 120.1** Analysis Date: **5/4/2018** SeqNo: **3017869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	19160.000	0.10						19190	0.156	2	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Calculations are based on raw values

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE			**SM2540C**				
RunID: **NV00922-WC_180507J** QC Batch: **67983**				PrepDate **5/7/2018**			Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2500	33	33		mg/L	1	5/7/2018 01:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180507J**	QC Batch: **67983**			PrepDate		**5/7/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3100	50	50		mg/L	1	5/7/2018 01:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-67983** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **5/7/2018** RunNo: **123934**
Client ID: **LCSW** Batch ID: **67983** TestNo: **SM2540C** Analysis Date: **5/7/2018** SeqNo: **3021096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	991.000	10	1000	0	99.1	80	120				

Sample ID **MB-67983** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **5/7/2018** RunNo: **123934**
Client ID: **PBW** Batch ID: **67983** TestNo: **SM2540C** Analysis Date: **5/7/2018** SeqNo: **3021097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N030186-002BDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **5/7/2018** RunNo: **123934**
Client ID: **ZZZZZZ** Batch ID: **67983** TestNo: **SM2540C** Analysis Date: **5/7/2018** SeqNo: **3021108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4275.000	50						4125	3.57	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 8:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180508A** QC Batch: **R123962** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/8/2018 06:47 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018** Analyst: **CEI**							
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 03:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180508A**	QC Batch: **R123962**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	150	0.66	4.0		µg/L	20	5/8/2018 02:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	150	0.13	1.0		µg/L	1	5/17/2018 03:42 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180508A** QC Batch: **R123962**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	150	0.66	4.0		µg/L	20	5/8/2018 03:53 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180517A** QC Batch: **68012**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	140	0.13	1.0		µg/L	1	5/17/2018 04:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-61-110-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 9:06:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180508A**	QC Batch: **R123962**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	330	3.3	20		µg/L	100	5/8/2018 02:47 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	340	0.65	5.0		µg/L	5	5/17/2018 04:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-722-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-005		

HEXAVALENT CHROMIUM BY IC

EPA 218.6

RunID: **NV00922-IC7_180508A** QC Batch: **R123962** PrepDate Analyst: **RAB**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/8/2018 07:06 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-723-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 9:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180508A**	QC Batch: **R123962**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/8/2018 07:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-724-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180508A**	QC Batch: **R123962**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/8/2018 07:43 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123962** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **PBW** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123962** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **LCSW** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.175	0.20	5.000	0	104	90	110				

Sample ID **N030123-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.514	0.20	1.000	0.4578	106	90	110				

Sample ID **N030123-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.534	1.0	5.000	0.5225	100	90	110				

Sample ID **N030123-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.678	1.0	5.000	0	93.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030185-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	857.510	20	500.0	330.2	105	90	110				

Sample ID **N030185-004AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	853.570	20	500.0	330.2	105	90	110	857.5	0.461	20	

Sample ID **N030185-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	259.550	4.0	100.0	154.3	105	90	110				

Sample ID **N030148-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.763	0.20						5.765	0.0278	20	

Sample ID **N030185-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	258.758	4.0	100.0	152.8	106	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030123-017AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123962**
Client ID: **ZZZZZZ**	Batch ID: **R123962**	TestNo: **EPA 218.6**	Analysis Date: **5/8/2018**	SeqNo: **3022183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.905	1.0	5.000	0	98.1	90	110				

Sample ID **N030123-019AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123962**
Client ID: **ZZZZZZ**	Batch ID: **R123962**	TestNo: **EPA 218.6**	Analysis Date: **5/8/2018**	SeqNo: **3022185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.737	1.0	5.000	0.7380	100	90	110				

Sample ID **N030123-020AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123962**
Client ID: **ZZZZZZ**	Batch ID: **R123962**	TestNo: **EPA 218.6**	Analysis Date: **5/8/2018**	SeqNo: **3022187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.160	0.20	1.000	0.1266	103	90	110				

Sample ID **N030123-021AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123962**
Client ID: **ZZZZZZ**	Batch ID: **R123962**	TestNo: **EPA 218.6**	Analysis Date: **5/8/2018**	SeqNo: **3022189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.187	0.20	1.000	0.1096	108	90	110				

Sample ID **N030185-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123962**
Client ID: **ZZZZZZ**	Batch ID: **R123962**	TestNo: **EPA 218.6**	Analysis Date: **5/8/2018**	SeqNo: **3022193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.569	1.0	5.000	0	91.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030185-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.147	0.20	1.000	0.1216	103	90	110				

Sample ID **N030185-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0	108	90	110				

Sample ID **N030185-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.177	0.20	1.000	0.1164	106	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
E Value above quantitation range
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike/Surrogate outside of limits due to matrix interference
Calculations are based on raw values

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030185
Project:	PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-68012** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **PBW** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3031089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-68012** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **LCSW** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3031090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.497	1.0	10.00	0	105	85	115				

Sample ID **N030147-002D-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3031103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	386.556	5.0	10.00	355.3	312	75	125				S

Sample ID **N030147-002D-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3031105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	359.612	5.0	10.00	355.3	42.8	75	125	386.6	7.22	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180507H**	QC Batch: **R123911**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	89	1.2	5.0		mg/L	1	5/7/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180507H**	QC Batch: **R123911**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	140	1.2	5.0		mg/L	1	5/7/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R123911** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **LCSW** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	97.872	5.0	100.0	0	97.9	85	115				

Sample ID **MB-R123911** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **PBW** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N030185-002BDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **ZZZZZZ** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019795**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	89.362	5.0						89.36	0	30	

Sample ID **N030185-003BMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **ZZZZZZ** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	231.915	5.0	100.0	138.3	93.6	75	125				

Sample ID **N030185-003BMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **ZZZZZZ** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	227.660	5.0	100.0	138.3	89.4	75	125	231.9	1.85	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY			**EPA 300.0**				
RunID: **NV00922-IC8_180507A** QC Batch: **R123903**				PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	5/7/2018 02:55 PM
ANIONS BY ION CHROMATOGRAPHY			**EPA 300.0**				
RunID: **NV00922-IC8_180507A** QC Batch: **R123903**				PrepDate			Analyst: **RAB**
Chloride	1100	4.6	250		mg/L	500	5/7/2018 08:48 PM
ANIONS BY ION CHROMATOGRAPHY			**EPA 300.0**				
RunID: **NV00922-IC8_180507A** QC Batch: **R123903**				PrepDate			Analyst: **RAB**
Sulfate	240	1.1	25		mg/L	50	5/7/2018 08:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180507A**	QC Batch: **R123903**			PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	5/7/2018 03:11 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180507A**	QC Batch: **R123903**			PrepDate			Analyst: **RAB**
Chloride	1500	4.6	250		mg/L	500	5/7/2018 09:03 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180507A**	QC Batch: **R123903**			PrepDate			Analyst: **RAB**
Sulfate	320	1.1	25		mg/L	50	5/7/2018 08:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R123903_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **PBW** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **LCS-R123903_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **LCSW** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.226	0.50	1.250	0	98.1	90	110				

Sample ID **N030185-002BMS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.353	2.5	6.250	0.2670	97.4	80	120				

Sample ID **N030185-002BMSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.368	2.5	6.250	0.2670	97.6	80	120	6.352	0.236	20	

Sample ID **N030185-002BDUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.245	2.5						0.2670	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R123903_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **PBW** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R123903_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **LCSW** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.014	0.50	2.000	0	101	90	110				

Sample ID **N030186-002BMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3184.800	250	1000	2174	101	80	120				

Sample ID **N030186-002BMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3189.800	250	1000	2174	102	80	120	3185	0.157	20	

Sample ID **N030186-001BDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	351.950	25						352.2	0.0738	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R123903_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **PBW** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R123903_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **LCSW** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.887	0.50	4.000	0	97.2	90	110				

Sample ID **N030186-001BMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	455.140	25	200.0	261.3	96.9	80	120				

Sample ID **N030186-001BMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	455.950	25	200.0	261.3	97.3	80	120	455.1	0.178	20	

Sample ID **N030186-001BDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	262.460	25						261.3	0.431	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 8:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180518C** QC Batch: **R124137** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.44	0.032	0.050		mg/L	1	5/18/2018

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-61-110-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 9:06:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180518C** QC Batch: **R124137** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.53	0.032	0.050		mg/L	1	5/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124137** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **PBW** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124137** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **LCSW** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.515	0.050	0.5000	0	103	85	115				

Sample ID **N030186-002CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ZZZZZZ** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.601	0.25	2.500	2.659	118	75	125				

Sample ID **N030186-002CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ZZZZZZ** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.260	0.25	2.500	2.659	104	75	125	5.601	6.28	20	

Sample ID **N030186-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ZZZZZZ** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.036	0.050						0.04570	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 8:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-001		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.2	0.081	0.10		µg/L	1	5/17/2018 03:31 PM
Manganese	73	0.26	0.50		µg/L	1	5/17/2018 03:31 PM
Molybdenum	93	1.1	2.5		µg/L	5	5/17/2018 03:37 PM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 03:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate	**5/8/2018**		Analyst: **CEI**
Manganese	3.2	0.26	0.50		µg/L	1	5/17/2018 03:42 PM
Molybdenum	10	1.1	2.5		µg/L	5	5/17/2018 03:59 PM
Selenium	2.2	0.36	0.50		µg/L	1	5/17/2018 03:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A** QC Batch: **68012**					PrepDate **5/8/2018**		Analyst: **CEI**
Manganese	5.7	0.26	0.50		µg/L	1	5/17/2018 04:05 PM
Molybdenum	11	0.21	0.50		µg/L	1	5/17/2018 04:05 PM
Selenium	2.3	0.36	0.50		µg/L	1	5/17/2018 04:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-61-110-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 9:06:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Arsenic	3.2	0.081	0.10		µg/L	1	5/17/2018 04:17 PM
Manganese	130	0.26	0.50		µg/L	1	5/17/2018 04:17 PM
Molybdenum	25	1.1	2.5		µg/L	5	5/17/2018 04:23 PM
Selenium	1.1	0.36	0.50		µg/L	1	5/17/2018 04:17 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-68012** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **PBW** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-68012** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **LCSW** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.359	0.10	10.00	0	104	85	115				
Manganese	104.400	0.50	100.0	0	104	85	115				
Molybdenum	10.498	0.50	10.00	0	105	85	115				
Selenium	10.106	0.50	10.00	0	101	85	115				

Sample ID **N030147-002D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.422	0.10	10.00	1.248	102	75	125				
Manganese	100.592	0.50	100.0	1.604	99.0	75	125				
Molybdenum	17.033	0.50	10.00	5.016	120	75	125				
Selenium	12.946	0.50	10.00	3.516	94.3	75	125				

Sample ID **N030147-002D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.401	0.10	10.00	1.248	102	75	125	11.42	0.186	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030185
Project:	PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030147-002D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**

Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	101.279	0.50	100.0	1.604	99.7	75	125	100.6	0.681	20	
Molybdenum	17.213	0.50	10.00	5.016	122	75	125	17.03	1.05	20	
Selenium	12.423	0.50	10.00	3.516	89.1	75	125	12.95	4.12	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com, daniel.moore@critigen.com	Address:
Phone: 916-786-3302 / Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com / P.O.#:
Submitted By: Gantt Jeffers	Phone: 916-786-3302 / Fax:	Phone: 949-727-1400, ext 200 / Fax:
Title: Geologist II	Sampled By: Jason Mahn	
Signature: [signature] Date: 5/4/2018	Signature: [signature] Date: 5/4/2018	
Project Name: PG&E Topock - GMP		
Project Number: RC000753.801D		

I hereby authorize ASSET Labs to perform the tests indicated below.

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
Global ID:		Regulatory	
		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		✓
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	4	
6. Method of Cooling: ICE		
Sample Temp: 2.5°C		
Courier:		
Tracking No.:		

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	250 mL poly: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	2x250 mL poly: Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	1 liter poly: Bromide, Sulfate, Chloride (EPA 300.0)	1 liter poly: Specific Conductance (EPA 120.1)	1 liter poly: Total Dissolved Solids (SM2540C)	1 liter poly: Alkalinity, Total as CaCO3 (SM2320B)	125 mL poly: Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4	500 mL poly: Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3	500 mL poly: Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3	500 mL poly: Dissolved metals (SW6010B FF) (Cr); HNO3	500 mL poly: Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3	500 mL poly: Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030185 - 01	MW-41D-Q218	5/4/2018	8:10		X			X			X	X					E	4	P	BNS	
2	- 02	TW-02D-Q218	5/4/2018	1130		X		X	X	X	X						X	E	3	P	BN	
3	- 03	MW-910-Q218	5/4/2018	1140		X		X	X	X	X						X	E	3	P	BN	
4	- 04	MW-61-110-Q218	5/4/2018	9:06		X			X			X	X					E	4	P	BNS	
5	- 05	MW-722-Q218	5/4/2018	9:00		X												E	1	P	B	
6	- 06	MW-723-Q218	5/4/2018	9:30		X												E	1	P	B	
7	- 07	MW-724-Q218	5/4/2018	9:15		X												E	1	P	B	
8																						
9																						
10																						

Reliquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
[signature] Jason Mahn	5.4.18 11:35	[signature]	5/4/18 11:35
[signature]	5/4/18 14:15	[signature]	5/4/18 14:15

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/4/2018	Workorder:	N030185
Rep sample Temp (Deg C):	2.5	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

	Yes	No	Not Present / NA
1. Shipping container/cooler in good condition?	☑	☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	☐	☐	Not Present ☑
3. Custody seals intact on sample bottles?	☐	☐	Not Present ☑
4. Chain of custody present?	☑	☐	
5. Sampler's name present in COC?	☑	☐	
6. Chain of custody signed when relinquished and received?	☑	☐	
7. Chain of custody agrees with sample labels?	☑	☐	
8. Samples in proper container/bottle?	☑	☐	
9. Sample containers intact?	☑	☐	
10. Sufficient sample volume for indicated test?	☑	☐	
11. All samples received within holding time?	☑	☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	☑	☐	NA ☐
13. Water - VOA vials have zero headspace?	☐	☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	☑	☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	☑	☐	NA ☐
16. Were there Non-Conformance issues at login?	☐	☐	NA ☑
Was Client notified?	☐	☐	NA ☑

Comments:

For:

Checklist Completed By: DA [signature] 5/10/2018

Reviewed By: [signature] 05/17/2018

Subject: RE: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/1/2018 6:08 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>, Kalib Sumter <Kalib.Sumter@critigen.com>, Dan Moore <Daniel.Moore@critigen.com>

Hi Yoandra,
Method 6020 is acceptable.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, April 30, 2018 8:48 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)

Hi Laura,

Please kindly check the attached COCs. Some samples are requested to be analyzed for As, Cr, Mn, Mo and Se by 6010.

Please kindly confirm if they can be analyzed by 6020 instead of 6010, as we have been doing before.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

nancy@assetlaboratories.com

From: nancy@assetlaboratories.com
Sent: Tuesday, May 29, 2018 1:38 PM
To: 'Daniel Moore'
Cc: 'Marlon B. Cartin'
Subject: RE: N030185 for EPA 6020

Thank you Dan!

From: Daniel Moore [mailto:Daniel.Moore@critigen.com]
Sent: Tuesday, May 29, 2018 12:57 PM
To: nancy@assetlaboratories.com
Cc: 'Marlon B. Cartin'
Subject: RE: N030185 for EPA 6020

Report the 1X with the 1.1 ppb result and note in the narrative. Thanks!

From: nancy@assetlaboratories.com <nancy@assetlaboratories.com>
Sent: Tuesday, May 29, 2018 2:27 PM
To: Daniel Moore <Daniel.Moore@critigen.com>
Cc: 'Marlon B. Cartin' <marlon@assetlaboratories.com>
Subject: RE: N030185 for EPA 6020
Importance: High

Hi Dan,

Please advise on this too.

Thanks,
Nancy

From: nancy@assetlaboratories.com [mailto:nancy@assetlaboratories.com]
Sent: Thursday, May 24, 2018 9:58 AM
To: 'Daniel Moore'
Cc: 'Marlon B. Cartin'
Subject: N030185 for EPA 6020
Importance: High

Hi Dan,

We are having issues on the RSD for Selenium in sample N030185-004. On our initial run, we have a 1x and 5x dilution for this sample and at 1x the IS passed but the RSD failed the 15% criteria. And so we run the sample again at 1x for 2 non-consecutive days but this time the IS is the one failing already and here's the breakdown for all readings:

On-column reading % RSD IS (Internal Standard)

1st reading @ 1x	1.1 ug/L	25.4%	77.1%
2nd reading @5x	0.32	24.3	94.6

For the 5x, though the calculated value is 1.6 ug/L the final result came out as ND as it is <RL already

3rd reading @1x	1.04	7.19	63.6
4th reading @1x	1.2	13.3	66.3

All four reading are comparable so, can we report the 2nd reading which has the passing IS though RSD is biased high since result is <RL?

Please advise.

Thanks,
Nancy

ASSET Laboratories

WORK ORDER Summary

07-May-18

WorkOrder: N030185

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/4/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030185-001A	MW-41D-Q218	5/4/2018 8:10:00 AM	5/18/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030185-001B			5/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030185-001C			5/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030185-001D			5/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030185-002A	TW-02D-Q218	5/4/2018 11:30:00 AM	5/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030185-002B			5/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			5/18/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			5/18/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			5/18/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			5/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			5/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			5/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N030185-002C			5/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030185-003A	MW-910-Q218	5/4/2018 11:40:00 AM	5/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030185-003B			5/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			5/18/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			5/18/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			5/18/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

07-May-18

WorkOrder: N030185

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/4/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030185-003B	MW-910-Q218	5/4/2018 11:40:00 AM	5/18/2018	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			5/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			5/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N030185-003C			5/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030185-004A	MW-61-110-Q218	5/4/2018 9:06:00 AM	5/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030185-004B			5/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030185-004C			5/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030185-004D			5/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030185-005A	MW-722-Q218	5/4/2018 9:00:00 AM	5/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030185-006A	MW-723-Q218	5/4/2018 9:30:00 AM	5/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030185-007A	MW-724-Q218	5/4/2018 9:15:00 AM	5/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030185-008A	FOLDER	5/18/2018	5/18/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/18/2018		Folder	Folder	☐	☐	☐	LAB
			5/18/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project No.: RC000753.801D

ASSET Laboratories Work Order:

N030185

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N030185

May 29, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030185

RE: PG&E Topock - GMP, RC000753.801D

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 04, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California	
Project:	PG&E Topock - GMP, RC000753.801D	**CASE NARRATIVE**
Lab Order:	N030185	

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N030185-001due to matrix interference. Sample was analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Sample was reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 300.0:

Dilution was necessary for samples N030185-002 and -003 due to precipitation upon the addition of eluent.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N030185-001, -002 and -004 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N030147-002D-MS and N030147-002D-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories **Date:** *29-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801D
Lab Order: N030185
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030185-001A	MW-41D-Q218	Groundwater	5/4/2018 8:10:00 AM	5/4/2018	5/29/2018
N030185-001B	MW-41D-Q218	Groundwater	5/4/2018 8:10:00 AM	5/4/2018	5/29/2018
N030185-001C	MW-41D-Q218	Groundwater	5/4/2018 8:10:00 AM	5/4/2018	5/29/2018
N030185-001D	MW-41D-Q218	Groundwater	5/4/2018 8:10:00 AM	5/4/2018	5/29/2018
N030185-002A	TW-02D-Q218	Groundwater	5/4/2018 11:30:00 AM	5/4/2018	5/29/2018
N030185-002B	TW-02D-Q218	Groundwater	5/4/2018 11:30:00 AM	5/4/2018	5/29/2018
N030185-002C	TW-02D-Q218	Groundwater	5/4/2018 11:30:00 AM	5/4/2018	5/29/2018
N030185-003A	MW-910-Q218	Groundwater	5/4/2018 11:40:00 AM	5/4/2018	5/29/2018
N030185-003B	MW-910-Q218	Groundwater	5/4/2018 11:40:00 AM	5/4/2018	5/29/2018
N030185-003C	MW-910-Q218	Groundwater	5/4/2018 11:40:00 AM	5/4/2018	5/29/2018
N030185-004A	MW-61-110-Q218	Groundwater	5/4/2018 9:06:00 AM	5/4/2018	5/29/2018
N030185-004B	MW-61-110-Q218	Groundwater	5/4/2018 9:06:00 AM	5/4/2018	5/29/2018
N030185-004C	MW-61-110-Q218	Groundwater	5/4/2018 9:06:00 AM	5/4/2018	5/29/2018
N030185-004D	MW-61-110-Q218	Groundwater	5/4/2018 9:06:00 AM	5/4/2018	5/29/2018
N030185-005A	MW-722-Q218	Groundwater	5/4/2018 9:00:00 AM	5/4/2018	5/29/2018
N030185-006A	MW-723-Q218	Groundwater	5/4/2018 9:30:00 AM	5/4/2018	5/29/2018
N030185-007A	MW-724-Q218	Groundwater	5/4/2018 9:15:00 AM	5/4/2018	5/29/2018

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 8:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	19000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	3900	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	5000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-61-110-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 9:06:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180504E** QC Batch: **R123873** PrepDate Analyst: **LR**							
Specific Conductance	15000	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030147-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123873**
Client ID: **ZZZZZZ** Batch ID: **R123873** TestNo: **EPA 120.1** Analysis Date: **5/4/2018** SeqNo: **3017855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11250.000	0.10						11280	0.266	2	

Sample ID **N030185-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123873**
Client ID: **ZZZZZZ** Batch ID: **R123873** TestNo: **EPA 120.1** Analysis Date: **5/4/2018** SeqNo: **3017869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	19160.000	0.10						19190	0.156	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180507J**	QC Batch: **67983**			PrepDate		**5/7/2018**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2500	33	33		mg/L	1	5/7/2018 01:18 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180507J**	QC Batch: **67983**			PrepDate	**5/7/2018**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	3100	50	50		mg/L	1	5/7/2018 01:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-67983** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **5/7/2018** RunNo: **123934**
Client ID: **LCSW** Batch ID: **67983** TestNo: **SM2540C** Analysis Date: **5/7/2018** SeqNo: **3021096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	991.000	10	1000	0	99.1	80	120				

Sample ID **MB-67983** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **5/7/2018** RunNo: **123934**
Client ID: **PBW** Batch ID: **67983** TestNo: **SM2540C** Analysis Date: **5/7/2018** SeqNo: **3021097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N030186-002BDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **5/7/2018** RunNo: **123934**
Client ID: **ZZZZZZ** Batch ID: **67983** TestNo: **SM2540C** Analysis Date: **5/7/2018** SeqNo: **3021108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4275.000	50						4125	3.57	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 8:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180508A** QC Batch: **R123962** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	5/8/2018 06:47 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	5/17/2018 03:31 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180508A** QC Batch: **R123962**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	150	0.66	4.0		µg/L	20	5/8/2018 02:38 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180517A** QC Batch: **68012**				PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	150	0.13	1.0		µg/L	1	5/17/2018 03:42 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180508A**	QC Batch: **R123962**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	150	0.66	4.0		µg/L	20	5/8/2018 03:53 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Chromium	140	0.13	1.0		µg/L	1	5/17/2018 04:05 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-61-110-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 9:06:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180508A** QC Batch: **R123962** PrepDate Analyst: **RAB**							
Hexavalent Chromium	330	3.3	20		µg/L	100	5/8/2018 02:47 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018** Analyst: **CEI**							
Chromium	340	0.65	5.0		µg/L	5	5/17/2018 04:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-722-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180508A** QC Batch: **R123962**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/8/2018 07:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-723-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 9:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180508A**	QC Batch: **R123962**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/8/2018 07:24 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030185
Project: PG&E Topock - GMP, RC000753.801D
Lab ID: N030185-007

Client Sample ID: MW-724-Q218
Collection Date: 5/4/2018 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180508A** QC Batch: **R123962** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/8/2018 07:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123962** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **PBW** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123962** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **LCSW** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.175	0.20	5.000	0	104	90	110				

Sample ID **N030123-018AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022161**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.514	0.20	1.000	0.4578	106	90	110				

Sample ID **N030123-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.534	1.0	5.000	0.5225	100	90	110				

Sample ID **N030123-016AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.678	1.0	5.000	0	93.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030185-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	857.510	20	500.0	330.2	105	90	110				

Sample ID **N030185-004AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	853.570	20	500.0	330.2	105	90	110	857.5	0.461	20	

Sample ID **N030185-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	259.550	4.0	100.0	154.3	105	90	110				

Sample ID **N030148-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022176**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.763	0.20						5.765	0.0278	20	

Sample ID **N030185-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022179**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	258.758	4.0	100.0	152.8	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030123-017AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.905	1.0	5.000	0	98.1	90	110				

Sample ID **N030123-019AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.737	1.0	5.000	0.7380	100	90	110				

Sample ID **N030123-020AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.160	0.20	1.000	0.1266	103	90	110				

Sample ID **N030123-021AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.187	0.20	1.000	0.1096	108	90	110				

Sample ID **N030185-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.569	1.0	5.000	0	91.4	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
E Value above quantitation range
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike/Surrogate outside of limits due to matrix interference
Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030185-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.147	0.20	1.000	0.1216	103	90	110				

Sample ID **N030185-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0	108	90	110				

Sample ID **N030185-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.177	0.20	1.000	0.1164	106	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-68012** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **PBW** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3031089**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-68012** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **LCSW** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3031090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.497	1.0	10.00	0	105	85	115				

Sample ID **N030147-002D-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3031103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	386.556	5.0	10.00	355.3	312	75	125				S

Sample ID **N030147-002D-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3031105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	359.612	5.0	10.00	355.3	42.8	75	125	386.6	7.22	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180507H** QC Batch: **R123911**				PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	89	1.2	5.0		mg/L	1	5/7/2018 01:40 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180507H** QC Batch: **R123911**				PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	140	1.2	5.0		mg/L	1	5/7/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R123911** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **LCSW** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	97.872	5.0	100.0	0	97.9	85	115				

Sample ID **MB-R123911** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **PBW** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N030185-002BDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **ZZZZZZ** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019795**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	89.362	5.0						89.36	0	30	

Sample ID **N030185-003BMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **ZZZZZZ** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	231.915	5.0	100.0	138.3	93.6	75	125				

Sample ID **N030185-003BMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **ZZZZZZ** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	227.660	5.0	100.0	138.3	89.4	75	125	231.9	1.85	20	

Qualifiers:

B Analyte detected in the associated Method Blank
E Value above quantitation range
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike/Surrogate outside of limits due to matrix interference
Calculations are based on raw values

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180507A** QC Batch: **R123903** PrepDate Analyst: **RAB**							
Bromide	ND	0.098	2.5		mg/L	5	5/7/2018 02:55 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180507A** QC Batch: **R123903** PrepDate Analyst: **RAB**							
Chloride	1100	4.6	250		mg/L	500	5/7/2018 08:48 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180507A** QC Batch: **R123903** PrepDate Analyst: **RAB**							
Sulfate	240	1.1	25		mg/L	50	5/7/2018 08:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_180507A**	QC Batch: **R123903**			PrepDate			Analyst: **RAB**
Bromide	ND	0.098	2.5		mg/L	5	5/7/2018 03:11 PM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_180507A**	QC Batch: **R123903**			PrepDate			Analyst: **RAB**
Chloride	1500	4.6	250		mg/L	500	5/7/2018 09:03 PM
ANIONS BY ION CHROMATOGRAPHY				**EPA 300.0**			
RunID: **NV00922-IC8_180507A**	QC Batch: **R123903**			PrepDate			Analyst: **RAB**
Sulfate	320	1.1	25		mg/L	50	5/7/2018 08:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **MB-R123903_BR** SampType: **MBLK** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **PBW** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **LCS-R123903_BR** SampType: **LCS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **LCSW** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019505**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.226	0.50	1.250	0	98.1	90	110				

Sample ID **N030185-002BMS** SampType: **MS** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.353	2.5	6.250	0.2670	97.4	80	120				

Sample ID **N030185-002BMSD** SampType: **MSD** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.368	2.5	6.250	0.2670	97.6	80	120	6.352	0.236	20	

Sample ID **N030185-002BDUP** SampType: **DUP** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019516**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.245	2.5						0.2670	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R123903_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **PBW** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R123903_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **LCSW** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.014	0.50	2.000	0	101	90	110				

Sample ID **N030186-002BMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3184.800	250	1000	2174	101	80	120				

Sample ID **N030186-002BMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3189.800	250	1000	2174	102	80	120	3185	0.157	20	

Sample ID **N030186-001BDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	351.950	25						352.2	0.0738	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R123903_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **PBW** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R123903_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **LCSW** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.887	0.50	4.000	0	97.2	90	110				

Sample ID **N030186-001BMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	455.140	25	200.0	261.3	96.9	80	120				

Sample ID **N030186-001BMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	455.950	25	200.0	261.3	97.3	80	120	455.1	0.178	20	

Sample ID **N030186-001BDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	262.460	25						261.3	0.431	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 8:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180518C** QC Batch: **R124137**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.44	0.032	0.050		mg/L	1	5/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-61-110-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 9:06:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180518C** QC Batch: **R124137** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.53	0.032	0.050		mg/L	1	5/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124137** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **PBW** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124137** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **LCSW** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.515	0.050	0.5000	0	103	85	115				

Sample ID **N030186-002CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ZZZZZZ** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.601	0.25	2.500	2.659	118	75	125				

Sample ID **N030186-002CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ZZZZZZ** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.260	0.25	2.500	2.659	104	75	125	5.601	6.28	20	

Sample ID **N030186-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ZZZZZZ** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.036	0.050						0.04570	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 8:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-001		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.2	0.081	0.10		µg/L	1	5/17/2018 03:31 PM
Manganese	73	0.26	0.50		µg/L	1	5/17/2018 03:31 PM
Molybdenum	93	1.1	2.5		µg/L	5	5/17/2018 03:37 PM
Selenium	ND	0.36	0.50		µg/L	1	5/17/2018 03:31 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A** QC Batch: **68012**					PrepDate **5/8/2018**		Analyst: **CEI**
Manganese	3.2	0.26	0.50		µg/L	1	5/17/2018 03:42 PM
Molybdenum	10	1.1	2.5		µg/L	5	5/17/2018 03:59 PM
Selenium	2.2	0.36	0.50		µg/L	1	5/17/2018 03:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 11:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-003		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180517A** QC Batch: **68012** PrepDate **5/8/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Manganese	5.7	0.26	0.50		µg/L	1	5/17/2018 04:05 PM
Molybdenum	11	0.21	0.50		µg/L	1	5/17/2018 04:05 PM
Selenium	2.3	0.36	0.50		µg/L	1	5/17/2018 04:05 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *29-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-61-110-Q218
Lab Order:	N030185	**Collection Date:**	5/4/2018 9:06:00 AM
Project:	PG&E Topock - GMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030185-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180517A**	QC Batch: **68012**			PrepDate		**5/8/2018**	Analyst: **CEI**
Arsenic	3.2	0.081	0.10		µg/L	1	5/17/2018 04:17 PM
Manganese	130	0.26	0.50		µg/L	1	5/17/2018 04:17 PM
Molybdenum	25	1.1	2.5		µg/L	5	5/17/2018 04:23 PM
Selenium	1.1	0.36	0.50		µg/L	1	5/17/2018 04:17 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-68012** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **PBW** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-68012** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **LCSW** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.359	0.10	10.00	0	104	85	115				
Manganese	104.400	0.50	100.0	0	104	85	115				
Molybdenum	10.498	0.50	10.00	0	105	85	115				
Selenium	10.106	0.50	10.00	0	101	85	115				

Sample ID **N030147-002D-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.422	0.10	10.00	1.248	102	75	125				
Manganese	100.592	0.50	100.0	1.604	99.0	75	125				
Molybdenum	17.033	0.50	10.00	5.016	120	75	125				
Selenium	12.946	0.50	10.00	3.516	94.3	75	125				

Sample ID **N030147-002D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.401	0.10	10.00	1.248	102	75	125	11.42	0.186	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030185
Project:	PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030147-002D-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **5/8/2018** RunNo: **124122**

Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	101.279	0.50	100.0	1.604	99.7	75	125	100.6	0.681	20	
Molybdenum	17.213	0.50	10.00	5.016	122	75	125	17.03	1.05	20	
Selenium	12.423	0.50	10.00	3.516	89.1	75	125	12.95	4.12	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Gantt Jeffers
Title: Geologist II
Signature: Date: 5/4/2018
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - GMP
Project Number: RC000753.801D

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
Signature: Date: 5/4/2018

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		✓
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	4	
6. Method of Cooling: ICE		
Sample Temp: 2.5°C		

Courier:
Tracking No.:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Bromide, Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM2540C) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (SW6020A FF) (As, Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mo, Se); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (As, Cr, Mn); HNO3 (500 mL poly)	Dissolved metals (SW6010B FF) (Cr, Mn, Mo, Se); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030185 - 01	MW-41D-Q218	5/4/2018	8:10		X			X			X	X					E	4	P	BNS	
2	- 02	TW-02D-Q218	5/4/2018	1130		X		X	X	X	X						X	E	3	P	BN	
3	- 03	MW-910-Q218	5/4/2018	1140		X		X	X	X	X						X	E	3	P	BN	
4	- 04	MW-61-110-Q218	5/4/2018	9:06		X			X			X	X					E	4	P	BNS	
5	- 05	MW-722-Q218	5/4/2018	9:00		X												E	1	P	B	
6	- 06	MW-723-Q218	5/4/2018	9:30		X												E	1	P	B	
7	- 07	MW-724-Q218	5/4/2018	9:15		X												E	1	P	B	
8																						
9																						
10																						

Reliquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
Jason Mahn	5.4.18 11:35		5/4/18 11:35
	5/4/18 14:15		5/4/18 14:15

Turn Around Time (TAT)
- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	$(NH4)2SO4/NH4OH$	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 5/4/2018 — Workorder: N030185

Rep sample Temp (Deg C): 2.5 — IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA — Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

	Yes	No	Not Present / NA
1. Shipping container/cooler in good condition?	☑	☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	☐	☐	Not Present ☑
3. Custody seals intact on sample bottles?	☐	☐	Not Present ☑
4. Chain of custody present?	☑	☐	
5. Sampler's name present in COC?	☑	☐	
6. Chain of custody signed when relinquished and received?	☑	☐	
7. Chain of custody agrees with sample labels?	☑	☐	
8. Samples in proper container/bottle?	☑	☐	
9. Sample containers intact?	☑	☐	
10. Sufficient sample volume for indicated test?	☑	☐	
11. All samples received within holding time?	☑	☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	☑	☐	NA ☐
13. Water - VOA vials have zero headspace?	☐	☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	☑	☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	☑	☐	NA ☐
16. Were there Non-Conformance issues at login?	☐	☐	NA ☑
Was Client notified?	☐	☐	NA ☑

Comments:

Checklist Completed By: For: DA YKT 5/10/2018

Reviewed By: [signature] 05/17/2018

nancy@assetlaboratories.com

From: nancy@assetlaboratories.com
Sent: Tuesday, May 29, 2018 1:38 PM
To: 'Daniel Moore'
Cc: 'Marlon B. Cartin'
Subject: RE: N030185 for EPA 6020

Thank you Dan!

From: Daniel Moore [mailto:Daniel.Moore@critigen.com]
Sent: Tuesday, May 29, 2018 12:57 PM
To: nancy@assetlaboratories.com
Cc: 'Marlon B. Cartin'
Subject: RE: N030185 for EPA 6020

Report the 1X with the 1.1 ppb result and note in the narrative. Thanks!

From: nancy@assetlaboratories.com <nancy@assetlaboratories.com>
Sent: Tuesday, May 29, 2018 2:27 PM
To: Daniel Moore <Daniel.Moore@critigen.com>
Cc: 'Marlon B. Cartin' <marlon@assetlaboratories.com>
Subject: RE: N030185 for EPA 6020
Importance: High

Hi Dan,

Please advise on this too.

Thanks,
Nancy

From: nancy@assetlaboratories.com [mailto:nancy@assetlaboratories.com]
Sent: Thursday, May 24, 2018 9:58 AM
To: 'Daniel Moore'
Cc: 'Marlon B. Cartin'
Subject: N030185 for EPA 6020
Importance: High

Hi Dan,

We are having issues on the RSD for Selenium in sample N030185-004. On our initial run, we have a 1x and 5x dilution for this sample and at 1x the IS passed but the RSD failed the 15% criteria. And so we run the sample again at 1x for 2 non-consecutive days but this time the IS is the one failing already and here's the breakdown for all readings:

On-column reading % RSD IS (Internal Standard)

1st reading @ 1x	1.1 ug/L	25.4%	77.1%
2nd reading @5x	0.32	24.3	94.6

For the 5x, though the calculated value is 1.6 ug/L the final result came out as ND as it is <RL already

3rd reading @1x	1.04	7.19	63.6
4th reading @1x	1.2	13.3	66.3

All four reading are comparable so, can we report the 2nd reading which has the passing IS though RSD is biased high since result is <RL?

Please advise.

Thanks,
Nancy

Subject: RE: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/1/2018 6:08 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, Tina Rice <Tina.Rice@critigen.com>, Kalib Sumter <Kalib.Sumter@critigen.com>, Dan Moore <Daniel.Moore@critigen.com>

Hi Yoandra,
Method 6020 is acceptable.

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Monday, April 30, 2018 8:48 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: PG&E Topock - GMP, RC000753.0801 (Asset Labs No. N029973, N030006, N030017 and N030044)

Hi Laura,

Please kindly check the attached COCs. Some samples are requested to be analyzed for As, Cr, Mn, Mo and Se by 6010.

Please kindly confirm if they can be analyzed by 6020 instead of 6010, as we have been doing before.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

ASSET Laboratories

WORK ORDER Summary

07-May-18

WorkOrder: N030185

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/4/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030185-001A	MW-41D-Q218	5/4/2018 8:10:00 AM	5/18/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030185-001B			5/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030185-001C			5/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030185-001D			5/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030185-002A	TW-02D-Q218	5/4/2018 11:30:00 AM	5/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030185-002B			5/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			5/18/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			5/18/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			5/18/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			5/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			5/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			5/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N030185-002C			5/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030185-003A	MW-910-Q218	5/4/2018 11:40:00 AM	5/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030185-003B			5/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			5/18/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			5/18/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			5/18/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

07-May-18

WorkOrder: N030185

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/4/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030185-003B	MW-910-Q218	5/4/2018 11:40:00 AM	5/18/2018	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			5/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			5/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N030185-003C			5/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030185-004A	MW-61-110-Q218	5/4/2018 9:06:00 AM	5/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030185-004B			5/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
N030185-004C			5/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030185-004D			5/18/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030185-005A	MW-722-Q218	5/4/2018 9:00:00 AM	5/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030185-006A	MW-723-Q218	5/4/2018 9:30:00 AM	5/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030185-007A	MW-724-Q218	5/4/2018 9:15:00 AM	5/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030185-008A	FOLDER	5/18/2018	5/18/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/18/2018		Folder	Folder	☐	☐	☐	LAB
			5/18/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N030185

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6020_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 2540C, SM 2320 B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123873 **Analyst:** LSR

ASSET #: N030185 **Date Analyzed:** 5/4/2018

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 5/9/2018

2nd Level Reviewer [illegible] 5/22/2018 for RB Date:

LOGBOOK DATA,
QUANTITATION REPORT and/or
SPECTRA

Conductivity Logbook

Date: 5/4/18 1515

Analyst: LSR

CONTD

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV-180108A	9.80 @ 21.9°C	% Rec: (90-110%)
1412	180131A	1438 @ 22.1°C	
9987	180108B	10020 @ 22.2°C	
99601	180201A	98300 @ 22.3°C	

	Sample ID	Matrix	Reading	Comments
1	N030147-011B	H_2O	13470 @ 21.8°C	
2	12B		18410 @ 21.2°C	STD CHK:
3	13B		15270 @ 21.5°C	1413 CINV171121C
4	N030185-001B		19190 @ 21.0°C	= 1476 @ 21.3°C
5	1B DUP		19160 @ 20.9°C	10000 CINV180108C
6	2B		3940 @ 20.9°C	= 10370 @ 21.6°C
7	3B		5040 @ 20.9°C	99672 CINV171215A
8	4B		15340 @ 20.9°C	= 99500 @ 22.1°C
9	N030186-001B		1813 @ 20.9°C	
10	2B		7240 @ 20.8°C	2/2 LSR 5/4/18
Dup				Accept: ~~10% water, 20% soil~~
	Std Chk:			% Rec: (90-110%)

Julia Ramit 5/9/2018

Date: 5/7/18 1400

Analyst: LSR

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV-180108A	9.87 @ 23.8°C	% Rec: (90-110%)
1412	180131A	1420 @ 23.8°C	
9987	180108B	10040 @ 23.7°C	
99601	180201A	99800 @ 23.8°C	

	Sample ID	Matrix	Reading	Comments
1	N030212-001B	H_2O	33.3 @ 22.9°C	
2	1B DUP		33.4 @ 22.7°C	
3				
4				
5				
6				
7				
8	1413 uS/cm	CINV-171121C	1440 @ 24.4°C	
9	10000	180108C	10050 @ 24.2°C	
10	99672	171215A	98600 @ 24.2°C	2/2 LSR 5/7/18
Dup				Accept: ~~10% water, 20% soil~~
	Std Chk:			% Rec: (90-110%)

Logbook # 6

SM 2540C

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67983 **Analyst:** LSR

ASSET #: N030185 **Date Analyzed:** 5/7/2018

Method: EPA 160.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 5/11/2018

2nd Level Reviewer Nancy 5/22/2018 for RB Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N030185-002B,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(69.1231-69.0494)*1000000}{30}$$
$$= 2456.6667 \text{ mg/L}$$

Reporting result in two significant figures,

TDS =2500 mg/L

Julia Ramit 5/11/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/7/2018 1:18:16 P**
Prep End Date: **5/8/2018 12:05:00 P**
Prep Batch **67983** Prep Code: **160.1_W_PRE**

Reviewed/ Date: 5/22/2018
Initials/ Date: Lilia Ramit 5/9/2018
Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**
Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67983	Water		100	☐	0	0	100	1.000		
MB-67983	Water		100	☐	0	0	100	1.000		
N030113-001C	Groundwater		40	☐	0	0	100	2.500		
N030120-007D	Groundwater		100	☐	0	0	100	1.000		
N030120-008D	Groundwater		100	☐	0	0	100	1.000		
N030121-001A	Water		20	☐	0	0	100	5.000		
N030121-002B	Water		20	☐	0	0	100	5.000		
N030148-001C	Groundwater		75	☐	0	0	100	1.333		
N030185-002B	Groundwater		30	☐	0	0	100	3.333		
N030185-003B	Groundwater		20	☐	0	0	100	5.000		
N030186-001B	Groundwater		75	☐	0	0	100	1.333		
N030186-002B	Groundwater		20	☐	0	0	100	5.000		
N030186-002B-DU	Groundwater		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9935	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180503A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/7/2018 1:18:16 P**
Prep End Date:

Reviewed/ Date:
Initials/ Date: Lilia Ramit 5/9/2018

Prep Batch **67983** Prep Code: **160.1_W_PRE**
Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67983	Water	IWST 180503A	100	☐	0	0	100	1.000		
MB-67983	Water		100	☐	0	0	100	1.000		
N030113-001C	Groundwater	3700	100 /40	☐	0	0	100	1.000		
N030120-007D	Groundwater	1252	100	☐	0	0	100	1.000		
N030120-008D	Groundwater	1243	100	☐	0	0	100	1.000		
N030121-001A	Water	7500	100 /26	☐	0	0	100	1.000		
N030121-002B	Water	7370	100 /20	☐	0	0	100	1.000		
N030148-001C	Groundwater	1775	100 /75	☐	0	0	100	1.000		
N030185-002B	Groundwater	4040	100 /30	☐	0	0	100	1.000		
N030185-003B	Groundwater	5220	100 /20	☐	0	0	100	1.000		
N030186-001B	Groundwater	1920	100 /75	☐	0	0	100	1.000		
N030186-002B	Groundwater	7530	100 /20	☐	0	0	100	1.000		
N030186-002B-DU	Groundwater	[	100 /20	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

9935

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/ TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/7/18 1318 FF	MB 67983	100	68.1843 68.1845	68.1850 68.1847	
1A	LCS 67983	100	76.5582 76.5582 LSW 5/7	76.6576 76.6573	
LSL BB	N030113-001C	40	68.4282 68.4279	68.5735 68.5736	
GG	N030120-007D	100	67.8295 67.8299	67.9126 67.9130	
L2	8D	100	76.5148 76.5151	76.5978 76.5981	
XX	N030121-001A	20	49.3232 49.3231	49.4069 49.4070	
T	2B	20	46.0409 46.0407	46.1208 46.1210	
CC	N030148-001C	75	70.0887 70.0889	70.1829 70.1832	
LL	N030185-002B	30	69.0491 69.0494	69.1228 69.1231	
E	3B	20	49.3451 49.3455	49.4071 49.4068	

Julia Ramit 5/9/2018

ASSET Laboratories

Logbook#11

SOLIDS RAW DATA

TEST :TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/7/18 1k	N030186-001B	75	70.7709 70.7713	70.8583 70.8587	
5	2B	20	45.6753 45.6756	45.7579 45.7581	
15	2B DUP	20	48.8790 48.8794	48.9651 48.9649	
	Julia Ramit	5/9/2018			
	Closing wt:	49.999g	5/8/18 @ 1205	UR	

ASSET Laboratories Logbook#11

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
5/8/2018									
MB-67983	100	68.1845	68.1847	2	1	2			MBLK
LCS-67983	100	76.5582	76.6573	991	1	991			LCS
N030113-001C	40	68.4279	68.5736	1457	2.5	3642.5	3700	0.984	SAMP
N030120-007D	100	67.8299	67.913	831	1	831	1252	0.664	SAMP
N030120-008D	100	76.5151	76.5981	830	1	830	1243	0.668	SAMP
N030121-001A	20	49.3231	49.407	839	5	4195	7500	0.559	SAMP
N030121-002B	20	46.0407	46.121	803	5	4015	7370	0.545	SAMP
N030148-001C	75	70.0889	70.1832	943	1.33333333	1257.33333	1775	0.708	SAMP
N030185-002B	30	69.0494	69.1231	737	3.33333333	2456.66667	4040	0.608	SAMP
N030185-003B	20	49.3455	49.4068	613	5	3065	5220	0.587	SAMP
N030186-001B	75	70.7713	70.8587	874	1.33333333	1165.33333	1920	0.607	SAMP
N030186-002B	20	45.6756	45.7581	825	5	4125	7530	0.548	SAMP
N030186-002BDUP	20	48.8794	48.9649	855	5	4275	7530	0.568	DUP

Julia Ramit 5/9/2018

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R123962
ASSET #: N030185

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 5/8/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ___________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			✓		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X			✓		
3. ICV within ± 10% of expected value.	X			✓		
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X			✓		
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X			✓		
6. Calibration blanks run after ICV and CCV?	X			✓		
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X			✓		
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			✓		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X			✓		
Sample Information						
10. All samples are within linear range.	X			✓		
11. All samples pH within 9.3-9.7 when analyzed?	X			✓		
12. Duplicate sample injections for every sample. (7199 only)			X			✓
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X			✓		
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			✓
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			✓		
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			✓		
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			✓
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X			✓		
19. EPA 3060A digestion performed on solid samples (7199 only)			X			✓
20. Are all peaks within RT window, ± 0.2 min?	X			✓		
21. Are all samples analyzed within hold time?	X			✓		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			✓
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			✓		
24. LCS compounds are within control limits.	X			✓		
25. MS/MSD, RPD's are within control limits.	X			✓		
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			✓
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			✓		
28. Extraction log complete and included in package (if applicable)			X			✓
29. All manual integrations initialed, date and reasons included.	X			✓		
30. Before and after manual integration chromatogram included in the package	X			✓		
31. All samples and QC raw data present in package.	X			✓		
Preliminary Report						
32. Does the raw data match the preliminary report?	X			✓		
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			✓		
34 Is the QC summary report present and complete?	X			✓		

Comments:

Dilution was necessary in N030185-001A due to matrix interference.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	✓		
2. Matrix / units correct	✓		
3. Is QC present and complete?	✓		
4. Are analytical results correct? (dilutions,calculations)	✓		
5. Is first level review correct and complete?	✓		

1st Level Reviewer: rba Date: 5/11/2018

2nd Level Reviewer: [signature] 5/21/2018 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}\text{ ,µg/L} = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N030185-002A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}\text{ ,µg/L} = 7.7147 * 20$$

$$Cr^{+6}\text{ ,µg/L} = 154.2940$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}\text{ ,µg/L} = 150}$$

rba 5/11/2018

ANALYSIS RUN LOG

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	04/30/18 10:42 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/30/18 10:52 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/30/18 11:01 AM	Reported
13	MB-R123727	MBLK	1	Hexavalent Chromium	04/30/18 11:11 AM	Reported
14	LCS-R123727	LCS	1	Hexavalent Chromium	04/30/18 11:20 AM	Reported
15	N030044-001A	SAMP	5	Hexavalent Chromium	04/30/18 11:30 AM	Reported
16	N030044-001AMS	MS	5	Hexavalent Chromium	04/30/18 11:39 AM	Reported
17	N030044-002A	SAMP	5	Hexavalent Chromium	04/30/18 11:49 AM	Reported
18	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 11:58 AM	Not Reported
19	N030044-003A	SAMP	5	Hexavalent Chromium	04/30/18 12:08 PM	Reported
20	N030044-003AMS	MS	5	Hexavalent Chromium	04/30/18 12:17 PM	Reported
21	N030044-004A	SAMP	1000	Hexavalent Chromium	04/30/18 12:26 PM	Reported
22	N030044-004AMS	MS	1000	Hexavalent Chromium	04/30/18 12:36 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/30/18 12:45 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/30/18 12:55 PM	Reported
25	N030044-005A	SAMP	50	Hexavalent Chromium	04/30/18 1:04 PM	Reported
26	N030044-005AMS	MS	50	Hexavalent Chromium	04/30/18 1:14 PM	Reported
27	N030044-006A	SAMP	200	Hexavalent Chromium	04/30/18 1:23 PM	Reported
28	N030044-006AMS	MS	200	Hexavalent Chromium	04/30/18 1:33 PM	Reported
29	N030044-007A	SAMP	200	Hexavalent Chromium	04/30/18 1:42 PM	Reported
30	N030044-007AMS	MS	200	Hexavalent Chromium	04/30/18 1:52 PM	Reported
31	N030044-008A	SAMP	1000	Hexavalent Chromium	04/30/18 2:01 PM	Reported
32	N030044-008AMS	MS	1000	Hexavalent Chromium	04/30/18 2:10 PM	Reported
33	N030044-009A	SAMP	50	Hexavalent Chromium	04/30/18 2:20 PM	Reported
34	N030044-009AMS	MS	50	Hexavalent Chromium	04/30/18 2:29 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/30/18 2:39 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/30/18 2:48 PM	Reported
37	N030044-010A	SAMP	1	Hexavalent Chromium	04/30/18 2:58 PM	Reported
38	N030044-010AMS	MS	1	Hexavalent Chromium	04/30/18 3:07 PM	Reported
39	N030044-011A	SAMP	1	Hexavalent Chromium	04/30/18 3:17 PM	Reported
40	N030044-011AMS	MS	1	Hexavalent Chromium	04/30/18 3:26 PM	Reported
41	N030044-001ADUP	DUP	5	Hexavalent Chromium	04/30/18 3:36 PM	Reported
42	N030044-004AMSD	MSD	1000	Hexavalent Chromium	04/30/18 3:45 PM	Reported

rba 5/6/2018

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 3:55 PM	Reported
44	N029859-008A	SAMP	1	Hexavalent Chromium	04/30/18 4:06 PM	Not Reported
45	N029859-008AMS	MS	1	Hexavalent Chromium	04/30/18 4:17 PM	Not Reported
46	N029859-009A	SAMP	1	Hexavalent Chromium	04/30/18 4:26 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/30/18 4:36 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/30/18 4:45 PM	Reported
49	N029859-009AMS	MS	1	Hexavalent Chromium	04/30/18 4:55 PM	Not Reported
50	N029859-011A	SAMP	1	Hexavalent Chromium	04/30/18 5:04 PM	Not Reported
51	N029859-011AMS	MS	1	Hexavalent Chromium	04/30/18 5:14 PM	Not Reported
52	CCV-4	CCV	1	Hexavalent Chromium	04/30/18 5:23 PM	Reported
53	CCB-4	CCB	1	Hexavalent Chromium	04/30/18 5:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180430A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**30/Apr/18 18:19:59**
No. of Injections:	**56**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		04/30/2018 10:42	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/30/2018 10:52	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/30/2018 11:01	Finished	ICB R180418A
13	MB-H2O,MBLK,1,	13	1000	Unknown		04/30/2018 11:11	Finished	MB R180418A
14	LCS-H2O,LCS,1,	14	1000	Unknown		04/30/2018 11:20	Finished	LCS, IWST-180129B
15	N030044-001A,SAMP	15	1000	Unknown		04/30/2018 11:30	Finished	SAMP,2>10mL
16	N030044-001AMS,MS	16	1000	Unknown		04/30/2018 11:39	Finished	MS (5ppb), IWST-180129B,2>1
17	N030044-002A,SAMP	17	1000	Unknown		04/30/2018 11:49	Finished	SAMP,2>10mL
18	N030044-002AMS,MS	18	1000	Unknown		04/30/2018 11:58	Finished	MS (5ppb), IWST-180129B,2>1
19	N030044-003A,SAMP	19	1000	Unknown		04/30/2018 12:08	Finished	SAMP,2>10mL
20	N030044-003AMS,MS	20	1000	Unknown		04/30/2018 12:17	Finished	MS (5ppb), IWST-180129B,2>1
21	N030044-004A,SAMP	21	1000	Unknown		04/30/2018 12:26	Finished	SAMP,0.01>10mL
22	N030044-004AMS,MS	22	1000	Unknown		04/30/2018 12:36	Finished	MS (5ppb), IWST-180129B,0.0
23	CCV-1,CCV1,1,	23	1000	Unknown		04/30/2018 12:45	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	24	1000	Unknown		04/30/2018 12:55	Finished	CCB R180418A
25	N030044-005A,SAMP	25	1000	Unknown		04/30/2018 13:04	Finished	SAMP,0.2>10mL
26	N030044-005AMS,MS	26	1000	Unknown		04/30/2018 13:14	Finished	MS (5ppb), IWST-180129B,0.2
27	N030044-006A,SAMP	27	1000	Unknown		04/30/2018 13:23	Finished	SAMP,0.05>10mL
28	N030044-006AMS,MS	28	1000	Unknown		04/30/2018 13:33	Finished	MS (5ppb), IWST-180129B,0.0
29	N030044-007A,SAMP	29	1000	Unknown		04/30/2018 13:42	Finished	SAMP,0.05>10mL
30	N030044-007AMS,MS	30	1000	Unknown		04/30/2018 13:52	Finished	MS (5ppb), IWST-180129B,0.0
31	N030044-008A,SAMP	31	1000	Unknown		04/30/2018 14:01	Finished	SAMP,0.01>10mL
32	N030044-008AMS,MS	32	1000	Unknown		04/30/2018 14:10	Finished	MS (5ppb), IWST-180129B,0.0
33	N030044-009A,SAMP	33	1000	Unknown		04/30/2018 14:20	Finished	SAMP,0.2>10mL
34	N030044-009AMS,MS	34	1000	Unknown		04/30/2018 14:29	Finished	MS (5ppb), IWST-180129B,0.2
35	CCV-2,CCV,1,	35	1000	Unknown		04/30/2018 14:39	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	36	1000	Unknown		04/30/2018 14:48	Finished	CCB R180418A
37	N030044-010A,SAMP	37	1000	Unknown		04/30/2018 14:58	Finished	SAMP,10mL
38	N030044-010AMS,MS	38	1000	Unknown		04/30/2018 15:07	Finished	MS (1ppb), IWST-180129B,10
39	N030044-011A,SAMP	39	1000	Unknown		04/30/2018 15:17	Finished	SAMP,10mL
40	N030044-011AMS,MS	40	1000	Unknown		04/30/2018 15:26	Finished	MS (1ppb), IWST-180129B,10
41	N030044-001ADUP,D	41	1000	Unknown		04/30/2018 15:36	Finished	DUP,2>10mL
42	N030044-004AMSD,M	42	1000	Unknown		04/30/2018 15:45	Finished	MSD (5ppb), IWST-180129B,0.
43	N030044-002AMS,MS	43	1000	Unknown		04/30/2018 15:55	Finished	MS (5ppb), IWST-180129B,2>1
44	N029859-008A,SAMP	1	1000	Unknown		04/30/2018 16:06	Finished	SAMP,10mL
45	N029859-008AMS,MS	2	1000	Unknown		04/30/2018 16:17	Finished	MS (1ppb), IWST-180129B,10
46	N029859-009A,SAMP	3	1000	Unknown		04/30/2018 16:26	Finished	SAMP,10mL
47	CCV-3,CCV1,1,	4	1000	Unknown		04/30/2018 16:36	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	5	1000	Unknown		04/30/2018 16:45	Finished	CCB R180418A
49	N029859-009AMS,MS	6	1000	Unknown		04/30/2018 16:55	Finished	MS (1ppb), IWST-180129B,10
50	N029859-011A,SAMP	7	1000	Unknown		04/30/2018 17:04	Finished	SAMP,10mL
51	N029859-011AMS,MS	8	1000	Unknown		04/30/2018 17:14	Finished	MS (1ppb), IWST-180129B,10
52	CCV-4,CCV,1,	9	1000	Unknown		04/30/2018 17:23	Finished	CCV @5ppb, IWST-180129A
53	CCB-4,CCB,1,	10	1000	Unknown		04/30/2018 17:33	Finished	CCB R180418A
54	SHUTDOWN	11	1000	Unknown		04/30/2018 17:42	Finished	
55	Eluent: R180430A	12	1000	Unknown		n.a.	Finished	Eluent
56	PCR: R180430B	13	1000	Unknown		n.a.	Finished	Post-Column Reagent

jba 5/6/2018

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Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/08/18 9:33 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/08/18 9:44 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/08/18 9:53 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/08/18 10:03 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/08/18 10:12 AM	Reported
15	MB-R123962	MBLK	1	Hexavalent Chromium	05/08/18 10:22 AM	Reported
16	LCS-R123962	LCS	1	Hexavalent Chromium	05/08/18 10:31 AM	Reported
17	N030123-015A	SAMP	1	Hexavalent Chromium	05/08/18 10:41 AM	Not Reported
18	N030123-015AMS	MS	1	Hexavalent Chromium	05/08/18 10:50 AM	Not Reported
19	N030123-016A	SAMP	1	Hexavalent Chromium	05/08/18 11:00 AM	Not Reported
20	N030123-016AMS	MS	1	Hexavalent Chromium	05/08/18 11:09 AM	Not Reported
21	N030123-017A	SAMP	1	Hexavalent Chromium	05/08/18 11:19 AM	Not Reported
22	N030123-017AMS	MS	1	Hexavalent Chromium	05/08/18 11:28 AM	Not Reported
23	N030123-018A	SAMP	1	Hexavalent Chromium	05/08/18 11:37 AM	Reported
24	N030123-018AMS	MS	1	Hexavalent Chromium	05/08/18 11:47 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/08/18 11:56 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/08/18 12:06 PM	Reported
27	N030123-019A	SAMP	1	Hexavalent Chromium	05/08/18 12:15 PM	Not Reported
28	N030123-019AMS	MS	1	Hexavalent Chromium	05/08/18 12:25 PM	Not Reported
29	N030123-023A	SAMP	1	Hexavalent Chromium	N.A.	Not Reported
30	BLANK	BLANK	1	Hexavalent Chromium	05/08/18 1:11 PM	Not Reported
31	N030123-023AMS	MS	1	Hexavalent Chromium	05/08/18 1:22 PM	Not Reported
32	N030123-015A	SAMP	5	Hexavalent Chromium	05/08/18 1:32 PM	Reported
33	N030123-015AMS	MS	5	Hexavalent Chromium	05/08/18 1:41 PM	Reported
34	N030123-016A	SAMP	5	Hexavalent Chromium	05/08/18 1:51 PM	Reported
35	N030123-016AMS	MS	5	Hexavalent Chromium	05/08/18 2:00 PM	Reported
36	N030123-023A	SAMP	1	Hexavalent Chromium	05/08/18 2:10 PM	Not Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/08/18 2:19 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/08/18 2:28 PM	Reported
39	N030185-002A	SAMP	20	Hexavalent Chromium	05/08/18 2:38 PM	Reported
40	N030185-004A	SAMP	100	Hexavalent Chromium	05/08/18 2:47 PM	Reported
41	N030148-001A	SAMP	1	Hexavalent Chromium	05/08/18 2:56 PM	Reported
42	N030185-004AMS	MS	100	Hexavalent Chromium	05/08/18 3:05 PM	Reported

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Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030185-004AMSD	MSD	100	Hexavalent Chromium	05/08/18 3:15 PM	Reported
44	N030185-002AMS	MS	20	Hexavalent Chromium	05/08/18 3:24 PM	Reported
45	N030148-001ADUP	DUP	1	Hexavalent Chromium	05/08/18 3:34 PM	Reported
46	N030150-001A	SAMP	5	Hexavalent Chromium	05/08/18 3:43 PM	Reported
47	N030185-003A	SAMP	20	Hexavalent Chromium	05/08/18 3:53 PM	Reported
48	N030185-003AMS	MS	20	Hexavalent Chromium	05/08/18 4:02 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/08/18 4:12 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	05/08/18 4:21 PM	Reported
51	N030123-017A	SAMP	5	Hexavalent Chromium	05/08/18 4:30 PM	Reported
52	N030123-017AMS	MS	5	Hexavalent Chromium	05/08/18 4:40 PM	Reported
53	N030123-019A	SAMP	5	Hexavalent Chromium	05/08/18 4:51 PM	Reported
54	N030123-019AMS	MS	5	Hexavalent Chromium	05/08/18 5:03 PM	Reported
55	N030123-023A	SAMP	5	Hexavalent Chromium	05/08/18 5:12 PM	Not Reported
56	N030123-023AMS	MS	5	Hexavalent Chromium	05/08/18 5:21 PM	Not Reported
57	N030123-020A	SAMP	1	Hexavalent Chromium	05/08/18 5:31 PM	Reported
58	N030123-020AMS	MS	1	Hexavalent Chromium	05/08/18 5:40 PM	Reported
59	N030123-021A	SAMP	1	Hexavalent Chromium	05/08/18 5:50 PM	Reported
60	N030123-021AMS	MS	1	Hexavalent Chromium	05/08/18 5:59 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	05/08/18 6:09 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	05/08/18 6:18 PM	Reported
63	N030123-022A	SAMP	1	Hexavalent Chromium	05/08/18 6:28 PM	Not Reported
64	N030123-022AMS	MS	1	Hexavalent Chromium	05/08/18 6:37 PM	Not Reported
65	N030185-001A	SAMP	5	Hexavalent Chromium	05/08/18 6:47 PM	Reported
66	N030185-001AMS	MS	5	Hexavalent Chromium	05/08/18 6:56 PM	Reported
67	N030185-005A	SAMP	1	Hexavalent Chromium	05/08/18 7:06 PM	Reported
68	N030185-005AMS	MS	1	Hexavalent Chromium	05/08/18 7:15 PM	Reported
69	N030185-006A	SAMP	1	Hexavalent Chromium	05/08/18 7:24 PM	Reported
70	N030185-006AMS	MS	1	Hexavalent Chromium	05/08/18 7:34 PM	Reported
71	N030185-007A	SAMP	1	Hexavalent Chromium	05/08/18 7:43 PM	Reported
72	N030185-007AMS	MS	1	Hexavalent Chromium	05/08/18 7:53 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	05/08/18 8:02 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	05/08/18 8:12 PM	Reported
75	N030185-001A	SAMP	1	Hexavalent Chromium	05/08/18 8:21 PM	Not Reported
76	N030185-001AMS	MS	1	Hexavalent Chromium	05/08/18 8:31 PM	Not Reported
77	LCS-R123963	LCS	1	Hexavalent Chromium	05/08/18 8:40 PM	Reported
78	MB-R123963	MBLK	1	Hexavalent Chromium	05/08/18 8:50 PM	Reported
79	N030228-003A	SAMP	50	Hexavalent Chromium	05/08/18 8:59 PM	Reported
80	N030228-003AMS	MS	50	Hexavalent Chromium	05/08/18 9:08 PM	Reported
81	N030228-003AMSD	MSD	50	Hexavalent Chromium	05/08/18 9:18 PM	Reported
82	N030228-005A	SAMP	100	Hexavalent Chromium	05/08/18 9:27 PM	Reported
83	N030228-005AMS	MS	100	Hexavalent Chromium	05/08/18 9:37 PM	Reported
84	N030228-011A	SAMP	500	Hexavalent Chromium	05/08/18 9:46 PM	Reported

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Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	05/08/18 9:56 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	05/08/18 10:05 PM	Reported
87	N030228-011ADUP	DUP	500	Hexavalent Chromium	05/08/18 10:15 PM	Reported
88	N030228-001A	SAMP	1	Hexavalent Chromium	05/08/18 10:24 PM	Reported
89	N030228-002A	SAMP	2	Hexavalent Chromium	05/08/18 10:34 PM	Reported
90	N030228-004A	SAMP	20	Hexavalent Chromium	05/08/18 10:43 PM	Reported
91	N030228-006A	SAMP	10	Hexavalent Chromium	05/08/18 10:53 PM	Reported
92	N030228-007A	SAMP	100	Hexavalent Chromium	05/08/18 11:02 PM	Reported
93	N030228-008A	SAMP	10	Hexavalent Chromium	05/08/18 11:11 PM	Reported
94	N030228-009A	SAMP	1	Hexavalent Chromium	05/08/18 11:21 PM	Reported
95	N030228-010A	SAMP	10	Hexavalent Chromium	05/08/18 11:30 PM	Reported
96	CCV-8	CCV1	1	Hexavalent Chromium	05/08/18 11:40 PM	Reported
97	CCB-8	CCB	1	Hexavalent Chromium	05/08/18 11:49 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180508A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/May/18 00:20:08**
No. of Injections:	**100**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/08/2018 09:33	Finished	BLANK
11	BLANK	2	1000	Unknown		05/08/2018 09:44	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		05/08/2018 09:53	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/08/2018 10:03	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		05/08/2018 10:12	Finished	CCB R180409B
15	MB-H2O,MBLK,1,	6	1000	Unknown		05/08/2018 10:22	Finished	MB R180409B
16	LCS-H2O,LCS,1,	7	1000	Unknown		05/08/2018 10:31	Finished	LCS, IWST-180129B
17	N030123-015A,SAMF	8	1000	Unknown		05/08/2018 10:41	Finished	SAMP,10mL
18	N030123-015AMS,MS	9	1000	Unknown		05/08/2018 10:50	Finished	MS (1ppb), IWST-180129B,10
19	N030123-016A,SAMF	10	1000	Unknown		05/08/2018 11:00	Finished	SAMP,10mL
20	N030123-016AMS,MS	11	1000	Unknown		05/08/2018 11:09	Finished	MS (1ppb), IWST-180129B,10
21	N030123-017A,SAMF	12	1000	Unknown		05/08/2018 11:19	Finished	SAMP,10mL
22	N030123-017AMS,MS	13	1000	Unknown		05/08/2018 11:28	Finished	MS (1ppb), IWST-180129B,10
23	N030123-018A,SAMF	14	1000	Unknown		05/08/2018 11:37	Finished	SAMP,10mL
24	N030123-018AMS,MS	15	1000	Unknown		05/08/2018 11:47	Finished	MS (1ppb), IWST-180129B,10
25	CCV-2,CCV1,1,	16	1000	Unknown		05/08/2018 11:56	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	17	1000	Unknown		05/08/2018 12:06	Finished	CCB R180409B
27	N030123-019A,SAMF	18	1000	Unknown		05/08/2018 12:15	Finished	SAMP,10mL
28	N030123-019AMS,MS	19	1000	Unknown		05/08/2018 12:25	Finished	MS (1ppb), IWST-180129B,10
29	N030123-023A,SAMF	20	1000	Unknown		n.a.	Finished	SAMP,10mL
30	BLANK	21	1000	Unknown		05/08/2018 13:11	Finished	BLANK
31	N030123-023AMS,MS	22	1000	Unknown		05/08/2018 13:22	Finished	MS (1ppb), IWST-180129B,10
32	N030123-015A,SAMF	23	1000	Unknown		05/08/2018 13:32	Finished	SAMP,2>10mL
33	N030123-015AMS,MS	24	1000	Unknown		05/08/2018 13:41	Finished	MS (1ppb), IWST-180129B,2>1
34	N030123-016A,SAMF	25	1000	Unknown		05/08/2018 13:51	Finished	SAMP,2>10mL
35	N030123-016AMS,MS	26	1000	Unknown		05/08/2018 14:00	Finished	MS (1ppb), IWST-180129B,2>1
36	N030123-023A,SAMF	27	1000	Unknown		05/08/2018 14:10	Finished	SAMP,10mL
37	CCV-3,CCV,1,	28	1000	Unknown		05/08/2018 14:19	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	29	1000	Unknown		05/08/2018 14:28	Finished	CCB R180418A
39	N030185-002A,SAMF	30	1000	Unknown		05/08/2018 14:38	Finished	SAMP,0.5>10mL
40	N030185-004A,SAMF	31	1000	Unknown		05/08/2018 14:47	Finished	SAMP,0.1>10mL
41	N030148-001A,SAMF	32	1000	Unknown		05/08/2018 14:56	Finished	SAMP,10mL
42	N030185-004AMS,MS	33	1000	Unknown		05/08/2018 15:05	Finished	MS (5ppb), IWST-180129B,0.1
43	N030185-004AMSD,M	34	1000	Unknown		05/08/2018 15:15	Finished	MSD (5ppb), IWST-180129B,0.
44	N030185-002AMS,MS	35	1000	Unknown		05/08/2018 15:24	Finished	MS (5ppb), IWST-180129B,0.5
45	N030148-001ADUP,D	36	1000	Unknown		05/08/2018 15:34	Finished	DUP,10mL
46	N030150-001A,SAMF	37	1000	Unknown		05/08/2018 15:43	Finished	SAMP,2>10mL
47	N030185-003A,SAMF	38	1000	Unknown		05/08/2018 15:53	Finished	SAMP,0.5>10mL
48	N030185-003AMS,MS	39	1000	Unknown		05/08/2018 16:02	Finished	MS (5ppb), IWST-180129B,0.1
49	CCV-4,CCV1,1,	40	1000	Unknown		05/08/2018 16:12	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	41	1000	Unknown		05/08/2018 16:21	Finished	CCB R180418A
51	N030123-017A,SAMF	42	1000	Unknown		05/08/2018 16:30	Finished	SAMP,2>10mL
52	N030123-017AMS,MS	43	1000	Unknown		05/08/2018 16:40	Finished	MS (1ppb), IWST-180129B,2>1
53	N030123-019A,SAMF	1	1000	Unknown		05/08/2018 16:51	Finished	SAMP,2>10mL
54	N030123-019AMS,MS	2	1000	Unknown		05/08/2018 17:03	Finished	MS (1ppb), IWST-180129B,2>1
55	N030123-023A,SAMF	3	1000	Unknown		05/08/2018 17:12	Finished	SAMP,2>10mL
56	N030123-023AMS,MS	4	1000	Unknown		05/08/2018 17:21	Finished	MS (1ppb), IWST-180129B,2>1
57	N030123-020A,SAMF	5	1000	Unknown		05/08/2018 17:31	Finished	SAMP,10mL
58	N030123-020AMS,MS	6	1000	Unknown		05/08/2018 17:40	Finished	MS (1ppb), IWST-180129B,10
59	N030123-021A,SAMF	7	1000	Unknown		05/08/2018 17:50	Finished	SAMP,10mL
60	N030123-021AMS,MS	8	1000	Unknown		05/08/2018 17:59	Finished	MS (1ppb), IWST-180129B,10

61	CCV-5,CCV,1,	9	1000	Unknown		05/08/2018 18:09	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	10	1000	Unknown		05/08/2018 18:18	Finished	CCB R180409B
63	N030123-022A,SAMF	11	1000	Unknown		05/08/2018 18:28	Finished	SAMP,10mL
64	N030123-022AMS,MS	12	1000	Unknown		05/08/2018 18:37	Finished	MS (1ppb), IWST-180129B,10
65	N030185-001A,SAMF	13	1000	Unknown		05/08/2018 18:47	Finished	SAMP,2>10mL
66	N030185-001AMS,MS	14	1000	Unknown		05/08/2018 18:56	Finished	MS (1ppb), IWST-180129B,2>1
67	N030185-005A,SAMF	15	1000	Unknown		05/08/2018 19:06	Finished	SAMP,10mL
68	N030185-005AMS,MS	16	1000	Unknown		05/08/2018 19:15	Finished	MS (1ppb), IWST-180129B,10
69	N030185-006A,SAMF	17	1000	Unknown		05/08/2018 19:24	Finished	SAMP,10mL
70	N030185-006AMS,MS	18	1000	Unknown		05/08/2018 19:34	Finished	MS (1ppb), IWST-180129B,10
71	N030185-007A,SAMF	19	1000	Unknown		05/08/2018 19:43	Finished	SAMP,10mL
72	N030185-007AMS,MS	20	1000	Unknown		05/08/2018 19:53	Finished	MS (1ppb), IWST-180129B,10
73	CCV-6,CCV1,1,	21	1000	Unknown		05/08/2018 20:02	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	22	1000	Unknown		05/08/2018 20:12	Finished	CCB R180409B
75	N030185-001A,SAMF	23	1000	Unknown		05/08/2018 20:21	Finished	SAMP,10mL
76	N030185-001AMS,MS	24	1000	Unknown		05/08/2018 20:31	Finished	MS (1ppb), IWST-180129B,10
77	LCS-2,LCS,1,	25	1000	Unknown		05/08/2018 20:40	Finished	LCS, IWST-180129B
78	MB-2,MBLK,1,	26	1000	Unknown		05/08/2018 20:50	Finished	MB R180409B
79	N030228-003A,SAMF	27	1000	Unknown		05/08/2018 20:59	Finished	SAMP,0.2>10mL
80	N030228-003AMS,MS	28	1000	Unknown		05/08/2018 21:08	Finished	MS (5ppb), IWST-180129B,0.2
81	N030228-003AMSD,M	29	1000	Unknown		05/08/2018 21:18	Finished	MSD (5ppb), IWST-180129B,0.
82	N030228-005A,SAMF	30	1000	Unknown		05/08/2018 21:27	Finished	SAMP,0.1>10mL
83	N030228-005AMS,MS	31	1000	Unknown		05/08/2018 21:37	Finished	MS (5ppb), IWST-180129B,0.1
84	N030228-011A,SAMF	32	1000	Unknown		05/08/2018 21:46	Finished	SAMP,0.02>10mL
85	CCV-7,CCV,1,	33	1000	Unknown		05/08/2018 21:56	Finished	CCV @5ppb, IWST-180129A
86	CCB-7,CCB,1,	34	1000	Unknown		05/08/2018 22:05	Finished	CCB R180409B
87	N030228-011ADUP,D	35	1000	Unknown		05/08/2018 22:15	Finished	DUP,0.02>10mL
88	N030228-001A,SAMF	36	1000	Unknown		05/08/2018 22:24	Finished	SAMP,10mL
89	N030228-002A,SAMF	37	1000	Unknown		05/08/2018 22:34	Finished	SAMP,5>10mL
90	N030228-004A,SAMF	38	1000	Unknown		05/08/2018 22:43	Finished	SAMP,0.5>10mL
91	N030228-006A,SAMF	39	1000	Unknown		05/08/2018 22:53	Finished	SAMP,1>10mL
92	N030228-007A,SAMF	40	1000	Unknown		05/08/2018 23:02	Finished	SAMP,0.1>10mL
93	N030228-008A,SAMF	41	1000	Unknown		05/08/2018 23:11	Finished	SAMP,1>10mL
94	N030228-009A,SAMF	42	1000	Unknown		05/08/2018 23:21	Finished	SAMP,10mL
N020228-010A 95	~~N030228-0010~~A,SAM	43	1000	Unknown		05/08/2018 23:30	Finished	SAMP,1>10mL
96	CCV-8,CCV1,1,	44	1000	Unknown		05/08/2018 23:40	Finished	CCV @10ppb, IWST-180129A
97	CCB-8,CCB,1,	45	1000	Unknown		05/08/2018 23:49	Finished	CCB R180409B
98	SHUTDOWN	46	1000	Unknown		05/08/2018 23:59	Finished	
99	Eluent: R180508A	47	1000	Unknown		n.a.	Finished	Eluent
100	PCR: R180508B	48	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 5/8/18
Time Prepared: 1016H
Prepared By: MSA

Slope: 96.62
pH 4: 4.00 @25.0°C
7: 7.02 @25.0°C
10: 9.97 @25.0°C
LCS:

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M805094
NH4OH + NH4SO4 buffer: M8V409B

6N NaOH: M712294

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030148-001A	8.92	9.45	~250 ml	~250 ml	+6 drps NaOH	M8V409B
2)	N030149-1A	9.11	9.62			+5 drps NaOH	
3)	2A	9.43	-				
4)	4A	9.96	-				
5)	5A	9.07	9.61			+6 " "	
6)	6A	9.01	9.56			+6 " "	
7)	9A	9.15	9.49			+4 " "	
8)	10A	9.09	9.54			+6 " "	
9)	11A	9.21	9.53			+4 " "	
10)	12A	9.05	9.56			+6 " "	
11)	13A	9.70	-				
12)	14A	9.56	-			~~+6 " "~~ MSA	
13)	15A	8.96	9.50			+6 " "	
14)	16A	9.15	9.43			+4 " "	
15)	17A	9.09	9.52			+6 " "	
	18A	9.56	-				

Sample Preparation

Date Prepared: 5/8/18
Time Prepared: 1016H
Prepared By: MSA

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M805U9A / M805U8A
NH4OH + NH4SO4 buffer: M8V409B / M8V418A

6N NaOH: M712294

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030149-19A	9.46	-	~250 ml	~250 ml		M8V409B
2)	20A	9.48	-				
3)	21A	9.53	-				
4)	22A	9.01	9.58			+6 drps NaOH	
5)	N030150-1A	9.14	9.48			+4 " "	
6)	N030185-1A	9.39	-				M8V418A
7)	2A	9.41	-				
8)	3A	9.37	-				
9)	4A	9.70	-				
10)	5A	9.67	-				
11)	6A	9.60	-				
12)	7A	9.56	-				
13)	N030186-1A	9.36	-				M8V409B
14)	2A	9.19	9.52			+4 " "	
15)	N030189-1A	9.70	-				
	2A	9.41	-				

Logbook No. 14

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/30/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0607	0.2618	1.2924	2.5813	3.8731	5.1050	0.9999

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

ASSET Laboratories

Date: *10-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ICV** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3022152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.194	0.20	5.000	0	104	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3022153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCV** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.943	0.20	5.000	0	98.9	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.217	0.20	0.2000	0	108	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.090	0.20	10.00	0	101	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCV** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.039	0.20	5.000	0	101	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022180**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.136	0.20	10.00	0	101	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCV** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.005	0.20	5.000	0	100	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ZZZZZZ** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.113	0.20	10.00	0	101	95	105				

Sample ID **CCV-7** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCV** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.041	0.20	5.000	0	101	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **ICB** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3022154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCB** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCB** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCB** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCB** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCB** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCB** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123962**
Client ID: **CCB** Batch ID: **R123962** TestNo: **EPA 218.6** Analysis Date: **5/8/2018** SeqNo: **3022203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/8/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.215		
CCV-2	4.215		
CCV-3	4.223		
CCV-4	4.215		
CCV-5	4.215		
CCV-6	4.215		
CCV-7	4.215		
CCV-8	4.206		
Average	4.215		
Actual RT Window	4.135 -	4.295	
Applied RT Window	4.015 -	4.415	
MB-R123962	N.A.		N.A.
LCS-R123962	4.215		PASS
N030123-015A	N.A.		N.A.
N030123-015AMS	3.973		FAIL
N030123-016A	N.A.		N.A.
N030123-016AMS	N.A.		N.A.
N030123-017A	N.A.		N.A.
N030123-017AMS	N.A.		N.A.
N030123-018A	4.206		PASS
N030123-018AMS	4.206		PASS
N030123-019A	3.940		FAIL
N030123-019AMS	3.965		FAIL
N030123-023A	N.A.		N.A.
N030123-023AMS	N.A.		N.A.
N030123-015A	4.173		PASS
N030123-015AMS	4.173		PASS
N030123-016A	N.A.		N.A.
N030123-016AMS	4.156		PASS
N030123-023A	N.A.		N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/8/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.215		
CCV-2	4.215		
CCV-3	4.223		
CCV-4	4.215		
CCV-5	4.215		
CCV-6	4.215		
CCV-7	4.215		
CCV-8	4.206		
Average	4.215		
Actual RT Window	4.135 -	4.295	
Applied RT Window	4.015 -	4.415	
N030185-002A	4.215		PASS
N030185-004A	4.215		PASS
N030148-001A	4.190		PASS
N030185-004AMS	4.215		PASS
N030185-004AMSD	4.215		PASS
N030185-002AMS	4.215		PASS
N030148-001ADUP	4.190		PASS
N030150-001A	4.215		PASS
N030185-003A	4.215		PASS
N030185-003AMS	4.215		PASS
N030123-017A	N.A.		N.A.
N030123-017AMS	4.140		PASS
N030123-019A	4.173		PASS
N030123-019AMS	4.173		PASS
N030123-023A	N.A.		N.A.
N030123-023AMS	4.165		PASS
N030123-020A	4.206		PASS
N030123-020AMS	4.215		PASS
N030123-021A	4.206		PASS
N030123-021AMS	4.215		PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/8/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.215		
CCV-2	4.215		
CCV-3	4.223		
CCV-4	4.215		
CCV-5	4.215		
CCV-6	4.215		
CCV-7	4.215		
CCV-8	4.206		
Average	4.215		
Actual RT Window	4.135 -	4.295	
Applied RT Window	4.015 -	4.415	
N030123-022A	N.A.		N.A.
N030123-022AMS	4.215		PASS
N030185-001A	N.A.		N.A.
N030185-001AMS	4.123		PASS
N030185-005A	4.215		PASS
N030185-005AMS	4.215		PASS
N030185-006A	N.A.		N.A.
N030185-006AMS	4.215		PASS
N030185-007A	4.215		PASS
N030185-007AMS	4.206		PASS
N030185-001A	N.A.		N.A.
N030185-001AMS	N.A.		N.A.
LCS-R123963	4.198		PASS
MB-R123963	N.A.		N.A.
N030228-003A	4.206		PASS
N030228-003AMS	4.215		PASS
N030228-003AMSD	4.206		PASS
N030228-005A	4.215		PASS
N030228-005AMS	4.215		PASS
N030228-011A	4.215		PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/8/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.215		
CCV-2	4.215		
CCV-3	4.223		
CCV-4	4.215		
CCV-5	4.215		
CCV-6	4.215		
CCV-7	4.215		
CCV-8	4.206		
Average	4.215		
Actual RT Window	4.135 -	4.295	
Applied RT Window	4.015 -	4.415	
N030228-011ADUP	4.215		PASS
N030228-001A	N.A.		N.A.
N030228-002A	4.090		PASS
N030228-004A	4.206		PASS
N030228-006A	4.190		PASS
N030228-007A	4.206		PASS
N030228-008A	4.206		PASS
N030228-009A	N.A.		N.A.
N030228-010A	4.190		PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2018 (1st Quarter)

Method Name:	**Hexavalent Chromium by IC**	Matrix:	**WATER**
Method Number:	EPA Method 218.6/7199	Unit:	µg/L
Analysis Date(s):	3/21/2018		
Analyst:	Ria Abes		

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.116

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.201	100

INITIAL CALIBRATION

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	04/30/18 10:42 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/30/18 10:52 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/30/18 11:01 AM	Reported
13	MB-R123727	MBLK	1	Hexavalent Chromium	04/30/18 11:11 AM	Reported
14	LCS-R123727	LCS	1	Hexavalent Chromium	04/30/18 11:20 AM	Reported
15	N030044-001A	SAMP	5	Hexavalent Chromium	04/30/18 11:30 AM	Reported
16	N030044-001AMS	MS	5	Hexavalent Chromium	04/30/18 11:39 AM	Reported
17	N030044-002A	SAMP	5	Hexavalent Chromium	04/30/18 11:49 AM	Reported
18	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 11:58 AM	Not Reported
19	N030044-003A	SAMP	5	Hexavalent Chromium	04/30/18 12:08 PM	Reported
20	N030044-003AMS	MS	5	Hexavalent Chromium	04/30/18 12:17 PM	Reported
21	N030044-004A	SAMP	1000	Hexavalent Chromium	04/30/18 12:26 PM	Reported
22	N030044-004AMS	MS	1000	Hexavalent Chromium	04/30/18 12:36 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/30/18 12:45 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/30/18 12:55 PM	Reported
25	N030044-005A	SAMP	50	Hexavalent Chromium	04/30/18 1:04 PM	Reported
26	N030044-005AMS	MS	50	Hexavalent Chromium	04/30/18 1:14 PM	Reported
27	N030044-006A	SAMP	200	Hexavalent Chromium	04/30/18 1:23 PM	Reported
28	N030044-006AMS	MS	200	Hexavalent Chromium	04/30/18 1:33 PM	Reported
29	N030044-007A	SAMP	200	Hexavalent Chromium	04/30/18 1:42 PM	Reported
30	N030044-007AMS	MS	200	Hexavalent Chromium	04/30/18 1:52 PM	Reported
31	N030044-008A	SAMP	1000	Hexavalent Chromium	04/30/18 2:01 PM	Reported
32	N030044-008AMS	MS	1000	Hexavalent Chromium	04/30/18 2:10 PM	Reported
33	N030044-009A	SAMP	50	Hexavalent Chromium	04/30/18 2:20 PM	Reported
34	N030044-009AMS	MS	50	Hexavalent Chromium	04/30/18 2:29 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/30/18 2:39 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/30/18 2:48 PM	Reported
37	N030044-010A	SAMP	1	Hexavalent Chromium	04/30/18 2:58 PM	Reported
38	N030044-010AMS	MS	1	Hexavalent Chromium	04/30/18 3:07 PM	Reported
39	N030044-011A	SAMP	1	Hexavalent Chromium	04/30/18 3:17 PM	Reported
40	N030044-011AMS	MS	1	Hexavalent Chromium	04/30/18 3:26 PM	Reported
41	N030044-001ADUP	DUP	5	Hexavalent Chromium	04/30/18 3:36 PM	Reported
42	N030044-004AMSD	MSD	1000	Hexavalent Chromium	04/30/18 3:45 PM	Reported

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INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 3:55 PM	Reported
44	N029859-008A	SAMP	1	Hexavalent Chromium	04/30/18 4:06 PM	Not Reported
45	N029859-008AMS	MS	1	Hexavalent Chromium	04/30/18 4:17 PM	Not Reported
46	N029859-009A	SAMP	1	Hexavalent Chromium	04/30/18 4:26 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/30/18 4:36 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/30/18 4:45 PM	Reported
49	N029859-009AMS	MS	1	Hexavalent Chromium	04/30/18 4:55 PM	Not Reported
50	N029859-011A	SAMP	1	Hexavalent Chromium	04/30/18 5:04 PM	Not Reported
51	N029859-011AMS	MS	1	Hexavalent Chromium	04/30/18 5:14 PM	Not Reported
52	CCV-4	CCV	1	Hexavalent Chromium	04/30/18 5:23 PM	Reported
53	CCB-4	CCB	1	Hexavalent Chromium	04/30/18 5:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180430A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**30/Apr/18 18:19:59**
No. of Injections:	**56**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		04/30/2018 10:42	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/30/2018 10:52	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/30/2018 11:01	Finished	ICB R180418A
13	MB-H2O,MBLK,1,	13	1000	Unknown		04/30/2018 11:11	Finished	MB R180418A
14	LCS-H2O,LCS,1,	14	1000	Unknown		04/30/2018 11:20	Finished	LCS, IWST-180129B
15	N030044-001A,SAMF	15	1000	Unknown		04/30/2018 11:30	Finished	SAMP,2>10mL
16	N030044-001AMS,MS	16	1000	Unknown		04/30/2018 11:39	Finished	MS (5ppb), IWST-180129B,2>1
17	N030044-002A,SAMF	17	1000	Unknown		04/30/2018 11:49	Finished	SAMP,2>10mL
18	N030044-002AMS,MS	18	1000	Unknown		04/30/2018 11:58	Finished	MS (5ppb), IWST-180129B,2>1
19	N030044-003A,SAMF	19	1000	Unknown		04/30/2018 12:08	Finished	SAMP,2>10mL
20	N030044-003AMS,MS	20	1000	Unknown		04/30/2018 12:17	Finished	MS (5ppb), IWST-180129B,2>1
21	N030044-004A,SAMF	21	1000	Unknown		04/30/2018 12:26	Finished	SAMP,0.01>10mL
22	N030044-004AMS,MS	22	1000	Unknown		04/30/2018 12:36	Finished	MS (5ppb), IWST-180129B,0.0
23	CCV-1,CCV1,1,	23	1000	Unknown		04/30/2018 12:45	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	24	1000	Unknown		04/30/2018 12:55	Finished	CCB R180418A
25	N030044-005A,SAMF	25	1000	Unknown		04/30/2018 13:04	Finished	SAMP,0.2>10mL
26	N030044-005AMS,MS	26	1000	Unknown		04/30/2018 13:14	Finished	MS (5ppb), IWST-180129B,0.2
27	N030044-006A,SAMF	27	1000	Unknown		04/30/2018 13:23	Finished	SAMP,0.05>10mL
28	N030044-006AMS,MS	28	1000	Unknown		04/30/2018 13:33	Finished	MS (5ppb), IWST-180129B,0.0
29	N030044-007A,SAMF	29	1000	Unknown		04/30/2018 13:42	Finished	SAMP,0.05>10mL
30	N030044-007AMS,MS	30	1000	Unknown		04/30/2018 13:52	Finished	MS (5ppb), IWST-180129B,0.0
31	N030044-008A,SAMF	31	1000	Unknown		04/30/2018 14:01	Finished	SAMP,0.01>10mL
32	N030044-008AMS,MS	32	1000	Unknown		04/30/2018 14:10	Finished	MS (5ppb), IWST-180129B,0.0
33	N030044-009A,SAMF	33	1000	Unknown		04/30/2018 14:20	Finished	SAMP,0.2>10mL
34	N030044-009AMS,MS	34	1000	Unknown		04/30/2018 14:29	Finished	MS (5ppb), IWST-180129B,0.2
35	CCV-2,CCV,1,	35	1000	Unknown		04/30/2018 14:39	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	36	1000	Unknown		04/30/2018 14:48	Finished	CCB R180418A
37	N030044-010A,SAMF	37	1000	Unknown		04/30/2018 14:58	Finished	SAMP,10mL
38	N030044-010AMS,MS	38	1000	Unknown		04/30/2018 15:07	Finished	MS (1ppb), IWST-180129B,10
39	N030044-011A,SAMF	39	1000	Unknown		04/30/2018 15:17	Finished	SAMP,10mL
40	N030044-011AMS,MS	40	1000	Unknown		04/30/2018 15:26	Finished	MS (1ppb), IWST-180129B,10
41	N030044-001ADUP,D	41	1000	Unknown		04/30/2018 15:36	Finished	DUP,2>10mL
42	N030044-004AMSD,M	42	1000	Unknown		04/30/2018 15:45	Finished	MSD (5ppb), IWST-180129B,0.
43	N030044-002AMS,MS	43	1000	Unknown		04/30/2018 15:55	Finished	MS (5ppb), IWST-180129B,2>1
44	N029859-008A,SAMF	1	1000	Unknown		04/30/2018 16:06	Finished	SAMP,10mL
45	N029859-008AMS,MS	2	1000	Unknown		04/30/2018 16:17	Finished	MS (1ppb), IWST-180129B,10
46	N029859-009A,SAMF	3	1000	Unknown		04/30/2018 16:26	Finished	SAMP,10mL
47	CCV-3,CCV1,1,	4	1000	Unknown		04/30/2018 16:36	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	5	1000	Unknown		04/30/2018 16:45	Finished	CCB R180418A
49	N029859-009AMS,MS	6	1000	Unknown		04/30/2018 16:55	Finished	MS (1ppb), IWST-180129B,10
50	N029859-011A,SAMF	7	1000	Unknown		04/30/2018 17:04	Finished	SAMP,10mL
51	N029859-011AMS,MS	8	1000	Unknown		04/30/2018 17:14	Finished	MS (1ppb), IWST-180129B,10
52	CCV-4,CCV,1,	9	1000	Unknown		04/30/2018 17:23	Finished	CCV @5ppb, IWST-180129A
53	CCB-4,CCB,1,	10	1000	Unknown		04/30/2018 17:33	Finished	CCB R180418A
54	SHUTDOWN	11	1000	Unknown		04/30/2018 17:42	Finished	
55	Eluent: R180430A	12	1000	Unknown		n.a.	Finished	Eluent
56	PCR: R180430B	13	1000	Unknown		n.a.	Finished	Post-Column Reagent

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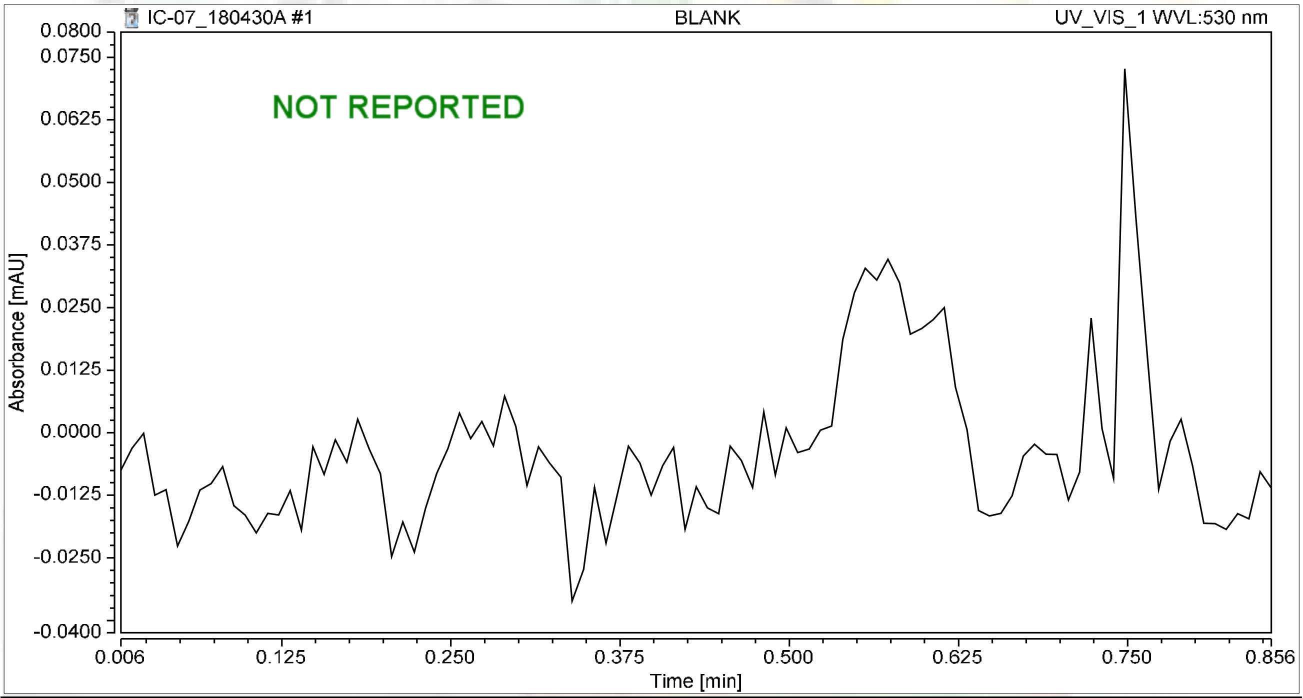
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.85**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

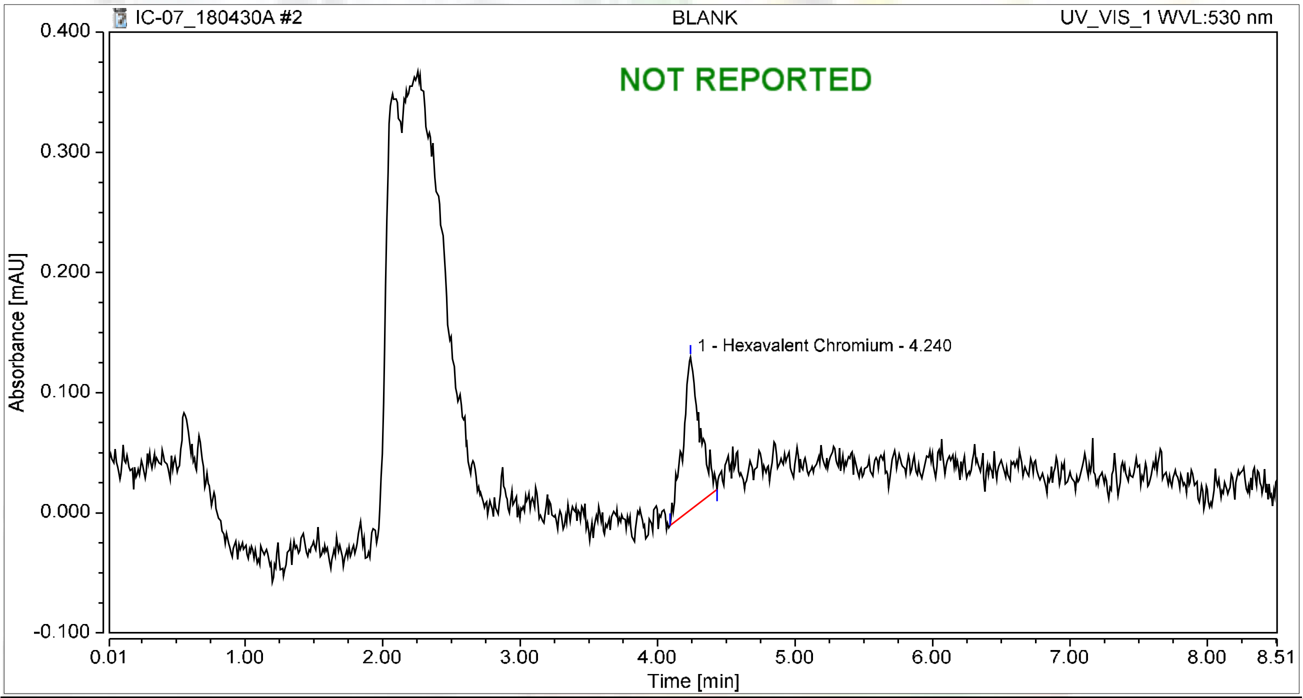
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

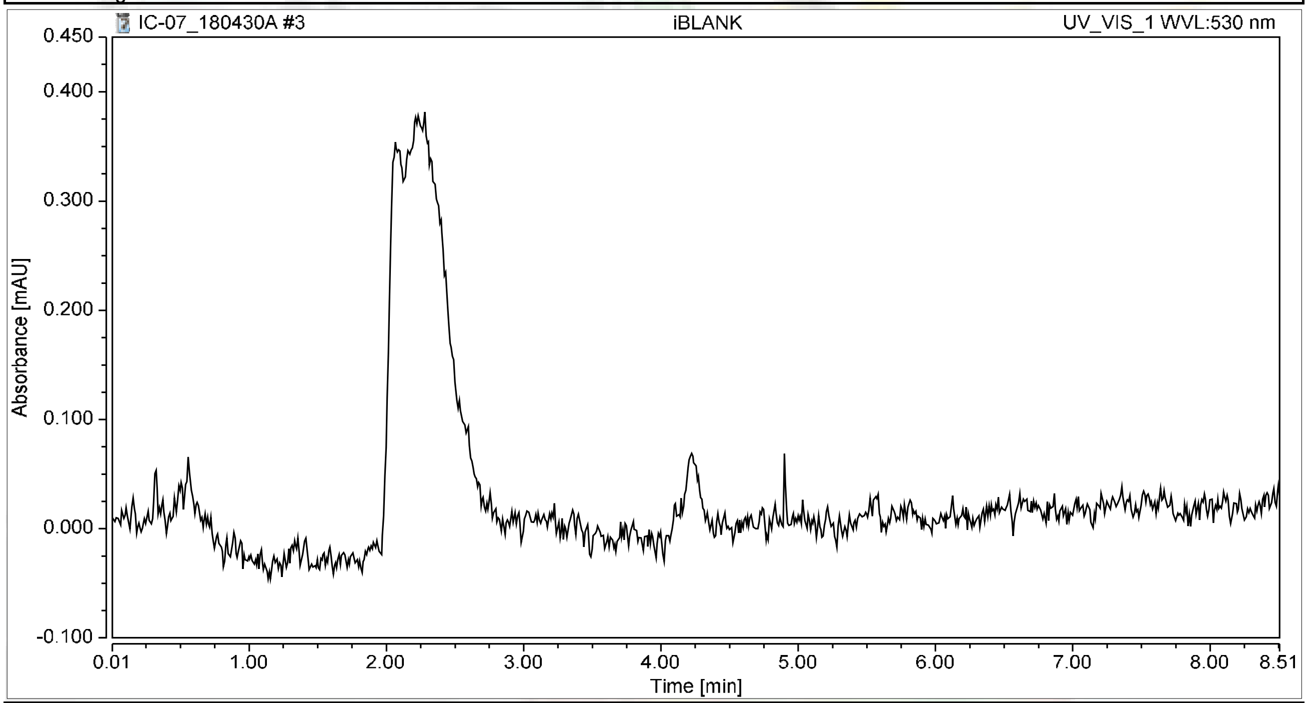
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.018	0.127	100.00	100.00	0.0705
Total:			**0.018**	**0.127**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

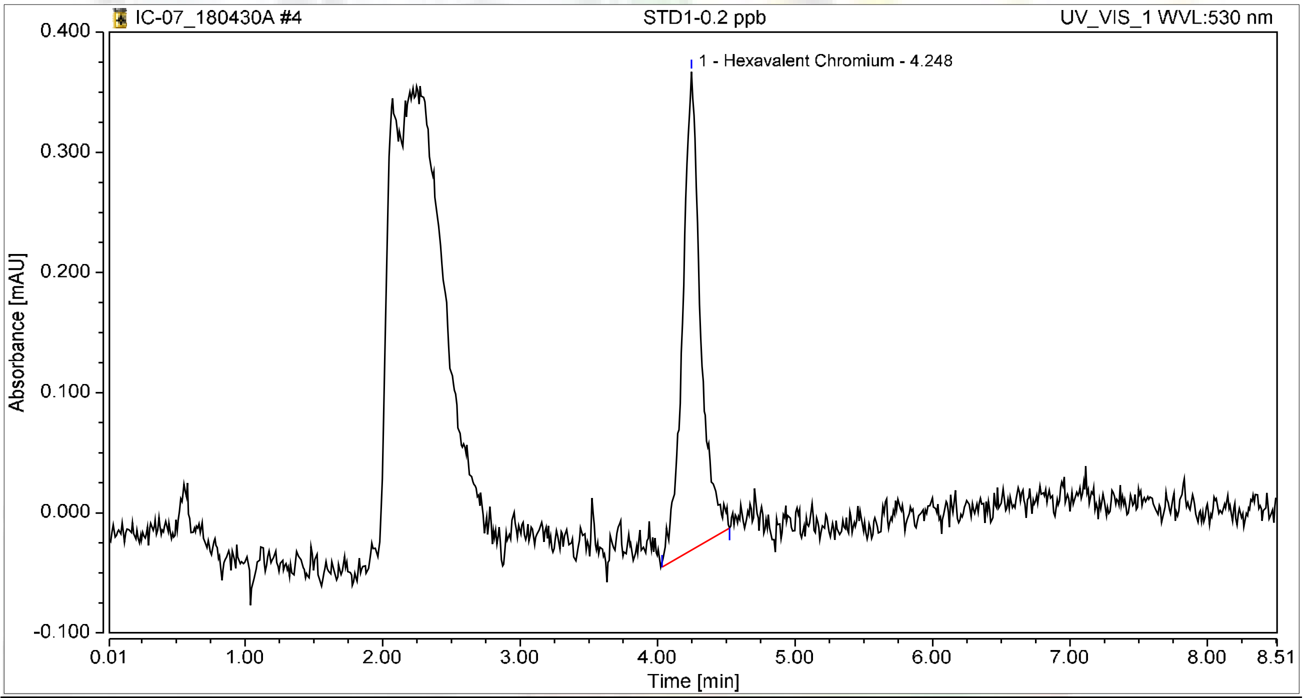
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

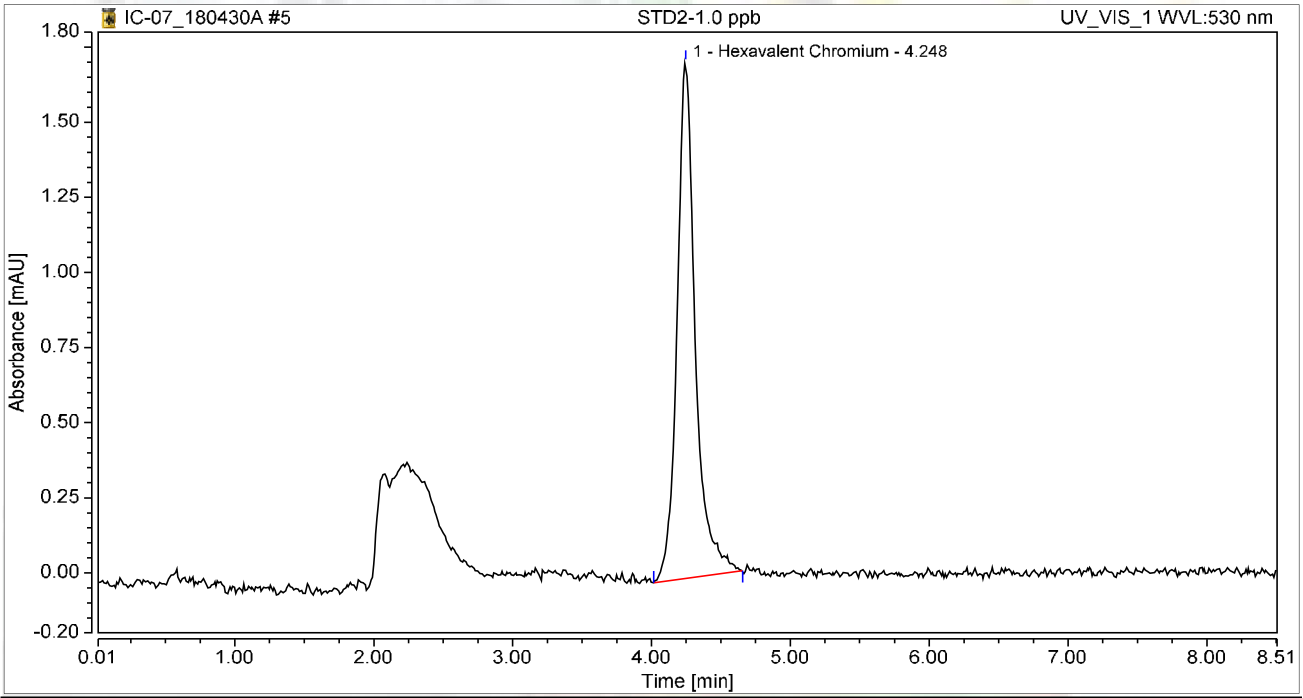
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.061	0.398	100.00	100.00	0.2363
Total:			**0.061**	**0.398**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

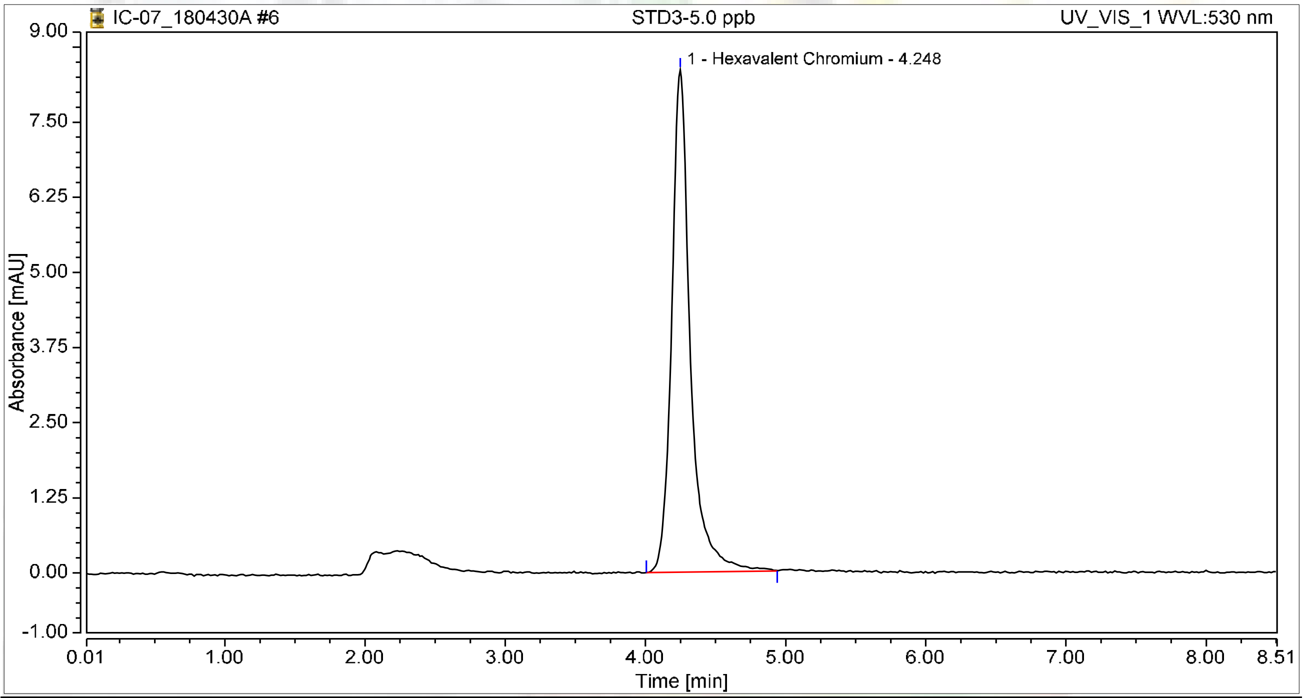
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.262	1.718	100.00	100.00	1.0201
Total:			**0.262**	**1.718**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

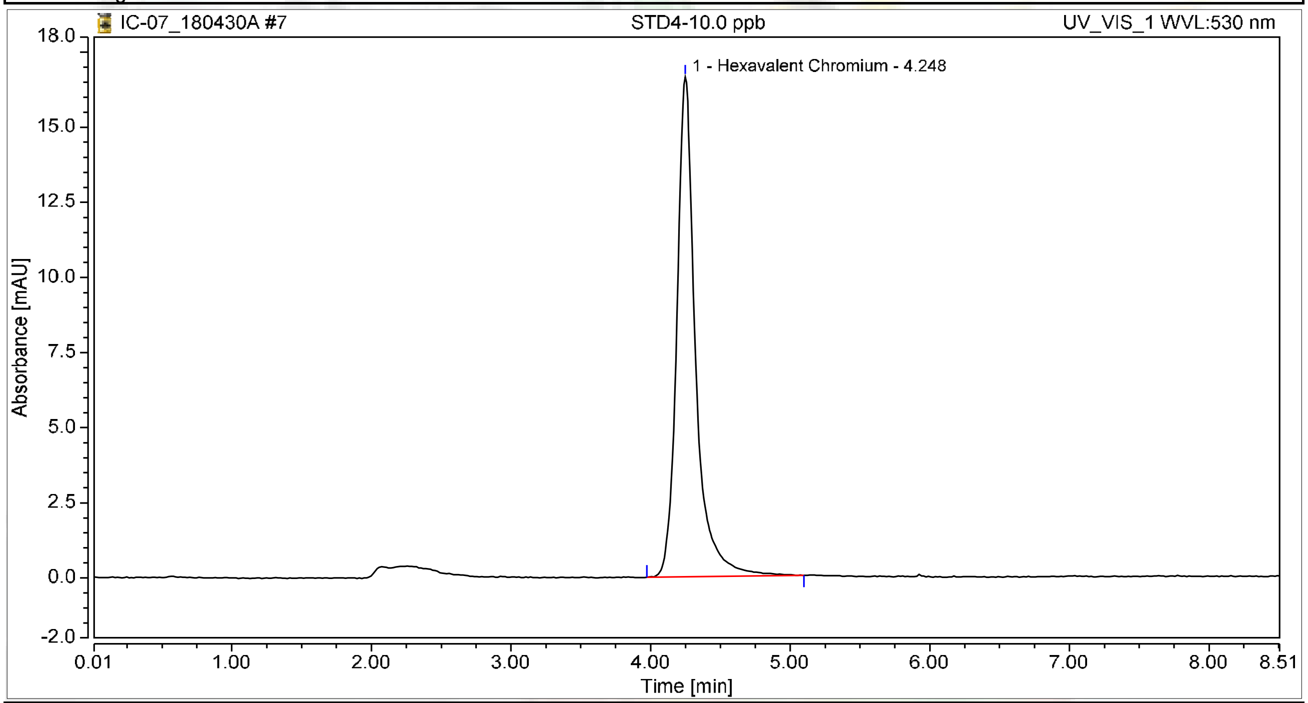
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.292	8.359	100.00	100.00	5.0360
Total:			**1.292**	**8.359**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

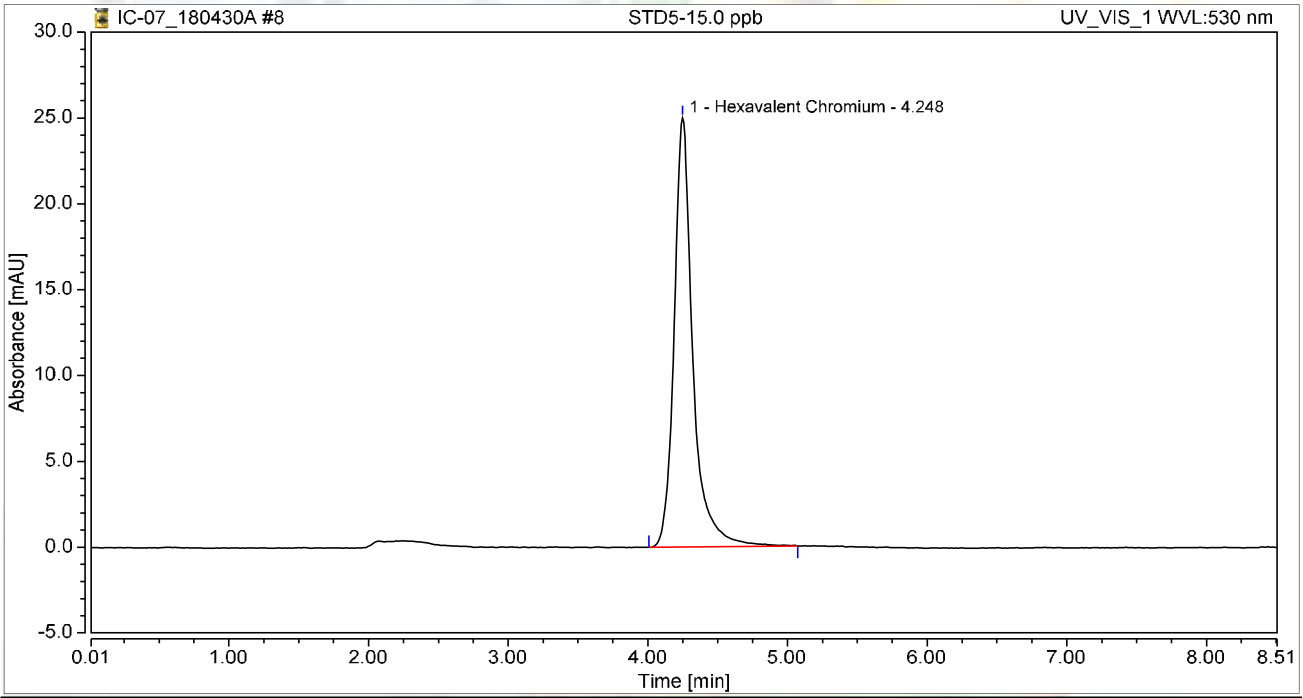
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.581	16.640	100.00	100.00	10.0583
Total:			**2.581**	**16.640**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

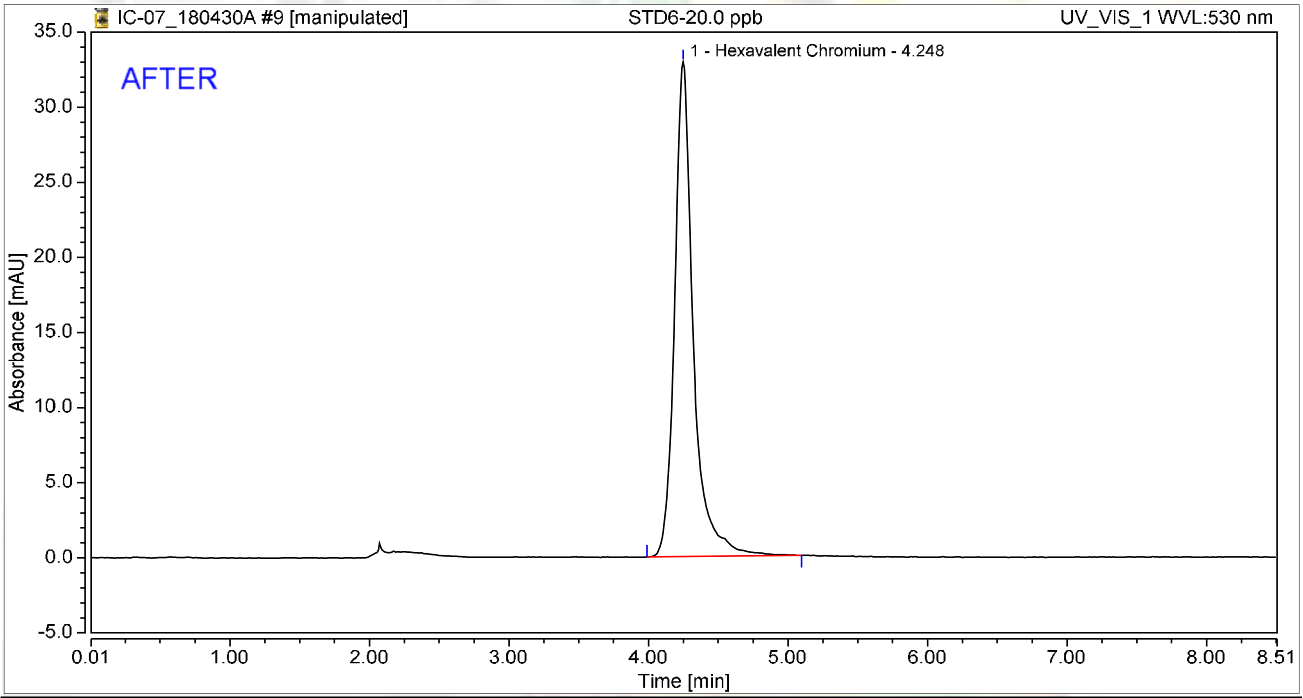
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.873	25.002	100.00	100.00	15.0915
Total:			**3.873**	**25.002**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.105	32.932	100.00	100.00	19.8919
Total:			**5.105**	**32.932**	**100.00**	**100.00**	

rba 5/6/2018

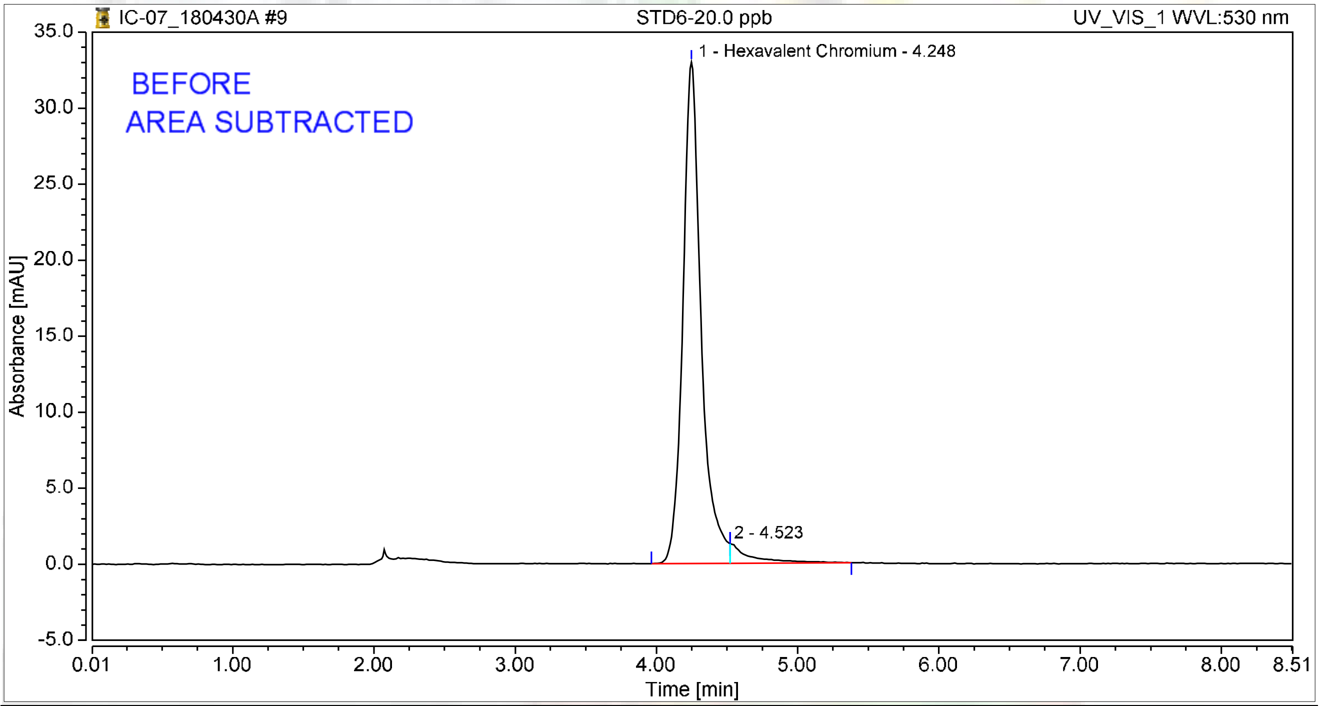
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

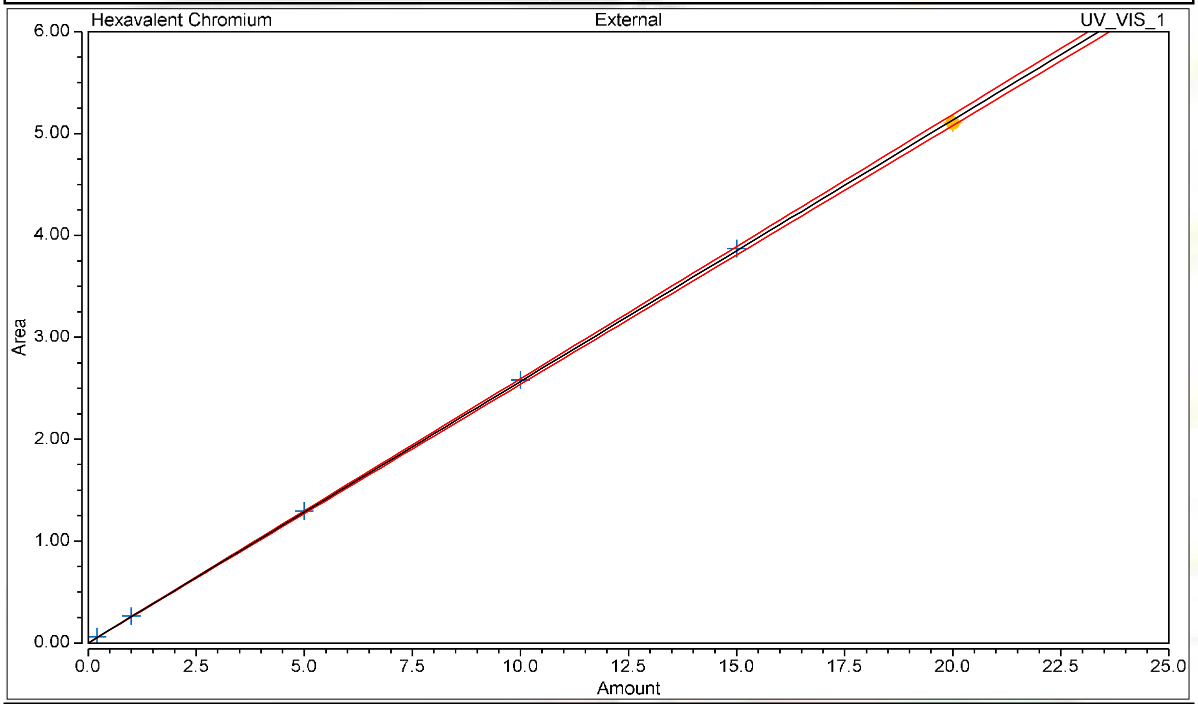
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	4.957	32.968	95.88	96.27	19.6162
2		4.523	0.213	1.278	4.12	3.73	n.a.
Total:			**5.170**	**34.246**	**100.00**	**100.00**	

rba 5/6/2018

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2566
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99992

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

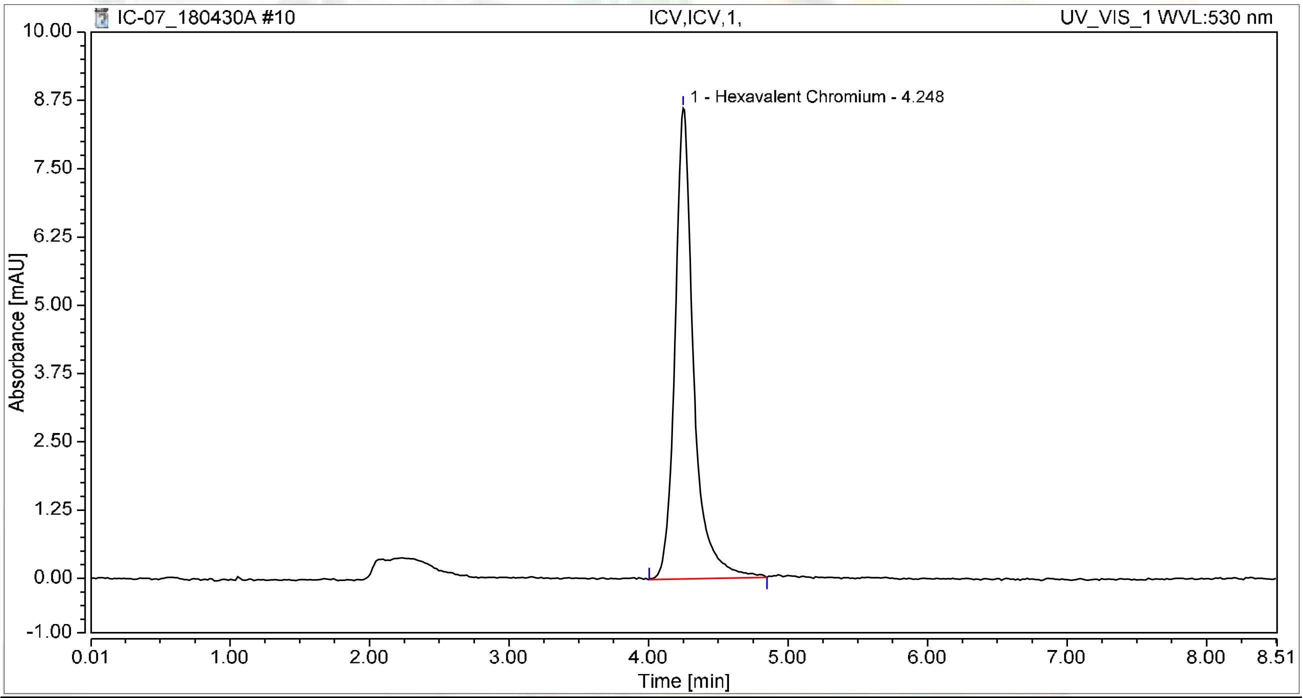
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0607	0.061	0.398
5	STD2-1.0 ppb	02	1.0000	0.2618	0.262	1.718
6	STD3-5.0 ppb	03	5.0000	1.2924	1.292	8.359
7	STD4-10.0 ppb	04	10.0000	2.5813	2.581	16.640
8	STD5-15.0 ppb	05	15.0000	3.8731	3.873	25.002
9	STD6-20.0 ppb	06	20.0000	5.1050	5.105	32.932

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

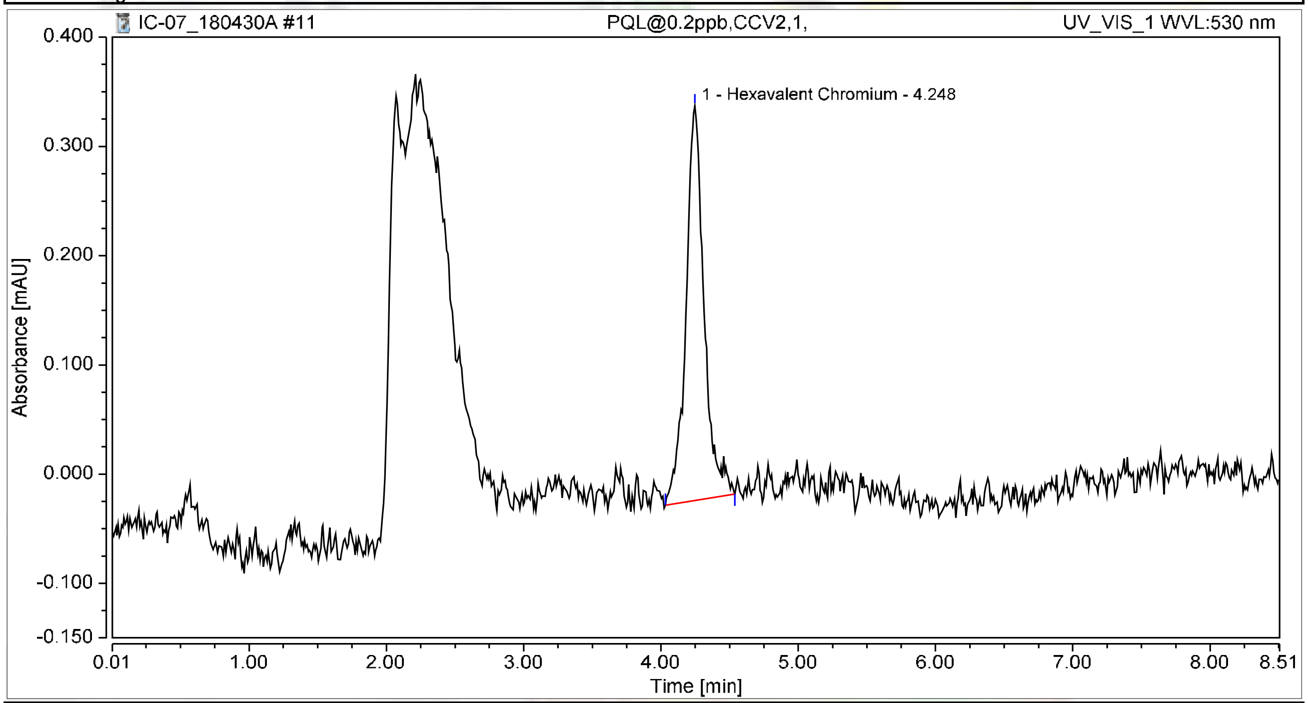
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.333	8.618	100.00	100.00	5.1938
Total:			**1.333**	**8.618**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

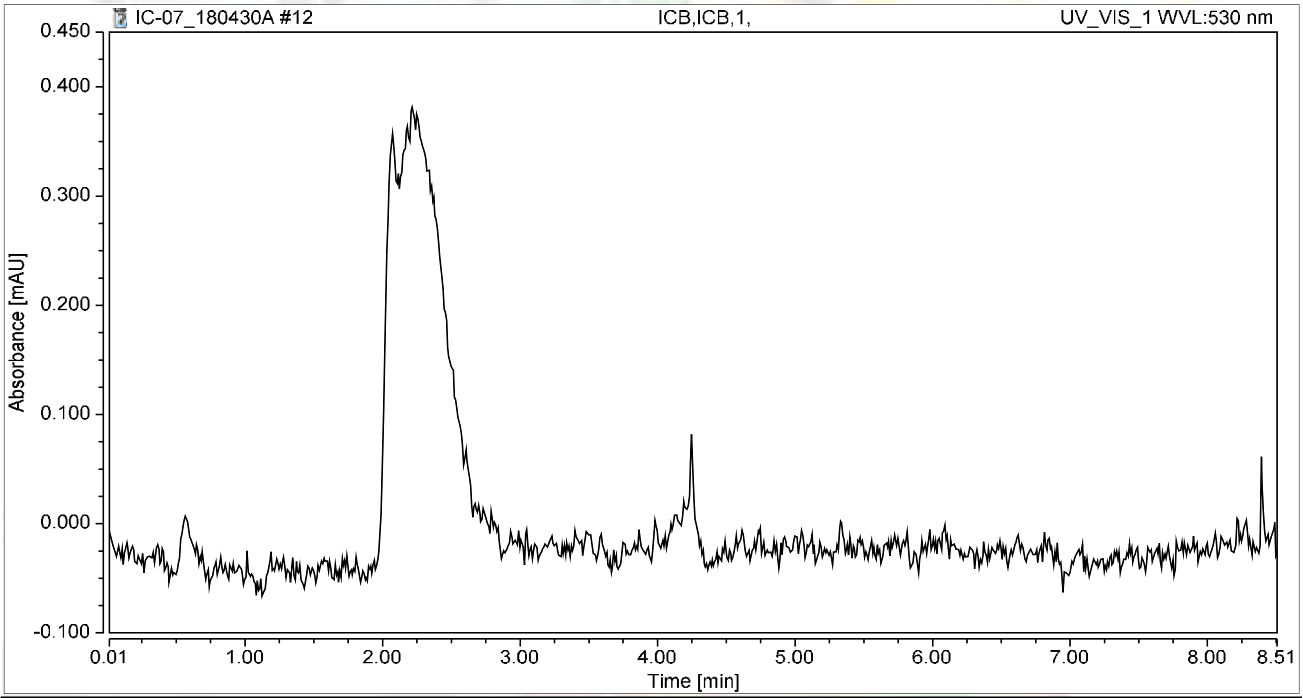
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.055	0.361	100.00	100.00	0.2153
Total:			**0.055**	**0.361**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180508A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/08/18 9:33 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/08/18 9:44 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/08/18 9:53 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/08/18 10:03 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/08/18 10:12 AM	Reported
15	MB-R123962	MBLK	1	Hexavalent Chromium	05/08/18 10:22 AM	Reported
16	LCS-R123962	LCS	1	Hexavalent Chromium	05/08/18 10:31 AM	Reported
17	N030123-015A	SAMP	1	Hexavalent Chromium	05/08/18 10:41 AM	Not Reported
18	N030123-015AMS	MS	1	Hexavalent Chromium	05/08/18 10:50 AM	Not Reported
19	N030123-016A	SAMP	1	Hexavalent Chromium	05/08/18 11:00 AM	Not Reported
20	N030123-016AMS	MS	1	Hexavalent Chromium	05/08/18 11:09 AM	Not Reported
21	N030123-017A	SAMP	1	Hexavalent Chromium	05/08/18 11:19 AM	Not Reported
22	N030123-017AMS	MS	1	Hexavalent Chromium	05/08/18 11:28 AM	Not Reported
23	N030123-018A	SAMP	1	Hexavalent Chromium	05/08/18 11:37 AM	Reported
24	N030123-018AMS	MS	1	Hexavalent Chromium	05/08/18 11:47 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/08/18 11:56 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/08/18 12:06 PM	Reported
27	N030123-019A	SAMP	1	Hexavalent Chromium	05/08/18 12:15 PM	Not Reported
28	N030123-019AMS	MS	1	Hexavalent Chromium	05/08/18 12:25 PM	Not Reported
29	N030123-023A	SAMP	1	Hexavalent Chromium	N.A.	Not Reported
30	BLANK	BLANK	1	Hexavalent Chromium	05/08/18 1:11 PM	Not Reported
31	N030123-023AMS	MS	1	Hexavalent Chromium	05/08/18 1:22 PM	Not Reported
32	N030123-015A	SAMP	5	Hexavalent Chromium	05/08/18 1:32 PM	Reported
33	N030123-015AMS	MS	5	Hexavalent Chromium	05/08/18 1:41 PM	Reported
34	N030123-016A	SAMP	5	Hexavalent Chromium	05/08/18 1:51 PM	Reported
35	N030123-016AMS	MS	5	Hexavalent Chromium	05/08/18 2:00 PM	Reported
36	N030123-023A	SAMP	1	Hexavalent Chromium	05/08/18 2:10 PM	Not Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/08/18 2:19 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/08/18 2:28 PM	Reported
39	N030185-002A	SAMP	20	Hexavalent Chromium	05/08/18 2:38 PM	Reported
40	N030185-004A	SAMP	100	Hexavalent Chromium	05/08/18 2:47 PM	Reported
41	N030148-001A	SAMP	1	Hexavalent Chromium	05/08/18 2:56 PM	Reported
42	N030185-004AMS	MS	100	Hexavalent Chromium	05/08/18 3:05 PM	Reported

INJECTION LOG: 180508A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030185-004AMSD	MSD	100	Hexavalent Chromium	05/08/18 3:15 PM	Reported
44	N030185-002AMS	MS	20	Hexavalent Chromium	05/08/18 3:24 PM	Reported
45	N030148-001ADUP	DUP	1	Hexavalent Chromium	05/08/18 3:34 PM	Reported
46	N030150-001A	SAMP	5	Hexavalent Chromium	05/08/18 3:43 PM	Reported
47	N030185-003A	SAMP	20	Hexavalent Chromium	05/08/18 3:53 PM	Reported
48	N030185-003AMS	MS	20	Hexavalent Chromium	05/08/18 4:02 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/08/18 4:12 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	05/08/18 4:21 PM	Reported
51	N030123-017A	SAMP	5	Hexavalent Chromium	05/08/18 4:30 PM	Reported
52	N030123-017AMS	MS	5	Hexavalent Chromium	05/08/18 4:40 PM	Reported
53	N030123-019A	SAMP	5	Hexavalent Chromium	05/08/18 4:51 PM	Reported
54	N030123-019AMS	MS	5	Hexavalent Chromium	05/08/18 5:03 PM	Reported
55	N030123-023A	SAMP	5	Hexavalent Chromium	05/08/18 5:12 PM	Not Reported
56	N030123-023AMS	MS	5	Hexavalent Chromium	05/08/18 5:21 PM	Not Reported
57	N030123-020A	SAMP	1	Hexavalent Chromium	05/08/18 5:31 PM	Reported
58	N030123-020AMS	MS	1	Hexavalent Chromium	05/08/18 5:40 PM	Reported
59	N030123-021A	SAMP	1	Hexavalent Chromium	05/08/18 5:50 PM	Reported
60	N030123-021AMS	MS	1	Hexavalent Chromium	05/08/18 5:59 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	05/08/18 6:09 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	05/08/18 6:18 PM	Reported
63	N030123-022A	SAMP	1	Hexavalent Chromium	05/08/18 6:28 PM	Not Reported
64	N030123-022AMS	MS	1	Hexavalent Chromium	05/08/18 6:37 PM	Not Reported
65	N030185-001A	SAMP	5	Hexavalent Chromium	05/08/18 6:47 PM	Reported
66	N030185-001AMS	MS	5	Hexavalent Chromium	05/08/18 6:56 PM	Reported
67	N030185-005A	SAMP	1	Hexavalent Chromium	05/08/18 7:06 PM	Reported
68	N030185-005AMS	MS	1	Hexavalent Chromium	05/08/18 7:15 PM	Reported
69	N030185-006A	SAMP	1	Hexavalent Chromium	05/08/18 7:24 PM	Reported
70	N030185-006AMS	MS	1	Hexavalent Chromium	05/08/18 7:34 PM	Reported
71	N030185-007A	SAMP	1	Hexavalent Chromium	05/08/18 7:43 PM	Reported
72	N030185-007AMS	MS	1	Hexavalent Chromium	05/08/18 7:53 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	05/08/18 8:02 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	05/08/18 8:12 PM	Reported
75	N030185-001A	SAMP	1	Hexavalent Chromium	05/08/18 8:21 PM	Not Reported
76	N030185-001AMS	MS	1	Hexavalent Chromium	05/08/18 8:31 PM	Not Reported
77	LCS-R123963	LCS	1	Hexavalent Chromium	05/08/18 8:40 PM	Reported
78	MB-R123963	MBLK	1	Hexavalent Chromium	05/08/18 8:50 PM	Reported
79	N030228-003A	SAMP	50	Hexavalent Chromium	05/08/18 8:59 PM	Reported
80	N030228-003AMS	MS	50	Hexavalent Chromium	05/08/18 9:08 PM	Reported
81	N030228-003AMSD	MSD	50	Hexavalent Chromium	05/08/18 9:18 PM	Reported
82	N030228-005A	SAMP	100	Hexavalent Chromium	05/08/18 9:27 PM	Reported
83	N030228-005AMS	MS	100	Hexavalent Chromium	05/08/18 9:37 PM	Reported
84	N030228-011A	SAMP	500	Hexavalent Chromium	05/08/18 9:46 PM	Reported

INJECTION LOG: 180508A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCV-7	CCV	1	Hexavalent Chromium	05/08/18 9:56 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	05/08/18 10:05 PM	Reported
87	N030228-011ADUP	DUP	500	Hexavalent Chromium	05/08/18 10:15 PM	Reported
88	N030228-001A	SAMP	1	Hexavalent Chromium	05/08/18 10:24 PM	Reported
89	N030228-002A	SAMP	2	Hexavalent Chromium	05/08/18 10:34 PM	Reported
90	N030228-004A	SAMP	20	Hexavalent Chromium	05/08/18 10:43 PM	Reported
91	N030228-006A	SAMP	10	Hexavalent Chromium	05/08/18 10:53 PM	Reported
92	N030228-007A	SAMP	100	Hexavalent Chromium	05/08/18 11:02 PM	Reported
93	N030228-008A	SAMP	10	Hexavalent Chromium	05/08/18 11:11 PM	Reported
94	N030228-009A	SAMP	1	Hexavalent Chromium	05/08/18 11:21 PM	Reported
95	N030228-010A	SAMP	10	Hexavalent Chromium	05/08/18 11:30 PM	Reported
96	CCV-8	CCV1	1	Hexavalent Chromium	05/08/18 11:40 PM	Reported
97	CCB-8	CCB	1	Hexavalent Chromium	05/08/18 11:49 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180508A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/May/18 00:20:08**
No. of Injections:	**100**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/08/2018 09:33	Finished	BLANK
11	BLANK	2	1000	Unknown		05/08/2018 09:44	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		05/08/2018 09:53	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/08/2018 10:03	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		05/08/2018 10:12	Finished	CCB R180409B
15	MB-H2O,MBLK,1,	6	1000	Unknown		05/08/2018 10:22	Finished	MB R180409B
16	LCS-H2O,LCS,1,	7	1000	Unknown		05/08/2018 10:31	Finished	LCS, IWST-180129B
17	N030123-015A,SAMF	8	1000	Unknown		05/08/2018 10:41	Finished	SAMP,10mL
18	N030123-015AMS,MS	9	1000	Unknown		05/08/2018 10:50	Finished	MS (1ppb), IWST-180129B,10
19	N030123-016A,SAMF	10	1000	Unknown		05/08/2018 11:00	Finished	SAMP,10mL
20	N030123-016AMS,MS	11	1000	Unknown		05/08/2018 11:09	Finished	MS (1ppb), IWST-180129B,10
21	N030123-017A,SAMF	12	1000	Unknown		05/08/2018 11:19	Finished	SAMP,10mL
22	N030123-017AMS,MS	13	1000	Unknown		05/08/2018 11:28	Finished	MS (1ppb), IWST-180129B,10
23	N030123-018A,SAMF	14	1000	Unknown		05/08/2018 11:37	Finished	SAMP,10mL
24	N030123-018AMS,MS	15	1000	Unknown		05/08/2018 11:47	Finished	MS (1ppb), IWST-180129B,10
25	CCV-2,CCV1,1,	16	1000	Unknown		05/08/2018 11:56	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	17	1000	Unknown		05/08/2018 12:06	Finished	CCB R180409B
27	N030123-019A,SAMF	18	1000	Unknown		05/08/2018 12:15	Finished	SAMP,10mL
28	N030123-019AMS,MS	19	1000	Unknown		05/08/2018 12:25	Finished	MS (1ppb), IWST-180129B,10
29	N030123-023A,SAMF	20	1000	Unknown		n.a.	Finished	SAMP,10mL
30	BLANK	21	1000	Unknown		05/08/2018 13:11	Finished	BLANK
31	N030123-023AMS,MS	22	1000	Unknown		05/08/2018 13:22	Finished	MS (1ppb), IWST-180129B,10
32	N030123-015A,SAMF	23	1000	Unknown		05/08/2018 13:32	Finished	SAMP,2>10mL
33	N030123-015AMS,MS	24	1000	Unknown		05/08/2018 13:41	Finished	MS (1ppb), IWST-180129B,2>1
34	N030123-016A,SAMF	25	1000	Unknown		05/08/2018 13:51	Finished	SAMP,2>10mL
35	N030123-016AMS,MS	26	1000	Unknown		05/08/2018 14:00	Finished	MS (1ppb), IWST-180129B,2>1
36	N030123-023A,SAMF	27	1000	Unknown		05/08/2018 14:10	Finished	SAMP,10mL
37	CCV-3,CCV,1,	28	1000	Unknown		05/08/2018 14:19	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	29	1000	Unknown		05/08/2018 14:28	Finished	CCB R180418A
39	N030185-002A,SAMF	30	1000	Unknown		05/08/2018 14:38	Finished	SAMP,0.5>10mL
40	N030185-004A,SAMF	31	1000	Unknown		05/08/2018 14:47	Finished	SAMP,0.1>10mL
41	N030148-001A,SAMF	32	1000	Unknown		05/08/2018 14:56	Finished	SAMP,10mL
42	N030185-004AMS,MS	33	1000	Unknown		05/08/2018 15:05	Finished	MS (5ppb), IWST-180129B,0.1
43	N030185-004AMSD,M	34	1000	Unknown		05/08/2018 15:15	Finished	MSD (5ppb), IWST-180129B,0.
44	N030185-002AMS,MS	35	1000	Unknown		05/08/2018 15:24	Finished	MS (5ppb), IWST-180129B,0.5
45	N030148-001ADUP,D	36	1000	Unknown		05/08/2018 15:34	Finished	DUP,10mL
46	N030150-001A,SAMF	37	1000	Unknown		05/08/2018 15:43	Finished	SAMP,2>10mL
47	N030185-003A,SAMF	38	1000	Unknown		05/08/2018 15:53	Finished	SAMP,0.5>10mL
48	N030185-003AMS,MS	39	1000	Unknown		05/08/2018 16:02	Finished	MS (5ppb), IWST-180129B,0.1
49	CCV-4,CCV1,1,	40	1000	Unknown		05/08/2018 16:12	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	41	1000	Unknown		05/08/2018 16:21	Finished	CCB R180418A
51	N030123-017A,SAMF	42	1000	Unknown		05/08/2018 16:30	Finished	SAMP,2>10mL
52	N030123-017AMS,MS	43	1000	Unknown		05/08/2018 16:40	Finished	MS (1ppb), IWST-180129B,2>1
53	N030123-019A,SAMF	1	1000	Unknown		05/08/2018 16:51	Finished	SAMP,2>10mL
54	N030123-019AMS,MS	2	1000	Unknown		05/08/2018 17:03	Finished	MS (1ppb), IWST-180129B,2>1
55	N030123-023A,SAMF	3	1000	Unknown		05/08/2018 17:12	Finished	SAMP,2>10mL
56	N030123-023AMS,MS	4	1000	Unknown		05/08/2018 17:21	Finished	MS (1ppb), IWST-180129B,2>1
57	N030123-020A,SAMF	5	1000	Unknown		05/08/2018 17:31	Finished	SAMP,10mL
58	N030123-020AMS,MS	6	1000	Unknown		05/08/2018 17:40	Finished	MS (1ppb), IWST-180129B,10
59	N030123-021A,SAMF	7	1000	Unknown		05/08/2018 17:50	Finished	SAMP,10mL
60	N030123-021AMS,MS	8	1000	Unknown		05/08/2018 17:59	Finished	MS (1ppb), IWST-180129B,10

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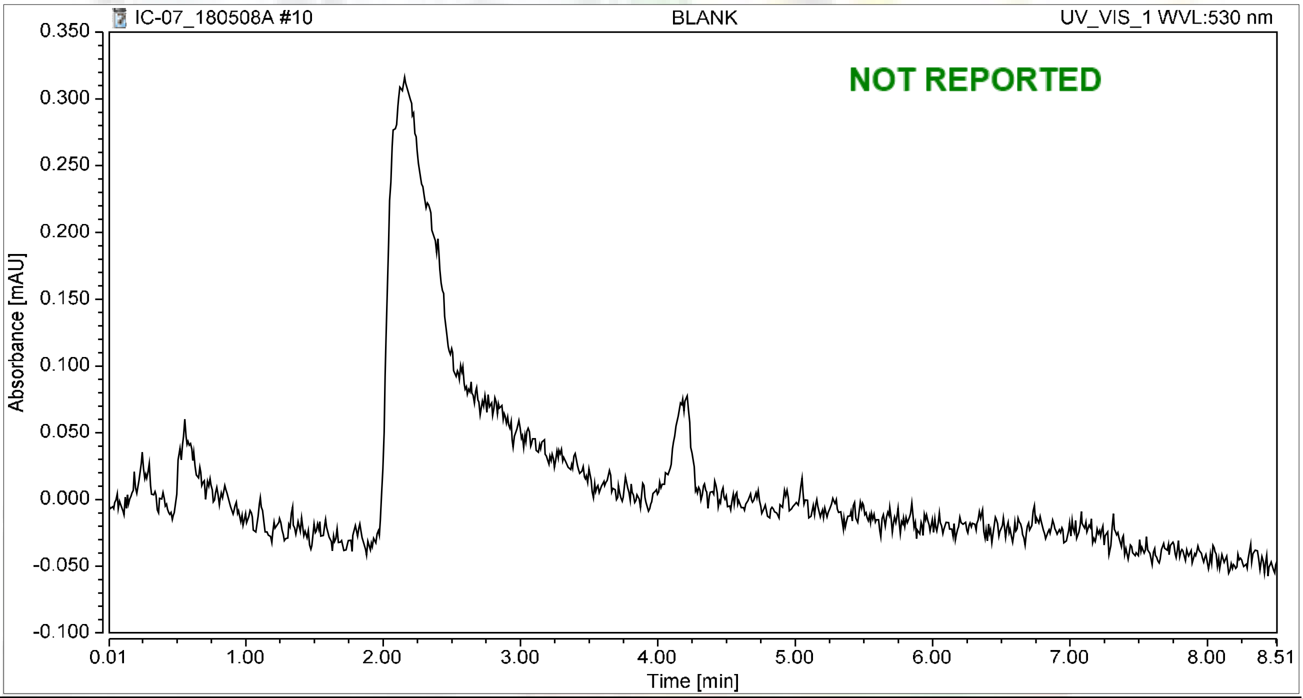
61	CCV-5,CCV,1,	9	1000	Unknown		05/08/2018 18:09	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	10	1000	Unknown		05/08/2018 18:18	Finished	CCB R180409B
63	N030123-022A,SAMP	11	1000	Unknown		05/08/2018 18:28	Finished	SAMP,10mL
64	N030123-022AMS,MS	12	1000	Unknown		05/08/2018 18:37	Finished	MS (1ppb), IWST-180129B,10
65	N030185-001A,SAMP	13	1000	Unknown		05/08/2018 18:47	Finished	SAMP,2>10mL
66	N030185-001AMS,MS	14	1000	Unknown		05/08/2018 18:56	Finished	MS (1ppb), IWST-180129B,2>1
67	N030185-005A,SAMP	15	1000	Unknown		05/08/2018 19:06	Finished	SAMP,10mL
68	N030185-005AMS,MS	16	1000	Unknown		05/08/2018 19:15	Finished	MS (1ppb), IWST-180129B,10
69	N030185-006A,SAMP	17	1000	Unknown		05/08/2018 19:24	Finished	SAMP,10mL
70	N030185-006AMS,MS	18	1000	Unknown		05/08/2018 19:34	Finished	MS (1ppb), IWST-180129B,10
71	N030185-007A,SAMP	19	1000	Unknown		05/08/2018 19:43	Finished	SAMP,10mL
72	N030185-007AMS,MS	20	1000	Unknown		05/08/2018 19:53	Finished	MS (1ppb), IWST-180129B,10
73	CCV-6,CCV1,1,	21	1000	Unknown		05/08/2018 20:02	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	22	1000	Unknown		05/08/2018 20:12	Finished	CCB R180409B
75	N030185-001A,SAMP	23	1000	Unknown		05/08/2018 20:21	Finished	SAMP,10mL
76	N030185-001AMS,MS	24	1000	Unknown		05/08/2018 20:31	Finished	MS (1ppb), IWST-180129B,10
77	LCS-2,LCS,1,	25	1000	Unknown		05/08/2018 20:40	Finished	LCS, IWST-180129B
78	MB-2,MBLK,1,	26	1000	Unknown		05/08/2018 20:50	Finished	MB R180409B
79	N030228-003A,SAMP	27	1000	Unknown		05/08/2018 20:59	Finished	SAMP,0.2>10mL
80	N030228-003AMS,MS	28	1000	Unknown		05/08/2018 21:08	Finished	MS (5ppb), IWST-180129B,0.2
81	N030228-003AMSD,M	29	1000	Unknown		05/08/2018 21:18	Finished	MSD (5ppb), IWST-180129B,0.
82	N030228-005A,SAMP	30	1000	Unknown		05/08/2018 21:27	Finished	SAMP,0.1>10mL
83	N030228-005AMS,MS	31	1000	Unknown		05/08/2018 21:37	Finished	MS (5ppb), IWST-180129B,0.1
84	N030228-011A,SAMP	32	1000	Unknown		05/08/2018 21:46	Finished	SAMP,0.02>10mL
85	CCV-7,CCV,1,	33	1000	Unknown		05/08/2018 21:56	Finished	CCV @5ppb, IWST-180129A
86	CCB-7,CCB,1,	34	1000	Unknown		05/08/2018 22:05	Finished	CCB R180409B
87	N030228-011ADUP,D	35	1000	Unknown		05/08/2018 22:15	Finished	DUP,0.02>10mL
88	N030228-001A,SAMP	36	1000	Unknown		05/08/2018 22:24	Finished	SAMP,10mL
89	N030228-002A,SAMP	37	1000	Unknown		05/08/2018 22:34	Finished	SAMP,5>10mL
90	N030228-004A,SAMP	38	1000	Unknown		05/08/2018 22:43	Finished	SAMP,0.5>10mL
91	N030228-006A,SAMP	39	1000	Unknown		05/08/2018 22:53	Finished	SAMP,1>10mL
92	N030228-007A,SAMP	40	1000	Unknown		05/08/2018 23:02	Finished	SAMP,0.1>10mL
93	N030228-008A,SAMP	41	1000	Unknown		05/08/2018 23:11	Finished	SAMP,1>10mL
94	N030228-009A,SAMP	42	1000	Unknown		05/08/2018 23:21	Finished	SAMP,10mL
N020228-010A 95	~~N030228-0010~~A,SAM	43	1000	Unknown		05/08/2018 23:30	Finished	SAMP,1>10mL
96	CCV-8,CCV1,1,	44	1000	Unknown		05/08/2018 23:40	Finished	CCV @10ppb, IWST-180129A
97	CCB-8,CCB,1,	45	1000	Unknown		05/08/2018 23:49	Finished	CCB R180409B
98	SHUTDOWN	46	1000	Unknown		05/08/2018 23:59	Finished	
99	Eluent: R180508A	47	1000	Unknown		n.a.	Finished	Eluent
100	PCR: R180508B	48	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

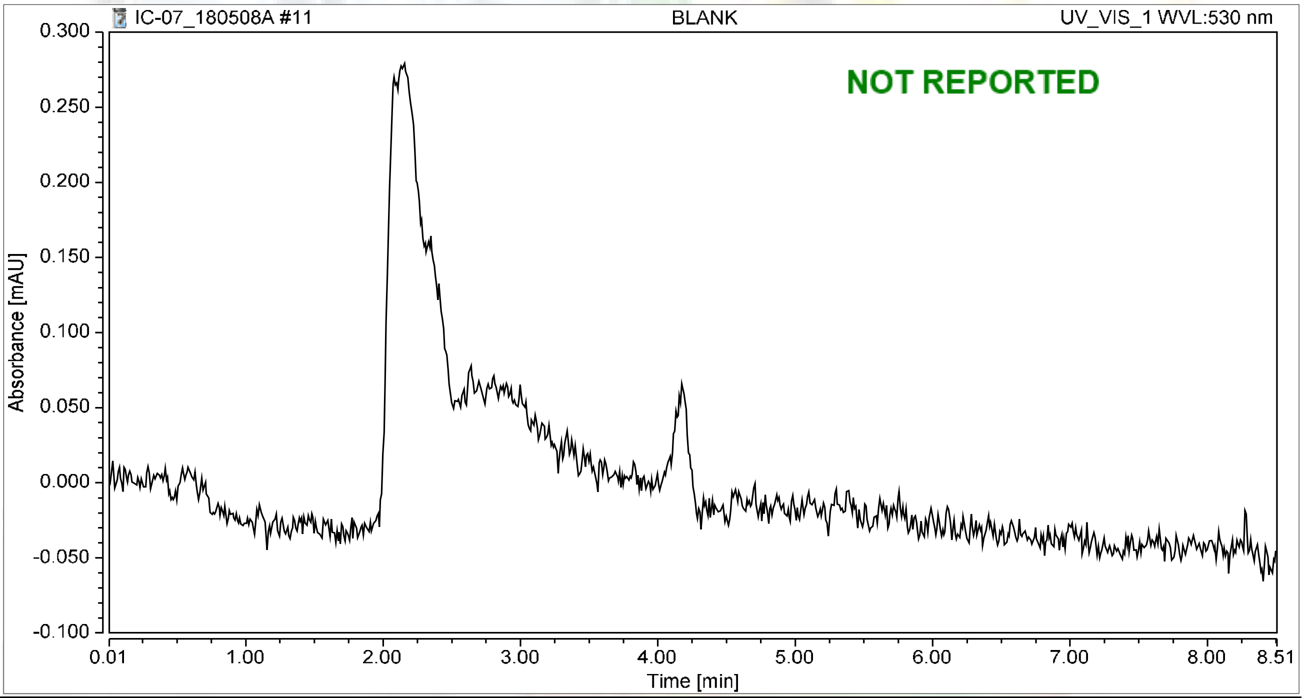
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 09:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

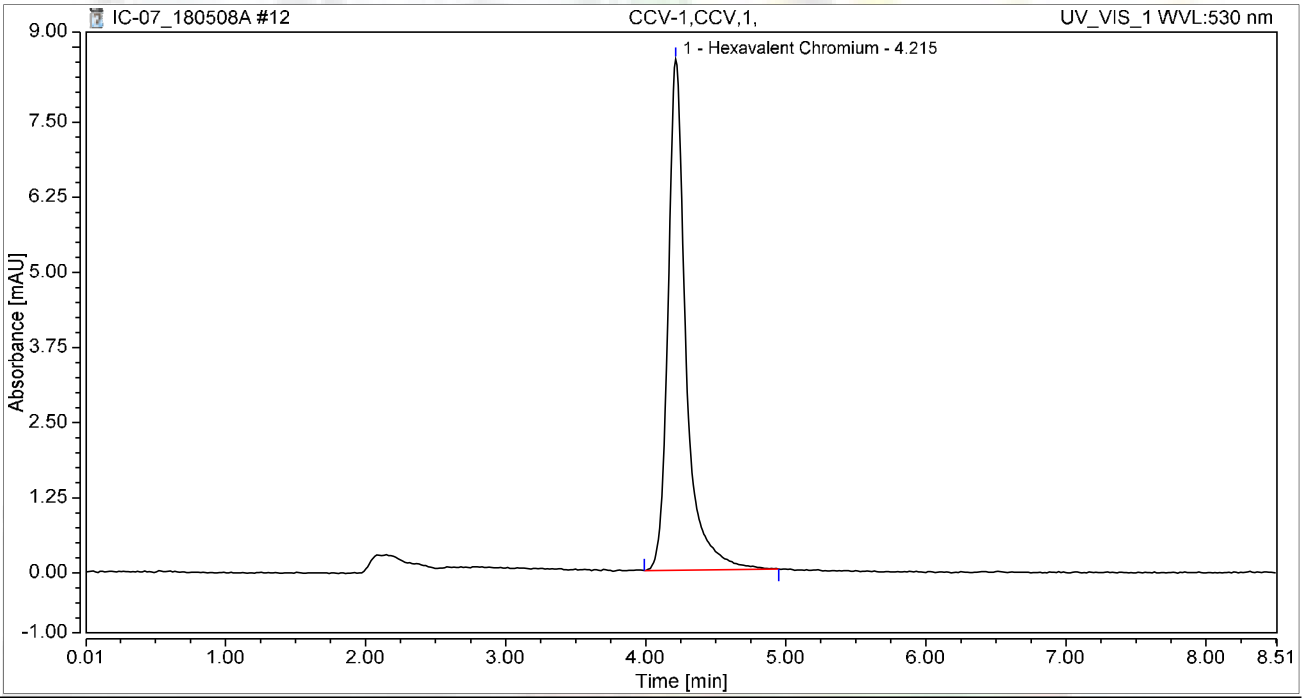
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 09:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

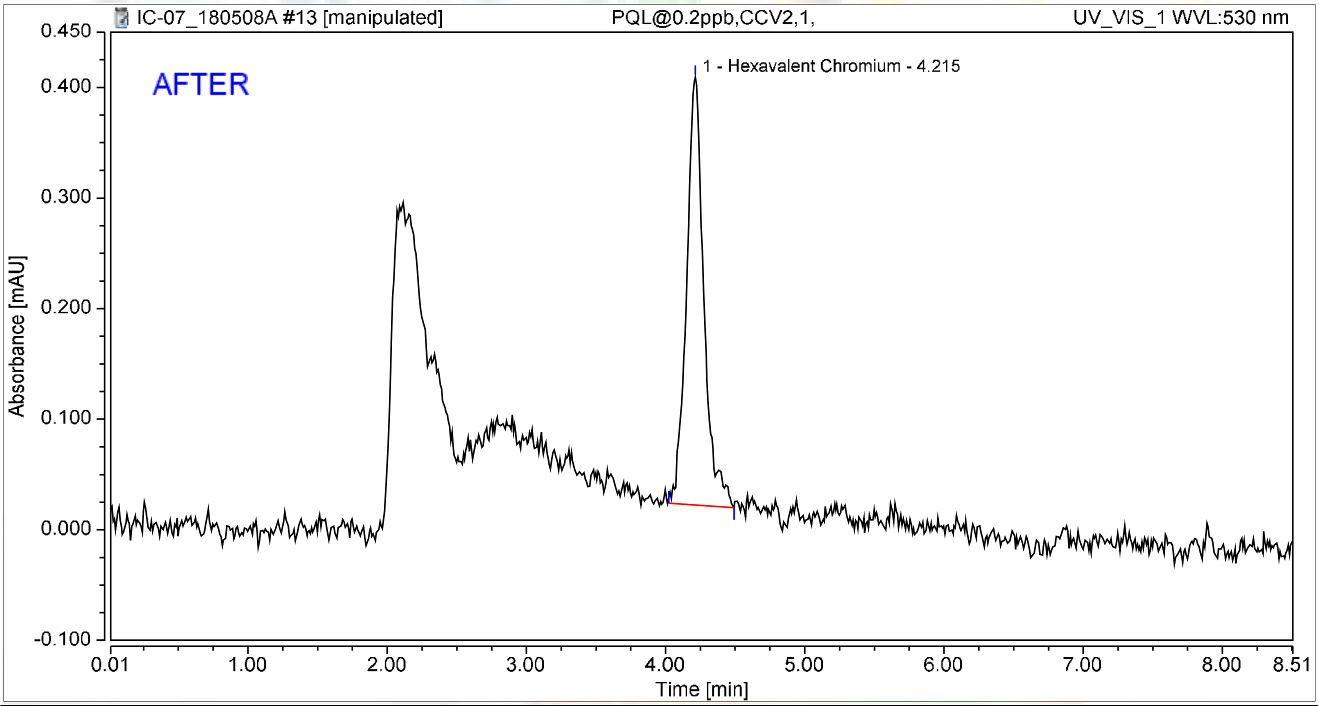
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.269	8.505	100.00	100.00	4.9433
Total:			**1.269**	**8.505**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 10:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.056	0.387	100.00	100.00	0.2167
Total:			**0.056**	**0.387**	**100.00**	**100.00**	

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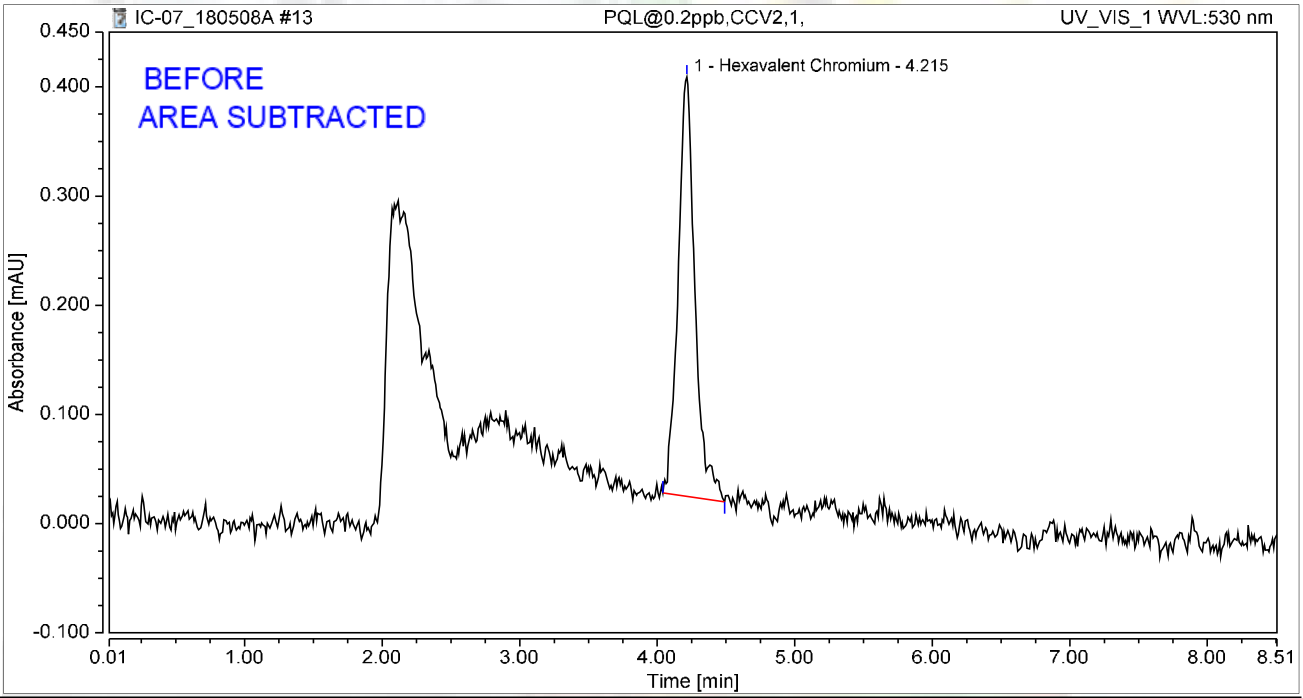
Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 10:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.055	0.384	100.00	100.00	0.2126
Total:			**0.055**	**0.384**	**100.00**	**100.00**	

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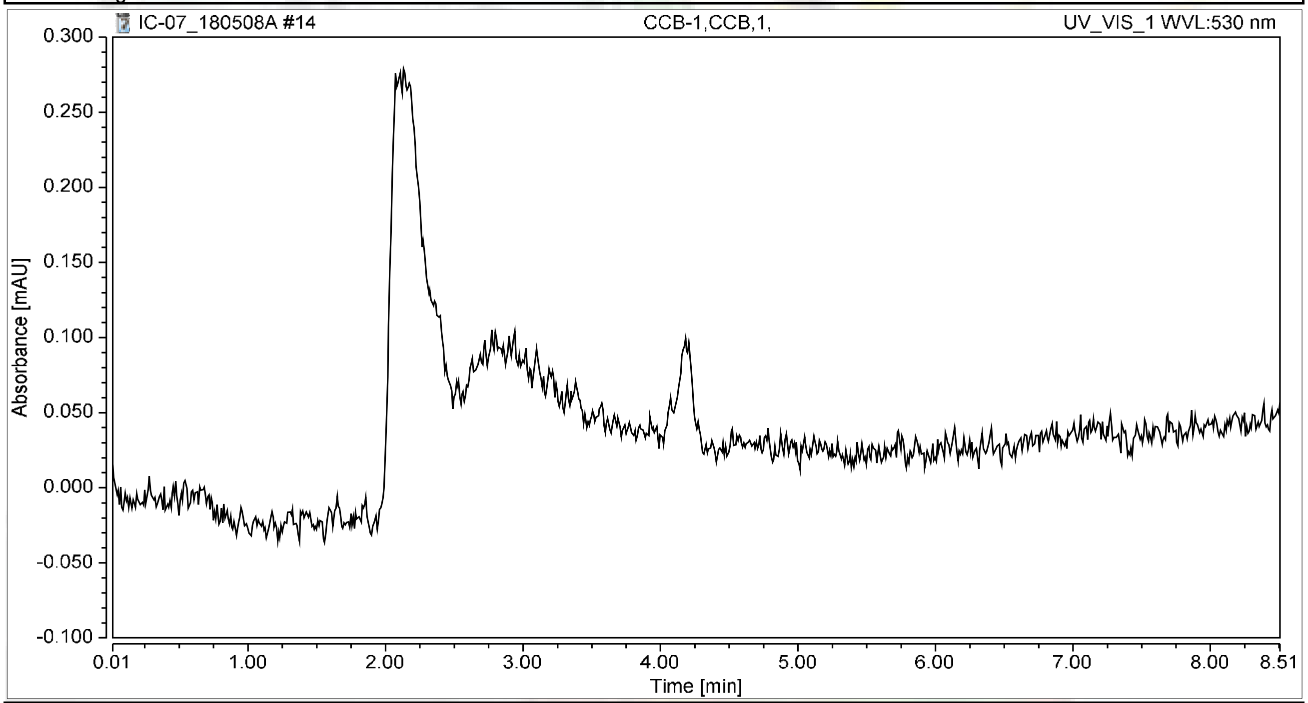
Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 10:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

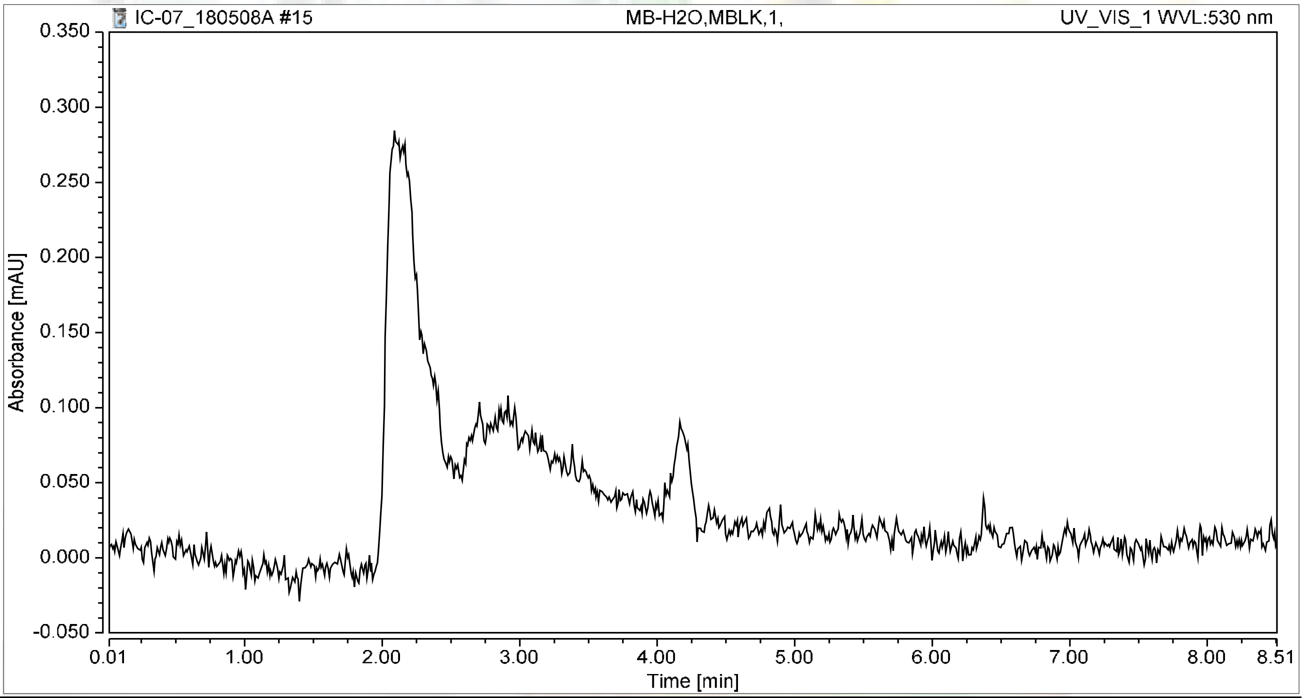
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 10:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

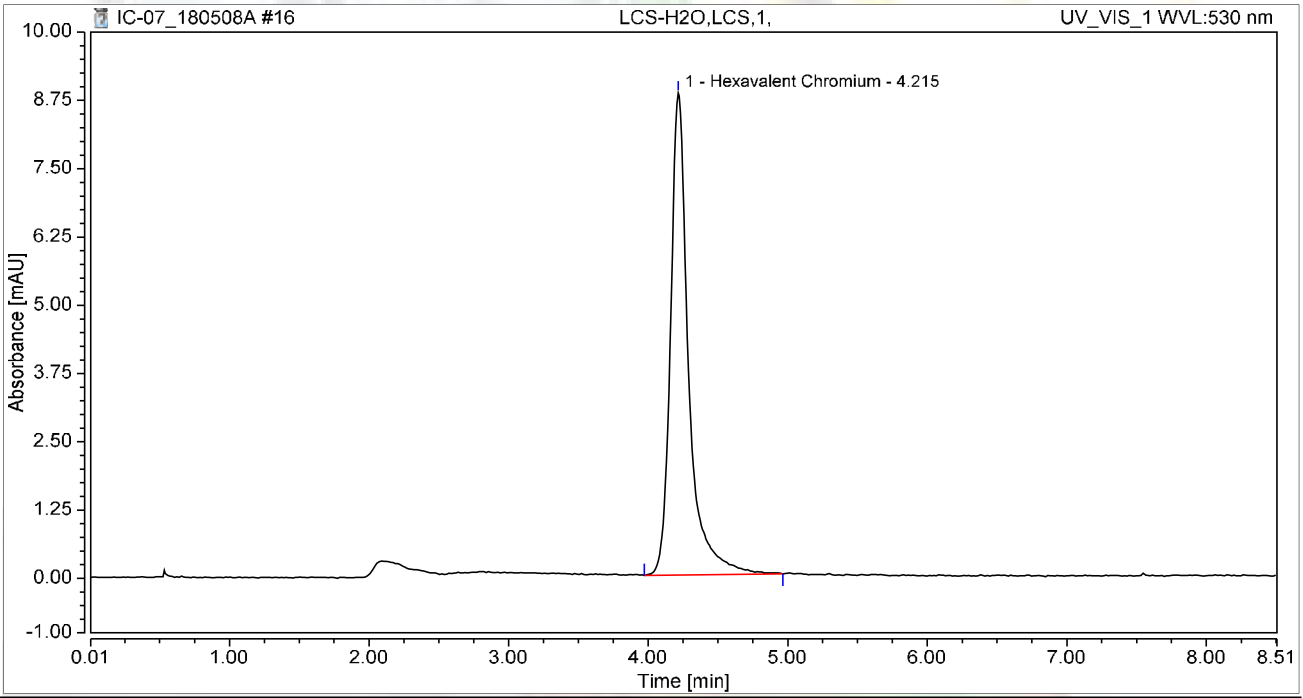
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 10:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

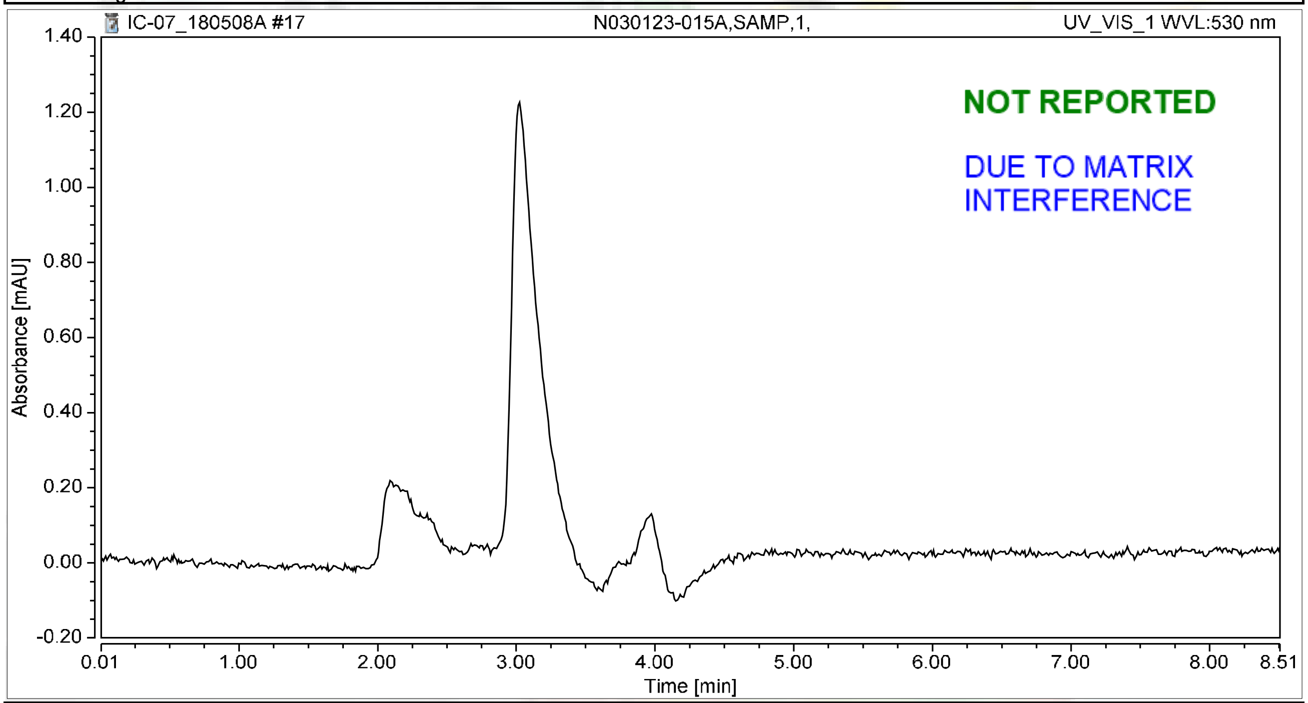
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.328	8.827	100.00	100.00	5.1754
Total:			**1.328**	**8.827**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 10:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

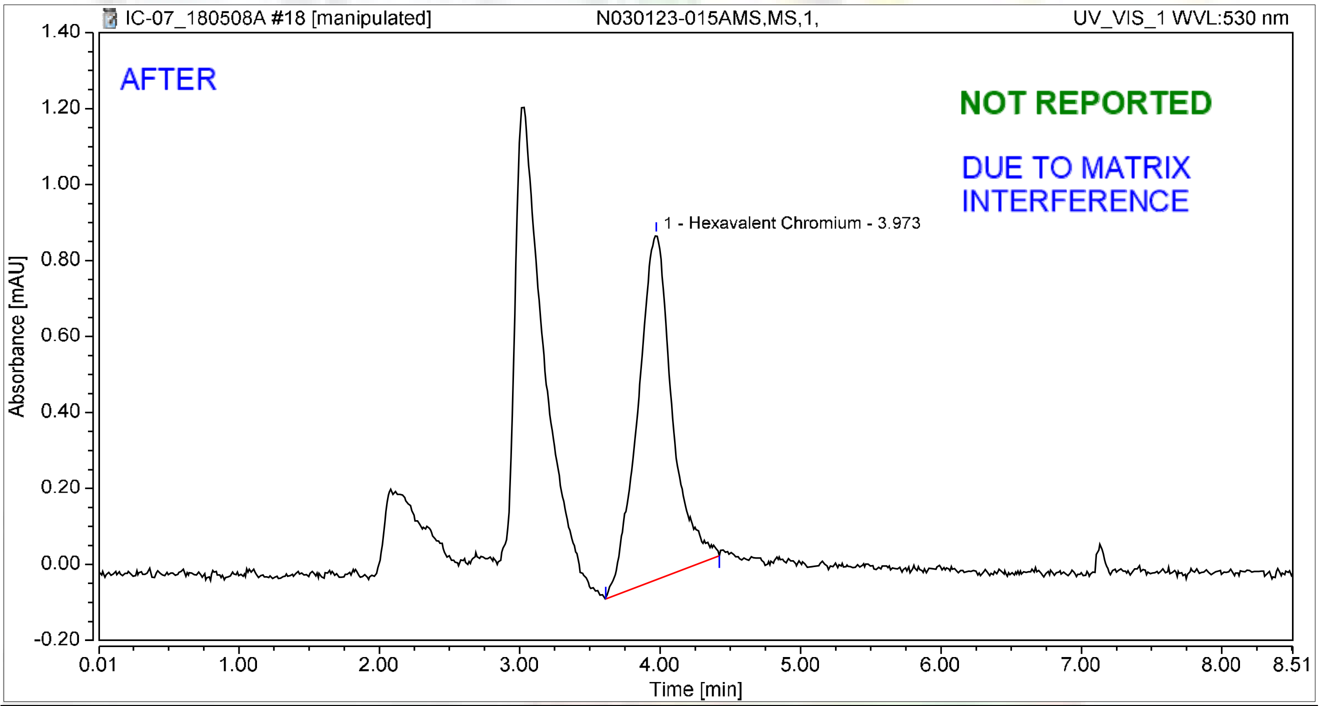
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.973	0.259	0.909	100.00	100.00	1.0090
Total:			**0.259**	**0.909**	**100.00**	**100.00**	

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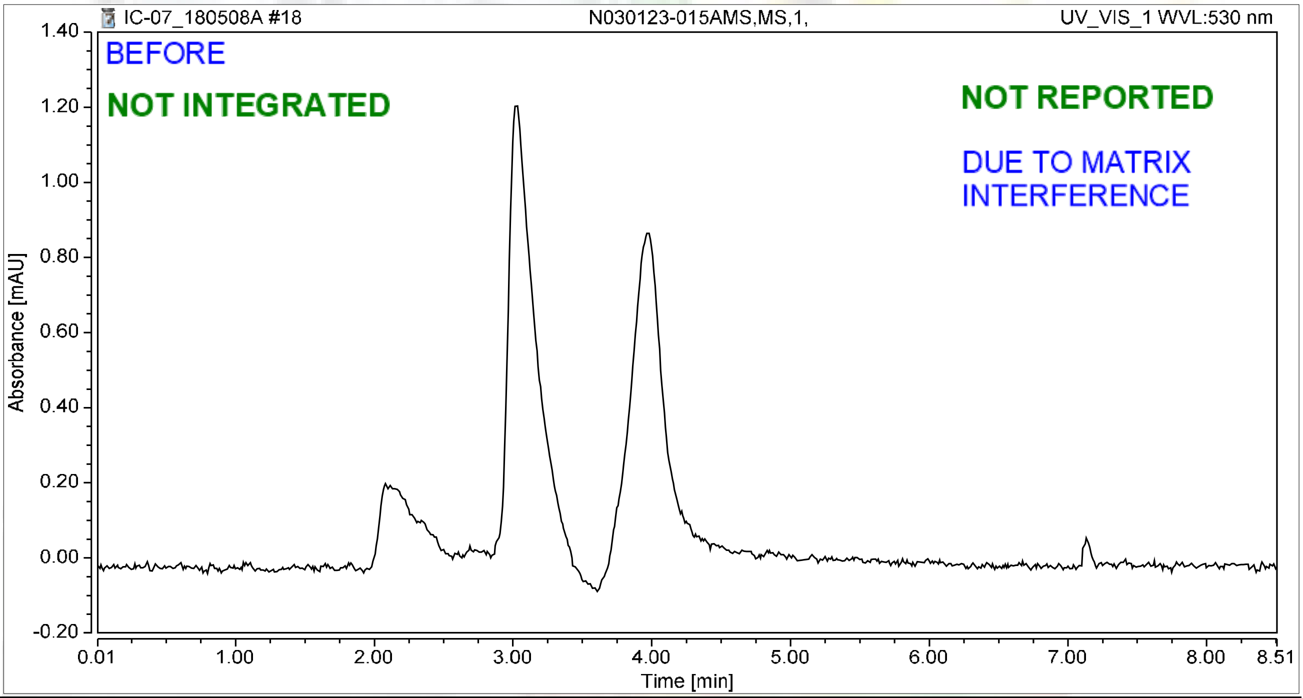
Chromatogram and Results

Injection Details			
Injection Name:	**N030123-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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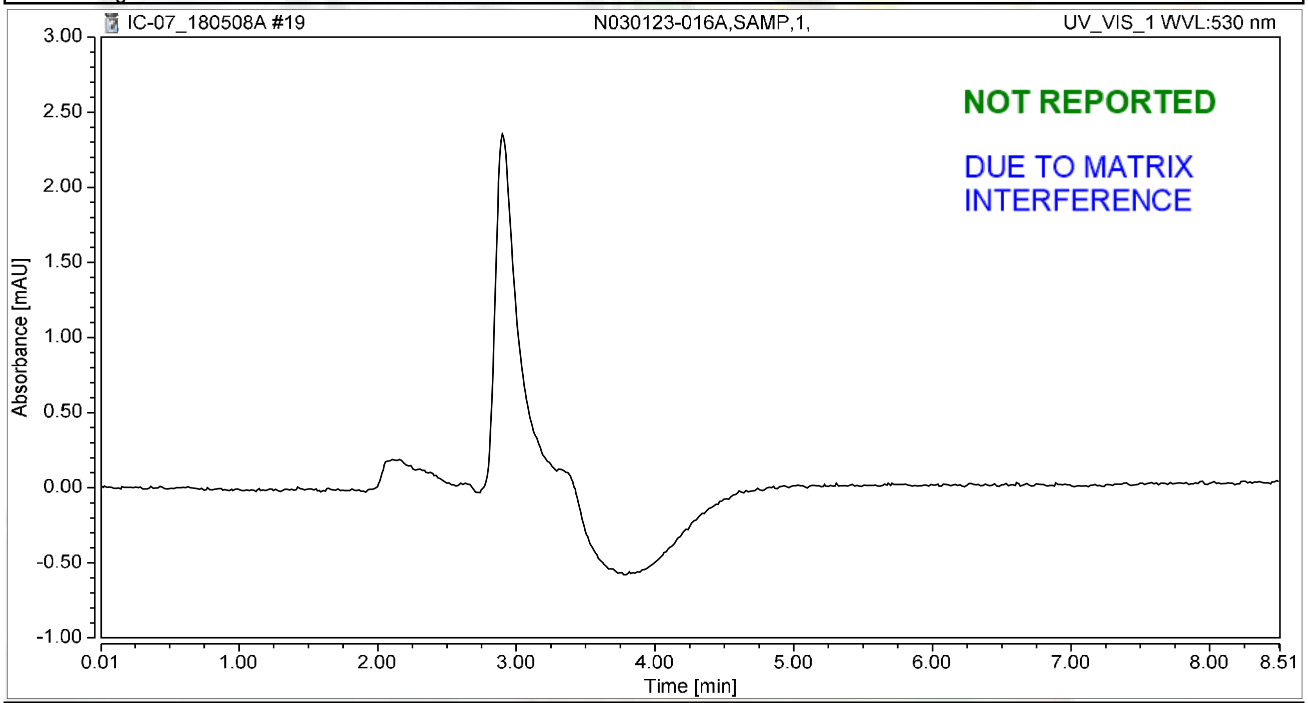
Chromatogram and Results

Injection Details

Injection Name:	**N030123-016A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 11:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

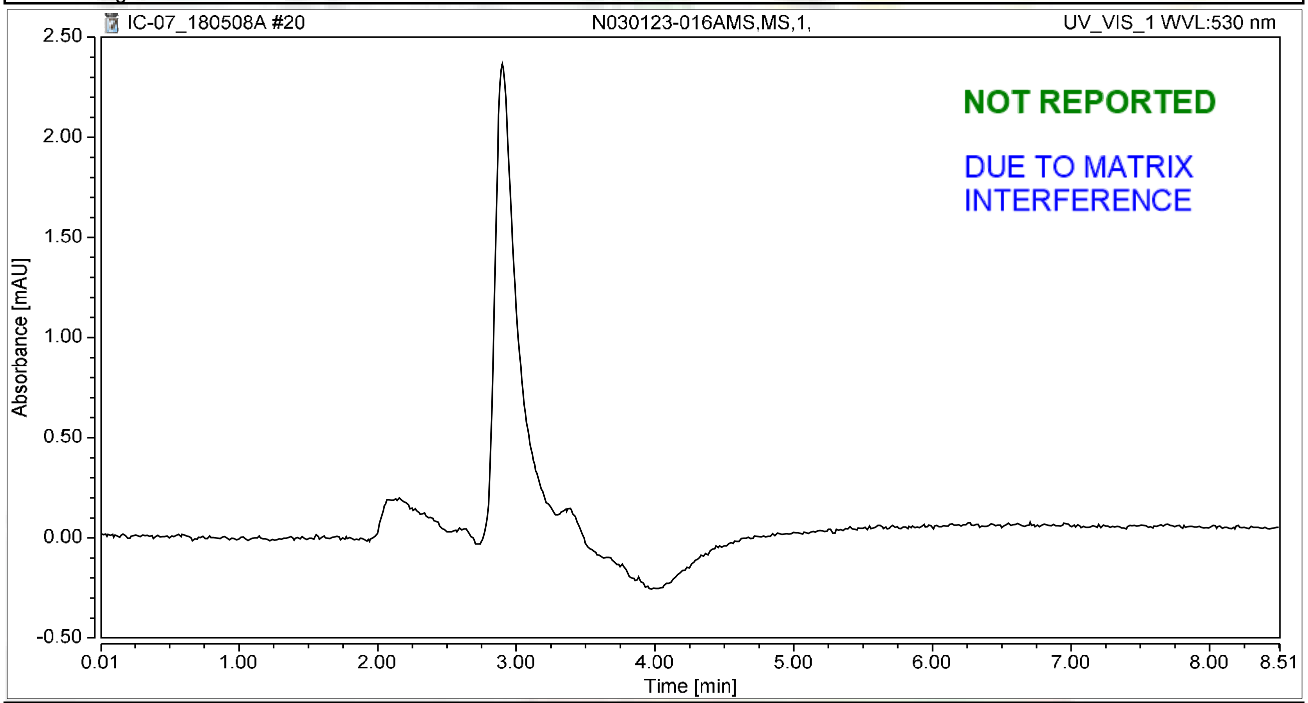
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-016AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 11:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

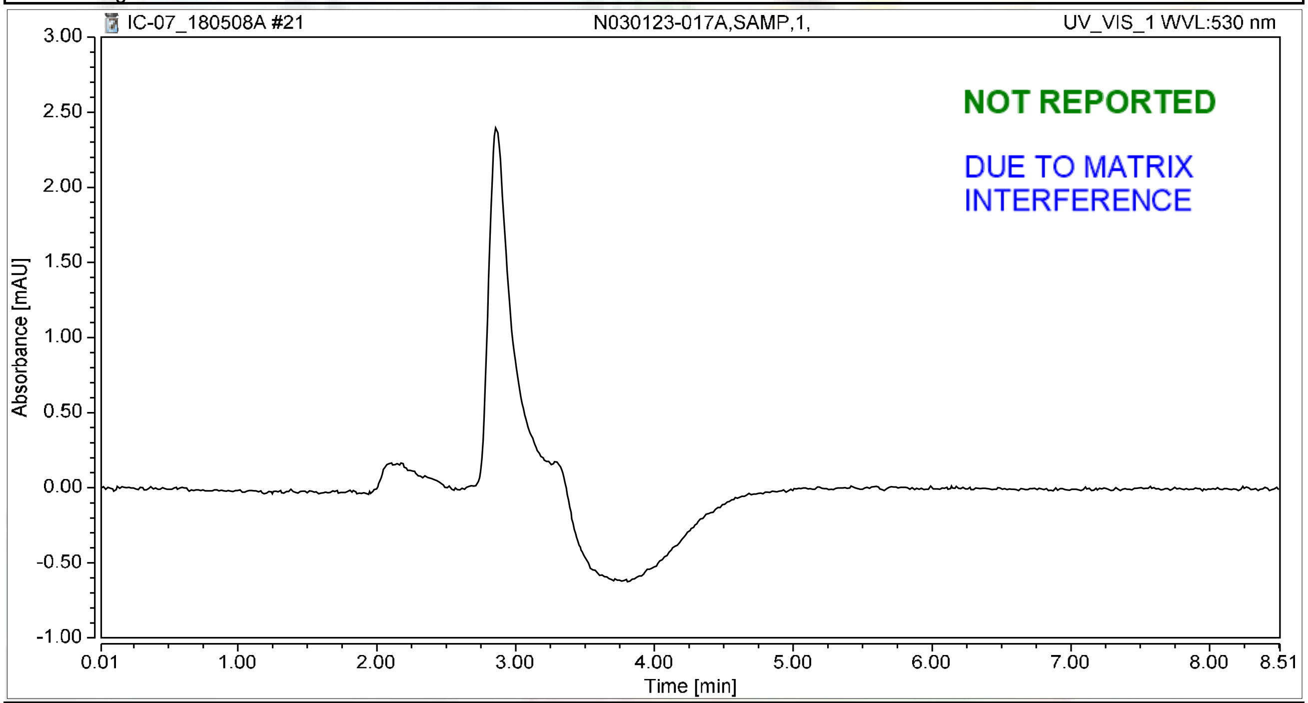
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-017A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 11:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

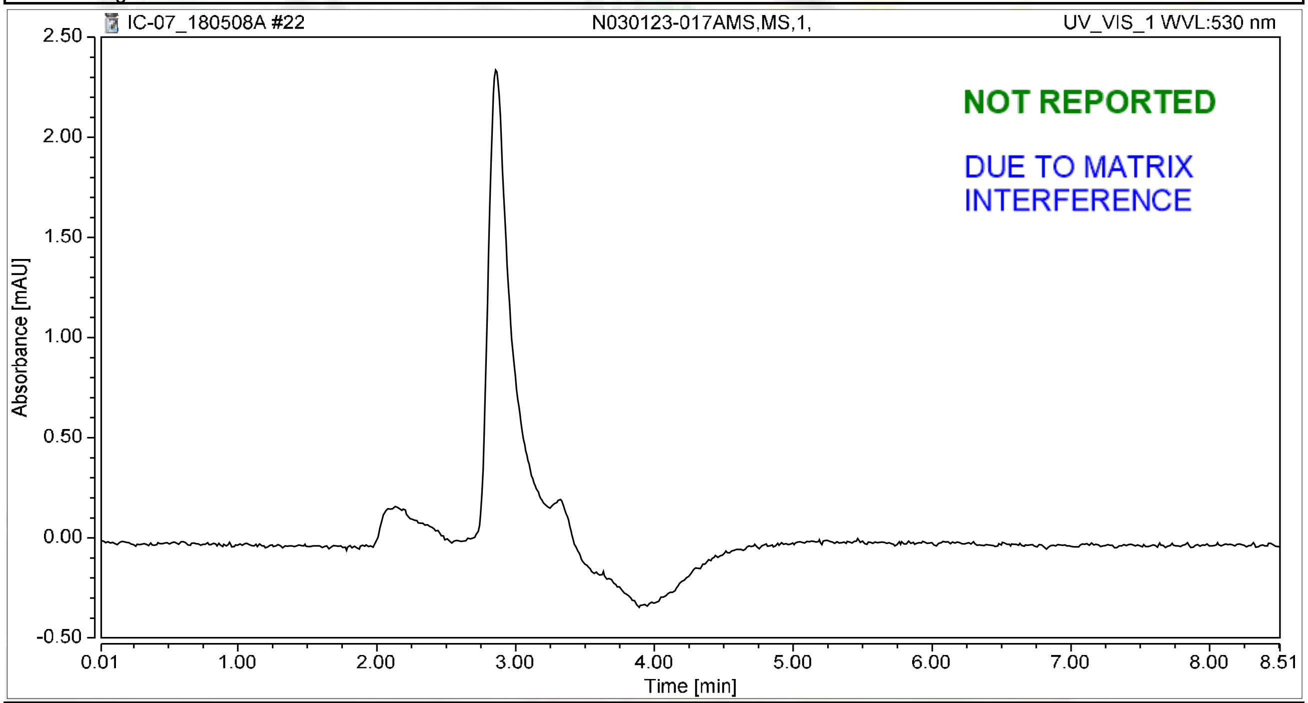
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-017AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 11:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

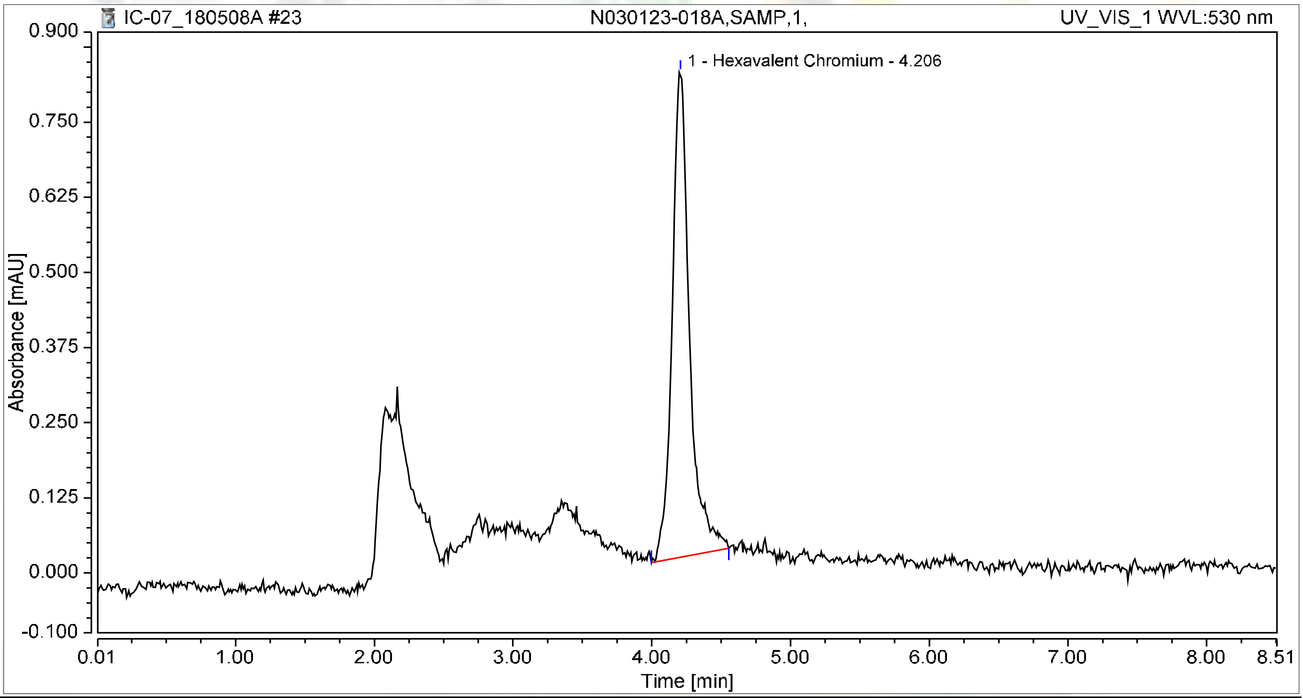
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-018A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 11:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

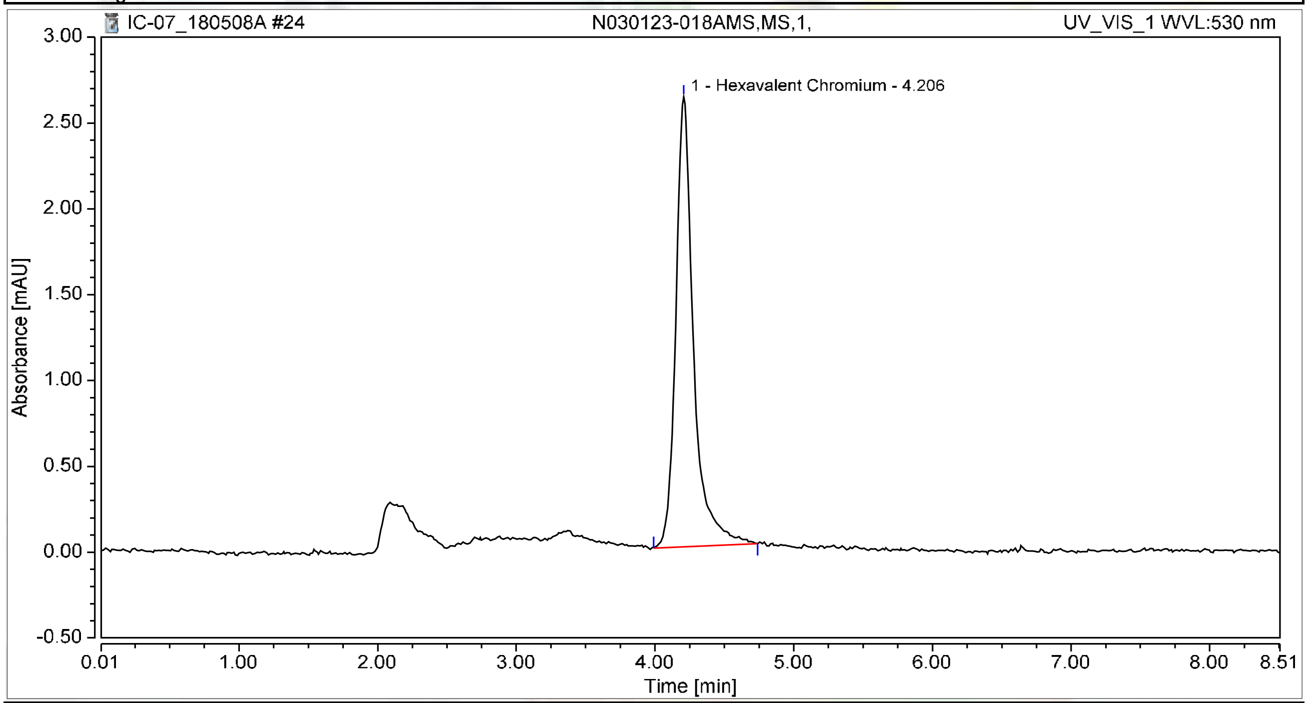
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.118	0.807	100.00	100.00	0.4578
Total:			**0.118**	**0.807**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-018AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 11:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

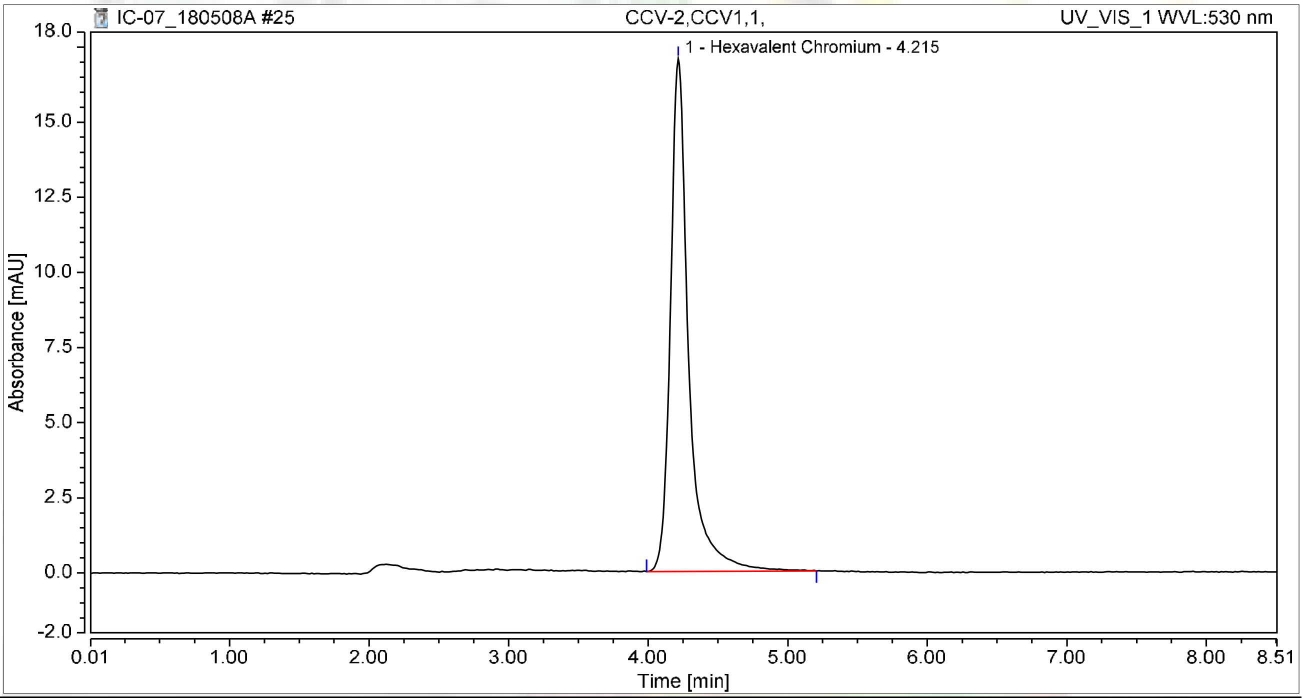
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.388	2.621	100.00	100.00	1.5135
Total:			**0.388**	**2.621**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 11:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

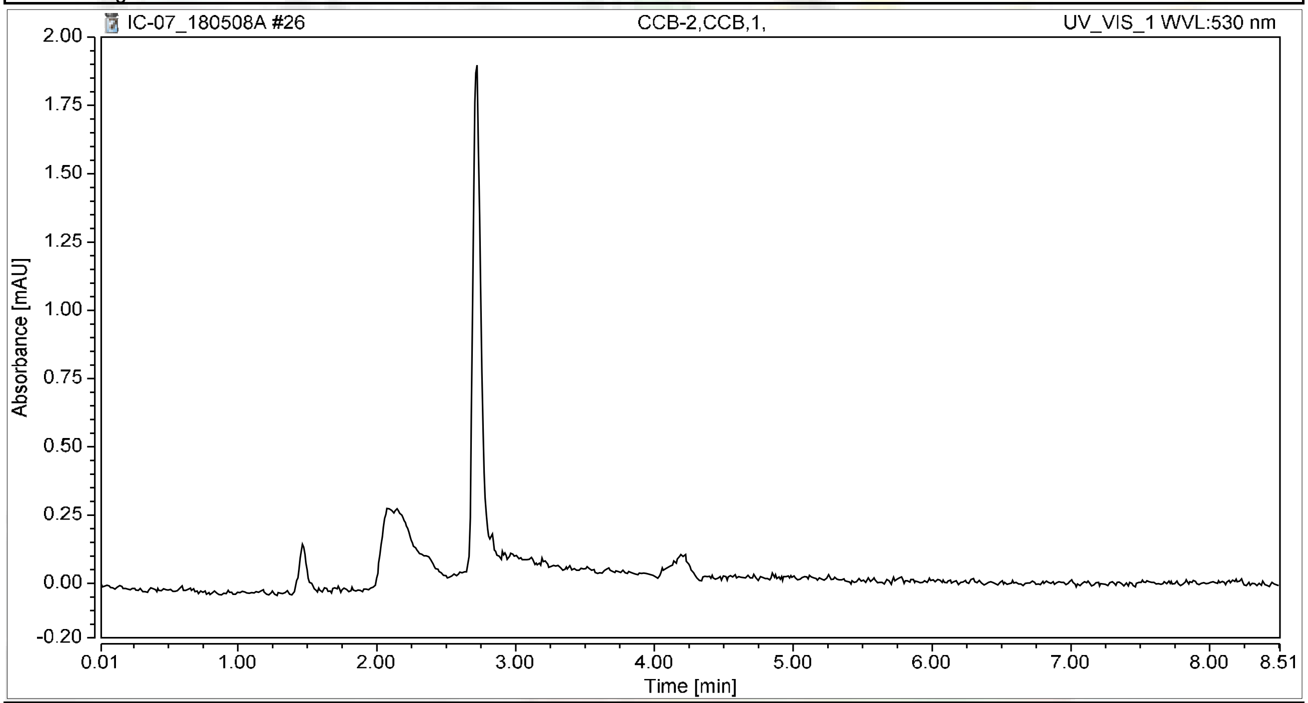
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.589	17.075	100.00	100.00	10.0896
Total:			**2.589**	**17.075**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 12:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

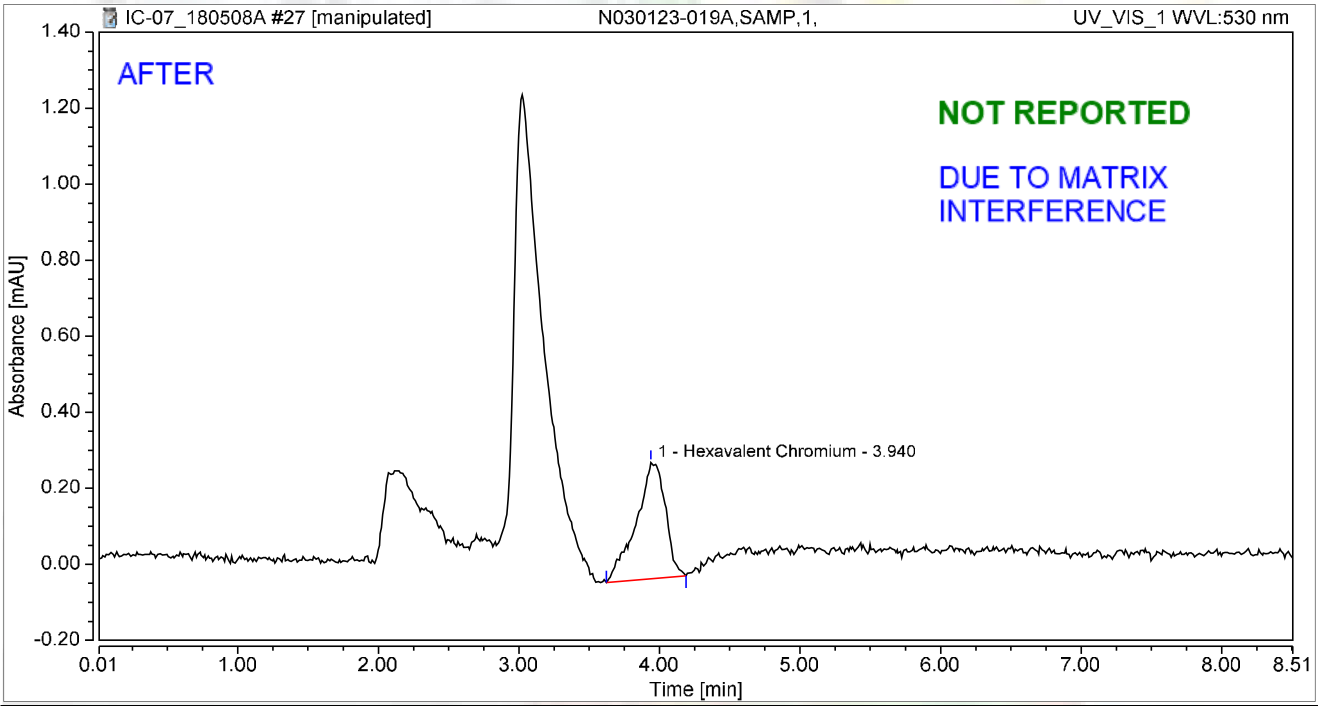
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-019A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 12:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.940	0.074	0.306	100.00	100.00	0.2878
Total:			**0.074**	**0.306**	**100.00**	**100.00**	

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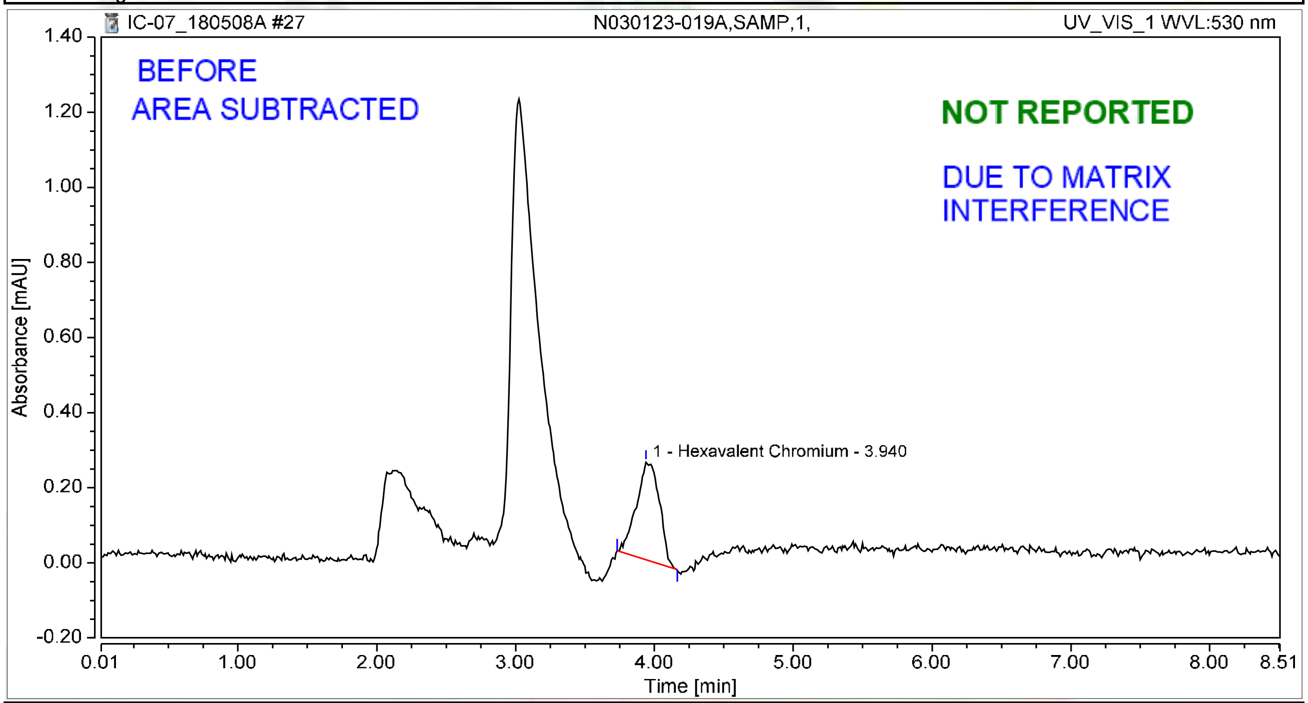
Chromatogram and Results

Injection Details

Injection Name:	**N030123-019A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 12:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.940	0.050	0.260	100.00	100.00	0.1965
Total:			**0.050**	**0.260**	**100.00**	**100.00**	

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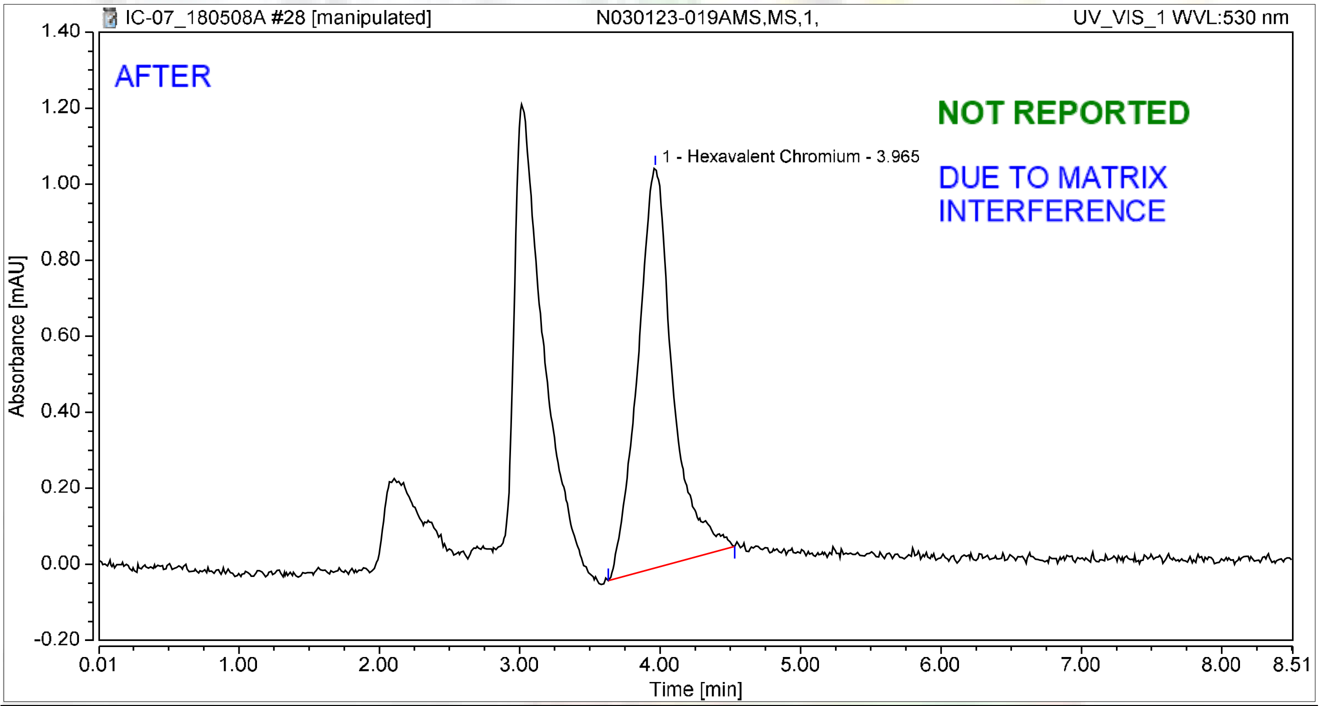
Chromatogram and Results

Injection Details

Injection Name:	**N030123-019AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 12:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.965	0.305	1.052	100.00	100.00	1.1895
Total:			**0.305**	**1.052**	**100.00**	**100.00**	

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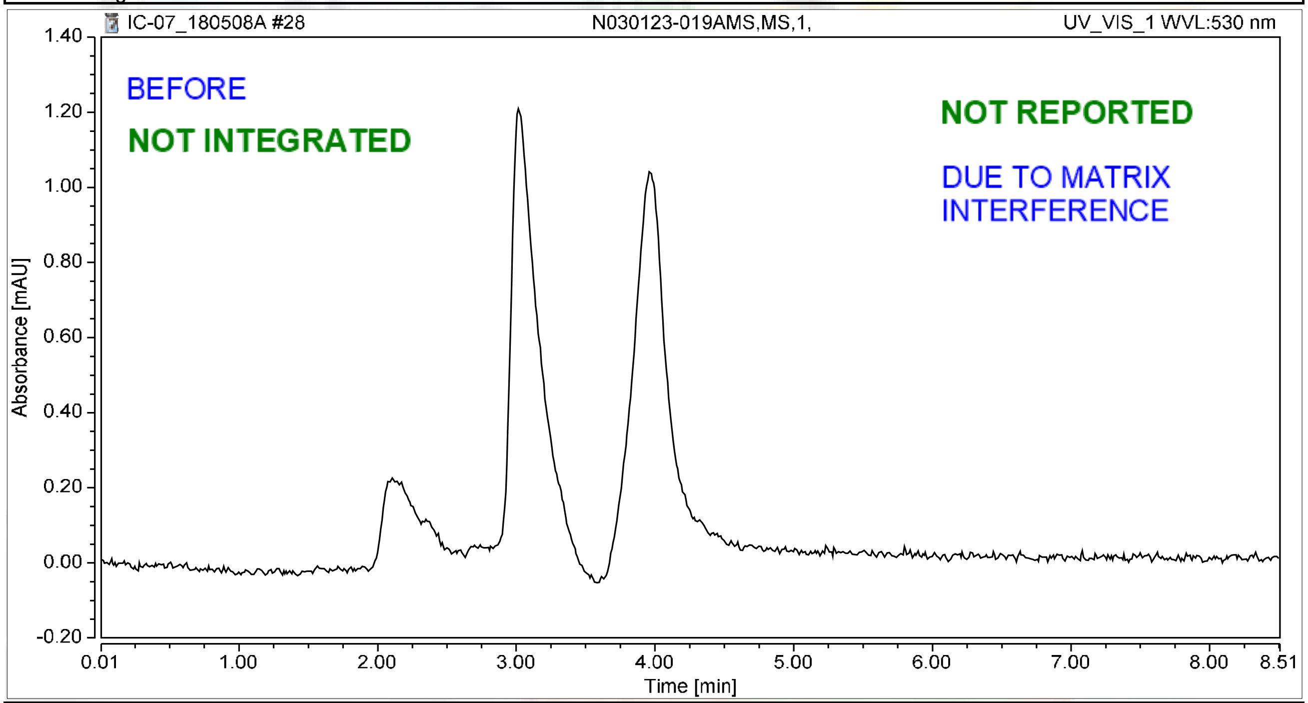
Chromatogram and Results

Injection Details

Injection Name:	**N030123-019AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 12:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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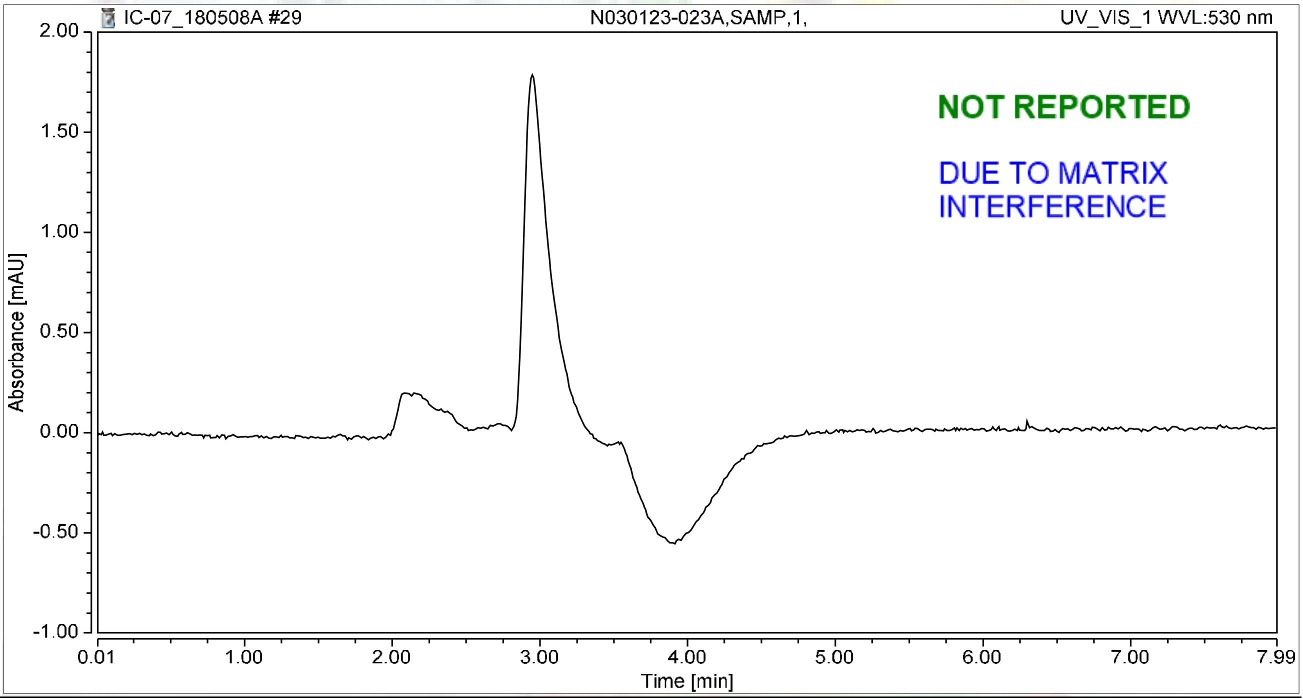
Chromatogram and Results

Injection Details

Injection Name:	**N030123-023A,SAMP,1,**	*Run Time (min):*	**7.98**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**n.a.**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

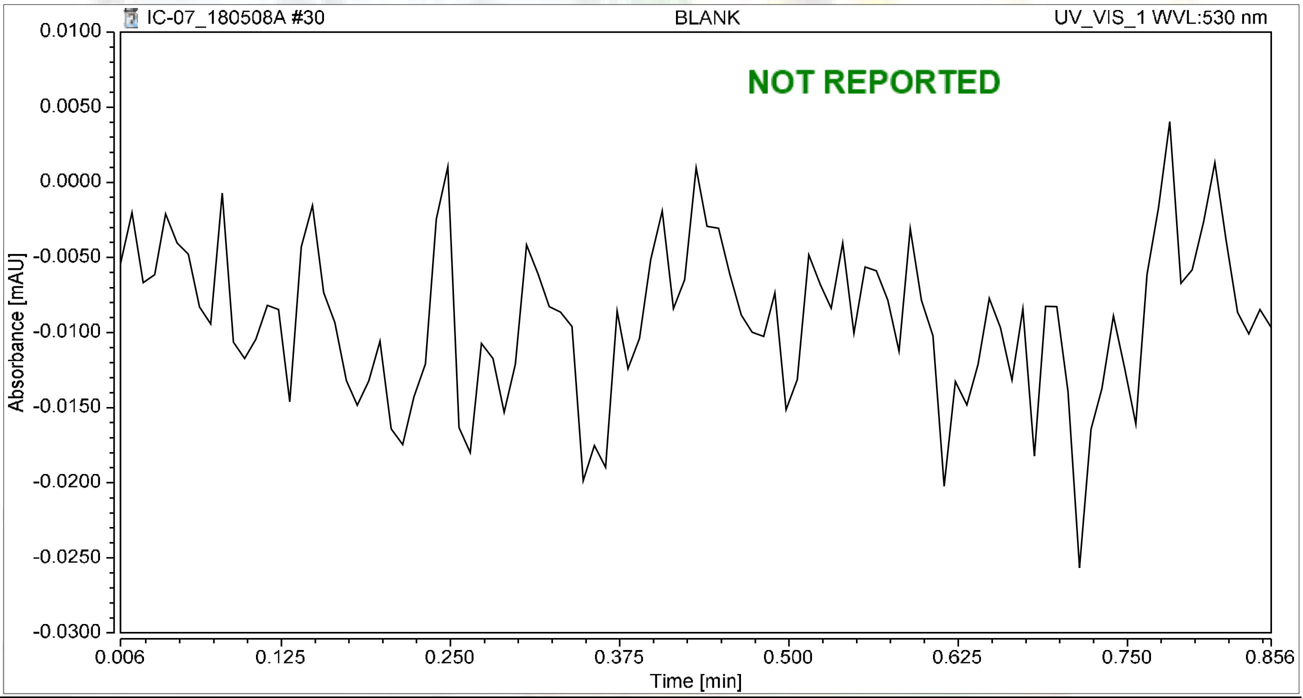
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.85**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 13:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

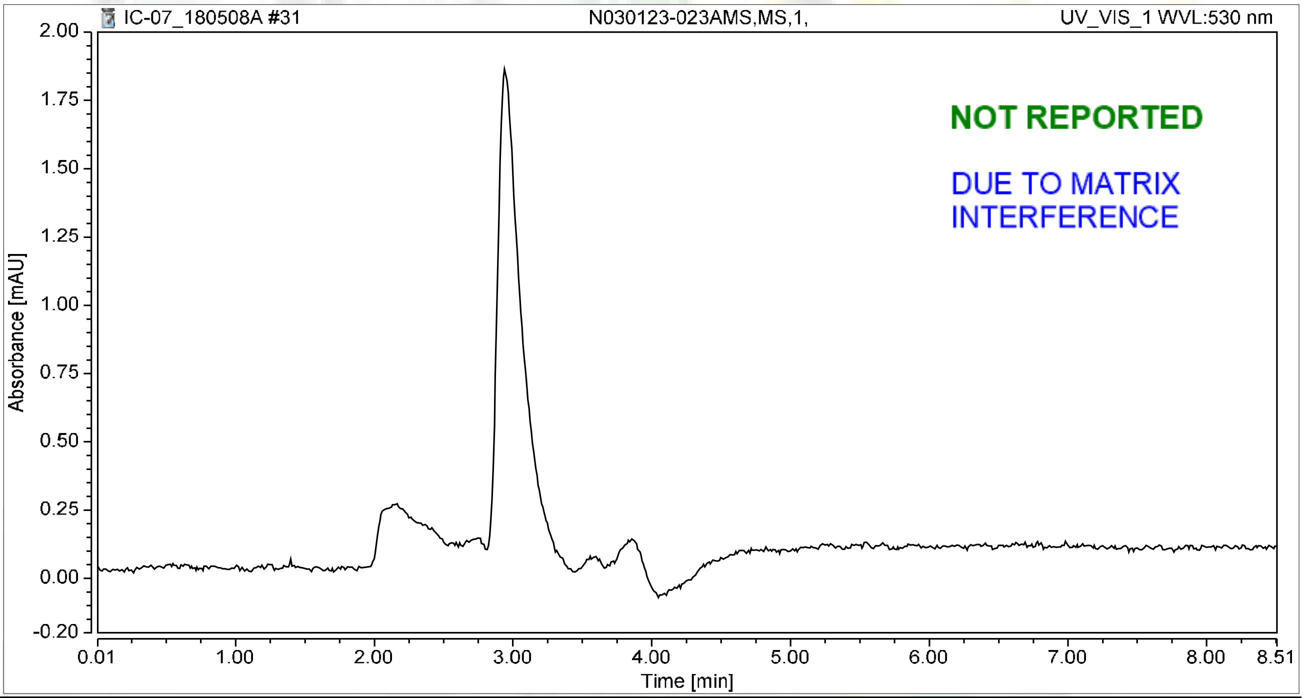
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-023AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 13:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

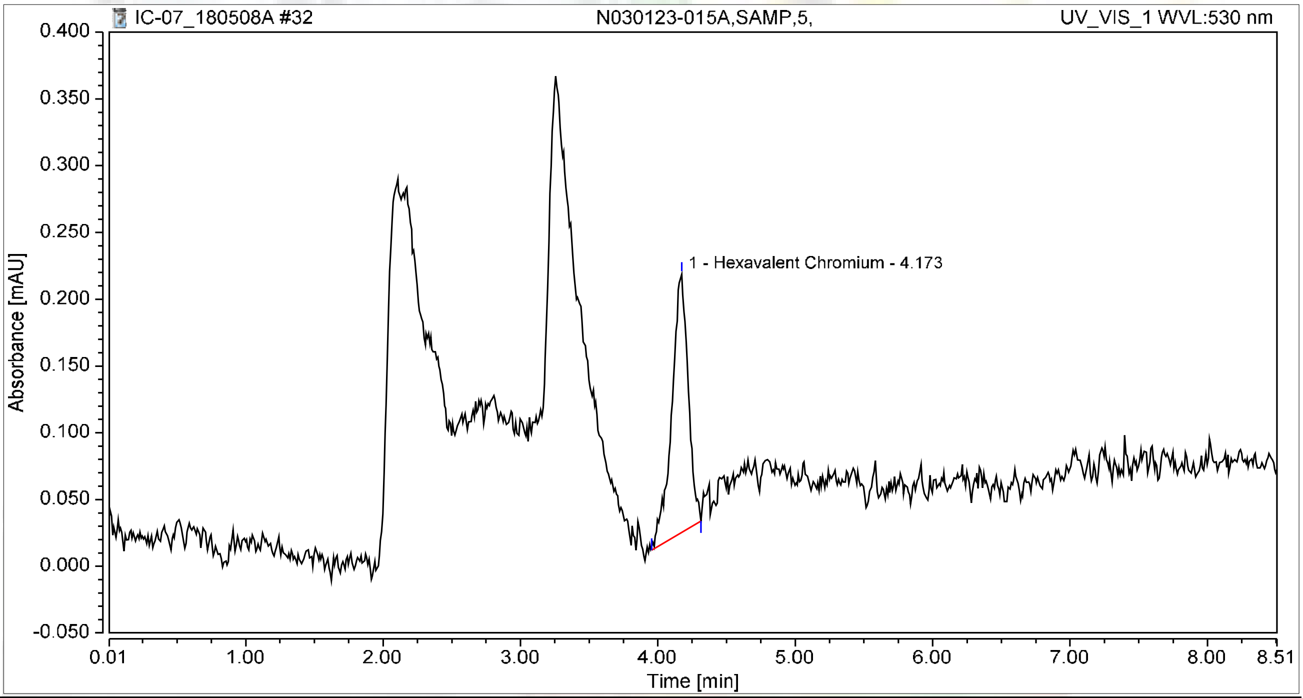
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-015A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 13:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

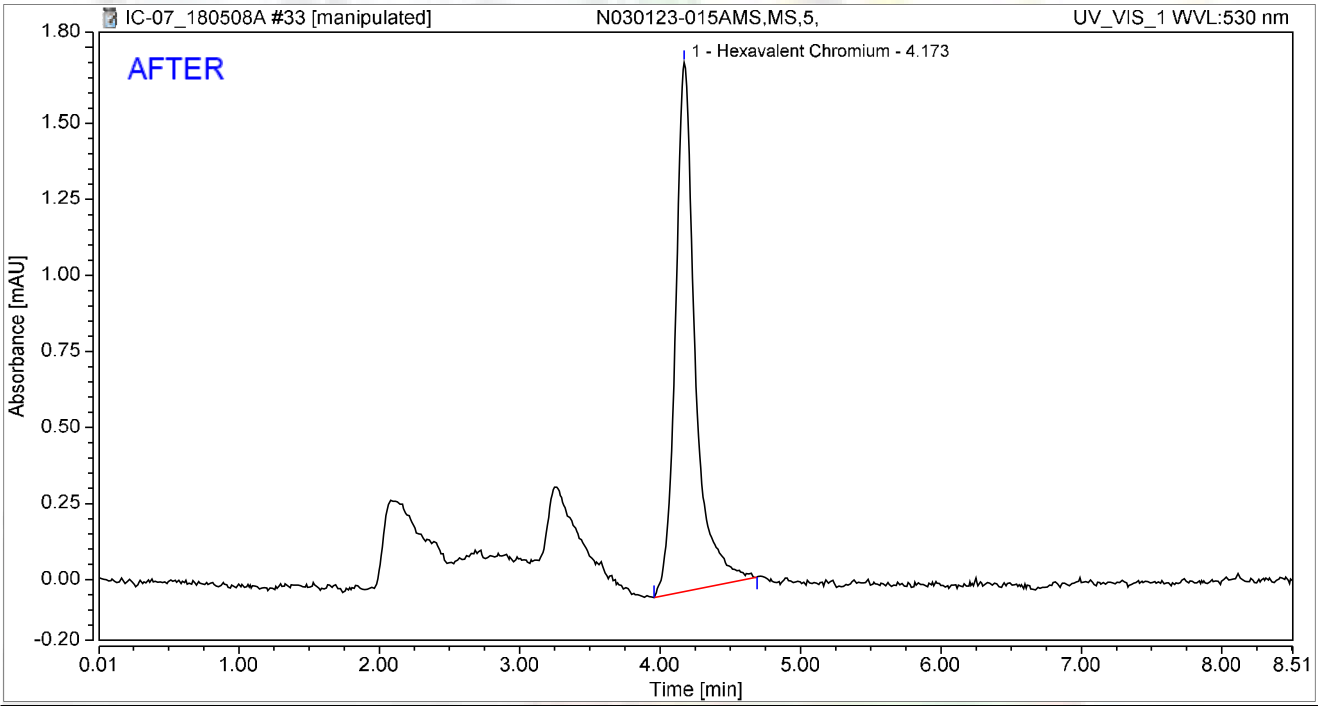
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.027	0.194	100.00	100.00	0.1045
Total:			**0.027**	**0.194**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-015AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 13:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.284	1.740	100.00	100.00	1.1067
Total:			**0.284**	**1.740**	**100.00**	**100.00**	

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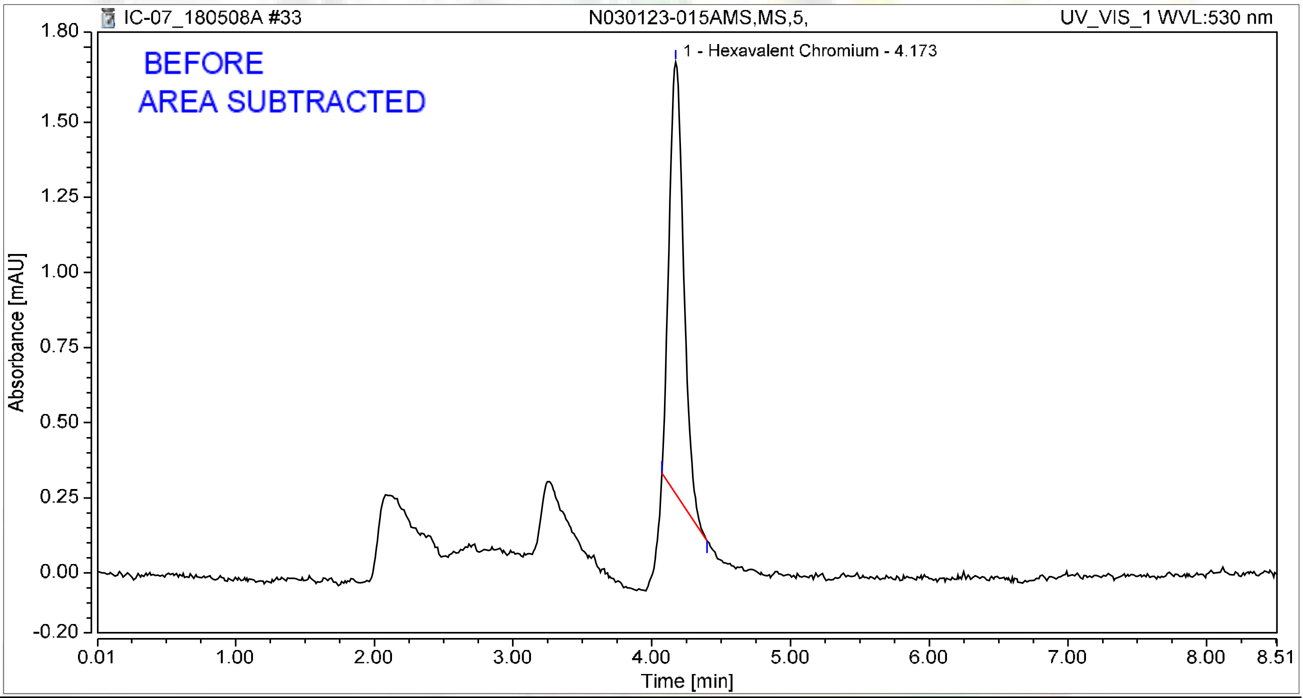
Chromatogram and Results

Injection Details

Injection Name:	**N030123-015AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 13:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.176	1.438	100.00	100.00	0.6841
Total:			**0.176**	**1.438**	**100.00**	**100.00**	

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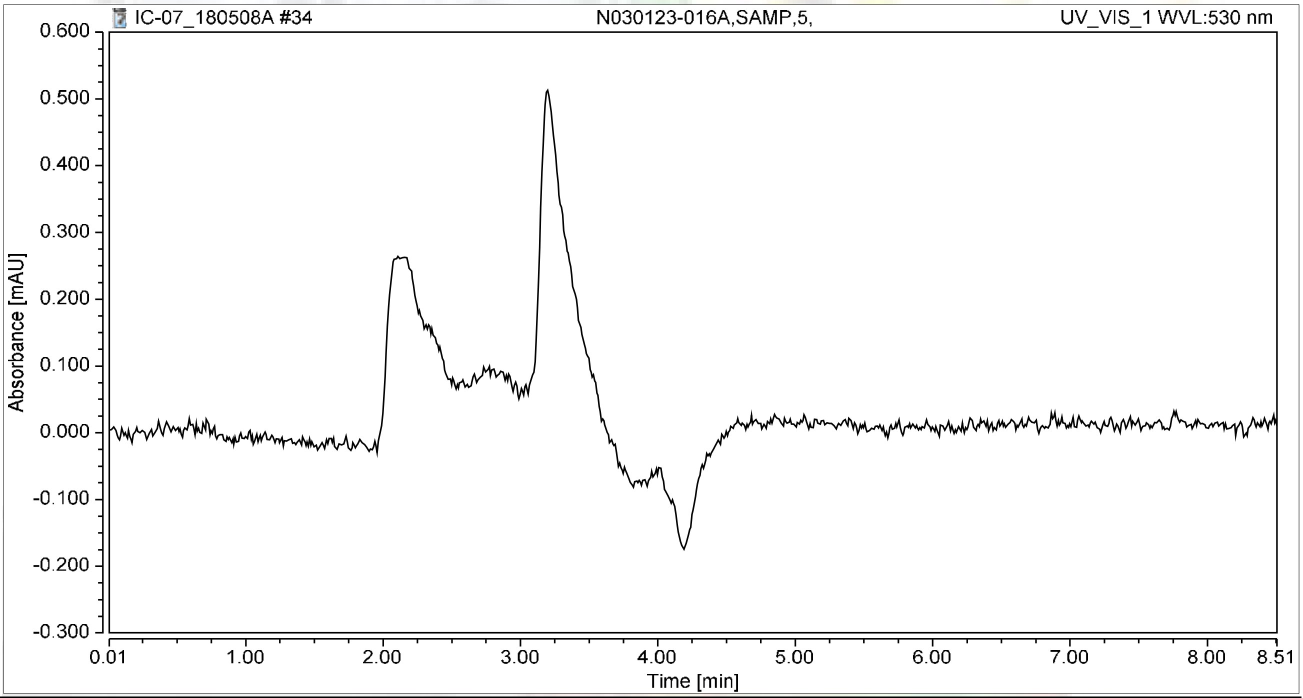
Chromatogram and Results

Injection Details

Injection Name:	**N030123-016A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 13:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

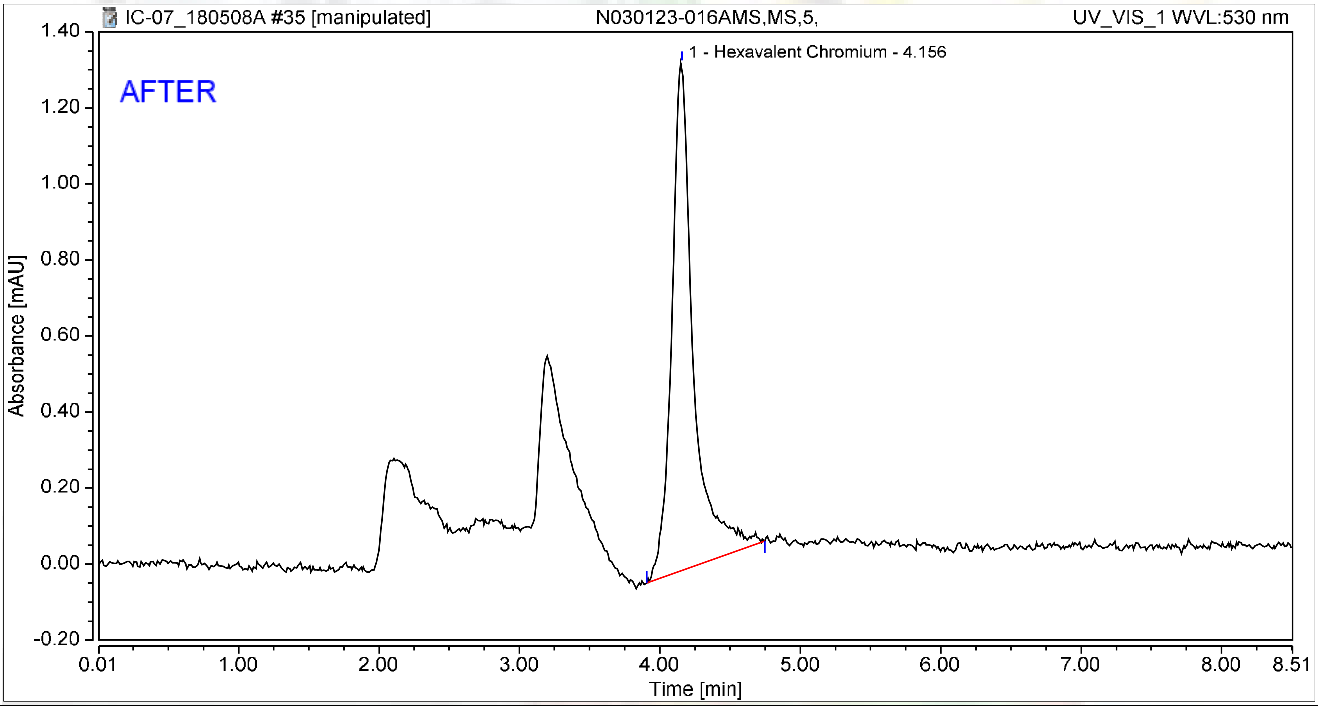
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-016AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 14:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.240	1.335	100.00	100.00	0.9356
Total:			**0.240**	**1.335**	**100.00**	**100.00**	

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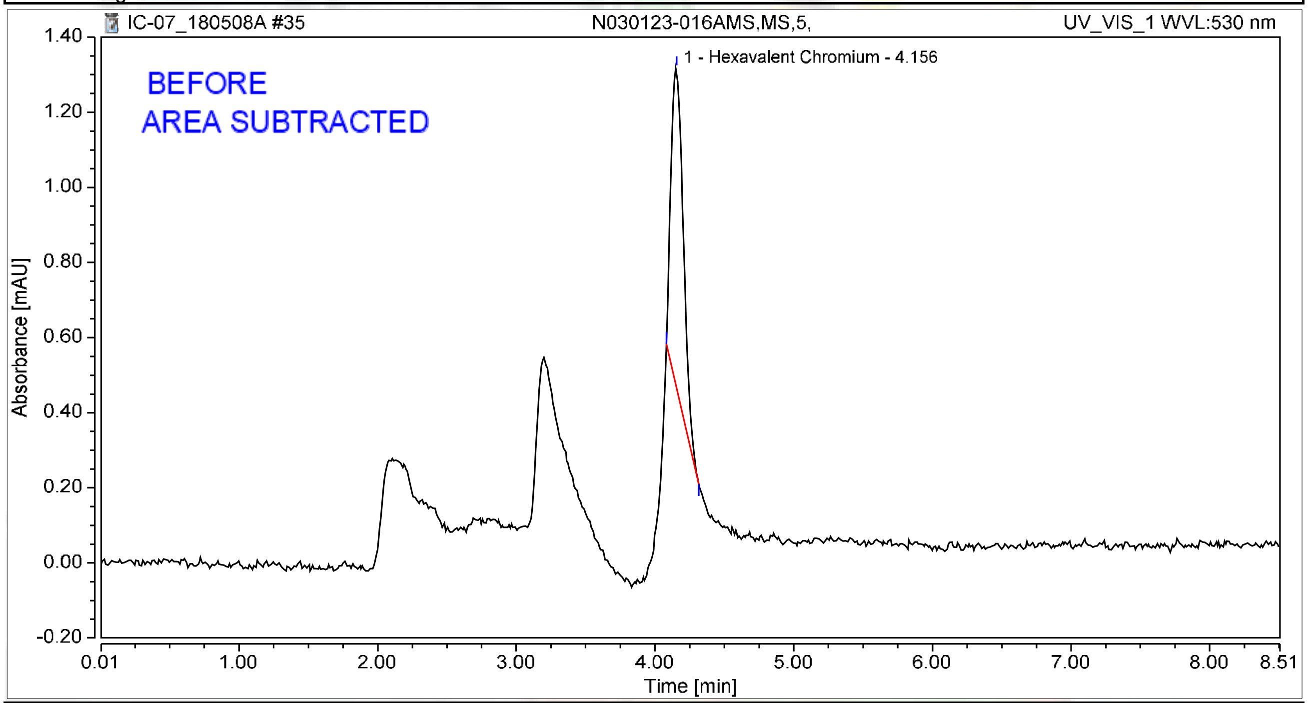
Chromatogram and Results

Injection Details

Injection Name:	**N030123-016AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 14:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.088	0.854	100.00	100.00	0.3428
Total:			**0.088**	**0.854**	**100.00**	**100.00**	

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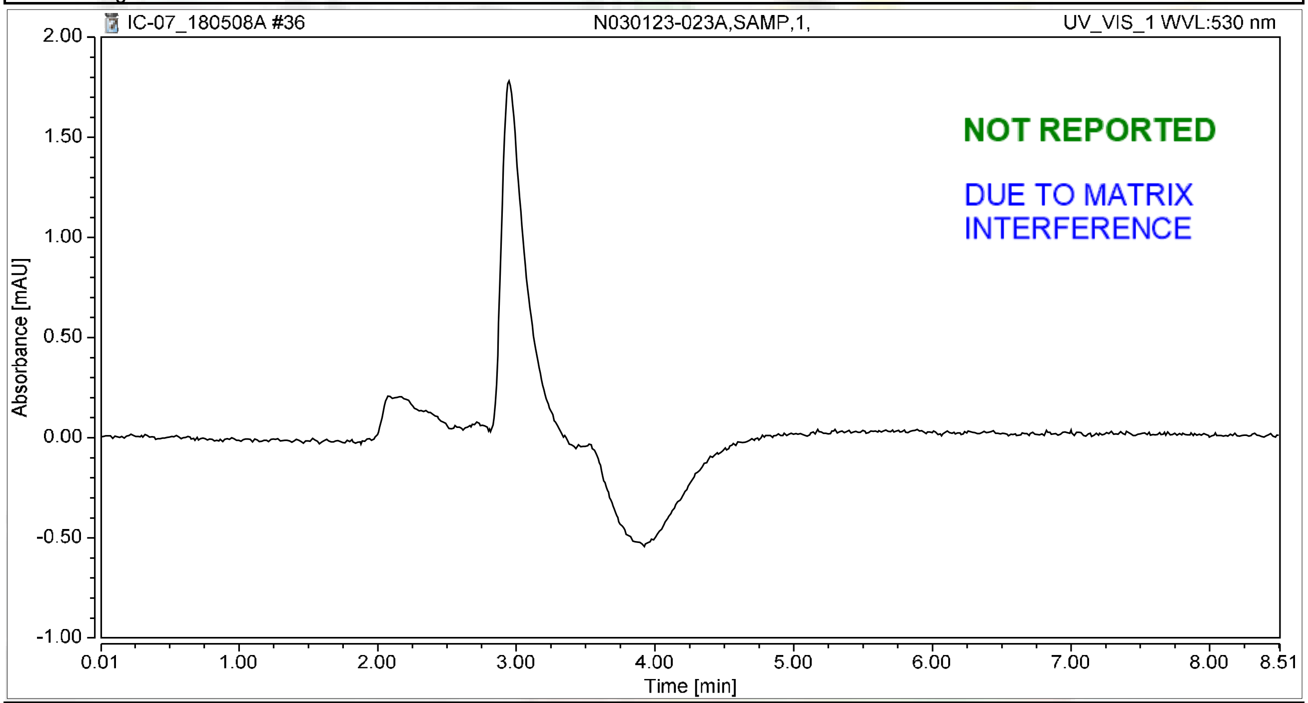
Chromatogram and Results

Injection Details

Injection Name:	**N030123-023A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 14:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

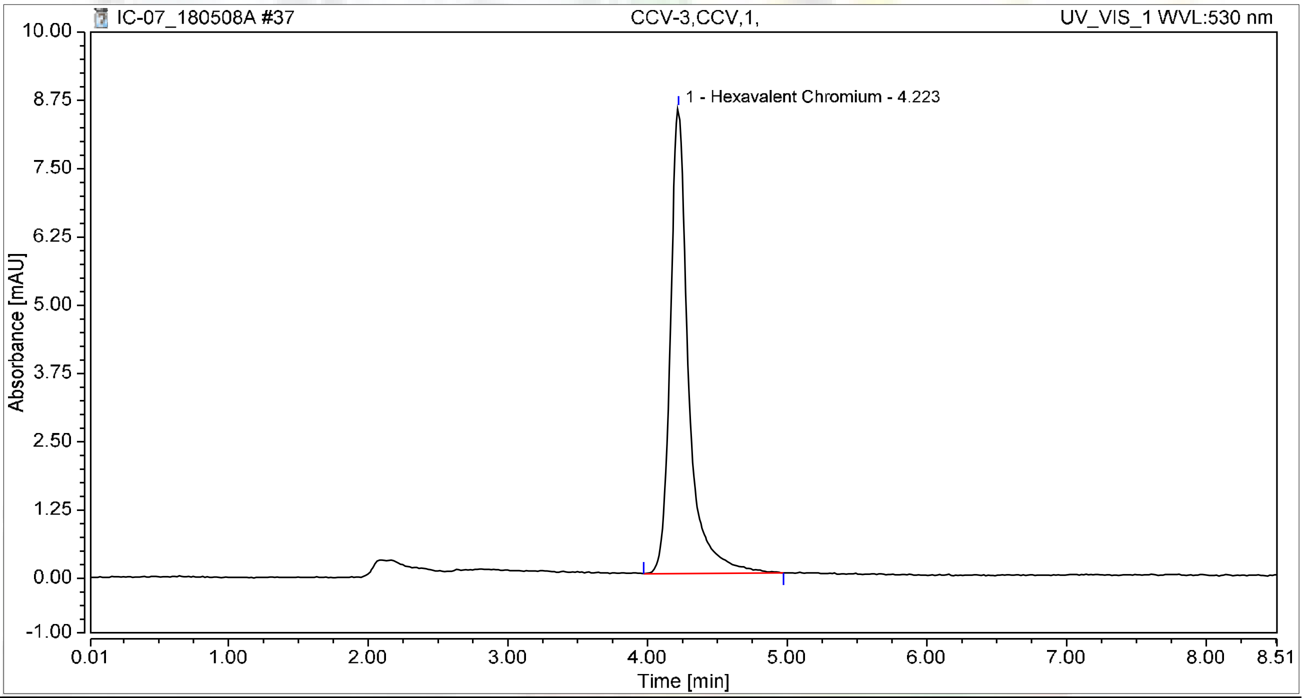
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 14:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

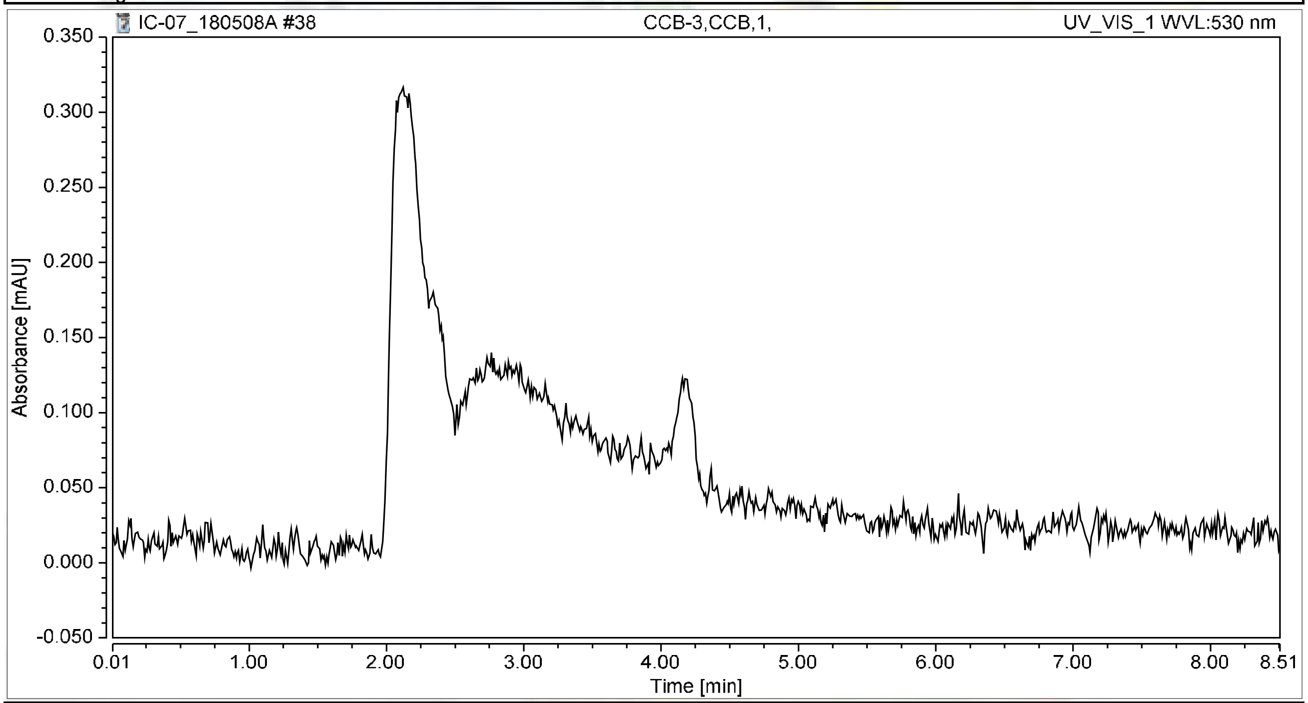
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.223	1.293	8.524	100.00	100.00	5.0387
Total:			**1.293**	**8.524**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 14:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

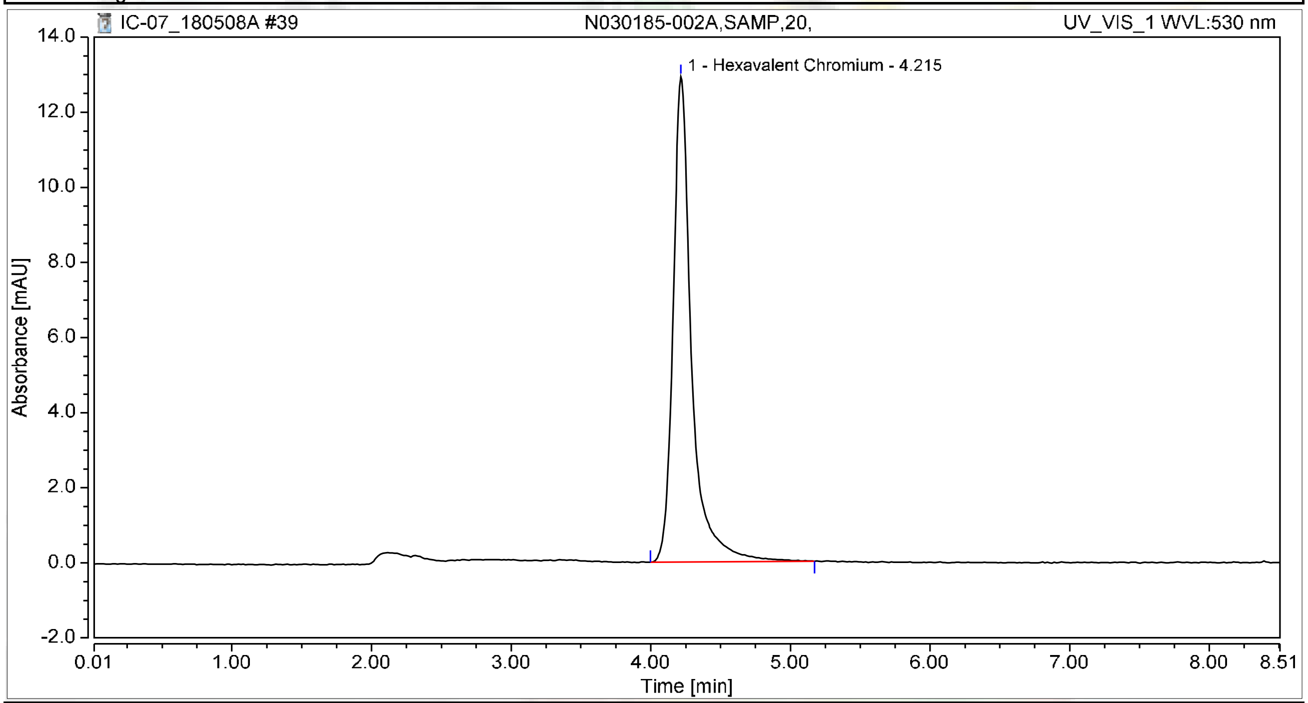
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-002A,SAMP,20,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 14:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

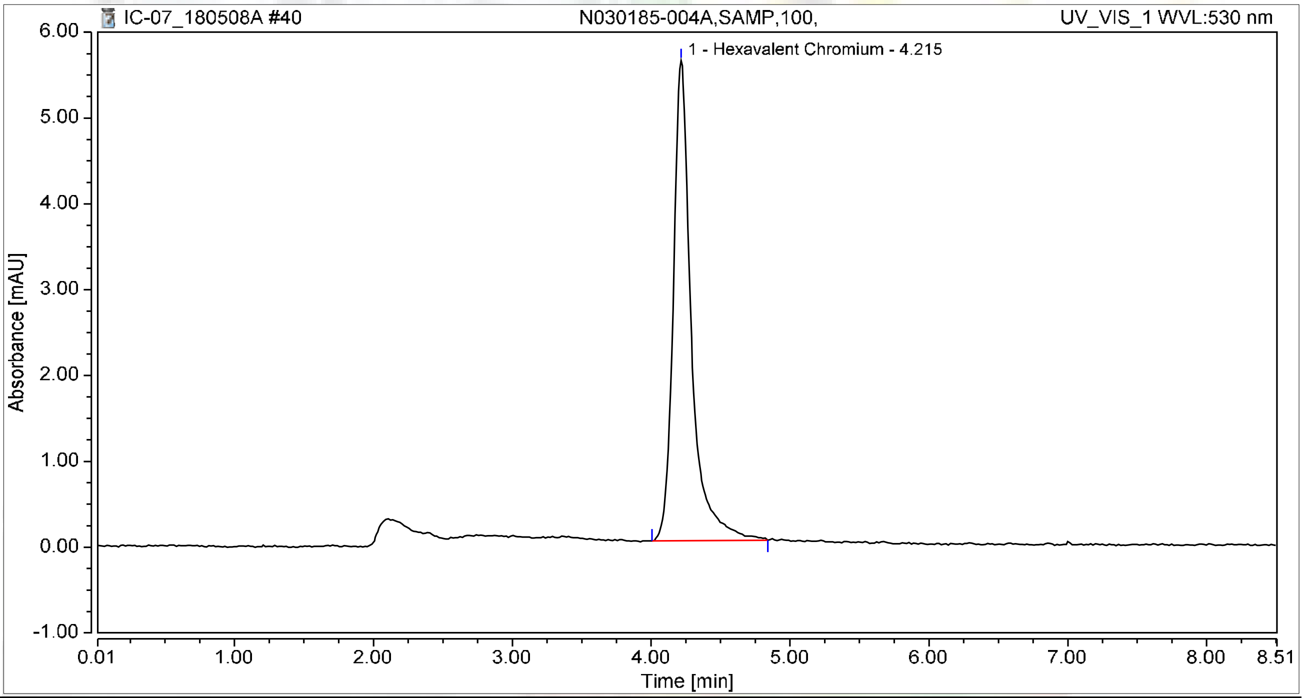
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.980	12.924	100.00	100.00	7.7147
Total:			**1.980**	**12.924**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-004A,SAMP,100,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 14:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

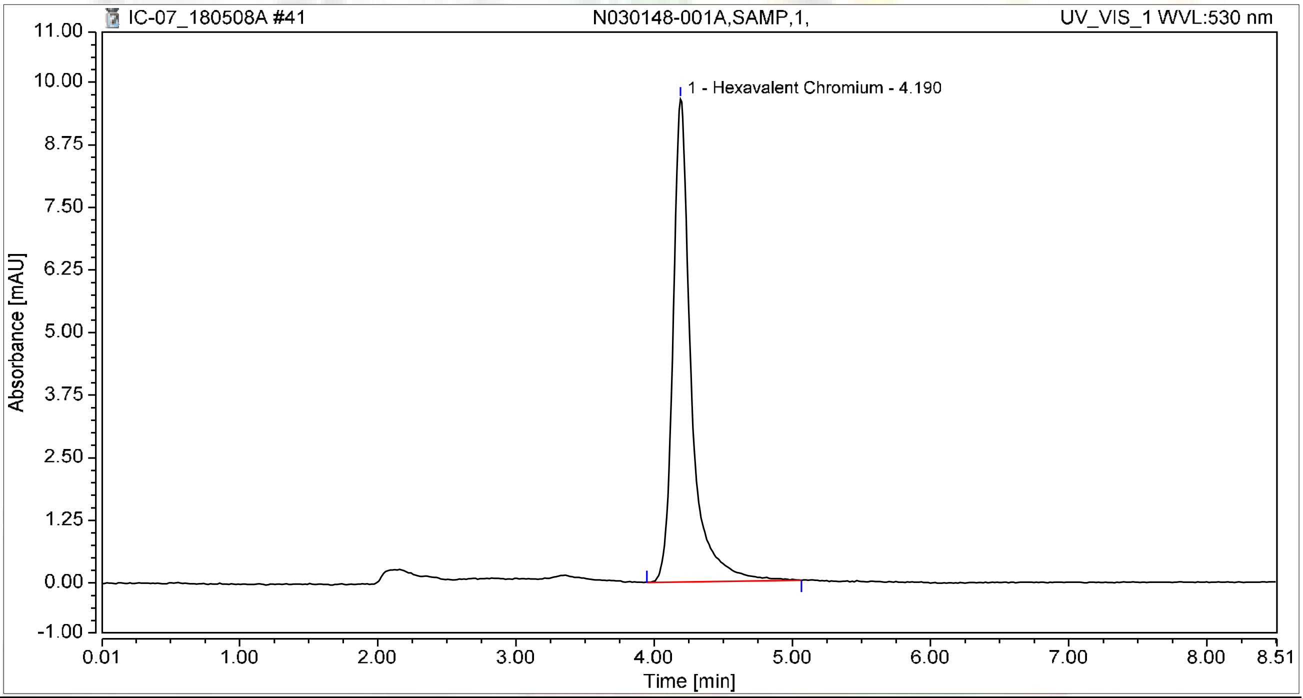
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.847	5.597	100.00	100.00	3.3020
Total:			**0.847**	**5.597**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030148-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 14:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

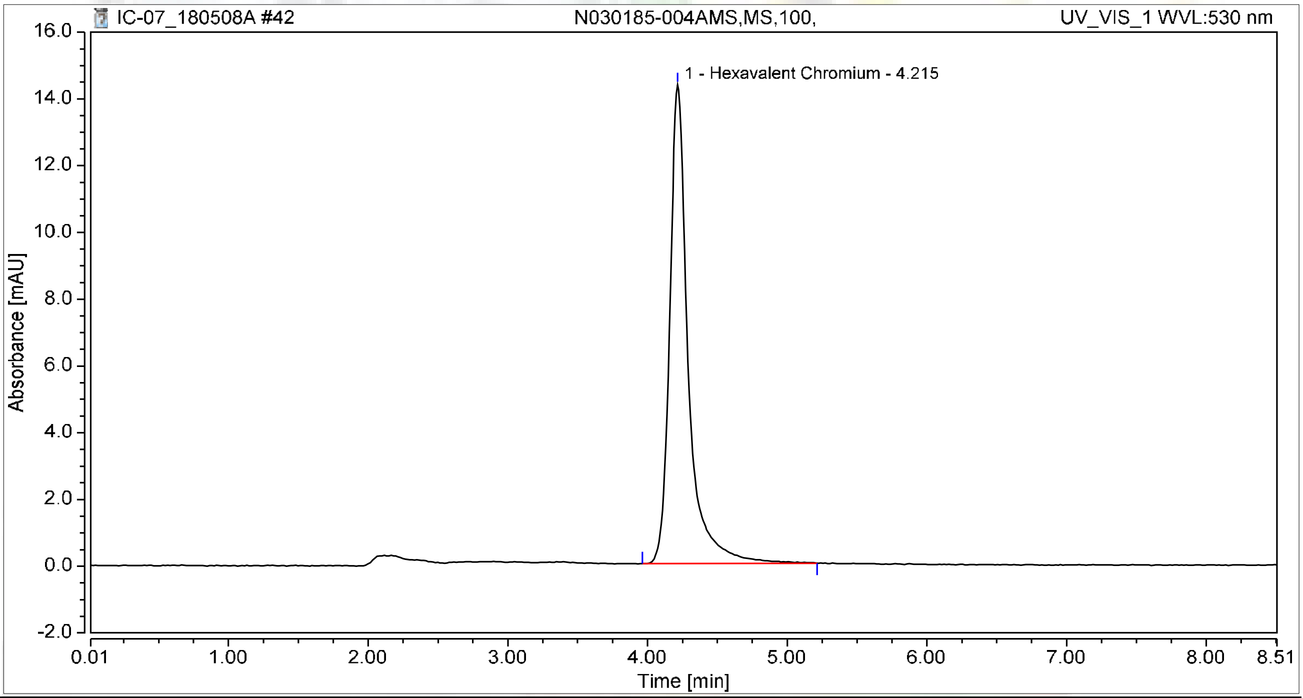
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.479	9.647	100.00	100.00	5.7646
Total:			**1.479**	**9.647**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-004AMS,MS,100,**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 15:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

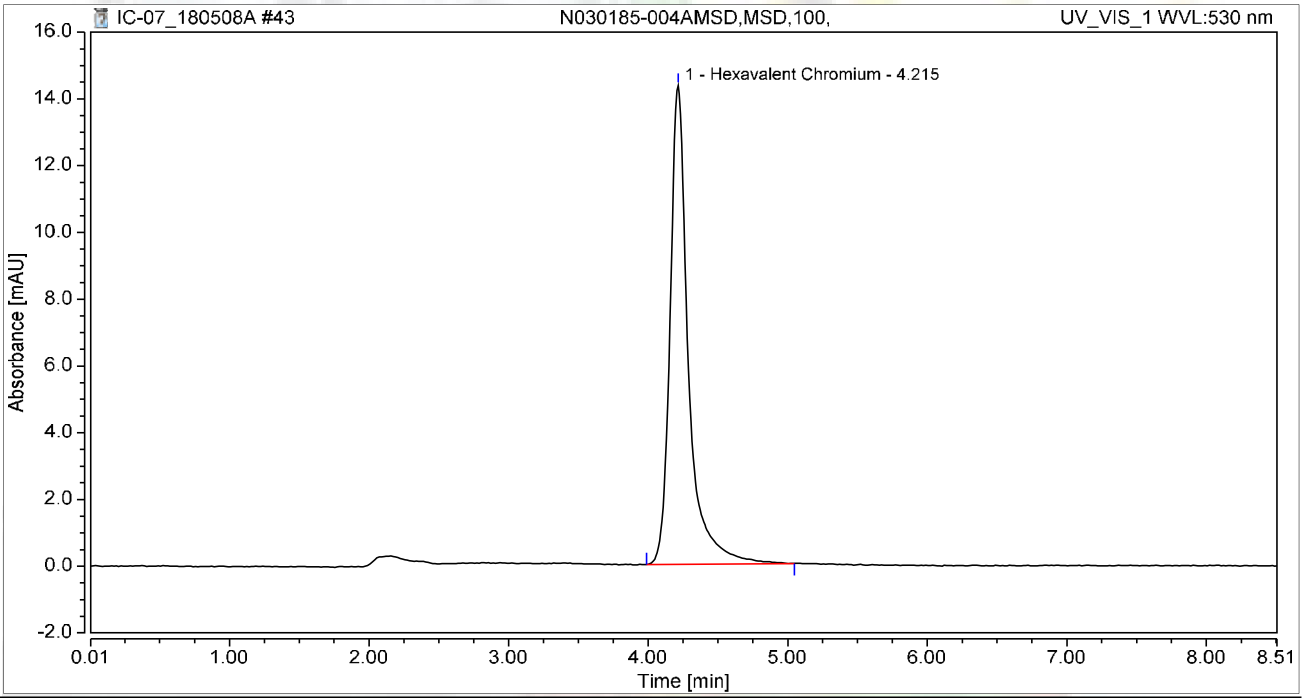
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.201	14.347	100.00	100.00	8.5751
Total:			**2.201**	**14.347**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-004AMSD,MSD,100,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 15:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

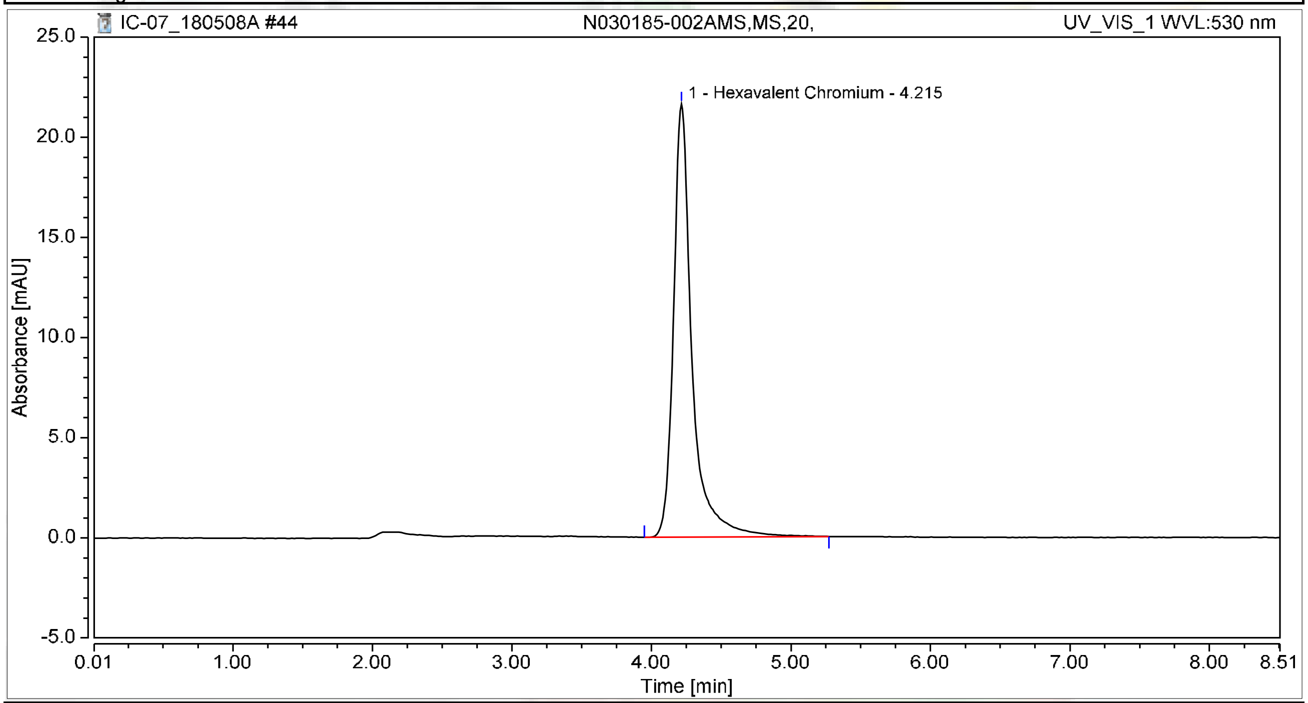
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.191	14.352	100.00	100.00	8.5357
Total:			**2.191**	**14.352**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-002AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 15:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

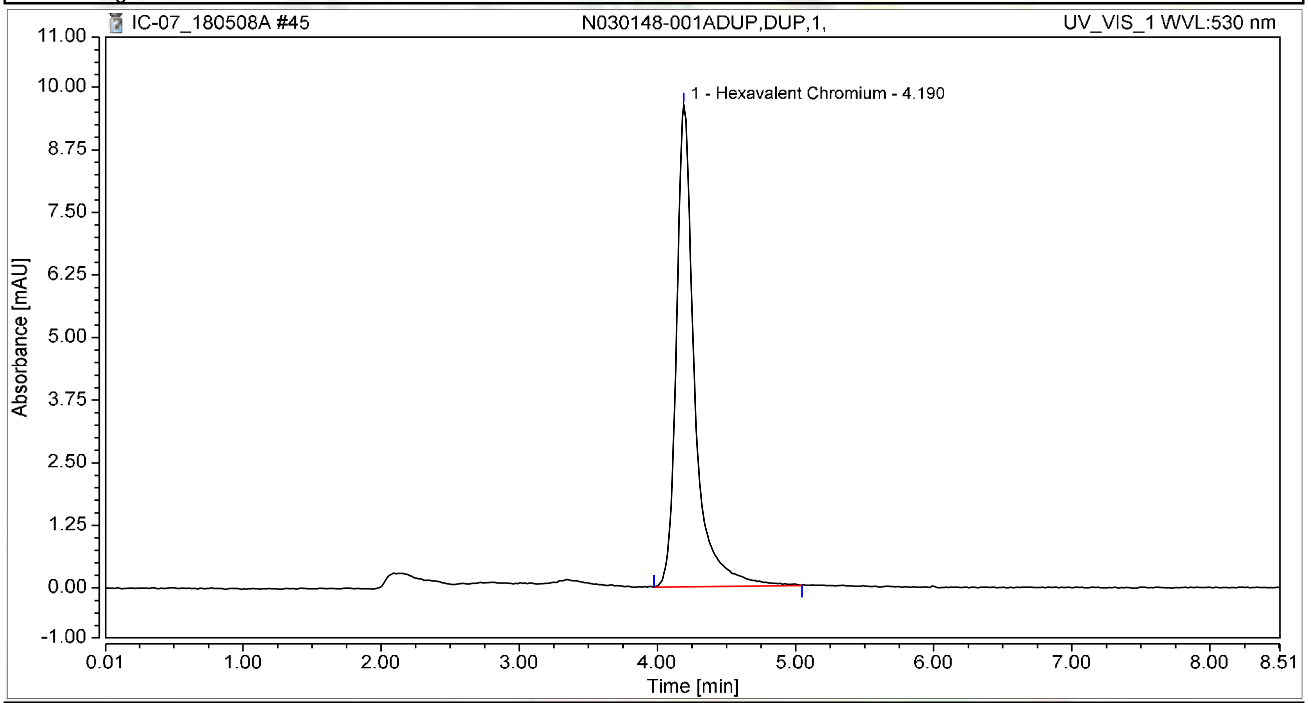
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	3.331	21.636	100.00	100.00	12.9775
Total:			**3.331**	**21.636**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030148-001ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 15:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

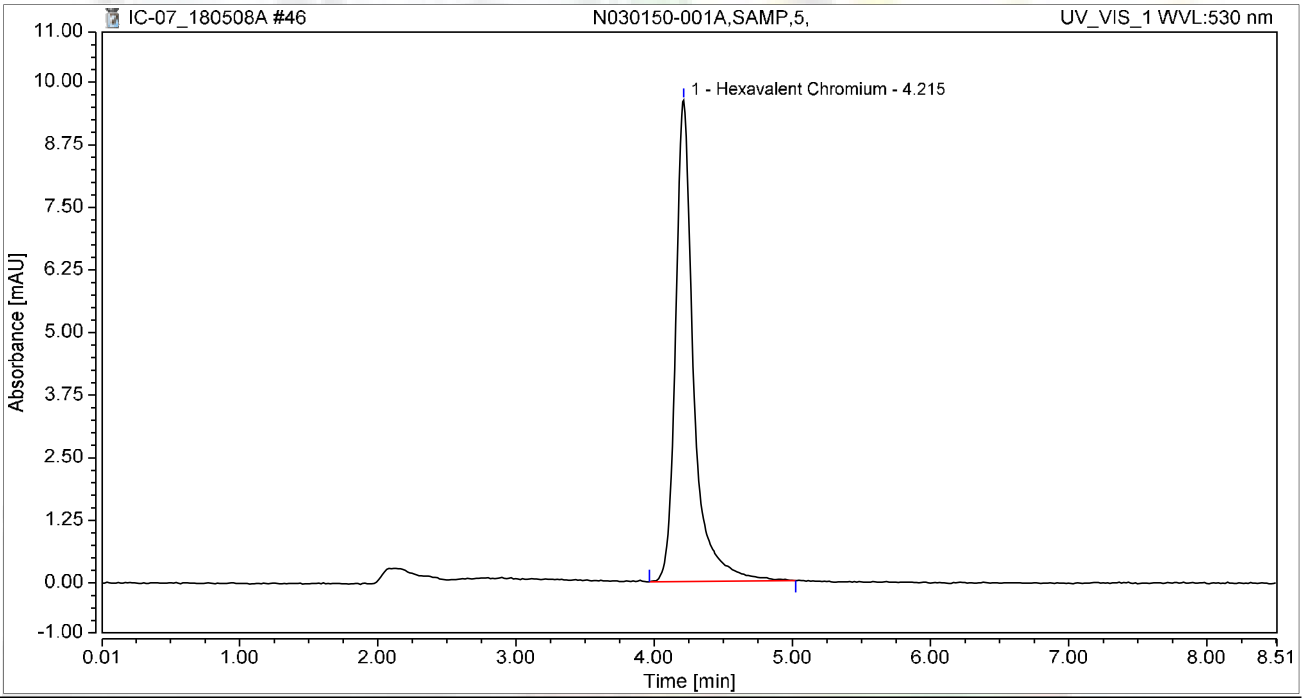
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.479	9.624	100.00	100.00	5.7630
Total:			**1.479**	**9.624**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030150-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 15:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

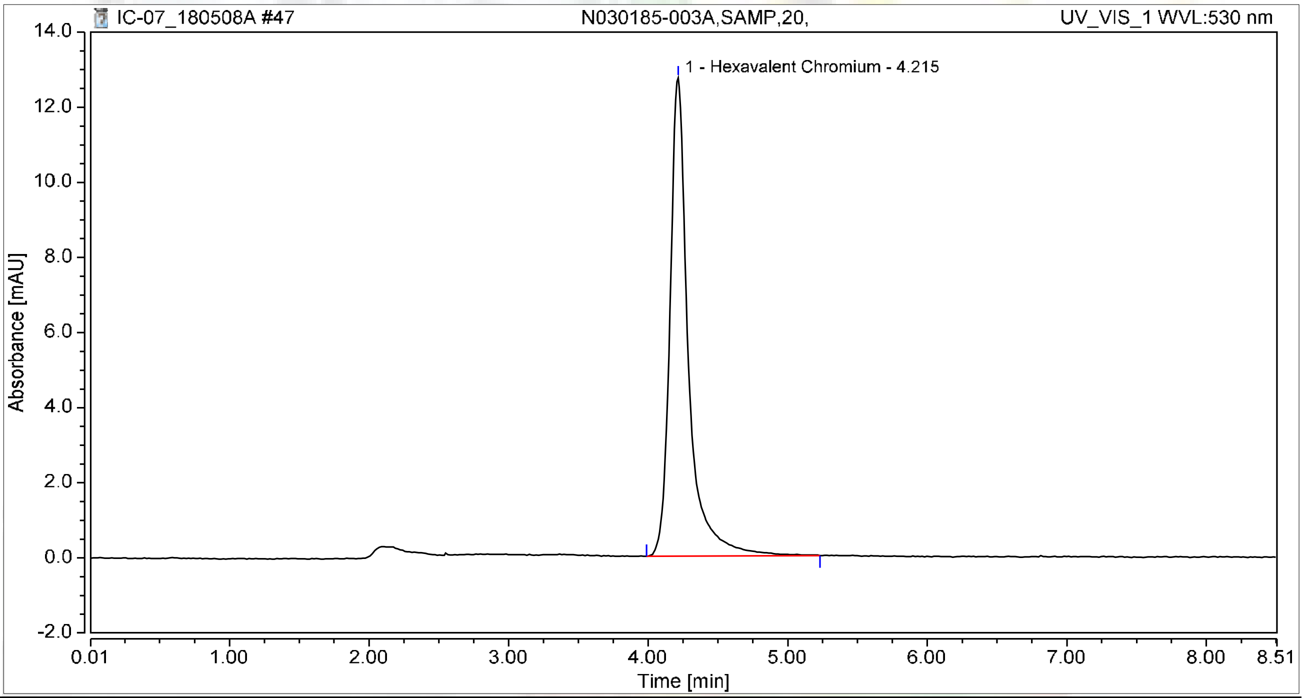
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.455	9.609	100.00	100.00	5.6697
Total:			**1.455**	**9.609**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-003A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 15:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

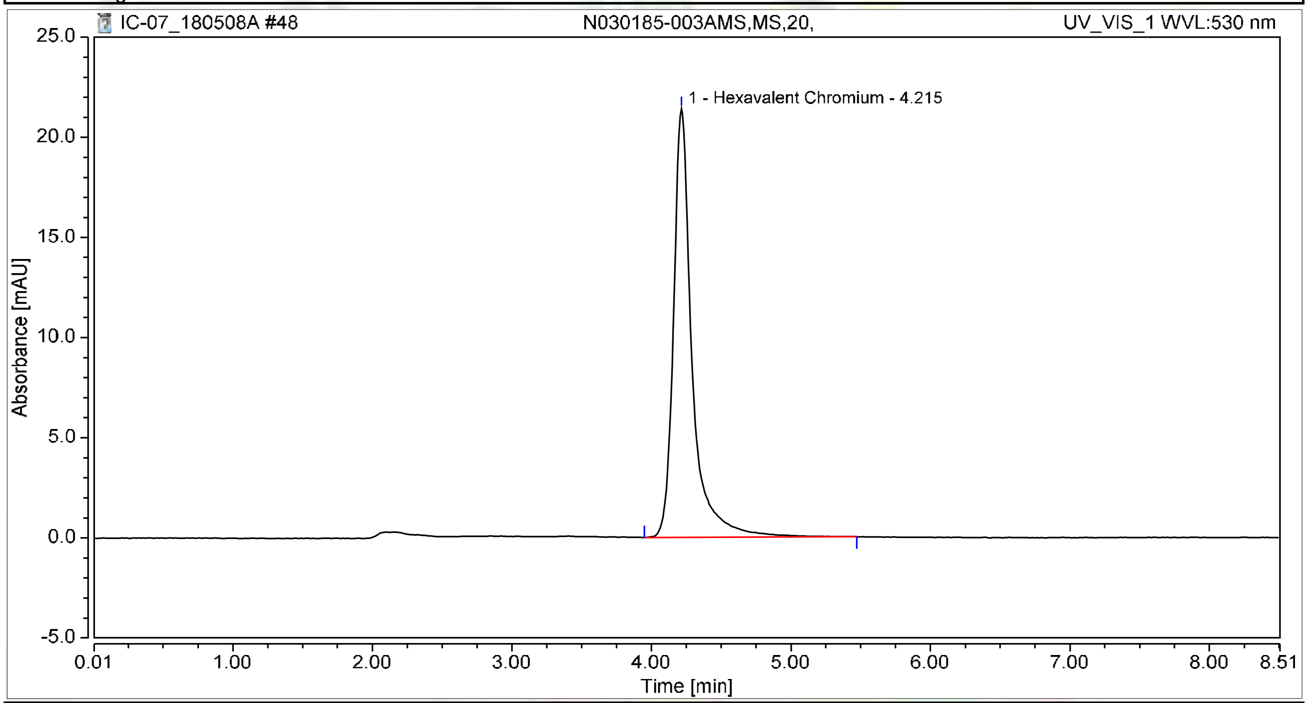
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.961	12.736	100.00	100.00	7.6397
Total:			**1.961**	**12.736**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-003AMS,MS,20,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 16:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

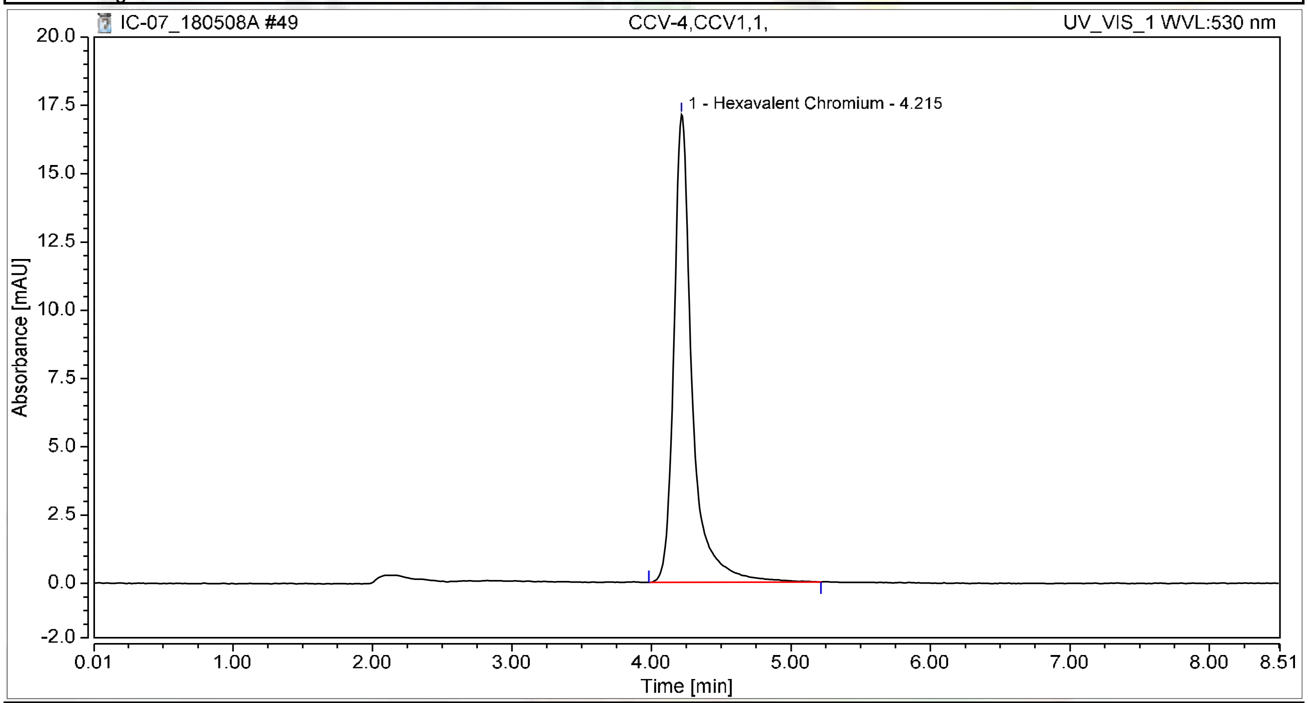
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	3.320	21.402	100.00	100.00	12.9379
Total:			**3.320**	**21.402**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 16:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

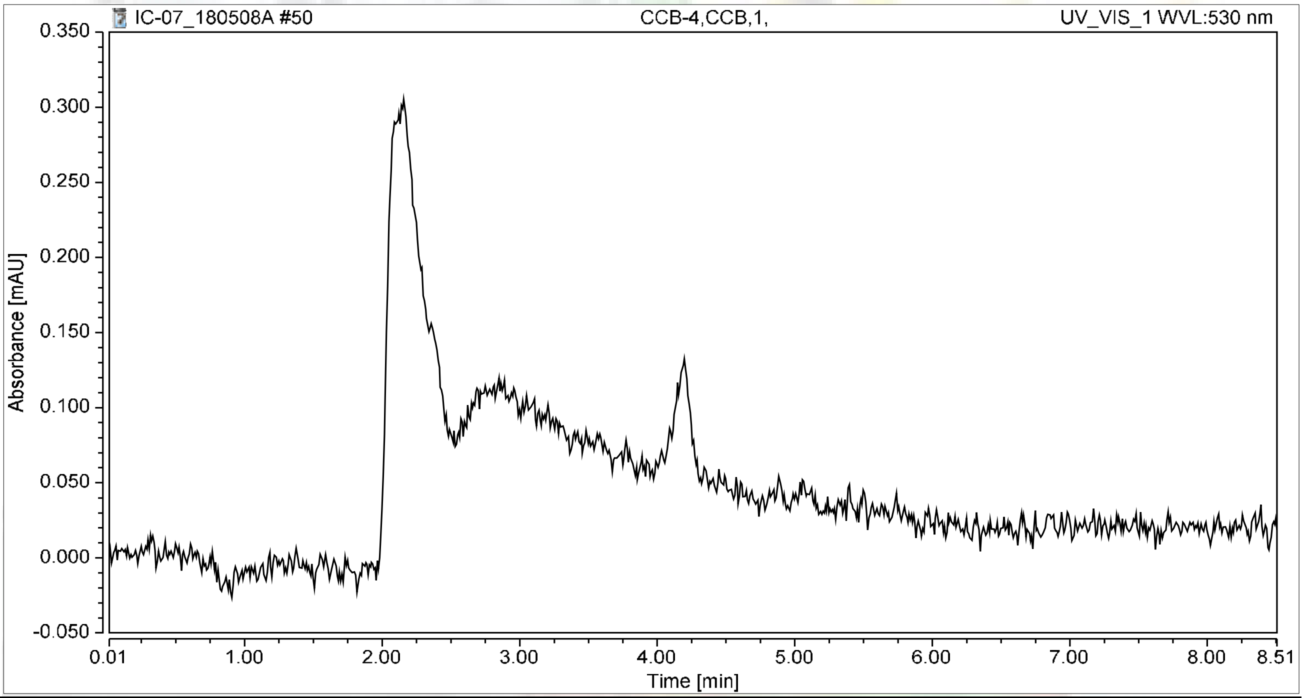
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.601	17.127	100.00	100.00	10.1357
Total:			**2.601**	**17.127**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 16:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

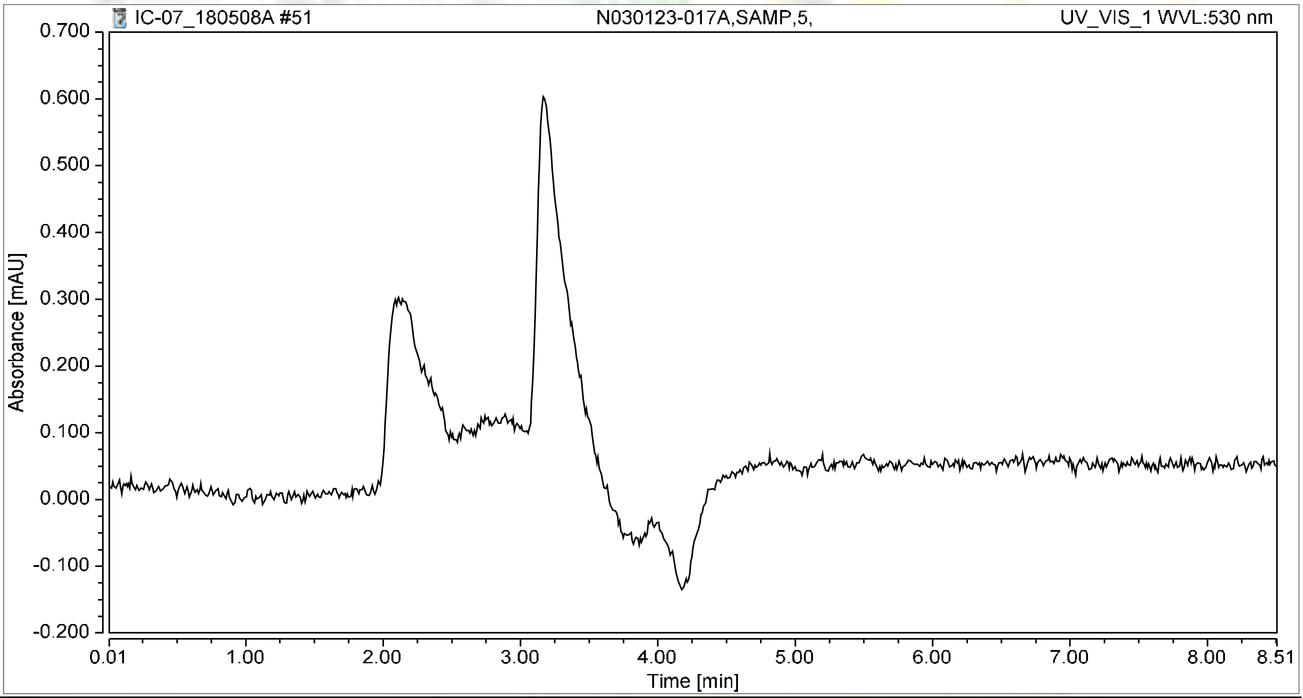
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-017A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 16:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

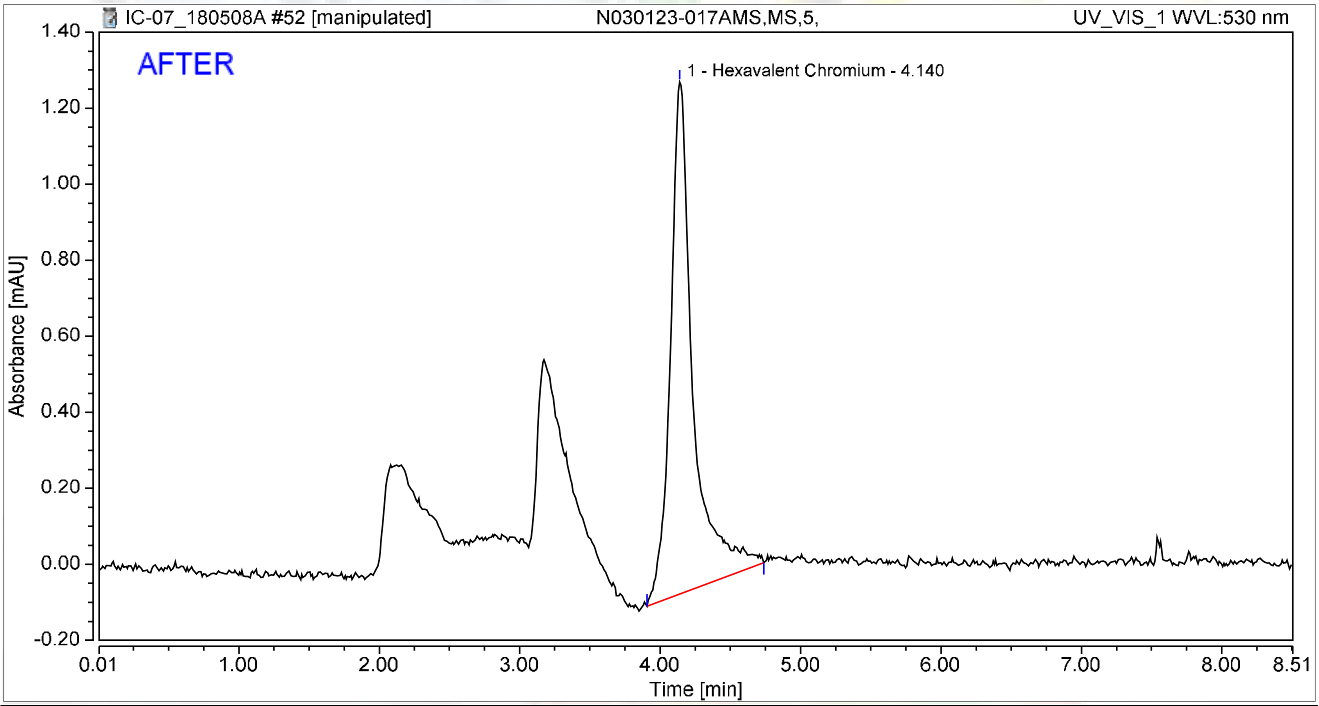
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-017AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 16:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.252	1.346	100.00	100.00	0.9809
Total:			**0.252**	**1.346**	**100.00**	**100.00**	

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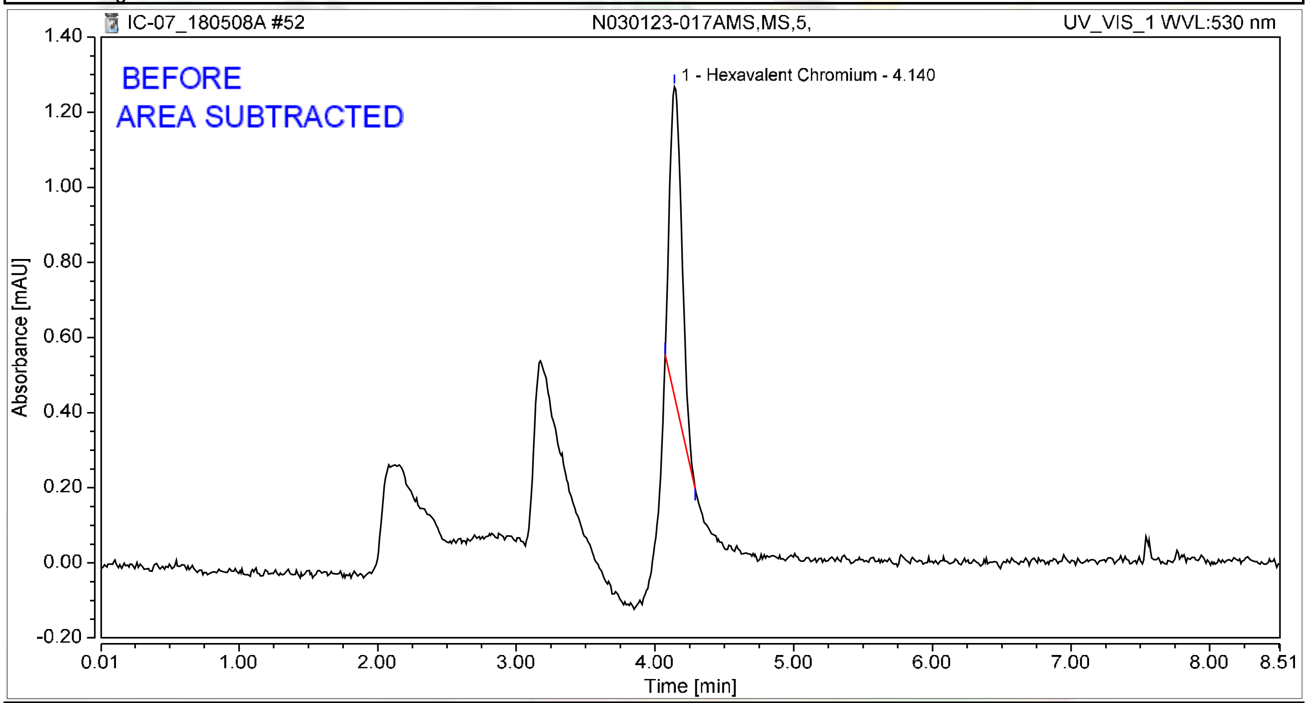
Chromatogram and Results

Injection Details

Injection Name:	**N030123-017AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 16:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.085	0.824	100.00	100.00	0.3304
Total:			**0.085**	**0.824**	**100.00**	**100.00**	

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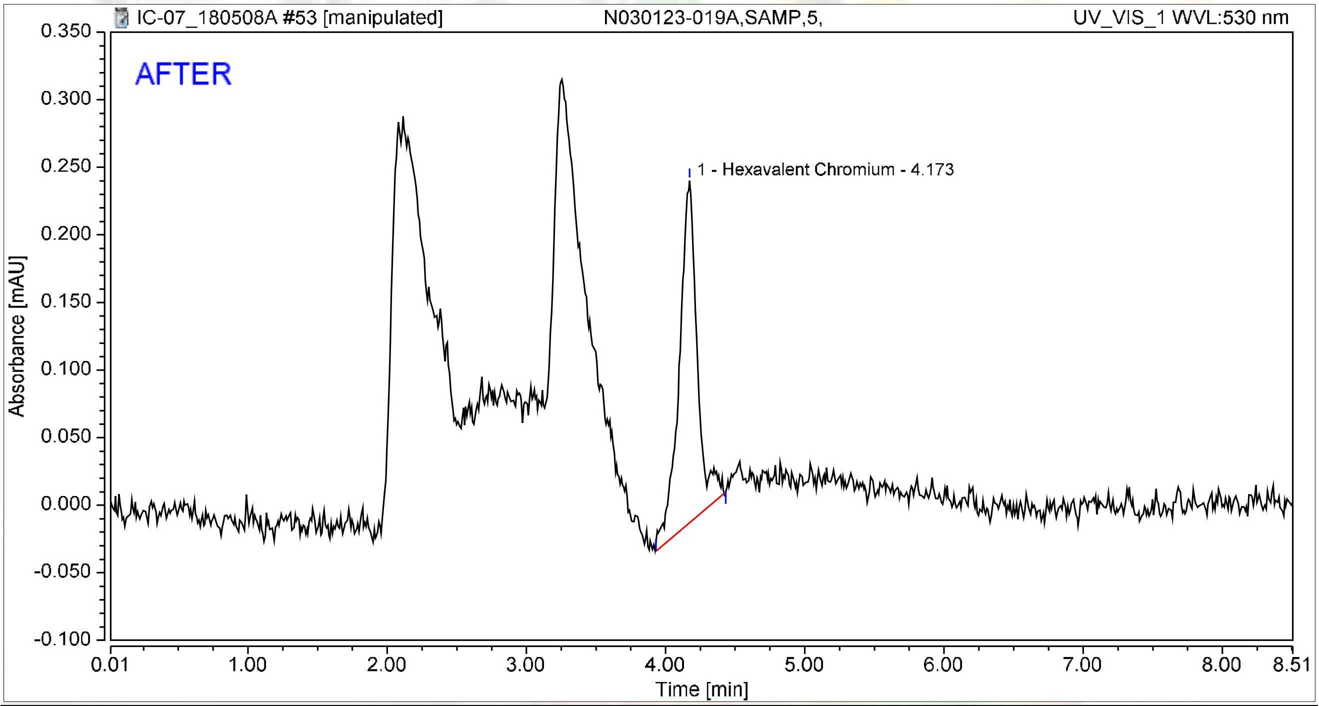
Chromatogram and Results

Injection Details

Injection Name:	**N030123-019A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 16:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.038	0.253	100.00	100.00	0.1476
Total:			**0.038**	**0.253**	**100.00**	**100.00**	

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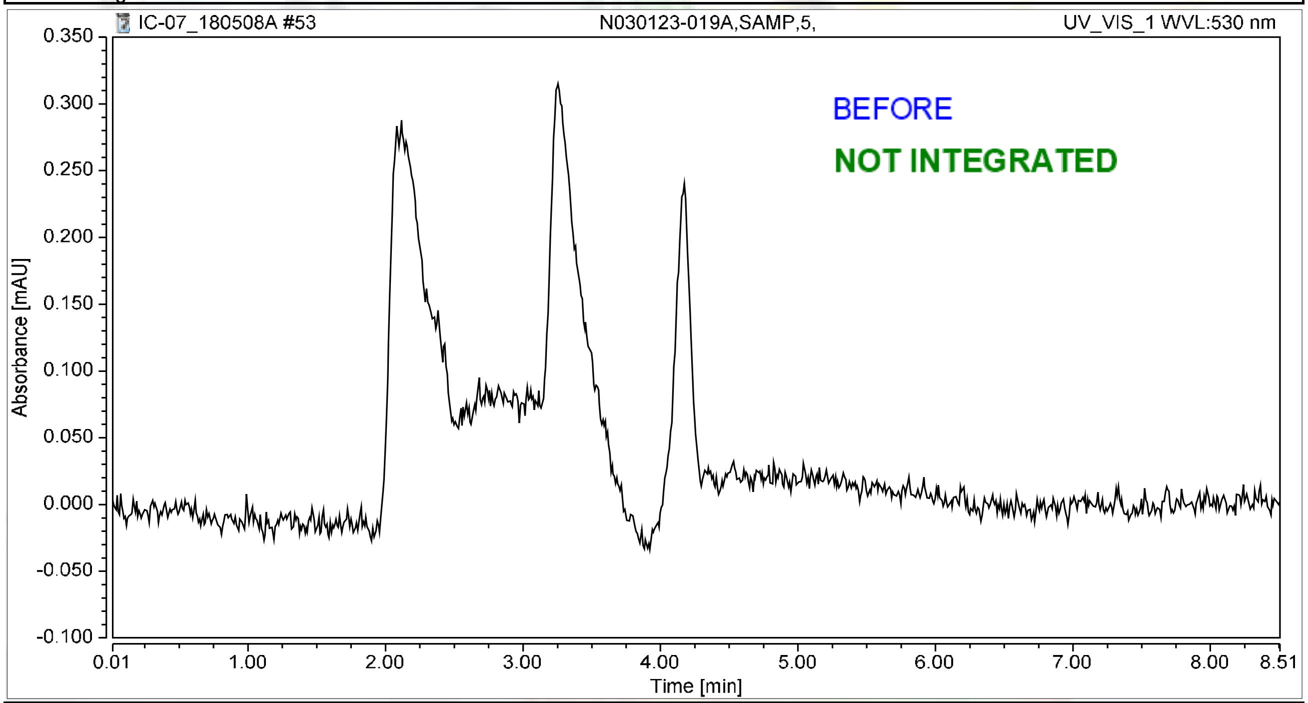
Chromatogram and Results

Injection Details

Injection Name:	**N030123-019A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 16:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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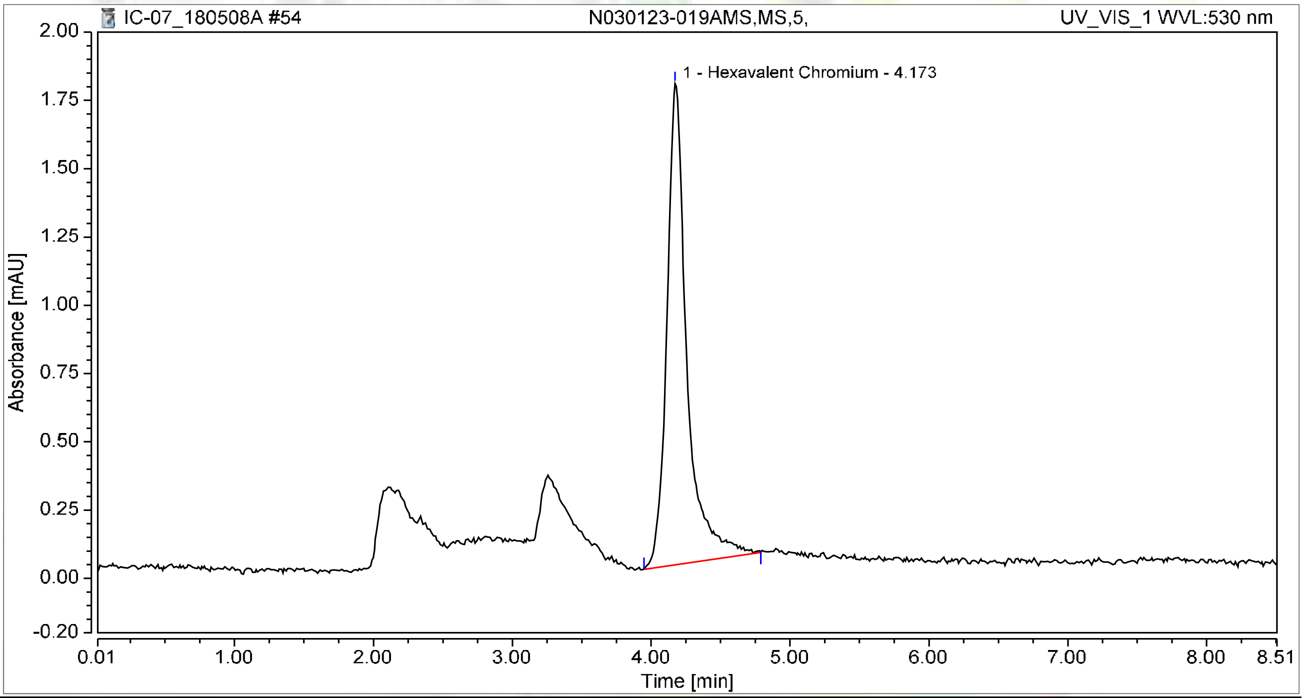
Chromatogram and Results

Injection Details

Injection Name:	**N030123-019AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 17:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

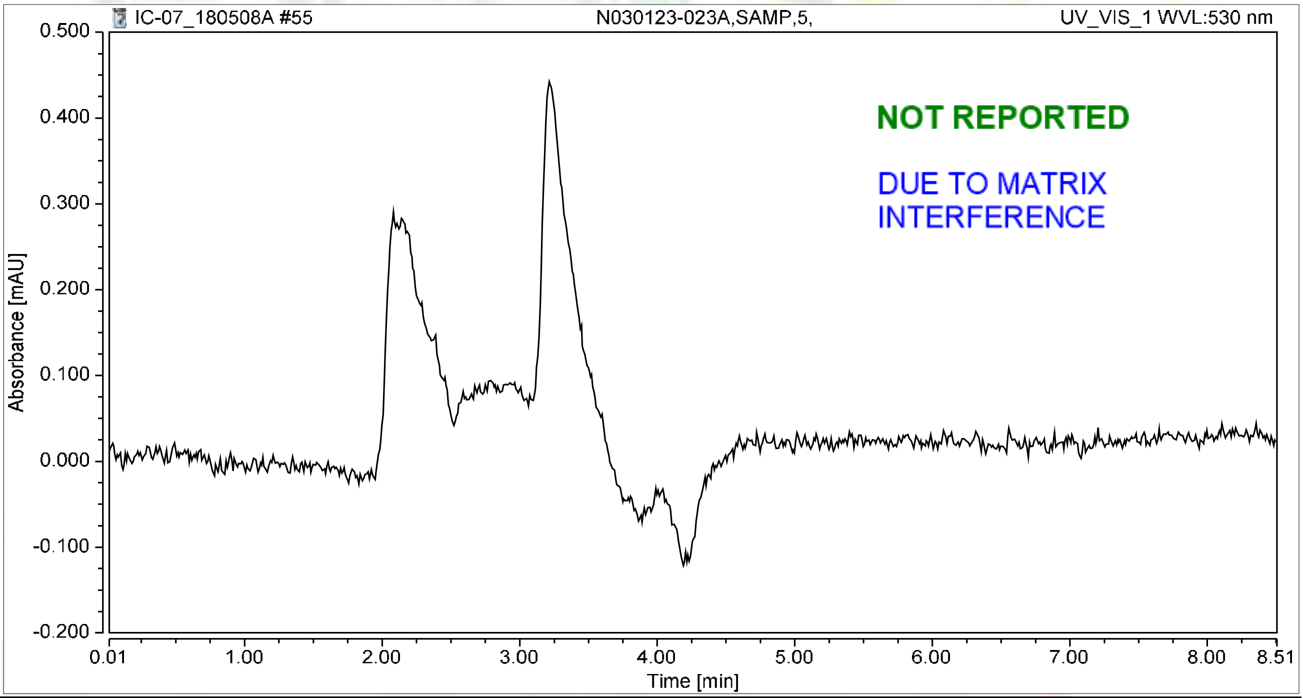
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.294	1.762	100.00	100.00	1.1474
Total:			**0.294**	**1.762**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-023A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 17:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

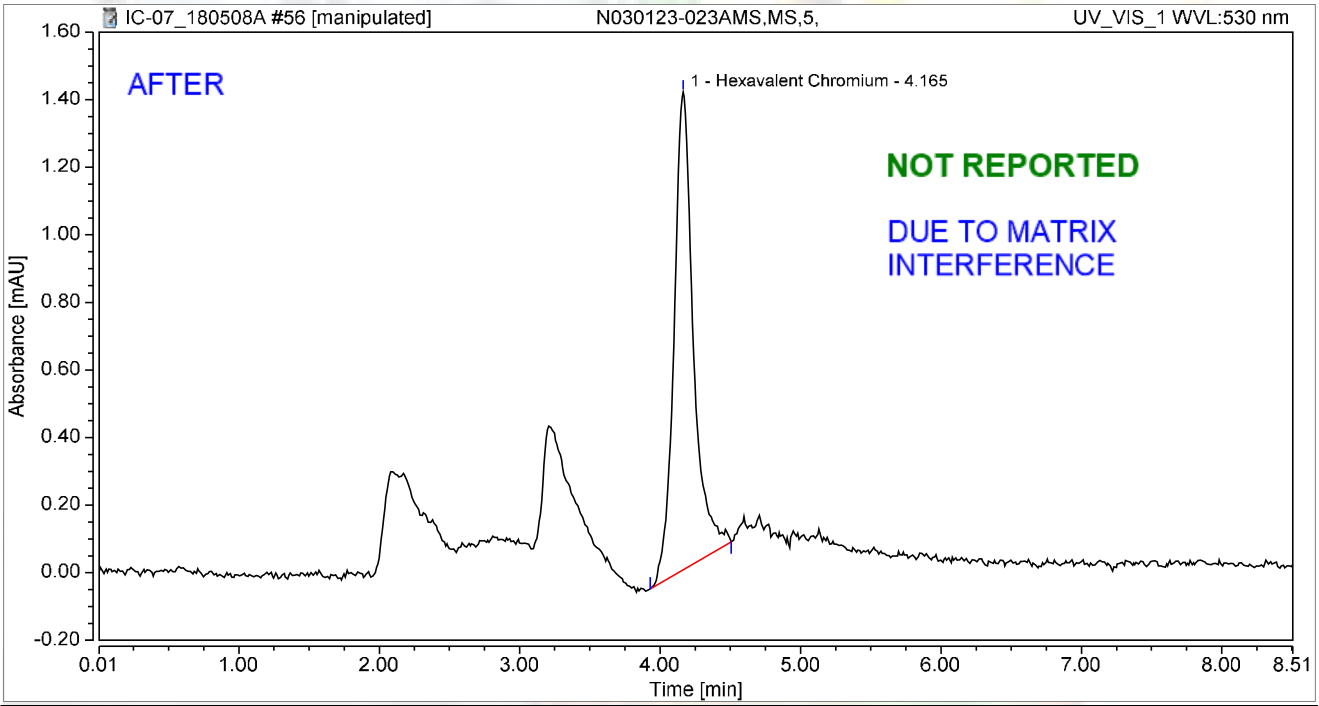
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-023AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.226	1.414	100.00	100.00	0.8818
Total:			**0.226**	**1.414**	**100.00**	**100.00**	

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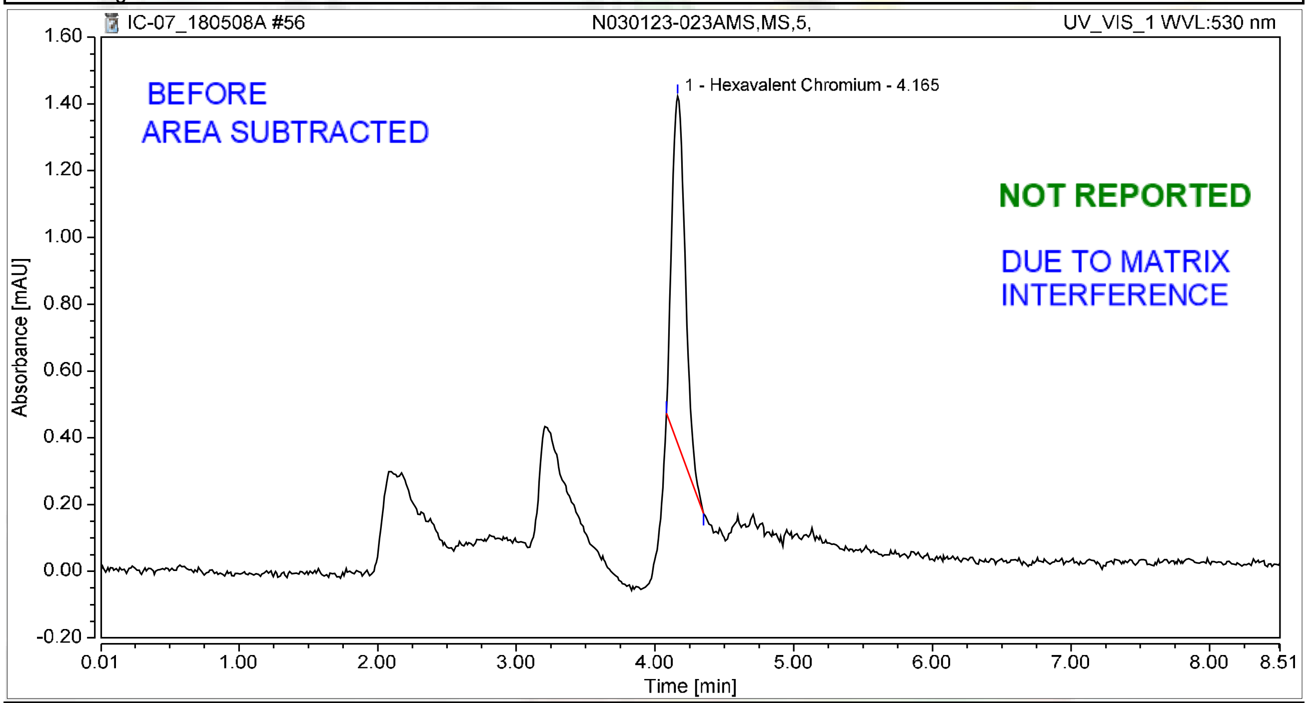
Chromatogram and Results

Injection Details

Injection Name:	**N030123-023AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 17:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.117	1.043	100.00	100.00	0.4567
Total:			**0.117**	**1.043**	**100.00**	**100.00**	

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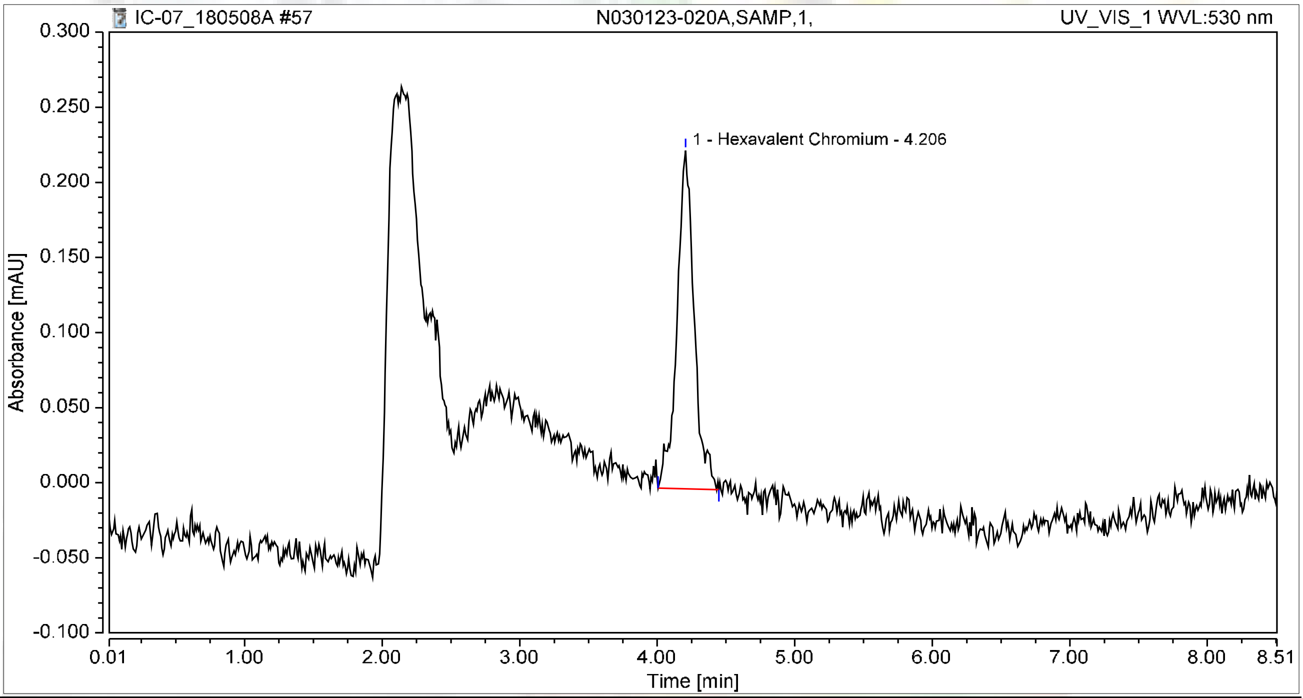
Chromatogram and Results

Injection Details

Injection Name:	**N030123-020A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

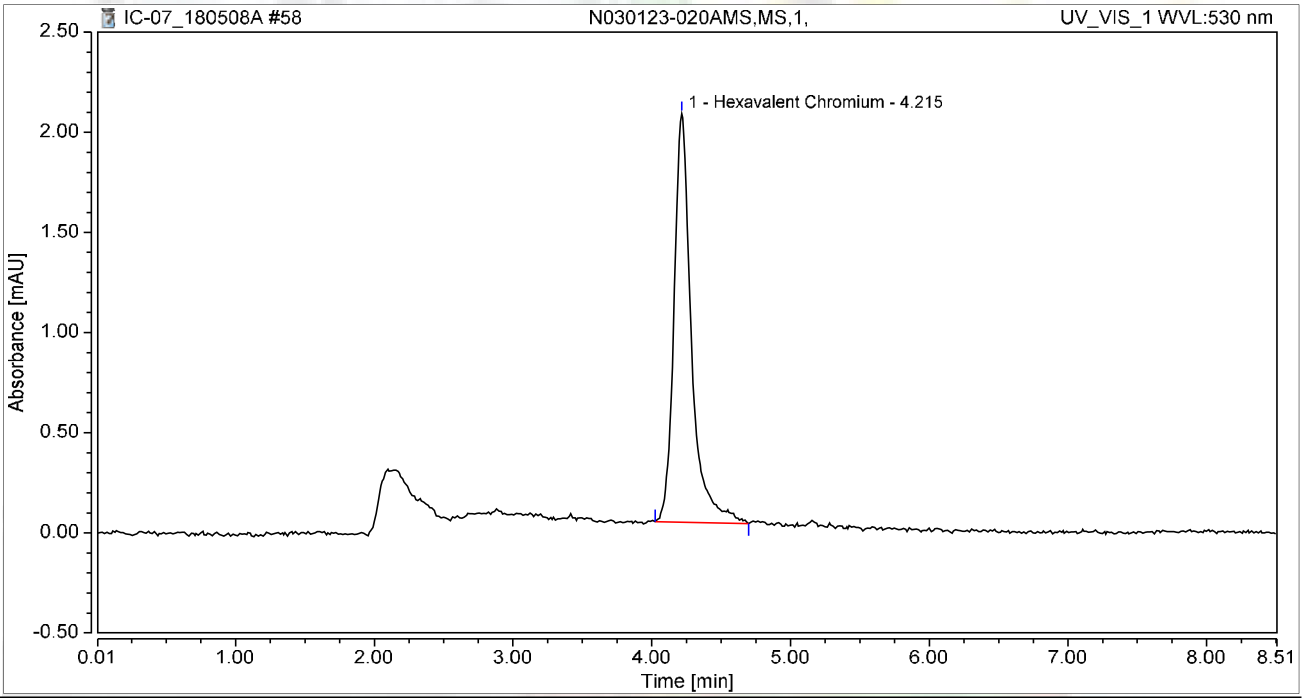
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.032	0.225	100.00	100.00	0.1266
Total:			**0.032**	**0.225**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-020AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 17:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

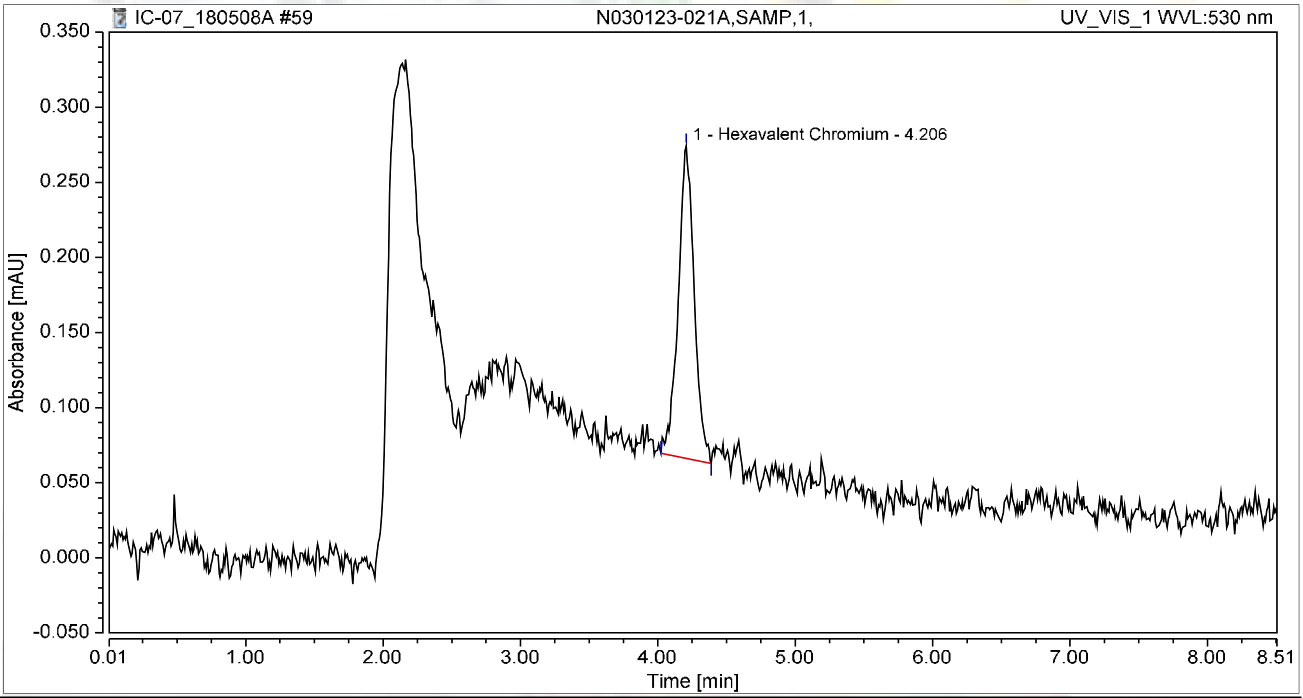
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.298	2.041	100.00	100.00	1.1603
Total:			**0.298**	**2.041**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-021A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 17:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

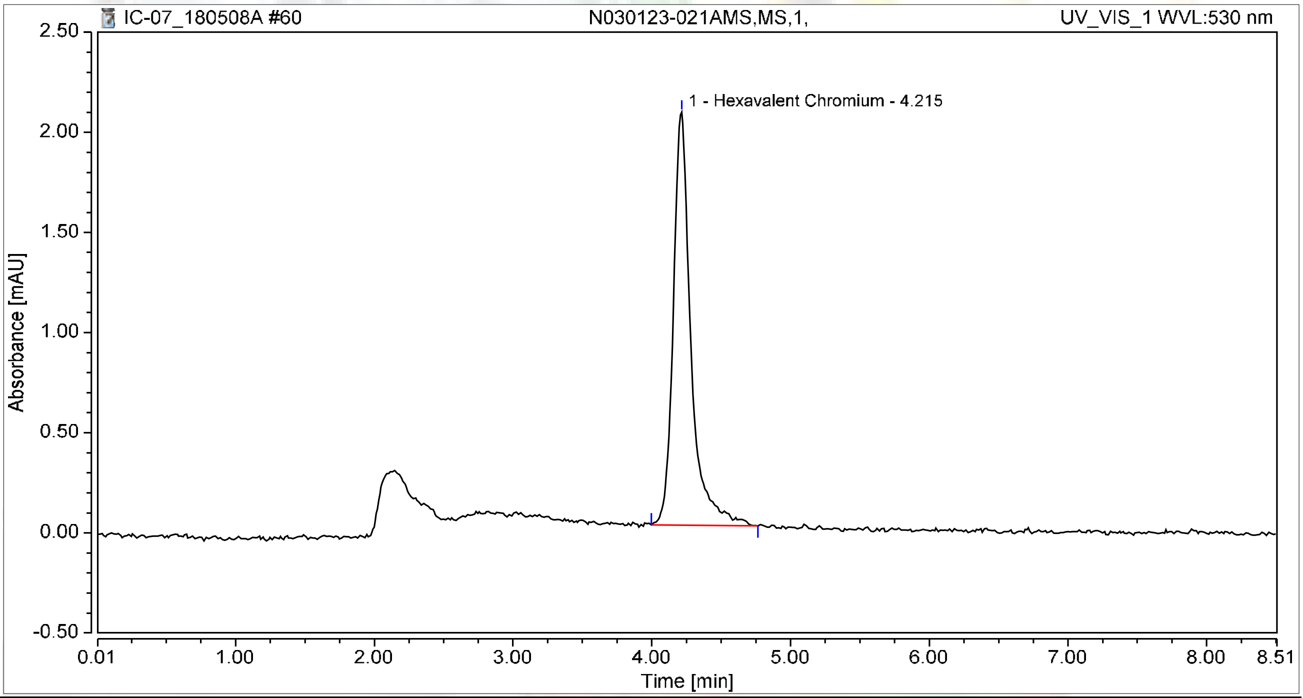
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.028	0.208	100.00	100.00	0.1096
Total:			**0.028**	**0.208**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-021AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 17:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

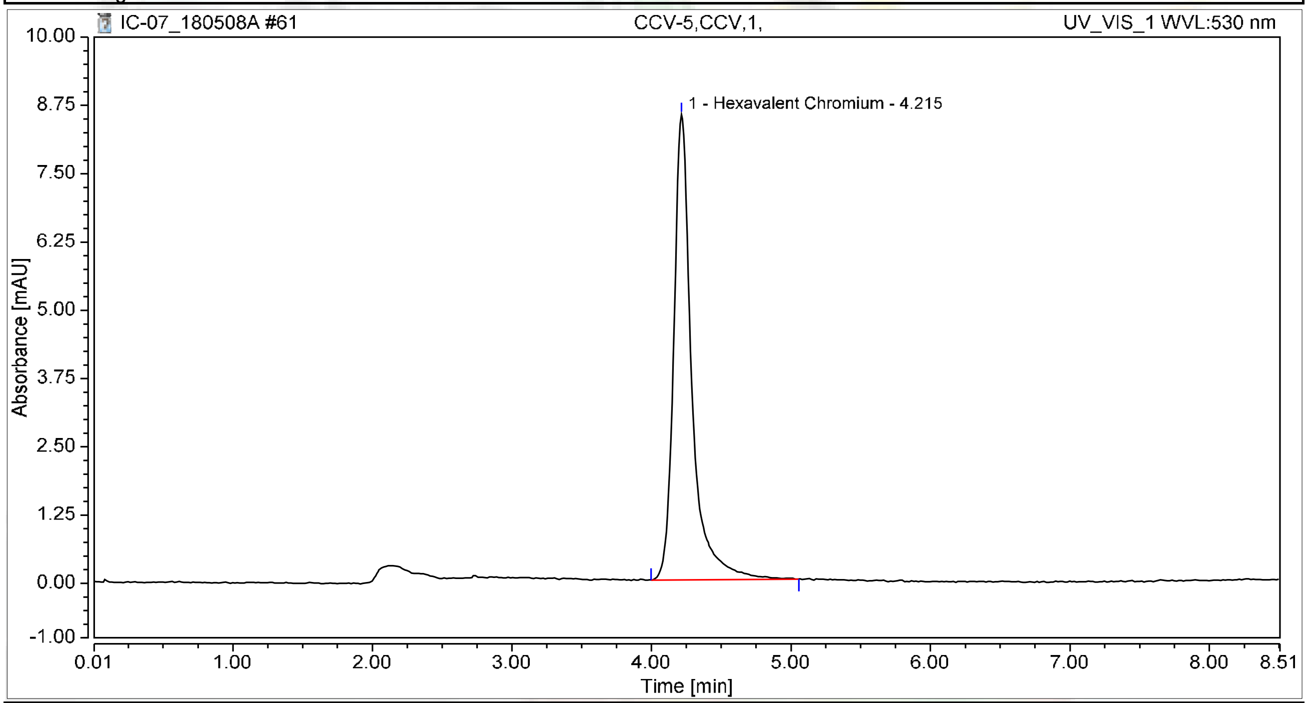
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.305	2.062	100.00	100.00	1.1865
Total:			**0.305**	**2.062**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 18:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

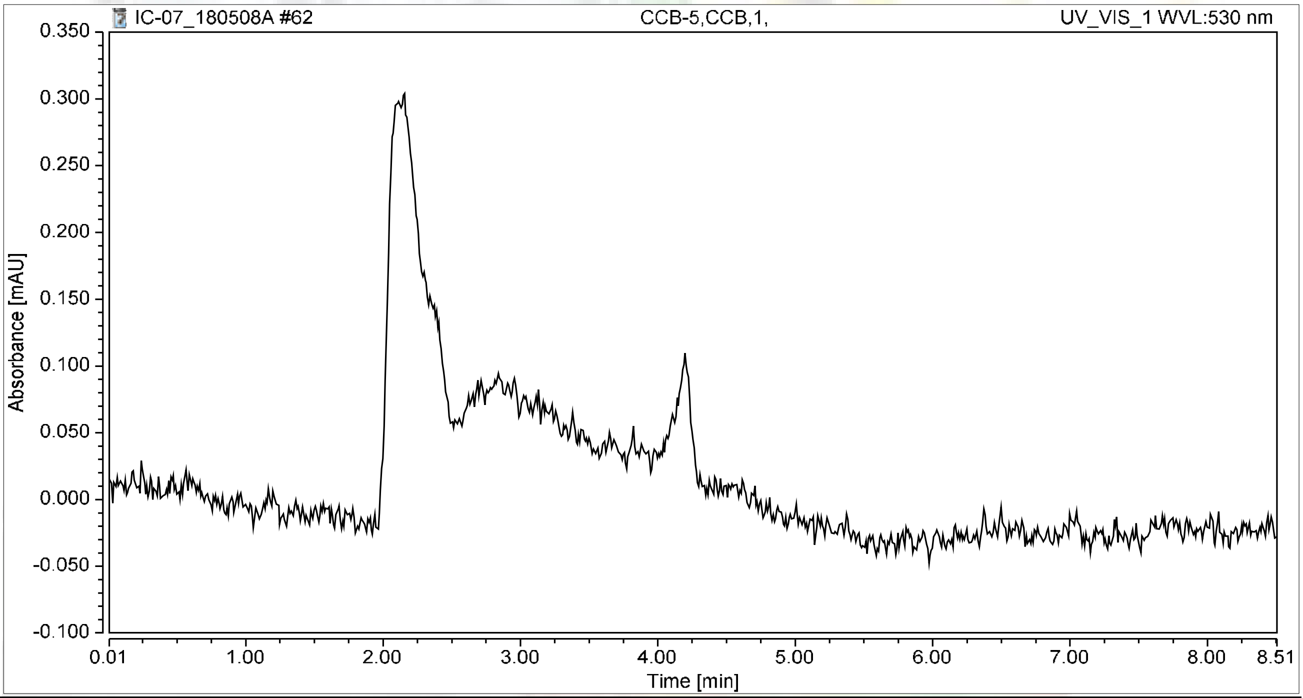
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.285	8.521	100.00	100.00	5.0054
Total:			**1.285**	**8.521**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 18:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

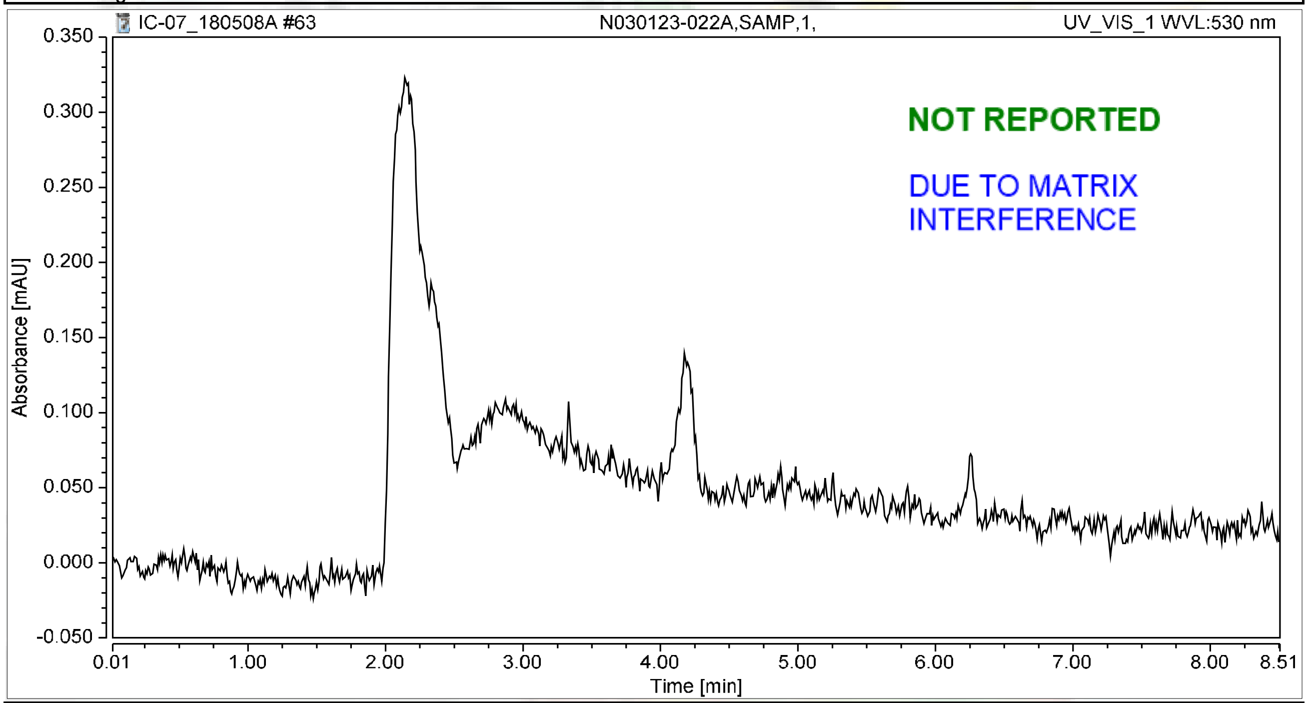
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-022A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 18:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

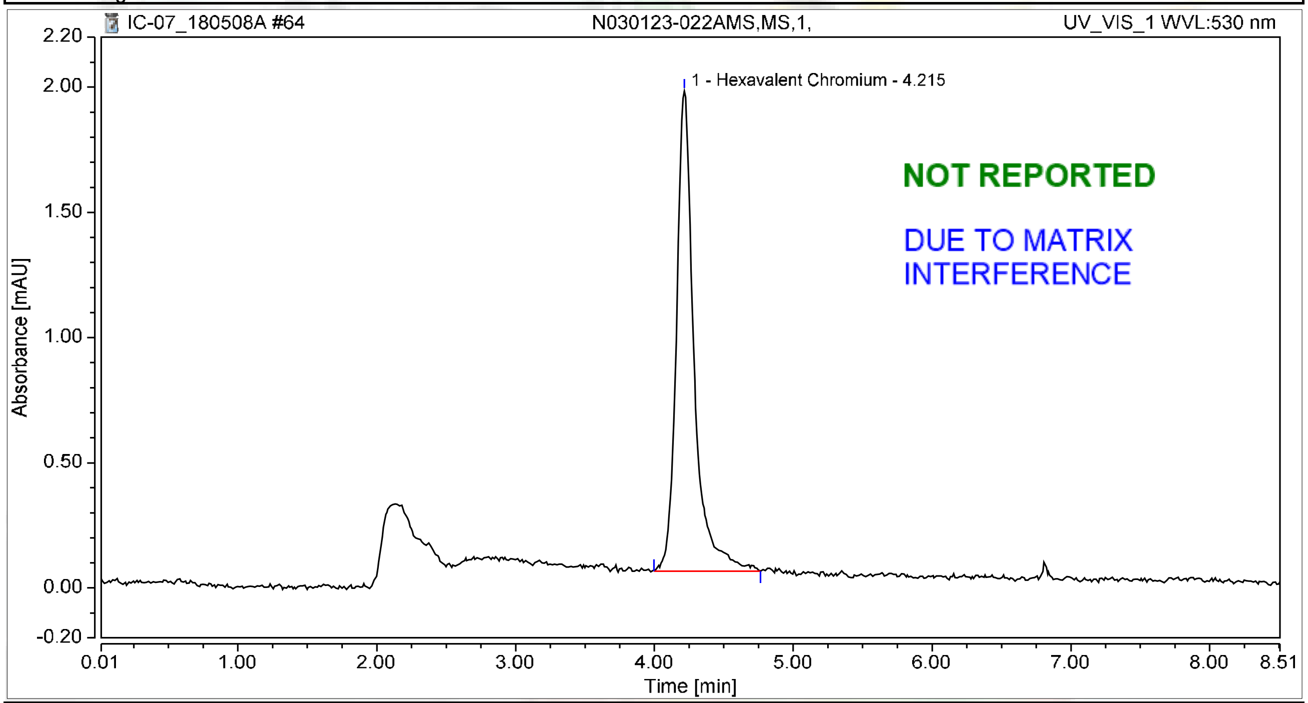
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-022AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 18:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

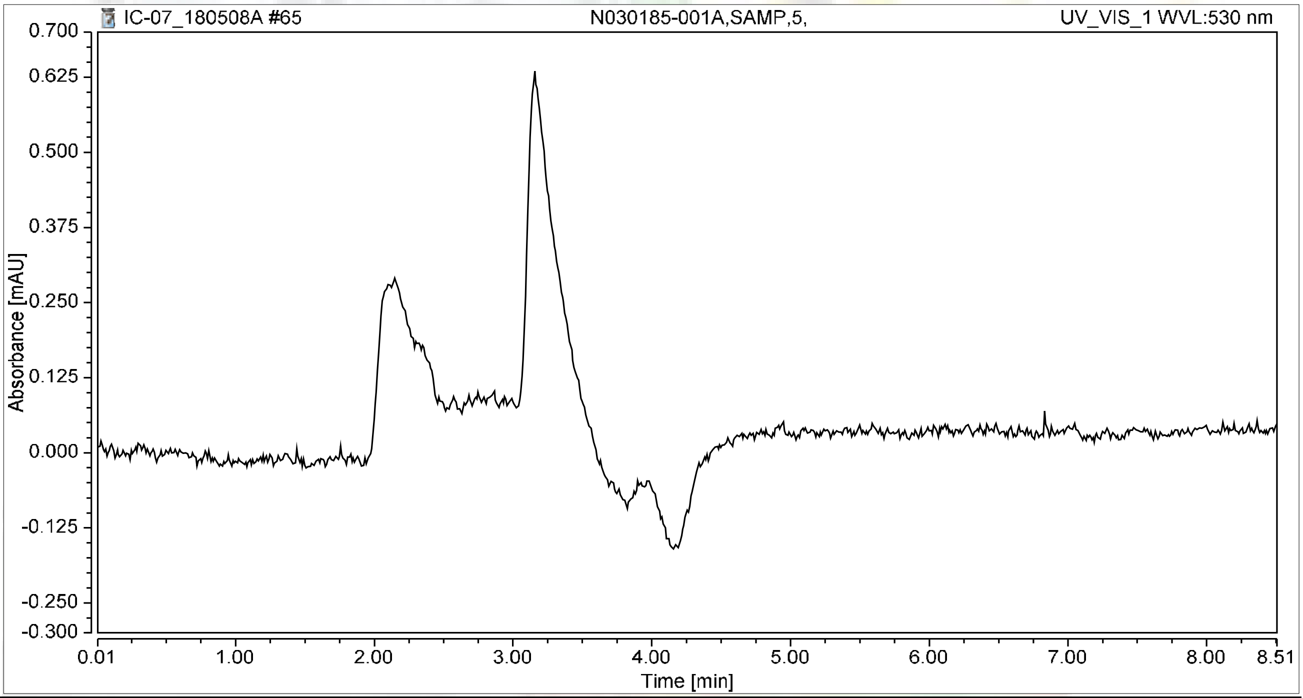
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.283	1.917	100.00	100.00	1.1040
Total:			**0.283**	**1.917**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 18:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

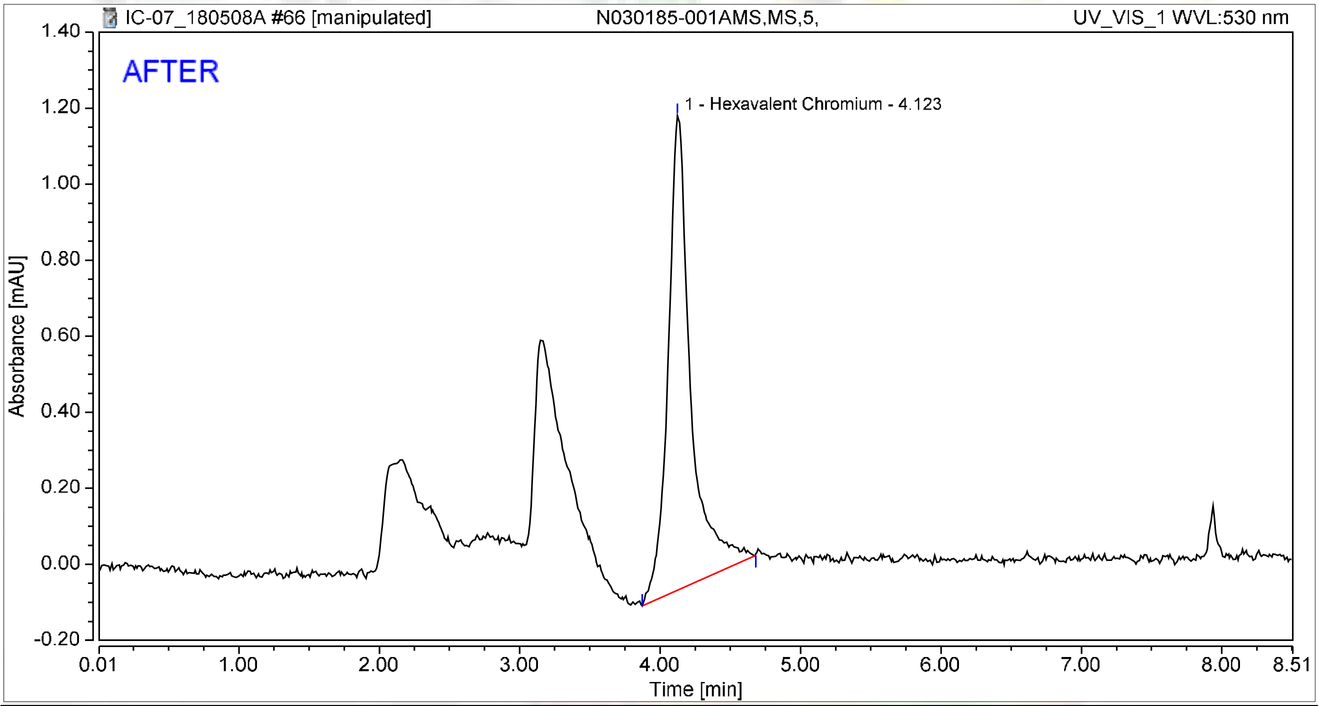
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 18:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.235	1.249	100.00	100.00	0.9138
Total:			**0.235**	**1.249**	**100.00**	**100.00**	

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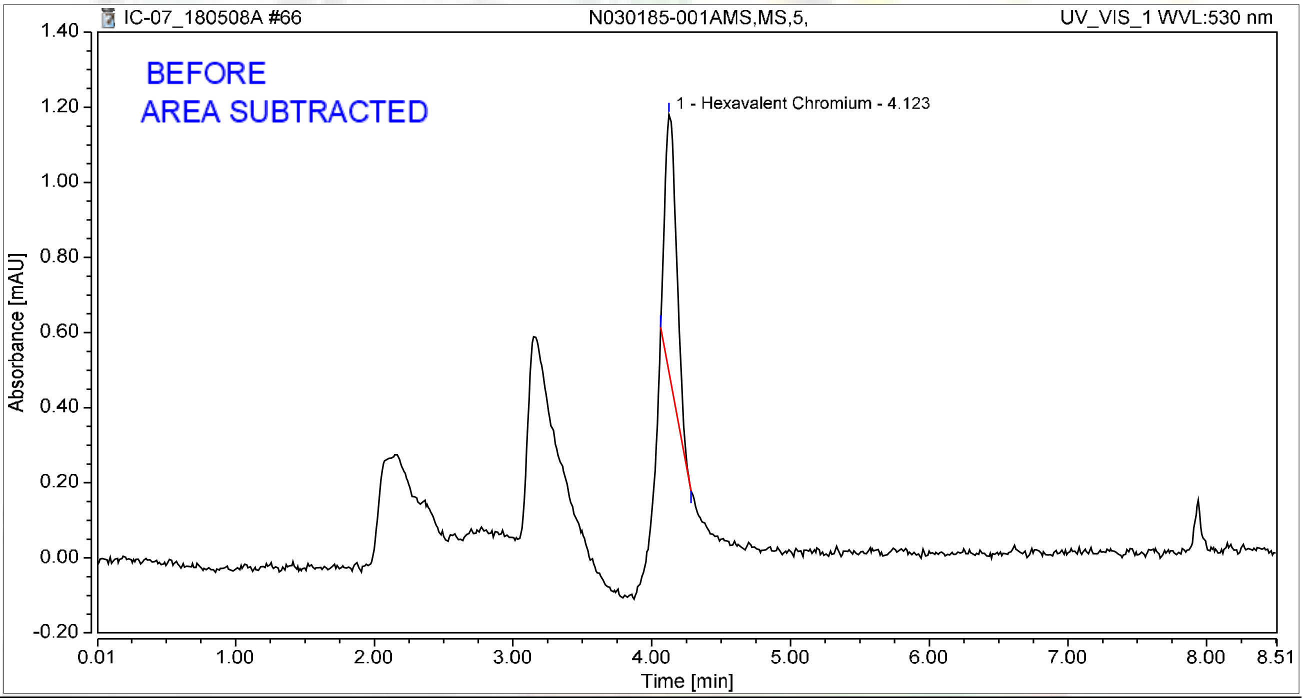
Chromatogram and Results

Injection Details

Injection Name:	**N030185-001AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 18:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.069	0.684	100.00	100.00	0.2700
Total:			**0.069**	**0.684**	**100.00**	**100.00**	

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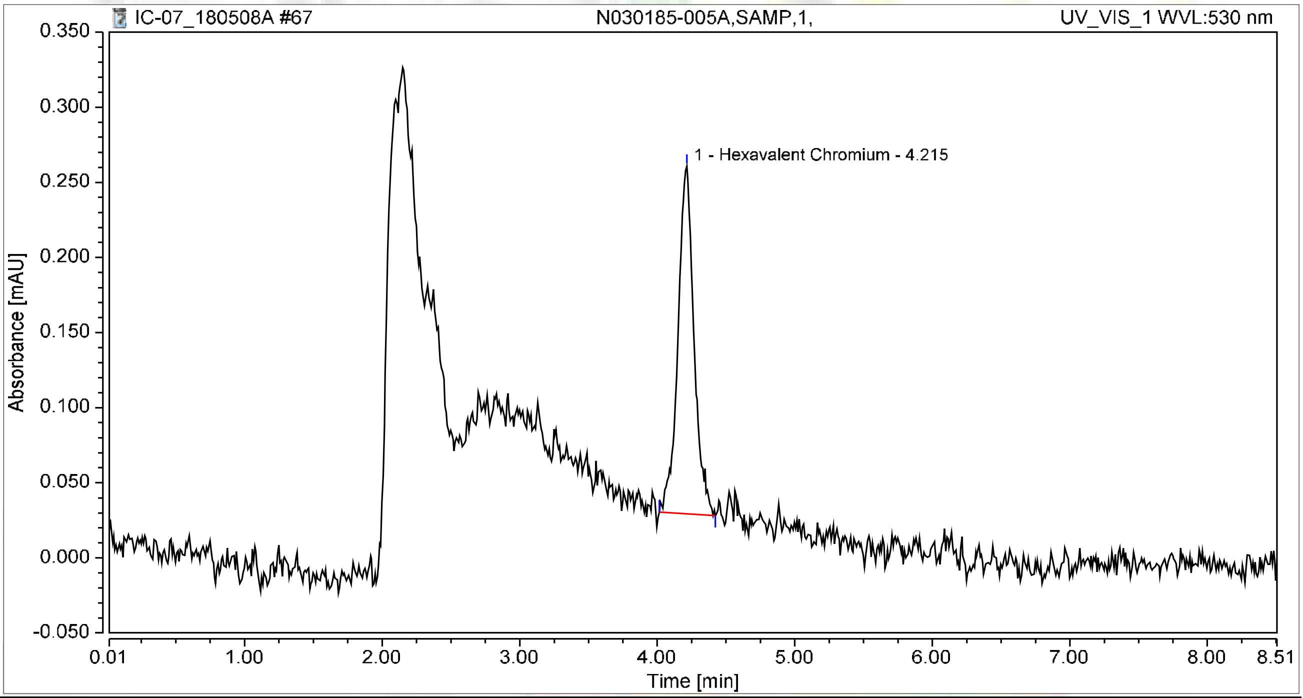
Chromatogram and Results

Injection Details

Injection Name:	**N030185-005A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 19:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

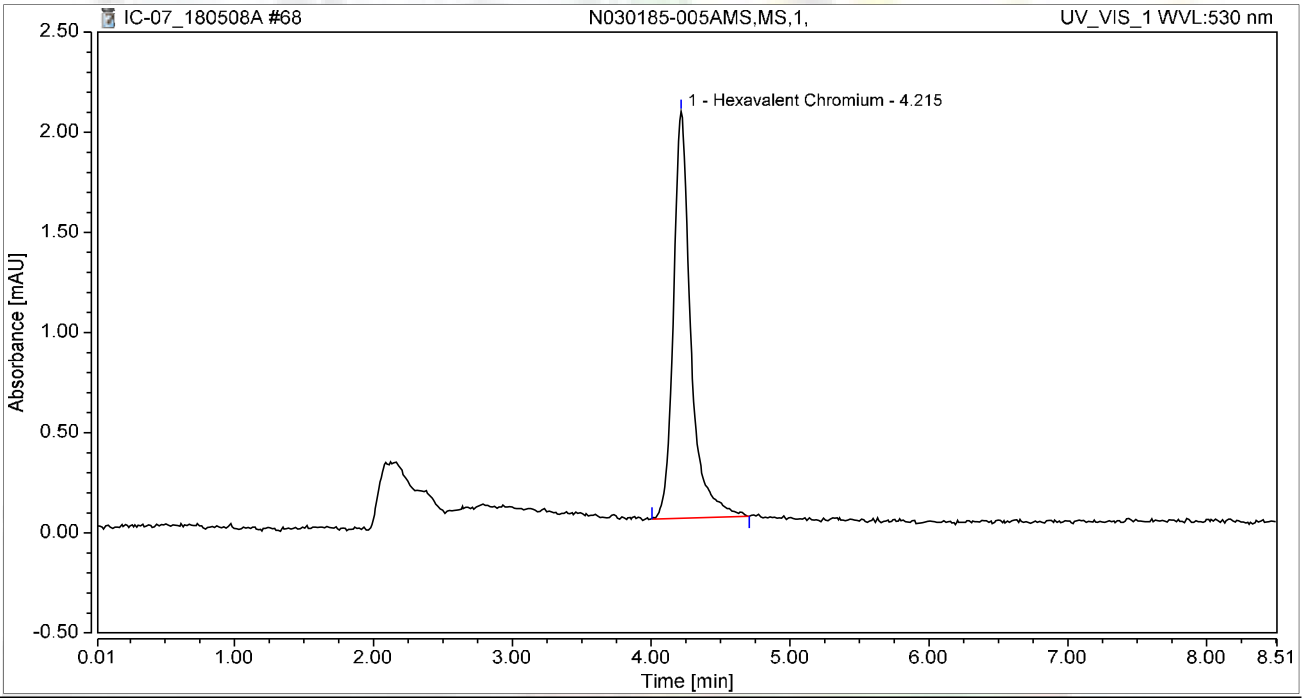
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.031	0.231	100.00	100.00	0.1216
Total:			**0.031**	**0.231**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-005AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 19:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

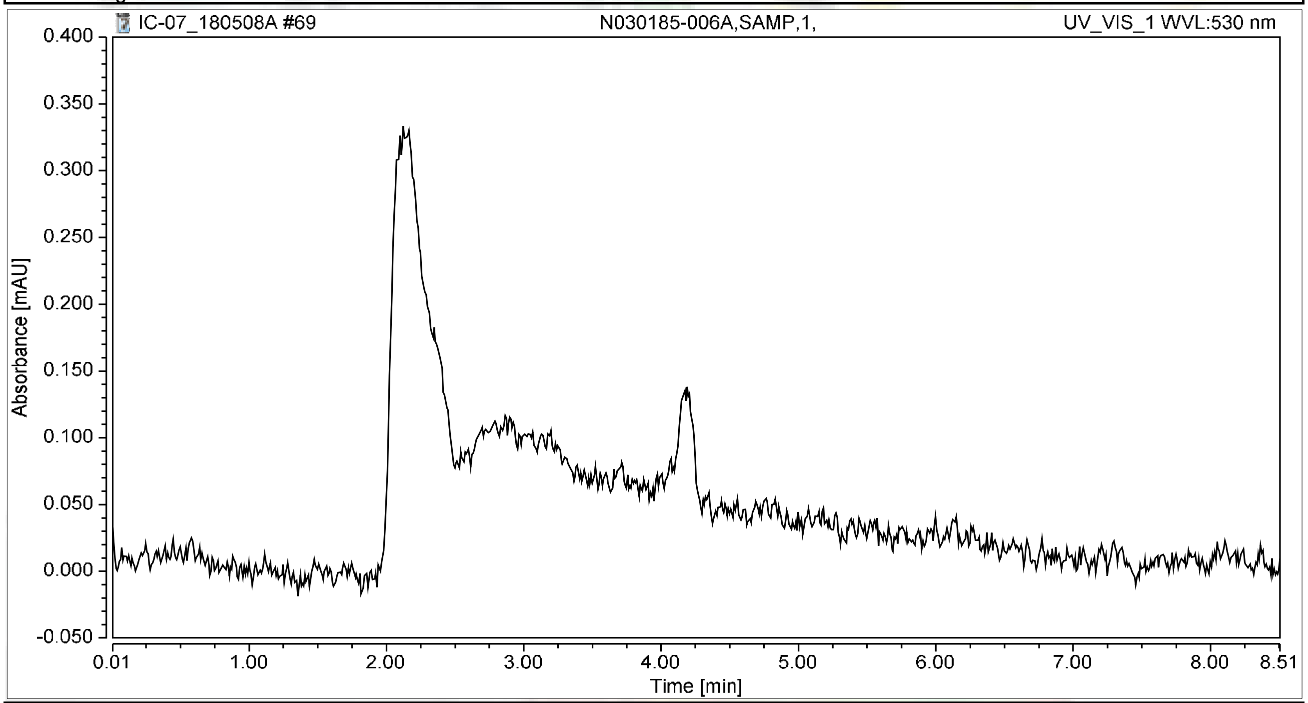
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.294	2.031	100.00	100.00	1.1474
Total:			**0.294**	**2.031**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

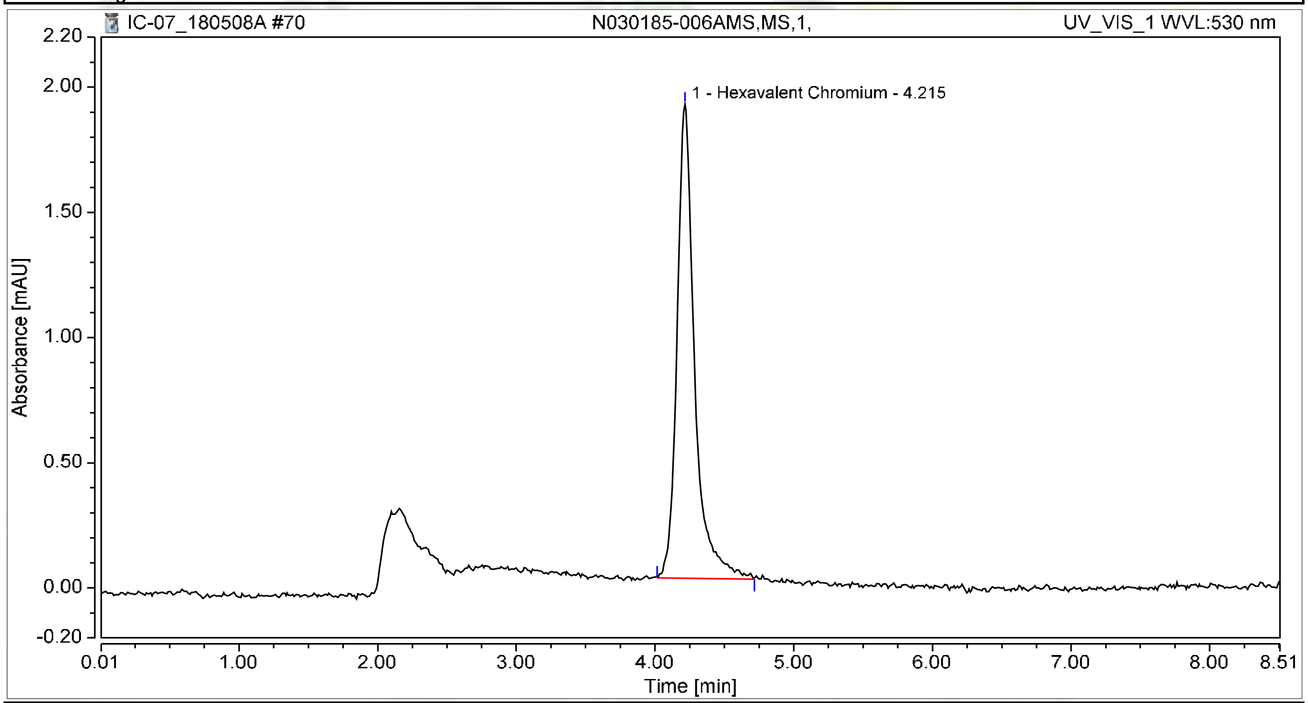
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 19:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

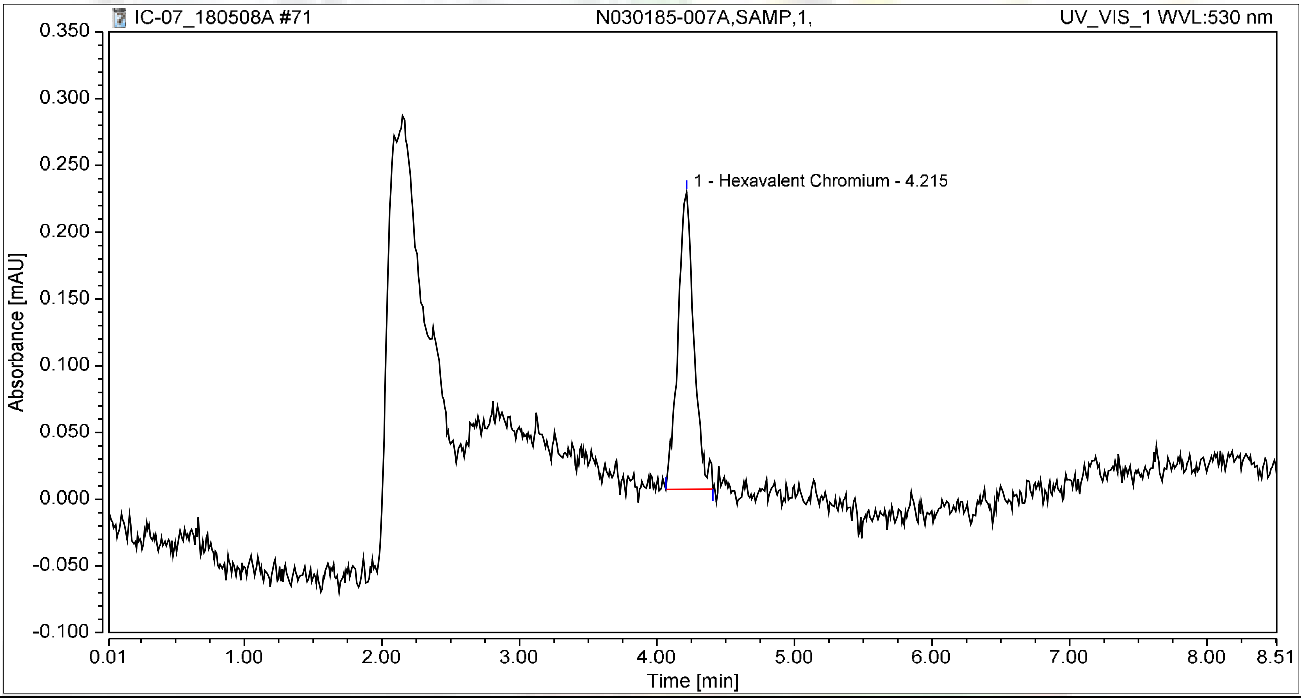
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.277	1.894	100.00	100.00	1.0799
Total:			**0.277**	**1.894**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-007A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 19:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

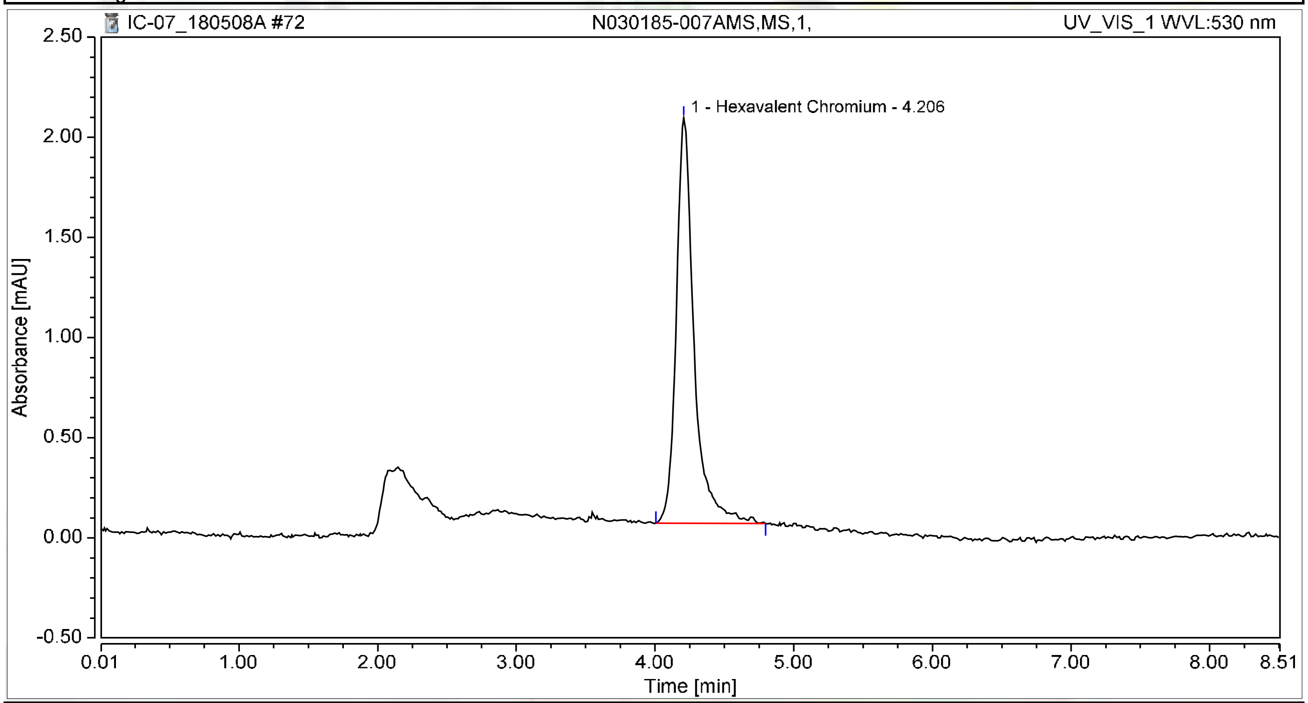
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.030	0.222	100.00	100.00	0.1164
Total:			**0.030**	**0.222**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 19:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

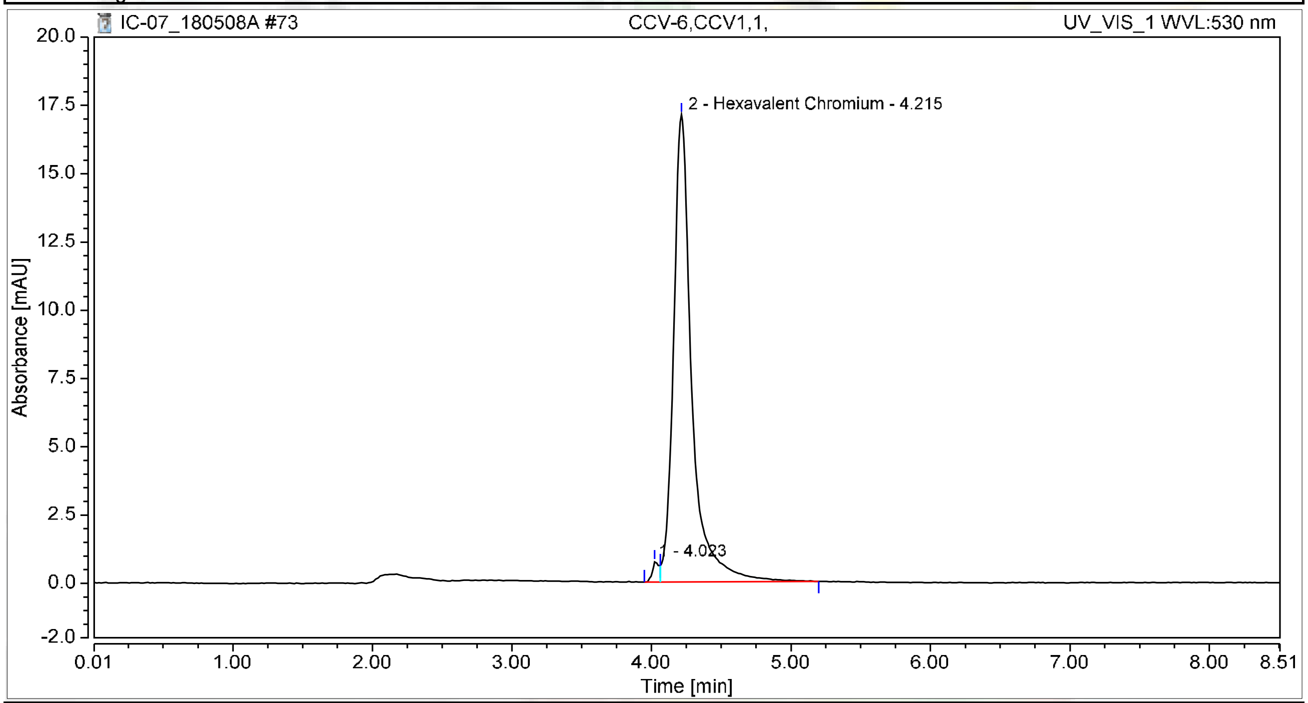
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.302	2.023	100.00	100.00	1.1768
Total:			**0.302**	**2.023**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 20:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

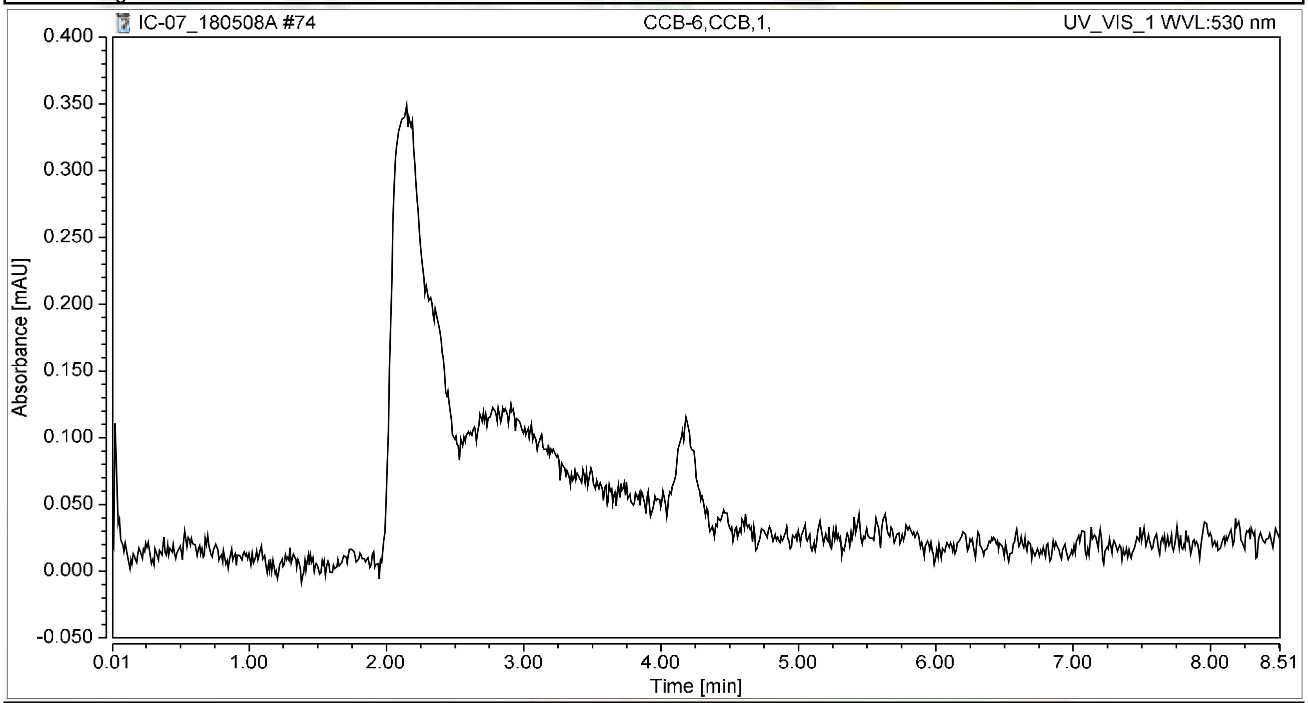
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		4.023	0.041	0.739	1.57	4.14	n.a.
2	Hexavalent Chromium	4.215	2.595	17.101	98.43	95.86	10.1126
Total:			**2.637**	**17.841**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 20:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

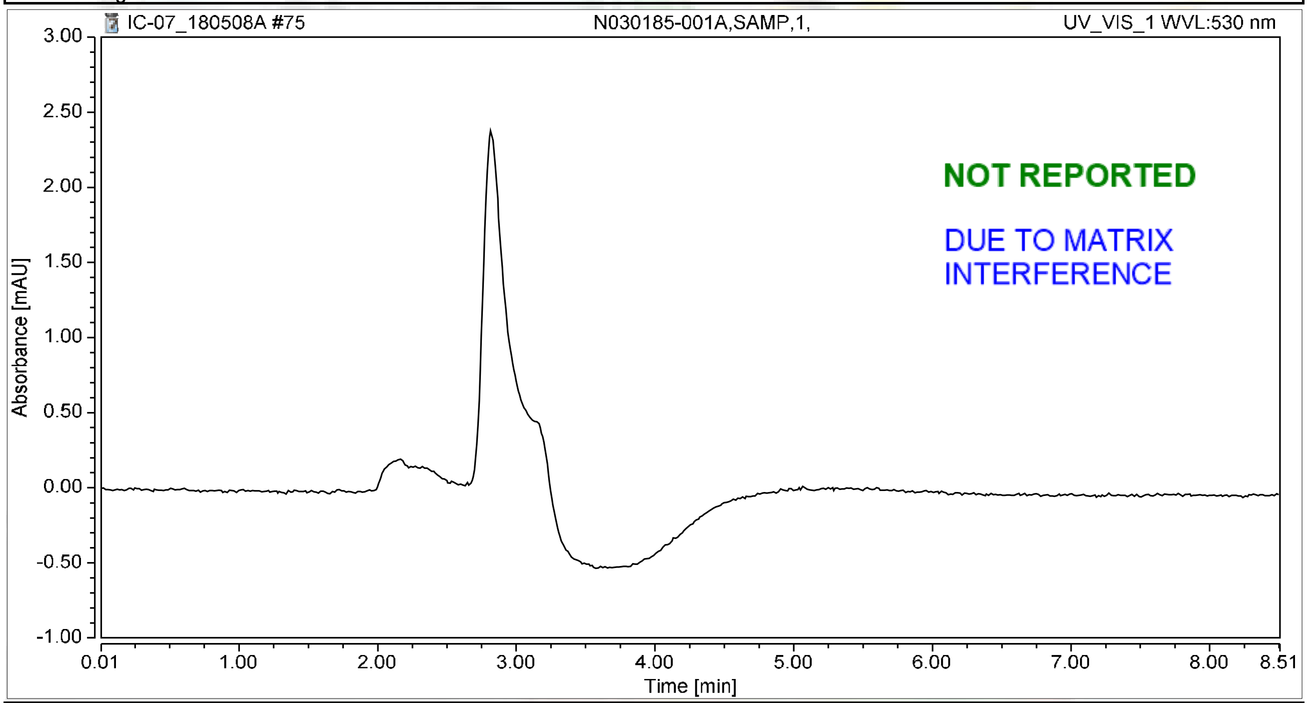
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 20:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

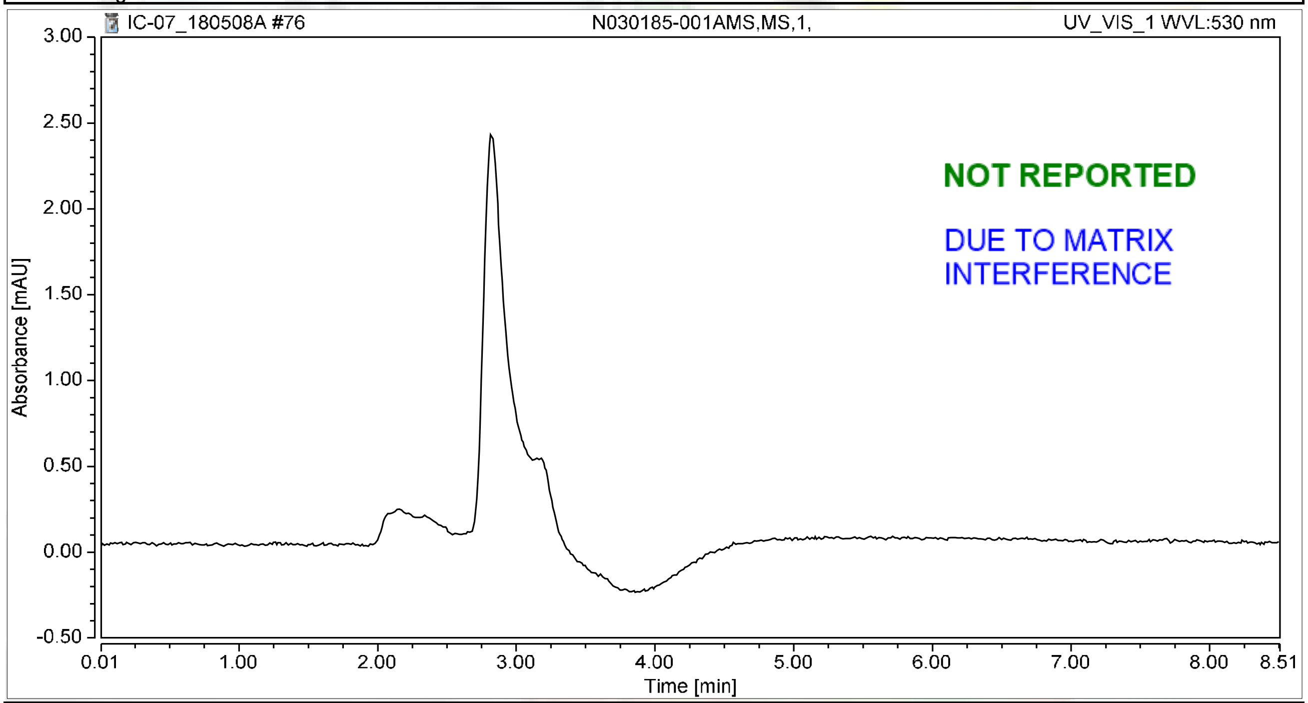
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030185-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 20:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

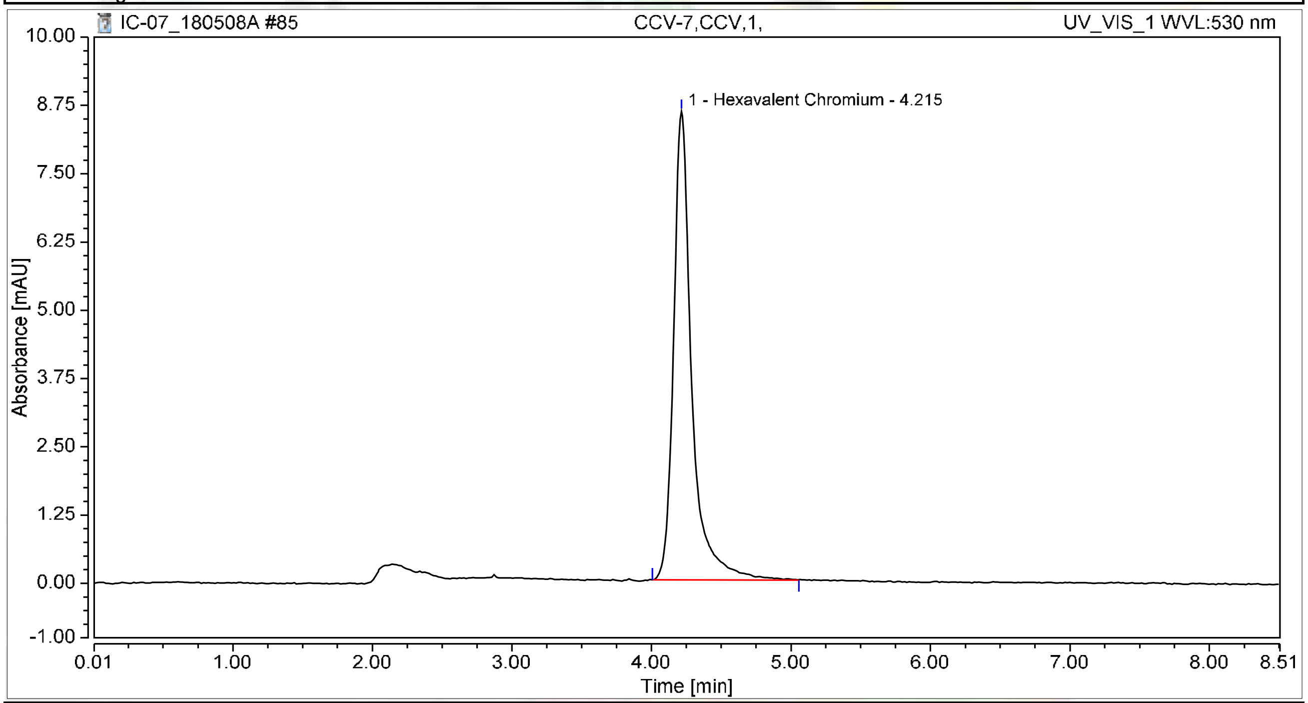
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 21:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

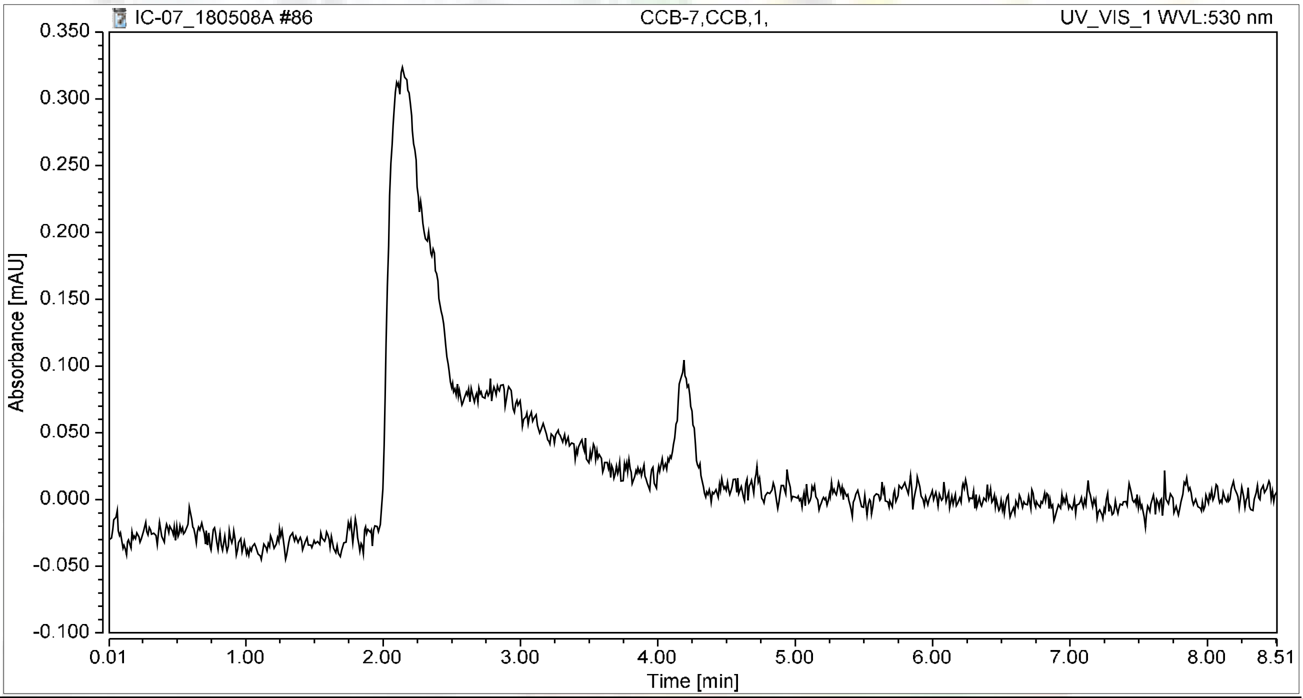
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.294	8.579	100.00	100.00	5.0409
Total:			**1.294**	**8.579**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/May/18 22:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123911 **Analyst:** LSR

ASSET #: N030185 **Date Analyzed:** 5/7/2018

Method: EPA 2320

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X			X		
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct	X		
3. Does batch meet QC requirements?	X		
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)	X		
5. Is first level review correct and complete?	X		

1st Level Reviewer Julia Ramit Date: 5/9/2018

2nd Level Reviewer [signature] 05/16/18 Date:

SAMPLE CALCULATION

Sample ID: **N030185-002B @ pH 7.67**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.75 mL)

= **0.02128 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (4.20) (0.02128 N) (1) * 1000

= 89.3760 mg/**L**

Reporting results in two significant figures,

= **89 mg/L** as CaCO3

Julia Ramit 5/9/2018

RB 05/23/2018

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02128 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (4.20 mL) (0.02128) (1) * 1000

= 89.3760 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 89.3760 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **89 mg/L**

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RB 05/23/2018

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.53	50	0.00	0.050	MBLK
LCS-1	8.63	50	0.10	4.60	LCS
N030185-002B	7.67	50	0.00	4.20	SAMP
N030185-003B	7.77	50	0.00	6.50	SAMP
N030186-001B	7.96	50	0.00	8.30	SAMP
N030186-002B	7.82	50	0.00	7.20	SAMP
N030185-002BDUP	7.76	50	0.00	4.20	DUP
N030185-003BMS	8.00	50	0.00	10.90	MS
N030185-003BMSD	7.98	50	0.00	10.70	MSD
N030212-001B	6.39	50	0.00	0.60	SAMP
N030212-001BDUP	6.40	50	0.00	0.60	DUP

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.750**	ml
N H2SO4	**0.02128**	Normal
Date Analyzed:	**5/7/18**	
Time:	**1:40 PM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R180507B**	

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RB 05/23/2018

Date Analyzed:	5/7/18	**Reagents:**			**Standardization:**			**P = 0**
Time Started:	1:40 PM		Sodium Carbonate:	CINV-161205A	Spike amt:	5	**mL**	**P < 1/2 T**
Analyzed By:	**LSR**		Hydrochloric Acid:	0	Titrant used:	11.75	**mL**	**P = 1/2 T**
			Sulfuric Acid:	R180507B				**P > 1/2 T**
					N H2SO4	0.02128	**N**	**P = T**

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.53				0.02128	0.00	0.05	0.05	1	0.00	1.06	
LCS-1	50	8.63				0.02128	0.10	4.50	4.60	1	2.13	97.87	
N030185-002B	50	7.67				0.02128	0.00	4.20	4.20	1	0.00	89.36	
N030185-003B	50	7.77				0.02128	0.00	6.50	6.50	1	0.00	138.30	
N030186-001B	50	7.96				0.02128	0.00	8.30	8.30	1	0.00	176.60	
N030186-002B	50	7.82				0.02128	0.00	7.20	7.20	1	0.00	153.19	
N030185-002BDU	50	7.76				0.02128	0.00	4.20	4.20	1	0.00	89.36	
N030185-003BMS	50	8				0.02128	0.00	10.90	10.90	1	0.00	231.91	
N030185-003BMS	50	7.98				0.02128	0.00	10.70	10.70	1	0.00	227.66	
N030212-001B	50	6.39				0.02128	0.00	0.60	0.60	1	0.00	12.77	
N030212-001BDU	50	6.4				0.02128	0.00	0.60	0.60	1	0.00	12.77	

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RB 05/23/2018

Speciated, Alkalinity as $CaCO_3$

SM 2320B

Date Analyzed:	5/7/18
Time:	1:40 PM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.06	1.06	1.06		P = 0
LCS-1	0.00	4.26	93.62	97.87	97.87		P < 1/2 T
N030185-002B	0.00	0.00	89.36	89.36	89.36		P = 0
N030185-003B	0.00	0.00	138.30	138.30	138.30		P = 0
N030186-001B	0.00	0.00	176.60	176.60	176.60		P = 0
N030186-002B	0.00	0.00	153.19	153.19	153.19		P = 0
N030185-002BDUP	0.00	0.00	89.36	89.36	89.36		P = 0
N030185-003BMS	0.00	0.00	231.91	231.91	231.91		P = 0
N030185-003BMSD	0.00	0.00	227.66	227.66	227.66		P = 0
N030212-001B	0.00	0.00	12.77	12.77	12.77		P = 0
N030212-001BDUP	0.00	0.00	12.77	12.77	12.77		P = 0

Lilia Ramit 5/9/2018

RB 05/23/2018

Matrix: H_2O

Date Extracted: 5/7/18
Time Extracted:
Extracted By: LSN

Date Analyzed: 5/7/18
Time Analyzed: 1340
Analyzed By: LSN

Reagent Lot # / Reagent ID
Sodium Carbonate: CIN 161205A
Hydrochloric Acid: -
Sulfuric Acid: R1805078
Sodium Bicarbonate: CIN 150601A

pH meter Calibration:
SLOPE: 98.0%
pH 7 - 7.01 - CIN 1712157
4 - 4.02 171208A
10 - 10.02 180119A

Sample ID	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
STANDARDIZATION											
#1	50mL	10.69	IWST180430A	5mL	0.05N	-	-	11.80	50/50	$N\ H_2SO_4 = \frac{(2.65g/L)(5mL)}{(53)(V\ titrant)}$	= 0.02118644
#2	↓	10.69	↓	↓	↓	-	-	11.70	↓		= 0.02136752
1) MBLK	50mL	5.53	-	-	-	0.02128	0	0.05	50/50		Ave: 0.02127698
2) LCS		8.63	IWST180430B	1mL	0.05N		0.10	4.60			
3) N030185-2B		7.67					0	4.20			
4) ↓ 3B		7.77					0	6.50			
5) N030186-1B		7.96					0	8.30			
6) ↓ 2B		7.82					0	7.20			
7) N030185-2B DUP		7.76					0	4.20			
8) ↓ 3B MS		8.00	IWST180430B	1mL	0.05N		0	10.90			
9) ↓ 3B MSD		7.98	↓	↓	↓		0	10.70			
10) N030212-1B		6.39					0	0.60			
11) ↓ 1B DUP	↓	6.46				↓	0	0.60	↓		
12)											
13)											
14)											
15)											
16)											
17)											
18)											
19)											
20)											
MS											
MSD											
LCS											

$$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50,000)}{Vsx}$$

$$T = \frac{(V\ pH\ 4.5)(N\ H_2SO_4)(50,000)}{Vsx}$$

Julia Ramit 5/9/2018

RB 05/23/2018

EPA 300.0

IC ARCUS
REV 2.0
011416

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R123903

ASSET #: ~~N030121~~ / N030097 / N030188
N030185 / N030186

Instrument ID: IC-08

Analyst: RBA

Date Analyzed: 5/7/2018

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others ____________

Initial Calibration and Initial Calibration Verification	**Ist Level Review**			**2nd Level Review**		
	Y	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	**N**	**N/A**
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 5/14/2018

2nd Level Reviewer [illegible] 5/22/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N030185-002B** concentration in mg/L is calculated as follows:

Chloride, mg/L = 2.2103 * 500

= 1105.15

Reporting result in two significant values,

Chloride, mg/L = 1100

rba 5/18/2018

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 5/5/2018 8:43:21 AM by IC-05
#Samples: 61 Last Update: 5/6/2018 12:18:53 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
2	Std - 0	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
3	Std - 1	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
4	Std - 2	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
5	Std - 3	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
6	Std - 4	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
7	Std - 5	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
8	ICV	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
9	ICB	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
10	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
11	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
12	N030189-003C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
13	N030189-007C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
14	N030189-001C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
15	N030146-003A,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
16	N030189-003CMS,MS,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
17	N030189-003CMSD,MSD,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
18	N030189-007CMS,MS,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
19	N030189-001CDUP,DUP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
20	CCV-1,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
21	CCB-1,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
22	N030189-004C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
23	N030189-005C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
24	N030189-006C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
25	N030189-006C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
26	N030189-009C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
27	N030189-011C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
28	N030189-012C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
29	N030189-013A,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
30	N030189-002C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
31	N030189-012C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
32	CCV-2,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
33	CCB-2,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
34	N030188-009A,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
35	N030188-001A,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
36	N030188-002A,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
37	N030188-001ADUP,DUP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
38	N030188-001AMS,MS,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
39	N030188-001AMSD,MSD,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
40	N030188-003A,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
41	N030188-004A,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished

rba 5/14/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 5/5/2018 8:43:21 AM by IC-05
#Samples: 61 Last Update: 5/6/2018 12:18:53 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	5/5/2018 8:44:01 AM	BLANK
2	Std - 0	5/5/2018 8:59:30 AM	IBLANK
3	Std - 1	5/5/2018 9:14:48 AM	STD-LOW
4	Std - 2	5/5/2018 9:31:43 AM	STD
5	Std - 3	5/5/2018 9:47:01 AM	STD
6	Std - 4	5/5/2018 10:02:19 AM	STD
7	Std - 5	5/5/2018 10:17:37 AM	STD-HIGH
8	ICV	5/5/2018 10:32:55 AM	ICV
9	ICB	5/5/2018 10:48:13 AM	ICB
10	MB-H2O,MBLK,1	5/5/2018 11:03:30 AM	METHOD BLANK
11	LCS-H2O,LCS,1	5/5/2018 11:18:49 AM	LCS
12	N030189-003C,SAMP,2	5/5/2018 11:34:07 AM	SAMP,5>10mL
13	N030189-007C,SAMP,2	5/5/2018 11:49:25 AM	SAMP,5>10mL
14	N030189-001C,SAMP,1	5/5/2018 12:04:42 PM	SAMP,10mL
15	N030146-003A,SAMP,1	5/5/2018 12:19:05 PM	SAMP,10mL
16	N030189-003CMS,MS,2	5/5/2018 12:34:23 PM	MS,5>10mL
17	N030189-003CMSD,MSD,2	5/5/2018 12:49:41 PM	MSD,5>10mL
18	N030189-007CMS,MS,2	5/5/2018 1:04:59 PM	MS,5>10mL
19	N030189-001CDUP,DUP,1	5/5/2018 1:20:17 PM	DUP,10mL
20	CCV-1,CCV,1	5/5/2018 1:35:35 PM	CCV
21	CCB-1,CCB,1	5/5/2018 1:50:52 PM	CCB
22	N030189-004C,SAMP,10	5/5/2018 2:06:10 PM	SAMP,1>10mL
23	N030189-005C,SAMP,10	5/5/2018 2:21:28 PM	SAMP,1>10mL
24	N030189-006C,SAMP,1	5/5/2018 2:36:46 PM	SAMP,10mL
25	N030189-006C,SAMP,2	5/5/2018 2:52:04 PM	SAMP,5>10mL
26	N030189-009C,SAMP,1	5/5/2018 3:07:21 PM	SAMP,10mL
27	N030189-011C,SAMP,5	5/5/2018 3:22:39 PM	SAMP,2>10mL
28	N030189-012C,SAMP,2	5/5/2018 3:37:57 PM	SAMP,5>10mL
29	N030189-013A,SAMP,2	5/5/2018 3:53:15 PM	SAMP,5>10mL
30	N030189-002C,SAMP,1	5/5/2018 4:08:32 PM	SAMP,10mL
31	N030189-012C,SAMP,5	5/5/2018 4:23:50 PM	SAMP,2>10mL
32	CCV-2,CCV,1	5/5/2018 4:39:08 PM	CCV
33	CCB-2,CCB,1	5/5/2018 4:54:27 PM	CCB
34	N030188-009A,SAMP,5	5/5/2018 5:09:45 PM	SAMP,2>10mL
35	N030188-001A,SAMP,1	5/5/2018 5:25:02 PM	SAMP,10mL
36	N030188-002A,SAMP,1	5/5/2018 5:40:20 PM	SAMP,10mL
37	N030188-001ADUP,DUP,1	5/5/2018 5:55:38 PM	DUP,10mL
38	N030188-001AMS,MS,1	5/5/2018 6:10:56 PM	MS,10mL
39	N030188-001AMSD,MSD,1	5/5/2018 6:26:14 PM	MSD,10mL
40	N030188-003A,SAMP,20	5/5/2018 6:41:31 PM	SAMP,0.5>10mL
41	N030188-004A,SAMP,20	5/5/2018 6:56:49 PM	SAMP,0.5>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 5/5/2018 8:43:21 AM by IC-05
#Samples: 61 Last Update: 5/6/2018 12:18:53 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N030188-005A,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
43	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
44	CCV-3,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
45	CCB-3,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
46	N030188-007A,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
47	N030188-006A,SAMP,100	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
48	N030188-008A,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
49	N030188-005A,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
50	N030188-005ADUP,DUP,10	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
51	N030188-005AMS,MS,10	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
52	N030188-005AMSD,MSD,10	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
53	N030188-001A,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
54	N030188-002A,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
55	N030189-011C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
56	CCV-4,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
57	CCB-4,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
58	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
59	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
60	CCV-4,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
61	CCB-4,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished

rba 5/14/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 5/5/2018 8:43:21 AM by IC-05
#Samples: 61 Last Update: 5/6/2018 12:18:53 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N030188-005A,SAMP,20	5/5/2018 7:12:07 PM	SAMP,0.5>10mL
43	BLANK,BLANK,1	5/5/2018 7:27:25 PM	BLANK
44	CCV-3,CCV,1	5/5/2018 7:42:43 PM	CCV
45	CCB-3,CCB,1	5/5/2018 7:58:01 PM	CCB
46	N030188-007A,SAMP,50	5/5/2018 8:13:18 PM	SAMP,0.2>10mL
47	N030188-006A,SAMP,100	5/5/2018 8:28:36 PM	SAMP,0.1>10mL
48	N030188-008A,SAMP,5	5/5/2018 8:43:54 PM	SAMP,2>10mL
49	N030188-005A,SAMP,10	5/5/2018 8:59:12 PM	SAMP,1>10mL
50	N030188-005ADUP,DUP,10	5/5/2018 9:14:30 PM	DUP,1>10mL
51	N030188-005AMS,MS,10	5/5/2018 9:29:48 PM	MS,1>10mL
52	N030188-005AMSD,MSD,10	5/5/2018 9:45:06 PM	MSD,1>10mL
53	N030188-001A,SAMP,2	5/5/2018 10:00:23 PM	SAMP,5>10mL
54	N030188-002A,SAMP,2	5/5/2018 10:15:41 PM	SAMP,5>10mL
55	N030189-011C,SAMP,1	5/5/2018 10:30:59 PM	SAMP,10mL
56	CCV-4,CCV,1	5/5/2018 10:46:17 PM	CCV
57	CCB-4,CCB,1	5/5/2018 11:01:35 PM	CCB
58	BLANK,BLANK,1	5/5/2018 11:16:53 PM	BLANK
59	BLANK,BLANK,1	5/5/2018 11:32:11 PM	BLANK
60	CCV-4,CCV,1	5/6/2018 12:18:56 AM	CCV
61	CCB-4,CCB,1	5/6/2018 12:34:14 AM	CCB

Sequence: IC-08_180507A
Operator: IC-05
Printed: 5/8/2018 2:12:49 AM

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS
#Samples: 68
Created: 5/7/2018 8:44:17 AM by IC-05
Last Update: 5/7/2018 4:46:32 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
2	Std - 0	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
3	Std - 1	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
4	Std - 2	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
5	Std - 3	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
6	Std - 4	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
7	Std - 5	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
8	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
9	CCV-1,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
10	CCB-1,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
13	N030121-002B,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
14	N030097-009A,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
15	N030097-010A,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
16	N030097-011A,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
17	N030097-012A,SAMP,100	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
18	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
19	N030188-009A,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
20	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
21	CCV-2,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
22	CCB-2,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
23	N030121-002BDUP,DUP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
24	N030188-011A,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
25	N030188-006A,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
26	N030097-009A,SAMP,100	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
27	N030097-010A,SAMP,100	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
28	N030097-012A,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
29	N030097-011AMS,MS,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
30	N030097-011AMSD,MSD,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
31	N030185-002B,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
32	N030185-003B,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
33	CCV-3,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
34	CCB-3,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
35	N030186-001B,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
36	N030186-001B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
37	N030186-002B,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
38	N030186-002B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
39	N030185-002BMS,MS,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
40	N030185-002BMSD,MSD,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
41	N030186-002BMS,MS,500	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished

rba 5/14/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 5/7/2018 8:44:17 AM by IC-05
#Samples: 68 Last Update: 5/7/2018 4:46:32 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	5/5/2018 8:44:01 AM	BLANK
2	Std - 0	5/5/2018 8:59:30 AM	IBLANK
3	Std - 1	5/5/2018 9:14:48 AM	STD-LOW
4	Std - 2	5/5/2018 9:31:43 AM	STD
5	Std - 3	5/5/2018 9:47:01 AM	STD
6	Std - 4	5/5/2018 10:02:19 AM	STD
7	Std - 5	5/5/2018 10:17:37 AM	STD-HIGH
8	BLANK,BLANK,1	5/7/2018 8:45:47 AM	BLANK
9	CCV-1,CCV,1	5/7/2018 9:01:05 AM	CCV
10	CCB-1,CCB,1	5/7/2018 9:16:22 AM	CCB
11	MB-H2O,MBLK,1	5/7/2018 9:31:40 AM	METHOD BLANK
12	LCS-H2O,LCS,1	5/7/2018 9:46:58 AM	LCS
13	N030121-002B,SAMP,5	5/7/2018 10:07:51 AM	SAMP,2>10mL
14	N030097-009A,SAMP,50	5/7/2018 10:35:41 AM	SAMP,0.2>10mL
15	N030097-010A,SAMP,50	5/7/2018 10:50:59 AM	SAMP,0.2>10mL
16	N030097-011A,SAMP,50	5/7/2018 11:06:17 AM	SAMP,0.2>10mL
17	N030097-012A,SAMP,100	5/7/2018 11:21:35 AM	SAMP,0.1>10mL
18	BLANK,BLANK,1	5/7/2018 11:36:53 AM	BLANK
19	N030188-009A,SAMP,1	5/7/2018 11:52:11 AM	SAMP,10mL
20	BLANK,BLANK,1	5/7/2018 12:07:29 PM	BLANK
21	CCV-2,CCV,1	5/7/2018 12:22:47 PM	CCV
22	CCB-2,CCB,1	5/7/2018 12:38:04 PM	CCB
23	N030121-002BDUP,DUP,5	5/7/2018 12:53:22 PM	DUP,2>10mL
24	N030188-011A,SAMP,1	5/7/2018 1:08:40 PM	SAMP,10mL
25	N030188-006A,SAMP,5	5/7/2018 1:23:58 PM	SAMP,2>10mL
26	N030097-009A,SAMP,100	5/7/2018 1:39:16 PM	SAMP,0.1>10mL
27	N030097-010A,SAMP,100	5/7/2018 1:54:34 PM	SAMP,0.1>10mL
28	N030097-012A,SAMP,200	5/7/2018 2:09:52 PM	SAMP,0.05>10mL
29	N030097-011AMS,MS,50	5/7/2018 2:25:09 PM	MSD,0.2>10mL
30	N030097-011AMSD,MSD,50	5/7/2018 2:40:27 PM	MS,0.2>10mL
31	N030185-002B,SAMP,5	5/7/2018 2:55:45 PM	SAMP,2>10mL
32	N030185-003B,SAMP,5	5/7/2018 3:11:03 PM	SAMP,2>10mL
33	CCV-3,CCV,1	5/7/2018 3:26:21 PM	CCV
34	CCB-3,CCB,1	5/7/2018 3:41:39 PM	CCB
35	N030186-001B,SAMP,200	5/7/2018 3:56:57 PM	SAMP,0.05>10mL
36	N030186-001B,SAMP,50	5/7/2018 4:12:15 PM	SAMP,0.2>10mL
37	N030186-002B,SAMP,500	5/7/2018 4:28:12 PM	SAMP,0.02>10mL
38	N030186-002B,SAMP,50	5/7/2018 4:43:40 PM	SAMP,0.2>10mL
39	N030185-002BMS,MS,5	5/7/2018 4:58:58 PM	MS,2>10mL
40	N030185-002BMSD,MSD,5	5/7/2018 5:14:16 PM	MSD,2>10mL
41	N030186-002BMS,MS,500	5/7/2018 5:29:34 PM	MS,0.02>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 5/7/2018 8:44:17 AM by IC-05
#Samples: 68 Last Update: 5/7/2018 4:46:32 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N030186-002BMSD,MSD,500	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
43	N030186-001BMS,MS,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
44	N030186-001BMSD,MSD,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
45	CCV-4,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
46	CCB-4,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
47	N030121-002B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
48	N030186-001BDUP,DUP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
49	N030185-002BDUP,DUP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
50	N030185-002B,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
51	N030185-003B,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
52	N030185-002B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
53	N030185-003B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
54	N030185-002B,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
55	N030185-003B,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
56	CCV-5,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
57	CCB-5,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
58	N030188-011A,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
59	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
60	N030105-001A,SAMP,5	Unknown	1000.0	Anions Default2	EPA 300_0_180505	Finished
61	N030105-001B,SAMP,5	Unknown	1000.0	Anions Default2	EPA 300_0_180505	Finished
62	N030105-002A,SAMP,5	Unknown	1000.0	Anions Default2	EPA 300_0_180505	Finished
63	N030105-002B,SAMP,5	Unknown	1000.0	Anions Default2	EPA 300_0_180505	Finished
64	N030105-003A,SAMP,5	Unknown	1000.0	Anions Default2	EPA 300_0_180505	Finished
65	N030105-003B,SAMP,5	Unknown	1000.0	Anions Default2	EPA 300_0_180505	Finished
66	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
67	CCV-6,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
68	CCB-6,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 5/7/2018 8:44:17 AM by IC-05
#Samples: 68 Last Update: 5/7/2018 4:46:32 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N030186-002BMSD,MSD,500	5/7/2018 5:44:51 PM	MSD,0.02>10mL
43	N030186-001BMS,MS,50	5/7/2018 6:00:09 PM	MS,0.2>10mL
44	N030186-001BMSD,MSD,50	5/7/2018 6:15:28 PM	MSD,0.2>10mL
45	CCV-4,CCV,1	5/7/2018 6:30:45 PM	CCV
46	CCB-4,CCB,1	5/7/2018 6:46:03 PM	CCB
47	N030121-002B,SAMP,50	5/7/2018 7:01:21 PM	SAMP,0.2>10mL
48	N030186-001BDUP,DUP,50	5/7/2018 7:16:39 PM	DUP,0.2>10mL
49	N030185-002BDUP,DUP,5	5/7/2018 7:31:57 PM	DUP,2>10mL
50	N030185-002B,SAMP,5	5/7/2018 7:47:15 PM	SAMP,2>10mL
51	N030185-003B,SAMP,5	5/7/2018 8:02:32 PM	SAMP,2>10mL
52	N030185-002B,SAMP,50	5/7/2018 8:17:50 PM	SAMP,0.2>10mL
53	N030185-003B,SAMP,50	5/7/2018 8:33:08 PM	SAMP,0.2>10mL
54	N030185-002B,SAMP,500	5/7/2018 8:48:26 PM	SAMP,0.02>10mL
55	N030185-003B,SAMP,500	5/7/2018 9:03:44 PM	SAMP,0.02>10mL
56	CCV-5,CCV,1	5/7/2018 9:19:01 PM	CCV
57	CCB-5,CCB,1	5/7/2018 9:34:19 PM	CCB
58	N030188-011A,SAMP,2	5/7/2018 9:49:37 PM	SAMP,5>10mL
59	BLANK,BLANK,1	5/7/2018 10:04:55 PM	BLANK
60	N030105-001A,SAMP,5	5/7/2018 10:20:13 PM	SAMP,2>10mL
61	N030105-001B,SAMP,5	5/7/2018 10:42:31 PM	SAMP,2>10mL
62	N030105-002A,SAMP,5	5/7/2018 11:04:48 PM	SAMP,2>10mL
63	N030105-002B,SAMP,5	5/7/2018 11:27:07 PM	SAMP,2>10mL
64	N030105-003A,SAMP,5	5/7/2018 11:49:25 PM	SAMP,2>10mL
65	N030105-003B,SAMP,5	5/8/2018 12:11:43 AM	SAMP,2>10mL
66	BLANK,BLANK,1	5/8/2018 12:34:01 AM	BLANK
67	CCV-6,CCV,1	5/8/2018 12:49:19 AM	CCV
68	CCB-6,CCB,1	5/8/2018 1:04:37 AM	CCB

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 5/5/2018

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0718	0.1435	0.2889	0.7378	1.5636	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 5/5/2018

Initial Calibration:

Bromide	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0030	0.0153	0.0309	0.0769	0.1551	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814D

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 5/5/2018

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0043	0.0538	0.2164	0.4354	1.1054	2.3061	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

ASSET Laboratories

Date: *17-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ICV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/5/2018** SeqNo: **3019500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.230	0.50	1.250	0	98.4	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.249	0.50	1.250	0	99.9	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.244	0.50	1.250	0	99.5	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.239	0.50	1.250	0	99.1	90	110				

Sample ID **CCV-4** SampType: **CCV** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.247	0.50	1.250	0	99.8	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCV-5** SampType: **CCV** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019517**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.242	0.50	1.250	0	99.3	90	110				

Sample ID **CCV-6** SampType: **CCV** TestCode: **300_W_BRP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/8/2018** SeqNo: **3019519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.246	0.50	1.250	0	99.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ICV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/5/2018** SeqNo: **3019471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.991	0.50	2.000	0	99.6	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.946	0.50	2.000	0	97.3	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.919	0.50	2.000	0	96.0	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.936	0.50	2.000	0	96.8	90	110				

Sample ID **CCV-4** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.958	0.50	2.000	0	97.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030185
Project:	PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**

Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.941	0.50	2.000	0	97.1	90	110				

Sample ID **CCV-6** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**

Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/8/2018** SeqNo: **3019498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.955	0.50	2.000	0	97.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ICV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/5/2018** SeqNo: **3019521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.902	0.50	4.000	0	97.6	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.879	0.50	4.000	0	97.0	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.943	0.50	4.000	0	98.6	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.894	0.50	4.000	0	97.4	90	110				

Sample ID **CCV-4** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.892	0.50	4.000	0	97.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019541**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.895	0.50	4.000	0	97.4	90	110				

Sample ID **CCV-6** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/8/2018** SeqNo: **3019543**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.936	0.50	4.000	0	98.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:		RunNo: **123903**					
Client ID: **ICB**	Batch ID: **R123903**	TestNo: **EPA 300.0**		Analysis Date: **5/5/2018**		SeqNo: **3019501**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:		RunNo: **123903**					
Client ID: **CCB**	Batch ID: **R123903**	TestNo: **EPA 300.0**		Analysis Date: **5/7/2018**		SeqNo: **3019503**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:		RunNo: **123903**					
Client ID: **CCB**	Batch ID: **R123903**	TestNo: **EPA 300.0**		Analysis Date: **5/7/2018**		SeqNo: **3019507**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:		RunNo: **123903**					
Client ID: **CCB**	Batch ID: **R123903**	TestNo: **EPA 300.0**		Analysis Date: **5/7/2018**		SeqNo: **3019511**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:		RunNo: **123903**					
Client ID: **CCB**	Batch ID: **R123903**	TestNo: **EPA 300.0**		Analysis Date: **5/7/2018**		SeqNo: **3019515**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **123903**
Client ID: **CCB**	Batch ID: **R123903**	TestNo: **EPA 300.0**		Analysis Date: **5/7/2018**	SeqNo: **3019518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **123903**
Client ID: **CCB**	Batch ID: **R123903**	TestNo: **EPA 300.0**		Analysis Date: **5/8/2018**	SeqNo: **3019520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB** SampType: **ICB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ICB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/5/2018** SeqNo: **3019472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-6** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/8/2018** SeqNo: **3019499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.137	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **123903**
Client ID: **ICB**	Batch ID: **R123903**	TestNo: **EPA 300.0**	Analysis Date: **5/5/2018**	SeqNo: **3019522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **123903**
Client ID: **CCB**	Batch ID: **R123903**	TestNo: **EPA 300.0**	Analysis Date: **5/7/2018**	SeqNo: **3019524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **123903**
Client ID: **CCB**	Batch ID: **R123903**	TestNo: **EPA 300.0**	Analysis Date: **5/7/2018**	SeqNo: **3019528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **123903**
Client ID: **CCB**	Batch ID: **R123903**	TestNo: **EPA 300.0**	Analysis Date: **5/7/2018**	SeqNo: **3019530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **123903**
Client ID: **CCB**	Batch ID: **R123903**	TestNo: **EPA 300.0**	Analysis Date: **5/7/2018**	SeqNo: **3019536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P** Units: **mg/L**		Prep Date:			RunNo: **123903**			
Client ID: **CCB**	Batch ID: **R123903**	TestNo: **EPA 300.0**		Analysis Date: **5/7/2018**			SeqNo: **3019542**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P** Units: **mg/L**		Prep Date:			RunNo: **123903**			
Client ID: **CCB**	Batch ID: **R123903**	TestNo: **EPA 300.0**		Analysis Date: **5/8/2018**			SeqNo: **3019544**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.207	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 5/7/2018

Sample Name		Retention Time	Evaluation
ICV	Sulfate	8.850	
CCV-1	Sulfate	8.804	
CCV-2	Sulfate	8.790	
CCV-3	Sulfate	8.787	
CCV-4	Sulfate	8.800	
CCV-5	Sulfate	8.787	
CCV-6	Sulfate	8.797	

Average 8.794
Applied RT Window 8.594 - 8.994

MB-R123903_SO4	Sulfate	N.A.	N.A.
LCS-R123903_SO4	Sulfate	8.800	PASS
N030186-001BMS	Sulfate	8.803	PASS
N030186-001BMSD	Sulfate	8.807	PASS
N030186-001BDUP	Sulfate	8.800	PASS
N030185-002B	Sulfate	8.804	PASS
N030185-003B	Sulfate	8.807	PASS

rba 5/18/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 5/7/2018

Sample Name	Retention Time		Evaluation
ICV	Bromide	5.434	
CCV-1	Bromide	5.414	
CCV-2	Bromide	5.410	
CCV-3	Bromide	5.407	
CCV-4	Bromide	5.410	
CCV-5	Bromide	5.404	
CCV-6	Bromide	5.407	

Average 5.409

Applied RT Window 5.209 - 5.609

MB-R123903_BR	Bromide	N.A.	N.A.
LCS-R123903_BR	Bromide	5.413	PASS
N030185-002B	Bromide	5.424	PASS
N030185-003B	Bromide	5.424	PASS
N030185-002BMS	Bromide	5.414	PASS
N030185-002BMSD	Bromide	5.414	PASS
N030185-002BDUP	Bromide	5.407	PASS

rba 5/18/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 5/7/2018

Sample Name	Retention Time		Evaluation
ICV	Chloride	4.054	
CCV-1	Chloride	4.040	
CCV-2	Chloride	4.037	
CCV-3	Chloride	4.037	
CCV-4	Chloride	4.040	
CCV-5	Chloride	4.034	
CCV-6	Chloride	4.037	

Average 4.038

Applied RT Window 3.838 - 4.238

MB-R123903_CL	Chloride	N.A.	N.A.
LCS-R123903_CL	Chloride	4.040	PASS
N030186-002BMS	Chloride	4.040	PASS
N030186-002BMSD	Chloride	4.040	PASS
N030186-001BDUP	Chloride	4.040	PASS
N030185-002B	Chloride	4.037	PASS
N030185-003B	Chloride	4.033	PASS

rba 5/18/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2018 (1st Quarter)

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)**
Method Number: EPA Method 300.0
Analysis Date(s): 3/29-30/2018
Analyst: Ria B. Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.0252	0.10	0.087	**87**
Chloride	**0.0091**	0.020	0.1193	0.50	0.5757	**115**
Nitrite	**0.0030**	0.010	0.0237	0.05	0.0638	**128**
Bromide	**0.0196**	0.040	0.0405	0.20	0.1993	**100**
Nitrate	**0.0050**	0.010	0.0191	0.05	0.0561	**112**
Phosphate	**0.0135**	0.030	0.0415	0.10	0.1216	**122**
Sulfate	**0.0229**	0.050	0.3682	0.50	0.6549	**131**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R124137 **Analyst:** QBM

ASSET #: N030147, N030185, N030186, N030188 **Date Analyzed:** 5/18/2018

Method: **4500_NO3**

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 5/22/2018

2nd Level Reviewer RB 05/22/2018 Date:

SAMPLE CALCULATION

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N030185-001C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.441	*	1
	=	0.441	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.44 mg/L

RB 05/22/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

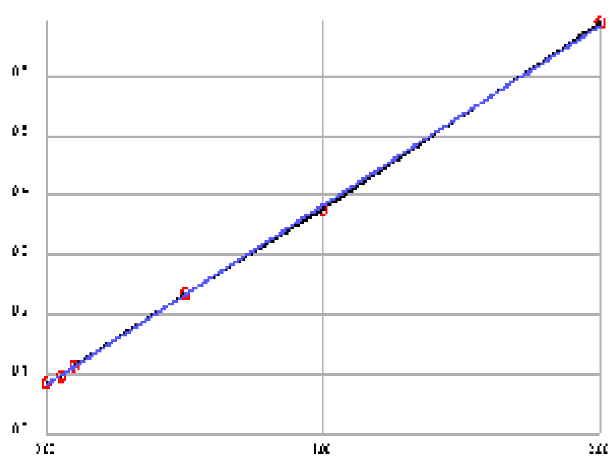
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.301x + 0.0834
Correlation	.999805

Calibrant	Energy	Set	Conc
1	0.0858	0.0000	0.0081
2	0.0984	0.0500	0.0500
3	0.1144	0.1000	0.1032
4	0.2354	0.5000	0.5052
5	0.3753	1.0000	0.9700
6	0.6894	2.0000	2.0136



Notes:

RJB 05/22/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ICV** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.535	0.050	0.5000	0	107	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **CCV** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031750**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.508	0.050	0.5000	0	102	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **CCV** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.462	0.050	0.5000	0	92.4	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **CCV** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ICB** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **CCB** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **CCB** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **CCB** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031772**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.
3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 05-18-2018 16:39
Time end: 05-18-2018 19:34

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	18:53:25	0.0078		0.0857
2	<BLANK>	18:54:19	0.0088		0.0860
3	<CAL1>	18:55:20	0.0081	[0]	0.0858
4	<CAL2>	18:56:16	0.0500	[0.05]	0.0984
5	<CAL3>	18:57:17	0.1032	[0.1]	0.1144
6	<CAL4>	18:58:11	0.5052	[0.5]	0.2354
7	<CAL5>	18:59:07	0.9700	[1]	0.3753
8	<CAL6>	19:00:02	2.0136	[2]	0.6894
9	,BLANK,BLANK,1, NOT REPORTED	19:01:02	0.0347		0.0938
10	,ICV,ICV,1,	19:01:58	0.5347		0.2443
11	,ICB,ICB,1,	19:02:59	0.0048		0.0848
12	,MB-H2O,MBLK,1,	19:03:55	0.0058		0.0851
13	,LCS-H2O,LCS,1,	19:04:49	0.5145		0.2382
14	,N030147-007C,SAMP,5,	19:05:50	0.7125		0.2978
15	,N030147-008C,SAMP,5,	19:06:46	0.6268		0.2720
16	,N030147-009C,SAMP,1,	19:07:40	0.4374		0.2150
17	,N030147-010C,SAMP,1,	19:08:42	0.8726		0.3460
18	,N030186-002C,SAMP,5,	19:09:37	0.5318		0.2434
19	,N030186-002CMS,MS,5,	19:10:33	1.1202		0.4205
20	,N030186-002CMSD,MSD,5,	19:11:33	1.0520		0.4000
21	,BLANK, NOT REPORTED	19:12:29	0.0277		0.0917
22	,CCV-1,CCV,1,	19:13:24	0.5082		0.2363
23	,CCB-1,CCB,1,	19:14:25	0.0154		0.0880
24	,N030186-001C,SAMP,1,	19:15:20	0.0457		0.0971
25	,N030186-001CDUP,DUP,1,	19:16:16	0.0357		0.0941
26	,N030147-011C,SAMP,1,	19:17:17	0.0224		0.0901

RB 05/22/2018

				EPA 353.2 NO3 as N		
				ppm	Flags	OD
27	,N030147-012C,SAMP,1,		19:18:11	0.0490		0.0981
28	,N030185-001C,SAMP,1,		19:19:01	0.4410		0.2161
29	,N030185-004C,SAMP,1,		19:19:43	0.5308		0.2431
30	,N030188-006B,SAMP,5,		19:20:33	0.5540		0.2501
31	,N030188-007B,SAMP,1,		19:21:16	0.8773		0.3474
32	,N030188-008B,SAMP,10,		19:21:58	0.7012		0.2944
33	,BLANK,	NOT REPORTED	19:22:48	0.0121		0.0870
34	,CCV-2,CCV,1,	NOT REPORTED	19:23:30	0.4597		0.2217
35	,CCV-2,CCV,1,		19:24:13	0.4620		0.2224
36	,CCB-2,CCB,1,		19:25:01	0.0045		0.0847
37	,N030188-005B,SAMP,1,		19:25:45	0.0257		0.0911
38	,N030188-003B,SAMP,1,		19:26:28	0.6773		0.2872
39	,N030188-004B,SAMP,1,		19:27:16	0.0988		0.1131
40	,N030188-010A,SAMP,1,		19:28:00	0.2184		0.1491
41	,N030188-009B,SAMP,5,		19:28:48	0.9740		0.3765
42	,N030188-011B,SAMP,5,		19:29:31	1.0969		0.4135
43	,BLANK,	NOT REPORTED	19:30:13	0.0340		0.0936
44	,CCV-3,CCV,1,		19:30:57	0.5105		0.2370
45	,CCV-3,CCV,1,	NOT REPORTED	19:31:46	0.4321		0.2134
46	,CCB-3,CCB,1,		19:32:28	0.0194		0.0892

RB 05/22/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 5/18/2018
Time Analyzed: 4:39 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180504F
Color reagent: R180509C
2% Copper Sulfate: R180504E
Ammonium Hydroxide: CINV-180423A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N030147-007C		8.24							
N030147-008C		8.73							
N030147-009C		8.38							
N030147-010C		8.03							
N030147-011C		7.92							
N030147-012C		8.02							
N030185-001C		8.19							
N030185-004C		7.56							
N030186-001C		7.52							
N030186-002C		8.28							
N030188-003B		8.09							
N030188-004B		8.01							
N030188-005B		8.30							
N030188-006B		7.19							
N030188-007B		7.43							
N030188-008B		7.00							
N030188-009B		6.42							
N030188-010A		7.35							
N030188-011B		6.20							

Advanced Technology Laboratories, Inc.
Book # 1

RB 05/22/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05

Method Blank

Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6020
Dissolved

METALS ARCUS
REV 1.0
071116

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68012 **Instrument ID:** ICPMS-02
ASSET #: N030185 **Analyst:** CEI
Method: **Date Analyzed:** 5/17/2018

- [ ] EPA 6010B / 200.7
- [x] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			~~X~~	x	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X		x		~~X~~
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Cr in N030147-002D PS/MS/MSD failed. However, LCS passed criteria.

RSD of Se for N030185-004 is biased high- CAR 2343

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 5/29/18
2nd Level Reviewer [signature] 5/29/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N030185-002C** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 150.588 * 1 * (25/25)

Chromium , ug/L = 150.588

Reporting results in two significant figures,

Chromium , ug/L = 150

% RSD SUMMARY

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

PERCENT RSD SUMMARY: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.08	15.93	15	<PQL	0.088	10.24	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	3.84	15	PASS	0.52	6.12	15	PASS
Std3-5/50 ppb	ICAL	1	5.25	1.51	15	PASS	5.11	2.97	15	PASS
Std4-10/100 ppb	ICAL	1	10.31	0.48	15	PASS	10.36	1.68	15	PASS
Std5-20/200 ppb	ICAL	1	20.77	1.2	15	PASS	20.82	0.27	15	PASS
Std6-40/400 ppb	ICAL	1	40.48	1.28	15	PASS	40.22	1.46	15	PASS
Std7-100/1000 ppb	ICAL	1	101	1.41	15	PASS	100.91	1.71	15	PASS
Std8-200/2000 ppb	ICAL	1	199.31	0.96	15	PASS	199.4	0.89	15	PASS
ICV	ICV	1	10.58	1.43	15	PASS	105.63	0.36	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.047	2.037	20	PASS	0.52	11.022	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.33	1.86	15	PASS	16.22	1.91	15	PASS
MB-68012	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-68012	LCS	1	10.5	2.16	15	PASS	104.4	1.058	15	PASS
N030150-001B	SAMP	1	28.84	1.049	15	PASS	0.33	6.77	15	PASS
N030147-001D	SAMP	1	2808.55	1.064	15	PASS	1.36	0.64	15	PASS
N030147-001D	SAMP	5	623.62	0.84	15	PASS	0.27	4.76	15	PASS
N030147-001D	SAMP	25	119.36	0.43	15	PASS	0.045	24.1	15	<PQL
N030147-002D	SAMP	1	352.23	1.51	15	PASS	1.6	3.71	15	PASS
N030147-002D	SAMP	5	71.067	0.89	15	PASS	0.32	14.63	15	PASS
N030147-002D	SAMP	25	14.73	2.22	15	PASS	0.067	14.99	15	PASS
N030147-002D-PS	PS	1	346.045	1.73	15	PASS	99.14	1.6	15	PASS
CCV1	CCV	1	20.49	1.83	15	PASS	20.56	0.45	15	PASS
CCB1	CCB	1	0.034	10.16	15	PASS	<0.000	N/A	15	<PQL
N030147-002D-PS	PS	5	72.16	0.31	15	PASS	21.95	0.77	15	PASS
N030147-002D-MS	MS	1	346.047	1.51	15	PASS	100.59	1.85	15	PASS
N030147-002D-MS	MS	5	77.31	1.37	15	PASS	23.86	2.48	15	PASS
N030147-002D-MSD	MSD	1	346.11	2.056	15	PASS	101.28	1.41	15	PASS
N030147-002D-MSD	MSD	5	71.92	0.55	15	PASS	22.55	1.57	15	PASS
N030147-003D	SAMP	1	4.66	0.95	15	PASS	12.0057	2.39	15	PASS
N030147-003D	SAMP	5	0.98	5	15	PASS	2.56	2.86	15	PASS
N030147-004D	SAMP	1	5.19	1.34	15	PASS	6.23	0.27	15	PASS
N030147-004D	SAMP	5	1.098	2.12	15	PASS	1.27	0.81	15	PASS
N030147-005D	SAMP	1	7.45	1.046	15	PASS	218.66	0.19	15	PASS
CCV2	CCV	1	19.93	1.022	15	PASS	20.45	1.33	15	PASS
CCB2	CCB	1	0.0016	460.84	15	<PQL	<0.000	N/A	15	<PQL
N030147-005D	SAMP	5	1.62	2.65	15	PASS	47.98	0.33	15	PASS
N030147-006D	SAMP	1	146.79	1.034	15	PASS	1.46	2.65	15	PASS
N030147-006D	SAMP	5	31.028	1.41	15	PASS	0.28	4.85	15	PASS

PERCENT RSD SUMMARY: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030147-007D	SAMP	1	1777.28	1.024	15	PASS	1.19	4.77	15	PASS
N030147-007D	SAMP	25	73.79	0.28	15	PASS	0.02	16.36	15	<PQL
N030147-008D	SAMP	1	1213.97	0.46	15	PASS	11.7	1.77	15	PASS
N030147-008D	SAMP	10	126.17	0.97	15	PASS	1.26	3.44	15	PASS
N030147-009D	SAMP	1	7.087	0.74	15	PASS	2.72	1.72	15	PASS
N030147-009D	SAMP	5	1.58	1.94	15	PASS	0.55	2.89	15	PASS
N030147-010D	SAMP	1	9.23	1.54	15	PASS	253.24	1.37	15	PASS
CCV3	CCV	1	19.94	1.0039	15	PASS	20.65	2.039	15	PASS
CCB3	CCB	1	0.047	20.81	15	<PQL	<0.000	N/A	15	<PQL
N030147-010D	SAMP	5	2.037	0.54	15	PASS	55.69	0.33	15	PASS
N030147-011D	SAMP	1	<0.000	N/A	15	<PQL	161.98	0.46	15	PASS
N030147-011D	SAMP	5	<0.000	N/A	15	<PQL	35.41	1.14	15	PASS
N030147-012D	SAMP	1	<0.000	N/A	15	<PQL	811.16	2.12	15	PASS
N030147-012D	SAMP	5	<0.000	N/A	15	<PQL	163.83	1.4	15	PASS
N030147-013C	SAMP	1	<0.000	N/A	15	<PQL	21.058	0.9	15	PASS
N030147-013C	SAMP	5	<0.000	N/A	15	<PQL	4.92	4.096	15	PASS
N030185-001D	SAMP	1	<0.000	N/A	15	<PQL	72.71	0.39	15	PASS
N030185-001D	SAMP	5	<0.000	N/A	15	<PQL	15.83	1.21	15	PASS
N030185-002C	SAMP	1	150.59	0.9	15	PASS	3.16	3.44	15	PASS
CCV4	CCV	1	20.033	0.54	15	PASS	20.66	1.14	15	PASS
CCB4	CCB	1	0.0046	185.26	15	<PQL	<0.000	N/A	15	<PQL
N030185-002C	SAMP	5	30.48	0.26	15	PASS	0.7	6.29	15	PASS
N030185-003C	SAMP	1	140.78	0.38	15	PASS	5.66	1.41	15	PASS
N030185-003C	SAMP	5	30.25	0.81	15	PASS	1.24	4.22	15	PASS
N030185-004D	SAMP	1	321.4	0.81	15	PASS	125.82	0.7	15	PASS
N030185-004D	SAMP	5	68.012	0.63	15	PASS	28.15	0.75	15	PASS
N030185-002C	SAMP	1	144.67	0.43	15	PASS	3.094	2.58	15	PASS
N030147-007D	SAMP	5	373.84	2.34	15	PASS	0.2	5.57	15	PASS
N030147-008D	SAMP	5	265.16	1.73	15	PASS	2.52	0.77	15	PASS
N030304-001A	SAMP	1	3.8	1.47	15	PASS	<0.000	N/A	15	<PQL
N030123-016D	SAMP	25	0.034	24.17	15	<PQL	70.24	1.03	15	PASS
CCV5	CCV	1	20.086	0.64	15	PASS	20.93	0.64	15	PASS
CCB5	CCB	1	0.035	41.3	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.1	4.31	20	PASS	0.57	3.39	20	PASS
ICSA2	ICSA	1	0.045	32.59	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.8	1.11	15	PASS	17.42	1.22	15	PASS

PERCENT RSD SUMMARY: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.097	24.34	15	<PQL	0.072	62.76	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	4.65	15	PASS	0.51	29.82	15	NR!
Std3-5/50 ppb	ICAL	1	5.11	0.68	15	PASS	5.094	6.91	15	PASS
Std4-10/100 ppb	ICAL	1	10.013	1.96	15	PASS	10.61	2.39	15	PASS
Std5-20/200 ppb	ICAL	1	20.003	2.6	15	PASS	20.29	3.54	15	PASS
Std6-40/400 ppb	ICAL	1	40.88	0.86	15	PASS	40.57	4.089	15	PASS
Std7-100/1000 ppb	ICAL	1	101.14	1.12	15	PASS	99.42	0.68	15	PASS
Std8-200/2000 ppb	ICAL	1	199.25	1.73	15	PASS	200.12	1.28	15	PASS
ICV	ICV	1	10.55	1.79	15	PASS	10.43	3.62	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.047	50.14	15	<PQL
LLICV	CCV1	1	0.098	24.31	20	<PQL	0.51	9.8	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.012	149.97	15	<PQL
ICSAB1	ICSAB	1	21.33	0.74	15	PASS	20.4	4.5	15	PASS
MB-68012	MBLK	1	<0.000	N/A	15	<PQL	0.0055	367.89	15	<PQL
LCS-68012	LCS	1	10.36	0.52	15	PASS	10.11	8.04	15	PASS
N030150-001B	SAMP	1	1.39	0.43	15	PASS	0.13	43.94	15	<PQL
N030147-001D	SAMP	1	2.17	6.065	15	PASS	2.78	2.58	15	PASS
N030147-001D	SAMP	5	0.46	10.66	15	PASS	0.56	29.93	15	NR!
N030147-001D	SAMP	25	0.062	30.83	15	<PQL	0.21	21.7	15	<PQL
N030147-002D	SAMP	1	1.25	5.74	15	PASS	3.52	10.57	15	PASS
N030147-002D	SAMP	5	0.21	16.47	15	NR!	0.72	7.85	15	PASS
N030147-002D	SAMP	25	0.032	79.4	15	<PQL	0.12	65.78	15	<PQL
N030147-002D-PS	PS	1	11.53	1.45	15	PASS	13.38	1.64	15	PASS
CCV1	CCV	1	20.074	2.12	15	PASS	19.84	2.83	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0071	324.43	15	<PQL
N030147-002D-PS	PS	5	2.4	5.16	15	PASS	3.31	5.48	15	PASS
N030147-002D-MS	MS	1	11.42	2.33	15	PASS	12.95	0.52	15	PASS
N030147-002D-MS	MS	5	2.67	3.21	15	PASS	3.26	10.19	15	PASS
N030147-002D-MSD	MSD	1	11.4	3.97	15	PASS	12.42	0.32	15	PASS
N030147-002D-MSD	MSD	5	2.33	5.25	15	PASS	2.5	12.32	15	PASS
N030147-003D	SAMP	1	4.22	1.19	15	PASS	0.41	44.26	15	<PQL
N030147-003D	SAMP	5	0.85	6.59	15	PASS	0.063	105.41	15	<PQL
N030147-004D	SAMP	1	3.28	6.2	15	PASS	0.32	19.42	15	<PQL
N030147-004D	SAMP	5	0.66	3.34	15	PASS	0.061	91.096	15	<PQL
N030147-005D	SAMP	1	12.65	2.33	15	PASS	0.35	20.83	15	<PQL
CCV2	CCV	1	19.66	1.48	15	PASS	20.037	4.92	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.015	60.088	15	<PQL
N030147-005D	SAMP	5	2.59	1.67	15	PASS	0.15	17.98	15	<PQL
N030147-006D	SAMP	1	4	0.46	15	PASS	4.86	10.66	15	PASS
N030147-006D	SAMP	5	0.85	5.6	15	PASS	1.16	20.88	15	NR!

PERCENT RSD SUMMARY: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030147-007D	SAMP	1	1.93	7.88	15	PASS	2.5	9.12	15	PASS
N030147-007D	SAMP	25	0.062	56.079	15	<PQL	0.076	26.75	15	<PQL
N030147-008D	SAMP	1	1.48	1.72	15	PASS	2.44	7.42	15	PASS
N030147-008D	SAMP	10	0.11	19.18	15	NR!	0.21	28.85	15	<PQL
N030147-009D	SAMP	1	3.37	4.56	15	PASS	0.42	18.23	15	<PQL
N030147-009D	SAMP	5	0.66	5.44	15	PASS	0.086	41.79	15	<PQL
N030147-010D	SAMP	1	1.71	6.54	15	PASS	1.87	10.93	15	PASS
CCV3	CCV	1	19.73	1.57	15	PASS	20.12	1.051	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.0057	180.98	15	<PQL
N030147-010D	SAMP	5	0.36	3.86	15	PASS	0.39	20.39	15	<PQL
N030147-011D	SAMP	1	4.44	1.83	15	PASS	0.19	39.63	15	<PQL
N030147-011D	SAMP	5	0.9	3.28	15	PASS	0.018	154.98	15	<PQL
N030147-012D	SAMP	1	1.42	11.68	15	PASS	0.074	103.14	15	<PQL
N030147-012D	SAMP	5	0.23	10.63	15	PASS	0.044	65.27	15	<PQL
N030147-013C	SAMP	1	1.46	4.96	15	PASS	0.18	44.18	15	<PQL
N030147-013C	SAMP	5	0.29	14.84	15	PASS	0.044	107.37	15	<PQL
N030185-001D	SAMP	1	2.25	5.35	15	PASS	0.42	15.55	15	<PQL
N030185-001D	SAMP	5	0.42	3.87	15	PASS	0.036	126.37	15	<PQL
N030185-002C	SAMP	1	1.53	8.6	15	PASS	2.2	10.84	15	PASS
CCV4	CCV	1	19.82	1	15	PASS	21.084	1.68	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N030185-002C	SAMP	5	0.32	12.48	15	PASS	0.45	4.57	15	PASS
N030185-003C	SAMP	1	1.65	3.9	15	PASS	2.28	9.81	15	PASS
N030185-003C	SAMP	5	0.37	12.16	15	PASS	0.32	19.88	15	<PQL
N030185-004D	SAMP	1	3.24	3.8	15	PASS	1.1	25.39	15	NR!
N030185-004D	SAMP	5	0.68	2.95	15	PASS	0.32	24.31	15	<PQL
N030185-002C	SAMP	1	1.6	2.039	15	PASS	2.46	4.94	15	PASS
N030147-007D	SAMP	5	0.36	7.21	15	PASS	0.63	13.067	15	PASS
N030147-008D	SAMP	5	0.25	10.2	15	PASS	0.5	24.72	15	NR!
N030304-001A	SAMP	1	4.54	2.18	15	PASS	1.026	20.31	15	NR!
N030123-016D	SAMP	25	0.085	12.7	15	PASS	0.0068	165.7	15	<PQL
CCV5	CCV	1	19.53	0.8	15	PASS	19.73	2.98	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.034	58.13	15	<PQL
LLCCV1	CCV2	1	0.072	25.4	20	<PQL	0.51	30.73	20	NR!
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.0065	169.072	15	<PQL
ICSAB2	ICSAB	1	22.41	0.56	15	PASS	18.42	4.41	15	PASS

PERCENT RSD SUMMARY: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.091	2.37	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.5	3.13	15	PASS
Std3-5/50 ppb	ICAL	1	5.037	1.64	15	PASS
Std4-10/100 ppb	ICAL	1	9.83	0.78	15	PASS
Std5-20/200 ppb	ICAL	1	19.74	0.56	15	PASS
Std6-40/400 ppb	ICAL	1	39.46	0.59	15	PASS
Std7-100/1000 ppb	ICAL	1	99.99	0.46	15	PASS
Std8-200/2000 ppb	ICAL	1	200.14	0.74	15	PASS
ICV	ICV	1	10.66	1.89	15	PASS
ICB	ICB	1	0.065	12.65	15	PASS
LLICV	CCV1	1	0.49	5.21	20	PASS
ICSA1	ICSA	1	0.067	17.11	15	<PQL
ICSAB1	ICSAB	1	22.83	0.98	15	PASS
MB-68012	MBLK	1	0.04	13.89	15	PASS
LCS-68012	LCS	1	10.5	1.42	15	PASS
N030150-001B	SAMP	1	2.8	1.48	15	PASS
N030147-001D	SAMP	1	7.42	1.11	15	PASS
N030147-001D	SAMP	5	1.45	2.38	15	PASS
N030147-001D	SAMP	25	0.28	12.87	15	PASS
N030147-002D	SAMP	1	5.016	3.57	15	PASS
N030147-002D	SAMP	5	0.97	0.9	15	PASS
N030147-002D	SAMP	25	0.18	9.52	15	PASS
N030147-002D-PS	PS	1	17.013	0.72	15	PASS
CCV1	CCV	1	20.0096	1.083	15	PASS
CCB1	CCB	1	0.023	39.84	15	<PQL
N030147-002D-PS	PS	5	3.41	0.89	15	PASS
N030147-002D-MS	MS	1	17.033	0.71	15	PASS
N030147-002D-MS	MS	5	3.91	2.79	15	PASS
N030147-002D-MSD	MSD	1	17.21	1.36	15	PASS
N030147-002D-MSD	MSD	5	3.5	0.43	15	PASS
N030147-003D	SAMP	1	88.49	1.025	15	PASS
N030147-003D	SAMP	5	17.12	3.062	15	PASS
N030147-004D	SAMP	1	91.54	0.22	15	PASS
N030147-004D	SAMP	5	16.89	0.96	15	PASS
N030147-005D	SAMP	1	92.71	0.36	15	PASS
CCV2	CCV	1	20.37	0.63	15	PASS
CCB2	CCB	1	0.051	20.32	15	<PQL
N030147-005D	SAMP	5	18.12	1.017	15	PASS
N030147-006D	SAMP	1	71.093	1.083	15	PASS
N030147-006D	SAMP	5	14.26	0.69	15	PASS

PERCENT RSD SUMMARY: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N030147-007D	SAMP	1	19.86	0.87	15	PASS
N030147-007D	SAMP	25	0.74	4.58	15	PASS
N030147-008D	SAMP	1	20.29	0.59	15	PASS
N030147-008D	SAMP	10	1.86	2.29	15	PASS
N030147-009D	SAMP	1	57.25	0.51	15	PASS
N030147-009D	SAMP	5	10.62	0.53	15	PASS
N030147-010D	SAMP	1	26.39	1.19	15	PASS
CCV3	CCV	1	20.11	1.61	15	PASS
CCB3	CCB	1	0.043	31.65	15	<PQL
N030147-010D	SAMP	5	5.11	4.66	15	PASS
N030147-011D	SAMP	1	72.67	0.36	15	PASS
N030147-011D	SAMP	5	14.017	2.15	15	PASS
N030147-012D	SAMP	1	49.49	1.092	15	PASS
N030147-012D	SAMP	5	9.65	1.52	15	PASS
N030147-013C	SAMP	1	11.32	1.38	15	PASS
N030147-013C	SAMP	5	2.28	2.95	15	PASS
N030185-001D	SAMP	1	94.96	0.41	15	PASS
N030185-001D	SAMP	5	18.55	0.53	15	PASS
N030185-002C	SAMP	1	10.36	0.75	15	PASS
CCV4	CCV	1	20.34	1.28	15	PASS
CCB4	CCB	1	0.041	28.35	15	<PQL
N030185-002C	SAMP	5	2.022	3.16	15	PASS
N030185-003C	SAMP	1	11.14	1.91	15	PASS
N030185-003C	SAMP	5	2.22	8.2	15	PASS
N030185-004D	SAMP	1	23.46	0.77	15	PASS
N030185-004D	SAMP	5	4.9	2.67	15	PASS
N030185-002C	SAMP	1	10.4	1.62	15	PASS
N030147-007D	SAMP	5	3.73	2.82	15	PASS
N030147-008D	SAMP	5	4.068	3.075	15	PASS
N030304-001A	SAMP	1	5.22	2.19	15	PASS
N030123-016D	SAMP	25	0.81	3.12	15	PASS
CCV5	CCV	1	20.69	2.83	15	PASS
CCB5	CCB	1	0.021	42	15	<PQL
LLCCV1	CCV2	1	0.54	6.55	20	PASS
ICSA2	ICSA	1	0.047	16.65	15	<PQL
ICSAB2	ICSAB	1	23.81	1.49	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180517A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0517001.D	RINSE	RINSE	1	05/17/18 10:04 AM
A0517002.D	Cal Blank	IBLK	1	05/17/18 10:09 AM
A0517003.D	Std1-0.1/1 ppb	ICAL	1	05/17/18 10:15 AM
A0517004.D	Std2-0.5/5 ppb	ICAL	1	05/17/18 10:21 AM
A0517005.D	Std3-5/50 ppb	ICAL	1	05/17/18 10:26 AM
A0517006.D	Std4-10/100 ppb	ICAL	1	05/17/18 10:32 AM
A0517007.D	Std5-20/200 ppb	ICAL	1	05/17/18 10:37 AM
A0517008.D	Std6-40/400 ppb	ICAL	1	05/17/18 10:43 AM
A0517009.D	Std7-100/1000 ppb	ICAL	1	05/17/18 10:48 AM
A0517010.D	Std8-200/2000 ppb	ICAL	1	05/17/18 10:54 AM
A0517011.D	ICV	ICV	1	05/17/18 11:00 AM
A0517012.D	ICB	ICB	1	05/17/18 11:05 AM
A0517013.D	LLICV	CCV1	1	05/17/18 11:11 AM
A0517014.D	ICSA1	ICSA	1	05/17/18 11:16 AM
A0517015.D	ICSAB1	ICSAB	1	05/17/18 11:22 AM
A0517016.D	MB-68012	MBLK	1	05/17/18 11:28 AM
A0517017.D	LCS-68012	LCS	1	05/17/18 11:33 AM
A0517018.D	N030150-001B	SAMP	1	05/17/18 11:42 AM
A0517019.D	N030147-001D	SAMP	1	05/17/18 11:47 AM
A0517020.D	N030147-001D	SAMP	5	05/17/18 11:53 AM
A0517021.D	N030147-001D	SAMP	25	05/17/18 11:58 AM
A0517022.D	N030147-002D	SAMP	1	05/17/18 12:04 PM
A0517023.D	N030147-002D	SAMP	5	05/17/18 12:10 PM
A0517024.D	N030147-002D	SAMP	25	05/17/18 12:16 PM
A0517025.D	N030147-002D-PS	PS	1	05/17/18 12:21 PM
A0517026.D	CCV1	CCV	1	05/17/18 12:27 PM
A0517027.D	CCB1	CCB	1	05/17/18 12:33 PM
A0517028.D	N030147-002D-PS	PS	5	05/17/18 12:38 PM
A0517029.D	N030147-002D-MS	MS	1	05/17/18 12:44 PM
A0517030.D	N030147-002D-MS	MS	5	05/17/18 12:49 PM
A0517031.D	N030147-002D-MSD	MSD	1	05/17/18 12:55 PM
A0517032.D	N030147-002D-MSD	MSD	5	05/17/18 1:00 PM
A0517033.D	N030147-003D	SAMP	1	05/17/18 1:06 PM
A0517034.D	N030147-003D	SAMP	5	05/17/18 1:12 PM
A0517035.D	N030147-004D	SAMP	1	05/17/18 1:17 PM
A0517036.D	N030147-004D	SAMP	5	05/17/18 1:23 PM
A0517037.D	N030147-005D	SAMP	1	05/17/18 1:28 PM
A0517038.D	CCV2	CCV	1	05/17/18 1:34 PM
A0517039.D	CCB2	CCB	1	05/17/18 1:39 PM
A0517040.D	N030147-005D	SAMP	5	05/17/18 1:45 PM
A0517041.D	N030147-006D	SAMP	1	05/17/18 1:51 PM
A0517042.D	N030147-006D	SAMP	5	05/17/18 1:56 PM

INJECTION LOG: 180517A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0517043.D	N030147-007D	SAMP	1	05/17/18 2:02 PM
A0517044.D	N030147-007D	SAMP	25	05/17/18 2:07 PM
A0517045.D	N030147-008D	SAMP	1	05/17/18 2:13 PM
A0517046.D	N030147-008D	SAMP	10	05/17/18 2:19 PM
A0517047.D	N030147-009D	SAMP	1	05/17/18 2:24 PM
A0517048.D	N030147-009D	SAMP	5	05/17/18 2:30 PM
A0517049.D	N030147-010D	SAMP	1	05/17/18 2:35 PM
A0517050.D	CCV3	CCV	1	05/17/18 2:41 PM
A0517051.D	CCB3	CCB	1	05/17/18 2:46 PM
A0517052.D	N030147-010D	SAMP	5	05/17/18 2:52 PM
A0517053.D	N030147-011D	SAMP	1	05/17/18 2:58 PM
A0517054.D	N030147-011D	SAMP	5	05/17/18 3:03 PM
A0517055.D	N030147-012D	SAMP	1	05/17/18 3:09 PM
A0517056.D	N030147-012D	SAMP	5	05/17/18 3:14 PM
A0517057.D	N030147-013C	SAMP	1	05/17/18 3:20 PM
A0517058.D	N030147-013C	SAMP	5	05/17/18 3:26 PM
A0517059.D	N030185-001D	SAMP	1	05/17/18 3:31 PM
A0517060.D	N030185-001D	SAMP	5	05/17/18 3:37 PM
A0517061.D	N030185-002C	SAMP	1	05/17/18 3:42 PM
A0517062.D	CCV4	CCV	1	05/17/18 3:48 PM
A0517063.D	CCB4	CCB	1	05/17/18 3:53 PM
A0517064.D	N030185-002C	SAMP	5	05/17/18 3:59 PM
A0517065.D	N030185-003C	SAMP	1	05/17/18 4:05 PM
A0517066.D	N030185-003C	SAMP	5	05/17/18 4:12 PM
A0517067.D	N030185-004D	SAMP	1	05/17/18 4:17 PM
A0517068.D	N030185-004D	SAMP	5	05/17/18 4:23 PM
A0517069.D	N030185-002C	SAMP	1	05/17/18 4:29 PM
A0517070.D	N030147-007D	SAMP	5	05/17/18 4:34 PM
A0517071.D	N030147-008D	SAMP	5	05/17/18 4:40 PM
A0517072.D	N030304-001A	SAMP	1	05/17/18 4:45 PM
A0517073.D	N030123-016D	SAMP	25	05/17/18 4:51 PM
A0517074.D	CCV5	CCV	1	05/17/18 4:56 PM
A0517075.D	CCB5	CCB	1	05/17/18 5:02 PM
A0517076.D	LLCCV1	CCV2	1	05/17/18 5:08 PM
A0517077.D	ICSA2	ICSA	1	05/17/18 5:13 PM
A0517078.D	ICSAB2	ICSAB	1	05/17/18 5:19 PM
A0517079.D	N030120-003B	SAMP	1	05/17/18 5:23 PM
A0517080.D	N030120-003A	SAMP	1	05/17/18 5:29 PM
A0517081.D	N030120-017B	SAMP	1	05/17/18 5:34 PM
A0517082.D	N030120-017A	SAMP	1	05/17/18 5:40 PM
A0517083.D	N030120-018B	SAMP	1	05/17/18 5:45 PM
A0517084.D	N030120-018A	SAMP	1	05/17/18 5:51 PM

INJECTION LOG: 180517A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0517085.D	N030186-001B	SAMP	1	05/17/18 5:57 PM
A0517086.D	N030186-001A	SAMP	1	05/17/18 6:02 PM
A0517087.D	MB-68013	MBLK	1	05/17/18 6:08 PM
A0517088.D	LCS-68013	LCS	1	05/17/18 6:13 PM
A0517089.D	CCV6	CCV	1	05/17/18 6:19 PM
A0517090.D	CCB6	CCB	1	05/17/18 6:25 PM
A0517091.D	N030149-001B	SAMP	1	05/17/18 6:30 PM
A0517092.D	N030149-001B	SAMP	5	05/17/18 6:36 PM
A0517093.D	N030149-001B	SAMP	25	05/17/18 6:41 PM
A0517094.D	N030149-001B-PS	PS	1	05/17/18 6:47 PM
A0517095.D	N030149-001B-PS	PS	5	05/17/18 6:52 PM
A0517096.D	N030149-001B-MS	MS	1	05/17/18 6:58 PM
A0517097.D	N030149-001B-MS	MS	5	05/17/18 7:04 PM
A0517098.D	N030149-001B-MSD	MSD	1	05/17/18 7:09 PM
A0517099.D	N030149-001B-MSD	MSD	5	05/17/18 7:15 PM
A0517100.D	N030149-002B	SAMP	1	05/17/18 7:20 PM
A0517101.D	CCV7	CCV	1	05/17/18 7:26 PM
A0517102.D	CCB7	CCB	1	05/17/18 7:32 PM
A0517103.D	N030149-002B	SAMP	5	05/17/18 7:37 PM
A0517104.D	N030149-004B	SAMP	1	05/17/18 7:43 PM
A0517105.D	N030149-005B	SAMP	1	05/17/18 7:48 PM
A0517106.D	N030149-005B	SAMP	5	05/17/18 7:54 PM
A0517107.D	N030149-006B	SAMP	1	05/17/18 7:59 PM
A0517108.D	N030149-006B	SAMP	5	05/17/18 8:05 PM
A0517109.D	N030149-009B	SAMP	1	05/17/18 8:11 PM
A0517110.D	N030149-010B	SAMP	5	05/17/18 8:16 PM
A0517111.D	N030149-011B	SAMP	1	05/17/18 8:22 PM
A0517112.D	N030149-012B	SAMP	5	05/17/18 8:27 PM
A0517113.D	CCV8	CCV	1	05/17/18 8:33 PM
A0517114.D	CCB8	CCB	1	05/17/18 8:38 PM
A0517115.D	LLCCV2	CCV2	1	05/17/18 8:44 PM
A0517116.D	ICSA3	ICSA	1	05/17/18 8:50 PM
A0517117.D	ICSAB3	ICSAB	1	05/17/18 8:55 PM
A0517118.D	N030149-013B	SAMP	1	05/17/18 9:01 PM
A0517119.D	N030149-014B	SAMP	5	05/17/18 9:06 PM
A0517120.D	N030149-015B	SAMP	1	05/17/18 9:12 PM
A0517121.D	N030149-016B	SAMP	1	05/17/18 9:17 PM
A0517122.D	N030149-016B	SAMP	5	05/17/18 9:23 PM
A0517123.D	N030149-016B	SAMP	10	05/17/18 9:29 PM
A0517124.D	N030149-017B	SAMP	1	05/17/18 9:34 PM
A0517125.D	N030149-017B	SAMP	25	05/17/18 9:40 PM
A0517126.D	N030149-022B	SAMP	1	05/17/18 9:45 PM

INJECTION LOG: 180517A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0517127.D	MB-68014	MBLK	1	05/17/18 9:51 PM
A0517128.D	CCV9	CCV	1	05/17/18 9:56 PM
A0517129.D	CCB9	CCB	1	05/17/18 10:02 PM
A0517130.D	LCS-68014	LCS	1	05/17/18 10:08 PM
A0517131.D	N030189-001B	SAMP	1	05/17/18 10:13 PM
A0517132.D	N030189-001B	SAMP	5	05/17/18 10:19 PM
A0517133.D	N030189-001B	SAMP	25	05/17/18 10:24 PM
A0517134.D	N030189-001B-PS	PS	1	05/17/18 10:30 PM
A0517135.D	N030189-001B-PS	PS	5	05/17/18 10:36 PM
A0517136.D	N030189-001B-MS	MS	1	05/17/18 10:41 PM
A0517137.D	N030189-001B-MS	MS	5	05/17/18 10:47 PM
A0517138.D	N030189-001B-MSD	MSD	1	05/17/18 10:52 PM
A0517139.D	N030189-001B-MSD	MSD	5	05/17/18 10:58 PM
A0517140.D	CCV10	CCV	1	05/17/18 11:04 PM
A0517141.D	CCB10	CCB	1	05/17/18 11:09 PM
A0517142.D	N030189-002B	SAMP	1	05/17/18 11:15 PM
A0517143.D	N030189-002B	SAMP	5	05/17/18 11:20 PM
A0517144.D	N030189-003B	SAMP	1	05/17/18 11:26 PM
A0517145.D	N030189-003B	SAMP	5	05/17/18 11:31 PM
A0517146.D	N030189-003B	SAMP	10	05/17/18 11:37 PM
A0517147.D	N030189-004B	SAMP	1	05/17/18 11:43 PM
A0517148.D	N030189-005B	SAMP	1	05/17/18 11:48 PM
A0517149.D	N030189-006B	SAMP	1	05/17/18 11:54 PM
A0517150.D	N030189-006B	SAMP	5	05/17/18 11:59 PM
A0517151.D	N030189-007B	SAMP	1	05/18/18 12:05 AM
A0517152.D	CCV11	CCV	1	05/18/18 12:11 AM
A0517153.D	CCB11	CCB	1	05/18/18 12:16 AM
A0517154.D	N030189-007B	SAMP	25	05/18/18 12:22 AM
A0517155.D	N030189-008B	SAMP	1	05/18/18 12:27 AM
A0517156.D	N030189-009B	SAMP	1	05/18/18 12:33 AM
A0517157.D	N030189-009B	SAMP	5	05/18/18 12:38 AM
A0517158.D	N030189-010B	SAMP	1	05/18/18 12:44 AM
A0517159.D	N030189-011B	SAMP	1	05/18/18 12:50 AM
A0517160.D	N030189-011B	SAMP	10	05/18/18 12:55 AM
A0517161.D	N030189-012B	SAMP	1	05/18/18 1:01 AM
A0517162.D	N030189-012B	SAMP	5	05/18/18 1:06 AM
A0517163.D	CCV12	CCV	1	05/18/18 1:12 AM
A0517164.D	CCB12	CCB	1	05/18/18 1:18 AM
A0517165.D	LLCCV3	CCV2	1	05/18/18 1:23 AM
A0517166.D	ICSA4	ICSA	1	05/18/18 1:29 AM
A0517167.D	ICSAB4	ICSAB	1	05/18/18 1:34 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/8/2018 6:51:34 P**
Prep End Date: **5/9/2018 8:00:00 A**
Prep Batch **68012** Prep Code: **3010_W_MSDI**

Reviewed/ Date: Nancy 5/29/2018
Initials/ Date: 5/29/2018
Technician **Claire Ignacio**

Prep Factor Units **mL / mL** Temp. (°C): **94.7** Location: **02-10**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68012	Aqueous		25	☐	0	0	25	1.000		
MB-68012	Aqueous		25	☐	0	0	25	1.000		
N030147-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-002D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-002D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-002D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-003D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-004D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-005D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-006D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-007D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-008D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-009D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-010D	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/8/2018 6:51:34 P**
Prep End Date: **5/9/2018 8:00:00 A**
Prep Batch **68012** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/29/2018
Initials/ Date: 5/29/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-10**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N030147-011D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-012D	Groundwater	<2	25	☐	0	0	25	1.000		
N030147-013C	Groundwater	<2	25	☐	0	0	25	1.000		
N030150-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N030185-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N030185-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N030185-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N030185-004D	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 17 May 2018 09:22:59 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	127748.00	0.00	
24	Mg	430517.00	0.00	
25	Mg	56639.50	0.00	
26	Mg	64723.10	0.00	
59	Co	444129.00	0.00	
115	In	745989.00	0.00	
206	Pb	199429.00	0.00	
207	Pb	172927.00	0.00	
208	Pb	425514.00	0.00	

RSD (%)

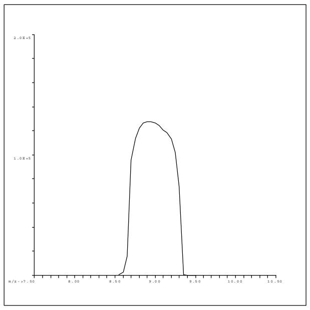
Element		Actual	Required	Flag
9	Be	0.56	5.00	
24	Mg	3.22	5.00	
25	Mg	3.55	5.00	
26	Mg	4.16	5.00	
59	Co	0.87	5.00	
115	In	0.87	5.00	
206	Pb	0.57	5.00	
207	Pb	0.65	5.00	
208	Pb	0.95	5.00	

Ion Ratio

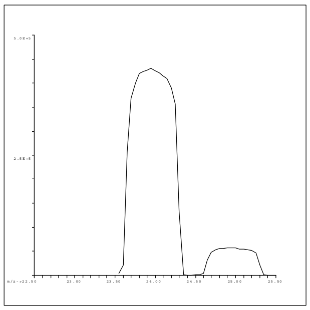
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

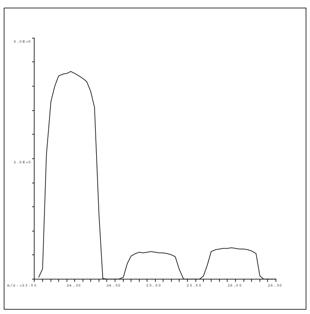
Element	Actual	Required	Flag



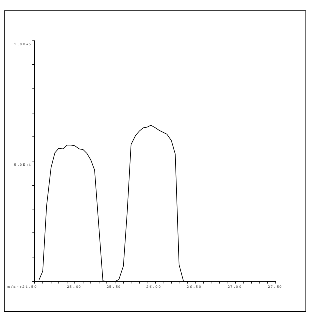
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



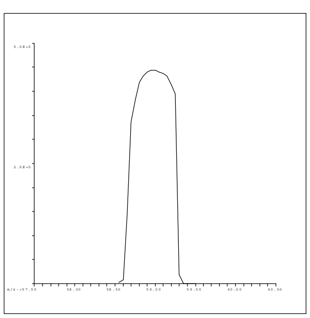
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



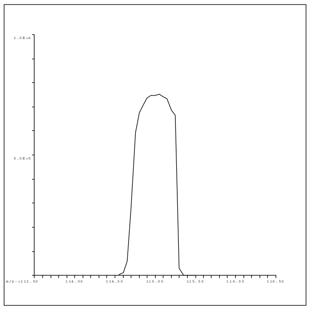
25 Mg
Mass Calib.
Actual: 24.90
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



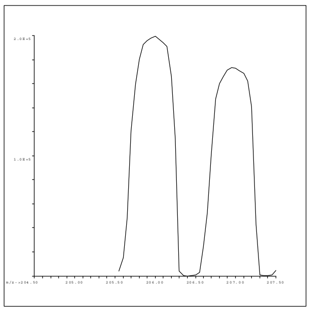
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



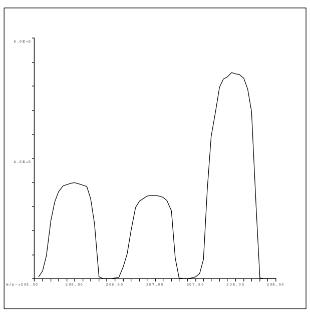
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



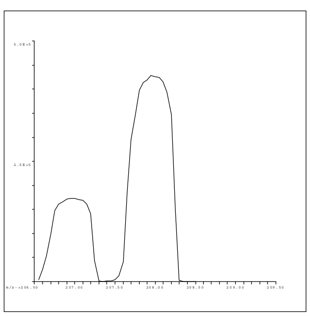
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

~~1.0000~~

INITIAL CALIBRATION SUMMARY: 180517A

Instrument ID: ICPMS-02

Analyte	Data File	A0517002.D	A0517003.D	A0517004.D	A0517005.D	A0517006.D	A0517007.D	A0517008.D	A0517009.D	A0517010.D	
	Acq. Date-Time	05/17/2018 10:09 AM	05/17/2018 10:15 AM	05/17/2018 10:21 AM	05/17/2018 10:26 AM	05/17/2018 10:32 AM	05/17/2018 10:37 AM	05/17/2018 10:43 AM	05/17/2018 10:48 AM	05/17/2018 10:54 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	66634.9		66636	64661.6	64497.3	62331.6	63640.1	62762.1	61992.7	
55 Mn [2]	CPS	168.8		1462.5	12569.7	25255.6	48895.5	96263.5	237981	464316.2	1.0000
52 Cr [2]	CPS	295.3		2996.8	27534.1	53605.2	104146.4	206920.4	508746.4	991382.2	1.0000
72 Ge (ISTD) [1]	CPS	48870.4		48759.1	48920.7	47975.7	46838	46558.3	46026.8	45749.2	
78 Se [1]	CPS	1.1		92.2	919	1875.7	3502.7	6960.7	16858.3	33726.9	1.0000
72 Ge (ISTD) [2]	CPS	45115.4	45968.8	44568.2	44589.4	44060.1	43378.4	43291.5	43027.5	42725.7	
75 As [2]	CPS	30.7	87.1	304.5	2876.3	5542.8	10869.4	22144.4	54409.1	106398.2	1.0000
103 Rh (ISTD) [2]	CPS	1493389.3		1526844.1	1490798.5	1494199.1	1457399.2	1466843.3	1433474.9	1414580.7	
95 Mo [2]	CPS	63.3		1767.9	16887.2	32970.2	64529.9	129750.7	321238.8	634404.7	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MWST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030761**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.552	0.10	10.00	0	106	90	110				
Manganese	105.632	0.50	100.0	0	106	90	110				
Molybdenum	10.661	0.50	10.00	0	107	90	110				
Selenium	10.431	0.50	10.00	0	104	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.098	0.10	0.1000	0	97.9	80	120				
Manganese	0.517	0.50	0.5000	0	103	80	120				
Molybdenum	0.492	0.50	0.5000	0	98.5	80	120				
Selenium	0.513	0.50	0.5000	0	103	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.074	0.10	20.00	0	100	90	110				
Manganese	20.556	0.50	20.00	0	103	90	110				
Molybdenum	20.010	0.50	20.00	0	100	90	110				
Selenium	19.835	0.50	20.00	0	99.2	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.664	0.10	20.00	0	98.3	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.453	0.50	20.00	0	102	90	110				
Molybdenum	20.371	0.50	20.00	0	102	90	110				
Selenium	20.037	0.50	20.00	0	100	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.733	0.10	20.00	0	98.7	90	110				
Manganese	20.647	0.50	20.00	0	103	90	110				
Molybdenum	20.107	0.50	20.00	0	101	90	110				
Selenium	20.119	0.50	20.00	0	101	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030812**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.817	0.10	20.00	0	99.1	90	110				
Manganese	20.660	0.50	20.00	0	103	90	110				
Molybdenum	20.340	0.50	20.00	0	102	90	110				
Selenium	21.084	0.50	20.00	0	105	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.530	0.10	20.00	0	97.7	90	110				
Manganese	20.928	0.50	20.00	0	105	90	110				
Molybdenum	20.690	0.50	20.00	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California		
Work Order:	N030185		
Project:	PG&E Topock - GMP, RC000753.801D	**TestCode:**	**6020_DIS**

ANALYTICAL QC SUMMARY REPORT

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**

Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.728	0.50	20.00	0	98.6	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**

Client ID: **ZZZZZZ** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	~~ND~~ 0.0716	0.10	0.1000	0	~~0~~ 71.6%	70	130				~~S~~
Manganese	0.567	0.50	0.5000	0	113	70	130				
Molybdenum	0.544	0.50	0.5000	0	109	70	130				
Selenium	0.509	0.50	0.5000	0	102	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 5/29/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.581	1.0	10.00	0	106	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.047	1.0	1.000	0	105	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.489	1.0	20.00	0	102	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.926	1.0	20.00	0	99.6	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.944	1.0	20.00	0	99.7	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.033	1.0	20.00	0	100	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCV** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.086	1.0	20.00	0	100	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.104	1.0	1.000	0	110	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:		RunNo: **124122**					
Client ID: **CCB**	Batch ID: **R124122**	TestNo: **EPA 6020**		Analysis Date: **5/17/2018**		SeqNo: **3030801**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:		RunNo: **124122**					
Client ID: **CCB**	Batch ID: **R124122**	TestNo: **EPA 6020**		Analysis Date: **5/17/2018**		SeqNo: **3030813**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:		RunNo: **124122**					
Client ID: **CCB**	Batch ID: **R124122**	TestNo: **EPA 6020**		Analysis Date: **5/17/2018**		SeqNo: **3030825**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **CCB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP** Units: **µg/L**	Prep Date:	RunNo: **124122**
Client ID: **CCB**	Batch ID: **R124122**	TestNo: **EPA 6020**	Analysis Date: **5/17/2018**	SeqNo: **3031148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

ASSET Laboratories

Date: *29-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSA** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSAB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.334	0.10	20.00	0	107	80	120				
Manganese	16.221	0.50	20.00	0	81.1	80	120				
Molybdenum	22.828	0.50	20.00	0	114	80	120				
Selenium	20.399	0.50	20.00	0	102	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSA** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSAB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	22.413	0.10	20.00	0	112	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**

Client ID: **ICSAB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3030828**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	17.422	0.50	20.00	0	87.1	80	120				
Molybdenum	23.806	0.50	20.00	0	119	80	120				
Selenium	18.419	0.50	20.00	0	92.1	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSA** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSAB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.329	1.0	20.00	0	102	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSA** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ICSAB** Batch ID: **R124122** TestNo: **EPA 6020** Analysis Date: **5/17/2018** SeqNo: **3031151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.804	1.0	20.00	0	104	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	66634.9	66634.9	100	PASS	70-125	45115.4	45115.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	67856.4	66634.9	101.83	PASS	70-125	45968.8	45115.4	101.89	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	66636	66634.9	100	PASS	70-125	44568.2	45115.4	98.79	PASS	70-125
Std3-5/50 ppb	ICAL	1	64661.6	66634.9	97.039	PASS	70-125	44589.4	45115.4	98.83	PASS	70-125
Std4-10/100 ppb	ICAL	1	64497.3	66634.9	96.79	PASS	70-125	44060.1	45115.4	97.66	PASS	70-125
Std5-20/200 ppb	ICAL	1	62331.6	66634.9	93.54	PASS	70-125	43378.4	45115.4	96.15	PASS	70-125
Std6-40/400 ppb	ICAL	1	63640.1	66634.9	95.51	PASS	70-125	43291.5	45115.4	95.96	PASS	70-125
Std7-100/1000 ppb	ICAL	1	62762.1	66634.9	94.19	PASS	70-125	43027.5	45115.4	95.37	PASS	70-125
Std8-200/2000 ppb	ICAL	1	61992.7	66634.9	93.033	PASS	70-125	42725.7	45115.4	94.7	PASS	70-125
ICV	ICV	1	60144.8	66634.9	90.26	PASS	70-125	41827.6	45115.4	92.71	PASS	70-125
ICB	ICB	1	60510.4	66634.9	90.81	PASS	70-125	42130.5	45115.4	93.38	PASS	70-125
LLICV	CCV1	1	60518	66634.9	90.82	PASS	70-125	41511.4	45115.4	92.012	PASS	70-125
ICSA1	ICSA	1	68418.5	66634.9	102.68	PASS	70-125	44349.8	45115.4	98.3	PASS	70-125
ICSAB1	ICSAB	1	70943.4	66634.9	106.47	PASS	70-125	46138.2	45115.4	102.27	PASS	70-125
MB-68012	MBLK	1	68557	66634.9	102.88	PASS	70-125	46528.2	45115.4	103.13	PASS	70-125
LCS-68012	LCS	1	64240.8	66634.9	96.41	PASS	70-125	43898.5	45115.4	97.3	PASS	70-125
N030150-001B	SAMP	1	58310.2	66634.9	87.51	PASS	70-125	38997.4	45115.4	86.44	PASS	70-125
N030147-001D	SAMP	1	62406.3	66634.9	93.65	PASS	70-125	38810.2	45115.4	86.024	PASS	70-125
N030147-001D	SAMP	5	66274.4	66634.9	99.46	PASS	70-125	43551.1	45115.4	96.53	PASS	70-125
N030147-001D	SAMP	25	69029	66634.9	103.59	PASS	70-125	46231.6	45115.4	102.47	PASS	70-125
N030147-002D	SAMP	1	66646.9	66634.9	100.02	PASS	70-125	43539.9	45115.4	96.51	PASS	70-125
N030147-002D	SAMP	5	65809.1	66634.9	98.76	PASS	70-125	44335.3	45115.4	98.27	PASS	70-125
N030147-002D	SAMP	25	65649.8	66634.9	98.52	PASS	70-125	44404.4	45115.4	98.42	PASS	70-125
N030147-002D-PS	PS	1	63987.7	66634.9	96.027	PASS	70-125	42959.5	45115.4	95.22	PASS	70-125
CCV1	CCV	1	63059.7	66634.9	94.63	PASS	70-125	43642.5	45115.4	96.74	PASS	70-125
CCB1	CCB	1	59043	66634.9	88.61	PASS	70-125	40900.8	45115.4	90.66	PASS	70-125
N030147-002D-PS	PS	5	57567.9	66634.9	86.39	PASS	70-125	39906.2	45115.4	88.45	PASS	70-125
N030147-002D-MS	MS	1	59388.7	66634.9	89.13	PASS	70-125	40091	45115.4	88.86	PASS	70-125
N030147-002D-MS	MS	5	57614.9	66634.9	86.46	PASS	70-125	40282.7	45115.4	89.29	PASS	70-125
N030147-002D-MSD	MSD	1	57621.4	66634.9	86.47	PASS	70-125	39887.3	45115.4	88.41	PASS	70-125
N030147-002D-MSD	MSD	5	55030.3	66634.9	82.58	PASS	70-125	39373.9	45115.4	87.27	PASS	70-125
N030147-003D	SAMP	1	56476.3	66634.9	84.75	PASS	70-125	34956	45115.4	77.48	PASS	70-125
N030147-003D	SAMP	5	68010.2	66634.9	102.06	PASS	70-125	44346.5	45115.4	98.3	PASS	70-125
N030147-004D	SAMP	1	63236.1	66634.9	94.9	PASS	70-125	38169.8	45115.4	84.6	PASS	70-125
N030147-004D	SAMP	5	70731.5	66634.9	106.15	PASS	70-125	45419.5	45115.4	100.67	PASS	70-125
N030147-005D	SAMP	1	63437	66634.9	95.2	PASS	70-125	38217.6	45115.4	84.71	PASS	70-125
CCV2	CCV	1	78346.5	66634.9	117.58	PASS	70-125	53279.9	45115.4	118.1	PASS	70-125
CCB2	CCB	1	73641.8	66634.9	110.52	PASS	70-125	50016.3	45115.4	110.86	PASS	70-125
N030147-005D	SAMP	5	68062.7	66634.9	102.14	PASS	70-125	43585.6	45115.4	96.61	PASS	70-125
N030147-006D	SAMP	1	71378.6	66634.9	107.12	PASS	70-125	46179.3	45115.4	102.36	PASS	70-125
N030147-006D	SAMP	5	71059.6	66634.9	106.64	PASS	70-125	46844.6	45115.4	103.83	PASS	70-125

INTERNAL STANDARD: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030147-007D	SAMP	1	60910.7	66634.9	91.41	PASS	70-125	37374.7	45115.4	82.84	PASS	70-125
N030147-007D	SAMP	25	70840.4	66634.9	106.31	PASS	70-125	46785.5	45115.4	103.7	PASS	70-125
N030147-008D	SAMP	1	62937.2	66634.9	94.45	PASS	70-125	38496.2	45115.4	85.33	PASS	70-125
N030147-008D	SAMP	10	69892.5	66634.9	104.89	PASS	70-125	45586.5	45115.4	101.04	PASS	70-125
N030147-009D	SAMP	1	62646.1	66634.9	94.014	PASS	70-125	37845.7	45115.4	83.89	PASS	70-125
N030147-009D	SAMP	5	69470.5	66634.9	104.26	PASS	70-125	45256.8	45115.4	100.31	PASS	70-125
N030147-010D	SAMP	1	68183.2	66634.9	102.32	PASS	70-125	42310.1	45115.4	93.78	PASS	70-125
CCV3	CCV	1	70817.3	66634.9	106.28	PASS	70-125	47804.1	45115.4	105.96	PASS	70-125
CCB3	CCB	1	65619.7	66634.9	98.48	PASS	70-125	44800.1	45115.4	99.3	PASS	70-125
N030147-010D	SAMP	5	64722.8	66634.9	97.13	PASS	70-125	43424	45115.4	96.25	PASS	70-125
N030147-011D	SAMP	1	59552.4	66634.9	89.37	PASS	70-125	37765.6	45115.4	83.71	PASS	70-125
N030147-011D	SAMP	5	70050.8	66634.9	105.13	PASS	70-125	45779.4	45115.4	101.47	PASS	70-125
N030147-012D	SAMP	1	57911.3	66634.9	86.91	PASS	70-125	35730.9	45115.4	79.2	PASS	70-125
N030147-012D	SAMP	5	67230.2	66634.9	100.89	PASS	70-125	43609.1	45115.4	96.66	PASS	70-125
N030147-013C	SAMP	1	60498.4	66634.9	90.79	PASS	70-125	35727.6	45115.4	79.19	PASS	70-125
N030147-013C	SAMP	5	68109.5	66634.9	102.21	PASS	70-125	44674.1	45115.4	99.022	PASS	70-125
N030185-001D	SAMP	1	58139.8	66634.9	87.25	PASS	70-125	35011.8	45115.4	77.6	PASS	70-125
N030185-001D	SAMP	5	66862.3	66634.9	100.34	PASS	70-125	43759.3	45115.4	96.99	PASS	70-125
N030185-002C	SAMP	1	50049.2	66634.9	75.11	PASS	70-125	34059.7	45115.4	75.49	PASS	70-125
CCV4	CCV	1	69537.6	66634.9	104.36	PASS	70-125	48016.8	45115.4	106.43	PASS	70-125
CCB4	CCB	1	64484.2	66634.9	96.77	PASS	70-125	44440.2	45115.4	98.5	PASS	70-125
N030185-002C	SAMP	5	63066.6	66634.9	94.64	PASS	70-125	43049.7	45115.4	95.42	PASS	70-125
N030185-003C	SAMP	1	59931.9	66634.9	89.94	PASS	70-125	39782.5	45115.4	88.18	PASS	70-125
N030185-003C	SAMP	5	62954.8	66634.9	94.48	PASS	70-125	43250.2	45115.4	95.87	PASS	70-125
N030185-004D	SAMP	1	56261	66634.9	84.43	PASS	70-125	35513.7	45115.4	78.72	PASS	70-125
N030185-004D	SAMP	5	63227	66634.9	94.89	PASS	70-125	41539.3	45115.4	92.073	PASS	70-125
N030185-002C	SAMP	1	64474.2	66634.9	96.76	PASS	70-125	41845.6	45115.4	92.75	PASS	70-125
N030147-007D	SAMP	5	62219.9	66634.9	93.37	PASS	70-125	41398.8	45115.4	91.76	PASS	70-125
N030147-008D	SAMP	5	63613	66634.9	95.46	PASS	70-125	42516.3	45115.4	94.24	PASS	70-125
N030304-001A	SAMP	1	63053.9	66634.9	94.63	PASS	70-125	43806.2	45115.4	97.098	PASS	70-125
N030123-016D	SAMP	25	60808.3	66634.9	91.26	PASS	70-125	41601.6	45115.4	92.21	PASS	70-125
CCV5	CCV	1	59095.5	66634.9	88.69	PASS	70-125	41812	45115.4	92.68	PASS	70-125
CCB5	CCB	1	55835.4	66634.9	83.79	PASS	70-125	39396.2	45115.4	87.32	PASS	70-125
LLCCV1	CCV2	1	52757.5	66634.9	79.17	PASS	70-125	37344.6	45115.4	82.78	PASS	70-125
ICSA2	ICSA	1	60128.1	66634.9	90.24	PASS	70-125	40752.6	45115.4	90.33	PASS	70-125
ICSAB2	ICSAB	1	68067.2	66634.9	102.15	PASS	70-125	38203.3	45115.4	84.68	PASS	70-125

INTERNAL STANDARD: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	48870.4	48870.4	100	PASS	70-125	1493389.3	1493389.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	49904.7	48870.4	102.12	PASS	70-125	1528384.3	1493389.3	102.34	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	48759.1	48870.4	99.77	PASS	70-125	1526844.1	1493389.3	102.24	PASS	70-125
Std3-5/50 ppb	ICAL	1	48920.7	48870.4	100.1	PASS	70-125	1490798.5	1493389.3	99.83	PASS	70-125
Std4-10/100 ppb	ICAL	1	47975.7	48870.4	98.17	PASS	70-125	1494199.1	1493389.3	100.05	PASS	70-125
Std5-20/200 ppb	ICAL	1	46838	48870.4	95.84	PASS	70-125	1457399.2	1493389.3	97.59	PASS	70-125
Std6-40/400 ppb	ICAL	1	46558.3	48870.4	95.27	PASS	70-125	1466843.3	1493389.3	98.22	PASS	70-125
Std7-100/1000 ppb	ICAL	1	46026.8	48870.4	94.18	PASS	70-125	1433474.9	1493389.3	95.99	PASS	70-125
Std8-200/2000 ppb	ICAL	1	45749.2	48870.4	93.61	PASS	70-125	1414580.7	1493389.3	94.72	PASS	70-125
ICV	ICV	1	45313.7	48870.4	92.72	PASS	70-125	1420163.6	1493389.3	95.097	PASS	70-125
ICB	ICB	1	45083.1	48870.4	92.25	PASS	70-125	1408820.7	1493389.3	94.34	PASS	70-125
LLICV	CCV1	1	45901.9	48870.4	93.93	PASS	70-125	1413001.4	1493389.3	94.62	PASS	70-125
ICSA1	ICSA	1	48186.3	48870.4	98.6	PASS	70-125	1375285.3	1493389.3	92.092	PASS	70-125
ICSAB1	ICSAB	1	49788.9	48870.4	101.88	PASS	70-125	1390183.8	1493389.3	93.089	PASS	70-125
MB-68012	MBLK	1	51378	48870.4	105.13	PASS	70-125	1538710.8	1493389.3	103.04	PASS	70-125
LCS-68012	LCS	1	48990.8	48870.4	100.25	PASS	70-125	1477438.5	1493389.3	98.93	PASS	70-125
N030150-001B	SAMP	1	40308.3	48870.4	82.48	PASS	70-125	1174158.5	1493389.3	78.62	PASS	70-125
N030147-001D	SAMP	1	40210.3	48870.4	82.28	PASS	70-125	1025551.6	1493389.3	68.67	NR!	70-125
N030147-001D	SAMP	5	46280.7	48870.4	94.7	PASS	70-125	1255659.9	1493389.3	84.081	PASS	70-125
N030147-001D	SAMP	25	51260	48870.4	104.89	PASS	70-125	1414342.2	1493389.3	94.71	PASS	70-125
N030147-002D	SAMP	1	48848.4	48870.4	99.95	PASS	70-125	1261914.8	1493389.3	84.5	PASS	70-125
N030147-002D	SAMP	5	48499.4	48870.4	99.24	PASS	70-125	1392545.7	1493389.3	93.25	PASS	70-125
N030147-002D	SAMP	25	48738.1	48870.4	99.73	PASS	70-125	1440084.5	1493389.3	96.43	PASS	70-125
N030147-002D-PS	PS	1	47517.6	48870.4	97.23	PASS	70-125	1220780.9	1493389.3	81.75	PASS	70-125
CCV1	CCV	1	48888.5	48870.4	100.04	PASS	70-125	1434701.8	1493389.3	96.07	PASS	70-125
CCB1	CCB	1	45984.3	48870.4	94.094	PASS	70-125	1364934.2	1493389.3	91.4	PASS	70-125
N030147-002D-PS	PS	5	44501.5	48870.4	91.06	PASS	70-125	1217591.1	1493389.3	81.53	PASS	70-125
N030147-002D-MS	MS	1	45549.8	48870.4	93.21	PASS	70-125	1153953.4	1493389.3	77.27	PASS	70-125
N030147-002D-MS	MS	5	45637.9	48870.4	93.39	PASS	70-125	1183268.5	1493389.3	79.23	PASS	70-125
N030147-002D-MSD	MSD	1	46518.2	48870.4	95.19	PASS	70-125	1123181.1	1493389.3	75.21	PASS	70-125
N030147-002D-MSD	MSD	5	45007.3	48870.4	92.095	PASS	70-125	1159453.8	1493389.3	77.64	PASS	70-125
N030147-003D	SAMP	1	37537.1	48870.4	76.81	PASS	70-125	918778	1493389.3	61.52	NR!	70-125
N030147-003D	SAMP	5	48369.1	48870.4	98.97	PASS	70-125	1254804.3	1493389.3	84.024	PASS	70-125
N030147-004D	SAMP	1	39383.8	48870.4	80.59	PASS	70-125	982240.2	1493389.3	65.77	NR!	70-125
N030147-004D	SAMP	5	49165.7	48870.4	100.6	PASS	70-125	1336557.4	1493389.3	89.5	PASS	70-125
N030147-005D	SAMP	1	39425	48870.4	80.67	PASS	70-125	974619.8	1493389.3	65.26	NR!	70-125
CCV2	CCV	1	58443.1	48870.4	119.59	PASS	70-125	1659249.8	1493389.3	111.11	PASS	70-125
CCB2	CCB	1	56047.2	48870.4	114.69	PASS	70-125	1587677	1493389.3	106.31	PASS	70-125
N030147-005D	SAMP	5	48931.9	48870.4	100.13	PASS	70-125	1226178	1493389.3	82.11	PASS	70-125
N030147-006D	SAMP	1	50915.9	48870.4	104.19	PASS	70-125	1371398.1	1493389.3	91.83	PASS	70-125
N030147-006D	SAMP	5	53367.8	48870.4	109.2	PASS	70-125	1439262	1493389.3	96.38	PASS	70-125

INTERNAL STANDARD: 180517A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030147-007D	SAMP	1	39195.6	48870.4	80.2	PASS	70-125	987410.4	1493389.3	66.12	NR!	70-125
N030147-007D	SAMP	25	51534.2	48870.4	105.45	PASS	70-125	1405434.6	1493389.3	94.11	PASS	70-125
N030147-008D	SAMP	1	40914.2	48870.4	83.72	PASS	70-125	1027162.7	1493389.3	68.78	NR!	70-125
N030147-008D	SAMP	10	50439.5	48870.4	103.21	PASS	70-125	1364488.7	1493389.3	91.37	PASS	70-125
N030147-009D	SAMP	1	39851.7	48870.4	81.55	PASS	70-125	997747.2	1493389.3	66.81	NR!	70-125
N030147-009D	SAMP	5	48928.7	48870.4	100.12	PASS	70-125	1337242.8	1493389.3	89.54	PASS	70-125
N030147-010D	SAMP	1	45309.2	48870.4	92.71	PASS	70-125	1141534.8	1493389.3	76.44	PASS	70-125
CCV3	CCV	1	52715.7	48870.4	107.87	PASS	70-125	1518007.5	1493389.3	101.65	PASS	70-125
CCB3	CCB	1	50871.1	48870.4	104.09	PASS	70-125	1441722.4	1493389.3	96.54	PASS	70-125
N030147-010D	SAMP	5	48283.3	48870.4	98.8	PASS	70-125	1279252	1493389.3	85.66	PASS	70-125
N030147-011D	SAMP	1	39586.4	48870.4	81.003	PASS	70-125	977258.4	1493389.3	65.44	NR!	70-125
N030147-011D	SAMP	5	50155.4	48870.4	102.63	PASS	70-125	1315400.1	1493389.3	88.082	PASS	70-125
N030147-012D	SAMP	1	37506	48870.4	76.75	PASS	70-125	925574.2	1493389.3	61.98	NR!	70-125
N030147-012D	SAMP	5	48121.6	48870.4	98.47	PASS	70-125	1213491.6	1493389.3	81.26	PASS	70-125
N030147-013C	SAMP	1	38395.8	48870.4	78.57	PASS	70-125	947325.6	1493389.3	63.43	NR!	70-125
N030147-013C	SAMP	5	48840.5	48870.4	99.94	PASS	70-125	1217429	1493389.3	81.52	PASS	70-125
N030185-001D	SAMP	1	37418.1	48870.4	76.57	PASS	70-125	905389.5	1493389.3	60.63	NR!	70-125
N030185-001D	SAMP	5	49255.2	48870.4	100.79	PASS	70-125	1207885.2	1493389.3	80.88	PASS	70-125
N030185-002C	SAMP	1	34212.2	48870.4	70.006	PASS	70-125	980149.7	1493389.3	65.63	NR!	70-125
CCV4	CCV	1	54494.9	48870.4	111.51	PASS	70-125	1494360.7	1493389.3	100.07	PASS	70-125
CCB4	CCB	1	50877.9	48870.4	104.11	PASS	70-125	1414685.3	1493389.3	94.73	PASS	70-125
N030185-002C	SAMP	5	49179.2	48870.4	100.63	PASS	70-125	1220249.5	1493389.3	81.71	PASS	70-125
N030185-003C	SAMP	1	43497.7	48870.4	89.006	PASS	70-125	1085147.3	1493389.3	72.66	PASS	70-125
N030185-003C	SAMP	5	49625.3	48870.4	101.54	PASS	70-125	1238660.1	1493389.3	82.94	PASS	70-125
N030185-004D	SAMP	1	37674.3	48870.4	77.09	PASS	70-125	922395	1493389.3	61.77	NR!	70-125
N030185-004D	SAMP	5	46251.7	48870.4	94.64	PASS	70-125	1150773.5	1493389.3	77.058	PASS	70-125
N030185-002C	SAMP	1	47013.9	48870.4	96.2	PASS	70-125	1162543.3	1493389.3	77.85	PASS	70-125
N030147-007D	SAMP	5	46310.7	48870.4	94.76	PASS	70-125	1157407.2	1493389.3	77.5	PASS	70-125
N030147-008D	SAMP	5	46763.2	48870.4	95.69	PASS	70-125	1186882.9	1493389.3	79.48	PASS	70-125
N030304-001A	SAMP	1	49207.1	48870.4	100.69	PASS	70-125	1305676.2	1493389.3	87.43	PASS	70-125
N030123-016D	SAMP	25	46602.9	48870.4	95.36	PASS	70-125	1209202.4	1493389.3	80.97	PASS	70-125
CCV5	CCV	1	47673.8	48870.4	97.55	PASS	70-125	1301755.6	1493389.3	87.17	PASS	70-125
CCB5	CCB	1	44514.7	48870.4	91.087	PASS	70-125	1195921.6	1493389.3	80.081	PASS	70-125
LLCCV1	CCV2	1	40408.6	48870.4	82.69	PASS	70-125	1183780.7	1493389.3	79.27	PASS	70-125
ICSA2	ICSA	1	47304.9	48870.4	96.8	PASS	70-125	1168599.7	1493389.3	78.25	PASS	70-125
ICSAB2	ICSAB	1	41553.6	48870.4	85.028	PASS	70-125	1121536.1	1493389.3	75.1	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N030185
Test Method: EPA 6020
Analysis Date: 5/17/2018

Matrix: Groundwater
Batch No.: 68012

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Mn, Mo and Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030147-002D DT 5X	Arsenic	ug/L	1.04719	NA	1.247794	16.08%	10
N030147-002D DT 25X	Chromium	ug/L	368.206	PASS	355.333	3.62%	10
N030147-002D DT 5X	Manganese	ug/L	1.58078	NA	1.603954	1.44%	10
N030147-002D DT 5X	Molybdenum	ug/L	4.846588	NA	5.016076	3.38%	10
N030147-002D DT 5X	Selenium	ug/L	3.60746	NA	3.516039	2.60%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030147-002D-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3030775**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.529	0.10	10.00	1.248	103	80	120	1.248	161	0	
Manganese	99.139	0.50	100.0	1.604	97.5	80	120	1.604	194	0	
Molybdenum	17.013	0.50	10.00	5.016	120	80	120	5.016	109	0	
Selenium	13.381	0.50	10.00	3.516	98.7	80	120	3.516	117	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030185
Project: PG&E Topock - GMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N030147-002D-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124122**
Client ID: **ZZZZZZ** Batch ID: **68012** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **5/17/2018** SeqNo: **3031101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	360.790	5.0	10.00	355.3	54.6	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CORRECTIVE ACTION DOCUMENTATION

ASSET Laboratories

Corrective Action Report (CAR)

Date Initiated: 29-May-18

Initiated By: Claire Ignacio

Corrective Action Report ID: 2343

Department: ME-3(ICPMS)

Corrective Action Description

CAR Summary:

Description of Nonconformance: RSD of Selenium for N030185-004 is greater than 15% criteria.

Description of Corrective Action: Informed client. As per Daniel Moore (client), sample @ 1x from the initial run can be reported. The sample was injected/analyzed for several times but the succeeding runs @1x dilution have failing IS already although RSD passed criteria. All readings have comparable results.

Performed By: Claire Ignacio

Completion Date: 29-May-18

Client Notification

Client Notification Required: No

Notified By:

Comment:

Quality Assurance Review

Corrective Action: Deficiency

Further Action required by QA: none

Approval and Closure

CAR Closed By:

Close Date:

QA Reviewed By: Nancy 5/29/2018

QA Date:

Last Updated BY nancys | Updated: 29-May-2018 3:37 PM | Reported: 29-May-2018 3:36 P

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method:	**EPA 6020 / 200.8**	**Matrix:**	**Water**
Digestion Method:	**EPA 3010A**	**Units:**	**ug/L**
Date of Analysis:	**9/25,10/2,11/3/17**		
Digestion Date:	**9/21, 9/28,10/9/17**		
Instrument Name:	**ICPMS2**		
Analysts:	**MEI**		

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

May 23, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030186

RE: PG&E Topock - PMP, RC000753.801D

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 04, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Situcao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - PMP, RC000753.801D
Lab Order:	N030186

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (1.8 ug/L) and hexavalent chromium (0 ug/L) for sample N030186-001 (PE-01-0518) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N030121-002E-MS1 and N030121-002E-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Magnesium in QC samples N030121-002E-MS1 and N030121-002E-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 200.8_Dissolved:

Because the results for total dissolved chromium (1.8 ug/L) and hexavalent chromium (0 ug/L) for sample N030186-001 (PE-01-0518) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 2.0 and 0.08 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801D
Lab Order: N030186
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030186-001A	PE-01-0518	Groundwater	5/4/2018 11:10:00 AM	5/4/2018	5/23/2018
N030186-001B	PE-01-0518	Groundwater	5/4/2018 11:10:00 AM	5/4/2018	5/23/2018
N030186-001C	PE-01-0518	Groundwater	5/4/2018 11:10:00 AM	5/4/2018	5/23/2018
N030186-001D	PE-01-0518	Groundwater	5/4/2018 11:10:00 AM	5/4/2018	5/23/2018
N030186-002A	TW-03D-0518	Groundwater	5/4/2018 11:20:00 AM	5/4/2018	5/23/2018
N030186-002B	TW-03D-0518	Groundwater	5/4/2018 11:20:00 AM	5/4/2018	5/23/2018
N030186-002C	TW-03D-0518	Groundwater	5/4/2018 11:20:00 AM	5/4/2018	5/23/2018
N030186-002D	TW-03D-0518	Groundwater	5/4/2018 11:20:00 AM	5/4/2018	5/23/2018

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	1800	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	7200	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030147-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123873**
Client ID: **ZZZZZZ** Batch ID: **R123873** TestNo: **EPA 120.1** Analysis Date: **5/4/2018** SeqNo: **3017855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11250.000	0.10						11280	0.266	2	

Sample ID **N030185-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123873**
Client ID: **ZZZZZZ** Batch ID: **R123873** TestNo: **EPA 120.1** Analysis Date: **5/4/2018** SeqNo: **3017869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	19160.000	0.10						19190	0.156	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
SM4500-H+B							
RunID: **NV00922-WC_180504H** QC Batch: **R123876** PrepDate Analyst: **LR**							
pH	7.4	0.10	0.10	H	pH Units	1	5/4/2018 03:50 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	5/4/2018 03:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
SM4500-H+B							
RunID: **NV00922-WC_180504H** QC Batch: **R123876** PrepDate Analyst: **LR**							
pH	7.2	0.10	0.10	H	pH Units	1	5/4/2018 03:50 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	5/4/2018 03:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N030186-001BDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **123876**
Client ID: **ZZZZZZ** Batch ID: **R123876** TestNo: **SM4500-H+B** Analysis Date: **5/4/2018** SeqNo: **3017883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.480	0.10						7.430	0.671	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180507J**	QC Batch: **67983**			PrepDate	**5/7/2018**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1200	13	13		mg/L	1	5/7/2018 01:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE			**SM2540C**				
RunID: **NV00922-WC_180507J** QC Batch: **67983**				PrepDate **5/7/2018**			Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4100	50	50		mg/L	1	5/7/2018 01:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-67983** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **5/7/2018** RunNo: **123934**
Client ID: **LCSW** Batch ID: **67983** TestNo: **SM2540C** Analysis Date: **5/7/2018** SeqNo: **3021096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	991.000	10	1000	0	99.1	80	120				

Sample ID **MB-67983** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **5/7/2018** RunNo: **123934**
Client ID: **PBW** Batch ID: **67983** TestNo: **SM2540C** Analysis Date: **5/7/2018** SeqNo: **3021097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N030186-002BDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **5/7/2018** RunNo: **123934**
Client ID: **ZZZZZZ** Batch ID: **67983** TestNo: **SM2540C** Analysis Date: **5/7/2018** SeqNo: **3021108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4275.000	50						4125	3.57	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030186
Project: PG&E Topock - PMP, RC000753.801D
Lab ID: N030186-001

Client Sample ID: PE-01-0518
Collection Date: 5/4/2018 11:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
				EPA 200.7			
RunID: **NV00922-ICP2_180515D**	QC Batch: **68038**			PrepDate		**5/10/2018**	Analyst: **CEI**
Calcium	94000	85	500		µg/L	1	5/16/2018 02:29 AM
Iron	25	18	20		µg/L	1	5/16/2018 02:29 AM
Magnesium	25000	48	100		µg/L	1	5/16/2018 02:29 AM
Sodium	180000	960	5000		µg/L	10	5/16/2018 09:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180515D**	QC Batch: **68038**			PrepDate **5/10/2018**			Analyst: **CEI**
Calcium	210000	85	500		µg/L	1	5/16/2018 02:36 AM
Iron	40	18	20		µg/L	1	5/16/2018 02:36 AM
Magnesium	28000	48	100		µg/L	1	5/16/2018 02:36 AM
Sodium	1400000	4800	25000		µg/L	50	5/16/2018 09:40 AM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-68038** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/10/2018** RunNo: **124085**
Client ID: **PBW** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-68038** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/10/2018** RunNo: **124085**
Client ID: **LCSW** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9643.195	500	10000	0	96.4	85	115				
Iron	107.088	20	100.0	0	107	85	115				
Magnesium	10245.518	100	10000	0	102	85	115				

Sample ID **N030121-002E-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/10/2018** RunNo: **124085**
Client ID: **ZZZZZZ** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	173835.798	500	10000	170000	38.0	75	125				S
Iron	118.613	20	100.0	0	119	75	125				
Magnesium	35930.233	100	10000	29110	68.2	75	125				S

Sample ID **N030121-002E-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/10/2018** RunNo: **124085**
Client ID: **ZZZZZZ** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	173247.475	500	10000	170000	32.2	75	125	173800	0.339	20	S
Iron	118.925	20	100.0	0	119	75	125	118.6	0.262	20	
Magnesium	35996.655	100	10000	29110	68.9	75	125	35930	0.185	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-68038** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/10/2018** RunNo: **124093**
Client ID: **PBW** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-68038** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/10/2018** RunNo: **124093**
Client ID: **LCSW** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19830.239	500	20000	0	99.2	85	115				

Sample ID **N030186-001D-MS2** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/10/2018** RunNo: **124093**
Client ID: **ZZZZZZ** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	200755.804	5000	20000	182900	89.0	75	125				

Sample ID **N030186-001D-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/10/2018** RunNo: **124093**
Client ID: **ZZZZZZ** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	200992.355	5000	20000	182900	90.2	75	125	200800	0.118	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180515E**	QC Batch: **68083**			PrepDate		**5/15/2018**	Analyst: **CEI**
Manganese	310	1.3	2.5		µg/L	5	5/15/2018 10:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180515E**	QC Batch: **68083**			PrepDate **5/15/2018**			Analyst: **CEI**
Manganese	13	0.26	0.50		µg/L	1	5/15/2018 11:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-68083** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **5/15/2018** RunNo: **124087**
Client ID: **PBW** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-68083** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **5/15/2018** RunNo: **124087**
Client ID: **LCSW** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028042**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	103.502	0.50	100.0	0	104	85	115				

Sample ID **N030186-001D-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **5/15/2018** RunNo: **124087**
Client ID: **ZZZZZZ** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	402.366	2.5	100.0	306.9	95.5	75	125				

Sample ID **N030186-001D-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **5/15/2018** RunNo: **124087**
Client ID: **ZZZZZZ** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	400.866	2.5	100.0	306.9	94.0	75	125	402.4	0.373	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180509A** QC Batch: **R123964** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/9/2018 12:21 PM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **NV00922-ICP7_180515E** QC Batch: **68083** PrepDate **5/15/2018**							Analyst: **CEI**
Chromium	1.8	0.13	1.0		µg/L	1	5/15/2018 10:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180509A**	QC Batch: **R123964**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	490	3.3	20		µg/L	100	5/9/2018 04:36 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180515E**	QC Batch: **68083**			PrepDate		**5/15/2018**	Analyst: **CEI**
Chromium	490	0.65	5.0		µg/L	5	5/15/2018 11:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **MB-68083** SampType: **MBLK** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **5/15/2018** RunNo: **124087**
Client ID: **PBW** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3027947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-68083** SampType: **LCS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **5/15/2018** RunNo: **124087**
Client ID: **LCSW** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3027948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.098	1.0	10.00	0	101	85	115				

Sample ID **N030186-001D-MS** SampType: **MS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **5/15/2018** RunNo: **124087**
Client ID: **ZZZZZZ** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3027962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.894	1.0	10.00	1.818	101	75	125				

Sample ID **N030186-001D-MSD** SampType: **MSD** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **5/15/2018** RunNo: **124087**
Client ID: **ZZZZZZ** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3027964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.815	1.0	10.00	1.818	100	75	125	11.89	0.672	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123964** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **PBW** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123964** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **LCSW** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.213	0.20	5.000	0	104	90	110				

Sample ID **N030186-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.131	0.20	1.000	0.07100	106	90	110				

Sample ID **N030186-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1019.430	20	500.0	489.2	106	90	110				

Sample ID **N030186-002AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1013.550	20	500.0	489.2	105	90	110	1019	0.578	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030256-002ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123964**
Client ID: **ZZZZZZ**	Batch ID: **R123964**	TestNo: **EPA 218.6**	Analysis Date: **5/9/2018**	SeqNo: **3022273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N030123-022AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123964**
Client ID: **ZZZZZZ**	Batch ID: **R123964**	TestNo: **EPA 218.6**	Analysis Date: **5/9/2018**	SeqNo: **3022285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.034	0.20	1.000	0	103	90	110				

Sample ID **N030123-023AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **123964**
Client ID: **ZZZZZZ**	Batch ID: **R123964**	TestNo: **EPA 218.6**	Analysis Date: **5/9/2018**	SeqNo: **3022289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.968	1.0	5.000	0	99.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180507H** QC Batch: **R123911**				PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	180	1.2	5.0		mg/L	1	5/7/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

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ANALYTICAL RESULTS

Print Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180507H**	QC Batch: **R123911**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	5/7/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R123911** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **LCSW** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	97.872	5.0	100.0	0	97.9	85	115				

Sample ID **MB-R123911** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **PBW** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N030185-002BDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **ZZZZZZ** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019795**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	89.362	5.0						89.36	0	30	

Sample ID **N030185-003BMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **ZZZZZZ** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	231.915	5.0	100.0	138.3	93.6	75	125				

Sample ID **N030185-003BMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **ZZZZZZ** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	227.660	5.0	100.0	138.3	89.4	75	125	231.9	1.85	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180507A** QC Batch: **R123903** PrepDate							Analyst: **RAB**
Chloride	350	0.46	25		mg/L	50	5/7/2018 04:12 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180507A** QC Batch: **R123903** PrepDate							Analyst: **RAB**
Sulfate	260	1.1	25		mg/L	50	5/7/2018 04:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180507A** QC Batch: **R123903** PrepDate Analyst: **RAB**							
Chloride	2200	4.6	250		mg/L	500	5/7/2018 04:28 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180507A** QC Batch: **R123903** PrepDate Analyst: **RAB**							
Sulfate	490	1.1	25		mg/L	50	5/7/2018 04:43 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R123903_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **PBW** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R123903_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **LCSW** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.014	0.50	2.000	0	101	90	110				

Sample ID **N030186-002BMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3184.800	250	1000	2174	101	80	120				

Sample ID **N030186-002BMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3189.800	250	1000	2174	102	80	120	3185	0.157	20	

Sample ID **N030186-001BDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	351.950	25						352.2	0.0738	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R123903_SO4**	SampType: **MBLK**	TestCode: **300_W_SO4P** Units: **mg/L**		Prep Date:			RunNo: **123903**			
Client ID: **PBW**	Batch ID: **R123903**	TestNo: **EPA 300.0**		Analysis Date: **5/7/2018**			SeqNo: **3019525**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R123903_SO4**	SampType: **LCS**	TestCode: **300_W_SO4P** Units: **mg/L**		Prep Date:			RunNo: **123903**			
Client ID: **LCSW**	Batch ID: **R123903**	TestNo: **EPA 300.0**		Analysis Date: **5/7/2018**			SeqNo: **3019526**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.887	0.50	4.000	0	97.2	90	110				

Sample ID **N030186-001BMS**	SampType: **MS**	TestCode: **300_W_SO4P** Units: **mg/L**		Prep Date:			RunNo: **123903**			
Client ID: **ZZZZZZ**	Batch ID: **R123903**	TestNo: **EPA 300.0**		Analysis Date: **5/7/2018**			SeqNo: **3019533**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	455.140	25	200.0	261.3	96.9	80	120				

Sample ID **N030186-001BMSD**	SampType: **MSD**	TestCode: **300_W_SO4P** Units: **mg/L**		Prep Date:			RunNo: **123903**			
Client ID: **ZZZZZZ**	Batch ID: **R123903**	TestNo: **EPA 300.0**		Analysis Date: **5/7/2018**			SeqNo: **3019534**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	455.950	25	200.0	261.3	97.3	80	120	455.1	0.178	20	

Sample ID **N030186-001BDUP**	SampType: **DUP**	TestCode: **300_W_SO4P** Units: **mg/L**		Prep Date:			RunNo: **123903**			
Client ID: **ZZZZZZ**	Batch ID: **R123903**	TestNo: **EPA 300.0**		Analysis Date: **5/7/2018**			SeqNo: **3019538**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	262.460	25						261.3	0.431	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180518C**	QC Batch: **R124137**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/18/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180518C** QC Batch: **R124137** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	2.7	0.16	0.25		mg/L	5	5/18/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124137** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **PBW** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124137** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **LCSW** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.515	0.050	0.5000	0	103	85	115				

Sample ID **N030186-002CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ZZZZZZ** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.601	0.25	2.500	2.659	118	75	125				

Sample ID **N030186-002CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ZZZZZZ** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.260	0.25	2.500	2.659	104	75	125	5.601	6.28	20	

Sample ID **N030186-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ZZZZZZ** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.036	0.050						0.04570	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Gantt Jeffers		Phone: 949-727-1400, ext 200 Fax:
Title: Geologist II	Phone: 916-786-3302 Fax:	
Signature: [signature] Date: 5/4/2018	Sampled By: Jason Mahn	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	
Project Name: PG&E Topock - PMP	Signature: [signature] Date: 5/4/2018	
Project Number: RC000753.801D		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		✓
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	2	
6. Method of Cooling: ICE		
Sample Temp: 2.5°C		

Courier:
Tracking No.:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM2540C) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	pH (SM4500-HB) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (EPA 2000.7 FF) (Ca, Fe, Mg, Na); HNO3 (500 mL poly)	Metals Dissolved (EPA 200.8 FF) (Cr, Mn); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030186 - 01	PE-01-0518	5/4/2018	1110		X		X	X	X	X	X	X	X	X	E	4	P	BNS	
2	- 02	TW-03D-0518	5/4/2018	1120		X		X	X	X	X	X	X	X	X	E	4	P	BNS	
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Reliquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
[signature] Jason Mahn	5.4.18 1135	[signature]	5/4/18 11:35AM
[signature]	5/4/18 14:15	[signature]	5/4/18 14:15

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 5/4/2018 Workorder: N030186

Rep sample Temp (Deg C): 2.5 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

	Yes	No	Not Present / NA
1. Shipping container/cooler in good condition?	☑	☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	☐	☐	Not Present ☑
3. Custody seals intact on sample bottles?	☐	☐	Not Present ☑
4. Chain of custody present?	☑	☐	
5. Sampler's name present in COC?	☑	☐	
6. Chain of custody signed when relinquished and received?	☑	☐	
7. Chain of custody agrees with sample labels?	☐	☑	
8. Samples in proper container/bottle?	☑	☐	
9. Sample containers intact?	☑	☐	
10. Sufficient sample volume for indicated test?	☑	☐	
11. All samples received within holding time?	☐	☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	☑	☐	NA ☐
13. Water - VOA vials have zero headspace?	☐	☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	☑	☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	☑	☐	NA ☐
16. Were there Non-Conformance issues at login?	☑	☐	NA ☐
Was Client notified?	☑	☐	NA ☐

Comments: See Correspondence.
Samples for pH were past holding time upon receipt

For:

Checklist Completed By: DA [signature] 5/10/2018

Reviewed By: [signature] 05/17/2018

Subject: Re: PG&E Topock - PMP, RC000753.801D (Asset Labs No. N030186)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/10/2018 2:32 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "Andreafe. Gallardo" <andrea.gallardo@assetlaboratories.com>, "Sonny. Lorenzo" <sonny.lorenzo@assetlaboratories.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

Please use -0518. Thanks

Sent from my iPhone

> On May 10, 2018, at 3:00 PM, Yoandra Rodriguez <yoandra@assetlaboratories.com> wrote:
>
> Hi Laura,
>
> For the attached COC, please kindly confirm which sample IDs to use ... -0518 as per COC or ....-Q218 as per labels.
>
> Thanks,
>
> Yoandra Rodriguez
>
> Sample Control Officer
> Asset Laboratories
>
> <N030186_COC.pdf>

ASSET Laboratories

WORK ORDER Summary

07-May-18

WorkOrder: N030186

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/4/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030186-001A	PE-01-0518	5/4/2018 11:10:00 AM	5/18/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030186-001B			5/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			5/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			5/18/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			5/18/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			5/18/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			5/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			5/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			5/18/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N030186-001C			5/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030186-001D			5/18/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/18/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			5/18/2018		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030186-002A	TW-03D-0518	5/4/2018 11:20:00 AM	5/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030186-002B			5/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			5/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			5/18/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			5/18/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			5/18/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			5/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

07-May-18

WorkOrder: N030186

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/4/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030186-002B	TW-03D-0518	5/4/2018 11:20:00 AM	5/18/2018	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			5/18/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N030186-002C			5/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030186-002D			5/18/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/18/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			5/18/2018		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030186-003A	FOLDER	5/18/2018	5/18/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/18/2018		Folder	Folder	☐	☐	☐	LAB
			5/18/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - PMP

Project No.: RC000753.801D

ASSET Laboratories Work Order:

N030186

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N030186

May 23, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030186

RE: PG&E Topock - PMP, RC000753.801D

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 04, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - PMP, RC000753.801D
Lab Order:	N030186

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (1.8 ug/L) and hexavalent chromium (0 ug/L) for sample N030186-001 (PE-01-0518) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium in QC samples N030121-002E-MS1 and N030121-002E-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Magnesium in QC samples N030121-002E-MS1 and N030121-002E-MSD1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 200.8_Dissolved:

Because the results for total dissolved chromium (1.8 ug/L) and hexavalent chromium (0 ug/L) for sample N030186-001 (PE-01-0518) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 2.0 and 0.08 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

ASSET Laboratories

Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - PMP, RC000753.801D
Lab Order:	N030186
Contract No:	

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030186-001A	PE-01-0518	Groundwater	5/4/2018 11:10:00 AM	5/4/2018	5/23/2018
N030186-001B	PE-01-0518	Groundwater	5/4/2018 11:10:00 AM	5/4/2018	5/23/2018
N030186-001C	PE-01-0518	Groundwater	5/4/2018 11:10:00 AM	5/4/2018	5/23/2018
N030186-001D	PE-01-0518	Groundwater	5/4/2018 11:10:00 AM	5/4/2018	5/23/2018
N030186-002A	TW-03D-0518	Groundwater	5/4/2018 11:20:00 AM	5/4/2018	5/23/2018
N030186-002B	TW-03D-0518	Groundwater	5/4/2018 11:20:00 AM	5/4/2018	5/23/2018
N030186-002C	TW-03D-0518	Groundwater	5/4/2018 11:20:00 AM	5/4/2018	5/23/2018
N030186-002D	TW-03D-0518	Groundwater	5/4/2018 11:20:00 AM	5/4/2018	5/23/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180504E** QC Batch: **R123873**				PrepDate			Analyst: **LR**
Specific Conductance	1800	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180504E**	QC Batch: **R123873**			PrepDate			Analyst: **LR**
Specific Conductance	7200	0.10	0.10		umhos/cm	1	5/4/2018 03:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030147-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123873**
Client ID: **ZZZZZZ** Batch ID: **R123873** TestNo: **EPA 120.1** Analysis Date: **5/4/2018** SeqNo: **3017855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	11250.000	0.10						11280	0.266	2	

Sample ID **N030185-001BDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **123873**
Client ID: **ZZZZZZ** Batch ID: **R123873** TestNo: **EPA 120.1** Analysis Date: **5/4/2018** SeqNo: **3017869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	19160.000	0.10						19190	0.156	2	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

PH

SM4500-H+B

RunID: **NV00922-WC_180504H** QC Batch: **R123876** PrepDate Analyst: **LR**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
pH	7.4	0.10	0.10	H	pH Units	1	5/4/2018 03:50 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	5/4/2018 03:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180504H**	QC Batch: **R123876**			PrepDate			Analyst: **LR**
pH	7.2	0.10	0.10	H	pH Units	1	5/4/2018 03:50 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	5/4/2018 03:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N030186-001BDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **123876**
Client ID: **ZZZZZZ** Batch ID: **R123876** TestNo: **SM4500-H+B** Analysis Date: **5/4/2018** SeqNo: **3017883**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.480	0.10						7.430	0.671	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180507J**	QC Batch: **67983**			PrepDate	**5/7/2018**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	1200	13	13		mg/L	1	5/7/2018 01:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180507J** QC Batch: **67983**			PrepDate **5/7/2018**				Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4100	50	50		mg/L	1	5/7/2018 01:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-67983** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **5/7/2018** RunNo: **123934**
Client ID: **LCSW** Batch ID: **67983** TestNo: **SM2540C** Analysis Date: **5/7/2018** SeqNo: **3021096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	991.000	10	1000	0	99.1	80	120				

Sample ID **MB-67983** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **5/7/2018** RunNo: **123934**
Client ID: **PBW** Batch ID: **67983** TestNo: **SM2540C** Analysis Date: **5/7/2018** SeqNo: **3021097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N030186-002BDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **5/7/2018** RunNo: **123934**
Client ID: **ZZZZZZ** Batch ID: **67983** TestNo: **SM2540C** Analysis Date: **5/7/2018** SeqNo: **3021108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4275.000	50						4125	3.57	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **NV00922-ICP2_180515D** QC Batch: **68038** PrepDate **5/10/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Calcium	94000	85	500		µg/L	1	5/16/2018 02:29 AM
Iron	25	18	20		µg/L	1	5/16/2018 02:29 AM
Magnesium	25000	48	100		µg/L	1	5/16/2018 02:29 AM
Sodium	180000	960	5000		µg/L	10	5/16/2018 09:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Client Sample ID: TW-03D-0518
Lab Order: N030186
Collection Date: 5/4/2018 11:20:00 AM
Project: PG&E Topock - PMP, RC000753.801D
Matrix: GROUNDWATER
Lab ID: N030186-002

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180515D**	QC Batch: **68038**			PrepDate	**5/10/2018**		Analyst: **CEI**
Calcium	210000	85	500		µg/L	1	5/16/2018 02:36 AM
Iron	40	18	20		µg/L	1	5/16/2018 02:36 AM
Magnesium	28000	48	100		µg/L	1	5/16/2018 02:36 AM
Sodium	1400000	4800	25000		µg/L	50	5/16/2018 09:40 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-68038** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/10/2018** RunNo: **124085**
Client ID: **PBW** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-68038** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/10/2018** RunNo: **124085**
Client ID: **LCSW** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9643.195	500	10000	0	96.4	85	115				
Iron	107.088	20	100.0	0	107	85	115				
Magnesium	10245.518	100	10000	0	102	85	115				

Sample ID **N030121-002E-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/10/2018** RunNo: **124085**
Client ID: **ZZZZZZ** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	173835.798	500	10000	170000	38.0	75	125				S
Iron	118.613	20	100.0	0	119	75	125				
Magnesium	35930.233	100	10000	29110	68.2	75	125				S

Sample ID **N030121-002E-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/10/2018** RunNo: **124085**
Client ID: **ZZZZZZ** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	173247.475	500	10000	170000	32.2	75	125	173800	0.339	20	S
Iron	118.925	20	100.0	0	119	75	125	118.6	0.262	20	
Magnesium	35996.655	100	10000	29110	68.9	75	125	35930	0.185	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-68038** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/10/2018** RunNo: **124093**
Client ID: **PBW** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-68038** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/10/2018** RunNo: **124093**
Client ID: **LCSW** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19830.239	500	20000	0	99.2	85	115				

Sample ID **N030186-001D-MS2** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/10/2018** RunNo: **124093**
Client ID: **ZZZZZZ** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	200755.804	5000	20000	182900	89.0	75	125				

Sample ID **N030186-001D-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/10/2018** RunNo: **124093**
Client ID: **ZZZZZZ** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	200992.355	5000	20000	182900	90.2	75	125	200800	0.118	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180515E** QC Batch: **68083**				PrepDate **5/15/2018**			Analyst: **CEI**
Manganese	310	1.3	2.5		µg/L	5	5/15/2018 10:12 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180515E** QC Batch: **68083**				PrepDate **5/15/2018**			Analyst: **CEI**
Manganese	13	0.26	0.50		µg/L	1	5/15/2018 11:11 PM

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-68083** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **5/15/2018** RunNo: **124087**
Client ID: **PBW** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-68083** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **5/15/2018** RunNo: **124087**
Client ID: **LCSW** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028042**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	103.502	0.50	100.0	0	104	85	115				

Sample ID **N030186-001D-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **5/15/2018** RunNo: **124087**
Client ID: **ZZZZZZ** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	402.366	2.5	100.0	306.9	95.5	75	125				

Sample ID **N030186-001D-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **5/15/2018** RunNo: **124087**
Client ID: **ZZZZZZ** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	400.866	2.5	100.0	306.9	94.0	75	125	402.4	0.373	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180509A**	QC Batch: **R123964**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	5/9/2018 12:21 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180515E**	QC Batch: **68083**			PrepDate		**5/15/2018**	Analyst: **CEI**
Chromium	1.8	0.13	1.0		µg/L	1	5/15/2018 10:06 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180509A**	QC Batch: **R123964**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	490	3.3	20		µg/L	100	5/9/2018 04:36 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180515E**	QC Batch: **68083**			PrepDate	**5/15/2018**		Analyst: **CEI**
Chromium	490	0.65	5.0		µg/L	5	5/15/2018 11:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **MB-68083** SampType: **MBLK** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **5/15/2018** RunNo: **124087**
Client ID: **PBW** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3027947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-68083** SampType: **LCS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **5/15/2018** RunNo: **124087**
Client ID: **LCSW** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3027948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.098	1.0	10.00	0	101	85	115				

Sample ID **N030186-001D-MS** SampType: **MS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **5/15/2018** RunNo: **124087**
Client ID: **ZZZZZZ** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3027962**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.894	1.0	10.00	1.818	101	75	125				

Sample ID **N030186-001D-MSD** SampType: **MSD** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **5/15/2018** RunNo: **124087**
Client ID: **ZZZZZZ** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3027964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.815	1.0	10.00	1.818	100	75	125	11.89	0.672	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R123964** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **PBW** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R123964** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **LCSW** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.213	0.20	5.000	0	104	90	110				

Sample ID **N030186-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.131	0.20	1.000	0.07100	106	90	110				

Sample ID **N030186-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1019.430	20	500.0	489.2	106	90	110				

Sample ID **N030186-002AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1013.550	20	500.0	489.2	105	90	110	1019	0.578	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030256-002ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N030123-022AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.034	0.20	1.000	0	103	90	110				

Sample ID **N030123-023AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.968	1.0	5.000	0	99.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180507H** QC Batch: **R123911**				PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	180	1.2	5.0		mg/L	1	5/7/2018 01:40 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180507H**	QC Batch: **R123911**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	5/7/2018 01:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R123911** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **LCSW** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	97.872	5.0	100.0	0	97.9	85	115				

Sample ID **MB-R123911** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **PBW** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N030185-002BDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **ZZZZZZ** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019795**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	89.362	5.0						89.36	0	30	

Sample ID **N030185-003BMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **ZZZZZZ** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	231.915	5.0	100.0	138.3	93.6	75	125				

Sample ID **N030185-003BMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **123911**
Client ID: **ZZZZZZ** Batch ID: **R123911** TestNo: **SM 2320 B** Analysis Date: **5/7/2018** SeqNo: **3019798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	227.660	5.0	100.0	138.3	89.4	75	125	231.9	1.85	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180507A** QC Batch: **R123903** PrepDate							Analyst: **RAB**
Chloride	350	0.46	25		mg/L	50	5/7/2018 04:12 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180507A** QC Batch: **R123903** PrepDate							Analyst: **RAB**
Sulfate	260	1.1	25		mg/L	50	5/7/2018 04:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *23-May-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180507A** QC Batch: **R123903**				PrepDate			Analyst: **RAB**
Chloride	2200	4.6	250		mg/L	500	5/7/2018 04:28 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180507A** QC Batch: **R123903**				PrepDate			Analyst: **RAB**
Sulfate	490	1.1	25		mg/L	50	5/7/2018 04:43 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R123903_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **PBW** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R123903_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **LCSW** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019476**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.014	0.50	2.000	0	101	90	110				

Sample ID **N030186-002BMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3184.800	250	1000	2174	101	80	120				

Sample ID **N030186-002BMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	3189.800	250	1000	2174	102	80	120	3185	0.157	20	

Sample ID **N030186-001BDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ZZZZZZ** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019487**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	351.950	25						352.2	0.0738	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R123903_SO4**	SampType: **MBLK**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **123903**
Client ID: **PBW**	Batch ID: **R123903**	TestNo: **EPA 300.0**	Analysis Date: **5/7/2018**	SeqNo: **3019525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **LCS-R123903_SO4**	SampType: **LCS**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **123903**
Client ID: **LCSW**	Batch ID: **R123903**	TestNo: **EPA 300.0**	Analysis Date: **5/7/2018**	SeqNo: **3019526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.887	0.50	4.000	0	97.2	90	110				

Sample ID **N030186-001BMS**	SampType: **MS**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **123903**
Client ID: **ZZZZZZ**	Batch ID: **R123903**	TestNo: **EPA 300.0**	Analysis Date: **5/7/2018**	SeqNo: **3019533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	455.140	25	200.0	261.3	96.9	80	120				

Sample ID **N030186-001BMSD**	SampType: **MSD**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **123903**
Client ID: **ZZZZZZ**	Batch ID: **R123903**	TestNo: **EPA 300.0**	Analysis Date: **5/7/2018**	SeqNo: **3019534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	455.950	25	200.0	261.3	97.3	80	120	455.1	0.178	20	

Sample ID **N030186-001BDUP**	SampType: **DUP**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **123903**
Client ID: **ZZZZZZ**	Batch ID: **R123903**	TestNo: **EPA 300.0**	Analysis Date: **5/7/2018**	SeqNo: **3019538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	262.460	25						261.3	0.431	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:10:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180518C** QC Batch: **R124137** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	5/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0518
Lab Order:	N030186	**Collection Date:**	5/4/2018 11:20:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030186-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180518C** QC Batch: **R124137**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	2.7	0.16	0.25		mg/L	5	5/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124137** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **PBW** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124137** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **LCSW** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.515	0.050	0.5000	0	103	85	115				

Sample ID **N030186-002CMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ZZZZZZ** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.601	0.25	2.500	2.659	118	75	125				

Sample ID **N030186-002CMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ZZZZZZ** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.260	0.25	2.500	2.659	104	75	125	5.601	6.28	20	

Sample ID **N030186-001CDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ZZZZZZ** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.036	0.050						0.04570	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Gantt Jeffers
Title: Geologist II
Signature: [signature] Date: 5/4/2018
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - PMP
Project Number: RC000753.801D

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com
daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330
Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
Signature: [signature] Date: 5/4/2018

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓
Specify: RWQCB
Global ID:

QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory
Specify State:

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		✓
3. Container Intact	✓	
4. Seal Present		✓
5. IR number	2	

6. Method of Cooling: ICE
Sample Temp: 2.5°C
Courier:
Tracking No.:

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (2x250 mL poly)	Sulfate, Chloride (EPA 300.0) (1 liter poly)	Specific Conductance (EPA 120.1) (1 liter poly)	Total Dissolved Solids (SM2540C) (1 liter poly)	Alkalinity, Total as CaCO3 (SM2320B) (1 liter poly)	pH (SM4500-HB) (1 liter poly)	Nitrate/Nitrite (SM4500N03 F) Nitrate; H2SO4 (125 mL poly)	Metals Dissolved (EPA 2000.7 FF) (Ca, Fe, Mg, Na); HNO3 (500 mL poly)	Metals Dissolved (EPA 200.8 FF) (Cr, Mn); HNO3 (500 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030186 - 01	PE-01-0518	5/4/2018	1110		X		X	X	X	X	X	X	X	X	E	4	P	BNS	
2	- 02	TW-03D-0518	5/4/2018	1120		X		X	X	X	X	X	X	X	X	E	4	P	BNS	
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by (Signature and Printed Name)	Date/Time	Received by (Signature and Printed Name)	Date/Time
[signature] Jason Mahn	5.4.18 1135	[signature]	5/4/18 11:35AM
[signature]	5/4/18 14:15	[signature]	5/4/18 14:15

Turn Around Time (TAT)
- A < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 5/4/2018 Workorder: N030186

Rep sample Temp (Deg C): 2.5 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

	Yes	No	Not Present / NA
1. Shipping container/cooler in good condition?	☑	☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	☐	☐	Not Present ☑
3. Custody seals intact on sample bottles?	☐	☐	Not Present ☑
4. Chain of custody present?	☑	☐	
5. Sampler's name present in COC?	☑	☐	
6. Chain of custody signed when relinquished and received?	☑	☐	
7. Chain of custody agrees with sample labels?	☐	☑	
8. Samples in proper container/bottle?	☑	☐	
9. Sample containers intact?	☑	☐	
10. Sufficient sample volume for indicated test?	☑	☐	
11. All samples received within holding time?	☐	☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	☑	☐	NA ☐
13. Water - VOA vials have zero headspace?	☐	☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	☑	☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	☑	☐	NA ☐
16. Were there Non-Conformance issues at login?	☑	☐	NA ☐
Was Client notified?	☑	☐	NA ☐

Comments: See Correspondence.
Samples for pH were past holding time upon receipt

Checklist Completed By: DA For: YLT 5/10/2018

Reviewed By: [signature] 05/17/2018

Subject: Re: PG&E Topock - PMP, RC000753.801D (Asset Labs No. N030186)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 5/10/2018 2:32 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "Andreafe. Gallardo" <andrea.gallardo@assetlaboratories.com>, "Sonny. Lorenzo" <sonny.lorenzo@assetlaboratories.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

Please use -0518. Thanks

Sent from my iPhone

> On May 10, 2018, at 3:00 PM, Yoandra Rodriguez <yoandra@assetlaboratories.com> wrote:
>
> Hi Laura,
>
> For the attached COC, please kindly confirm which sample IDs to use ... -0518 as per COC or ....-Q218 as per labels.
>
> Thanks,
>
> Yoandra Rodriguez
>
> Sample Control Officer
> Asset Laboratories
>
> <N030186_COC.pdf>

ASSET Laboratories

WORK ORDER Summary

07-May-18

WorkOrder: N030186

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/4/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030186-001A	PE-01-0518	5/4/2018 11:10:00 AM	5/18/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030186-001B			5/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			5/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			5/18/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			5/18/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			5/18/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			5/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			5/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			5/18/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N030186-001C			5/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030186-001D			5/18/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/18/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			5/18/2018		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030186-002A	TW-03D-0518	5/4/2018 11:20:00 AM	5/18/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030186-002B			5/18/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			5/18/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			5/18/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			5/18/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			5/18/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			5/18/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

07-May-18

WorkOrder: N030186

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801D **QC Level:** Level IV **Date Received:** 5/4/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030186-002B	TW-03D-0518	5/4/2018 11:20:00 AM	5/18/2018	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			5/18/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N030186-002C			5/18/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030186-002D			5/18/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/18/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			5/18/2018		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030186-003A	FOLDER	5/18/2018	5/18/2018		EDD	RWQCB	☐	☐	☐	LAB
			5/18/2018		Folder	Folder	☐	☐	☐	LAB
			5/18/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N030186

NAME	TEST METHOD
Quennie Manimtim	EPA 200.8_Dissolved, SM 4500-NO3F
Claire Ignacio	EPA 200.7_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540C, SM 2320 B

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123873 **Analyst:** LSR

ASSET #: N030186 **Date Analyzed:** 5/4/2018

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 5/9/2018

2nd Level Reviewer [signature] 5/22/2018 for RB Date:

LOGBOOK DATA,
QUANTITATION REPORT and/or
SPECTRA

Date: 5/4/18 1515

Analyst: LSR

CONTD

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV-180108A	9.80 @ 21.9°C	% Rec: (90-110%)
1412	180131A	1438 @ 22.1°C	
9987	180108B	10020 @ 22.2°C	
99601	180201A	9830 @ 22.3°C	

	Sample ID	Matrix	Reading	Comments
1	N030147-011B	H_2O	13470 @ 21.8°C	
2	12B		18410 @ 21.2°C	STD CHK:
3	13B		15270 @ 21.5°C	1413 CINV171121C
4	N030185-001B		19190 @ 21.0°C	= 1476 @ 21.3°C
5	1BDUP		19160 @ 20.9°C	10000 CINV180108C
6	2B		3940 @ 20.9°C	= 10370 @ 21.0°C
7	3B		5040 @ 20.9°C	99672 CINV171215A
8	4B		15340 @ 20.9°C	= 99500 @ 22.1°C
9	N030186-001B		1813 @ 20.9°C	
10	2B		7240 @ 20.8°C	2/2 LR 5/4/18
Dup				Accept: ~~10% water, 20% soil~~
	Std Chk:			% Rec: (90-110%)

Date: 5/7/18 1400

Analyst: LSR

Julia Ramit 5/9/2018

Standard	Std ID	Reading	Comments
9.65 uS/cm	CINV-180108A	9.87 @ 23.8°C	% Rec: (90-110%)
1412	180131A	1426 @ 23.8°C	
9987	180108B	10040 @ 23.7°C	
99601	180201A	99800 @ 23.8°C	

	Sample ID	Matrix	Reading	Comments
1	N030212-001B	H_2O	33.3 @ 22.9°C	
2	1BDUP		33.4 @ 22.7°C	
3				
4				
5				
6				
7				
8	1413 uS/cm	CINV-171121C	1440 @ 24.4°C	
9	10000	180108C	10050 @ 24.2°C	
10	99672	171215A	98600 @ 24.2°C	2/2 LR 5/7/18
Dup				Accept: ~~10% water, 20% soil~~
	Std Chk:			% Rec: (90-110%)

Logbook # 6

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123876 **Instrument ID:** pH meter

ASSET #: N030186 **Analyst:** LSR

Date Analyzed: 4-May

Method: EPA 150.1

	Ist Level Review			2nd Level Review		
pH Meter Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?			X			
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 5/10/2018

2nd Level Reviewer Nancy 5/22/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 5/4/18 1550
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CIW-171215D	7.01 @25.0°C	
Buffer 4	171208A	4.03 @25.0°C	
Buffer 10	180119A	9.98 @25.0°C	
Slope		97.4%	Acceptance Criteria: 95%-105%

	Sample ID	Matrix	pH	Comments
1	N030186-001B	H2O	7.43 @25.0°C	
2	1B DUP		7.48 @25.0°C	
3	2B		7.21 @25.0°C	
4				
5				
6				
7				
8			Julia Ramit	5/10/2018
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CIW-171023A	7.03 @25.0°C	Accept: +/-~~0.1~~ 0.05 pH units from expected value

MSm 1/8/18

Date: 5/7/18 1030
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CIW-171215D	7.01 @25.0°C	
Buffer 4	171208A	4.02 @25.0°C	
Buffer 10	180119A	10.02 @25.0°C	
Slope		98.0%	Acceptance Criteria: 95%-105%

	Sample ID	Matrix	pH	Comments
1	N030194-007A	Soil	6.96 @25.0°C	
2	7A DUP		7.05 @25.0°C	
3	8A		6.86 @25.0°C	
4	9A		7.14 @25.0°C	
5	N030197-001A		5.53 @25.0°C	
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CIW-180220C	7.03 @25.0°C	Accept: +/-~~0.1~~ 0.05 pH units from expected value

MSm 1/8/18

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 67983 **Analyst:** LSR

ASSET #: N030186 **Date Analyzed:** 5/7/2018

Method: EPA 160.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 5/11/2018

2nd Level Reviewer Nancy 5/22/2018 for RB Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A\text{-}B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N030186-001B,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(70.8587 - 70.7713)*1000000}{75}$$
$$= 1165.3333 \text{ mg/L}$$

Reporting result in two significant figures,

TDS =1200 mg/L

Julia Ramit 5/11/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/7/2018 1:18:16 P**
Prep End Date: **5/8/2018 12:05:00 P**
Prep Batch **67983** Prep Code: **160.1_W_PRE**

Reviewed/ Date: Nancy 5/22/2018
Initials/ Date: Lilia Ramit 5/9/2018
Technician: **Lilia Ramit**

Prep Factor Units **mL / mL**
Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67983	Water		100	☐	0	0	100	1.000		
MB-67983	Water		100	☐	0	0	100	1.000		
N030113-001C	Groundwater		40	☐	0	0	100	2.500		
N030120-007D	Groundwater		100	☐	0	0	100	1.000		
N030120-008D	Groundwater		100	☐	0	0	100	1.000		
N030121-001A	Water		20	☐	0	0	100	5.000		
N030121-002B	Water		20	☐	0	0	100	5.000		
N030148-001C	Groundwater		75	☐	0	0	100	1.333		
N030185-002B	Groundwater		30	☐	0	0	100	3.333		
N030185-003B	Groundwater		20	☐	0	0	100	5.000		
N030186-001B	Groundwater		75	☐	0	0	100	1.333		
N030186-002B	Groundwater		20	☐	0	0	100	5.000		
N030186-002B-DU	Groundwater		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9935	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180503A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/7/2018 1:18:16 P**
Prep End Date:

Reviewed/ Date:
Initials/ Date: Lilia Ramit 5/9/2018

Prep Batch **67983** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-67983	Water	IWST180503A	100	☐	0	0	100	1.000		
MB-67983	Water		100	☐	0	0	100	1.000		
N030113-001C	Groundwater	3700	100 /40	☐	0	0	100	1.000		
N030120-007D	Groundwater	1252	100	☐	0	0	100	1.000		
N030120-008D	Groundwater	1243	100	☐	0	0	100	1.000		
N030121-001A	Water	7500	100 /20	☐	0	0	100	1.000		
N030121-002B	Water	7370	100 /20	☐	0	0	100	1.000		
N030148-001C	Groundwater	1775	100 /75	☐	0	0	100	1.000		
N030185-002B	Groundwater	4040	100 /30	☐	0	0	100	1.000		
N030185-003B	Groundwater	5220	100 /20	☐	0	0	100	1.000		
N030186-001B	Groundwater	1920	100 /75	☐	0	0	100	1.000		
N030186-002B	Groundwater	7530	100 /20	☐	0	0	100	1.000		
N030186-002B-DU	Groundwater	⌊	100 /20	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

7935

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/7/18 1318 FF	MB 67983	100	68.1843 68.1845	68.1850 68.1847	
1A	LCS 67983	100	76.5582 76.5582	76.6576 76.6573	
BB	N030113-001C	40	68.4282 68.4279	68.5735 68.5736	
GG	N030120-007D	100	67.8295 67.8299	67.9126 67.9130	
L2	8D	100	76.5148 76.5151	76.5978 76.5981	
XX	N030121-001A	20	49.3232 49.3231	49.4069 49.4070	
T	2B	20	46.0409 46.0407	46.1208 46.1210	
CC	N030148-001C	75	70.0887 70.0889	70.1829 70.1832	
LL	N030185-002B	30	69.0491 69.0494	69.1228 69.1231	
E	3B	20	49.3451 49.3455	49.4071 49.4068	

Julia Ramit 5/9/2018

ASSET Laboratories

Logbook#11

SOLIDS RAW DATA

TEST :TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/7/18 14	NO30186-001B	75	70.7709 70.7713	70.8583 70.8587	
5	2B	20	45.6753 45.6756	45.7579 45.7581	
15	2B DUP	20	48.8790 48.8794	48.9651 48.9649	
	Silia Ramit 5/9/2018				
	Closing wt: 49.999g 5/8/18 @ 1205				

ASSET Laboratories Logbook#11

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = **weight in grams of dish + residue after drying**
B = **weight of dish in grams**
PF = **100/volume of sample used in mL**

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
5/8/2018									
MB-67983	100	68.1845	68.1847	2	1	2			MBLK
LCS-67983	100	76.5582	76.6573	991	1	991			LCS
N030113-001C	40	68.4279	68.5736	1457	2.5	3642.5	3700	0.984	SAMP
N030120-007D	100	67.8299	67.913	831	1	831	1252	0.664	SAMP
N030120-008D	100	76.5151	76.5981	830	1	830	1243	0.668	SAMP
N030121-001A	20	49.3231	49.407	839	5	4195	7500	0.559	SAMP
N030121-002B	20	46.0407	46.121	803	5	4015	7370	0.545	SAMP
N030148-001C	75	70.0889	70.1832	943	1.33333333	1257.33333	1775	0.708	SAMP
N030185-002B	30	69.0494	69.1231	737	3.33333333	2456.66667	4040	0.608	SAMP
N030185-003B	20	49.3455	49.4068	613	5	3065	5220	0.587	SAMP
N030186-001B	75	70.7713	70.8587	874	1.33333333	1165.33333	1920	0.607	SAMP
N030186-002B	20	45.6756	45.7581	825	5	4125	7530	0.548	SAMP
N030186-002BDUP	20	48.8794	48.9649	855	5	4275	7530	0.568	DUP

Julia Ramit 5/9/2018

EPA 200.7
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68038
ASSET #: N030186
Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/15/2018

Method:
[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Ca and Mg in N030121-002E PS/MS/MSD failed. However, LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 5/18/18

2nd Level Reviewer 5/18/2018 Date: —

Metals Technical Batch Review Checklist (ARCUS02)
ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68038 **Instrument ID:** ICP-02
ASSET #: N030121 / 186 **Analyst:** CEI
Method: **Date Analyzed:** 5/16/2018

[X] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[ ] EPA 6020 / 200.8 [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Na run only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 5/18/18
2nd Level Reviewer 5/18/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N030186-001D** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.0246 * 1 * (25/25) * 1000

Iron , ug/L = 24.6

Reporting results in two significant figures,

Iron , ug/L = 25

% RSD SUMMARY

RSD SUMMARY: 180515C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	100.91	15	<PQL
Standard1	ICAL	1	Ca	0.2	9.88	15	PASS
Standard2	ICAL	1	Ca	1	2.6	15	PASS
Standard3	ICAL	1	Ca	2	0.94	15	PASS
Standard4	ICAL	1	Ca	5	0.05	15	PASS
Standard5	ICAL	1	Ca	7.5	0.7	15	PASS
Standard6	ICAL	1	Ca	10	0.51	15	PASS
Standard7	ICAL	1	Ca	20	0.26	15	PASS
ICV	ICV	1	Ca	10.035	0.45	15	PASS
ICB	ICB	1	Ca	0.049	15.022	15	<PQL
LLICV	CCV1	1	Ca	0.21	6.43	20	PASS
LLICV	CCV1	1	Ca	0.19	12.17	20	PASS
ICSA1	ICSA	1	Ca	518.43	0.26	15	PASS
ICSAB1	ICSAB	1	Ca	576.32	0.65	15	PASS
CCV1	CCV	1	Ca	10.22	0.45	15	PASS
CCB1	CCB	1	Ca	0.026	52.71	15	<PQL
CCV2	CCV	1	Ca	10.034	0.5	15	PASS
CCB2	CCB	1	Ca	0.0031	345.33	15	<PQL
CCV3	CCV	1	Ca	10.18	0.63	15	PASS
CCB3	CCB	1	Ca	0.011	78.64	15	<PQL
LLCCV1	CCV2	1	Ca	0.2	20.4	20	<PQL
ICSA2	ICSA	1	Ca	517.09	0.24	15	PASS
ICSAB2	ICSAB	1	Ca	569.23	0.17	15	PASS
CCV4	CCV	1	Ca	9.81	0.38	15	PASS
CCB4	CCB	1	Ca	0.014	246.45	15	<PQL
MB-68038	MBLK	1	Ca	0.008	431.64	15	<PQL
LCS1-68038	LCS	1	Ca	9.64	0.63	15	PASS
N030121-002E	SAMP	1	Ca	170.03	0.18	15	PASS
N030121-002E	SAMP	5	Ca	33.59	0.069	15	PASS
N030121-002E-PS	PS	1	Ca	174.49	0.29	15	PASS
N030121-002E-MS1	MS	1	Ca	173.84	0.67	15	PASS
N030121-002E-MSD1	MSD	1	Ca	173.25	0.82	15	PASS
N030186-001D	SAMP	1	Ca	94.24	0.22	15	PASS
N030186-002D	SAMP	1	Ca	205.98	0.43	15	PASS
CCV5	CCV	1	Ca	9.71	0.75	15	PASS
CCB5	CCB	1	Ca	0.036	68.0044	15	<PQL
LLCCV2	CCV2	1	Ca	0.16	13.56	20	PASS
ICSA3	ICSA	1	Ca	495.71	0.95	15	PASS
ICSAB3	ICSAB	1	Ca	551.08	1.19	15	PASS
CalBlk	IBLK	1	Fe	0	5.86	15	PASS
Standard1	ICAL	1	Fe	0.02	3.22	15	PASS
Standard2	ICAL	1	Fe	0.05	0.84	15	PASS

RSD SUMMARY: 180515C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard3	ICAL	1	Fe	2	0.36	15	PASS
Standard4	ICAL	1	Fe	5	0.44	15	PASS
Standard5	ICAL	1	Fe	7.5	0.24	15	PASS
Standard6	ICAL	1	Fe	10	0.23	15	PASS
Standard7	ICAL	1	Fe	20	0.18	15	PASS
ICV	ICV	1	Fe	10.31	0.66	15	PASS
ICB	ICB	1	Fe	0.00019	121.33	15	<PQL
LLICV	CCV1	1	Fe	0.02	4.14	20	PASS
LLICV	CCV1	1	Fe	0.02	4.54	20	PASS
ICSA1	ICSA	1	Fe	200.24	0.11	15	PASS
ICSAB1	ICSAB	1	Fe	193.5	0.096	15	PASS
CCV1	CCV	1	Fe	10.58	0.88	15	PASS
CCB1	CCB	1	Fe	0.00028	98.45	15	<PQL
CCV2	CCV	1	Fe	10.5	0.25	15	PASS
CCB2	CCB	1	Fe	0.00006	369.48	15	<PQL
CCV3	CCV	1	Fe	10.51	0.52	15	PASS
CCB3	CCB	1	Fe	0	24239.26	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	0.49	20	PASS
ICSA2	ICSA	1	Fe	199.4	0.2	15	PASS
ICSAB2	ICSAB	1	Fe	191.93	0.15	15	PASS
CCV4	CCV	1	Fe	10.17	0.8	15	PASS
CCB4	CCB	1	Fe	0.00015	196.089	15	<PQL
MB-68038	MBLK	1	Fe	-0.00001	7954.12	15	<PQL
LCS1-68038	LCS	1	Fe	0.11	0.8	15	PASS
N030121-002E	SAMP	1	Fe	0.014	2.65	15	PASS
N030121-002E	SAMP	5	Fe	0.0022	15.56	15	<PQL
N030121-002E-PS	PS	1	Fe	0.11	0.86	15	PASS
N030121-002E-MS1	MS	1	Fe	0.12	0.89	15	PASS
N030121-002E-MSD1	MSD	1	Fe	0.12	2.028	15	PASS
N030186-001D	SAMP	1	Fe	0.025	2.78	15	PASS
N030186-002D	SAMP	1	Fe	0.04	1.67	15	PASS
CCV5	CCV	1	Fe	10.12	0.41	15	PASS
CCB5	CCB	1	Fe	0.00036	53.84	15	<PQL
LLCCV2	CCV2	1	Fe	0.019	2.85	20	PASS
ICSA3	ICSA	1	Fe	188.09	0.3	15	PASS
ICSAB3	ICSAB	1	Fe	181.71	0.98	15	PASS
CalBlk	IBLK	1	Mg	0	4.12	15	PASS
Standard1	ICAL	1	Mg	0.1	0.57	15	PASS
Standard2	ICAL	1	Mg	1	0.61	15	PASS
Standard3	ICAL	1	Mg	2	0.56	15	PASS
Standard4	ICAL	1	Mg	5	0.59	15	PASS
Standard5	ICAL	1	Mg	7.5	0.11	15	PASS

RSD SUMMARY: 180515C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard6	ICAL	1	Mg	10	0.16	15	PASS
Standard7	ICAL	1	Mg	20	0.17	15	PASS
ICV	ICV	1	Mg	10.24	0.57	15	PASS
ICB	ICB	1	Mg	0.00016	185.87	15	<PQL
LLICV	CCV1	1	Mg	0.1	0.43	20	PASS
LLICV	CCV1	1	Mg	0.1	1.21	20	PASS
ICSA1	ICSA	1	Mg	491.5	0.12	15	PASS
ICSAB1	ICSAB	1	Mg	546.94	0.23	15	PASS
CCV1	CCV	1	Mg	10.39	0.79	15	PASS
CCB1	CCB	1	Mg	0.0028	24.83	15	<PQL
CCV2	CCV	1	Mg	10.5	0.15	15	PASS
CCB2	CCB	1	Mg	0.0039	4.5	15	PASS
CCV3	CCV	1	Mg	10.52	0.47	15	PASS
CCB3	CCB	1	Mg	0.0041	13.49	15	PASS
LLCCV1	CCV2	1	Mg	0.1	0.53	20	PASS
ICSA2	ICSA	1	Mg	491.3	0.22	15	PASS
ICSAB2	ICSAB	1	Mg	544.86	0.29	15	PASS
CCV4	CCV	1	Mg	10.13	0.77	15	PASS
CCB4	CCB	1	Mg	0.0039	5.88	15	PASS
MB-68038	MBLK	1	Mg	0.006	4.59	15	PASS
LCS1-68038	LCS	1	Mg	10.25	0.37	15	PASS
N030121-002E	SAMP	1	Mg	29.11	0.33	15	PASS
N030121-002E	SAMP	5	Mg	6.062	0.11	15	PASS
N030121-002E-PS	PS	1	Mg	36.35	0.23	15	PASS
N030121-002E-MS1	MS	1	Mg	35.93	0.25	15	PASS
N030121-002E-MSD1	MSD	1	Mg	36	0.054	15	PASS
N030186-001D	SAMP	1	Mg	25.45	0.26	15	PASS
N030186-002D	SAMP	1	Mg	28.29	0.43	15	PASS
CCV5	CCV	1	Mg	10.27	0.48	15	PASS
CCB5	CCB	1	Mg	0.0045	16.18	15	<PQL
LLCCV2	CCV2	1	Mg	0.1	0.51	20	PASS
ICSA3	ICSA	1	Mg	473.67	0.3	15	PASS
ICSAB3	ICSAB	1	Mg	527.17	1.11	15	PASS

RSD SUMMARY: 180516A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	1.46	15	PASS
Standard1	ICAL	1	Na	0.1	3.32	15	PASS
Standard2	ICAL	1	Na	1	0.31	15	PASS
Standard3	ICAL	1	Na	5	0.19	15	PASS
Standard4	ICAL	1	Na	10	0.32	15	PASS
Standard5	ICAL	1	Na	20	0.1	15	PASS
Standard6	ICAL	1	Na	40	0.14	15	PASS
ICV	ICV	1	Na	10.007	0.073	15	PASS
ICB	ICB	1	Na	-0.1	1.74	15	PASS
ICSA0	ICSA	1	Na	-0.12	5.024	15	PASS
ICSAB0	ICSAB	1	Na	10.061	0.19	15	PASS
MB-68038	MBLK	1	Na	-0.13	3.71	15	PASS
LCS2-68038	LCS	1	Na	19.83	0.26	15	PASS
N030186-001D	SAMP	5	Na	36.3	0.15	15	PASS
N030186-002D	SAMP	5	Na	280.98	1.22	15	PASS
N030186-001D	SAMP	10	Na	18.3	0.082	15	PASS
N030186-001D	SAMP	50	Na	3.61	0.13	15	PASS
N030186-001D-PS	PS	10	Na	20.19	0.17	15	PASS
N030186-001D-MS2	MS	10	Na	20.076	0.18	15	PASS
N030186-001D-MSD2	MSD	10	Na	20.099	0.16	15	PASS
N030186-002D	SAMP	50	Na	28.61	0.046	15	PASS
CCV0	CCV	1	Na	10.17	0.073	15	PASS
CCB0	CCB	1	Na	-0.16	1.15	15	PASS
ICSA0	ICSA	1	Na	-0.17	2.3	15	PASS
ICSAB0	ICSAB	1	Na	10.23	0.16	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180515C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-180420A,0.5<50mL
Standard2	MWST-180420C
Standard3	MWST-180420E,5<50mL
Standard4	MWST-180420E,12.5<50mL
Standard5	MWST-180420E,15<40mL
Standard6	MWST-180420E,25<50mL
Standard7	MWST-180420E
ICV	MWST-180430E
CCV	MWST-180420E,25<50mL
ICSA/ICSAB	MWST-180430F/G
Int. Std. (Y)	MSST-180420B/A
PS Spike	MWST-171201G/ -180430F/ - 171201C

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/15/2018	04:57:52 PM
2	Standard1	ICAL	1	05/15/2018	05:03:44 PM
3	Standard2	ICAL	1	05/15/2018	05:10:02 PM
11	Standard3	ICAL	1	05/15/2018	05:16:22 PM
12	Standard4	ICAL	1	05/15/2018	05:22:44 PM
6	Standard5	ICAL	1	05/15/2018	05:32:05 PM
7	Standard6	ICAL	1	05/15/2018	05:41:26 PM
8	Standard7	ICAL	1	05/15/2018	05:50:47 PM
9	ICV	ICV	1	05/15/2018	06:02:03 PM
1	ICB	ICB	1	05/15/2018	06:27:54 PM
2	LLICV	CCV1	1	05/15/2018	06:34:13 PM
2	LLICV	CCV1	1	05/15/2018	06:40:31 PM
4	ICSA1	ICSA	1	05/15/2018	06:46:50 PM
5	ICSAB1	ICSAB	1	05/15/2018	06:56:17 PM
98	MB-67951	MBLK	1	05/15/2018	07:05:45 PM
99	LCS-67951	LCS	1	05/15/2018	07:11:37 PM
100	N030097-001B	SAMP	1	05/15/2018	07:19:19 PM
101	N030097-001B	SAMP	5	05/15/2018	07:25:41 PM
102	N030097-001B-PS	PS	1	05/15/2018	07:32:02 PM
103	N030097-001B-MS	MS	1	05/15/2018	07:41:25 PM
104	N030097-001B-MSD	MSD	1	05/15/2018	07:50:49 PM
105	N030097-002B	SAMP	1	05/15/2018	07:57:10 PM
106	N030097-003B	SAMP	1	05/15/2018	08:03:32 PM
107	N030097-004B	SAMP	1	05/15/2018	08:09:54 PM
7	CCV1	CCV	1	05/15/2018	08:16:16 PM
1	CCB1	CCB	1	05/15/2018	08:25:39 PM
108	N030097-005B	SAMP	1	05/15/2018	08:31:28 PM
109	N030097-006B	SAMP	1	05/15/2018	08:37:49 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
110	N030097-007B	SAMP	1	05/15/2018	08:44:11 PM
111	N030097-008B	SAMP	1	05/15/2018	08:50:34 PM
112	N030097-011C	SAMP	1	05/15/2018	08:56:56 PM
113	N030097-011C	SAMP	5	05/15/2018	09:06:17 PM
115	N030097-009C	SAMP	25	05/15/2018	09:22:47 PM
116	N030097-010C	SAMP	5	05/15/2018	09:32:10 PM
7	CCV2	CCV	1	05/15/2018	09:46:11 PM
1	CCB2	CCB	1	05/15/2018	09:55:33 PM
119	N030097-012C	SAMP	25	05/15/2018	10:04:45 PM
120	N030098-001A	SAMP	5	05/15/2018	10:14:10 PM
121	N030098-002A	SAMP	5	05/15/2018	10:20:33 PM
122	N030098-003A	SAMP	5	05/15/2018	10:29:56 PM
123	N030098-004A	SAMP	5	05/15/2018	10:36:19 PM
124	N030098-005A	SAMP	5	05/15/2018	10:42:42 PM
125	N030098-006A	SAMP	5	05/15/2018	10:52:05 PM
126	N030098-007A	SAMP	5	05/15/2018	10:58:28 PM
127	N030098-008A	SAMP	5	05/15/2018	11:07:51 PM
7	CCV3	CCV	1	05/15/2018	11:14:14 PM
1	CCB3	CCB	1	05/15/2018	11:23:36 PM
2	LLCCV1	CCV2	1	05/15/2018	11:29:25 PM
4	ICSA2	ICSA	1	05/15/2018	11:35:44 PM
5	ICSAB2	ICSAB	1	05/15/2018	11:45:12 PM
110	N030097-007B	SAMP	1	05/15/2018	11:50:19 PM
154	N030097-012C	SAMP	125	05/15/2018	11:56:40 PM
146	N030098-001A	SAMP	1	05/16/2018	12:06:05 AM
147	N030098-002A	SAMP	1	05/16/2018	12:15:29 AM
148	N030098-003A	SAMP	1	05/16/2018	12:24:59 AM
149	N030098-004A	SAMP	1	05/16/2018	12:31:23 AM
150	N030098-005A	SAMP	1	05/16/2018	12:37:47 AM
151	N030098-006A	SAMP	1	05/16/2018	12:47:12 AM
152	N030098-007A	SAMP	1	05/16/2018	12:56:35 AM
153	N030098-008A	SAMP	1	05/16/2018	01:06:00 AM
7	CCV4	CCV	1	05/16/2018	01:15:24 AM
1	CCB4	CCB	1	05/16/2018	01:24:46 AM
128	MB-68038	MBLK	1	05/16/2018	01:30:35 AM
129	LCS1-68038	LCS	1	05/16/2018	01:36:27 AM
130	N030121-002E	SAMP	1	05/16/2018	01:45:50 AM
131	N030121-002E	SAMP	5	05/16/2018	01:55:13 AM
132	N030121-002E-PS	PS	1	05/16/2018	02:01:36 AM
133	N030121-002E-MS1	MS	1	05/16/2018	02:11:01 AM
134	N030121-002E-MSD1	MSD	1	05/16/2018	02:20:25 AM
135	N030186-001D	SAMP	1	05/16/2018	02:29:49 AM
136	N030186-002D	SAMP	1	05/16/2018	02:36:12 AM
7	CCV5	CCV	1	05/16/2018	02:45:35 AM
1	CCB5	CCB	1	05/16/2018	02:55:10 AM
2	LLCCV2	CCV2	1	05/16/2018	03:00:58 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
4	ICSA3	ICSA	1	05/16/2018	03:07:18 AM
5	ICSAB3	ICSAB	1	05/16/2018	03:16:46 AM

INJECTION LOG: 180516A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-171201R,0.025<50mL
Standard2	MWST-171201R,0.25<50mL
Standard3	MWST-171201R,1.25<50mL
Standard4	MWST-171201R,2.5<50mL
Standard5	MWST-171201R,5<50mL
Standard6	MWST-171201R,10<50mL
ICV	MWST-180430H
CCV	MWST-171201R,2.5<50mL
ICSA/ICSAB	MWST-180430F/ -171201S
Int. Std. (Sc):	MSST-180420B/A
PS Spike	MSST-140120B/ -130329E/ -170116A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/16/2018	08:25:54 AM
26	Standard1	ICAL	1	05/16/2018	08:29:12 AM
27	Standard2	ICAL	1	05/16/2018	08:32:30 AM
28	Standard3	ICAL	1	05/16/2018	08:36:19 AM
29	Standard4	ICAL	1	05/16/2018	08:40:09 AM
30	Standard5	ICAL	1	05/16/2018	08:44:02 AM
31	Standard6	ICAL	1	05/16/2018	08:48:06 AM
32	ICV	ICV	1	05/16/2018	08:50:52 AM
1	ICB	ICB	1	05/16/2018	08:54:47 AM
33	ICSA1	ICSA	1	05/16/2018	08:58:03 AM
34	ICSAB1	ICSAB	1	05/16/2018	09:01:22 AM
38	MB-68038	MBLK	1	05/16/2018	09:05:18 AM
39	LCS2-68038	LCS	1	05/16/2018	09:08:36 AM
40	N030186-001D	SAMP	5	05/16/2018	09:12:40 AM
41	N030186-002D	SAMP	5	05/16/2018	09:16:30 AM
42	N030186-001D	SAMP	10	05/16/2018	09:22:18 AM
43	N030186-001D	SAMP	50	05/16/2018	09:26:07 AM
44	N030186-001D-PS	PS	10	05/16/2018	09:29:26 AM
45	N030186-001D-MS2	MS	10	05/16/2018	09:33:16 AM
46	N030186-001D-MSD2	MSD	10	05/16/2018	09:37:07 AM
47	N030186-002D	SAMP	50	05/16/2018	09:40:58 AM
29	CCV1	CCV	1	05/16/2018	09:44:18 AM
1	CCB1	CCB	1	05/16/2018	09:48:12 AM
33	ICSA2	ICSA	1	05/16/2018	09:51:30 AM
34	ICSAB2	ICSAB	1	05/16/2018	09:54:48 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/10/2018 8:06:35 A**
Prep End Date: **5/10/2018 11:30:00**
Prep Batch **68038** Prep Code: **200.7_PR**

Reviewed/ Date: Nancy 5/18/2018
Initials/ Date: for
Technician: **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-8**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-68038	Aqueous		25	☐	0	0	25	1.000		
LCS2-68038	Aqueous		25	☐	0	0	25	1.000		
MB-68038	Aqueous		25	☐	0	0	25	1.000		
N030121-002E	Water	<2	25	☐	0	0	25	1.000		
N030121-002E-MS	Water	<2	25	☐	0	0	25	1.000		
N030121-002E-MS	Water	<2	25	☐	0	0	25	1.000		
N030186-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N030186-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030186-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030186-002D	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9882	HYDROCHLORIC ACID
9891	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-171201C	ICP Solution C	LCS,MS,MSD	0.5
MWST-171201G	ICP Solution A	LCS,MS,MSD	0.5
MWST-180430F	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180515C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	05/15/2018	04:57:52 PM	Mg	279.079	137	0.00	mg/L	
Standard1	05/15/2018	05:03:44 PM	Mg	279.079	969	0.1000	mg/L	
Standard2	05/15/2018	05:10:02 PM	Mg	279.079	9924	1.000	mg/L	
Standard3	05/15/2018	05:16:22 PM	Mg	279.079	19957	2.000	mg/L	
Standard4	05/15/2018	05:22:44 PM	Mg	279.079	49193	5.000	mg/L	
Standard5	05/15/2018	05:32:05 PM	Mg	279.079	74264	7.500	mg/L	
Standard6	05/15/2018	05:41:26 PM	Mg	279.079	101042	10.000	mg/L	
Standard7	05/15/2018	05:50:47 PM	Mg	279.079	195053	20.000	mg/L	0.9999
Calcium								
CalBlk	05/15/2018	04:57:52 PM	Ca	227.546	-12	0.00	mg/L	
Standard1	05/15/2018	05:03:44 PM	Ca	227.546	51	0.2000	mg/L	
Standard2	05/15/2018	05:10:02 PM	Ca	227.546	259	1.000	mg/L	
Standard3	05/15/2018	05:16:22 PM	Ca	227.546	512	2.000	mg/L	
Standard4	05/15/2018	05:22:44 PM	Ca	227.546	1261	5.000	mg/L	
Standard5	05/15/2018	05:32:05 PM	Ca	227.546	1891	7.500	mg/L	
Standard6	05/15/2018	05:41:26 PM	Ca	227.546	2574	10.000	mg/L	
Standard7	05/15/2018	05:50:47 PM	Ca	227.546	5114	20.000	mg/L	1.0000
Iron								
CalBlk	05/15/2018	04:57:52 PM	Fe	273.953	-175	0.00	mg/L	
Standard1	05/15/2018	05:03:44 PM	Fe	273.953	438	0.0200	mg/L	
Standard2	05/15/2018	05:10:02 PM	Fe	273.953	1428	0.050	mg/L	
Standard3	05/15/2018	05:16:22 PM	Fe	273.953	45895	2.000	mg/L	
Standard4	05/15/2018	05:22:44 PM	Fe	273.953	112904	5.000	mg/L	
Standard5	05/15/2018	05:32:05 PM	Fe	273.953	169599	7.500	mg/L	
Standard6	05/15/2018	05:41:26 PM	Fe	273.953	228978	10.000	mg/L	
Standard7	05/15/2018	05:50:47 PM	Fe	273.953	437611	20.000	mg/L	0.9998

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180516A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	05/16/2018	08:25:54 AM	Na	589.594	387	0.00	mg/L	
Standard1	05/16/2018	08:29:12 AM	Na	589.594	383	0.1000	mg/L	
Standard2	05/16/2018	08:32:30 AM	Na	589.594	3450	1.000	mg/L	
Standard3	05/16/2018	08:36:19 AM	Na	589.594	18010	5.000	mg/L	
Standard4	05/16/2018	08:40:09 AM	Na	589.594	35462	10.000	mg/L	
Standard5	05/16/2018	08:44:02 AM	Na	589.594	71131	20.000	mg/L	
Standard6	05/16/2018	08:48:06 AM	Na	589.594	142532	40.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **ICV** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/15/2018** SeqNo: **3028432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10035.097	500	10000	0	100	90	110				
Iron	10307.125	20	10000	0	103	90	110				
Magnesium	10239.016	100	10000	0	102	90	110				

not reported

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **ZZZZZZ** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/15/2018** SeqNo: **3028434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	205.434	500	200.0	0	103	80	120				
Iron	19.558	20	20.00	0	97.8	80	120				
Magnesium	102.271	100	100.0	0	102	80	120				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **ZZZZZZ** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/15/2018** SeqNo: **3028435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	193.408	500	200.0	0	96.7	80	120				
Iron	19.532	20	20.00	0	97.7	80	120				
Magnesium	102.295	100	100.0	0	102	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **CCV** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/15/2018** SeqNo: **3028448**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10215.850	500	10000	0	102	90	110				
Iron	10581.219	20	10000	0	106	90	110				
Magnesium	10389.550	100	10000	0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Nancy 5/18/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV2** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **CCV** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/15/2018** SeqNo: **3028458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10034.020	500	10000	0	100	90	110				
Iron	10495.916	20	10000	0	105	90	110				
Magnesium	10497.850	100	10000	0	105	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **CCV** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/15/2018** SeqNo: **3028469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10177.161	500	10000	0	102	90	110				
Iron	10506.254	20	10000	0	105	90	110				
Magnesium	10523.191	100	10000	0	105	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **ZZZZZZ** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/15/2018** SeqNo: **3028471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	195.668	500	200.0	0	97.8	70	130				
Iron	20.277	20	20.00	0	101	70	130				
Magnesium	104.453	100	100.0	0	104	70	130				

Sample ID **CCV4** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **CCV** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9813.241	500	10000	0	98.1	90	110				
Iron	10170.599	20	10000	0	102	90	110				
Magnesium	10130.344	100	10000	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV5** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **CCV** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9708.793	500	10000	0	97.1	90	110				
Iron	10116.164	20	10000	0	101	90	110				
Magnesium	10271.919	100	10000	0	103	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **ZZZZZZ** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028497**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	164.930	500	200.0	0	82.5	70	130				
Iron	19.287	20	20.00	0	96.4	70	130				
Magnesium	101.437	100	100.0	0	101	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG** Units: **µg/L**	Prep Date:	RunNo: **124093**
Client ID: **ICV**	Batch ID: **R124093**	TestNo: **EPA 200.7**	Analysis Date: **5/16/2018**	SeqNo: **3028518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10007.089	500	10000	0	100	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG** Units: **µg/L**	Prep Date:	RunNo: **124093**
Client ID: **CCV**	Batch ID: **R124093**	TestNo: **EPA 200.7**	Analysis Date: **5/16/2018**	SeqNo: **3028532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10172.478	500	10000	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **ICB** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/15/2018** SeqNo: **3028433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	49.158	500									
Iron	0.186	20									
Magnesium	0.156	100									

Sample ID **CCB1** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **CCB** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/15/2018** SeqNo: **3028449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.763	500									
Iron	0.277	20									
Magnesium	2.757	100									

Sample ID **CCB2** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **CCB** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/15/2018** SeqNo: **3028459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	3.060	500									
Iron	0.060	20									
Magnesium	3.869	100									

Sample ID **CCB3** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **CCB** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/15/2018** SeqNo: **3028470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	11.257	500									
Iron	0.003	20									
Magnesium	4.096	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCB4** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **CCB** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	14.313	500									
Iron	0.153	20									
Magnesium	3.900	100									

Sample ID **CCB5** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **CCB** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	36.461	500									
Iron	0.356	20									
Magnesium	4.465	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG** Units: **µg/L**	Prep Date:	RunNo: **124093**
Client ID: **ICB**	Batch ID: **R124093**	TestNo: **EPA 200.7**	Analysis Date: **5/16/2018**	SeqNo: **3028519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-101.981796	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG** Units: **µg/L**	Prep Date:	RunNo: **124093**
Client ID: **CCB**	Batch ID: **R124093**	TestNo: **EPA 200.7**	Analysis Date: **5/16/2018**	SeqNo: **3028533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-159.741276	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **ICSA** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/15/2018** SeqNo: **3028436**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	500955.093	50	500000	0	100	80	120				
Calcium	518434.712	500	500000	0	104	80	120				
Iron	200237.368	20	200000	0	100	80	120				
Magnesium	491498.478	100	500000	0	98.3	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **ICSAB** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/15/2018** SeqNo: **3028437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	561092.939	50	500000	0	112	80	120				
Calcium	576317.616	500	500000	0	115	80	120				
Iron	193504.512	20	200000	0	96.8	80	120				
Magnesium	546935.221	100	500000	0	109	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **ICSA** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/15/2018** SeqNo: **3028472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	497297.912	50	500000	0	99.5	80	120				
Calcium	517092.212	500	500000	0	103	80	120				
Iron	199401.514	20	200000	0	99.7	80	120				
Magnesium	491296.368	100	500000	0	98.3	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **ICSAB** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/15/2018** SeqNo: **3028473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	554109.529	50	500000	0	111	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **ICSAB** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/15/2018** SeqNo: **3028473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	569234.096	500	500000	0	114	80	120				
Iron	191932.793	20	200000	0	96.0	80	120				
Magnesium	544861.425	100	500000	0	109	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **ICSA** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	479207.850	50	500000	0	95.8	80	120				
Calcium	495705.054	500	500000	0	99.1	80	120				
Iron	188090.937	20	200000	0	94.0	80	120				
Magnesium	473670.278	100	500000	0	94.7	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **ICSAB** Batch ID: **R124085** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	535937.040	50	500000	0	107	80	120				
Calcium	551082.815	500	500000	0	110	80	120				
Iron	181705.801	20	200000	0	90.9	80	120				
Magnesium	527171.218	100	500000	0	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124093**
Client ID: **ICSA** Batch ID: **R124093** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-115.879496	500									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124093**
Client ID: **ICSAB** Batch ID: **R124093** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10061.445	500	10000	0	101	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124093**
Client ID: **ICSA** Batch ID: **R124093** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-168.677559	500									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124093**
Client ID: **ICSAB** Batch ID: **R124093** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10233.848	500	10000	0	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180515C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1	99.73	65-125	PASS
Standard2	ICAL	1	1.044	104.43	65-125	PASS
Standard3	ICAL	1	1	99.99	65-125	PASS
Standard4	ICAL	1	1.029	102.88	65-125	PASS
Standard5	ICAL	1	1.026	102.61	65-125	PASS
Standard6	ICAL	1	0.99	99.058	65-125	PASS
Standard7	ICAL	1	0.97	96.52	65-125	PASS
ICV	ICV	1	0.99	99.14	65-125	PASS
ICB	ICB	1	1.019	101.94	65-125	PASS
LLICV	CCV1	1	0.99	98.92	65-125	PASS
LLICV	CCV1	1	0.98	98.21	65-125	PASS
ICSA1	ICSA	1	0.92	91.71	65-125	PASS
ICSAB1	ICSAB	1	0.8	80.007	65-125	PASS
CCV1	CCV	1	0.93	93.095	65-125	PASS
CCB1	CCB	1	0.95	94.51	65-125	PASS
CCV2	CCV	1	0.98	98.011	65-125	PASS
CCB2	CCB	1	0.99	99.15	65-125	PASS
CCV3	CCV	1	0.96	95.91	65-125	PASS
CCB3	CCB	1	0.97	97.24	65-125	PASS
LLCCV1	CCV2	1	0.98	97.89	65-125	PASS
ICSA2	ICSA	1	0.93	93.094	65-125	PASS
ICSAB2	ICSAB	1	0.82	82.42	65-125	PASS
CCV4	CCV	1	0.95	95.38	65-125	PASS
CCB4	CCB	1	0.96	96.42	65-125	PASS
MB-68038	MBLK	1	0.96	96.11	65-125	PASS
LCS1-68038	LCS	1	0.89	88.8	65-125	PASS
N030121-002E	SAMP	1	0.83	83.11	65-125	PASS
N030121-002E	SAMP	5	0.88	87.83	65-125	PASS
N030121-002E-PS	PS	1	0.81	81.019	65-125	PASS
N030121-002E-MS1	MS	1	0.84	83.73	65-125	PASS
N030121-002E-MSD1	MSD	1	0.82	81.78	65-125	PASS
N030186-001D	SAMP	1	0.93	93.24	65-125	PASS
N030186-002D	SAMP	1	0.81	80.81	65-125	PASS
CCV5	CCV	1	0.89	88.83	65-125	PASS
CCB5	CCB	1	0.91	91.19	65-125	PASS
LLCCV2	CCV2	1	0.92	92.3	65-125	PASS
ICSA3	ICSA	1	0.9	89.63	65-125	PASS
ICSAB3	ICSAB	1	0.78	78.18	65-125	PASS

INTERNAL STANDARD: 180516A

Instrument ID: ICP-02

Sample Name	Type	DF	Sc, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.97	97.13	65-125	PASS
Standard2	ICAL	1	0.98	98.38	65-125	PASS
Standard3	ICAL	1	0.97	97.45	65-125	PASS
Standard4	ICAL	1	0.98	97.52	65-125	PASS
Standard5	ICAL	1	0.98	97.51	65-125	PASS
Standard6	ICAL	1	0.96	96.29	65-125	PASS
ICV	ICV	1	0.98	97.81	65-125	PASS
ICB	ICB	1	1.017	101.73	65-125	PASS
ICSA1	ICSA	1	0.99	98.96	65-125	PASS
ICSAB1	ICSAB	1	0.97	97.18	65-125	PASS
MB-68038	MBLK	1	0.99	98.98	65-125	PASS
LCS2-68038	LCS	1	1.06	106.03	65-125	PASS
N030186-001D	SAMP	5	1.0014	100.14	65-125	PASS
N030186-002D	SAMP	5	0.98	97.7	65-125	PASS
N030186-001D	SAMP	10	0.99	99.19	65-125	PASS
N030186-001D	SAMP	50	0.98	97.57	65-125	PASS
N030186-001D-PS	PS	10	0.98	98.38	65-125	PASS
N030186-001D-MS2	MS	10	0.98	97.97	65-125	PASS
N030186-001D-MSD2	MSD	10	0.97	97.47	65-125	PASS
N030186-002D	SAMP	50	0.97	97.27	65-125	PASS
CCV1	CCV	1	0.95	95.46	65-125	PASS
CCB1	CCB	1	0.99	99.5	65-125	PASS
ICSA2	ICSA	1	0.97	97.11	65-125	PASS
ICSAB2	ICSAB	1	0.95	95.01	65-125	PASS

SERIAL DILUTION/ POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water | **Dilution Test Summary**

Work Order No.: N030186

Test Method: EPA 200.7

Analysis Date: 5/15/2018

5/16/18

Matrix: Groundwater

Batch No.: 68038

Instrument ID: ICP-02

Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030121-002E DT 5X	Calcium	ug/L	167924.8	PASS	170031.9	1.24%	10
N030121-002E DT 5X	Iron	ug/L	0	NA	0		10
N030121-002E DT 5X	Magnesium	ug/L	30312.52	PASS	29105.32	4.15%	10
N030186-001D 50x	Sodium	ug/L	180459.9	PASS	182947.7	1.36%	

Note: NA - Not applicable

CEI / ICP-02 / 5/17/2018

Nancy 5/18/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N030121-002E-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124085**
Client ID: **ZZZZZZ** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	174488.963	500	10000	170000	44.6	80	120				S
Iron	112.736	20	100.0	0	113	80	120				
Magnesium	36352.755	100	10000	29110	72.5	80	120				S

Sample ID **N030186-001D-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **124093**
Client ID: **ZZZZZZ** Batch ID: **68038** TestNo: **EPA 200.7** Analysis Date: **5/16/2018** SeqNo: **3028528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	201925.930	5000	20000	182900	94.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 200.7
Date of Analysis: 4/26/2018,4/27/18, 4/28/18
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	MDL	PQL
Potassium	0.52047	0.51468	0.50982	0.46507	0.46016	0.45873	0.49093	0.02710	0.48855	0.5000	0.08509	0.5
Sodium	0.55314	0.5464	0.5354	0.4861	0.49466	0.48423	0.49053	0.03061	0.51292	0.5000	0.09611	0.5
Strontium	0.0543	0.05418	0.05429	0.05295	0.05353	0.05251	0.05341	0.00070	0.05360	0.0250	0.00220	0.05

MBLK

Analyte	1	2	3	4	5	6	7	SD	Ave	MDL
Potassium	0.046	0.02365	0.01213	-0.00541	-0.0022	-0.00535	0.03047	0.02002	0.01418	0.0771
Sodium	0.04731	0.03661	0.02294	-0.0006	-0.00135	-0.00646	-0.00911	0.02270	0.01276	0.0841
Strontium	0.00006	-0.0006	-0.0002	0.00003	-0.00002	0.00001	0.00035	0.00029	-0.00005	0.0009

Note: MDL spike is used since it's value is greater than the MDL blank.

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7
Date of Analysis: 4/30/2018
Instrument Name: ICP2
Analyst: MI

Matrix: Water
Units: mg/L

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Potassium	0.08509	0.250	0.304	0.500	0.544	108.9
Sodium	0.09611	0.250	0.274	0.500	0.521	104.1
Strontium	0.00220	0.025	0.027	0.050	0.054	108.0

EPA 200.8
Dissolved

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

METALS ARCUS
REV 1.0
071116

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68083
ASSET #: N030186

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/15/2018

Method:
- [ ] EPA 6010B / 200.7
- [X] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			~~X~~	x	
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X	X		~~X~~
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X	X		~~X~~
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

With confirmation for sample N030186-001.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 5/21/18

2nd Level Reviewer 5/21/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N030186-001D** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 1.81779 * 1 * (25/25)

Chromium , ug/L = 1.81779

Reporting results in two significant figures,

Chromium , ug/L = 1.8

% RSD SUMMARY

PERCENT RSD SUMMARY: 180515B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.087	3.12	15	PASS	0.094	26.11	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.55	2.38	15	PASS	0.54	4.51	15	PASS
Std3-5/50 ppb	ICAL	1	5.14	1.9	15	PASS	5.076	1.29	15	PASS
Std4-10/100 ppb	ICAL	1	10.045	1.56	15	PASS	10.06	0.94	15	PASS
Std5-20/200 ppb	ICAL	1	20.45	0.19	15	PASS	20.39	0.42	15	PASS
Std6-40/400 ppb	ICAL	1	40.98	1.51	15	PASS	40.84	1.054	15	PASS
Std7-100/1000 ppb	ICAL	1	101.032	1.94	15	PASS	100.79	1.49	15	PASS
Std8-200/2000 ppb	ICAL	1	199.24	0.52	15	PASS	199.39	0.22	15	PASS
ICV	ICV	1	10.1	0.86	15	PASS	104.93	0.54	15	PASS
ICB	ICB	1	0.0084	105.89	15	<PQL	0.0092	125.86	15	<PQL
LLICV	CCV1	1	0.87	1.069	20	PASS	0.53	2.75	20	PASS
ICSA1	ICSA	1	0.018	53.86	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.9	0.77	15	PASS	17.24	0.9	15	PASS
LLICV	CCV1	1	1.056	0.68	20	PASS	0.59	5.33	20	PASS
MB-68083	MBLK	1	0.004	38.39	15	<PQL	0.023	9.8	15	PASS
LCS-68083	LCS	1	10.098	0.42	15	PASS	103.5	0.56	15	PASS
N030119-001B	SAMP	1	52.53	1.19	15	PASS	<0.000	N/A	15	<PQL
N030148-001B	SAMP	1	5.38	1.95	15	PASS	0.79	16.31	15	NR!
N030121-001C	SAMP	1	471.93	0.79	15	PASS	7.16	2.62	15	PASS
N030121-001C	SAMP	5	95.82	1.28	15	PASS	1.48	5.4	15	PASS
N030121-002E	SAMP	1	0.24	26.056	15	<PQL	9.13	0.8	15	PASS
N030121-002E	SAMP	5	0.054	12.47	15	PASS	1.93	1.66	15	PASS
N030186-001D	SAMP	1	1.82	0.51	15	PASS	291.37	0.51	15	PASS
N030186-001D	SAMP	5	0.38	1.066	15	PASS	61.38	0.83	15	PASS
CCV1	CCV	1	20.31	1.024	15	PASS	20.13	2.43	15	PASS
CCB1	CCB	1	0.00093	478.086	15	<PQL	0.0027	193.12	15	<PQL
N030186-001D	SAMP	25	0.067	4.62	15	PASS	12.53	1.91	15	PASS
N030186-001D-PS	PS	1	11.77	0.58	15	PASS	377.45	0.89	15	PASS
N030186-001D-PS	PS	5	2.6	2.078	15	PASS	83.6	1.94	15	PASS
N030186-001D-MS	MS	1	11.89	1.92	15	PASS	381.88	0.63	15	PASS
N030186-001D-MS	MS	5	2.51	0.99	15	PASS	80.47	0.41	15	PASS
N030186-001D-MSD	MSD	1	11.81	0.18	15	PASS	375.46	0.48	15	PASS
N030186-001D-MSD	MSD	5	2.54	1.26	15	PASS	80.17	0.57	15	PASS
N030186-002D	SAMP	1	486.46	0.58	15	PASS	12.98	0.6	15	PASS
N030186-002D	SAMP	5	97.29	0.4	15	PASS	2.81	1.0089	15	PASS
N030304-001A	SAMP	1	3.83	4.21	15	PASS	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.25	0.53	15	PASS	19.87	0.68	15	PASS
CCB2	CCB	1	0.0036	206.56	15	<PQL	0.0052	110.97	15	<PQL
CCV3	CCV	1	20.4	1.51	15	PASS	19.59	1.041	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.016	41.2	15	<PQL

PERCENT RSD SUMMARY: 180515B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
LLCCV1	CCV2	1	0.89	2.77	20	PASS	0.54	1.9	20	PASS
ICSA2	ICSA	1	0.024	55.52	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.93	1.71	15	PASS	17.75	0.82	15	PASS
CCV4	CCV	1	20.46	0.48	15	PASS	19.98	0.95	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.0027	104.47	15	<PQL
CCV5	CCV	1	20.31	1.44	15	PASS	20.26	1.5	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.044	4.44	15	PASS
CCV6	CCV	1	20.34	1.24	15	PASS	20.8	1.53	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	0.15	6.67	15	PASS
LLCCV2	CCV2	1	0.87	1.025	20	PASS	0.64	1.65	20	PASS
ICSA3	ICSA	1	0.033	33.66	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.051	0.68	15	PASS	16.48	0.45	15	PASS
CCV7	CCV	1	20.23	0.73	15	PASS	21.64	1.73	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	0.29	7.46	15	PASS
CCV8	CCV	1	19.98	2.77	15	PASS	21.37	2.083	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL	0.44	10.32	15	PASS
LLCCV2	CCV2	1	0.97	3.2	20	PASS	0.61	2.62	20	PASS
ICSA3	ICSA	1	0.03	92.54	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.25	0.64	15	PASS	18.36	1.99	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180515B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0515001.D	RINSE	RINSE	1	05/15/18 7:51 PM
B0515002.D	Cal Blank	IBLK	1	05/15/18 7:57 PM
B0515003.D	Std1-0.1/1 ppb	ICAL	1	05/15/18 8:02 PM
B0515004.D	Std2-0.5/5 ppb	ICAL	1	05/15/18 8:08 PM
B0515005.D	Std3-5/50 ppb	ICAL	1	05/15/18 8:13 PM
B0515006.D	Std4-10/100 ppb	ICAL	1	05/15/18 8:19 PM
B0515007.D	Std5-20/200 ppb	ICAL	1	05/15/18 8:24 PM
B0515008.D	Std6-40/400 ppb	ICAL	1	05/15/18 8:30 PM
B0515009.D	Std7-100/1000 ppb	ICAL	1	05/15/18 8:36 PM
B0515010.D	Std8-200/2000 ppb	ICAL	1	05/15/18 8:41 PM
B0515011.D	ICV	ICV	1	05/15/18 8:47 PM
B0515012.D	ICB	ICB	1	05/15/18 8:52 PM
B0515013.D	LLICV	CCV1	1	05/15/18 8:58 PM
B0515014.D	ICSA1	ICSA	1	05/15/18 9:03 PM
B0515015.D	ICSAB1	ICSAB	1	05/15/18 9:10 PM
B0515016.D	LLICV	CCV1	1	05/15/18 9:14 PM
B0515017.D	MB-68083	MBLK	1	05/15/18 9:22 PM
B0515018.D	LCS-68083	LCS	1	05/15/18 9:27 PM
B0515019.D	N030119-001B	SAMP	1	05/15/18 9:33 PM
B0515020.D	N030148-001B	SAMP	1	05/15/18 9:39 PM
B0515021.D	N030121-001C	SAMP	1	05/15/18 9:44 PM
B0515022.D	N030121-001C	SAMP	5	05/15/18 9:50 PM
B0515023.D	N030121-002E	SAMP	1	05/15/18 9:55 PM
B0515024.D	N030121-002E	SAMP	5	05/15/18 10:01 PM
B0515025.D	N030186-001D	SAMP	1	05/15/18 10:06 PM
B0515026.D	N030186-001D	SAMP	5	05/15/18 10:12 PM
B0515027.D	CCV1	CCV	1	05/15/18 10:17 PM
B0515028.D	CCB1	CCB	1	05/15/18 10:23 PM
B0515029.D	N030186-001D	SAMP	25	05/15/18 10:29 PM
B0515030.D	N030186-001D-PS	PS	1	05/15/18 10:34 PM
B0515031.D	N030186-001D-PS	PS	5	05/15/18 10:40 PM
B0515032.D	N030186-001D-MS	MS	1	05/15/18 10:49 PM
B0515033.D	N030186-001D-MS	MS	5	05/15/18 10:55 PM
B0515034.D	N030186-001D-MSD	MSD	1	05/15/18 11:00 PM
B0515035.D	N030186-001D-MSD	MSD	5	05/15/18 11:06 PM
B0515036.D	N030186-002D	SAMP	1	05/15/18 11:11 PM
B0515037.D	N030186-002D	SAMP	5	05/15/18 11:17 PM
B0515038.D	N030304-001A	SAMP	1	05/15/18 11:22 PM
B0515039.D	CCV2	CCV	1	05/15/18 11:28 PM
B0515040.D	CCB2	CCB	1	05/15/18 11:34 PM
B0515041.D	MB-67851	MBLK	1	05/15/18 11:39 PM
B0515042.D	LCS-67851	LCS	1	05/15/18 11:45 PM

INJECTION LOG: 180515B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0515043.D	N029902-003A	SAMP	1	05/15/18 11:50 PM
B0515044.D	N029902-003A	SAMP	5	05/15/18 11:56 PM
B0515045.D	N029902-005A	SAMP	1	05/16/18 12:01 AM
B0515046.D	N029902-005A	SAMP	5	05/16/18 12:07 AM
B0515047.D	N029902-004A	SAMP	1	05/16/18 12:12 AM
B0515048.D	N029902-004A	SAMP	5	05/16/18 12:18 AM
B0515049.D	N029902-004A	SAMP	25	05/16/18 12:23 AM
B0515050.D	N029902-001A	SAMP	5	05/16/18 12:29 AM
B0515051.D	CCV3	CCV	1	05/16/18 12:35 AM
B0515052.D	CCB3	CCB	1	05/16/18 12:40 AM
B0515053.D	LLCCV1	CCV2	1	05/16/18 12:46 AM
B0515054.D	ICSA2	ICSA	1	05/16/18 12:51 AM
B0515055.D	ICSAB2	ICSAB	1	05/16/18 12:57 AM
B0515056.D	N029902-001A	SAMP	1	05/16/18 1:02 AM
B0515057.D	N029902-001A	SAMP	25	05/16/18 1:08 AM
B0515058.D	N029902-001A	SAMP	125	05/16/18 1:14 AM
B0515059.D	N029902-001A-PS	PS	1	05/16/18 1:19 AM
B0515060.D	N029902-001A-PS	PS	5	05/16/18 1:25 AM
B0515061.D	N029902-001A-PS	PS	25	05/16/18 1:30 AM
B0515062.D	N029902-001A-MS	MS	1	05/16/18 1:36 AM
B0515063.D	N029902-001A-MS	MS	5	05/16/18 1:41 AM
B0515064.D	N029902-001A-MS	MS	25	05/16/18 1:47 AM
B0515065.D	N029902-001A-MSD	MSD	5	05/16/18 1:52 AM
B0515066.D	CCV4	CCV	1	05/16/18 1:58 AM
B0515067.D	CCB4	CCB	1	05/16/18 2:04 AM
B0515068.D	N029902-001A-MSD	MSD	1	05/16/18 2:09 AM
B0515069.D	N029902-001A-MSD	MSD	25	05/16/18 2:15 AM
B0515070.D	N029902-002A	SAMP	5	05/16/18 2:20 AM
B0515071.D	N029902-002A	SAMP	25	05/16/18 2:26 AM
B0515072.D	N029902-007A	SAMP	5	05/16/18 2:31 AM
B0515073.D	N029902-007A	SAMP	25	05/16/18 2:37 AM
B0515074.D	N029902-008A	SAMP	5	05/16/18 2:42 AM
B0515075.D	N029902-008A	SAMP	25	05/16/18 2:48 AM
B0515076.D	N029902-009A	SAMP	5	05/16/18 2:54 AM
B0515077.D	N029902-009A	SAMP	25	05/16/18 2:59 AM
B0515078.D	CCV5	CCV	1	05/16/18 3:05 AM
B0515079.D	CCB5	CCB	1	05/16/18 3:10 AM
B0515080.D	N029902-010A	SAMP	5	05/16/18 3:16 AM
B0515081.D	N029902-010A	SAMP	25	05/16/18 3:21 AM
B0515082.D	N029902-011A	SAMP	5	05/16/18 3:27 AM
B0515083.D	N029902-011A	SAMP	25	05/16/18 3:33 AM
B0515084.D	N029902-006A	SAMP	5	05/16/18 3:38 AM

INJECTION LOG: 180515B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0515085.D	N029902-006A	SAMP	25	05/16/18 3:44 AM
B0515086.D	CCV6	CCV	1	05/16/18 3:49 AM
B0515087.D	CCB6	CCB	1	05/16/18 3:55 AM
B0515088.D	LLCCV2	CCV2	1	05/16/18 4:00 AM
B0515089.D	ICSA3	ICSA	1	05/16/18 4:06 AM
B0515090.D	ICSAB3	ICSAB	1	05/16/18 4:11 AM
B0515091.D	N029902-002A	SAMP	1	05/16/18 4:17 AM
B0515092.D	RINSE	RINSE	1	05/16/18 4:23 AM
B0515093.D	N029902-007A	SAMP	1	05/16/18 4:28 AM
B0515094.D	RINSE	RINSE	1	05/16/18 4:34 AM
B0515095.D	N029902-008A	SAMP	1	05/16/18 4:39 AM
B0515096.D	RINSE	RINSE	1	05/16/18 4:45 AM
B0515097.D	N029902-009A	SAMP	1	05/16/18 4:50 AM
B0515098.D	RINSE	RINSE	1	05/16/18 4:56 AM
B0515099.D	N029902-010A	SAMP	1	05/16/18 5:01 AM
B0515100.D	RINSE	RINSE	1	05/16/18 5:07 AM
B0515101.D	CCV7	CCV	1	05/16/18 5:13 AM
B0515102.D	CCB7	CCB	1	05/16/18 5:18 AM
B0515103.D	N029902-011A	SAMP	1	05/16/18 5:24 AM
B0515104.D	RINSE	RINSE	1	05/16/18 5:29 AM
B0515105.D	N029902-006A	SAMP	1	05/16/18 5:35 AM
B0515106.D	RINSE	RINSE	1	05/16/18 5:40 AM
B0515107.D	RINSE	RINSE	1	05/16/18 5:46 AM
B0515108.D	CCV8	CCV	1	05/16/18 5:52 AM
B0515109.D	CCB8	CCB	1	05/16/18 5:57 AM
B0515110.D	LLCCV2	CCV2	1	05/16/18 6:04 AM
B0515111.D	ICSA3	ICSA	1	05/16/18 6:08 AM
B0515112.D	ICSAB3	ICSAB	1	05/16/18 6:14 AM
B0515113.D	RINSE	RINSE	1	05/16/18 6:19 AM
B0515114.D	RINSE	RINSE	1	05/16/18 6:25 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Page *1 of 1*

Prep Start Date: **5/15/2018 11:45:45**
Prep End Date: **5/15/2018 5:00:00 P**
Prep Batch **68083** Prep Code: **200.8_PR**

Reviewed/ Date: 5/17/2018
Initials/ Date: 5/17/2018
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.9**	**02-19**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68083	Aqueous		25	☐	0	0	25	1.000		
MB-68083	Aqueous		25	☐	0	0	25	1.000		
N030119-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N030121-001C	Water	<2	25	☐	0	0	25	1.000		
N030121-002E	Water	<2	25	☐	0	0	25	1.000		
N030148-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N030186-001D	Groundwater	<2	25	☐	0	0	25	1.000		
N030186-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030186-001D-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030186-002D	Groundwater	<2	25	☐	0	0	25	1.000		
N030304-001A	Drinking Water	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 15 May 2018 07:24:36 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	189953.00	0.00	
24	Mg	101350000.00	0.00	
25	Mg	13426800.00	0.00	
26	Mg	15396000.00	0.00	
59	Co	479514.00	0.00	
115	In	1110590.00	0.00	
206	Pb	183106.00	0.00	
207	Pb	161340.00	0.00	
208	Pb	396436.00	0.00	

RSD (%)

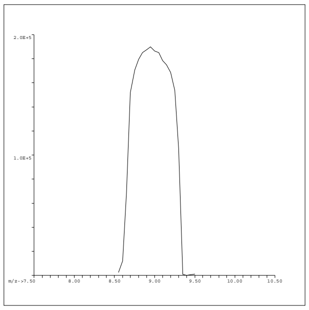
Element		Actual	Required	Flag
9	Be	1.22	5.00	
24	Mg	0.73	5.00	
25	Mg	0.85	5.00	
26	Mg	0.83	5.00	
59	Co	0.96	5.00	
115	In	0.74	5.00	
206	Pb	0.61	5.00	
207	Pb	0.47	5.00	
208	Pb	0.44	5.00	

Ion Ratio

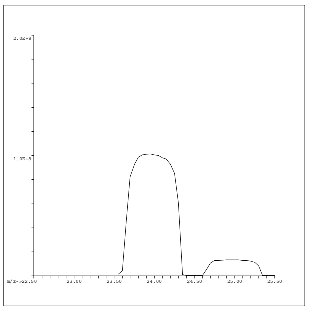
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

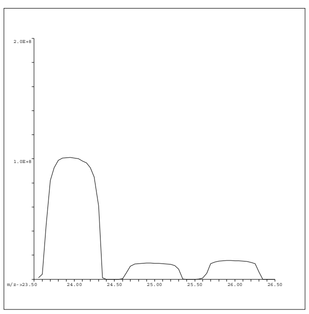
Element	Actual	Required	Flag



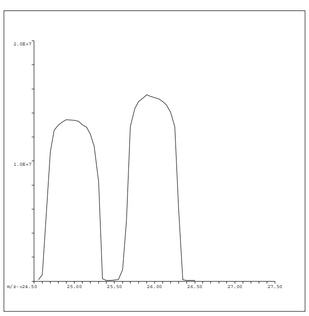
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



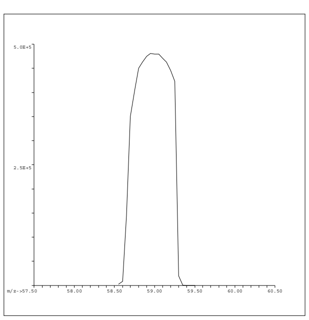
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



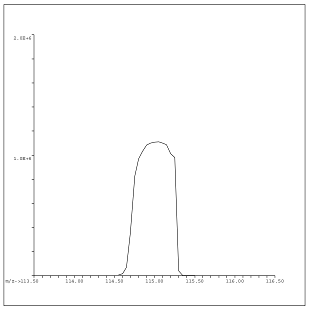
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



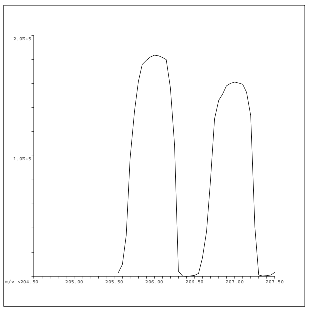
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



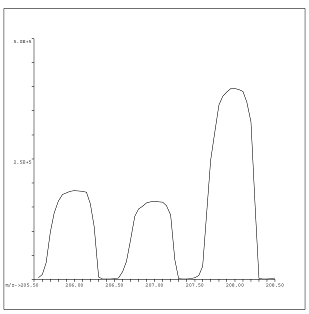
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



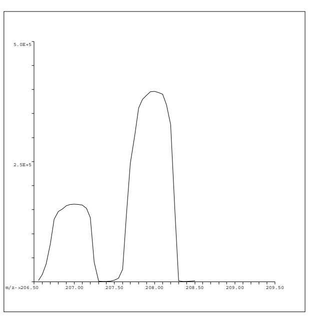
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180515B

Instrument ID: ICPMS-02

Analyte	Data File	B0515002.D	B0515004.D	B0515005.D	B0515006.D	B0515007.D	B0515008.D	B0515009.D	B0515010.D	
	Acq. Date-Time	05/15/2018 07:57 PM	05/15/2018 08:08 PM	05/15/2018 08:13 PM	05/15/2018 08:19 PM	05/15/2018 08:24 PM	05/15/2018 08:30 PM	05/15/2018 08:36 PM	05/15/2018 08:41 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	76957.8	74091.4	73286.9	73521	70668.7	68737.7	67420.2	66663.4	
55 Mn [2]	CPS	43.8	1523.5	13876.6	27550.6	53625.9	104437.4	252730.3	494416.9	1.0000
52 Cr [2]	CPS	233.2	3431.4	30058.5	58777	114779.6	223507.3	540170.9	1053291.1	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MWST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV** SampType: **ICV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **ICV** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	104.931	0.50	100.0	0	105	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **ZZZZZZ** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028037**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.527	0.50	0.5000	0	105	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **CCV** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.132	0.50	20.00	0	101	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **CCV** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.874	0.50	20.00	0	99.4	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **CCV** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/16/2018** SeqNo: **3028075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.586	0.50	20.00	0	97.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **ZZZZZZ** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/16/2018** SeqNo: **3028077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.535	0.50	0.5000	0	107	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICV** | SampType: **ICV** | TestCode: **200.8DIS_Cr** | Units: **µg/L** | Prep Date: | RunNo: **124087**
Client ID: **ICV** | Batch ID: **R124087** | TestNo: **EPA 200.8** | Analysis Date: **5/15/2018** | SeqNo: **3027941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.103	1.0	10.00	0	101	90	110				

Sample ID **LLICV** | SampType: **CCV1** | TestCode: **200.8DIS_Cr** | Units: **µg/L** | Prep Date: | RunNo: **124087**
Client ID: **ZZZZZZ** | Batch ID: **R124087** | TestNo: **EPA 200.8** | Analysis Date: **5/15/2018** | SeqNo: **3027943**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.872	1.0	1.000	0	87.2	80	120				

Sample ID **CCV1** | SampType: **CCV** | TestCode: **200.8DIS_Cr** | Units: **µg/L** | Prep Date: | RunNo: **124087**
Client ID: **CCV** | Batch ID: **R124087** | TestNo: **EPA 200.8** | Analysis Date: **5/15/2018** | SeqNo: **3027957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.310	1.0	20.00	0	102	90	110				

Sample ID **CCV2** | SampType: **CCV** | TestCode: **200.8DIS_Cr** | Units: **µg/L** | Prep Date: | RunNo: **124087**
Client ID: **CCV** | Batch ID: **R124087** | TestNo: **EPA 200.8** | Analysis Date: **5/15/2018** | SeqNo: **3027969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.249	1.0	20.00	0	101	90	110				

Sample ID **CCV3** | SampType: **CCV** | TestCode: **200.8DIS_Cr** | Units: **µg/L** | Prep Date: | RunNo: **124087**
Client ID: **CCV** | Batch ID: **R124087** | TestNo: **EPA 200.8** | Analysis Date: **5/16/2018** | SeqNo: **3027981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.398	1.0	20.00	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **124087**
Client ID: **ZZZZZZ**	Batch ID: **R124087**	TestNo: **EPA 200.8**		Analysis Date: **5/16/2018**	SeqNo: **3027983**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.890	1.0	1.000	0	89.0	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB** SampType: **ICB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **ICB** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **CCB** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **CCB** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **CCB** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/16/2018** SeqNo: **3028076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **ICB** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3027942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **CCB** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3027958**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **CCB** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3027970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **CCB** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/16/2018** SeqNo: **3027982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **ICSA** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **ICSAB** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3028039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	17.235	0.50	20.00	0	86.2	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **ICSA** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/16/2018** SeqNo: **3028078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **ICSAB** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/16/2018** SeqNo: **3028079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	17.754	0.50	20.00	0	88.8	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **ICSA** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3027944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **ICSAB** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3027945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.901	1.0	20.00	0	105	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **ICSA** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/16/2018** SeqNo: **3027984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **ICSAB** Batch ID: **R124087** TestNo: **EPA 200.8** Analysis Date: **5/16/2018** SeqNo: **3027985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.934	1.0	20.00	0	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180515B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	76957.8	76957.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	75584.7	76957.8	98.22	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	74091.4	76957.8	96.28	PASS	70-125
Std3-5/50 ppb	ICAL	1	73286.9	76957.8	95.23	PASS	70-125
Std4-10/100 ppb	ICAL	1	73521	76957.8	95.53	PASS	70-125
Std5-20/200 ppb	ICAL	1	70668.7	76957.8	91.83	PASS	70-125
Std6-40/400 ppb	ICAL	1	68737.7	76957.8	89.32	PASS	70-125
Std7-100/1000 ppb	ICAL	1	67420.2	76957.8	87.61	PASS	70-125
Std8-200/2000 ppb	ICAL	1	66663.4	76957.8	86.62	PASS	70-125
ICV	ICV	1	77531.8	76957.8	100.75	PASS	70-125
ICB	ICB	1	67065.5	76957.8	87.15	PASS	70-125
LLICV	CCV1	1	87376.2	76957.8	113.54	PASS	70-125
ICSA1	ICSA	1	73488.8	76957.8	95.49	PASS	70-125
ICSAB1	ICSAB	1	89429.1	76957.8	116.21	PASS	70-125
LLICV	CCV1	1	77681.8	76957.8	100.94	PASS	70-125
MB-68083	MBLK	1	70674.4	76957.8	91.84	PASS	70-125
LCS-68083	LCS	1	84345.3	76957.8	109.6	PASS	70-125
N030119-001B	SAMP	1	73471.2	76957.8	95.47	PASS	70-125
N030148-001B	SAMP	1	71064	76957.8	92.34	PASS	70-125
N030121-001C	SAMP	1	75225.5	76957.8	97.75	PASS	70-125
N030121-001C	SAMP	5	82161.3	76957.8	106.76	PASS	70-125
N030121-002E	SAMP	1	80278.7	76957.8	104.32	PASS	70-125
N030121-002E	SAMP	5	87054.4	76957.8	113.12	PASS	70-125
N030186-001D	SAMP	1	80499.8	76957.8	104.6	PASS	70-125
N030186-001D	SAMP	5	79863.5	76957.8	103.78	PASS	70-125
CCV1	CCV	1	82300.9	76957.8	106.94	PASS	70-125
CCB1	CCB	1	80200.9	76957.8	104.21	PASS	70-125
N030186-001D	SAMP	25	80705.2	76957.8	104.87	PASS	70-125
N030186-001D-PS	PS	1	78100.9	76957.8	101.49	PASS	70-125
N030186-001D-PS	PS	5	76927.5	76957.8	99.96	PASS	70-125
N030186-001D-MS	MS	1	79017.2	76957.8	102.68	PASS	70-125
N030186-001D-MS	MS	5	76965.6	76957.8	100.01	PASS	70-125
N030186-001D-MSD	MSD	1	78265.8	76957.8	101.7	PASS	70-125
N030186-001D-MSD	MSD	5	77455.8	76957.8	100.65	PASS	70-125
N030186-002D	SAMP	1	79408.5	76957.8	103.18	PASS	70-125
N030186-002D	SAMP	5	84665.7	76957.8	110.02	PASS	70-125
N030304-001A	SAMP	1	80743.2	76957.8	104.92	PASS	70-125
CCV2	CCV	1	79911.6	76957.8	103.84	PASS	70-125
CCB2	CCB	1	77829.8	76957.8	101.13	PASS	70-125
CCV3	CCV	1	76653.5	76957.8	99.6	PASS	70-125
CCB3	CCB	1	73903.4	76957.8	96.031	PASS	70-125

INTERNAL STANDARD: 180515B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
LLCCV1	CCV2	1	80186.3	76957.8	104.2	PASS	70-125
ICSA2	ICSA	1	73407.7	76957.8	95.39	PASS	70-125
ICSAB2	ICSAB	1	93101	76957.8	120.98	PASS	70-125
CCV4	CCV	1	64722.9	76957.8	84.1	PASS	70-125
CCB4	CCB	1	62781.1	76957.8	81.58	PASS	70-125
CCV5	CCV	1	60787.1	76957.8	78.99	PASS	70-125
CCB5	CCB	1	57929.2	76957.8	75.27	PASS	70-125
CCV6	CCV	1	53746.2	76957.8	69.84	NR!	70-125
CCB6	CCB	1	53200	76957.8	69.13	NR!	70-125
LLCCV2	CCV2	1	59176.7	76957.8	76.89	PASS	70-125
ICSA3	ICSA	1	50664.5	76957.8	65.83	NR!	70-125
ICSAB3	ICSAB	1	58500.8	76957.8	76.017	PASS	70-125
CCV7	CCV	1	28190.2	76957.8	36.63	NR!	70-125
CCB7	CCB	1	29169.7	76957.8	37.9	NR!	70-125
CCV8	CCV	1	22466.9	76957.8	29.19	NR!	70-125
CCB8	CCB	1	21918.4	76957.8	28.48	NR!	70-125
LLCCV2	CCV2	1	89648.4	76957.8	116.49	PASS	70-125
ICSA3	ICSA	1	21127.3	76957.8	27.45	NR!	70-125
ICSAB3	ICSAB	1	24304	76957.8	31.58	NR!	70-125

SERIAL DILUTION/ POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N030186
Test Method: EPA 200.8
Analysis Date: 5/15/2018

Matrix: Groundwater
Batch No.: 68083

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030186-001D DT 5X	Chromium	ug/L	1.924915	NA	1.817792	5.89%	10
N030186-001D DT 25X	Manganese	ug/L	313.3609	PASS	306.8948	2.11%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *16-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N030186-001D-PS**	SampType: **PS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:		RunNo: **124087**			
Client ID: **ZZZZZZ**	Batch ID: **68083**	TestNo: **EPA 200.8**		Analysis Date: **5/15/2018**		SeqNo: **3028055**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	418.015	2.5	100.0	306.9	111	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **N030186-001D-PS** SampType: **PS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **124087**
Client ID: **ZZZZZZ** Batch ID: **68083** TestNo: **EPA 200.8** Analysis Date: **5/15/2018** SeqNo: **3027960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.771	1.0	10.00	1.818	99.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R123964
ASSET #: N030186

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 5/9/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ___________

Initial Calibration and Initial Calibration Verification		Ist Level Review			2nd Level Review		
		Y	N	N/A	Y	N	N/A
1.	ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2.	Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3.	ICV within ± 10% of expected value.	X					
Continuing Calibration							
4.	CCV after every 10 injections and at the end of analysis sequence.	X					
5.	CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6.	Calibration blanks run after ICV and CCV?	X					
7.	Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8.	Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9.	Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information							
10.	All samples are within linear range.	X					
11.	All samples pH within 9.3-9.7 when analyzed?	X					
12.	Duplicate sample injections for every sample. (7199 only)			X			
13.	For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14.	For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15.	For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16.	For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17.	For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18.	For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19.	EPA 3060A digestion performed on solid samples (7199 only)			X			
20.	Are all peaks within RT window, ± 0.2 min?	X					
21.	Are all samples analyzed within hold time?	X					
22.	For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items							
23.	Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24.	LCS compounds are within control limits.	X					
25.	MS/MSD, RPD's are within control limits.	X					
26.	Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information							
27.	Runlog complete and included in package.	X					
28.	Extraction log complete and included in package (if applicable)			X			
29.	All manual integrations initialed, date and reasons included.	X					
30.	Before and after manual integration chromatogram included in the package	X					
31.	All samples and QC raw data present in package.	X					
Preliminary Report							
32.	Does the raw data match the preliminary report?	X					
33.	Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34	Is the QC summary report present and complete?	X					

Comments:

with confirmation for sample N030186-001

SECOND LEVEL REVIEW:

		Y	N	N/A
1.	All assigned sample(s) analyzed			
2.	Matrix / units correct			
3.	Is QC present and complete?			
4.	Are analytical results correct? (dilutions,calculations)			
5.	Is first level review correct and complete?			

1st Level Reviewer rba Date: 5/11/2018

2nd Level Reviewer [illegible signature] 5/22/2018 Date: ______

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}\text{ ,µg/L} = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N030186-002A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}\text{ ,µg/L} = 4.8917 * 100$$

$$Cr^{+6}\text{ ,µg/L} = 489.1700$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}\text{ ,µg/L} = 490}$$

rba 5/11/2018

ANALYSIS RUN LOG

ASSET LABORATORIES

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	04/30/18 10:42 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/30/18 10:52 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/30/18 11:01 AM	Reported
13	MB-R123727	MBLK	1	Hexavalent Chromium	04/30/18 11:11 AM	Reported
14	LCS-R123727	LCS	1	Hexavalent Chromium	04/30/18 11:20 AM	Reported
15	N030044-001A	SAMP	5	Hexavalent Chromium	04/30/18 11:30 AM	Reported
16	N030044-001AMS	MS	5	Hexavalent Chromium	04/30/18 11:39 AM	Reported
17	N030044-002A	SAMP	5	Hexavalent Chromium	04/30/18 11:49 AM	Reported
18	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 11:58 AM	Not Reported
19	N030044-003A	SAMP	5	Hexavalent Chromium	04/30/18 12:08 PM	Reported
20	N030044-003AMS	MS	5	Hexavalent Chromium	04/30/18 12:17 PM	Reported
21	N030044-004A	SAMP	1000	Hexavalent Chromium	04/30/18 12:26 PM	Reported
22	N030044-004AMS	MS	1000	Hexavalent Chromium	04/30/18 12:36 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/30/18 12:45 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/30/18 12:55 PM	Reported
25	N030044-005A	SAMP	50	Hexavalent Chromium	04/30/18 1:04 PM	Reported
26	N030044-005AMS	MS	50	Hexavalent Chromium	04/30/18 1:14 PM	Reported
27	N030044-006A	SAMP	200	Hexavalent Chromium	04/30/18 1:23 PM	Reported
28	N030044-006AMS	MS	200	Hexavalent Chromium	04/30/18 1:33 PM	Reported
29	N030044-007A	SAMP	200	Hexavalent Chromium	04/30/18 1:42 PM	Reported
30	N030044-007AMS	MS	200	Hexavalent Chromium	04/30/18 1:52 PM	Reported
31	N030044-008A	SAMP	1000	Hexavalent Chromium	04/30/18 2:01 PM	Reported
32	N030044-008AMS	MS	1000	Hexavalent Chromium	04/30/18 2:10 PM	Reported
33	N030044-009A	SAMP	50	Hexavalent Chromium	04/30/18 2:20 PM	Reported
34	N030044-009AMS	MS	50	Hexavalent Chromium	04/30/18 2:29 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/30/18 2:39 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/30/18 2:48 PM	Reported
37	N030044-010A	SAMP	1	Hexavalent Chromium	04/30/18 2:58 PM	Reported
38	N030044-010AMS	MS	1	Hexavalent Chromium	04/30/18 3:07 PM	Reported
39	N030044-011A	SAMP	1	Hexavalent Chromium	04/30/18 3:17 PM	Reported
40	N030044-011AMS	MS	1	Hexavalent Chromium	04/30/18 3:26 PM	Reported
41	N030044-001ADUP	DUP	5	Hexavalent Chromium	04/30/18 3:36 PM	Reported
42	N030044-004AMSD	MSD	1000	Hexavalent Chromium	04/30/18 3:45 PM	Reported

rba 5/6/2018

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 3:55 PM	Reported
44	N029859-008A	SAMP	1	Hexavalent Chromium	04/30/18 4:06 PM	Not Reported
45	N029859-008AMS	MS	1	Hexavalent Chromium	04/30/18 4:17 PM	Not Reported
46	N029859-009A	SAMP	1	Hexavalent Chromium	04/30/18 4:26 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/30/18 4:36 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/30/18 4:45 PM	Reported
49	N029859-009AMS	MS	1	Hexavalent Chromium	04/30/18 4:55 PM	Not Reported
50	N029859-011A	SAMP	1	Hexavalent Chromium	04/30/18 5:04 PM	Not Reported
51	N029859-011AMS	MS	1	Hexavalent Chromium	04/30/18 5:14 PM	Not Reported
52	CCV-4	CCV	1	Hexavalent Chromium	04/30/18 5:23 PM	Reported
53	CCB-4	CCB	1	Hexavalent Chromium	04/30/18 5:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180430A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**30/Apr/18 18:19:59**
No. of Injections:	**56**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		04/30/2018 10:42	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/30/2018 10:52	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/30/2018 11:01	Finished	ICB R180418A
13	MB-H2O,MBLK,1,	13	1000	Unknown		04/30/2018 11:11	Finished	MB R180418A
14	LCS-H2O,LCS,1,	14	1000	Unknown		04/30/2018 11:20	Finished	LCS, IWST-180129B
15	N030044-001A,SAMF	15	1000	Unknown		04/30/2018 11:30	Finished	SAMP,2>10mL
16	N030044-001AMS,MS	16	1000	Unknown		04/30/2018 11:39	Finished	MS (5ppb), IWST-180129B,2>1
17	N030044-002A,SAMF	17	1000	Unknown		04/30/2018 11:49	Finished	SAMP,2>10mL
18	N030044-002AMS,MS	18	1000	Unknown		04/30/2018 11:58	Finished	MS (5ppb), IWST-180129B,2>1
19	N030044-003A,SAMF	19	1000	Unknown		04/30/2018 12:08	Finished	SAMP,2>10mL
20	N030044-003AMS,MS	20	1000	Unknown		04/30/2018 12:17	Finished	MS (5ppb), IWST-180129B,2>1
21	N030044-004A,SAMF	21	1000	Unknown		04/30/2018 12:26	Finished	SAMP,0.01>10mL
22	N030044-004AMS,MS	22	1000	Unknown		04/30/2018 12:36	Finished	MS (5ppb), IWST-180129B,0.0
23	CCV-1,CCV1,1,	23	1000	Unknown		04/30/2018 12:45	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	24	1000	Unknown		04/30/2018 12:55	Finished	CCB R180418A
25	N030044-005A,SAMF	25	1000	Unknown		04/30/2018 13:04	Finished	SAMP,0.2>10mL
26	N030044-005AMS,MS	26	1000	Unknown		04/30/2018 13:14	Finished	MS (5ppb), IWST-180129B,0.2
27	N030044-006A,SAMF	27	1000	Unknown		04/30/2018 13:23	Finished	SAMP,0.05>10mL
28	N030044-006AMS,MS	28	1000	Unknown		04/30/2018 13:33	Finished	MS (5ppb), IWST-180129B,0.0
29	N030044-007A,SAMF	29	1000	Unknown		04/30/2018 13:42	Finished	SAMP,0.05>10mL
30	N030044-007AMS,MS	30	1000	Unknown		04/30/2018 13:52	Finished	MS (5ppb), IWST-180129B,0.0
31	N030044-008A,SAMF	31	1000	Unknown		04/30/2018 14:01	Finished	SAMP,0.01>10mL
32	N030044-008AMS,MS	32	1000	Unknown		04/30/2018 14:10	Finished	MS (5ppb), IWST-180129B,0.0
33	N030044-009A,SAMF	33	1000	Unknown		04/30/2018 14:20	Finished	SAMP,0.2>10mL
34	N030044-009AMS,MS	34	1000	Unknown		04/30/2018 14:29	Finished	MS (5ppb), IWST-180129B,0.2
35	CCV-2,CCV,1,	35	1000	Unknown		04/30/2018 14:39	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	36	1000	Unknown		04/30/2018 14:48	Finished	CCB R180418A
37	N030044-010A,SAMF	37	1000	Unknown		04/30/2018 14:58	Finished	SAMP,10mL
38	N030044-010AMS,MS	38	1000	Unknown		04/30/2018 15:07	Finished	MS (1ppb), IWST-180129B,10
39	N030044-011A,SAMF	39	1000	Unknown		04/30/2018 15:17	Finished	SAMP,10mL
40	N030044-011AMS,MS	40	1000	Unknown		04/30/2018 15:26	Finished	MS (1ppb), IWST-180129B,10
41	N030044-001ADUP,D	41	1000	Unknown		04/30/2018 15:36	Finished	DUP,2>10mL
42	N030044-004AMSD,M	42	1000	Unknown		04/30/2018 15:45	Finished	MSD (5ppb), IWST-180129B,0.
43	N030044-002AMS,MS	43	1000	Unknown		04/30/2018 15:55	Finished	MS (5ppb), IWST-180129B,2>1
44	N029859-008A,SAMF	1	1000	Unknown		04/30/2018 16:06	Finished	SAMP,10mL
45	N029859-008AMS,MS	2	1000	Unknown		04/30/2018 16:17	Finished	MS (1ppb), IWST-180129B,10
46	N029859-009A,SAMF	3	1000	Unknown		04/30/2018 16:26	Finished	SAMP,10mL
47	CCV-3,CCV1,1,	4	1000	Unknown		04/30/2018 16:36	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	5	1000	Unknown		04/30/2018 16:45	Finished	CCB R180418A
49	N029859-009AMS,MS	6	1000	Unknown		04/30/2018 16:55	Finished	MS (1ppb), IWST-180129B,10
50	N029859-011A,SAMF	7	1000	Unknown		04/30/2018 17:04	Finished	SAMP,10mL
51	N029859-011AMS,MS	8	1000	Unknown		04/30/2018 17:14	Finished	MS (1ppb), IWST-180129B,10
52	CCV-4,CCV,1,	9	1000	Unknown		04/30/2018 17:23	Finished	CCV @5ppb, IWST-180129A
53	CCB-4,CCB,1,	10	1000	Unknown		04/30/2018 17:33	Finished	CCB R180418A
54	SHUTDOWN	11	1000	Unknown		04/30/2018 17:42	Finished	
55	Eluent: R180430A	12	1000	Unknown		n.a.	Finished	Eluent
56	PCR: R180430B	13	1000	Unknown		n.a.	Finished	Post-Column Reagent

jba 5/6/2018

INJECTION LOG: 180509A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/09/18 8:42 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/09/18 8:53 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/09/18 9:03 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/09/18 9:12 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/09/18 9:22 AM	Reported
15	MB-R123964	MBLK	1	Hexavalent Chromium	05/09/18 9:31 AM	Reported
16	LCS-R123964	LCS	1	Hexavalent Chromium	05/09/18 9:41 AM	Reported
17	N030251-004A	SAMP	25	Hexavalent Chromium	05/09/18 9:50 AM	Not Reported
18	N030251-004A	SAMP	5	Hexavalent Chromium	05/09/18 9:59 AM	Reported
19	N030251-004A	SAMP	125	Hexavalent Chromium	05/09/18 10:09 AM	Not Reported
20	N030251-003A	SAMP	5	Hexavalent Chromium	05/09/18 10:18 AM	Not Reported
21	N030251-003A	SAMP	25	Hexavalent Chromium	05/09/18 10:28 AM	Reported
22	N030251-003A	SAMP	125	Hexavalent Chromium	05/09/18 10:44 AM	Not Reported
23	N030251-001A	SAMP	5	Hexavalent Chromium	05/09/18 10:55 AM	Not Reported
24	N030251-002A	SAMP	5	Hexavalent Chromium	05/09/18 11:05 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/09/18 11:14 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/09/18 11:24 AM	Reported
27	N030251-004AMS	MS	25	Hexavalent Chromium	05/09/18 11:33 AM	Not Reported
28	N030251-003AMS	MS	5	Hexavalent Chromium	05/09/18 11:43 AM	Not Reported
29	N030251-004AMS	MS	5	Hexavalent Chromium	05/09/18 12:00 PM	Reported
30	N030251-003AMS	MS	25	Hexavalent Chromium	05/09/18 12:11 PM	Reported
31	N030186-001A	SAMP	1	Hexavalent Chromium	05/09/18 12:21 PM	Reported
32	N030251-004AMS	MS	1	Hexavalent Chromium	05/09/18 12:30 PM	Not Reported
33	N030251-004AREP	DUP	5	Hexavalent Chromium	05/09/18 12:40 PM	Reported
34	N030251-003ADUP	DUP	25	Hexavalent Chromium	05/09/18 12:49 PM	Reported
35	N030251-004A	SAMP	1	Hexavalent Chromium	05/09/18 12:59 PM	Not Reported
36	N030186-001AMS	MS	1	Hexavalent Chromium	05/09/18 1:08 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/09/18 1:18 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/09/18 1:27 PM	Reported
39	N030254-001A	SAMP	5	Hexavalent Chromium	05/09/18 1:37 PM	Not Reported
40	N030254-002A	SAMP	5	Hexavalent Chromium	05/09/18 1:46 PM	Not Reported
41	N030254-003A	SAMP	5	Hexavalent Chromium	05/09/18 1:56 PM	Reported
42	N030254-004A	SAMP	5	Hexavalent Chromium	05/09/18 2:05 PM	Reported

INJECTION LOG: 180509A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030254-001AMS	MS	5	Hexavalent Chromium	05/09/18 2:14 PM	Not Reported
44	N030254-002AMS	MS	5	Hexavalent Chromium	05/09/18 2:24 PM	Not Reported
45	N030254-003AMS	MS	5	Hexavalent Chromium	05/09/18 2:33 PM	Reported
46	N030254-004AMS	MS	5	Hexavalent Chromium	05/09/18 2:43 PM	Reported
47	N030254-001AMS	MS	25	Hexavalent Chromium	05/09/18 2:52 PM	Reported
48	N030254-002AMS	MS	25	Hexavalent Chromium	05/09/18 3:02 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/09/18 3:11 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	05/09/18 3:21 PM	Reported
51	N030254-001A	SAMP	25	Hexavalent Chromium	05/09/18 3:30 PM	Reported
52	N030254-002A	SAMP	25	Hexavalent Chromium	05/09/18 3:40 PM	Reported
53	N030254-004AMSD	MSD	5	Hexavalent Chromium	05/09/18 3:49 PM	Reported
54	N030254-001AREP	DUP	25	Hexavalent Chromium	05/09/18 3:59 PM	Reported
55	N030254-002AREP	DUP	25	Hexavalent Chromium	05/09/18 4:08 PM	Reported
56	N030254-003AREP	DUP	5	Hexavalent Chromium	05/09/18 4:17 PM	Reported
57	N030254-004AREP	DUP	5	Hexavalent Chromium	05/09/18 4:27 PM	Reported
58	N030186-002A	SAMP	100	Hexavalent Chromium	05/09/18 4:36 PM	Reported
59	N030186-002AMS	MS	100	Hexavalent Chromium	05/09/18 4:49 PM	Reported
60	N030186-002AMSD	MSD	100	Hexavalent Chromium	05/09/18 5:00 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	05/09/18 5:09 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	05/09/18 5:19 PM	Reported
63	N030254-003A	SAMP	1	Hexavalent Chromium	05/09/18 5:28 PM	Not Reported
64	N030254-003AMS	MS	1	Hexavalent Chromium	05/09/18 5:38 PM	Not Reported
65	N030254-004A	SAMP	1	Hexavalent Chromium	05/09/18 5:47 PM	Not Reported
66	N030254-004AMS	MS	1	Hexavalent Chromium	05/09/18 5:57 PM	Not Reported
67	BLANK	BLANK	1	Hexavalent Chromium	05/09/18 6:06 PM	Not Reported
68	N030256-001A	SAMP	1	Hexavalent Chromium	05/09/18 6:15 PM	Reported
69	N030256-002A	SAMP	1	Hexavalent Chromium	05/09/18 6:25 PM	Reported
70	N030256-002ADUP	DUP	1	Hexavalent Chromium	05/09/18 6:34 PM	Reported
71	N030256-003A	SAMP	1	Hexavalent Chromium	05/09/18 6:44 PM	~~Not~~ Reported
72	N030256-004A	SAMP	1	Hexavalent Chromium	05/09/18 6:53 PM	~~Not~~ Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	05/09/18 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	05/09/18 7:12 PM	Reported
75	N030256-005A	SAMP	1	Hexavalent Chromium	05/09/18 7:22 PM	Reported
76	N030256-006A	SAMP	1	Hexavalent Chromium	05/09/18 7:31 PM	Reported
77	N030256-007A	SAMP	1	Hexavalent Chromium	05/09/18 7:41 PM	Reported
78	N030256-008A	SAMP	1	Hexavalent Chromium	05/09/18 7:50 PM	Reported
79	N030256-009A	SAMP	1	Hexavalent Chromium	05/09/18 8:00 PM	Reported
80	N030256-010A	SAMP	1	Hexavalent Chromium	05/09/18 8:09 PM	Reported
81	N030123-022A	SAMP	1	Hexavalent Chromium	05/09/18 8:18 PM	Reported
82	N030123-022AMS	MS	1	Hexavalent Chromium	05/09/18 8:28 PM	Reported
83	N030228-004A	SAMP	20	Hexavalent Chromium	05/09/18 8:37 PM	Not Reported
84	CCV-7	CCV	1	Hexavalent Chromium	05/09/18 8:47 PM	Reported

INJECTION LOG: 180509A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	05/09/18 8:56 PM	Reported
86	N030123-023A	SAMP	5	Hexavalent Chromium	05/09/18 9:06 PM	Reported
87	N030123-023AMS	MS	5	Hexavalent Chromium	05/09/18 9:15 PM	Reported
88	N030123-023A	SAMP	25	Hexavalent Chromium	05/09/18 9:25 PM	Not Reported
89	N030123-023AMS	MS	25	Hexavalent Chromium	05/09/18 9:34 PM	Not Reported
90	CCV-8	CCV1	1	Hexavalent Chromium	05/09/18 9:44 PM	Reported
91	CCB-8	CCB	1	Hexavalent Chromium	05/09/18 9:53 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180509A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/May/18 22:23:52**
No. of Injections:	**94**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/09/2018 08:42	Finished	BLANK
11	BLANK	2	1000	Unknown		05/09/2018 08:53	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		05/09/2018 09:03	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/09/2018 09:12	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		05/09/2018 09:22	Finished	CCB R180409B
15	MB-H2O,MBLK,1,	6	1000	Unknown		05/09/2018 09:31	Finished	MB R180409B
16	LCS-H2O,LCS,1,	7	1000	Unknown		05/09/2018 09:41	Finished	LCS, IWST-180129B
17	N030251-004A,SAMF	8	1000	Unknown		05/09/2018 09:50	Finished	SAMP,0.4>10mL
18	N030251-004A,SAMF	9	1000	Unknown		05/09/2018 09:59	Finished	SAMP,2>10mL
19	N030251-004A,SAMF	10	1000	Unknown		05/09/2018 10:09	Finished	SAMP,0.08>10mL
20	N030251-003A,SAMF	11	1000	Unknown		05/09/2018 10:18	Finished	SAMP,2>10mL
21	N030251-003A,SAMF	12	1000	Unknown		05/09/2018 10:28	Finished	SAMP,0.4>10mL
22	N030251-003A,SAMF	13	1000	Unknown		05/09/2018 10:44	Finished	SAMP,0.08>10mL
23	N030251-001A,SAMF	14	1000	Unknown		05/09/2018 10:55	Finished	SAMP,2>10mL
24	N030251-002A,SAMF	15	1000	Unknown		05/09/2018 11:05	Finished	SAMP,2>10mL
25	CCV-2,CCV1,1,	16	1000	Unknown		05/09/2018 11:14	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	17	1000	Unknown		05/09/2018 11:24	Finished	CCB R180409B
27	N030251-004AMS,MS	18	1000	Unknown		05/09/2018 11:33	Finished	MS (1ppb), IWST-180129B,0.4
28	N030251-003AMS,MS	19	1000	Unknown		05/09/2018 11:43	Finished	MS (1ppb), IWST-180129B,2>1
29	N030251-004AMS,MS	1	1000	Unknown		05/09/2018 12:00	Finished	MS (1ppb), IWST-180129B,2>1
30	N030251-003AMS,MS	2	1000	Unknown		05/09/2018 12:11	Finished	MS (1ppb), IWST-180129B,0.4
31	N030186-001A,SAMF	3	1000	Unknown		05/09/2018 12:21	Finished	SAMP,10mL
32	N030251-004AMS,MS	4	1000	Unknown		05/09/2018 12:30	Finished	MS (1ppb), IWST-180129B,10
33	N030251-004AREP,D	5	1000	Unknown		05/09/2018 12:40	Finished	REP,2>10mL
34	N030251-003A~~REP~~,DDUP	6	1000	Unknown		05/09/2018 12:49	Finished	REP,0.4>10mL
35	N030251-004A,SAMF	7	1000	Unknown		05/09/2018 12:59	Finished	SAMP,10mL
36	N030186-001AMS,MS	8	1000	Unknown		05/09/2018 13:08	Finished	MS (1ppb), IWST-180129B,10
37	CCV-3,CCV,1,	9	1000	Unknown		05/09/2018 13:18	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	10	1000	Unknown		05/09/2018 13:27	Finished	CCB R180418A
39	N030254-001A,SAMF	12	1000	Unknown		05/09/2018 13:37	Finished	SAMP,2>10mL
40	N030254-002A,SAMF	13	1000	Unknown		05/09/2018 13:46	Finished	SAMP,2>10mL
41	N030254-003A,SAMF	14	1000	Unknown		05/09/2018 13:56	Finished	SAMP,2>10mL
42	N030254-004A,SAMF	15	1000	Unknown		05/09/2018 14:05	Finished	SAMP,2>10mL
43	N030254-001AMS,MS	16	1000	Unknown		05/09/2018 14:14	Finished	MS (1ppb), IWST-180129B,2>1
44	N030254-002AMS,MS	17	1000	Unknown		05/09/2018 14:24	Finished	MS (1ppb), IWST-180129B,2>1
45	N030254-003AMS,MS	18	1000	Unknown		05/09/2018 14:33	Finished	MS (1ppb), IWST-180129B,2>1
46	N030254-004AMS,MS	19	1000	Unknown		05/09/2018 14:43	Finished	MS (1ppb), IWST-180129B,2>1
47	N030254-001AMS,MS	21	1000	Unknown		05/09/2018 14:52	Finished	MS (1ppb), IWST-180129B,0.4
48	N030254-002AMS,MS	22	1000	Unknown		05/09/2018 15:02	Finished	MS (1ppb), IWST-180129B,0.4
49	CCV-4,CCV1,1,	23	1000	Unknown		05/09/2018 15:11	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	24	1000	Unknown		05/09/2018 15:21	Finished	CCB R180418A
51	N030254-001A,SAMF	25	1000	Unknown		05/09/2018 15:30	Finished	SAMP,0.4>10mL
52	N030254-002A,SAMF	26	1000	Unknown		05/09/2018 15:40	Finished	SAMP,0.4>10mL
53	N030254-004AMSD,M	27	1000	Unknown		05/09/2018 15:49	Finished	MSD (1ppb), IWST-180129B,0.
54	N030254-001AREP,D	28	1000	Unknown		05/09/2018 15:59	Finished	REP,0.4>10mL
55	N030254-002AREP,D	29	1000	Unknown		05/09/2018 16:08	Finished	REP,0.4>10mL
56	N030254-003AREP,D	30	1000	Unknown		05/09/2018 16:17	Finished	REP,2>10mL
57	N030254-004AREP,D	31	1000	Unknown		05/09/2018 16:27	Finished	REP,2>10mL
58	N030186-002A,SAMF	32	1000	Unknown		05/09/2018 16:36	Finished	SAMP,0.1>10mL
59	N030186-002AMS,MS	1	1000	Unknown		05/09/2018 16:49	Finished	MS (5ppb), IWST-180129B,0.1
60	N030186-002AMSD,M	2	1000	Unknown		05/09/2018 17:00	Finished	MSD (5ppb), IWST-180129B,0.

rba 5/11/2018

61	CCV-5,CCV,1,	3	1000	Unknown		05/09/2018 17:09	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	4	1000	Unknown		05/09/2018 17:19	Finished	CCB R180409B
63	N030254-003A,SAMF	5	1000	Unknown		05/09/2018 17:28	Finished	SAMP,10mL
64	N030254-003AMS,MS	6	1000	Unknown		05/09/2018 17:38	Finished	MS (1ppb), IWST-180129B,10
65	N030254-004A,SAMF	7	1000	Unknown		05/09/2018 17:47	Finished	SAMP,10mL
66	N030254-004AMS,MS	8	1000	Unknown		05/09/2018 17:57	Finished	MS (1ppb), IWST-180129B,10
67	BLANK	9	1000	Unknown		05/09/2018 18:06	Finished	BLANK
68	N030256-001A,SAMF	10	1000	Unknown		05/09/2018 18:15	Finished	SAMP,10mL
69	N030256-002A,SAMF	11	1000	Unknown		05/09/2018 18:25	Finished	SAMP,10mL
70	N030256-002ADUP,D	12	1000	Unknown		05/09/2018 18:34	Finished	DUP,10mL
71	N030256-003A,SAMF	13	1000	Unknown		05/09/2018 18:44	Finished	SAMP,10mL
72	N030256-004A,SAMF	14	1000	Unknown		05/09/2018 18:53	Finished	SAMP,10mL
73	CCV-6,CCV1,1,	15	1000	Unknown		05/09/2018 19:03	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	16	1000	Unknown		05/09/2018 19:12	Finished	CCB R180409B
75	N030256-005A,SAMF	17	1000	Unknown		05/09/2018 19:22	Finished	SAMP,10mL
76	N030256-006A,SAMF	18	1000	Unknown		05/09/2018 19:31	Finished	SAMP,10mL
77	N030256-007A,SAMF	19	1000	Unknown		05/09/2018 19:41	Finished	SAMP,10mL
78	N030256-008A,SAMF	20	1000	Unknown		05/09/2018 19:50	Finished	SAMP,10mL
79	N030256-009A,SAMF	21	1000	Unknown		05/09/2018 20:00	Finished	SAMP,10mL
80	N030256-010A,SAMF	22	1000	Unknown		05/09/2018 20:09	Finished	SAMP,10mL
81	N030123-022A,SAMF	23	1000	Unknown		05/09/2018 20:18	Finished	SAMP,10mL
82	N030123-022AMS,MS	24	1000	Unknown		05/09/2018 20:28	Finished	MS (1ppb), IWST-180129B,10
83	N030228-004A,SAMF	25	1000	Unknown		05/09/2018 20:37	Finished	SAMP,0.5>10mL
84	CCV-7,CCV,1,	26	1000	Unknown		05/09/2018 20:47	Finished	CCV @5ppb, IWST-180129A
85	CCB-7,CCB,1,	27	1000	Unknown		05/09/2018 20:56	Finished	CCB R180409B
86	N030123-023A,SAMF	28	1000	Unknown		05/09/2018 21:06	Finished	SAMP,2>10mL
87	N030123-023AMS,MS	29	1000	Unknown		05/09/2018 21:15	Finished	MS (1ppb), IWST-180129B,2>1
88	N030123-023A,SAMF	30	1000	Unknown		05/09/2018 21:25	Finished	SAMP,0.4>10mL
89	N030123-023AMS,MS	31	1000	Unknown		05/09/2018 21:34	Finished	MS (1ppb), IWST-180129B,0.4
90	CCV-8,CCV1,1,	32	1000	Unknown		05/09/2018 21:44	Finished	CCV @10ppb, IWST-180129A
91	CCB-8,CCB,1,	33	1000	Unknown		05/09/2018 21:53	Finished	CCB R180409B
92	SHUTDOWN	34	1000	Unknown		05/09/2018 22:03	Finished	
93	Eluent: R180508A	35	1000	Unknown		n.a.	Finished	Eluent
94	PCR: R180508B	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 5/8/18
Time Prepared: 1016H
Prepared By: MSA

Slope: 96.62
pH 4: 4.00 @25.0°C
7: 7.02 @25.0°C
10: 9.97 @25.0°C
LIS:

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M805094
NH4OH + NH4SO4 buffer: M8V409B

6N NaOH: M712294

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030148-001A	8.92	9.45	~250 ml	~250 ml	+6 drps NaOH	M8V409B
2)	N030149-1A	9.11	9.62			+5 drps NaOH	
3)	2A	9.43	-				
4)	4A	9.96	-				
5)	5A	9.07	9.61			+6 " "	
6)	6A	9.01	9.56			+6 " "	
7)	9A	9.15	9.49			+4 " "	
8)	10A	9.09	9.54			+6 " "	
9)	11A	9.21	9.53			+4 " "	
10)	12A	9.05	9.56			+6 " "	
11)	13A	9.70	-				
12)	14A	9.56	-			~~+6 " "~~ M	
13)	15A	8.96	9.50			+6 " "	
14)	16A	9.15	9.43			+4 " "	
15)	17A	9.09	9.52			+6 " "	
	18A	9.56	-				

Sample Preparation

Date Prepared: 5/8/18
Time Prepared: 1016H
Prepared By: MSA

Reagent ID:
Sulfuric Acid: 9854
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M805V9A / M805V8A
NH4OH + NH4SO4 buffer: M8V409B / M8V418A

6N NaOH: M712294

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030149-19A	9.46	-	~250 ml	~250 ml		M8V409B
2)	20A	9.48	-				
3)	21A	9.53	-				
4)	22A	9.01	9.58			+6 drps NaOH	
5)	N030150-1A	9.14	9.48			+4 " "	
6)	N030185-1A	9.39	-				M8V418A
7)	2A	9.41	-				
8)	3A	9.37	-				
9)	4A	9.70	-				
10)	5A	9.67	-				
11)	6A	9.60	-				
12)	7A	9.56	-				
13)	N030186-1A	9.76	-				M8V409B
14)	2A	9.19	9.52			+4 " "	
15)	N030189-1A	9.70	-				
	2A	9.41	-				

Logbook No. 14

rba 5/11/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/30/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0607	0.2618	1.2924	2.5813	3.8731	5.1050	0.9999

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ICV** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3022231**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.194	0.20	5.000	0	104	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3022232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.215	0.20	0.2000	0	108	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCV** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.004	0.20	5.000	0	100	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.219	0.20	0.2000	0	109	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022241**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.072	0.20	10.00	0	101	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCV** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.031	0.20	5.000	0	101	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.053	0.20	10.00	0	101	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCV** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022269**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.018	0.20	5.000	0	100	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022276**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.132	0.20	10.00	0	101	95	105				

Sample ID **CCV-7** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCV** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.991	0.20	5.000	0	99.8	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-8** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ZZZZZZ** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022290**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.150	0.20	10.00	0	102	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **ICB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **4/30/2018** SeqNo: **3022233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022287**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-8** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **123964**
Client ID: **CCB** Batch ID: **R123964** TestNo: **EPA 218.6** Analysis Date: **5/9/2018** SeqNo: **3022291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/9/2018

Sample Name	Retention Time	Evaluation
ICV	4.248	
CCV-1	4.215	
CCV-2	4.215	
CCV-3	4.190	
CCV-4	4.215	
CCV-5	4.215	
CCV-6	4.215	
CCV-7	4.215	
CCV-8	4.215	

Average	4.212	
Actual RT Window	4.132 -	4.292
Applied RT Window	4.012 -	4.412

MB-R123964	N.A.	N.A.
LCS-R123964	4.206	PASS
N030251-004A	N.A.	N.A.
N030251-004A	N.A.	N.A.
N030251-004A	N.A.	N.A.
N030251-003A	N.A.	N.A.
N030251-003A	N.A.	N.A.
N030251-003A	N.A.	N.A.
N030251-001A	N.A.	N.A.
N030251-002A	N.A.	N.A.
N030251-004AMS	4.206	PASS
N030251-003AMS	3.948	FAIL
N030251-004AMS	4.190	PASS
N030251-003AMS	4.173	PASS
N030186-001A	4.198	PASS
N030251-004AMS	4.040	PASS
N030251-004AREP	N.A.	N.A.
N030251-003ADUP	N.A.	N.A.
N030251-004A	N.A.	N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/9/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.215		
CCV-2	4.215		
CCV-3	4.190		
CCV-4	4.215		
CCV-5	4.215		
CCV-6	4.215		
CCV-7	4.215		
CCV-8	4.215		
Average	4.212		
Actual RT Window	4.132 -	4.292	
Applied RT Window	4.012 -	4.412	
N030186-001AMS	4.190		PASS
N030254-001A	N.A.		N.A.
N030254-002A	N.A.		N.A.
N030254-003A	N.A.		N.A.
N030254-004A	N.A.		N.A.
N030254-001AMS	4.065		PASS
N030254-002AMS	4.090		PASS
N030254-003AMS	4.148		PASS
N030254-004AMS	4.148		PASS
N030254-001AMS	4.190		PASS
N030254-002AMS	4.190		PASS
N030254-001A	N.A.		N.A.
N030254-002A	N.A.		N.A.
N030254-004AMSD	4.148		PASS
N030254-001AREP	N.A.		N.A.
N030254-002AREP	N.A.		N.A.
N030254-003AREP	N.A.		N.A.
N030254-004AREP	N.A.		N.A.
N030186-002A	4.206		PASS
N030186-002AMS	4.215		PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/9/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.215		
CCV-2	4.215		
CCV-3	4.190		
CCV-4	4.215		
CCV-5	4.215		
CCV-6	4.215		
CCV-7	4.215		
CCV-8	4.215		
Average	4.212		
Actual RT Window	4.132 -	4.292	
Applied RT Window	4.012 -	4.412	
N030186-002AMSD	4.198		PASS
N030254-003A	N.A.		N.A.
N030254-003AMS	N.A.		N.A.
N030254-004A	N.A.		N.A.
N030254-004AMS	N.A.		N.A.
N030256-001A	4.156		PASS
N030256-002A	N.A.		N.A.
N030256-002ADUP	N.A.		N.A.
N030256-003A	4.165		PASS
N030256-004A	N.A.		N.A.
N030256-005A	N.A.		N.A.
N030256-006A	N.A.		N.A.
N030256-007A	N.A.		N.A.
N030256-008A	4.173		PASS
N030256-009A	N.A.		N.A.
N030256-010A	N.A.		N.A.
N030123-022A	N.A.		N.A.
N030123-022AMS	4.206		PASS
N030228-004A	4.206		PASS
N030123-023A	N.A.		N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/9/2018

Sample Name	Retention Time		Evaluation
ICV	4.248		
CCV-1	4.215		
CCV-2	4.215		
CCV-3	4.190		
CCV-4	4.215		
CCV-5	4.215		
CCV-6	4.215		
CCV-7	4.215		
CCV-8	4.215		
Average	4.212		
Actual RT Window	4.132 -	4.292	
Applied RT Window	4.012 -	4.412	
N030123-023AMS	4.156		PASS
N030123-023A	N.A.		N.A.
N030123-023AMS	4.198		PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	$t_{(n-1)}$ value	MDL	PQL	Remarks
Datafile	170505	170508	170509	170510	170511	170512	170515						
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2018 (1st Quarter)

Method Name:	**Hexavalent Chromium by IC**	Matrix:	**WATER**
Method Number:	EPA Method 218.6/7199	Unit:	µg/L
Analysis Date(s):	3/21/2018		
Analyst:	Ria Abes		

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.116

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.201	**100**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	04/30/18 10:42 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/30/18 10:52 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	04/30/18 11:01 AM	Reported
13	MB-R123727	MBLK	1	Hexavalent Chromium	04/30/18 11:11 AM	Reported
14	LCS-R123727	LCS	1	Hexavalent Chromium	04/30/18 11:20 AM	Reported
15	N030044-001A	SAMP	5	Hexavalent Chromium	04/30/18 11:30 AM	Reported
16	N030044-001AMS	MS	5	Hexavalent Chromium	04/30/18 11:39 AM	Reported
17	N030044-002A	SAMP	5	Hexavalent Chromium	04/30/18 11:49 AM	Reported
18	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 11:58 AM	Not Reported
19	N030044-003A	SAMP	5	Hexavalent Chromium	04/30/18 12:08 PM	Reported
20	N030044-003AMS	MS	5	Hexavalent Chromium	04/30/18 12:17 PM	Reported
21	N030044-004A	SAMP	1000	Hexavalent Chromium	04/30/18 12:26 PM	Reported
22	N030044-004AMS	MS	1000	Hexavalent Chromium	04/30/18 12:36 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	04/30/18 12:45 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	04/30/18 12:55 PM	Reported
25	N030044-005A	SAMP	50	Hexavalent Chromium	04/30/18 1:04 PM	Reported
26	N030044-005AMS	MS	50	Hexavalent Chromium	04/30/18 1:14 PM	Reported
27	N030044-006A	SAMP	200	Hexavalent Chromium	04/30/18 1:23 PM	Reported
28	N030044-006AMS	MS	200	Hexavalent Chromium	04/30/18 1:33 PM	Reported
29	N030044-007A	SAMP	200	Hexavalent Chromium	04/30/18 1:42 PM	Reported
30	N030044-007AMS	MS	200	Hexavalent Chromium	04/30/18 1:52 PM	Reported
31	N030044-008A	SAMP	1000	Hexavalent Chromium	04/30/18 2:01 PM	Reported
32	N030044-008AMS	MS	1000	Hexavalent Chromium	04/30/18 2:10 PM	Reported
33	N030044-009A	SAMP	50	Hexavalent Chromium	04/30/18 2:20 PM	Reported
34	N030044-009AMS	MS	50	Hexavalent Chromium	04/30/18 2:29 PM	Reported
35	CCV-2	CCV	1	Hexavalent Chromium	04/30/18 2:39 PM	Reported
36	CCB-2	CCB	1	Hexavalent Chromium	04/30/18 2:48 PM	Reported
37	N030044-010A	SAMP	1	Hexavalent Chromium	04/30/18 2:58 PM	Reported
38	N030044-010AMS	MS	1	Hexavalent Chromium	04/30/18 3:07 PM	Reported
39	N030044-011A	SAMP	1	Hexavalent Chromium	04/30/18 3:17 PM	Reported
40	N030044-011AMS	MS	1	Hexavalent Chromium	04/30/18 3:26 PM	Reported
41	N030044-001ADUP	DUP	5	Hexavalent Chromium	04/30/18 3:36 PM	Reported
42	N030044-004AMSD	MSD	1000	Hexavalent Chromium	04/30/18 3:45 PM	Reported

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INJECTION LOG: 180430A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030044-002AMS	MS	5	Hexavalent Chromium	04/30/18 3:55 PM	Reported
44	N029859-008A	SAMP	1	Hexavalent Chromium	04/30/18 4:06 PM	Not Reported
45	N029859-008AMS	MS	1	Hexavalent Chromium	04/30/18 4:17 PM	Not Reported
46	N029859-009A	SAMP	1	Hexavalent Chromium	04/30/18 4:26 PM	Not Reported
47	CCV-3	CCV1	1	Hexavalent Chromium	04/30/18 4:36 PM	Reported
48	CCB-3	CCB	1	Hexavalent Chromium	04/30/18 4:45 PM	Reported
49	N029859-009AMS	MS	1	Hexavalent Chromium	04/30/18 4:55 PM	Not Reported
50	N029859-011A	SAMP	1	Hexavalent Chromium	04/30/18 5:04 PM	Not Reported
51	N029859-011AMS	MS	1	Hexavalent Chromium	04/30/18 5:14 PM	Not Reported
52	CCV-4	CCV	1	Hexavalent Chromium	04/30/18 5:23 PM	Reported
53	CCB-4	CCB	1	Hexavalent Chromium	04/30/18 5:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180430A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**30/Apr/18 18:19:59**
No. of Injections:	**56**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		04/30/2018 10:42	Finished	ICV @5ppb, IWST-180129B
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		04/30/2018 10:52	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		04/30/2018 11:01	Finished	ICB R180418A
13	MB-H2O,MBLK,1,	13	1000	Unknown		04/30/2018 11:11	Finished	MB R180418A
14	LCS-H2O,LCS,1,	14	1000	Unknown		04/30/2018 11:20	Finished	LCS, IWST-180129B
15	N030044-001A,SAMF	15	1000	Unknown		04/30/2018 11:30	Finished	SAMP,2>10mL
16	N030044-001AMS,MS	16	1000	Unknown		04/30/2018 11:39	Finished	MS (5ppb), IWST-180129B,2>1
17	N030044-002A,SAMF	17	1000	Unknown		04/30/2018 11:49	Finished	SAMP,2>10mL
18	N030044-002AMS,MS	18	1000	Unknown		04/30/2018 11:58	Finished	MS (5ppb), IWST-180129B,2>1
19	N030044-003A,SAMF	19	1000	Unknown		04/30/2018 12:08	Finished	SAMP,2>10mL
20	N030044-003AMS,MS	20	1000	Unknown		04/30/2018 12:17	Finished	MS (5ppb), IWST-180129B,2>1
21	N030044-004A,SAMF	21	1000	Unknown		04/30/2018 12:26	Finished	SAMP,0.01>10mL
22	N030044-004AMS,MS	22	1000	Unknown		04/30/2018 12:36	Finished	MS (5ppb), IWST-180129B,0.0
23	CCV-1,CCV1,1,	23	1000	Unknown		04/30/2018 12:45	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	24	1000	Unknown		04/30/2018 12:55	Finished	CCB R180418A
25	N030044-005A,SAMF	25	1000	Unknown		04/30/2018 13:04	Finished	SAMP,0.2>10mL
26	N030044-005AMS,MS	26	1000	Unknown		04/30/2018 13:14	Finished	MS (5ppb), IWST-180129B,0.2
27	N030044-006A,SAMF	27	1000	Unknown		04/30/2018 13:23	Finished	SAMP,0.05>10mL
28	N030044-006AMS,MS	28	1000	Unknown		04/30/2018 13:33	Finished	MS (5ppb), IWST-180129B,0.0
29	N030044-007A,SAMF	29	1000	Unknown		04/30/2018 13:42	Finished	SAMP,0.05>10mL
30	N030044-007AMS,MS	30	1000	Unknown		04/30/2018 13:52	Finished	MS (5ppb), IWST-180129B,0.0
31	N030044-008A,SAMF	31	1000	Unknown		04/30/2018 14:01	Finished	SAMP,0.01>10mL
32	N030044-008AMS,MS	32	1000	Unknown		04/30/2018 14:10	Finished	MS (5ppb), IWST-180129B,0.0
33	N030044-009A,SAMF	33	1000	Unknown		04/30/2018 14:20	Finished	SAMP,0.2>10mL
34	N030044-009AMS,MS	34	1000	Unknown		04/30/2018 14:29	Finished	MS (5ppb), IWST-180129B,0.2
35	CCV-2,CCV,1,	35	1000	Unknown		04/30/2018 14:39	Finished	CCV @5ppb, IWST-180129A
36	CCB-2,CCB,1,	36	1000	Unknown		04/30/2018 14:48	Finished	CCB R180418A
37	N030044-010A,SAMF	37	1000	Unknown		04/30/2018 14:58	Finished	SAMP,10mL
38	N030044-010AMS,MS	38	1000	Unknown		04/30/2018 15:07	Finished	MS (1ppb), IWST-180129B,10
39	N030044-011A,SAMF	39	1000	Unknown		04/30/2018 15:17	Finished	SAMP,10mL
40	N030044-011AMS,MS	40	1000	Unknown		04/30/2018 15:26	Finished	MS (1ppb), IWST-180129B,10
41	N030044-001ADUP,D	41	1000	Unknown		04/30/2018 15:36	Finished	DUP,2>10mL
42	N030044-004AMSD,M	42	1000	Unknown		04/30/2018 15:45	Finished	MSD (5ppb), IWST-180129B,0.
43	N030044-002AMS,MS	43	1000	Unknown		04/30/2018 15:55	Finished	MS (5ppb), IWST-180129B,2>1
44	N029859-008A,SAMF	1	1000	Unknown		04/30/2018 16:06	Finished	SAMP,10mL
45	N029859-008AMS,MS	2	1000	Unknown		04/30/2018 16:17	Finished	MS (1ppb), IWST-180129B,10
46	N029859-009A,SAMF	3	1000	Unknown		04/30/2018 16:26	Finished	SAMP,10mL
47	CCV-3,CCV1,1,	4	1000	Unknown		04/30/2018 16:36	Finished	CCV @10ppb, IWST-180129A
48	CCB-3,CCB,1,	5	1000	Unknown		04/30/2018 16:45	Finished	CCB R180418A
49	N029859-009AMS,MS	6	1000	Unknown		04/30/2018 16:55	Finished	MS (1ppb), IWST-180129B,10
50	N029859-011A,SAMF	7	1000	Unknown		04/30/2018 17:04	Finished	SAMP,10mL
51	N029859-011AMS,MS	8	1000	Unknown		04/30/2018 17:14	Finished	MS (1ppb), IWST-180129B,10
52	CCV-4,CCV,1,	9	1000	Unknown		04/30/2018 17:23	Finished	CCV @5ppb, IWST-180129A
53	CCB-4,CCB,1,	10	1000	Unknown		04/30/2018 17:33	Finished	CCB R180418A
54	SHUTDOWN	11	1000	Unknown		04/30/2018 17:42	Finished	
55	Eluent: R180430A	12	1000	Unknown		n.a.	Finished	Eluent
56	PCR: R180430B	13	1000	Unknown		n.a.	Finished	Post-Column Reagent

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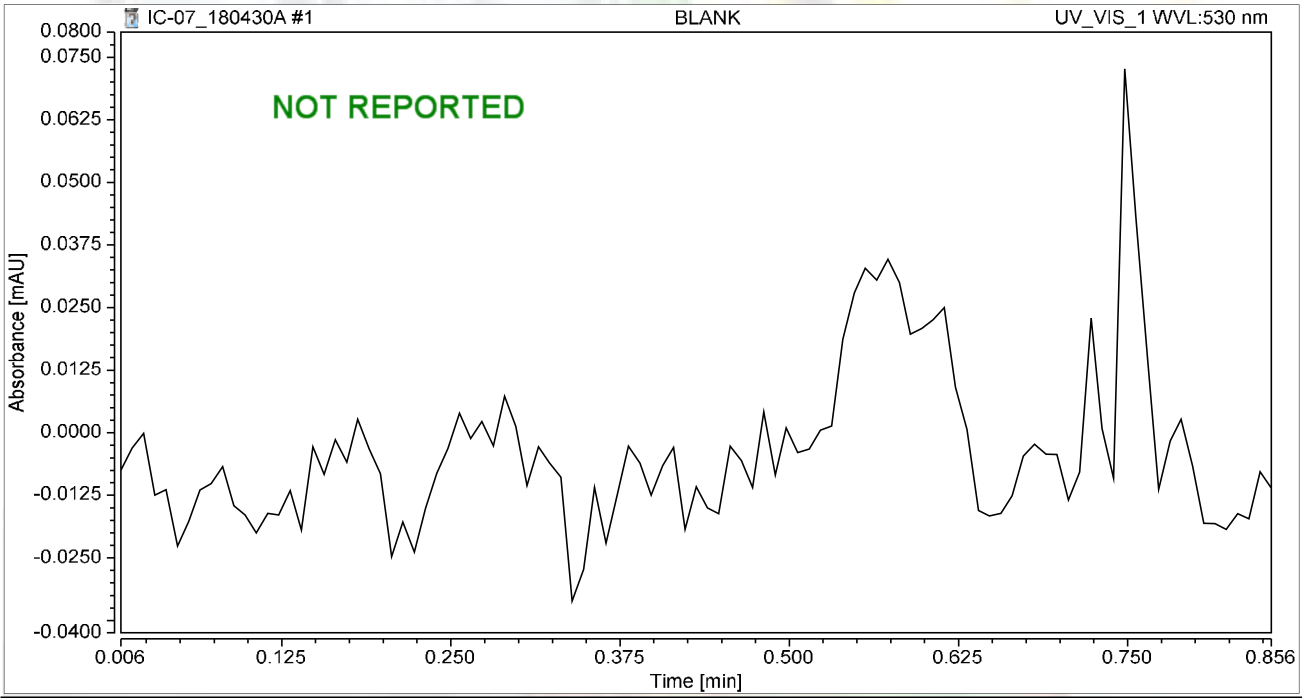
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**0.85**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

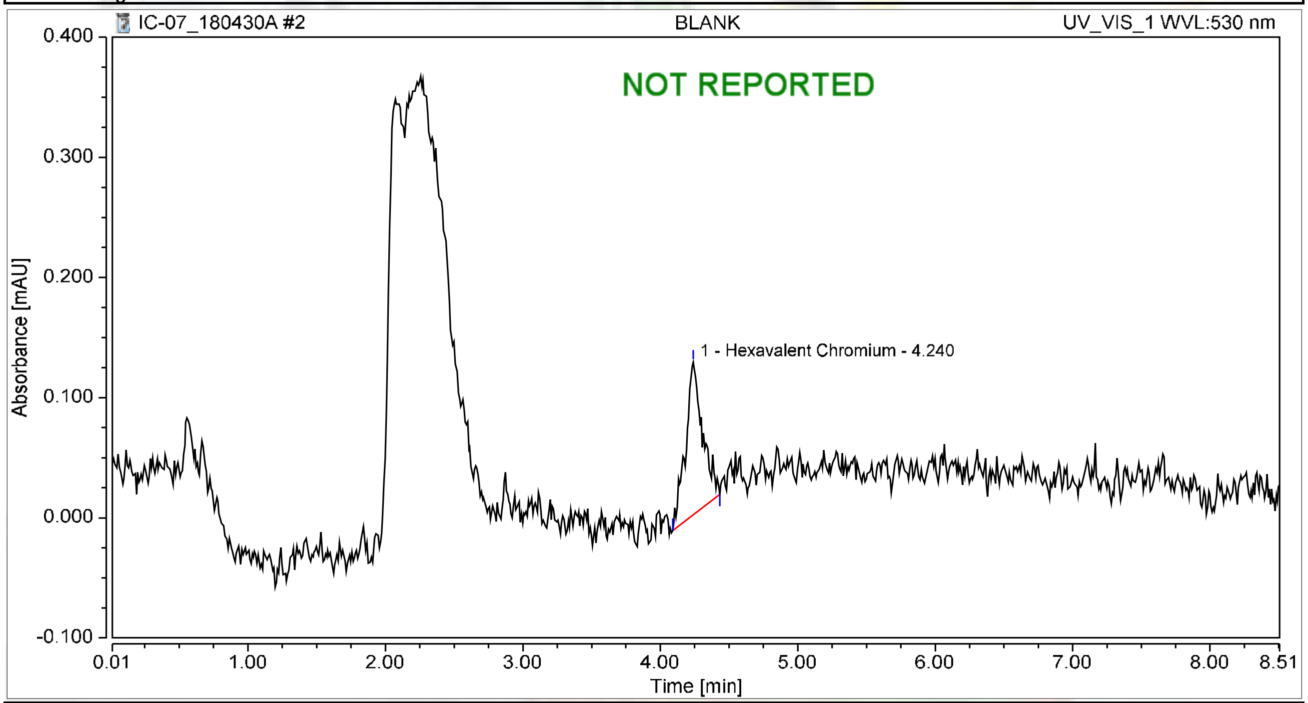
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

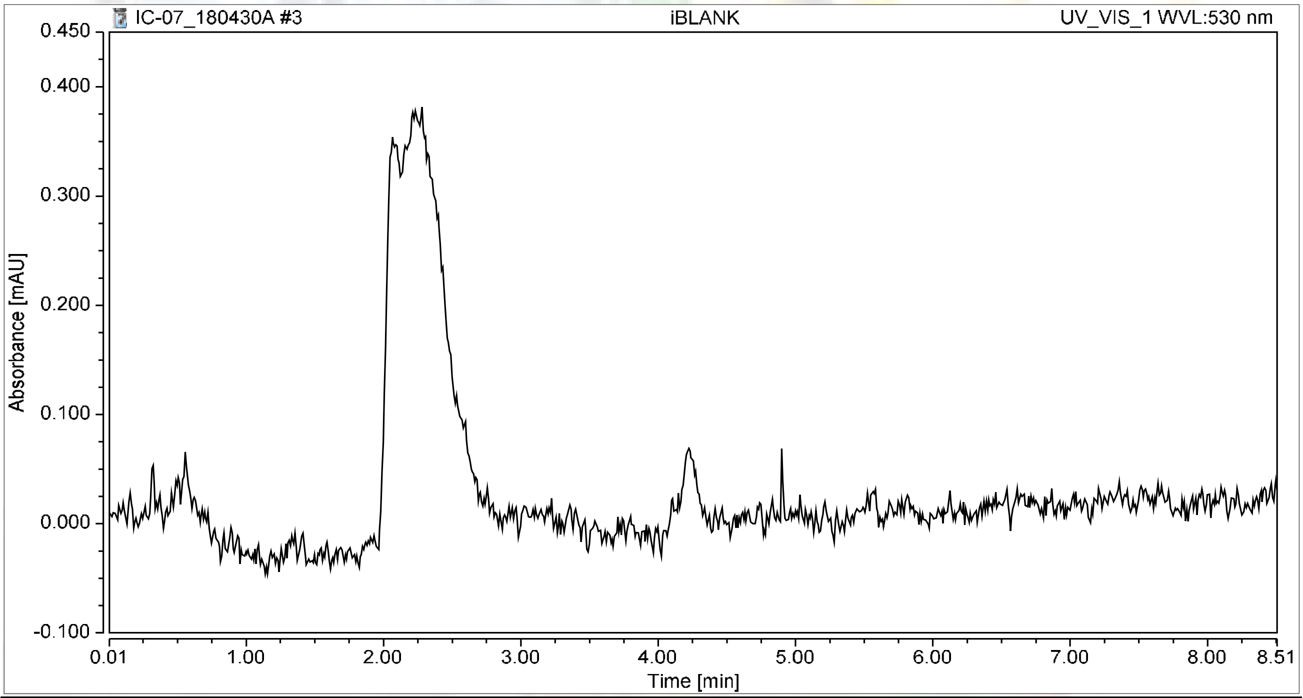
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.240	0.018	0.127	100.00	100.00	0.0705
Total:			**0.018**	**0.127**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

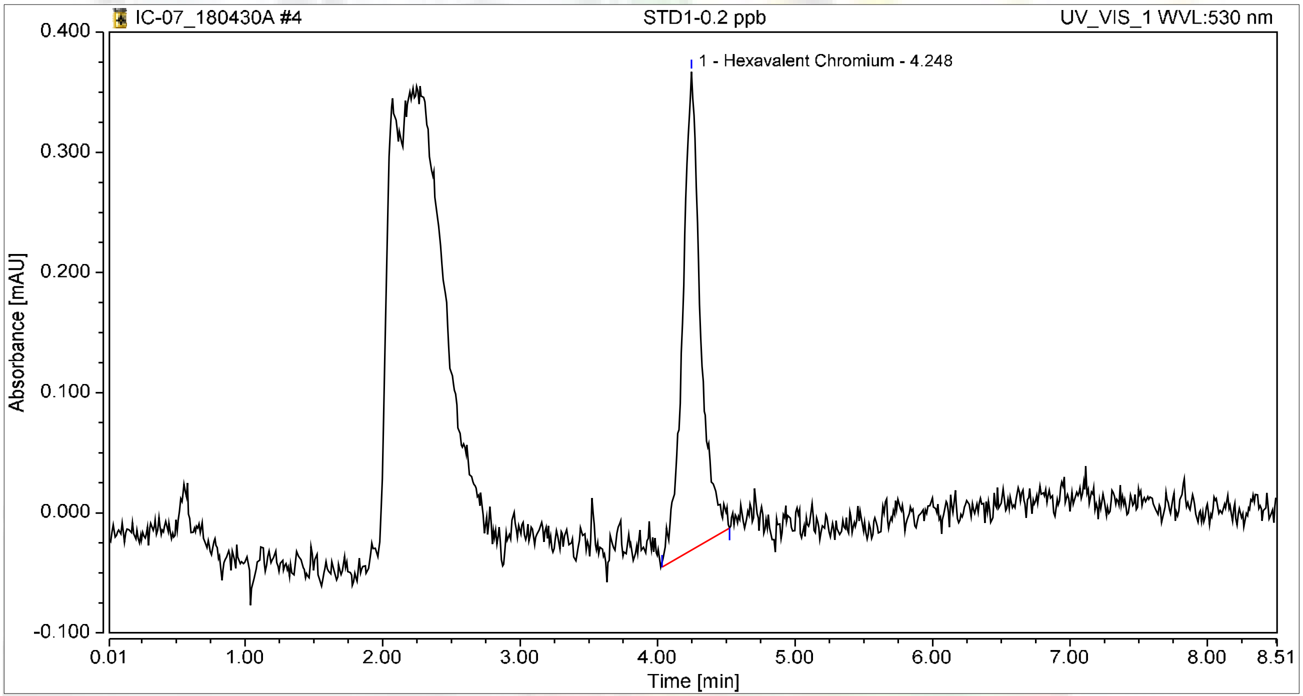
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

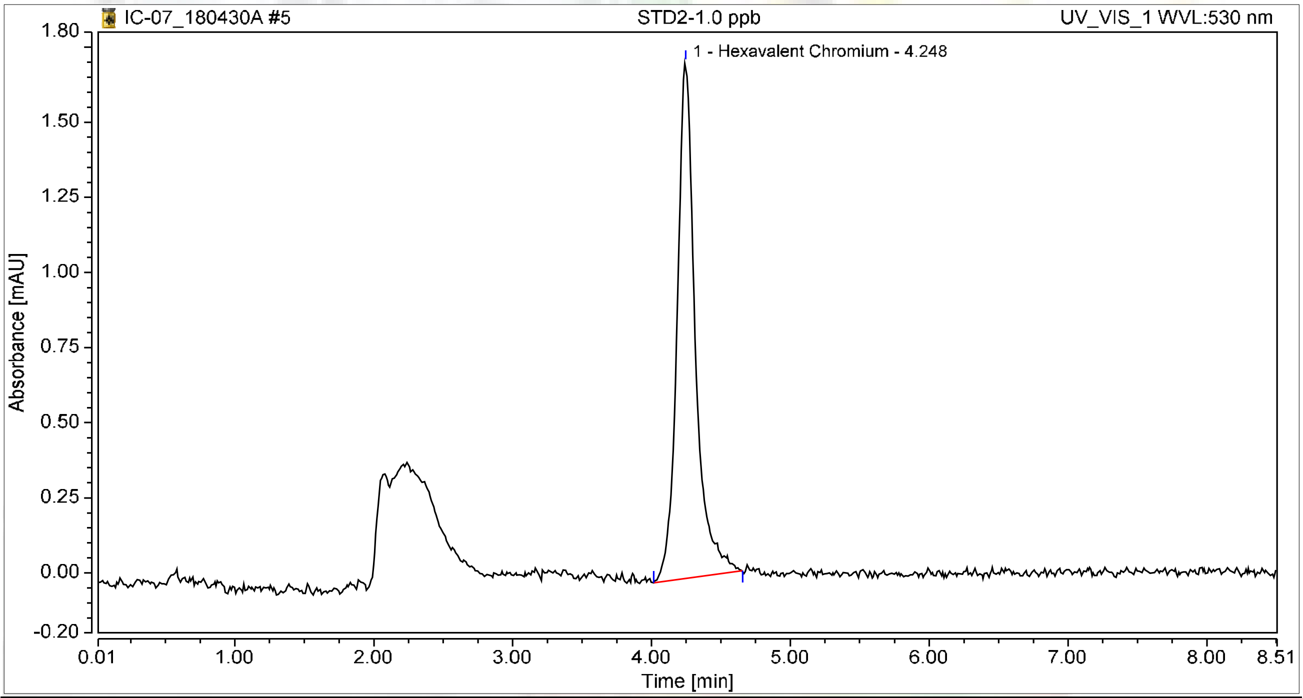
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.061	0.398	100.00	100.00	0.2363
Total:			**0.061**	**0.398**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

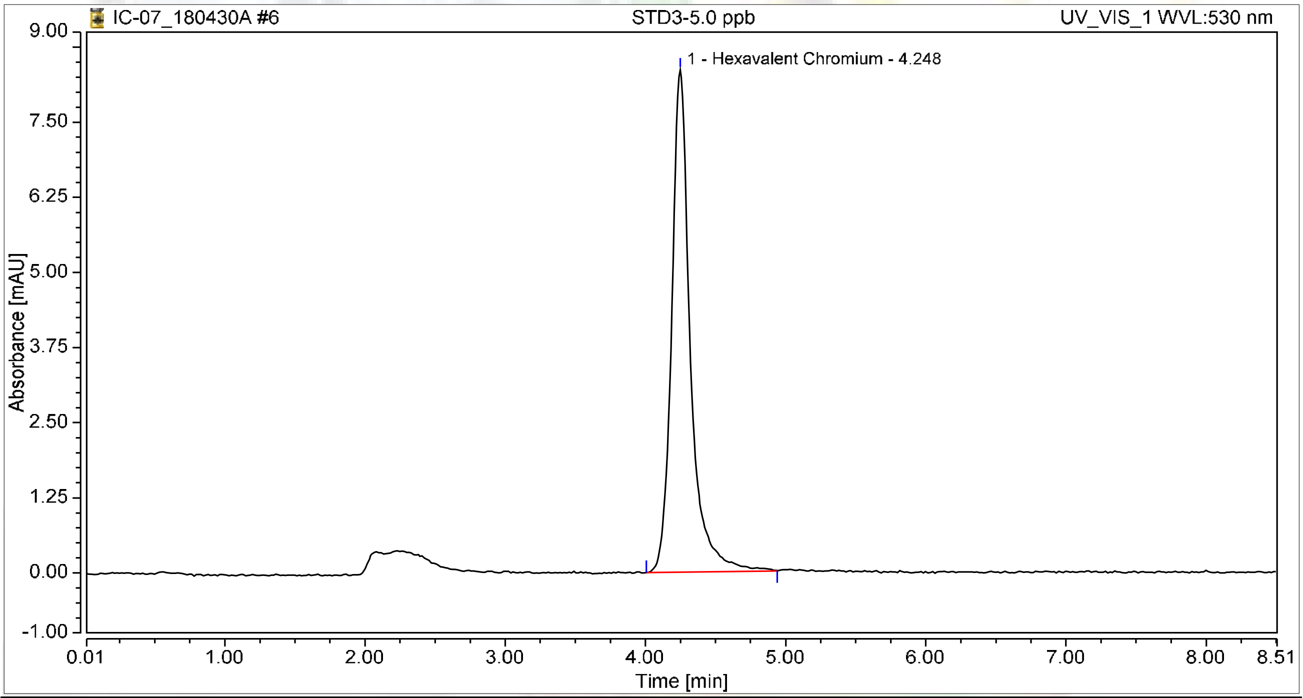
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.262	1.718	100.00	100.00	1.0201
Total:			**0.262**	**1.718**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

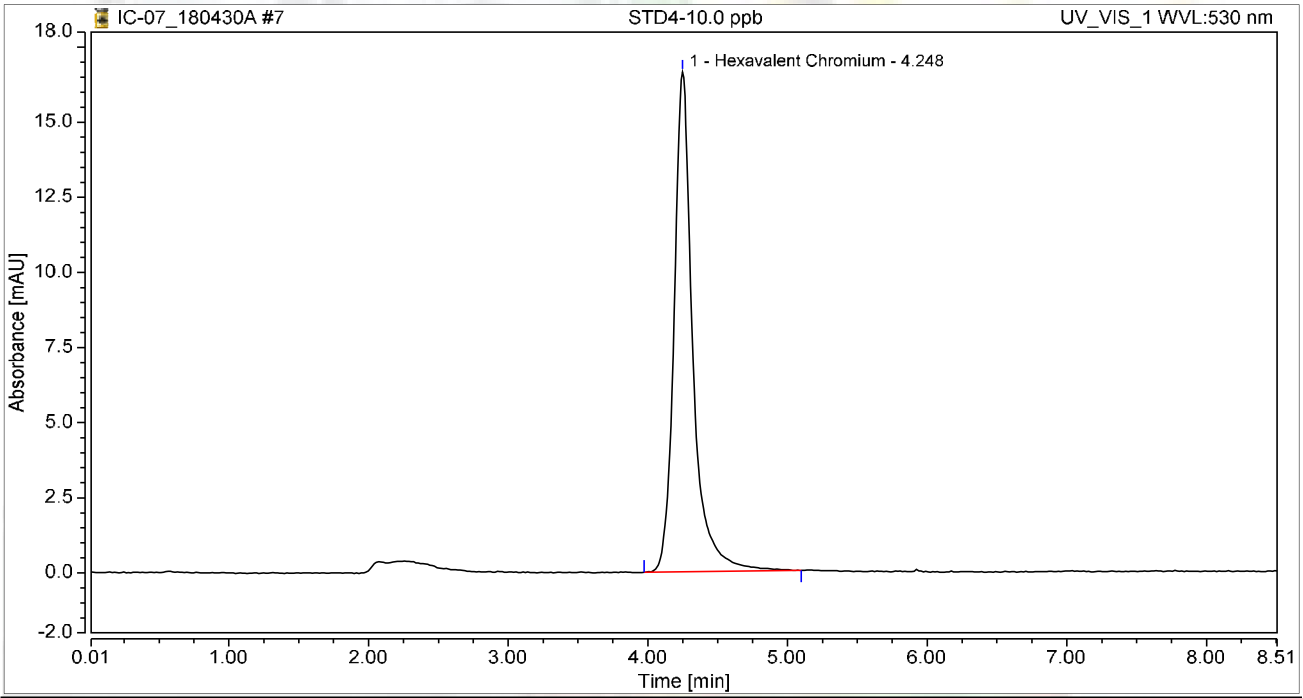
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.292	8.359	100.00	100.00	5.0360
Total:			**1.292**	**8.359**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

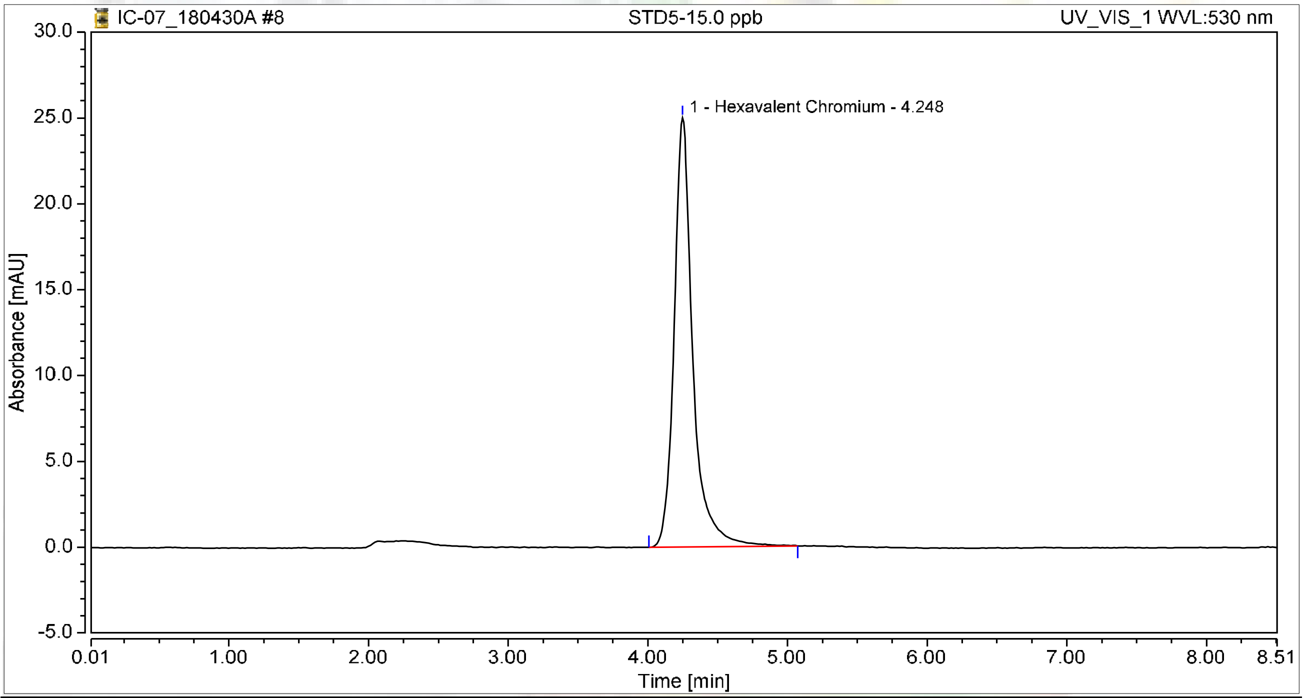
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	2.581	16.640	100.00	100.00	10.0583
Total:			**2.581**	**16.640**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

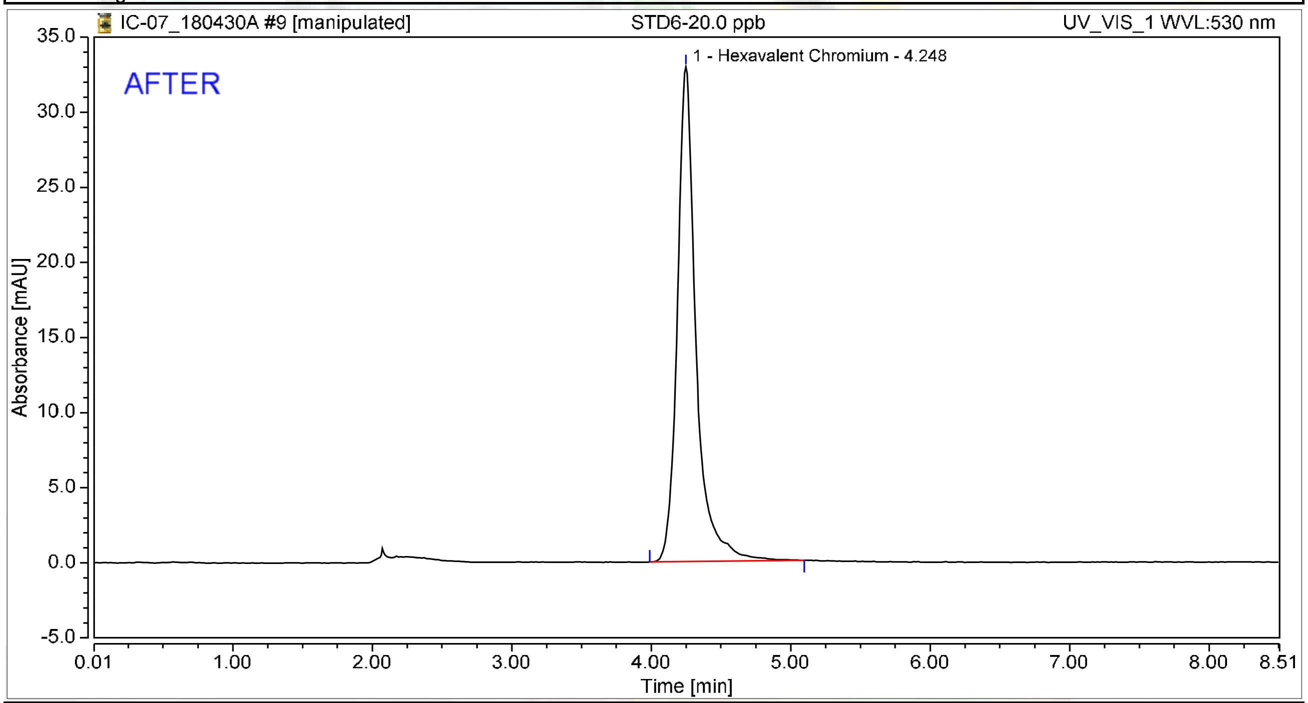
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	3.873	25.002	100.00	100.00	15.0915
Total:			**3.873**	**25.002**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	5.105	32.932	100.00	100.00	19.8919
Total:			**5.105**	**32.932**	**100.00**	**100.00**	

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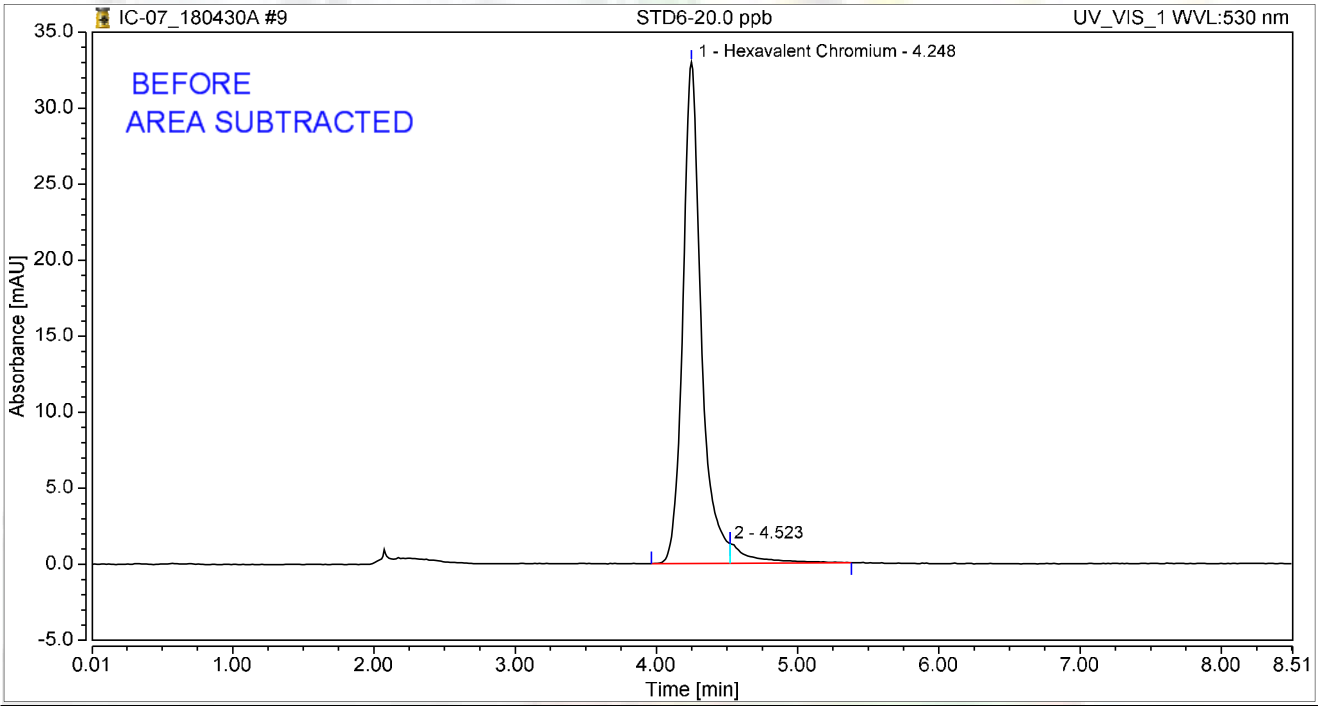
Reviewed by:
Nancy 5/7/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	4.957	32.968	95.88	96.27	19.6162
2		4.523	0.213	1.278	4.12	3.73	n.a.
Total:			**5.170**	**34.246**	**100.00**	**100.00**	

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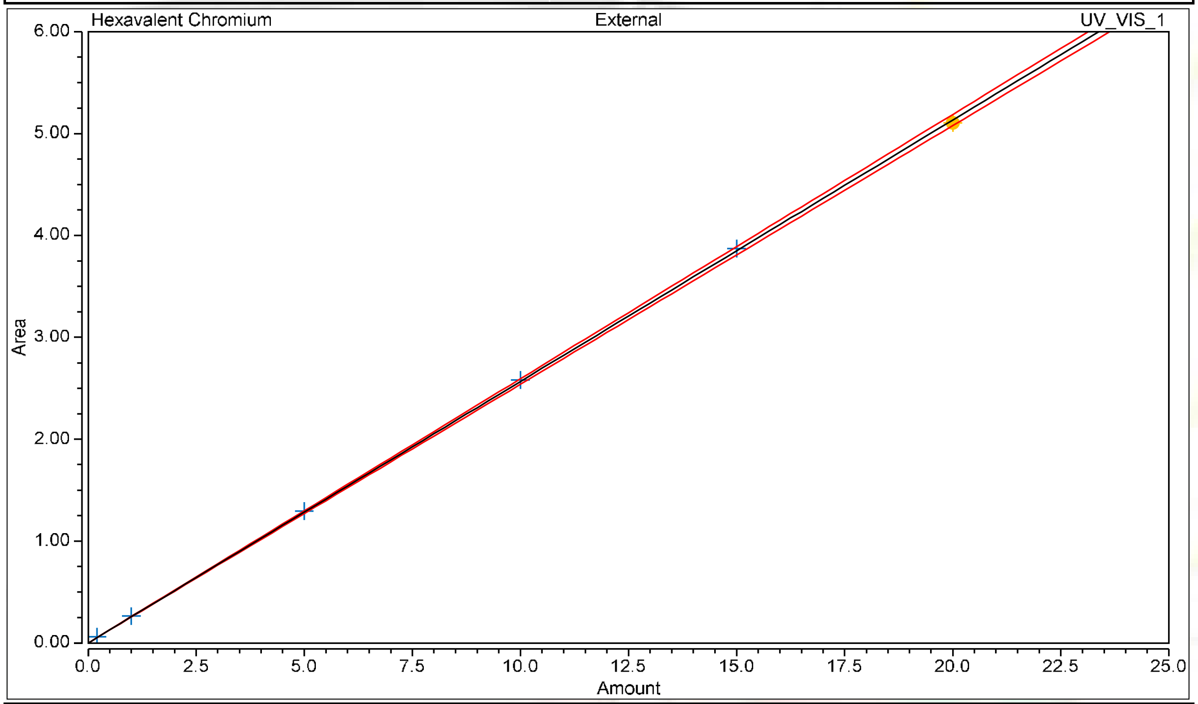
Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2566
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99992

Calibration Plot   Hexavalent Chromium



Calibration Results   Hexavalent Chromium

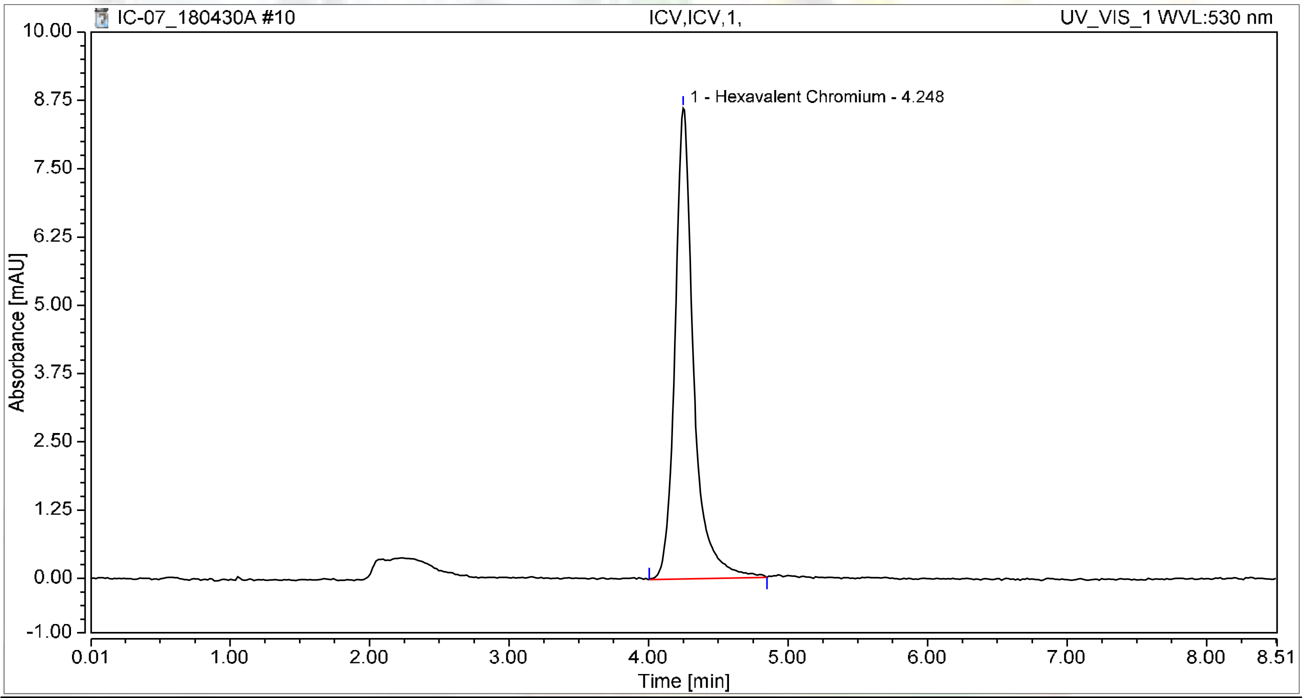
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0607	0.061	0.398
5	STD2-1.0 ppb	02	1.0000	0.2618	0.262	1.718
6	STD3-5.0 ppb	03	5.0000	1.2924	1.292	8.359
7	STD4-10.0 ppb	04	10.0000	2.5813	2.581	16.640
8	STD5-15.0 ppb	05	15.0000	3.8731	3.873	25.002
9	STD6-20.0 ppb	06	20.0000	5.1050	5.105	32.932

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

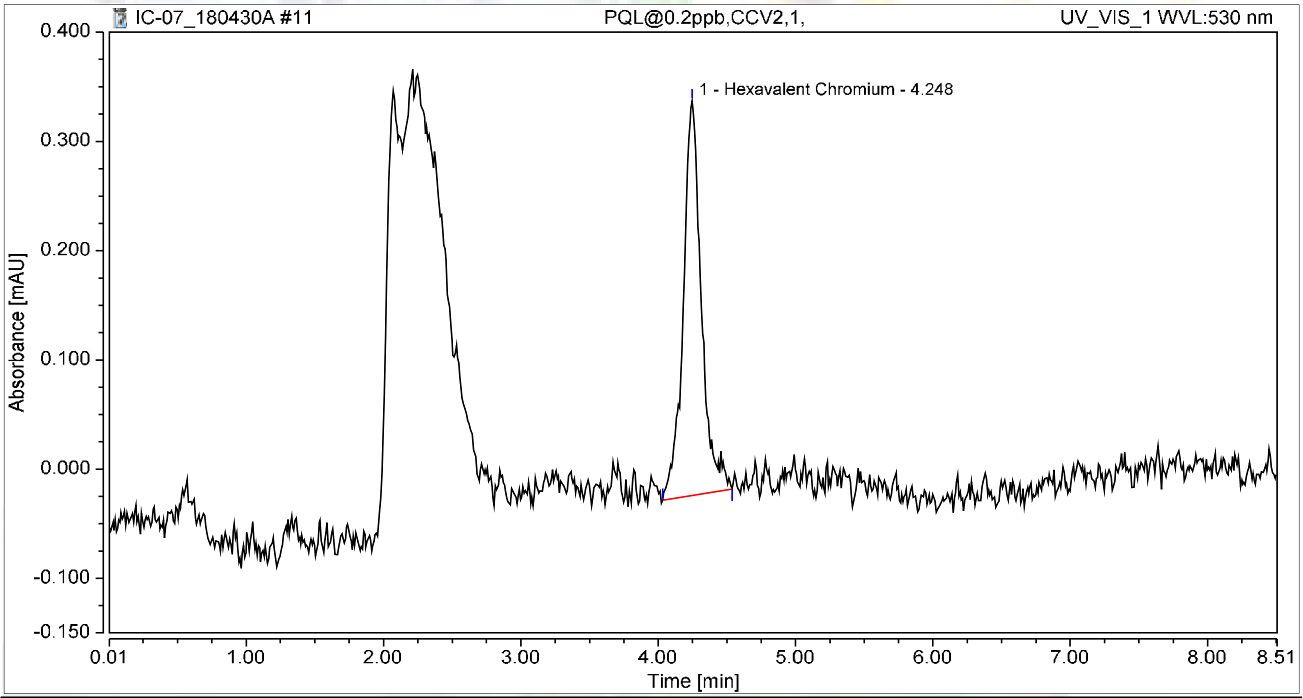
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	1.333	8.618	100.00	100.00	5.1938
Total:			**1.333**	**8.618**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

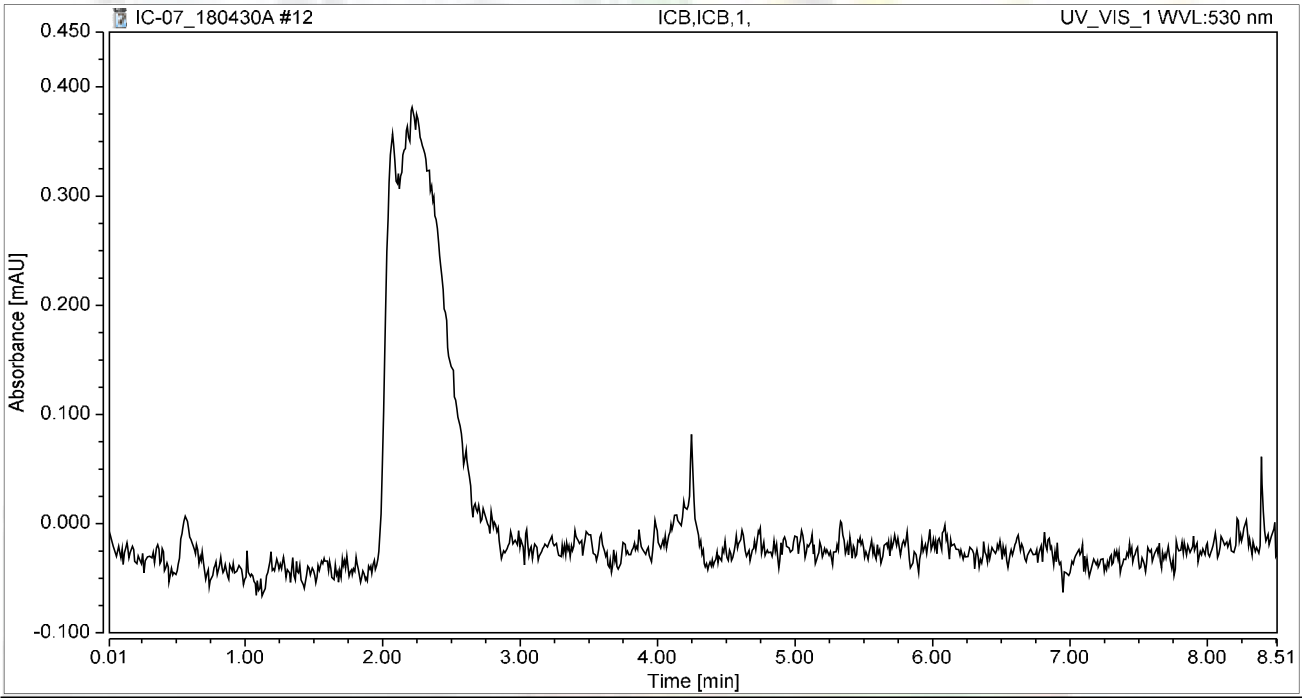
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.248	0.055	0.361	100.00	100.00	0.2153
Total:			**0.055**	**0.361**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**30/Apr/18 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180509A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:16 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/30/18 9:27 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	04/30/18 9:36 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:46 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 9:55 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:05 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:14 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:23 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/30/18 10:33 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	05/09/18 8:42 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	05/09/18 8:53 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	05/09/18 9:03 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/09/18 9:12 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	05/09/18 9:22 AM	Reported
15	MB-R123964	MBLK	1	Hexavalent Chromium	05/09/18 9:31 AM	Reported
16	LCS-R123964	LCS	1	Hexavalent Chromium	05/09/18 9:41 AM	Reported
17	N030251-004A	SAMP	25	Hexavalent Chromium	05/09/18 9:50 AM	Not Reported
18	N030251-004A	SAMP	5	Hexavalent Chromium	05/09/18 9:59 AM	Reported
19	N030251-004A	SAMP	125	Hexavalent Chromium	05/09/18 10:09 AM	Not Reported
20	N030251-003A	SAMP	5	Hexavalent Chromium	05/09/18 10:18 AM	Not Reported
21	N030251-003A	SAMP	25	Hexavalent Chromium	05/09/18 10:28 AM	Reported
22	N030251-003A	SAMP	125	Hexavalent Chromium	05/09/18 10:44 AM	Not Reported
23	N030251-001A	SAMP	5	Hexavalent Chromium	05/09/18 10:55 AM	Not Reported
24	N030251-002A	SAMP	5	Hexavalent Chromium	05/09/18 11:05 AM	Not Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	05/09/18 11:14 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	05/09/18 11:24 AM	Reported
27	N030251-004AMS	MS	25	Hexavalent Chromium	05/09/18 11:33 AM	Not Reported
28	N030251-003AMS	MS	5	Hexavalent Chromium	05/09/18 11:43 AM	Not Reported
29	N030251-004AMS	MS	5	Hexavalent Chromium	05/09/18 12:00 PM	Reported
30	N030251-003AMS	MS	25	Hexavalent Chromium	05/09/18 12:11 PM	Reported
31	N030186-001A	SAMP	1	Hexavalent Chromium	05/09/18 12:21 PM	Reported
32	N030251-004AMS	MS	1	Hexavalent Chromium	05/09/18 12:30 PM	Not Reported
33	N030251-004AREP	DUP	5	Hexavalent Chromium	05/09/18 12:40 PM	Reported
34	N030251-003ADUP	DUP	25	Hexavalent Chromium	05/09/18 12:49 PM	Reported
35	N030251-004A	SAMP	1	Hexavalent Chromium	05/09/18 12:59 PM	Not Reported
36	N030186-001AMS	MS	1	Hexavalent Chromium	05/09/18 1:08 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	05/09/18 1:18 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	05/09/18 1:27 PM	Reported
39	N030254-001A	SAMP	5	Hexavalent Chromium	05/09/18 1:37 PM	Not Reported
40	N030254-002A	SAMP	5	Hexavalent Chromium	05/09/18 1:46 PM	Not Reported
41	N030254-003A	SAMP	5	Hexavalent Chromium	05/09/18 1:56 PM	Reported
42	N030254-004A	SAMP	5	Hexavalent Chromium	05/09/18 2:05 PM	Reported

rba 5/11/2018

IC7 RBA 5/11/2018 2:31 PM

RB 05/18/2018

INJECTION LOG: 180509A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030254-001AMS	MS	5	Hexavalent Chromium	05/09/18 2:14 PM	Not Reported
44	N030254-002AMS	MS	5	Hexavalent Chromium	05/09/18 2:24 PM	Not Reported
45	N030254-003AMS	MS	5	Hexavalent Chromium	05/09/18 2:33 PM	Reported
46	N030254-004AMS	MS	5	Hexavalent Chromium	05/09/18 2:43 PM	Reported
47	N030254-001AMS	MS	25	Hexavalent Chromium	05/09/18 2:52 PM	Reported
48	N030254-002AMS	MS	25	Hexavalent Chromium	05/09/18 3:02 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	05/09/18 3:11 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	05/09/18 3:21 PM	Reported
51	N030254-001A	SAMP	25	Hexavalent Chromium	05/09/18 3:30 PM	Reported
52	N030254-002A	SAMP	25	Hexavalent Chromium	05/09/18 3:40 PM	Reported
53	N030254-004AMSD	MSD	5	Hexavalent Chromium	05/09/18 3:49 PM	Reported
54	N030254-001AREP	DUP	25	Hexavalent Chromium	05/09/18 3:59 PM	Reported
55	N030254-002AREP	DUP	25	Hexavalent Chromium	05/09/18 4:08 PM	Reported
56	N030254-003AREP	DUP	5	Hexavalent Chromium	05/09/18 4:17 PM	Reported
57	N030254-004AREP	DUP	5	Hexavalent Chromium	05/09/18 4:27 PM	Reported
58	N030186-002A	SAMP	100	Hexavalent Chromium	05/09/18 4:36 PM	Reported
59	N030186-002AMS	MS	100	Hexavalent Chromium	05/09/18 4:49 PM	Reported
60	N030186-002AMSD	MSD	100	Hexavalent Chromium	05/09/18 5:00 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	05/09/18 5:09 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	05/09/18 5:19 PM	Reported
63	N030254-003A	SAMP	1	Hexavalent Chromium	05/09/18 5:28 PM	Not Reported
64	N030254-003AMS	MS	1	Hexavalent Chromium	05/09/18 5:38 PM	Not Reported
65	N030254-004A	SAMP	1	Hexavalent Chromium	05/09/18 5:47 PM	Not Reported
66	N030254-004AMS	MS	1	Hexavalent Chromium	05/09/18 5:57 PM	Not Reported
67	BLANK	BLANK	1	Hexavalent Chromium	05/09/18 6:06 PM	Not Reported
68	N030256-001A	SAMP	1	Hexavalent Chromium	05/09/18 6:15 PM	~~Not~~ Reported
69	N030256-002A	SAMP	1	Hexavalent Chromium	05/09/18 6:25 PM	Reported
70	N030256-002ADUP	DUP	1	Hexavalent Chromium	05/09/18 6:34 PM	Reported
71	N030256-003A	SAMP	1	Hexavalent Chromium	05/09/18 6:44 PM	~~Not~~ Reported
72	N030256-004A	SAMP	1	Hexavalent Chromium	05/09/18 6:53 PM	~~Not~~ Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	05/09/18 7:03 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	05/09/18 7:12 PM	Reported
75	N030256-005A	SAMP	1	Hexavalent Chromium	05/09/18 7:22 PM	Reported
76	N030256-006A	SAMP	1	Hexavalent Chromium	05/09/18 7:31 PM	Reported
77	N030256-007A	SAMP	1	Hexavalent Chromium	05/09/18 7:41 PM	Reported
78	N030256-008A	SAMP	1	Hexavalent Chromium	05/09/18 7:50 PM	Reported
79	N030256-009A	SAMP	1	Hexavalent Chromium	05/09/18 8:00 PM	Reported
80	N030256-010A	SAMP	1	Hexavalent Chromium	05/09/18 8:09 PM	Reported
81	N030123-022A	SAMP	1	Hexavalent Chromium	05/09/18 8:18 PM	Reported
82	N030123-022AMS	MS	1	Hexavalent Chromium	05/09/18 8:28 PM	Reported
83	N030228-004A	SAMP	20	Hexavalent Chromium	05/09/18 8:37 PM	Not Reported
84	CCV-7	CCV	1	Hexavalent Chromium	05/09/18 8:47 PM	Reported

INJECTION LOG: 180509A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	CCB-7	CCB	1	Hexavalent Chromium	05/09/18 8:56 PM	Reported
86	N030123-023A	SAMP	5	Hexavalent Chromium	05/09/18 9:06 PM	Reported
87	N030123-023AMS	MS	5	Hexavalent Chromium	05/09/18 9:15 PM	Reported
88	N030123-023A	SAMP	25	Hexavalent Chromium	05/09/18 9:25 PM	Not Reported
89	N030123-023AMS	MS	25	Hexavalent Chromium	05/09/18 9:34 PM	Not Reported
90	CCV-8	CCV1	1	Hexavalent Chromium	05/09/18 9:44 PM	Reported
91	CCB-8	CCB	1	Hexavalent Chromium	05/09/18 9:53 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180509A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**09/May/18 22:23:52**
No. of Injections:	**94**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/30/2018 09:16	Finished	BLANK
2	BLANK	2	1000	Unknown		04/30/2018 09:27	Finished	BLANK
3	iBLANK	3	1000	Unknown		04/30/2018 09:36	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	04/30/2018 09:46	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	04/30/2018 09:55	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	04/30/2018 10:05	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	04/30/2018 10:14	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	04/30/2018 10:23	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	04/30/2018 10:33	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		05/09/2018 08:42	Finished	BLANK
11	BLANK	2	1000	Unknown		05/09/2018 08:53	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		05/09/2018 09:03	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/09/2018 09:12	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		05/09/2018 09:22	Finished	CCB R180409B
15	MB-H2O,MBLK,1,	6	1000	Unknown		05/09/2018 09:31	Finished	MB R180409B
16	LCS-H2O,LCS,1,	7	1000	Unknown		05/09/2018 09:41	Finished	LCS, IWST-180129B
17	N030251-004A,SAMF	8	1000	Unknown		05/09/2018 09:50	Finished	SAMP,0.4>10mL
18	N030251-004A,SAMF	9	1000	Unknown		05/09/2018 09:59	Finished	SAMP,2>10mL
19	N030251-004A,SAMF	10	1000	Unknown		05/09/2018 10:09	Finished	SAMP,0.08>10mL
20	N030251-003A,SAMF	11	1000	Unknown		05/09/2018 10:18	Finished	SAMP,2>10mL
21	N030251-003A,SAMF	12	1000	Unknown		05/09/2018 10:28	Finished	SAMP,0.4>10mL
22	N030251-003A,SAMF	13	1000	Unknown		05/09/2018 10:44	Finished	SAMP,0.08>10mL
23	N030251-001A,SAMF	14	1000	Unknown		05/09/2018 10:55	Finished	SAMP,2>10mL
24	N030251-002A,SAMF	15	1000	Unknown		05/09/2018 11:05	Finished	SAMP,2>10mL
25	CCV-2,CCV1,1,	16	1000	Unknown		05/09/2018 11:14	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	17	1000	Unknown		05/09/2018 11:24	Finished	CCB R180409B
27	N030251-004AMS,MS	18	1000	Unknown		05/09/2018 11:33	Finished	MS (1ppb), IWST-180129B,0.4
28	N030251-003AMS,MS	19	1000	Unknown		05/09/2018 11:43	Finished	MS (1ppb), IWST-180129B,2>1
29	N030251-004AMS,MS	1	1000	Unknown		05/09/2018 12:00	Finished	MS (1ppb), IWST-180129B,2>1
30	N030251-003AMS,MS	2	1000	Unknown		05/09/2018 12:11	Finished	MS (1ppb), IWST-180129B,0.4
31	N030186-001A,SAMF	3	1000	Unknown		05/09/2018 12:21	Finished	SAMP,10mL
32	N030251-004AMS,MS	4	1000	Unknown		05/09/2018 12:30	Finished	MS (1ppb), IWST-180129B,10
33	N030251-004AREP,D	5	1000	Unknown		05/09/2018 12:40	Finished	REP,2>10mL
34	N030251-003A~~REP~~,D DUP	6	1000	Unknown		05/09/2018 12:49	Finished	REP,0.4>10mL
35	N030251-004A,SAMF	7	1000	Unknown		05/09/2018 12:59	Finished	SAMP,10mL
36	N030186-001AMS,MS	8	1000	Unknown		05/09/2018 13:08	Finished	MS (1ppb), IWST-180129B,10
37	CCV-3,CCV,1,	9	1000	Unknown		05/09/2018 13:18	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	10	1000	Unknown		05/09/2018 13:27	Finished	CCB R180418A
39	N030254-001A,SAMF	12	1000	Unknown		05/09/2018 13:37	Finished	SAMP,2>10mL
40	N030254-002A,SAMF	13	1000	Unknown		05/09/2018 13:46	Finished	SAMP,2>10mL
41	N030254-003A,SAMF	14	1000	Unknown		05/09/2018 13:56	Finished	SAMP,2>10mL
42	N030254-004A,SAMF	15	1000	Unknown		05/09/2018 14:05	Finished	SAMP,2>10mL
43	N030254-001AMS,MS	16	1000	Unknown		05/09/2018 14:14	Finished	MS (1ppb), IWST-180129B,2>1
44	N030254-002AMS,MS	17	1000	Unknown		05/09/2018 14:24	Finished	MS (1ppb), IWST-180129B,2>1
45	N030254-003AMS,MS	18	1000	Unknown		05/09/2018 14:33	Finished	MS (1ppb), IWST-180129B,2>1
46	N030254-004AMS,MS	19	1000	Unknown		05/09/2018 14:43	Finished	MS (1ppb), IWST-180129B,2>1
47	N030254-001AMS,MS	21	1000	Unknown		05/09/2018 14:52	Finished	MS (1ppb), IWST-180129B,0.4
48	N030254-002AMS,MS	22	1000	Unknown		05/09/2018 15:02	Finished	MS (1ppb), IWST-180129B,0.4
49	CCV-4,CCV1,1,	23	1000	Unknown		05/09/2018 15:11	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	24	1000	Unknown		05/09/2018 15:21	Finished	CCB R180418A
51	N030254-001A,SAMF	25	1000	Unknown		05/09/2018 15:30	Finished	SAMP,0.4>10mL
52	N030254-002A,SAMF	26	1000	Unknown		05/09/2018 15:40	Finished	SAMP,0.4>10mL
53	N030254-004AMSD,M	27	1000	Unknown		05/09/2018 15:49	Finished	MSD (1ppb), IWST-180129B,0.
54	N030254-001AREP,D	28	1000	Unknown		05/09/2018 15:59	Finished	REP,0.4>10mL
55	N030254-002AREP,D	29	1000	Unknown		05/09/2018 16:08	Finished	REP,0.4>10mL
56	N030254-003AREP,D	30	1000	Unknown		05/09/2018 16:17	Finished	REP,2>10mL
57	N030254-004AREP,D	31	1000	Unknown		05/09/2018 16:27	Finished	REP,2>10mL
58	N030186-002A,SAMF	32	1000	Unknown		05/09/2018 16:36	Finished	SAMP,0.1>10mL
59	N030186-002AMS,MS	1	1000	Unknown		05/09/2018 16:49	Finished	MS (5ppb), IWST-180129B,0.1
60	N030186-002AMSD,M	2	1000	Unknown		05/09/2018 17:00	Finished	MSD (5ppb), IWST-180129B,0.

IC-07 RBA 5/10/2018 10:43:28 AM

rba 5/11/2018

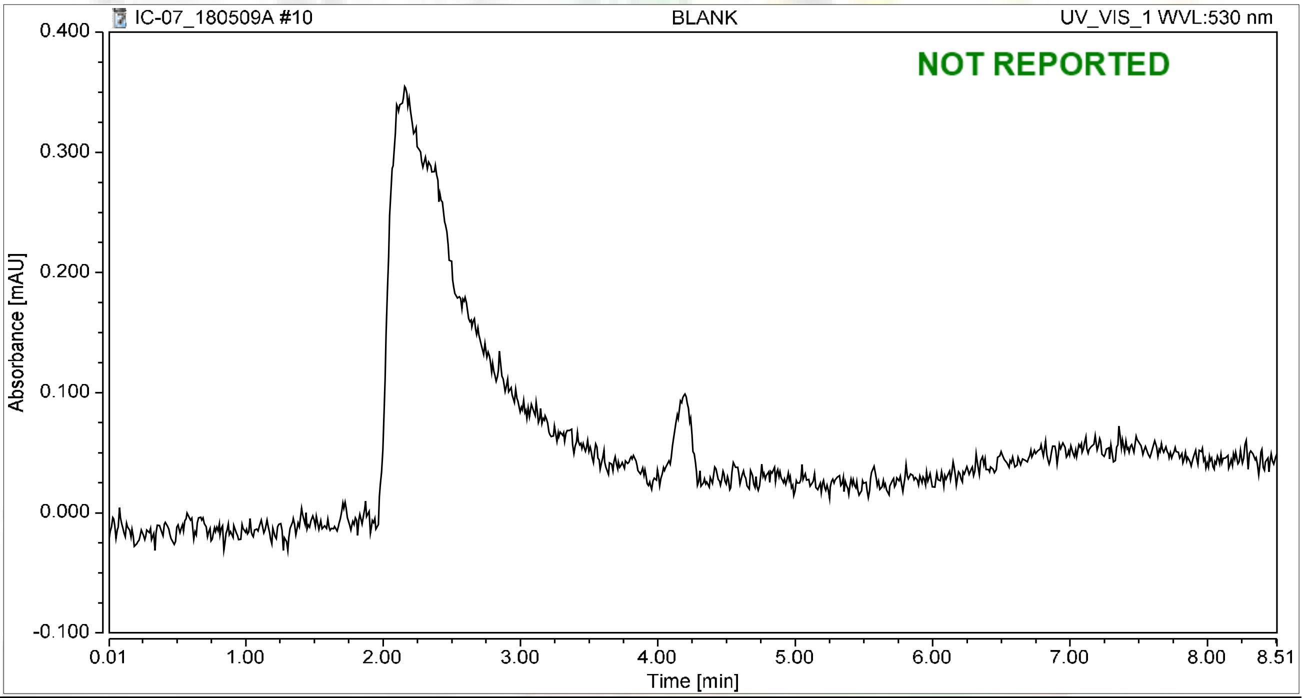
61	CCV-5,CCV,1,	3	1000	Unknown		05/09/2018 17:09	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	4	1000	Unknown		05/09/2018 17:19	Finished	CCB R180409B
63	N030254-003A,SAMF	5	1000	Unknown		05/09/2018 17:28	Finished	SAMP,10mL
64	N030254-003AMS,MS	6	1000	Unknown		05/09/2018 17:38	Finished	MS (1ppb), IWST-180129B,10
65	N030254-004A,SAMF	7	1000	Unknown		05/09/2018 17:47	Finished	SAMP,10mL
66	N030254-004AMS,MS	8	1000	Unknown		05/09/2018 17:57	Finished	MS (1ppb), IWST-180129B,10
67	BLANK	9	1000	Unknown		05/09/2018 18:06	Finished	BLANK
68	N030256-001A,SAMF	10	1000	Unknown		05/09/2018 18:15	Finished	SAMP,10mL
69	N030256-002A,SAMF	11	1000	Unknown		05/09/2018 18:25	Finished	SAMP,10mL
70	N030256-002ADUP,D	12	1000	Unknown		05/09/2018 18:34	Finished	DUP,10mL
71	N030256-003A,SAMF	13	1000	Unknown		05/09/2018 18:44	Finished	SAMP,10mL
72	N030256-004A,SAMF	14	1000	Unknown		05/09/2018 18:53	Finished	SAMP,10mL
73	CCV-6,CCV1,1,	15	1000	Unknown		05/09/2018 19:03	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	16	1000	Unknown		05/09/2018 19:12	Finished	CCB R180409B
75	N030256-005A,SAMF	17	1000	Unknown		05/09/2018 19:22	Finished	SAMP,10mL
76	N030256-006A,SAMF	18	1000	Unknown		05/09/2018 19:31	Finished	SAMP,10mL
77	N030256-007A,SAMF	19	1000	Unknown		05/09/2018 19:41	Finished	SAMP,10mL
78	N030256-008A,SAMF	20	1000	Unknown		05/09/2018 19:50	Finished	SAMP,10mL
79	N030256-009A,SAMF	21	1000	Unknown		05/09/2018 20:00	Finished	SAMP,10mL
80	N030256-010A,SAMF	22	1000	Unknown		05/09/2018 20:09	Finished	SAMP,10mL
81	N030123-022A,SAMF	23	1000	Unknown		05/09/2018 20:18	Finished	SAMP,10mL
82	N030123-022AMS,MS	24	1000	Unknown		05/09/2018 20:28	Finished	MS (1ppb), IWST-180129B,10
83	N030228-004A,SAMF	25	1000	Unknown		05/09/2018 20:37	Finished	SAMP,0.5>10mL
84	CCV-7,CCV,1,	26	1000	Unknown		05/09/2018 20:47	Finished	CCV @5ppb, IWST-180129A
85	CCB-7,CCB,1,	27	1000	Unknown		05/09/2018 20:56	Finished	CCB R180409B
86	N030123-023A,SAMF	28	1000	Unknown		05/09/2018 21:06	Finished	SAMP,2>10mL
87	N030123-023AMS,MS	29	1000	Unknown		05/09/2018 21:15	Finished	MS (1ppb), IWST-180129B,2>1
88	N030123-023A,SAMF	30	1000	Unknown		05/09/2018 21:25	Finished	SAMP,0.4>10mL
89	N030123-023AMS,MS	31	1000	Unknown		05/09/2018 21:34	Finished	MS (1ppb), IWST-180129B,0.4
90	CCV-8,CCV1,1,	32	1000	Unknown		05/09/2018 21:44	Finished	CCV @10ppb, IWST-180129A
91	CCB-8,CCB,1,	33	1000	Unknown		05/09/2018 21:53	Finished	CCB R180409B
92	SHUTDOWN	34	1000	Unknown		05/09/2018 22:03	Finished	
93	Eluent: R180508A	35	1000	Unknown		n.a.	Finished	Eluent
94	PCR: R180508B	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 08:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

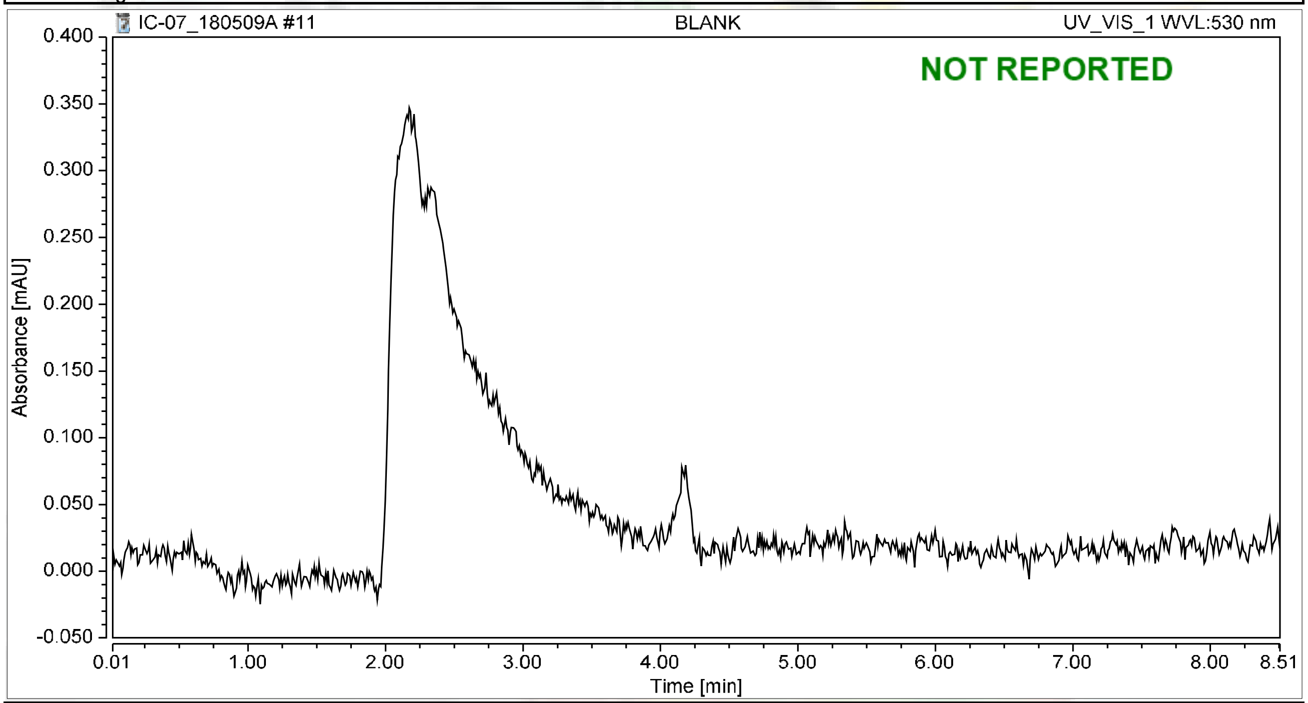
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 08:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

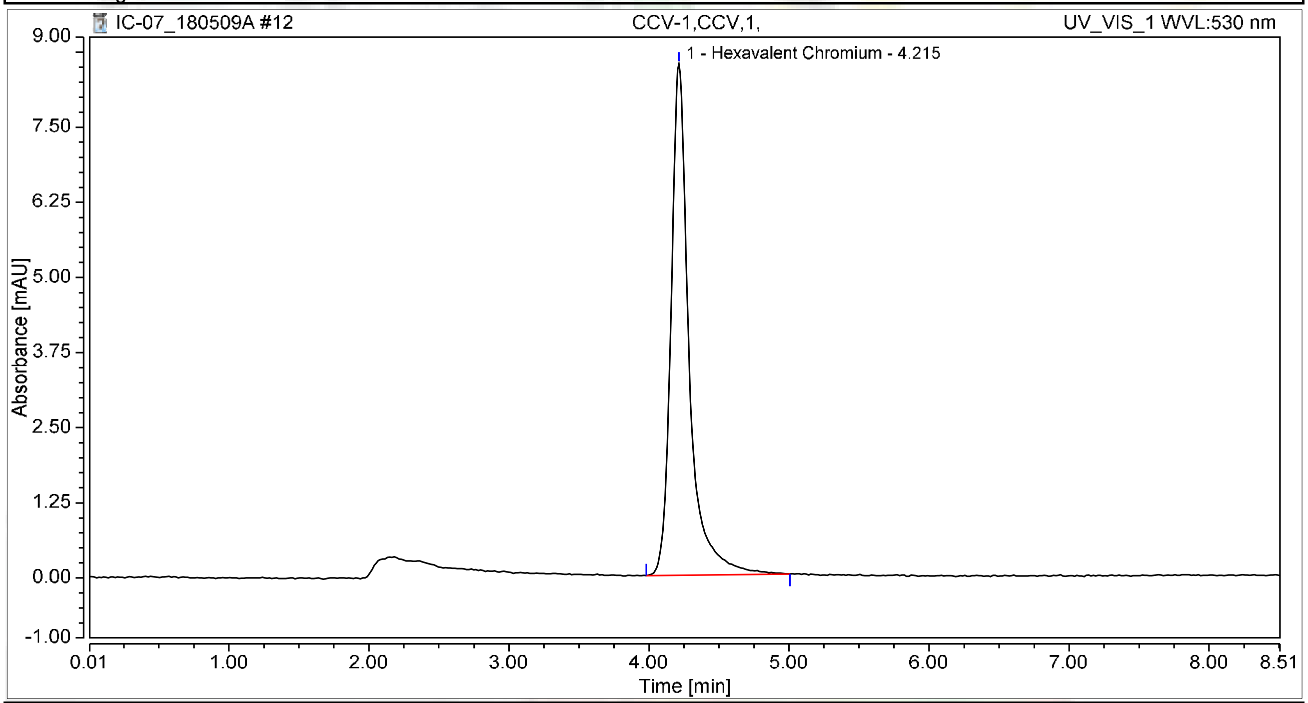
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 09:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

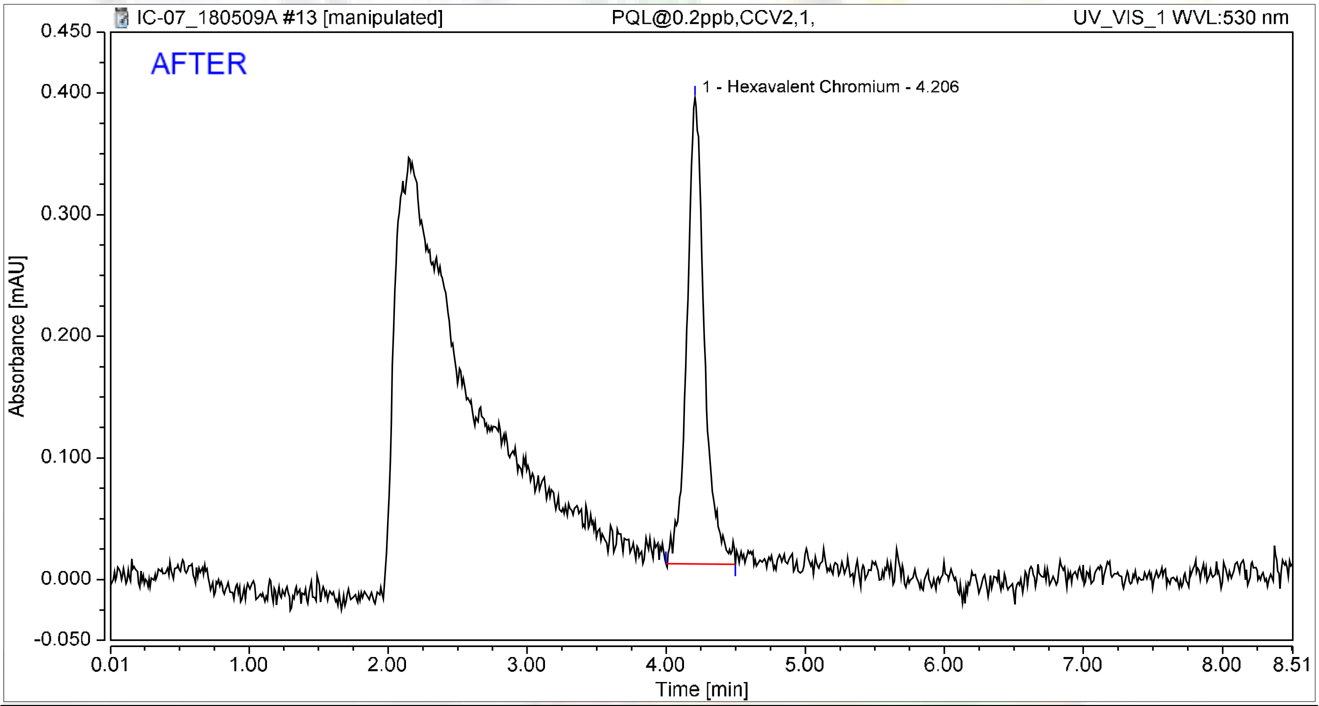
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.284	8.507	100.00	100.00	5.0035
Total:			**1.284**	**8.507**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 09:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.056	0.383	100.00	100.00	0.2187
Total:			**0.056**	**0.383**	**100.00**	**100.00**	

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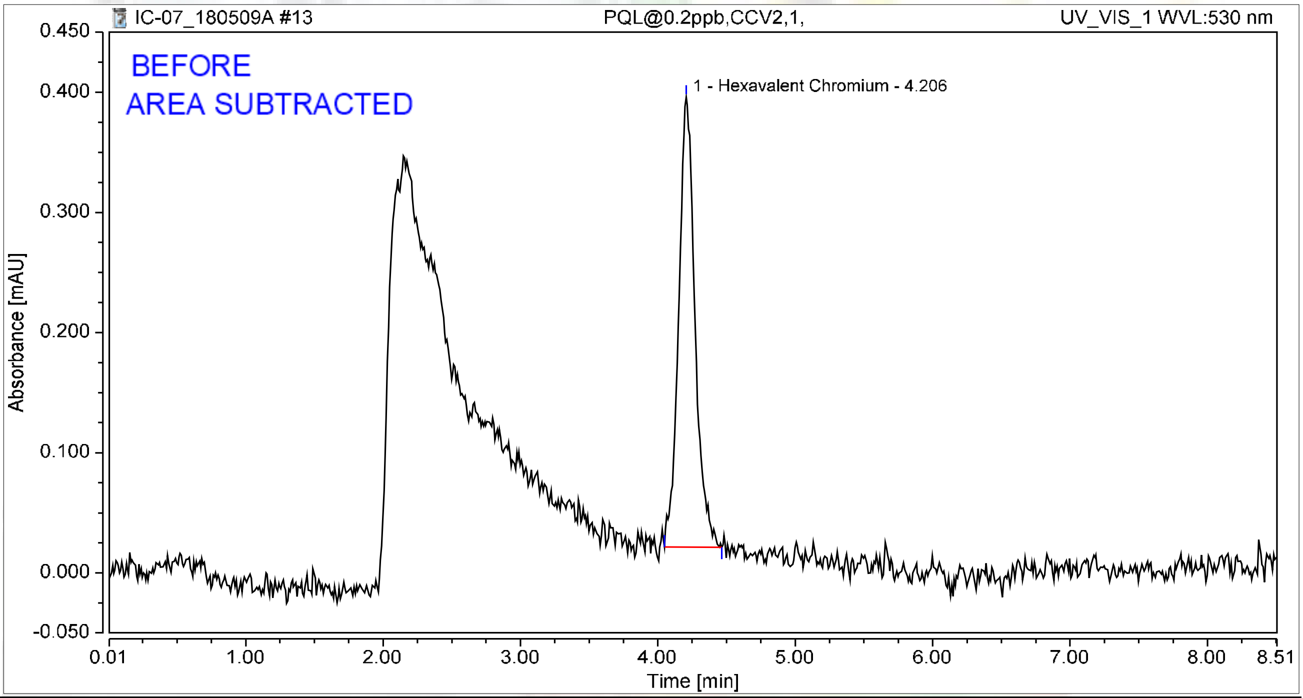
RB 05/18/2018

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 09:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.052	0.374	100.00	100.00	0.2011
Total:			**0.052**	**0.374**	**100.00**	**100.00**	

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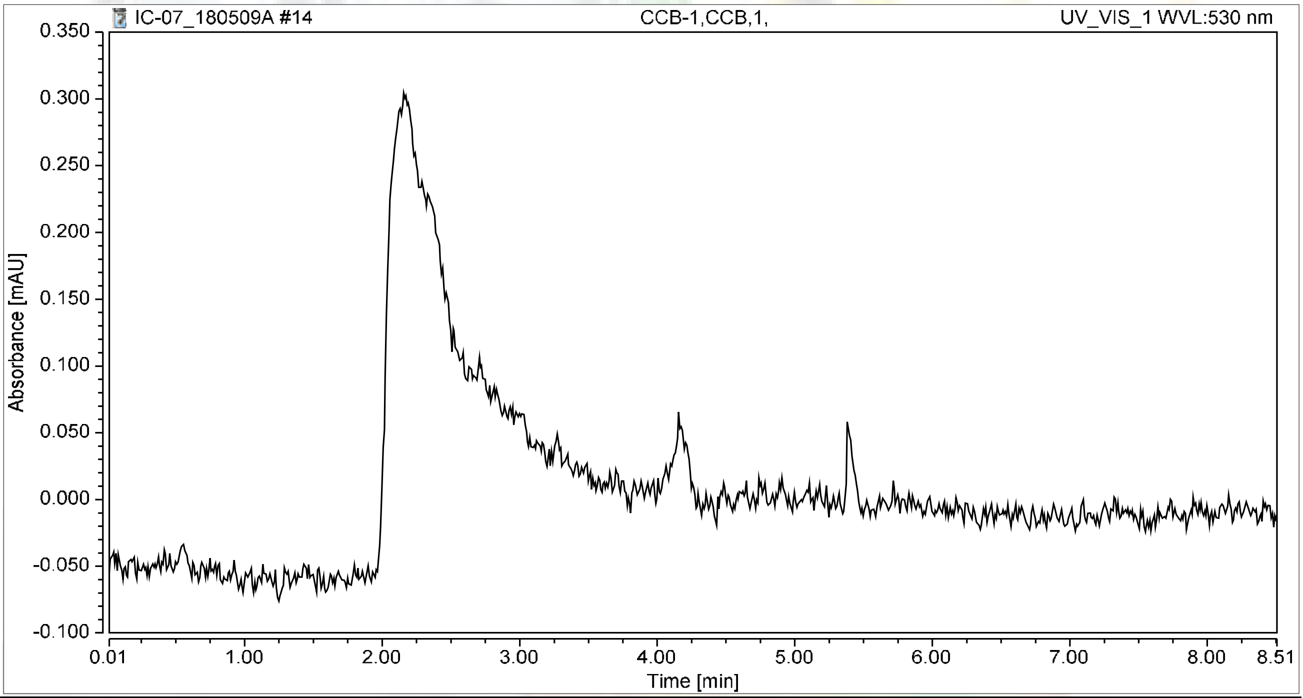
Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

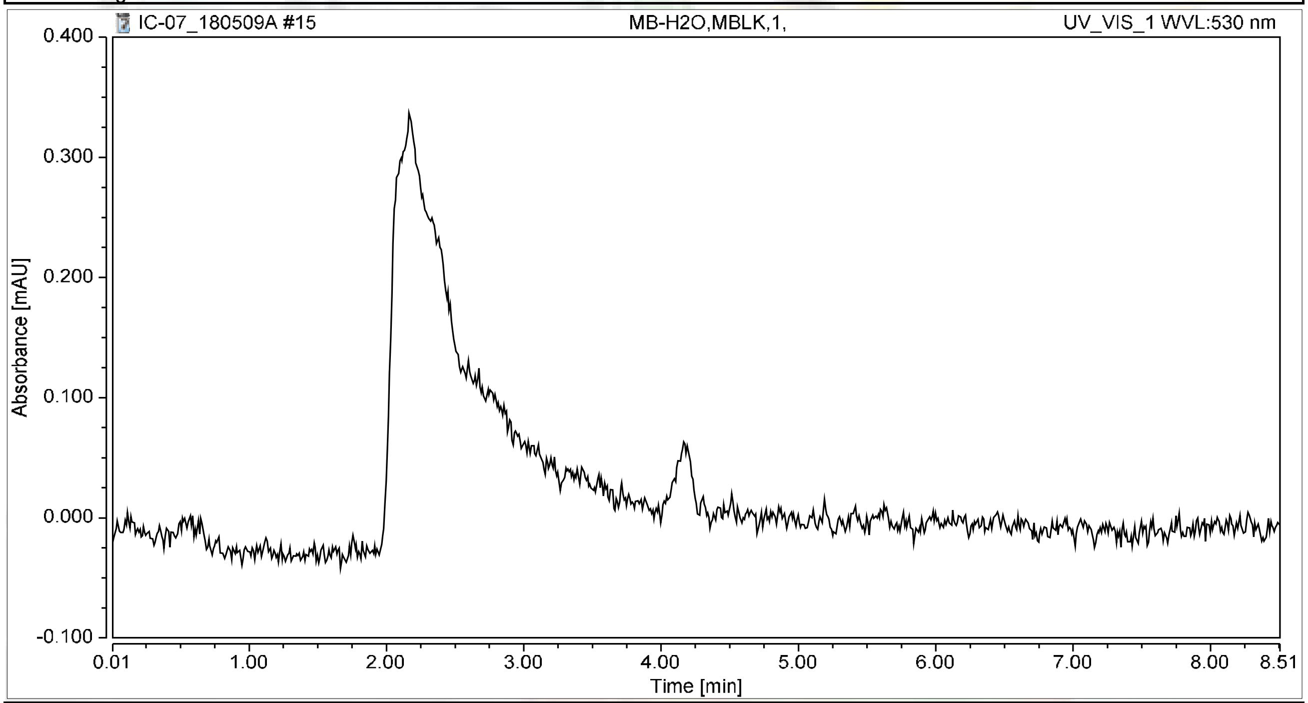
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 09:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

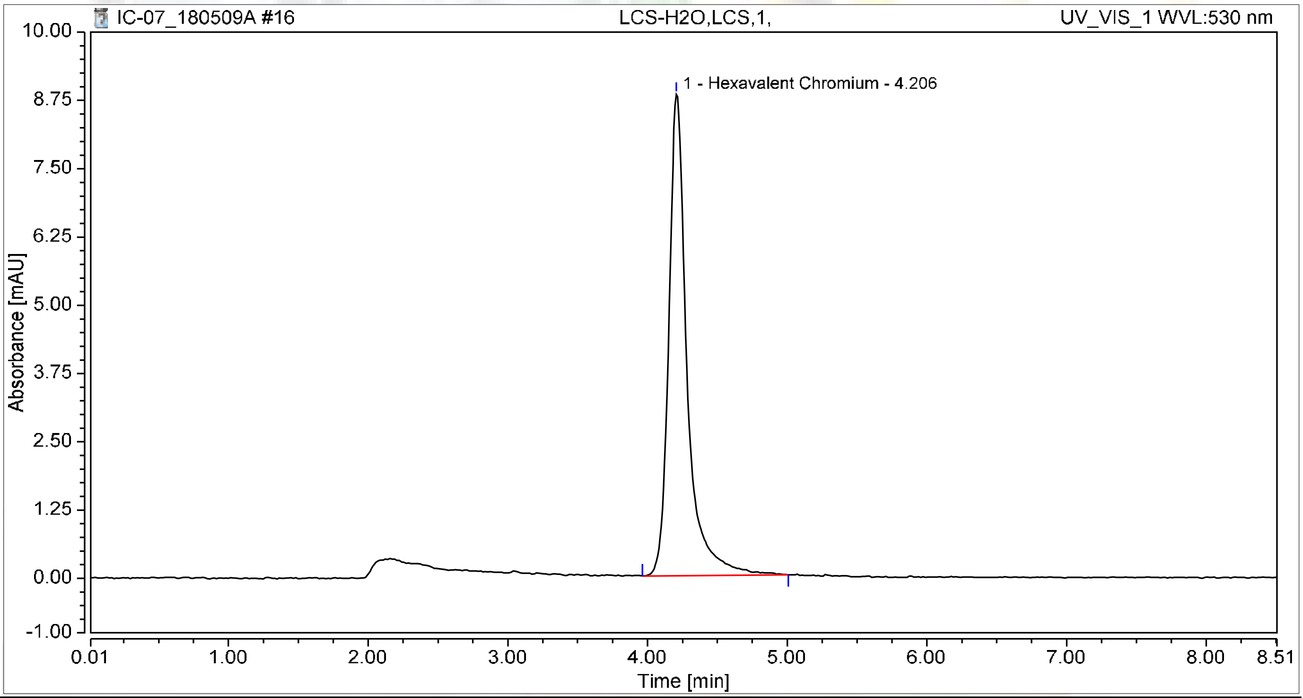
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 09:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

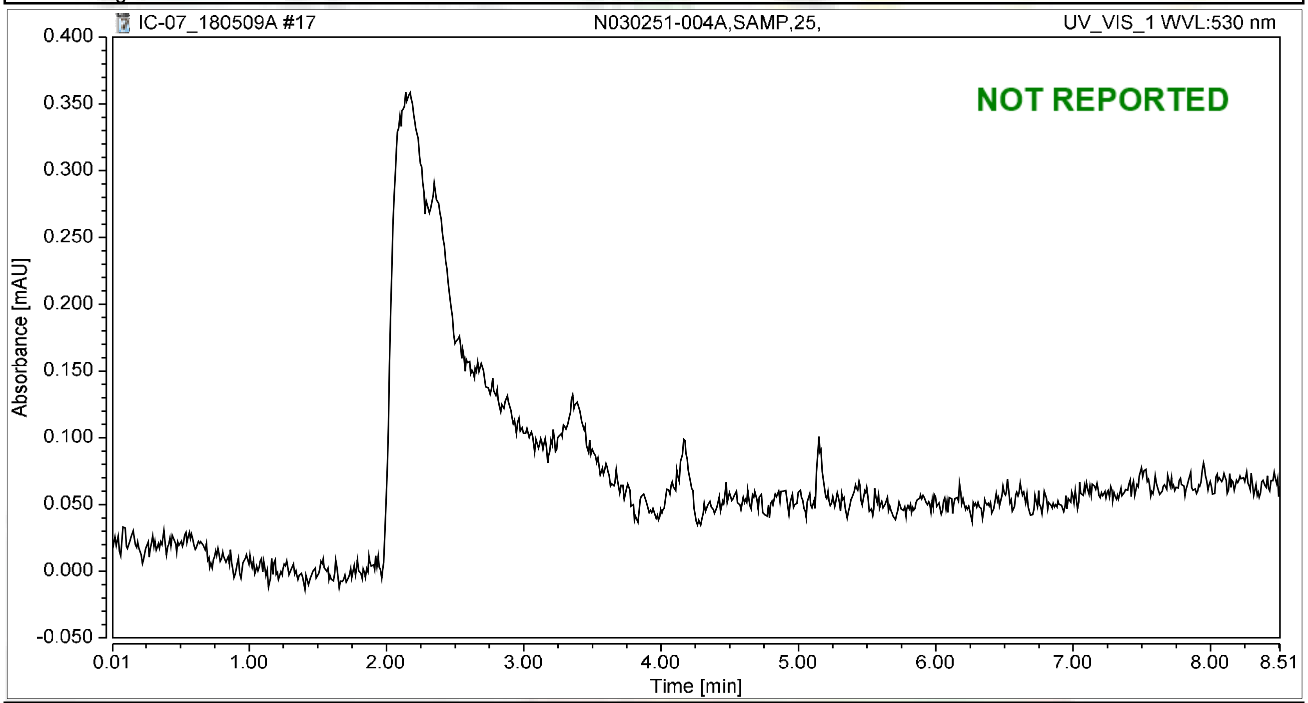
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.338	8.813	100.00	100.00	5.2129
Total:			**1.338**	**8.813**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-004A,SAMP,25,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 09:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

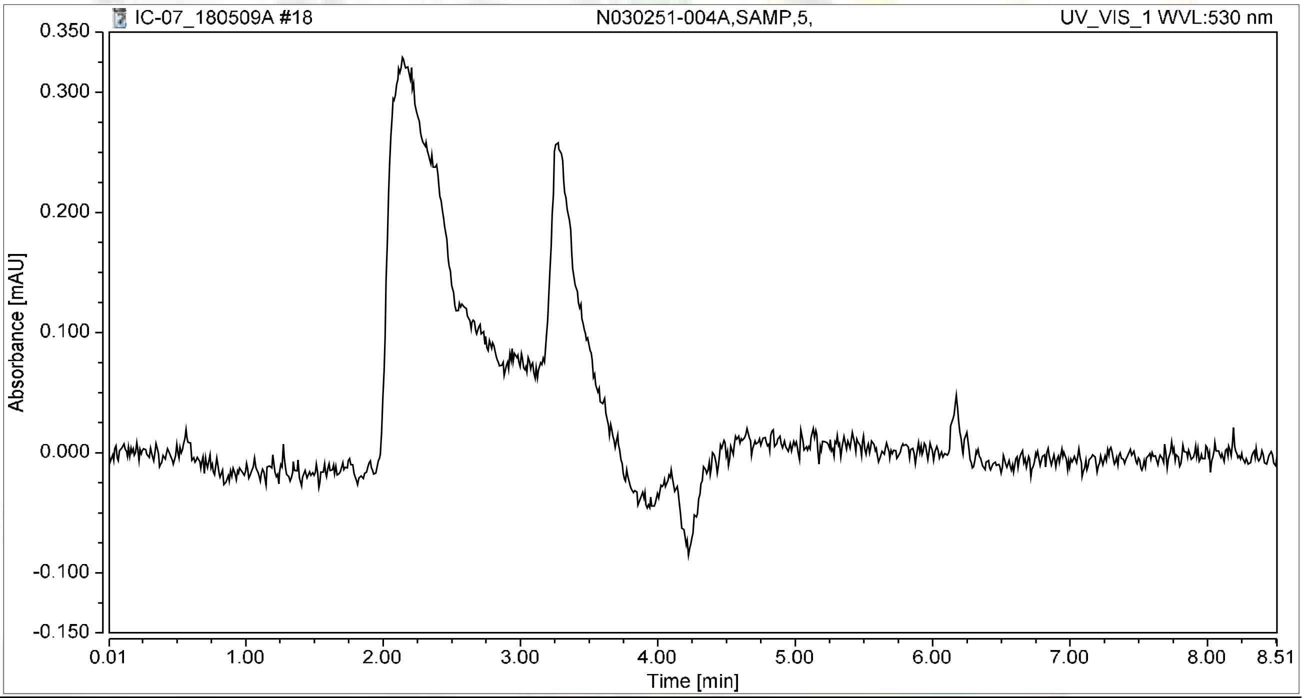
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-004A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 09:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

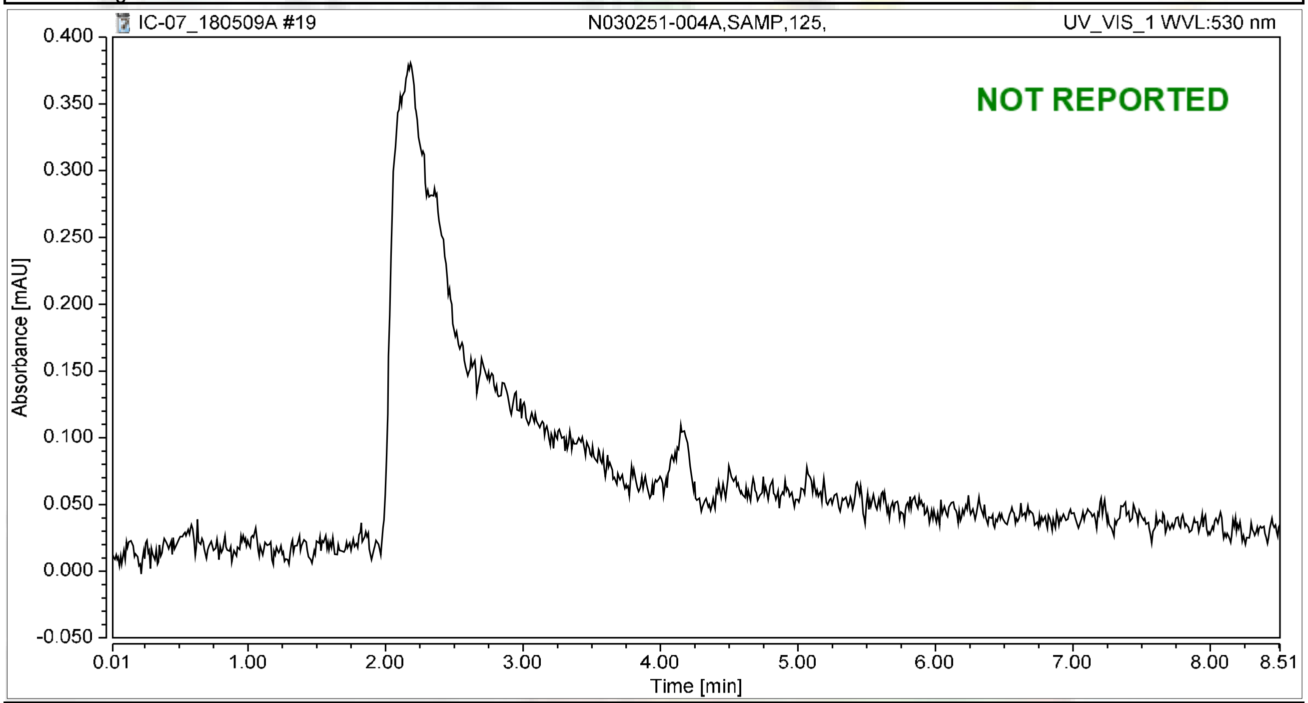
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-004A,SAMP,125,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

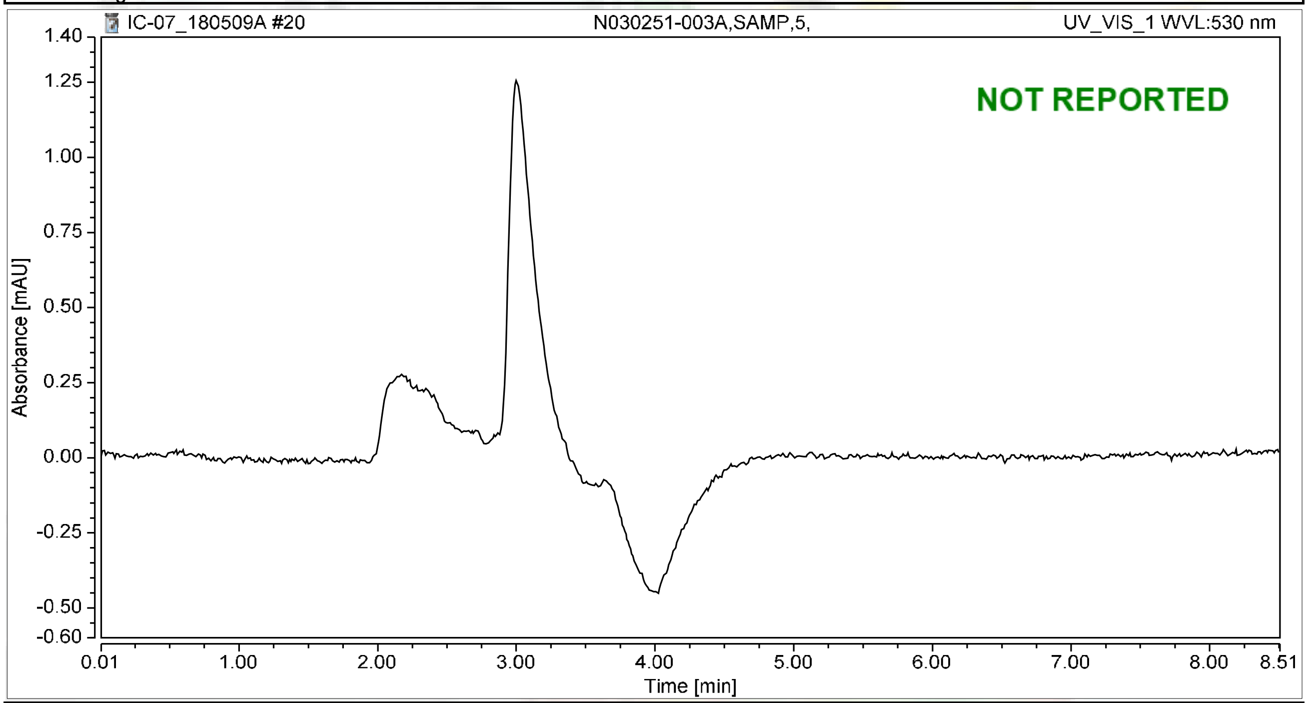
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-003A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 10:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

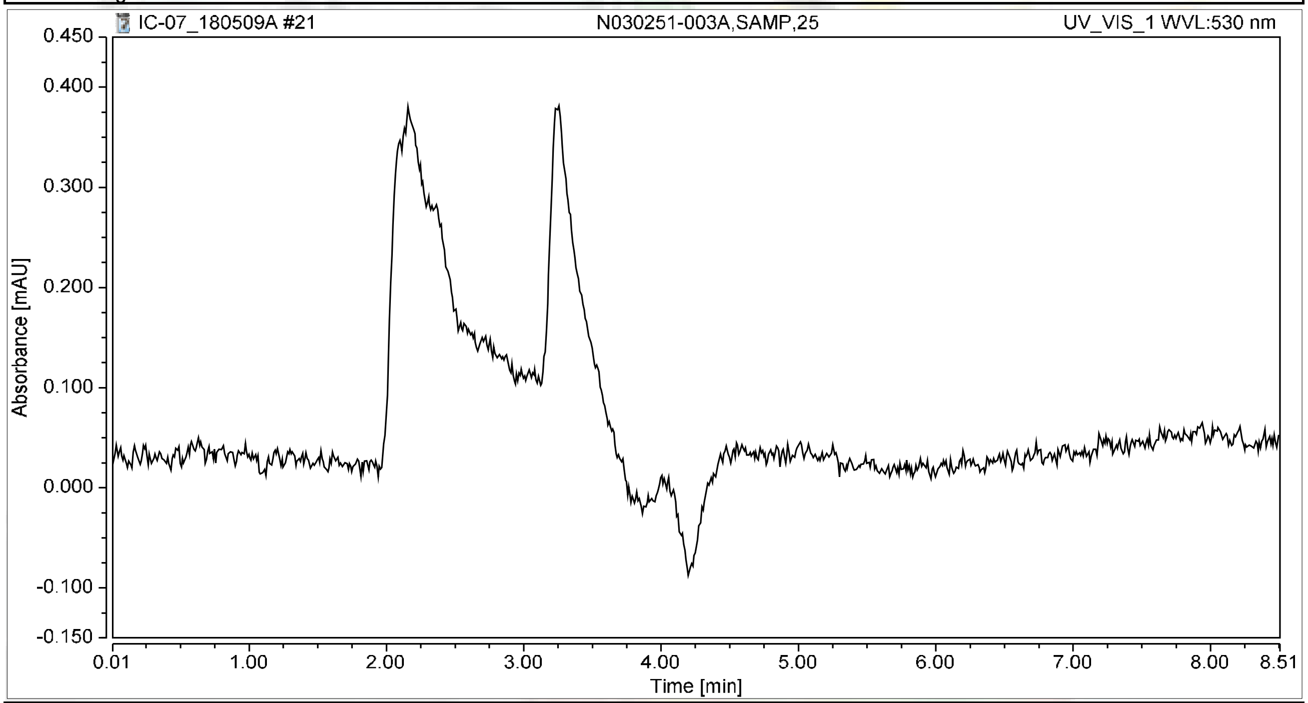
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-003A,SAMP,25**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 10:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

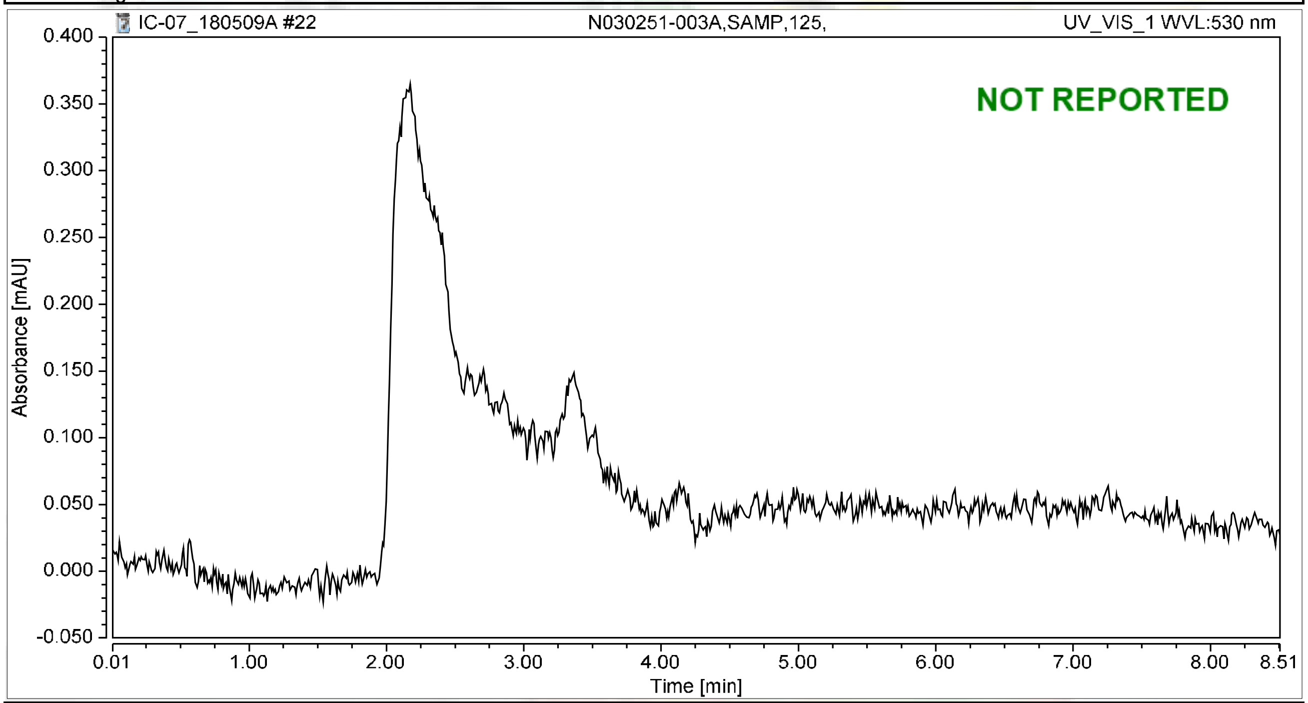
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-003A,SAMP,125,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 10:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

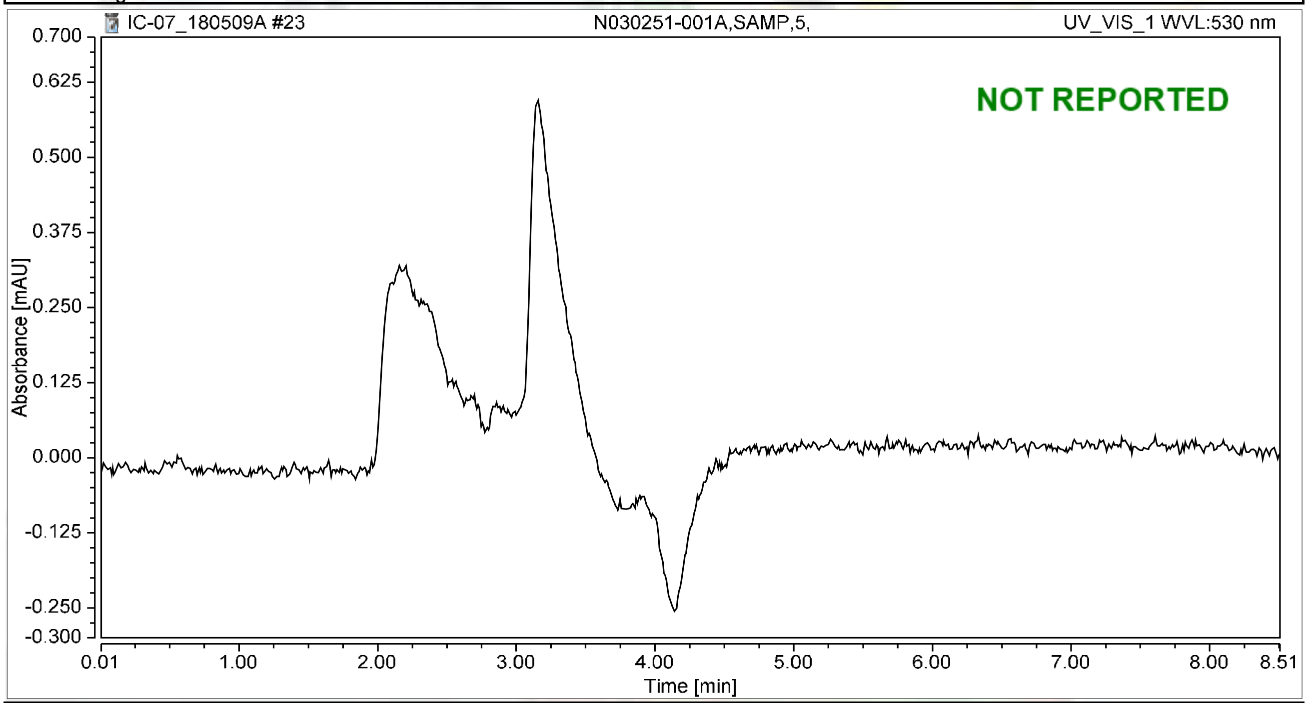
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 10:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

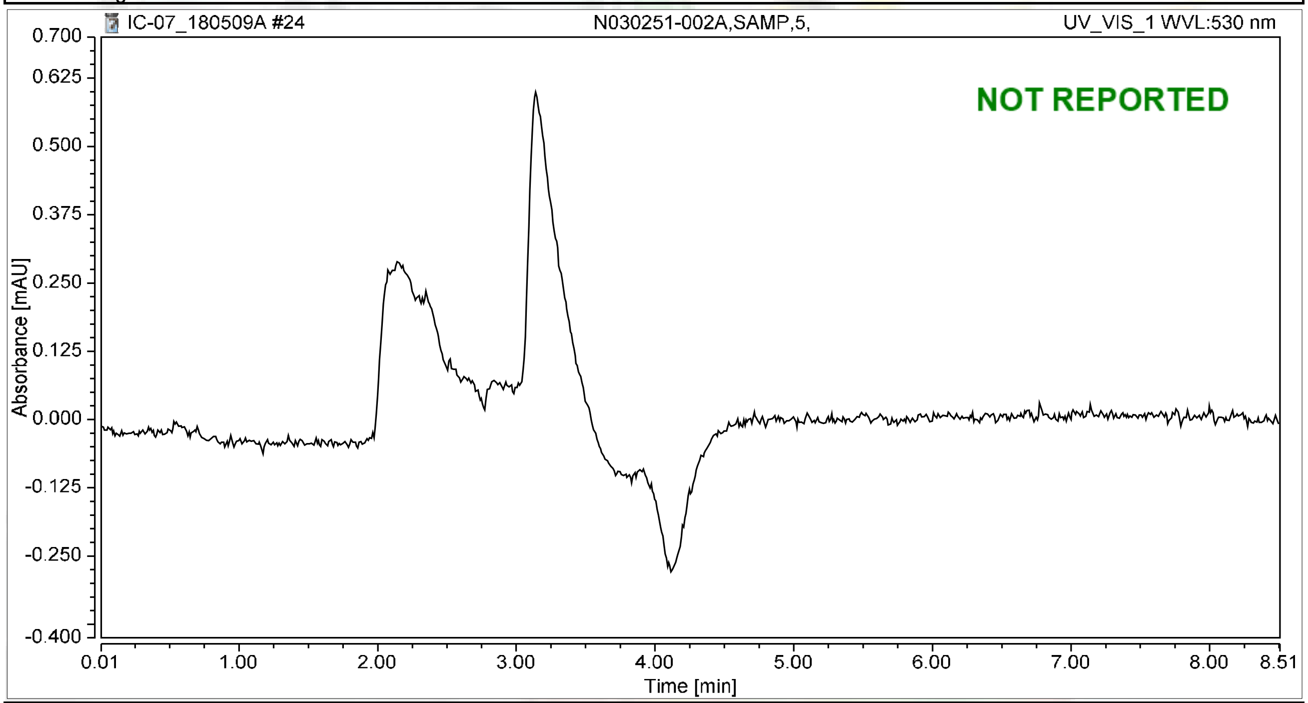
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 11:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

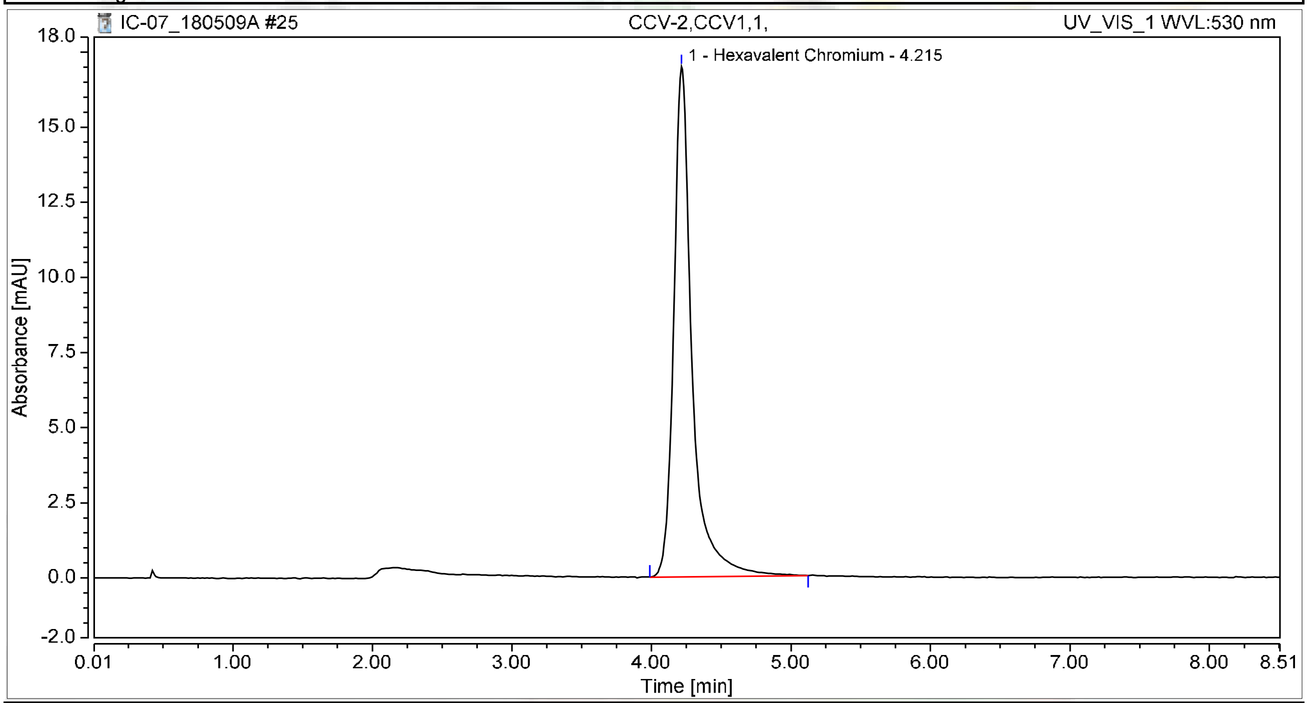
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 11:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

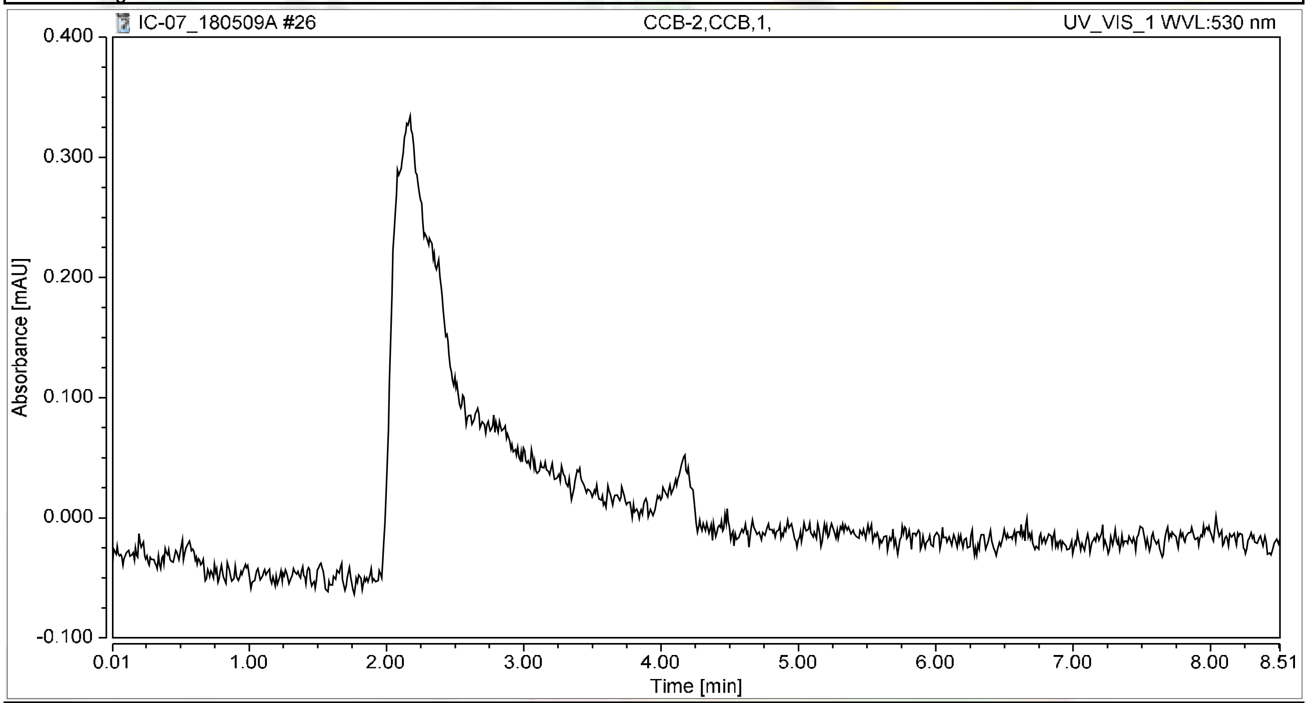
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.585	16.981	100.00	100.00	10.0721
Total:			**2.585**	**16.981**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 11:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

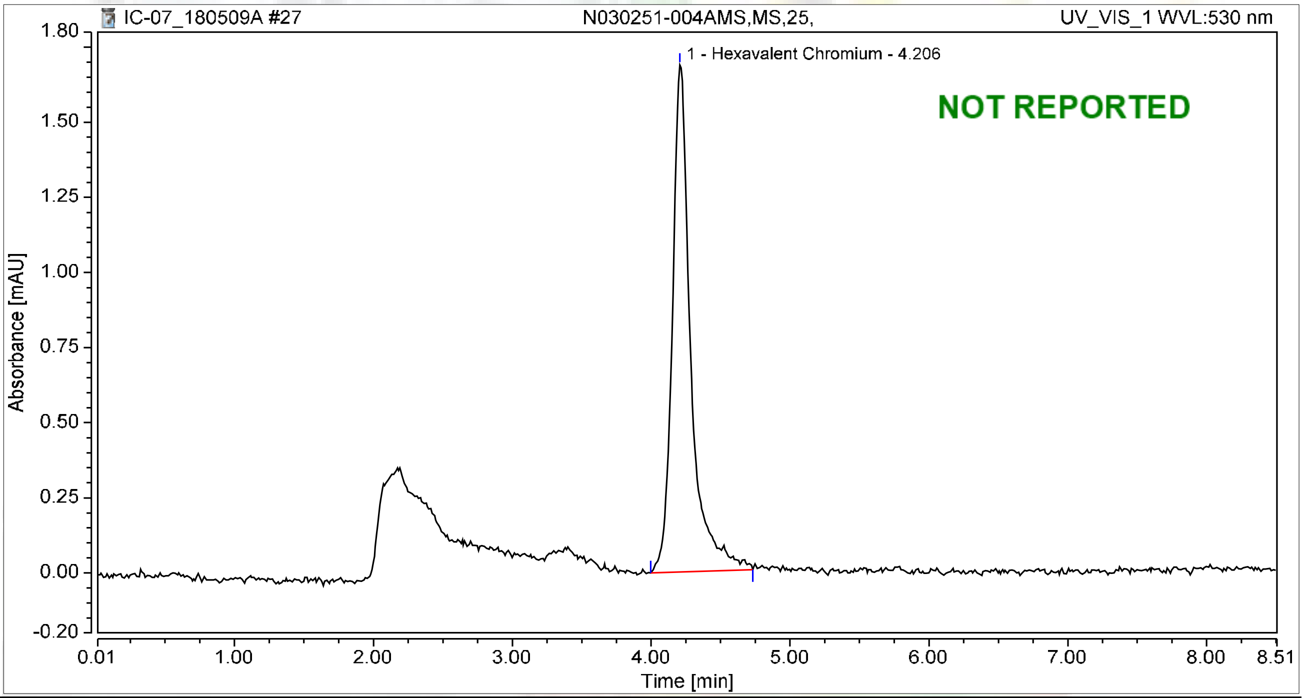
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-004AMS,MS,25,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

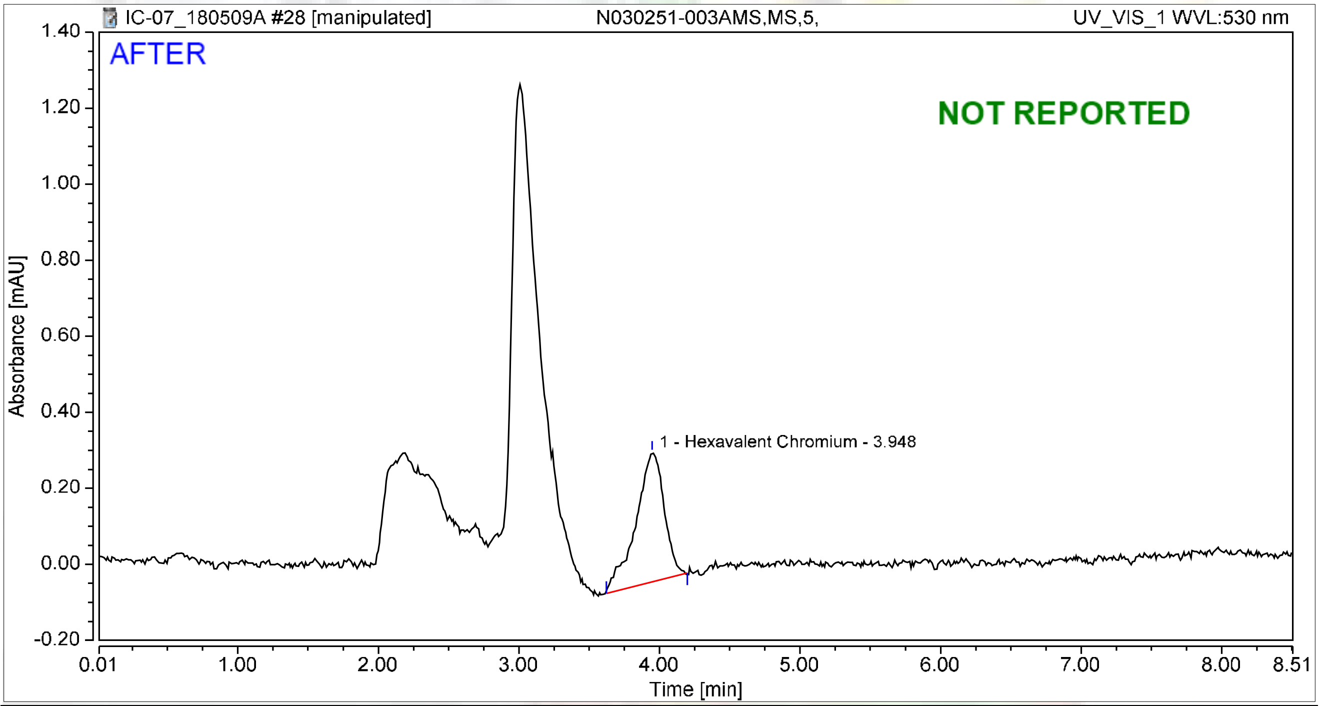
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.260	1.687	100.00	100.00	1.0123
Total:			**0.260**	**1.687**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-003AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.948	0.080	0.339	100.00	100.00	0.3104
Total:			**0.080**	**0.339**	**100.00**	**100.00**	

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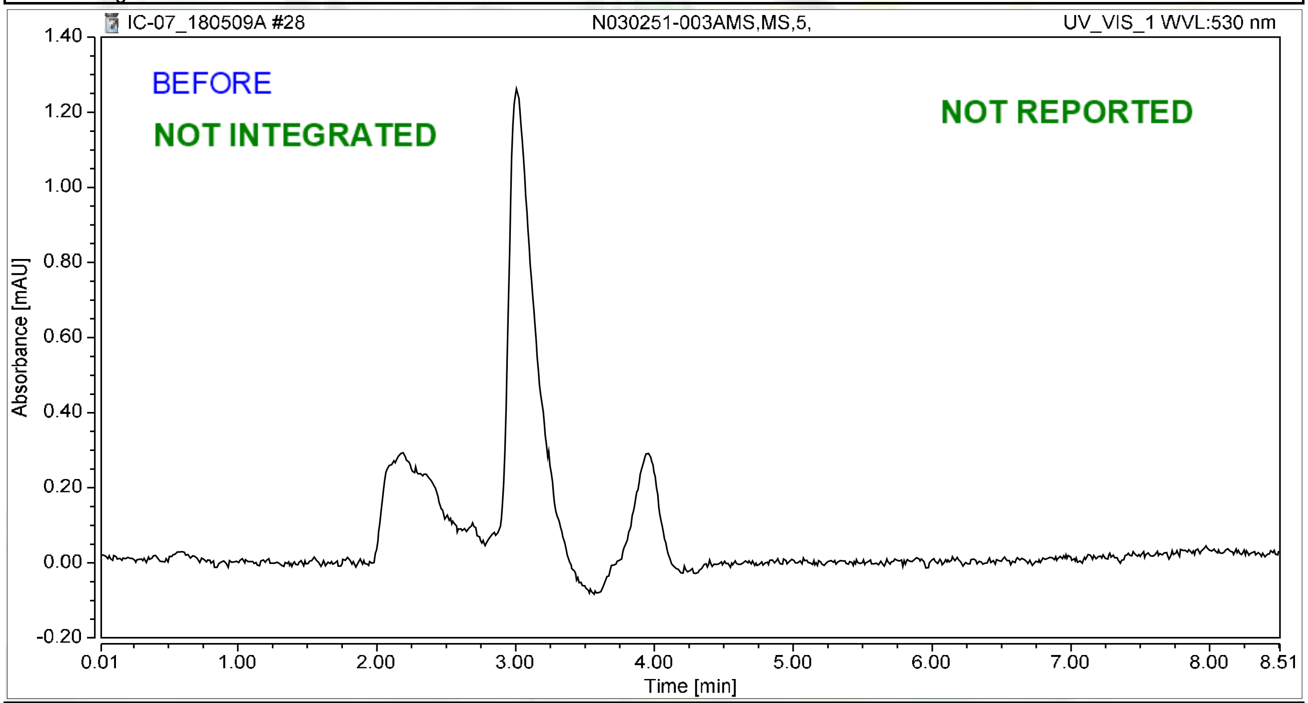
Chromatogram and Results

Injection Details			
Injection Name:	**N030251-003AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 11:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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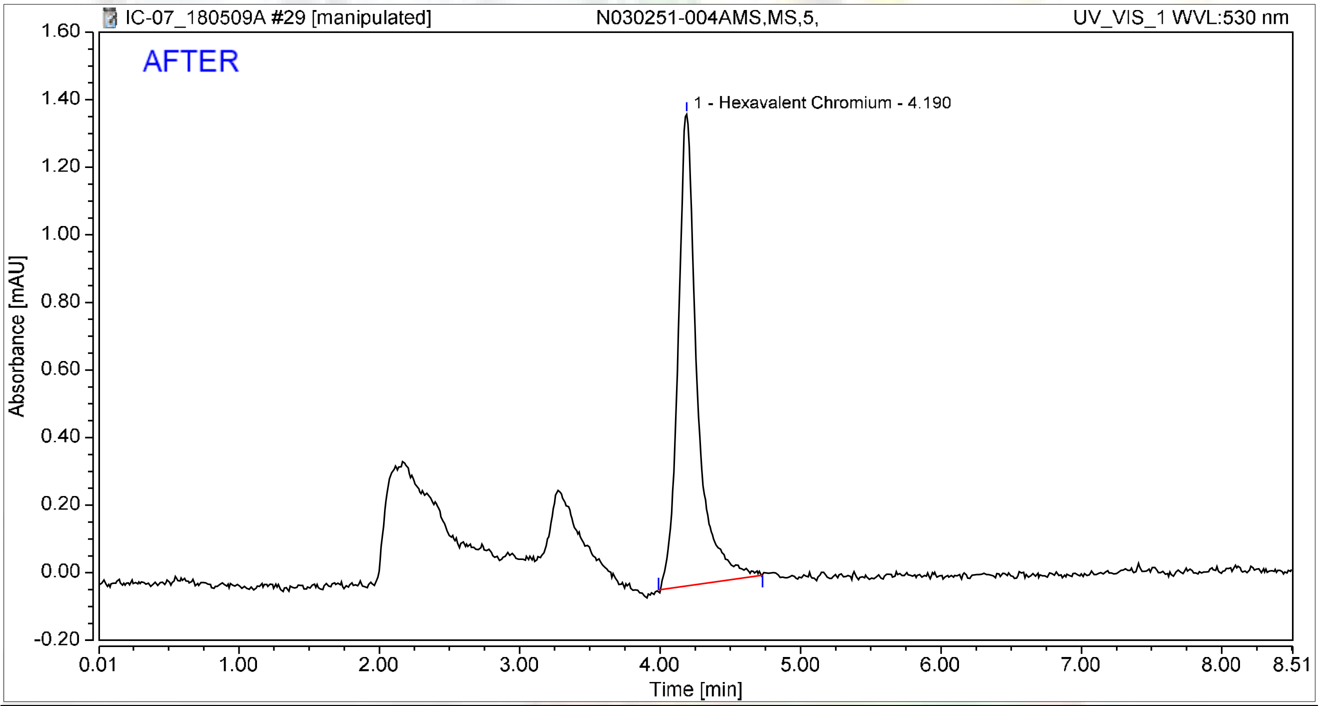
Chromatogram and Results

Injection Details

Injection Name:	**N030251-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.222	1.396	100.00	100.00	0.8643
Total:			**0.222**	**1.396**	**100.00**	**100.00**	

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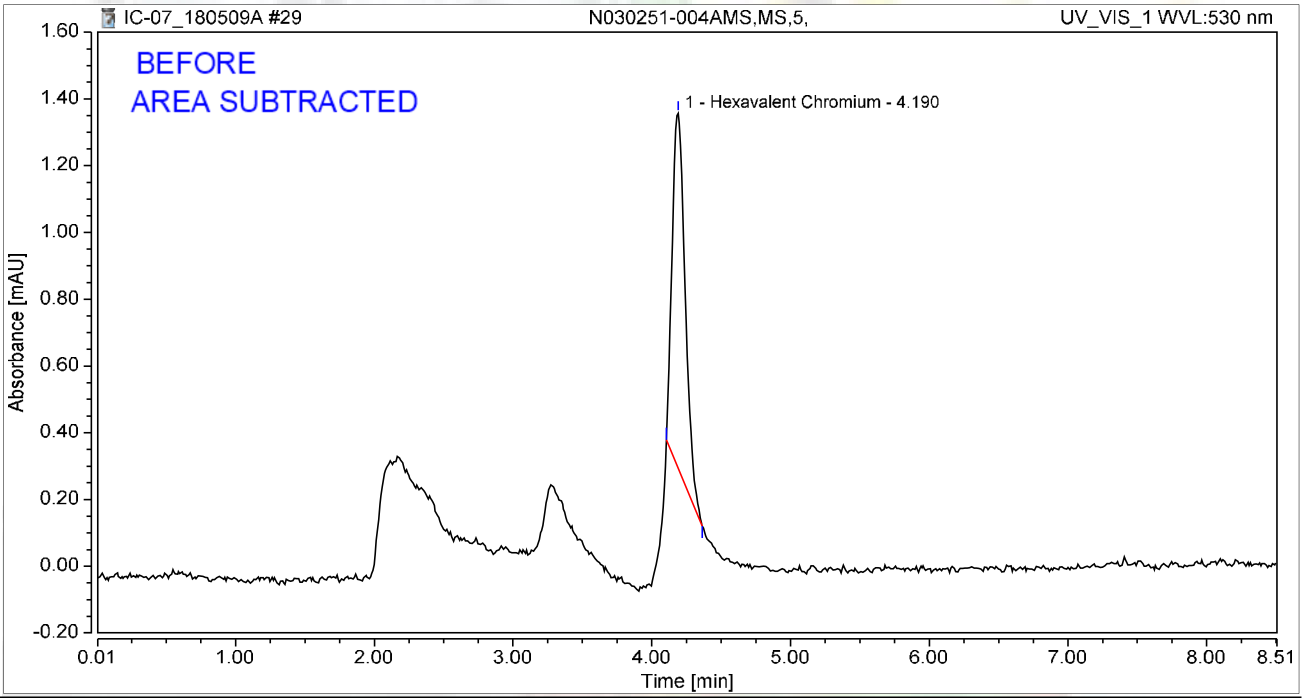
Chromatogram and Results

Injection Details

Injection Name:	**N030251-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.115	1.061	100.00	100.00	0.4493
Total:			**0.115**	**1.061**	**100.00**	**100.00**	

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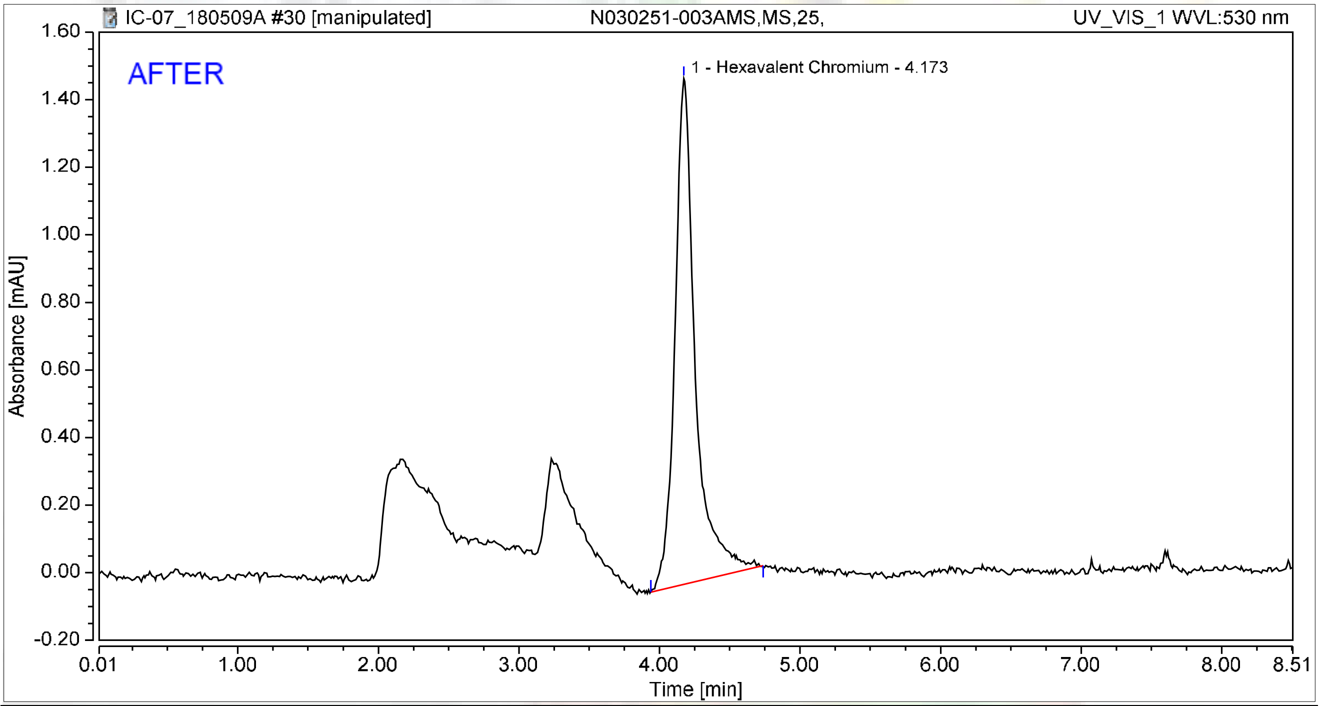
Chromatogram and Results

Injection Details

Injection Name:	**N030251-003AMS,MS,25,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.252	1.496	100.00	100.00	0.9811
Total:			**0.252**	**1.496**	**100.00**	**100.00**	

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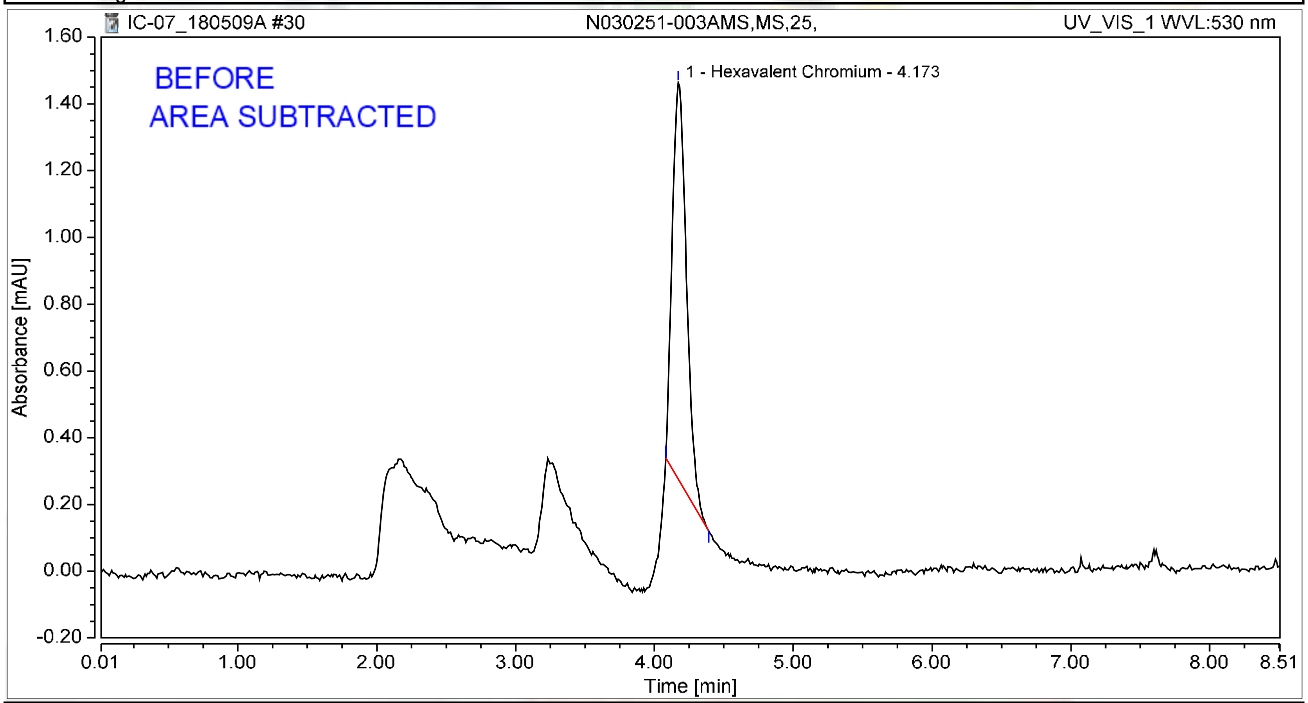
Chromatogram and Results

Injection Details

Injection Name:	**N030251-003AMS,MS,25,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.141	1.188	100.00	100.00	0.5494
Total:			**0.141**	**1.188**	**100.00**	**100.00**	

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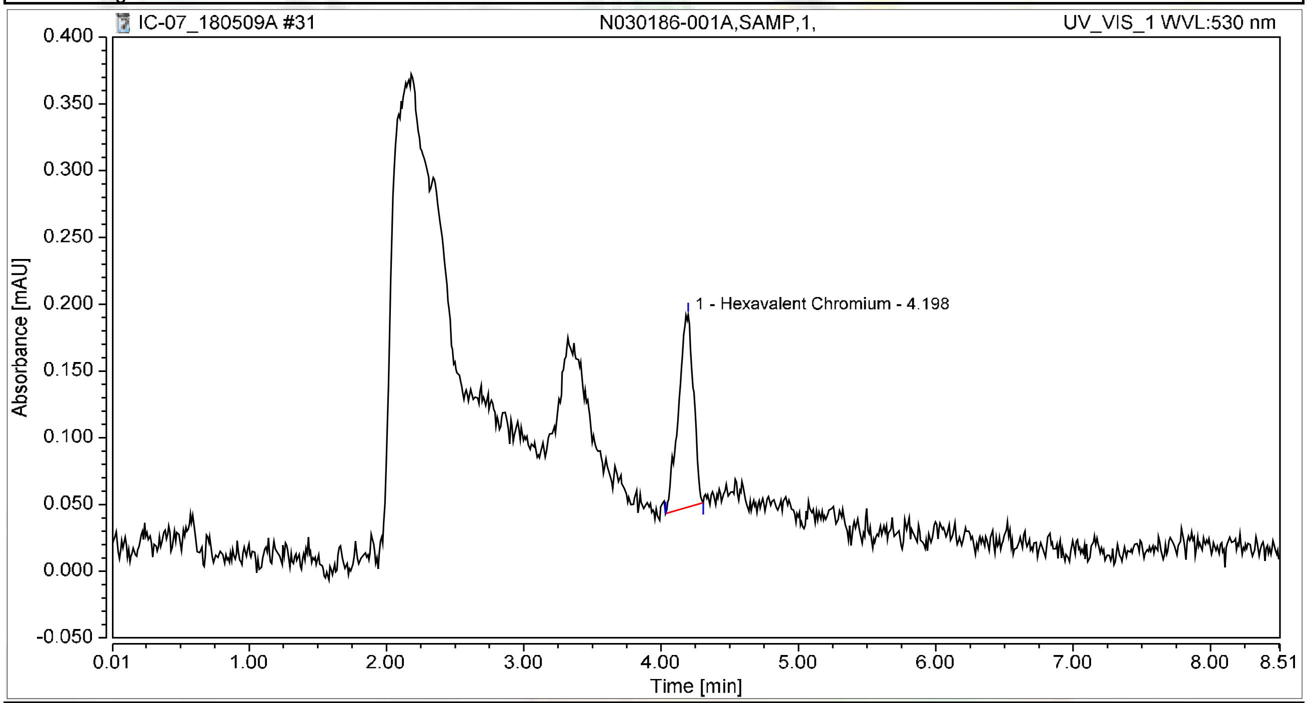
Chromatogram and Results

Injection Details

Injection Name:	**N030186-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

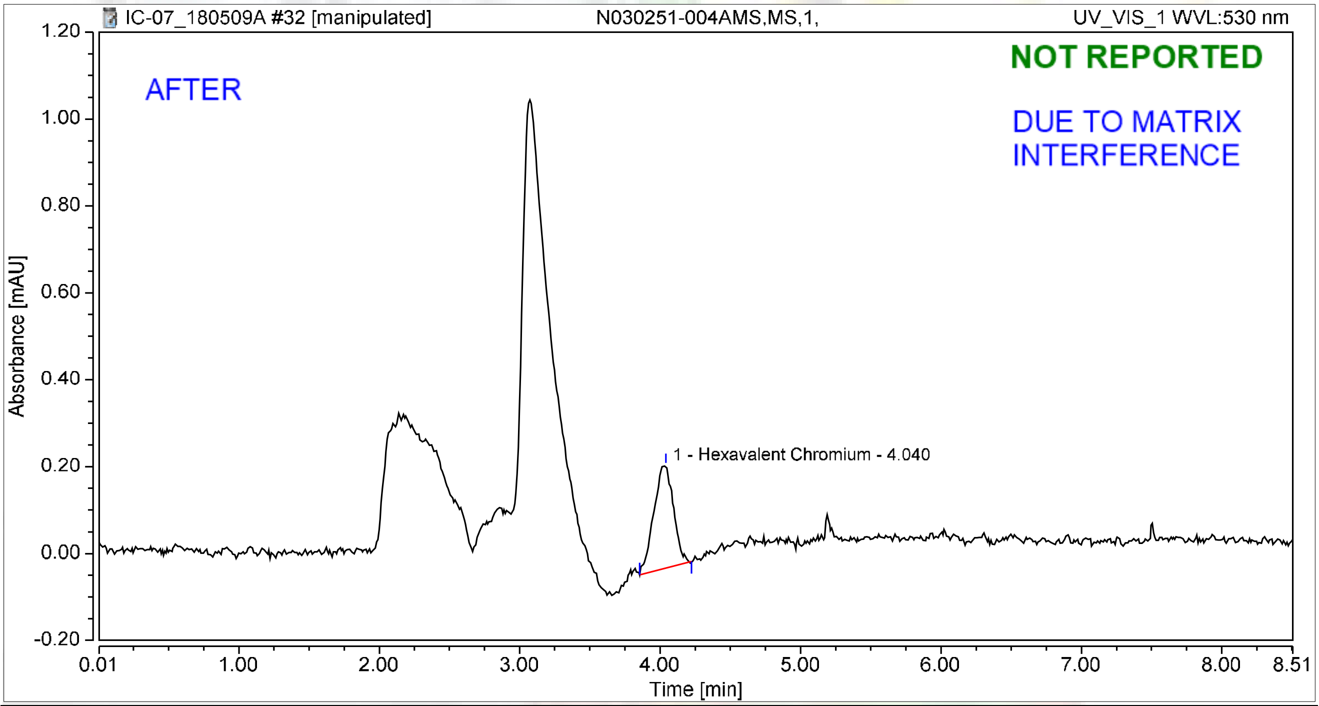
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.018	0.144	100.00	100.00	0.0710
Total:			**0.018**	**0.144**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.040	0.039	0.236	100.00	100.00	0.1500
Total:			**0.039**	**0.236**	**100.00**	**100.00**	

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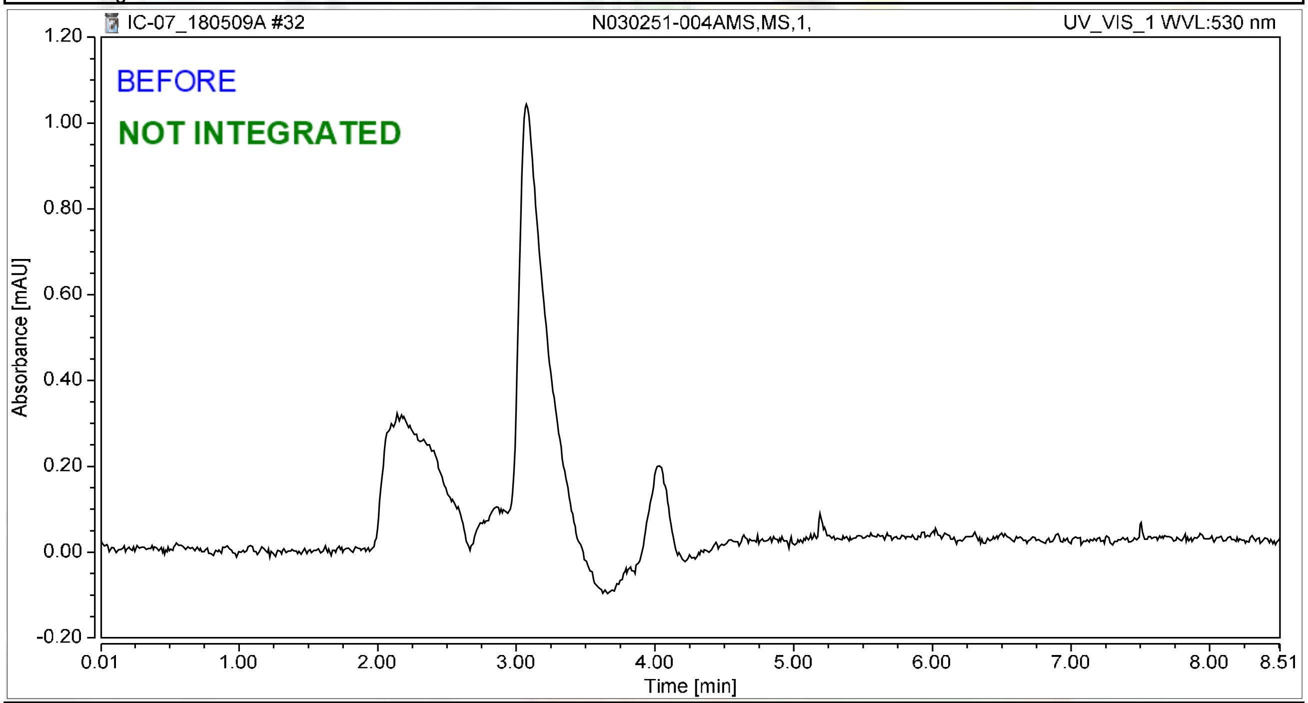
Chromatogram and Results

Injection Details

Injection Name:	**N030251-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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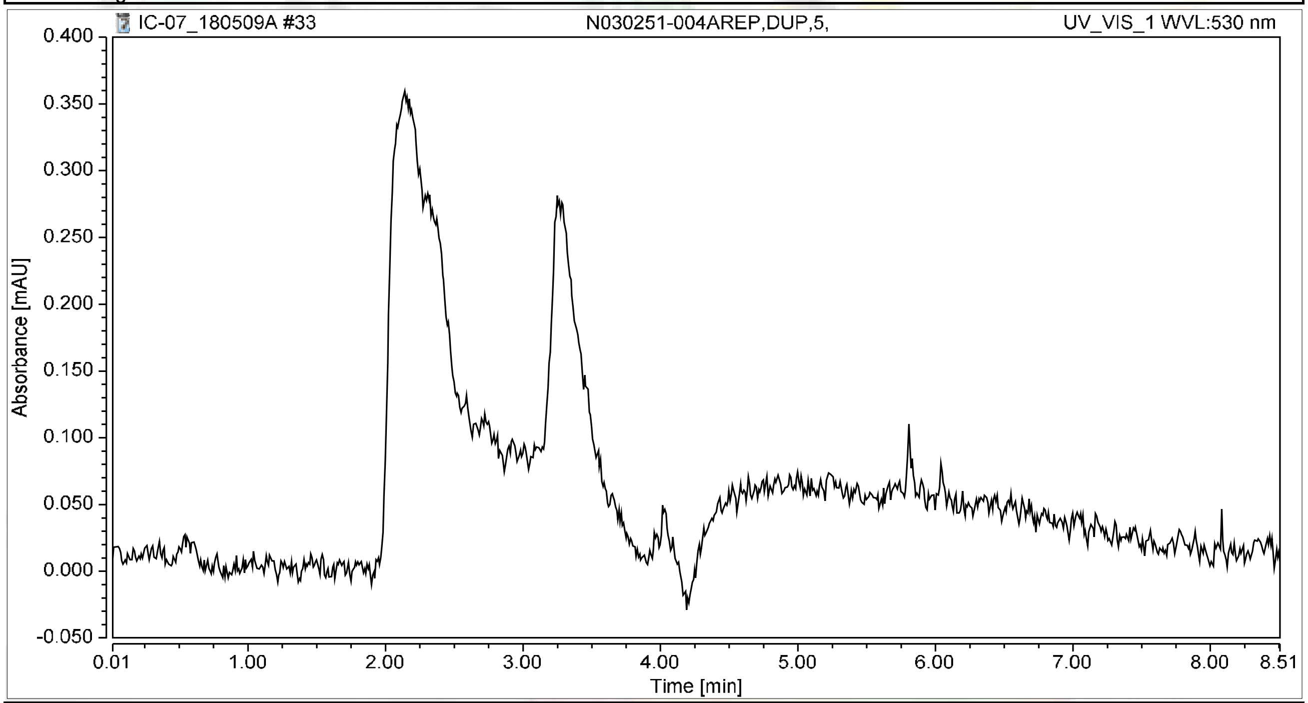
Chromatogram and Results

Injection Details

Injection Name:	**N030251-004AREP,DUP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

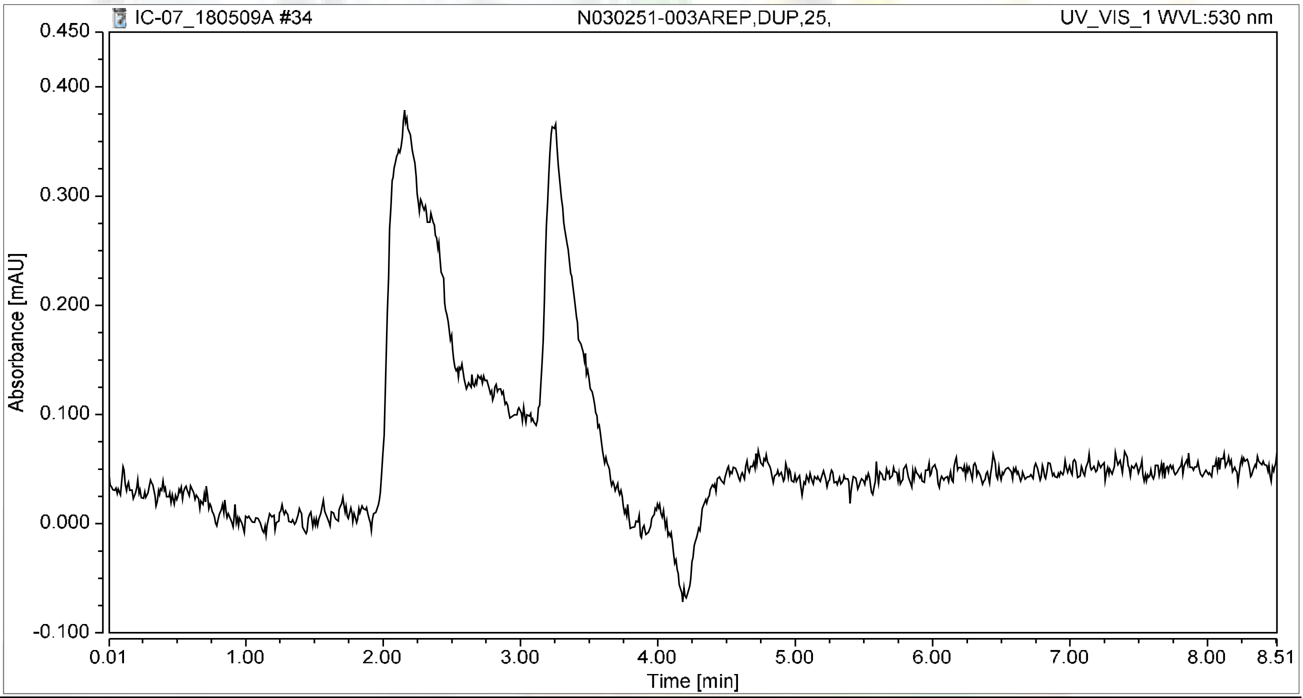
Chromatogram and Results

Injection Details

DUP

Injection Name:	**N030251-003A~~REP~~,DUP,25,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

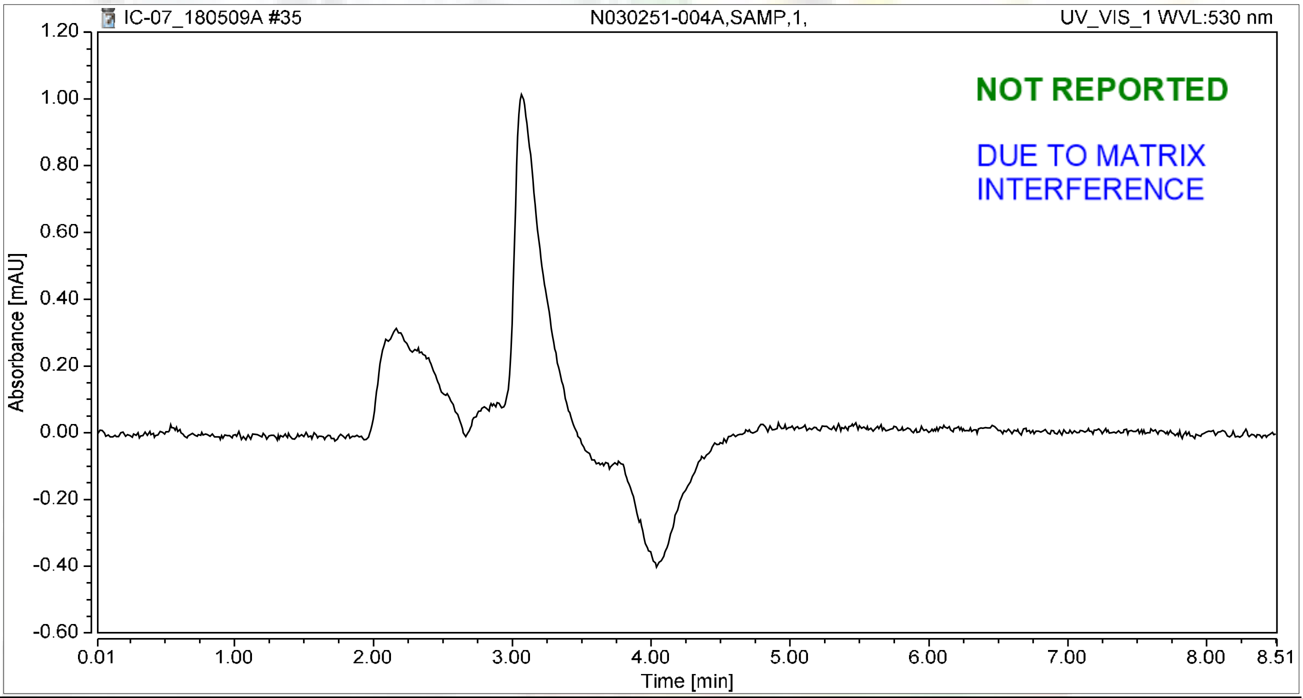
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030251-004A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 12:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

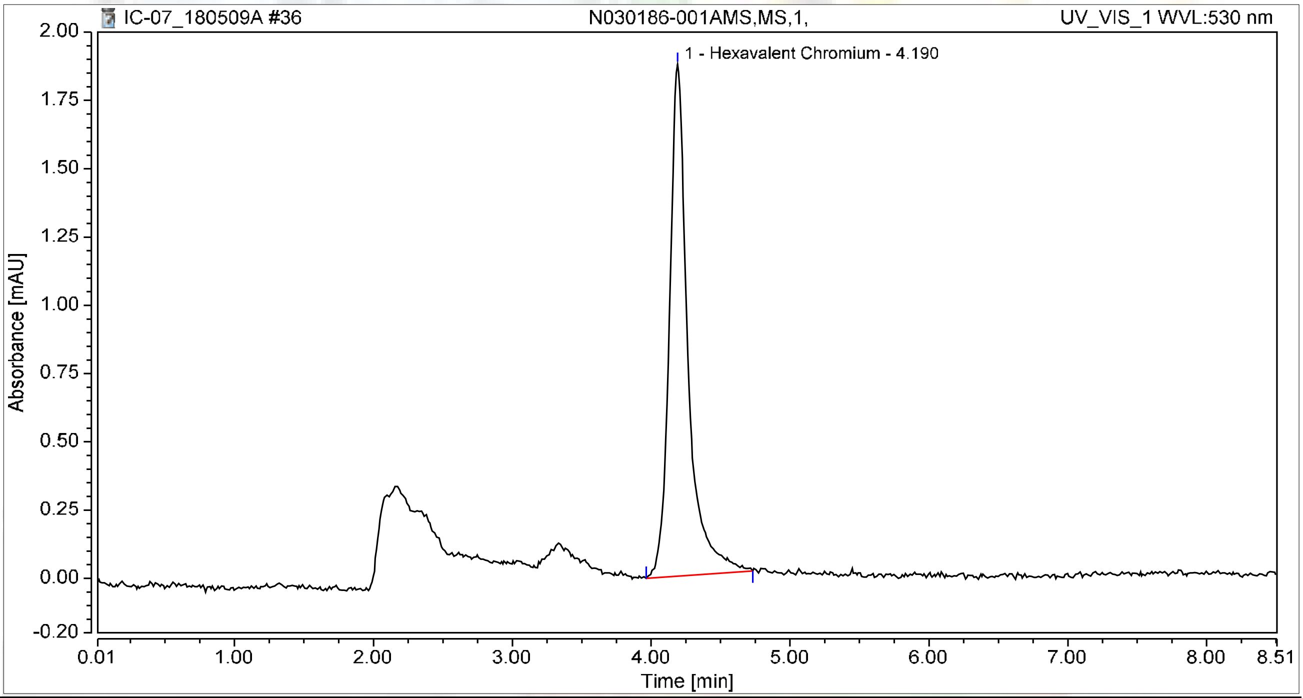
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030186-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 13:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

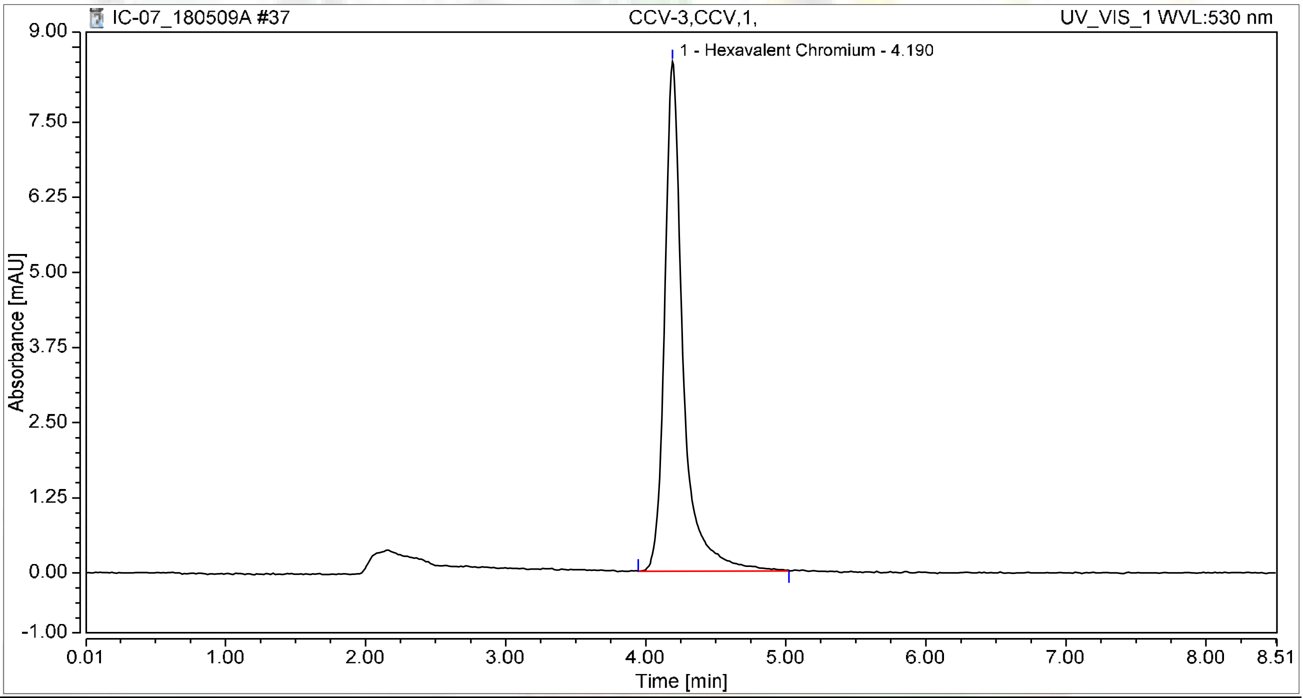
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.290	1.873	100.00	100.00	1.1309
Total:			**0.290**	**1.873**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 13:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

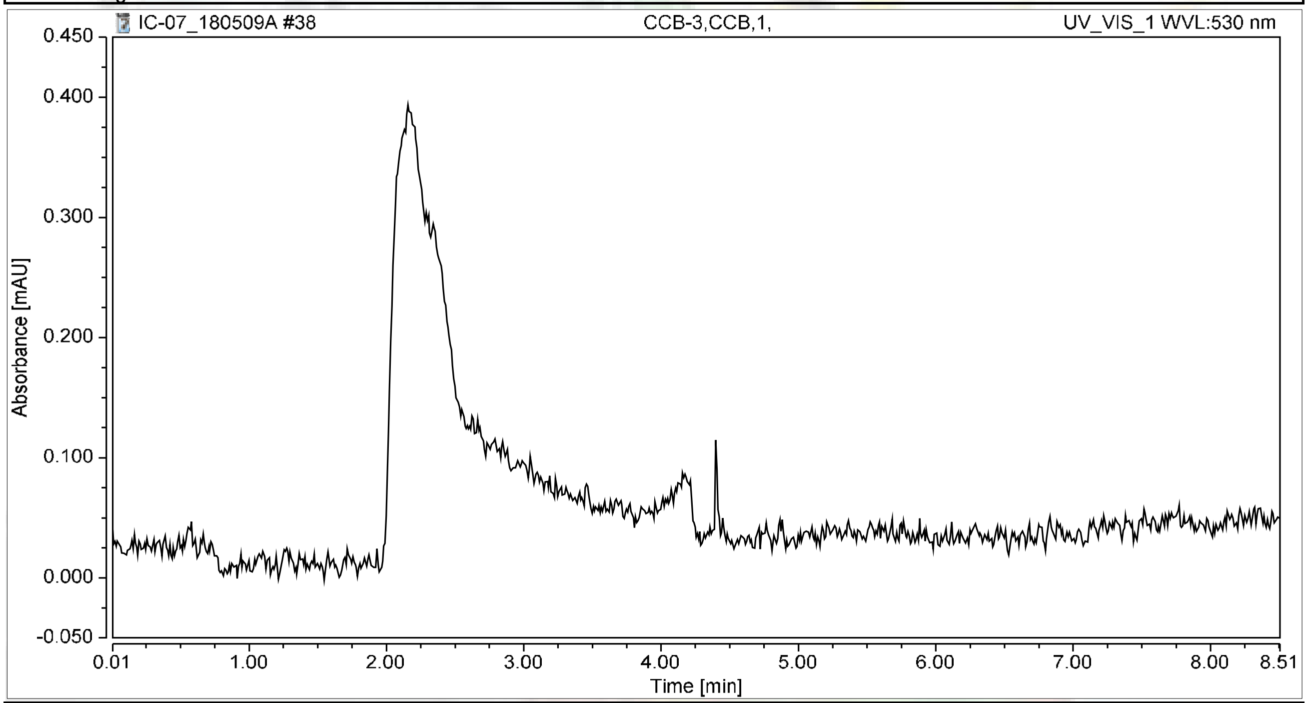
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	1.291	8.482	100.00	100.00	5.0309
Total:			**1.291**	**8.482**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 13:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

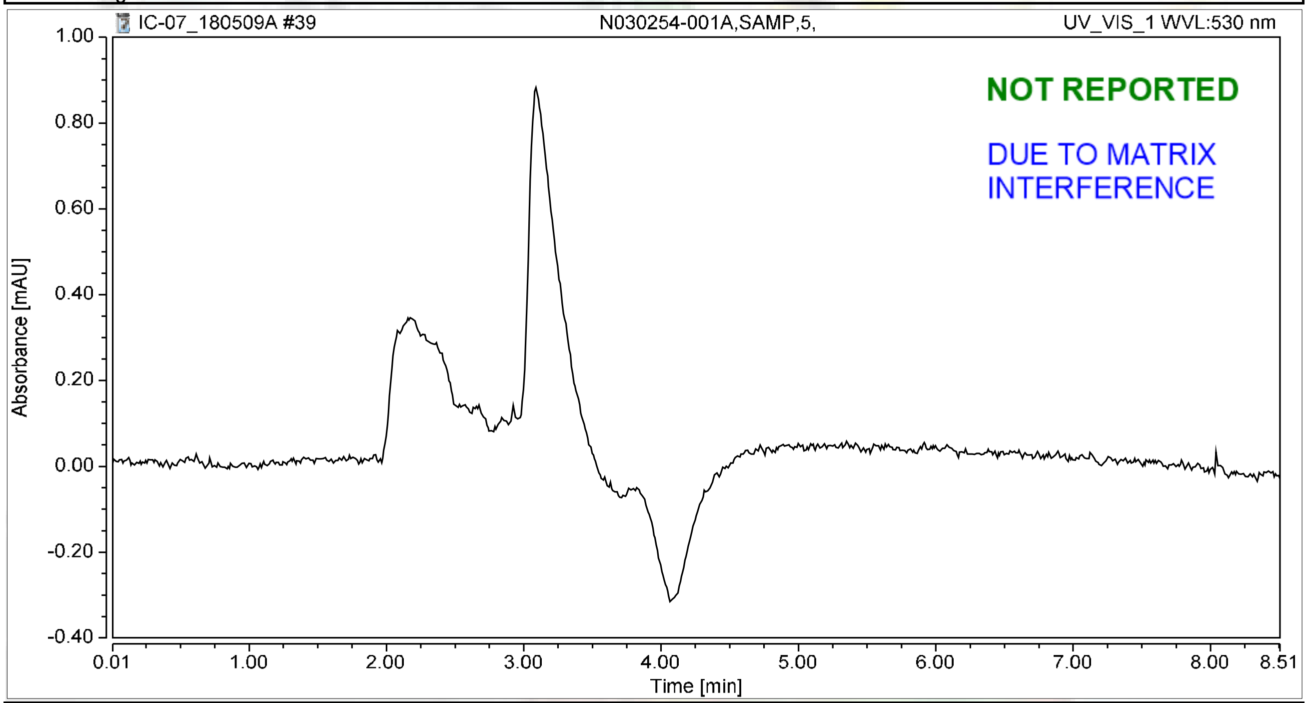
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-001A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 13:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

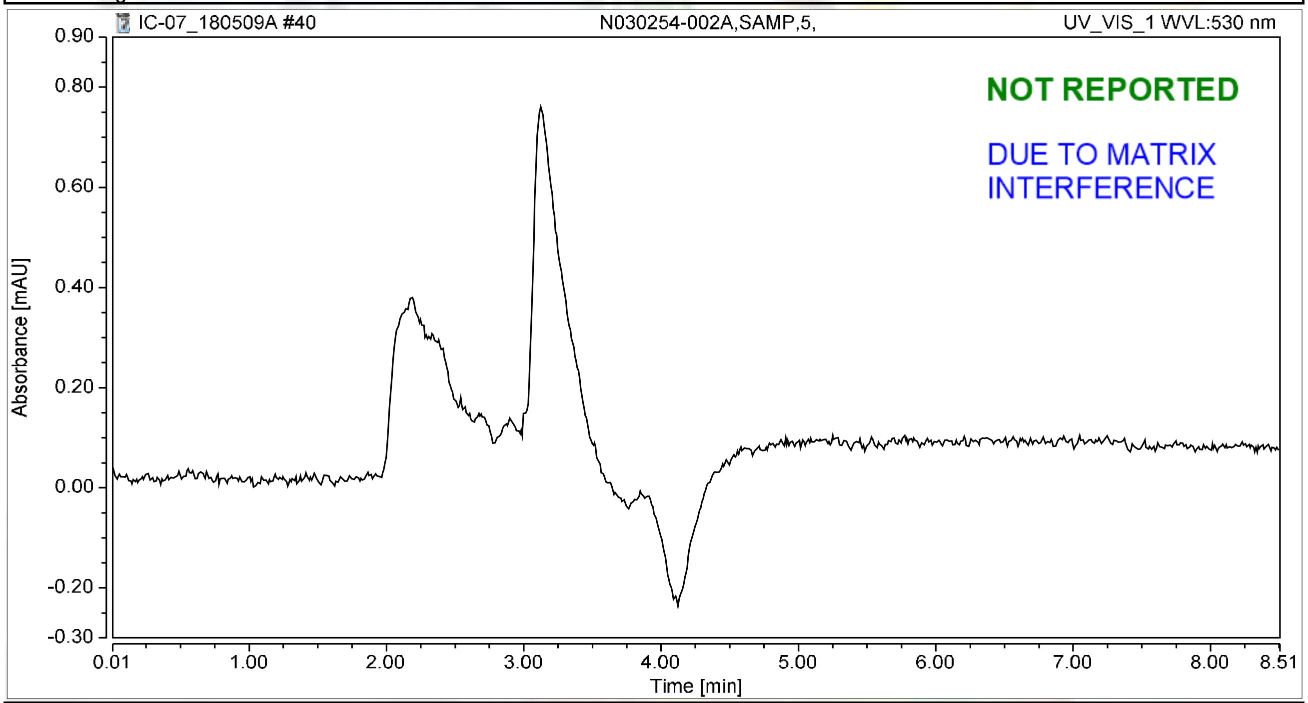
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-002A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 13:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

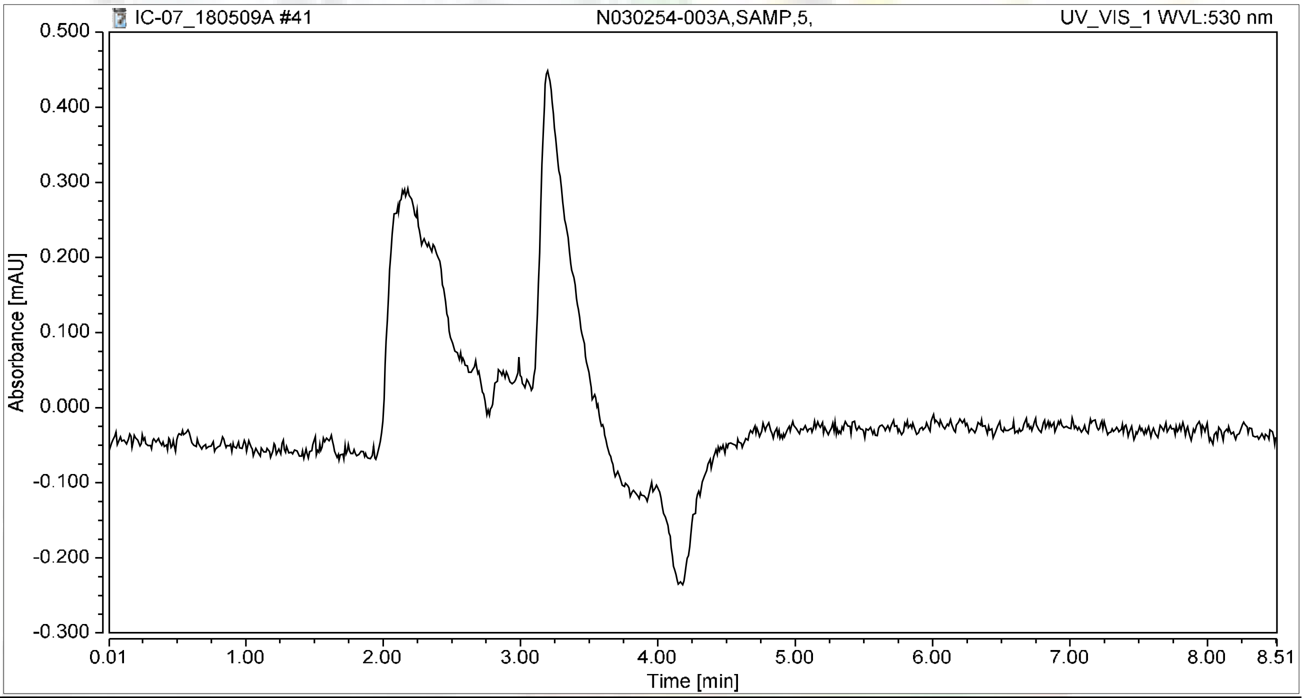
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-003A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 13:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

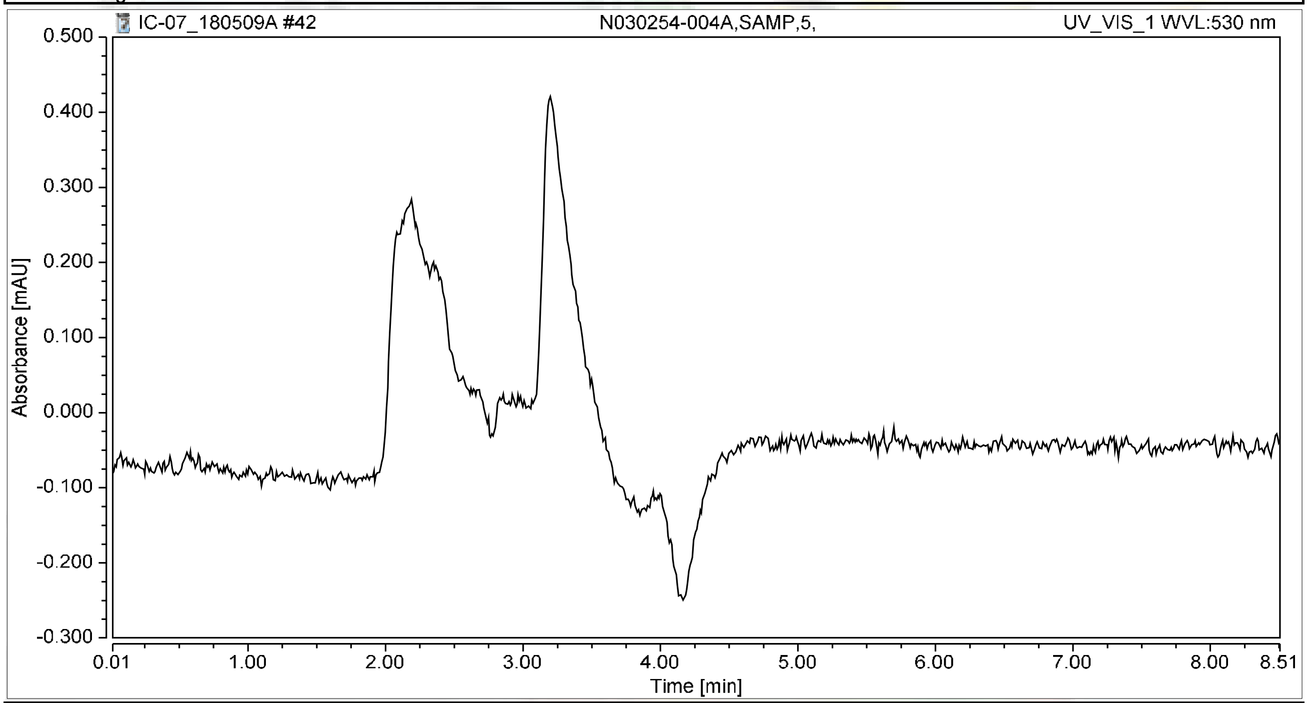
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-004A,SAMP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

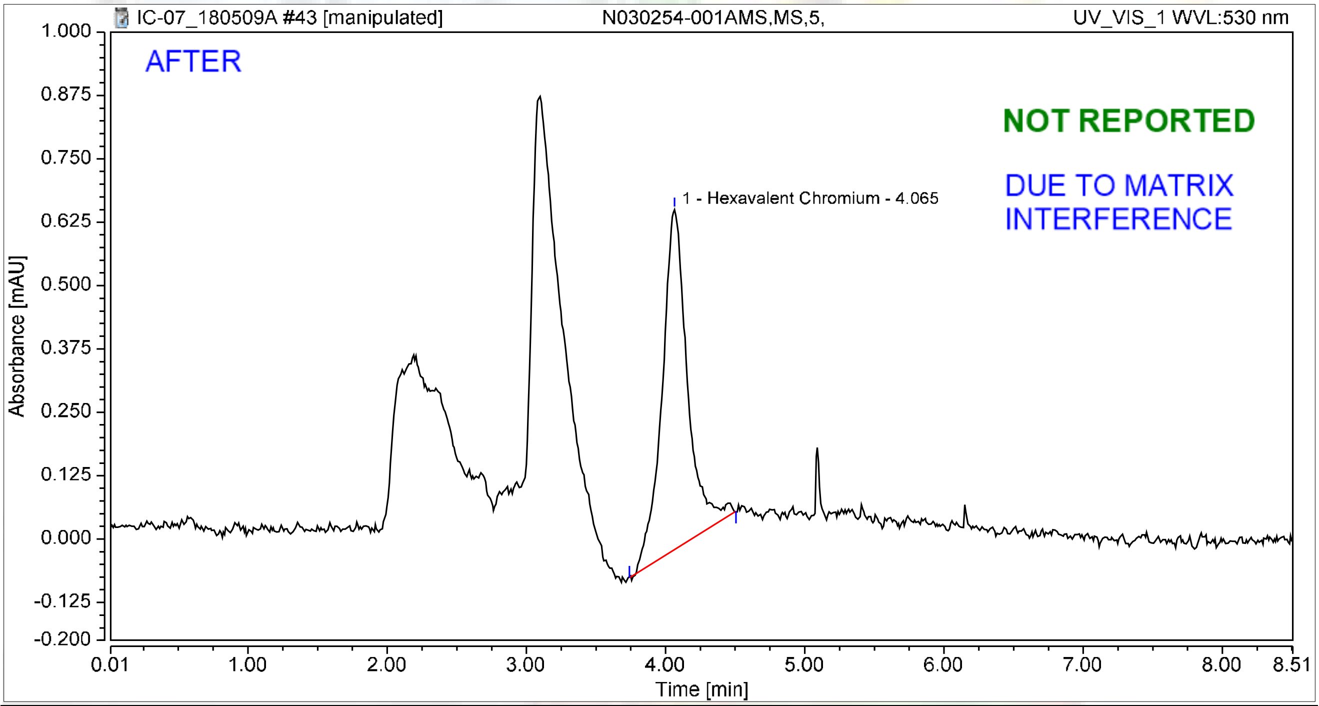
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-001AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.142	0.671	100.00	100.00	0.5548
Total:			**0.142**	**0.671**	**100.00**	**100.00**	

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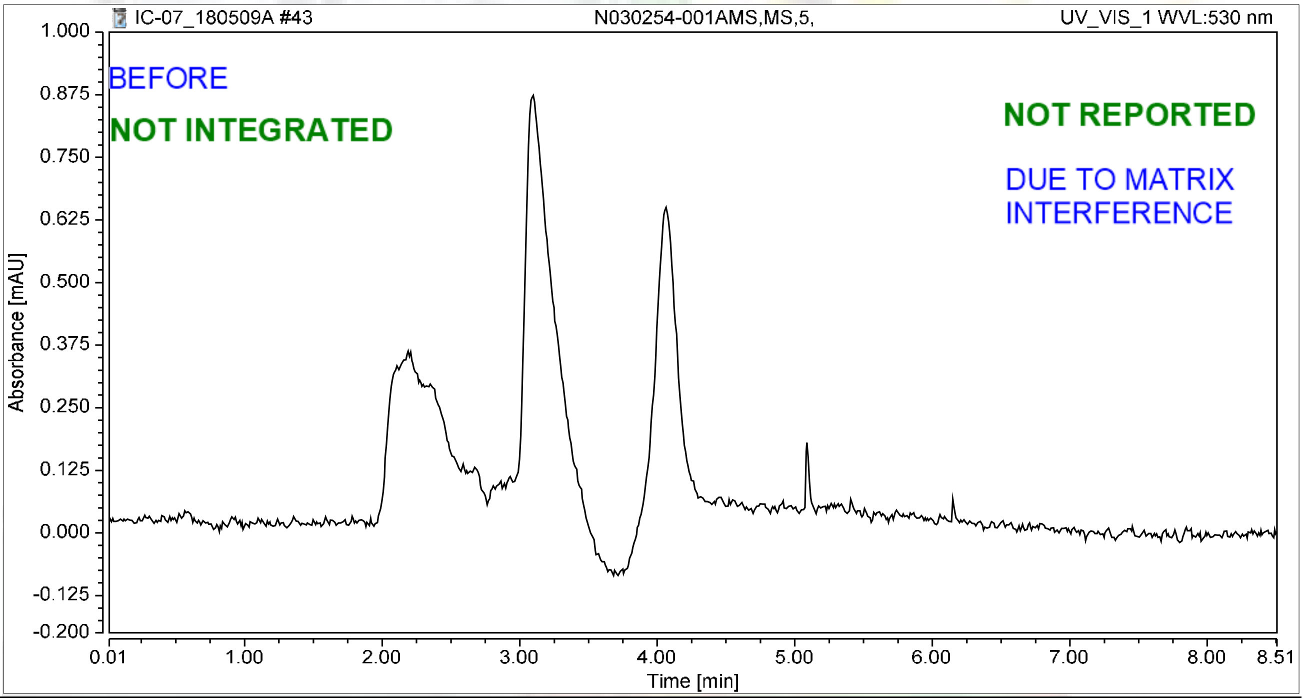
Chromatogram and Results

Injection Details

Injection Name:	**N030254-001AMS,MS,5,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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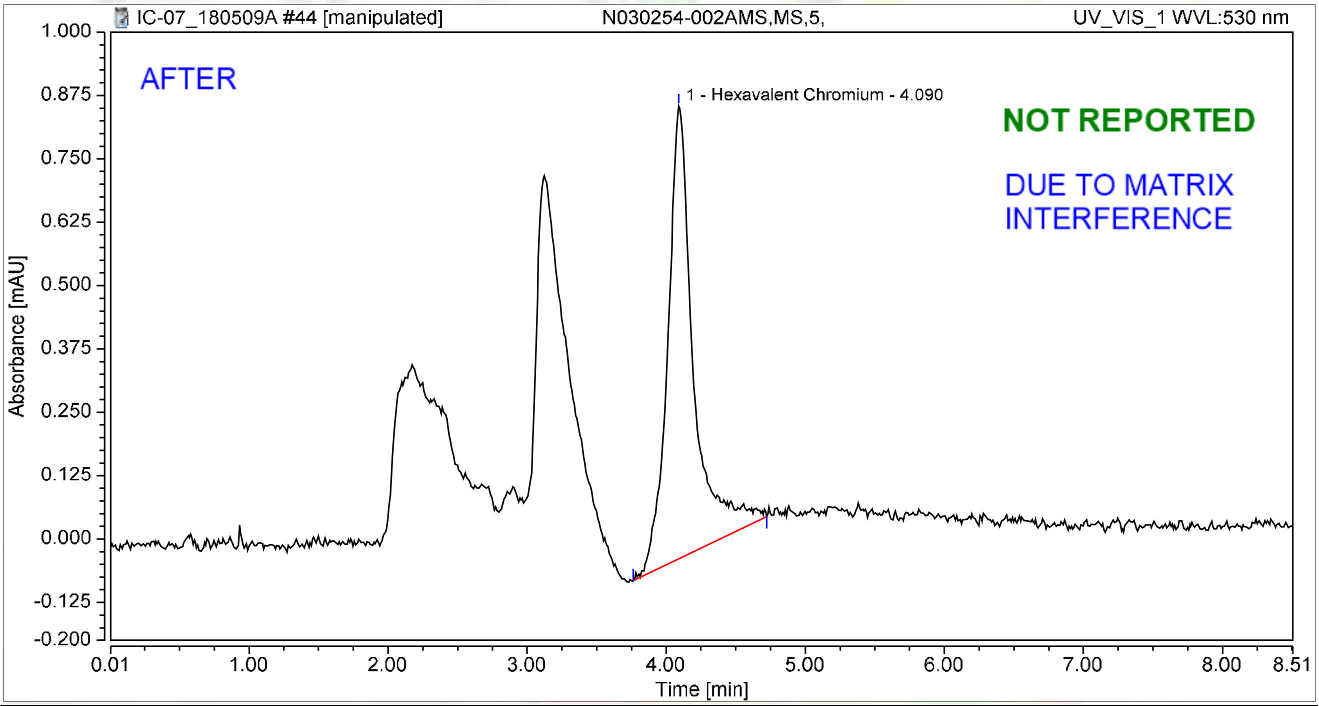
Chromatogram and Results

Injection Details

Injection Name:	**N030254-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.193	0.893	100.00	100.00	0.7521
Total:			**0.193**	**0.893**	**100.00**	**100.00**	

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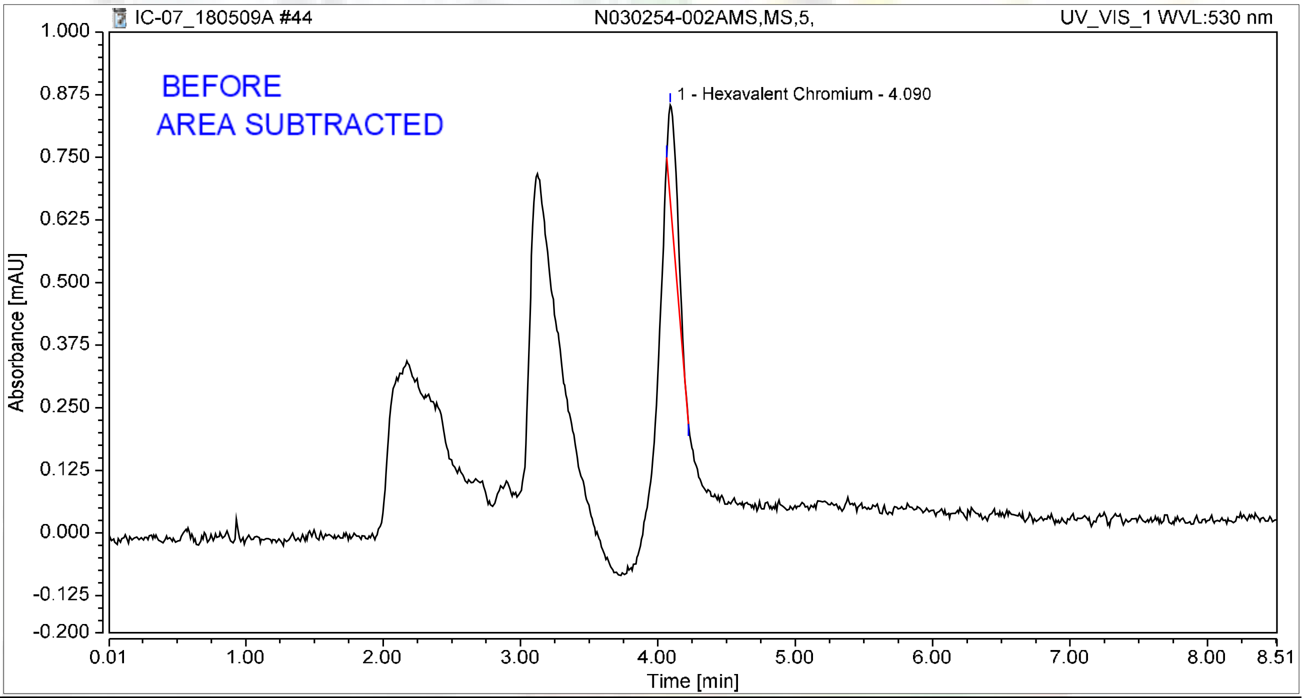
Chromatogram and Results

Injection Details

Injection Name:	**N030254-002AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.017	0.188	100.00	100.00	0.0672
Total:			**0.017**	**0.188**	**100.00**	**100.00**	

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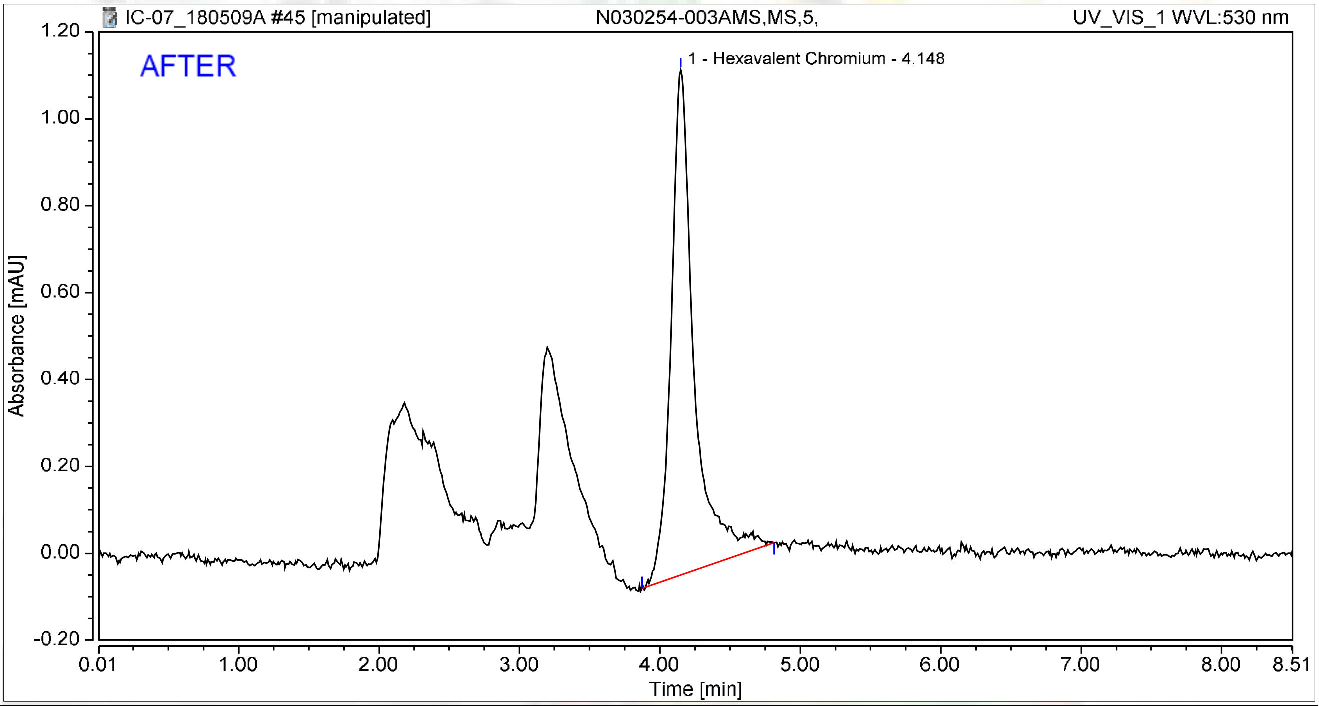
Chromatogram and Results

Injection Details

Injection Name:	**N030254-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.222	1.162	100.00	100.00	0.8651
Total:			**0.222**	**1.162**	**100.00**	**100.00**	

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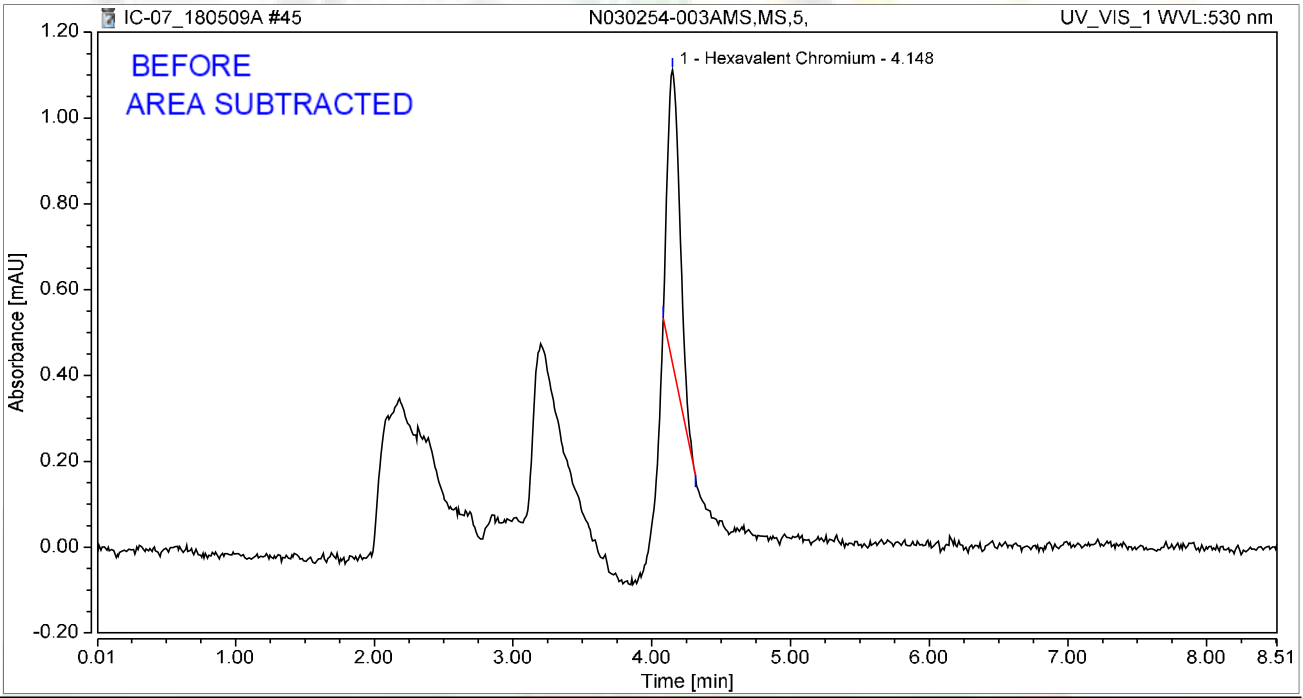
Chromatogram and Results

Injection Details

Injection Name:	**N030254-003AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.072	0.683	100.00	100.00	0.2801
Total:			**0.072**	**0.683**	**100.00**	**100.00**	

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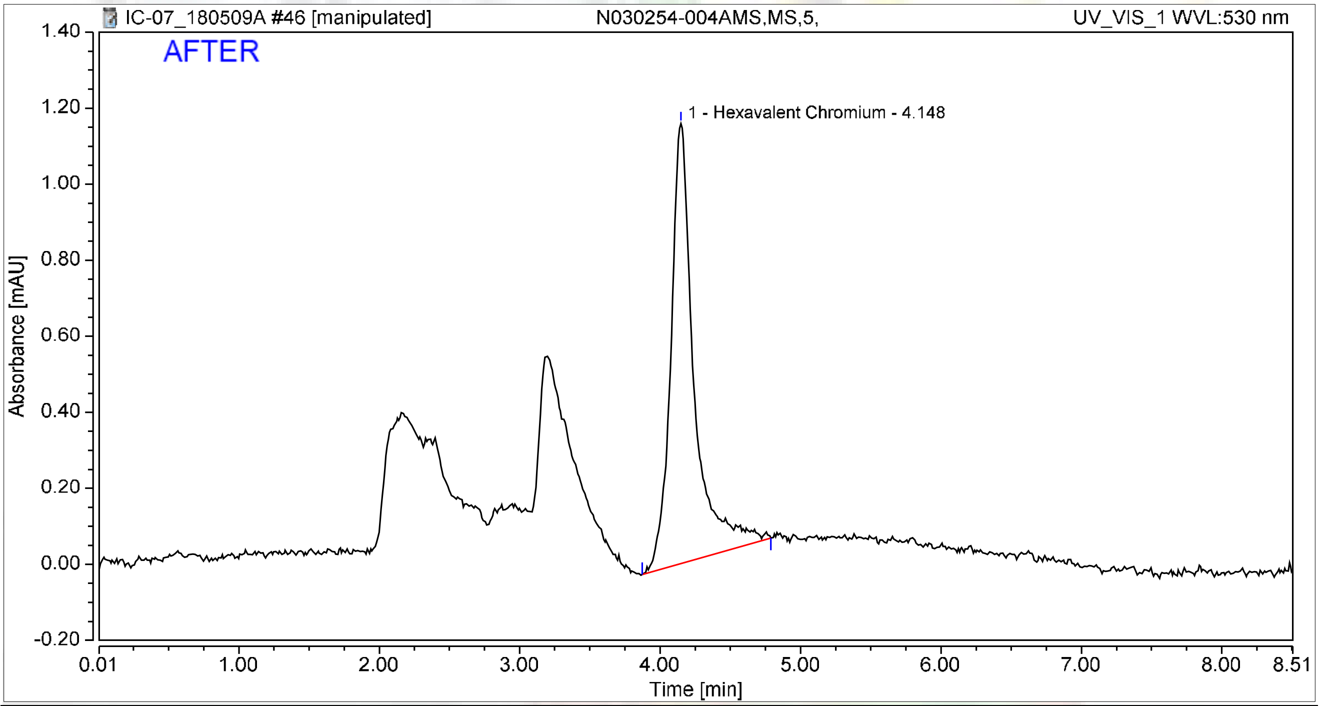
Chromatogram and Results

Injection Details

Injection Name:	**N030254-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.224	1.157	100.00	100.00	0.8711
Total:			**0.224**	**1.157**	**100.00**	**100.00**	

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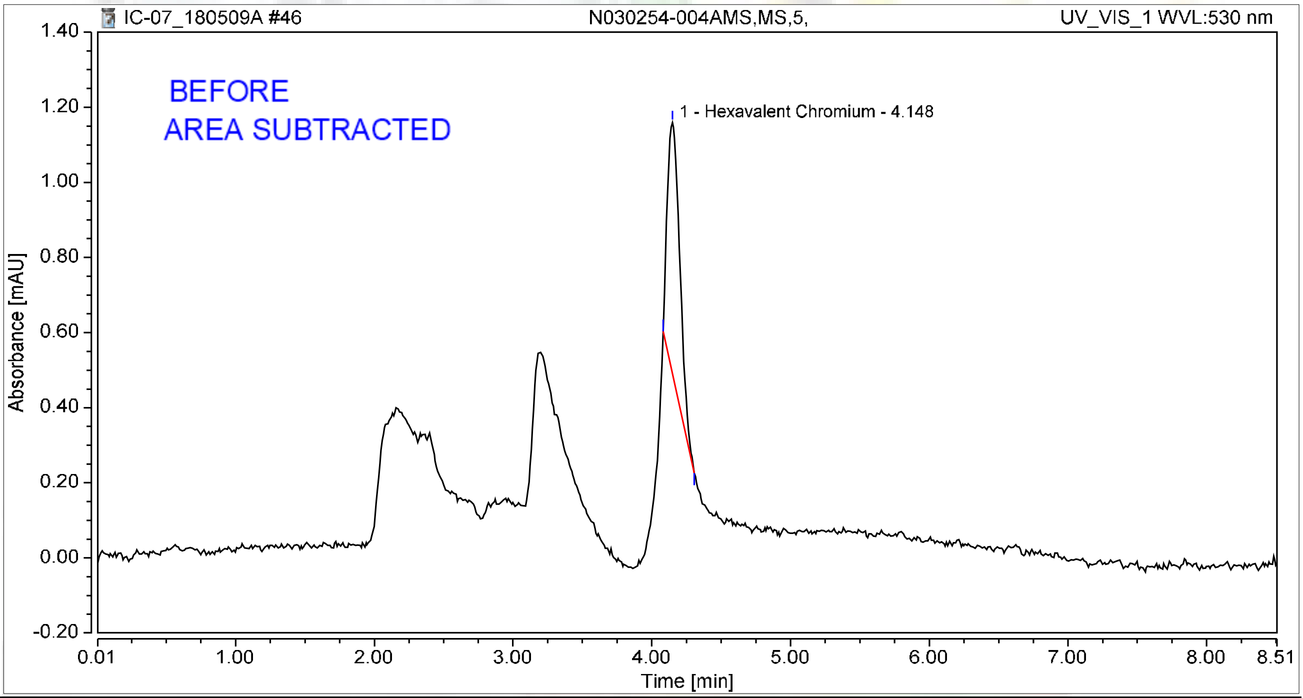
Chromatogram and Results

Injection Details

Injection Name:	**N030254-004AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.070	0.667	100.00	100.00	0.2726
Total:			**0.070**	**0.667**	**100.00**	**100.00**	

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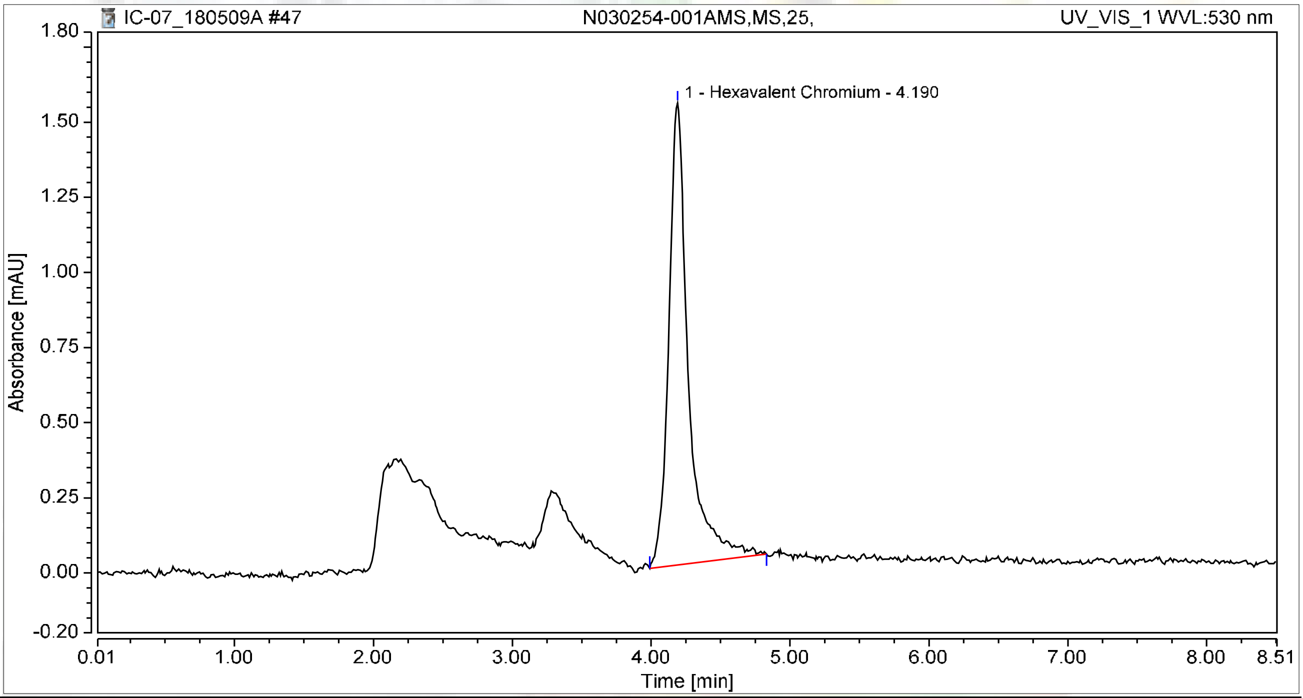
Chromatogram and Results

Injection Details

Injection Name:	**N030254-001AMS,MS,25,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 14:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

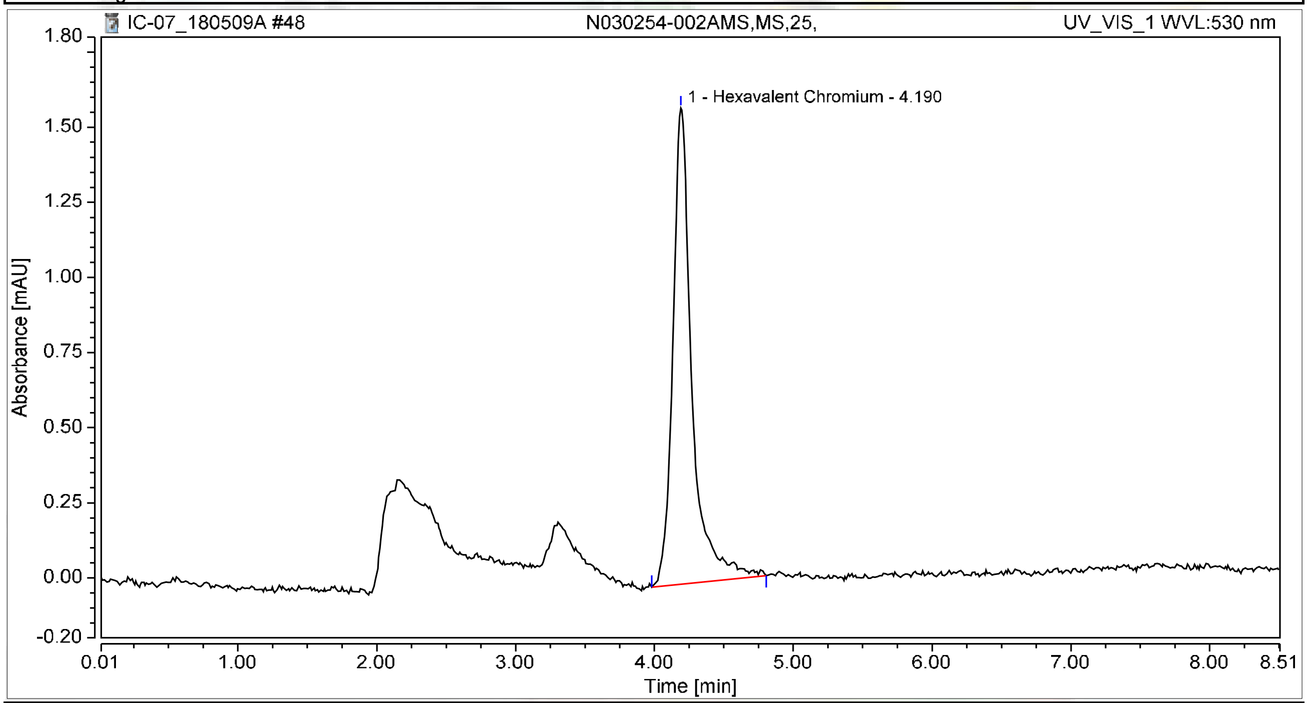
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.252	1.537	100.00	100.00	0.9832
Total:			**0.252**	**1.537**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-002AMS,MS,25,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

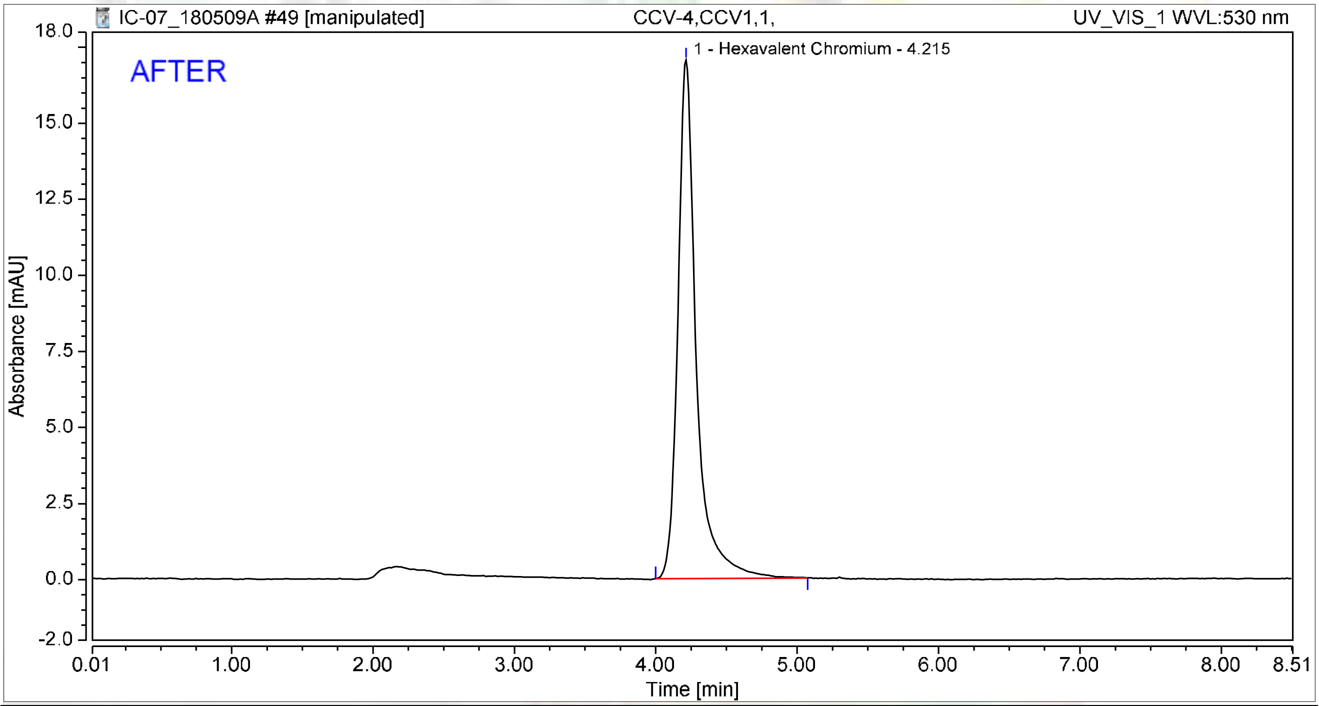
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.252	1.585	100.00	100.00	0.9836
Total:			**0.252**	**1.585**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.580	17.053	100.00	100.00	10.0530
Total:			**2.580**	**17.053**	**100.00**	**100.00**	

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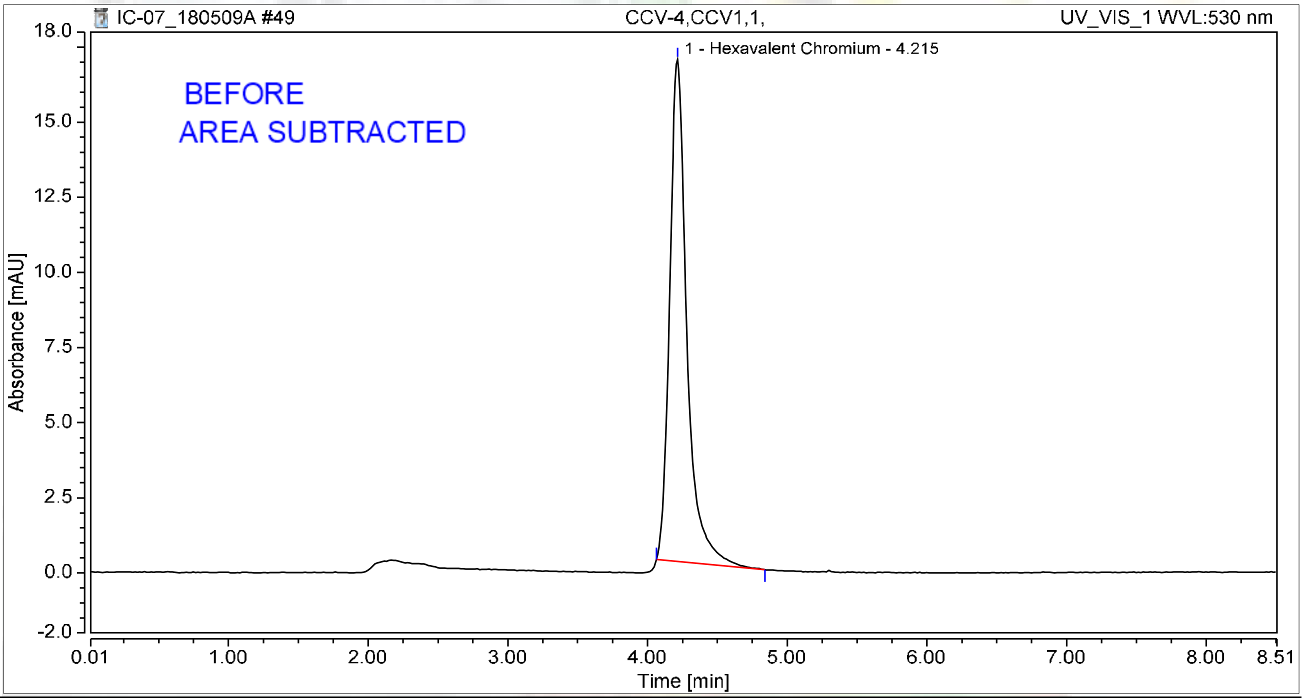
Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.378	16.700	100.00	100.00	9.2650
Total:			**2.378**	**16.700**	**100.00**	**100.00**	

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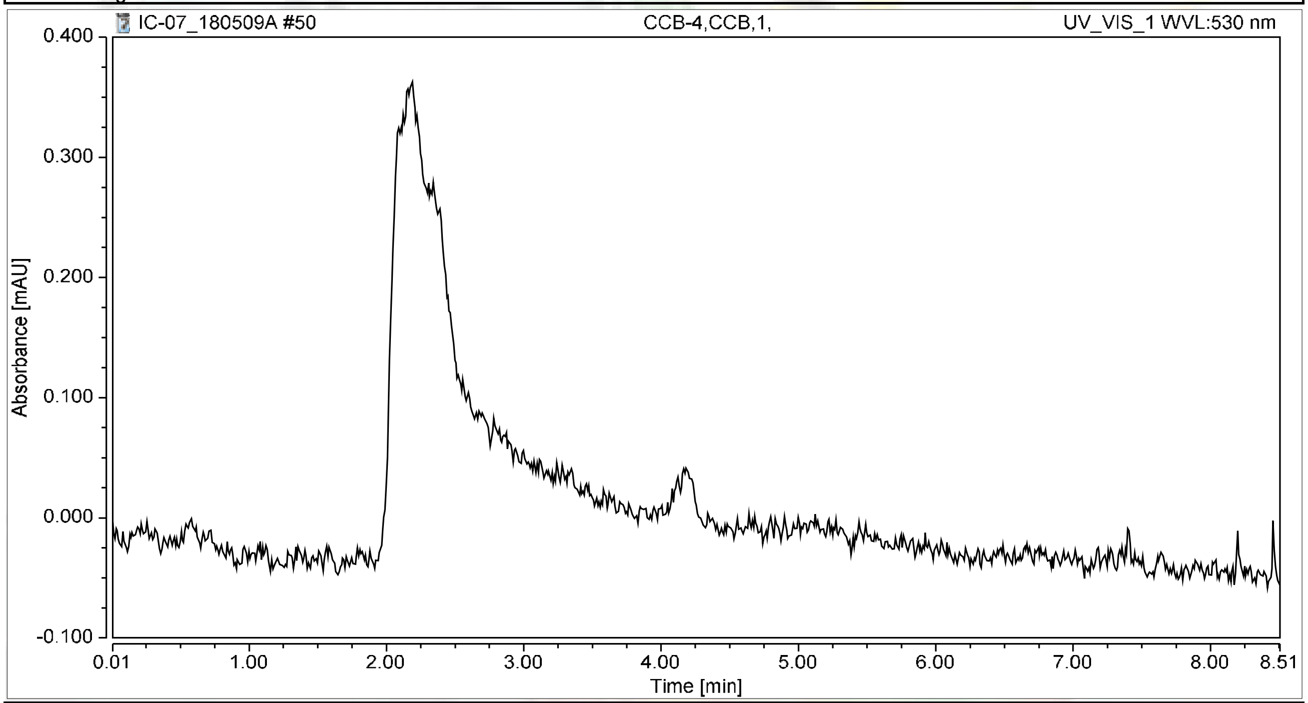
Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

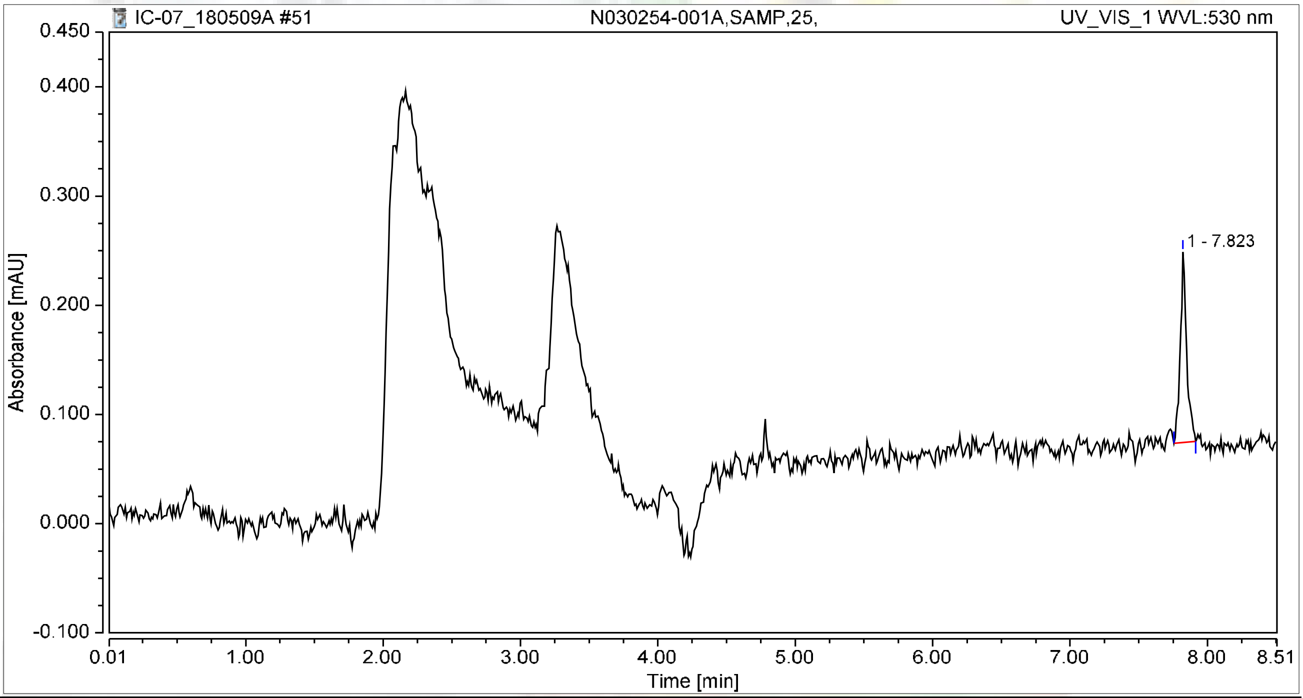
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-001A,SAMP,25,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

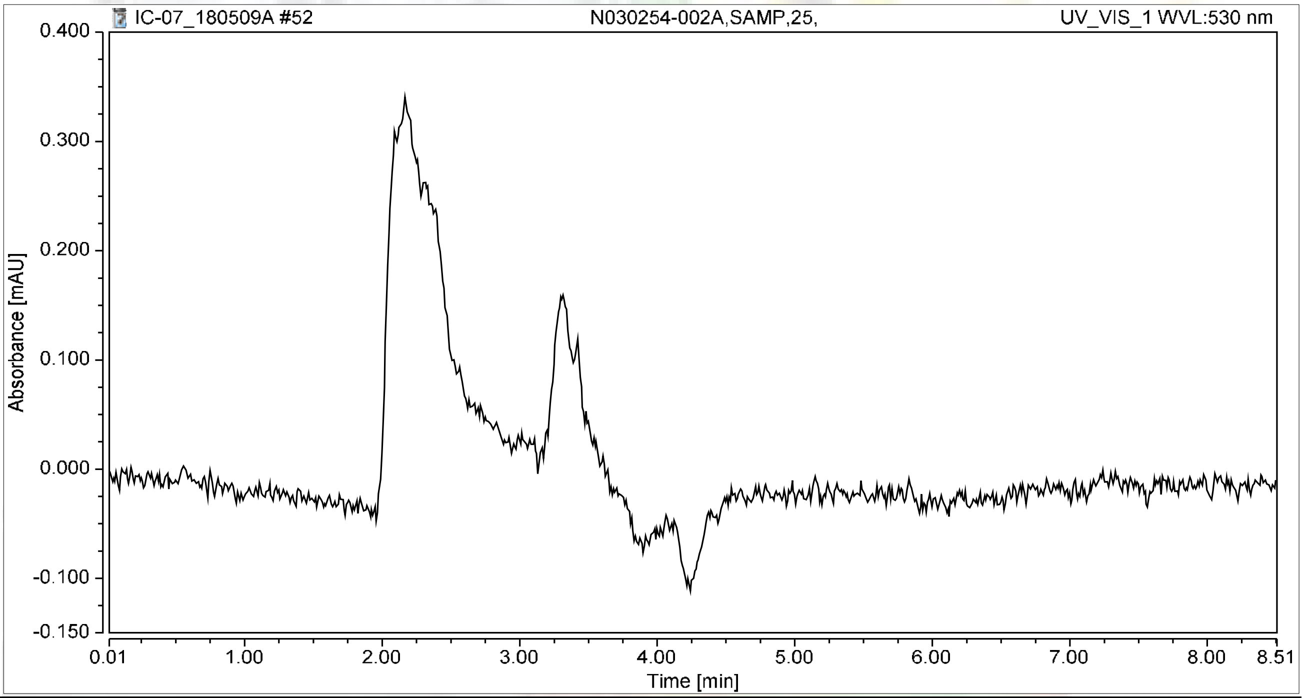
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.823	0.009	0.174	100.00	100.00	n.a.
Total:			**0.009**	**0.174**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-002A,SAMP,25,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

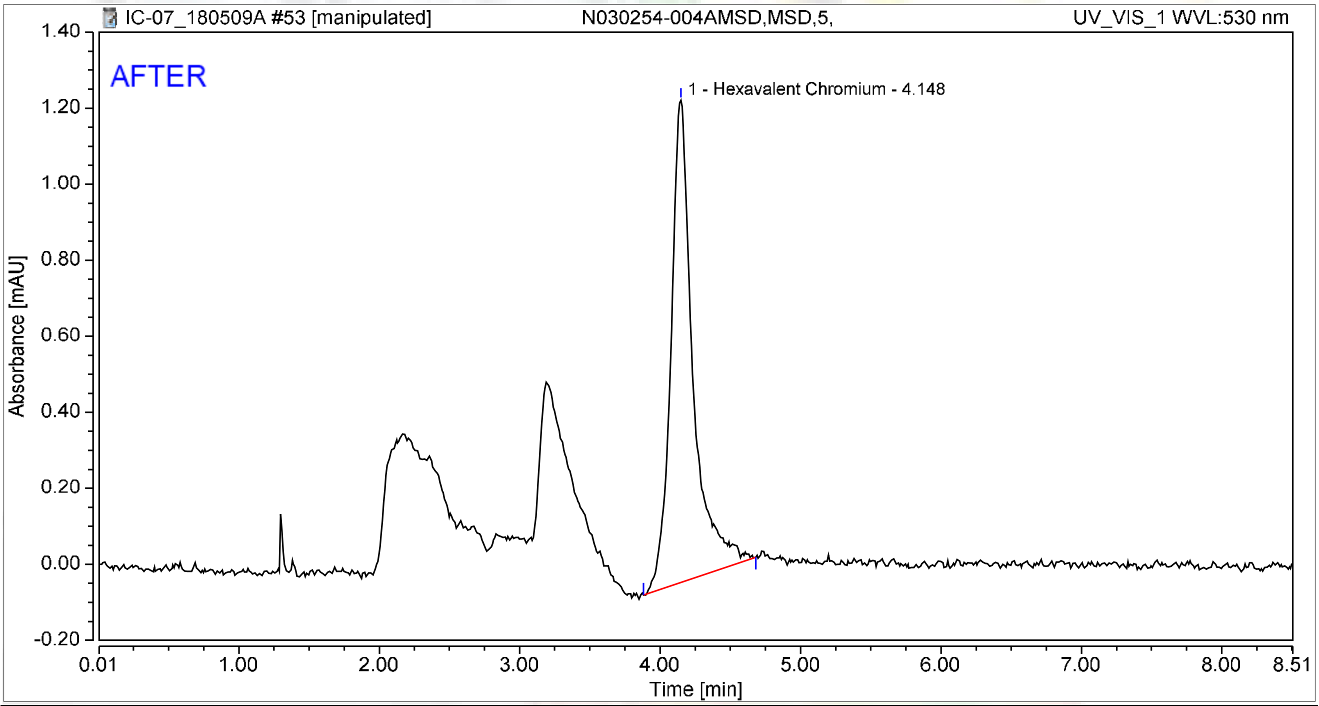
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-004AMSD,MSD,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.232	1.268	100.00	100.00	0.9039
Total:			**0.232**	**1.268**	**100.00**	**100.00**	

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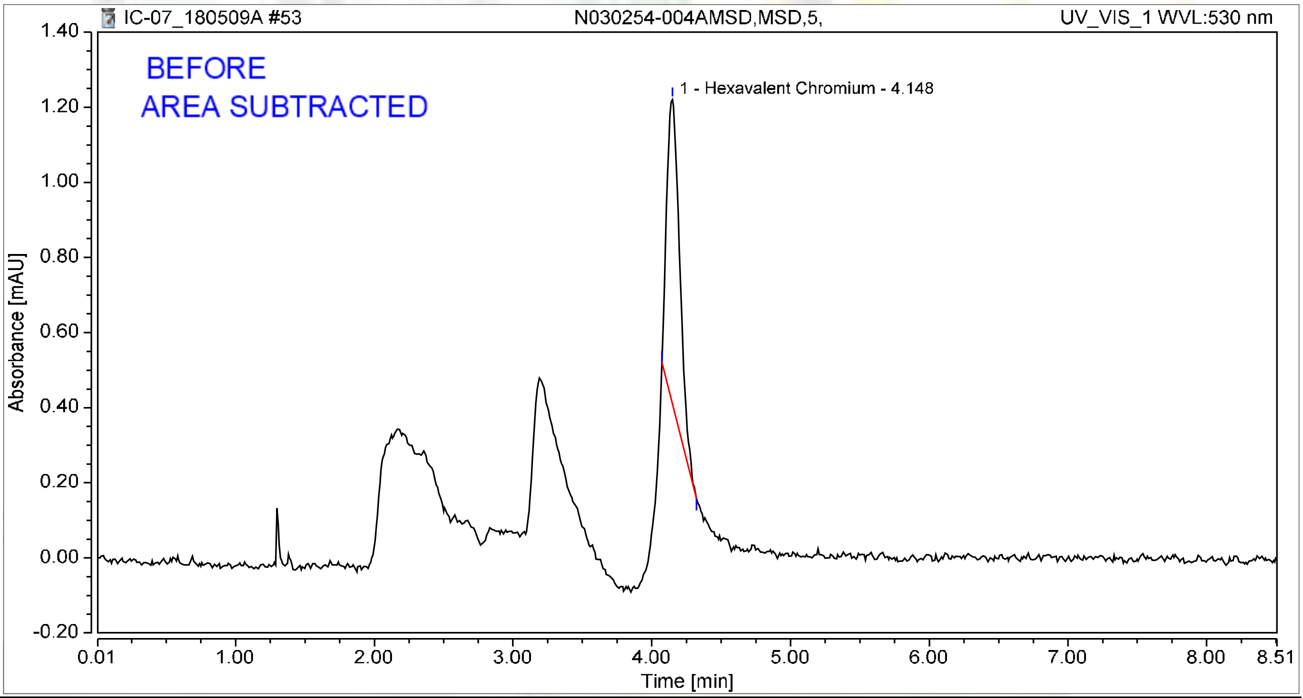
Chromatogram and Results

Injection Details

Injection Name:	**N030254-004AMSD,MSD,5,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.087	0.809	100.00	100.00	0.3401
Total:			**0.087**	**0.809**	**100.00**	**100.00**	

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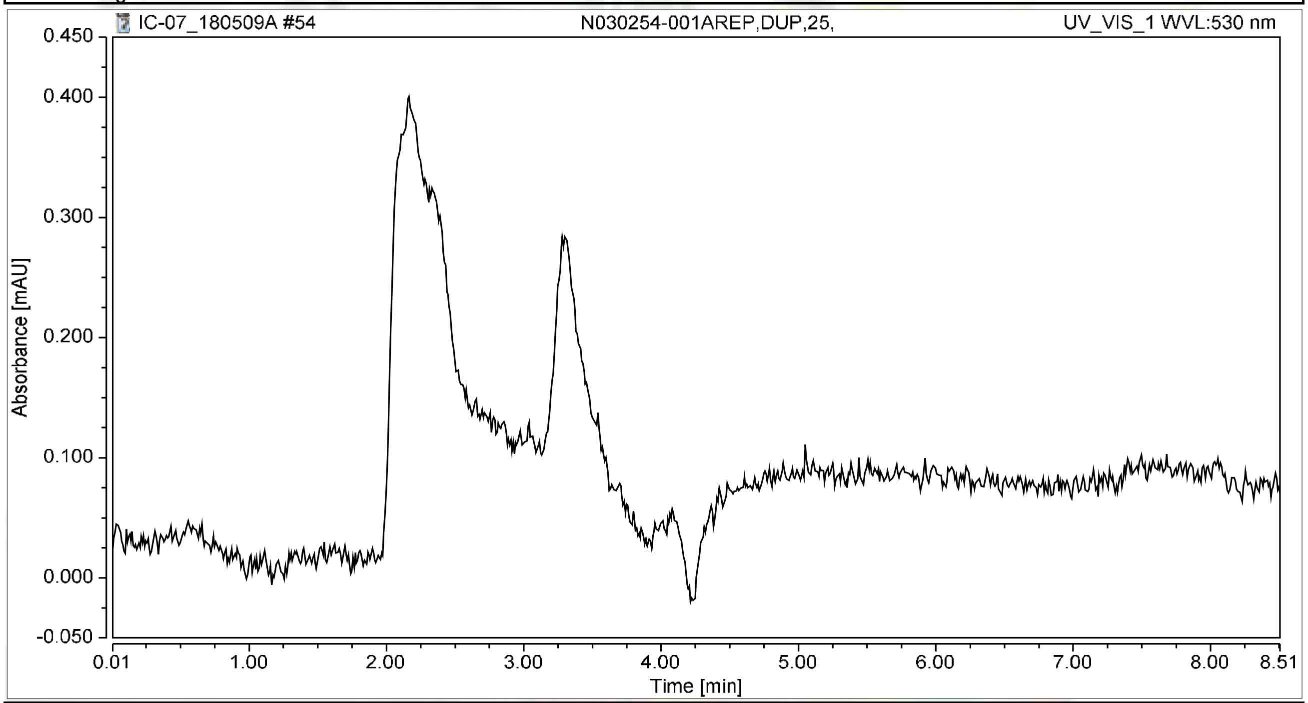
Chromatogram and Results

Injection Details

Injection Name:	**N030254-001AREP,DUP,25,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 15:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

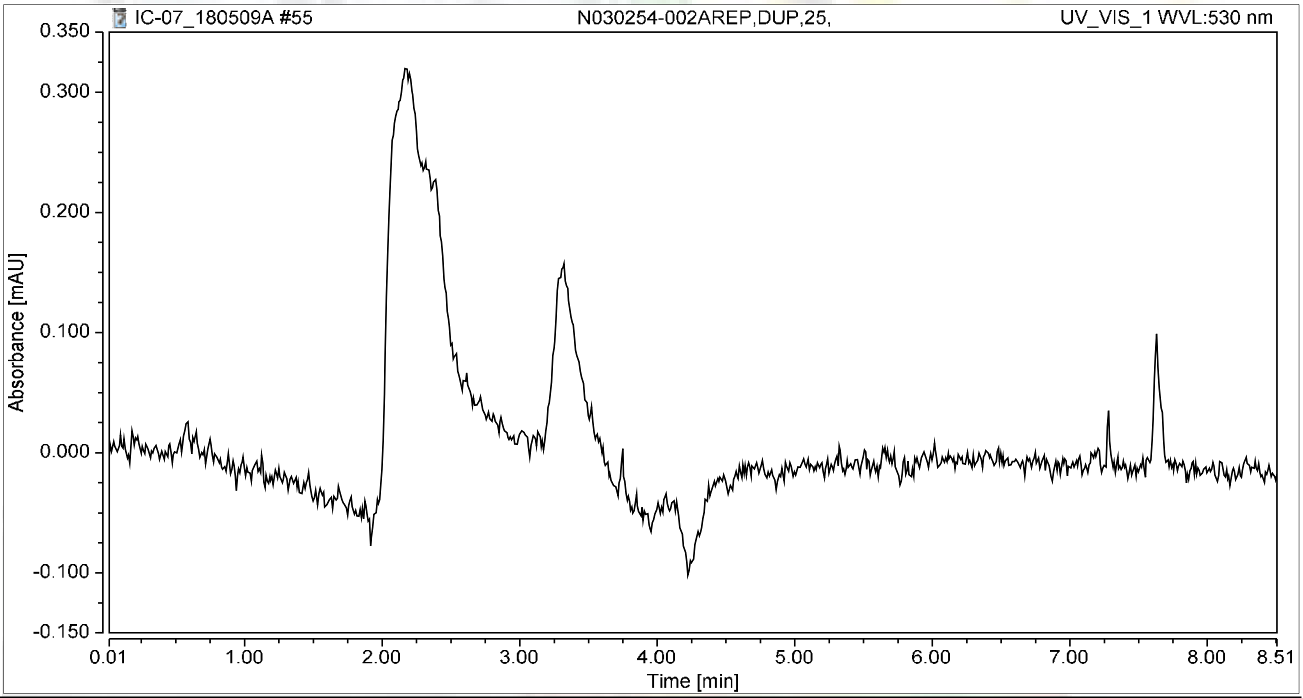
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-002AREP,DUP,25,**	*Run Time (min):*	**8.49**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 16:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

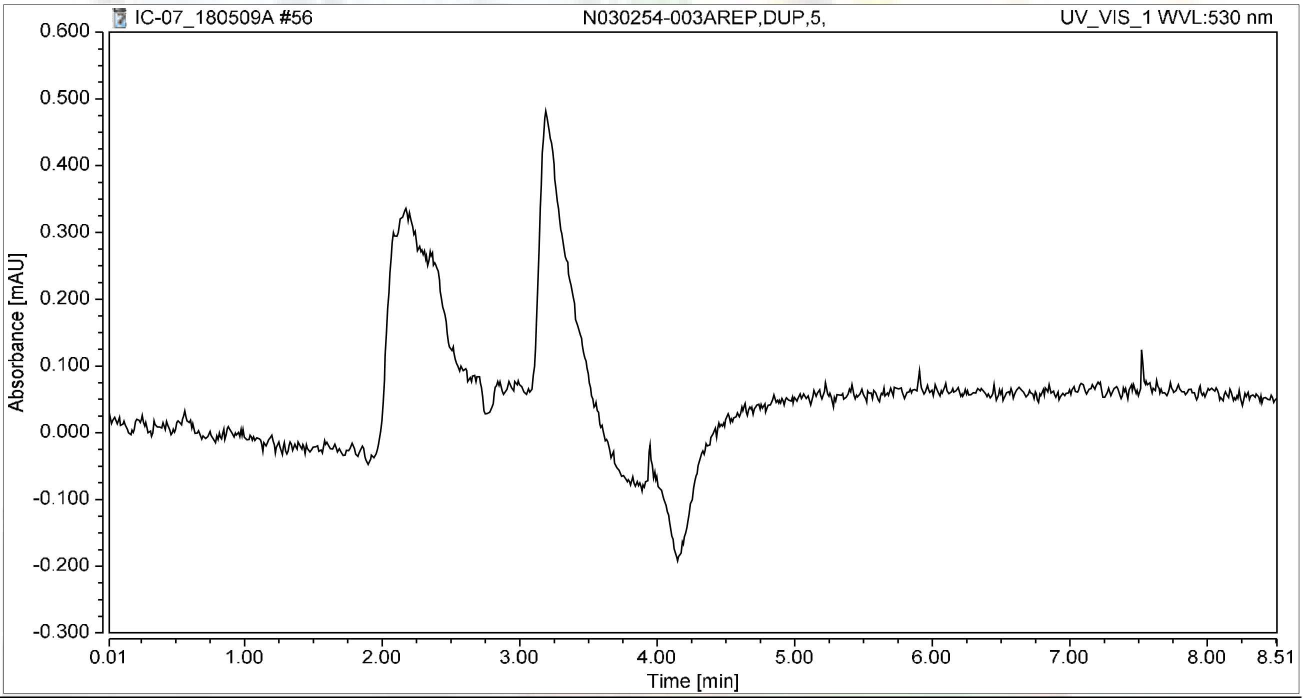
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-003AREP,DUP,5,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 16:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

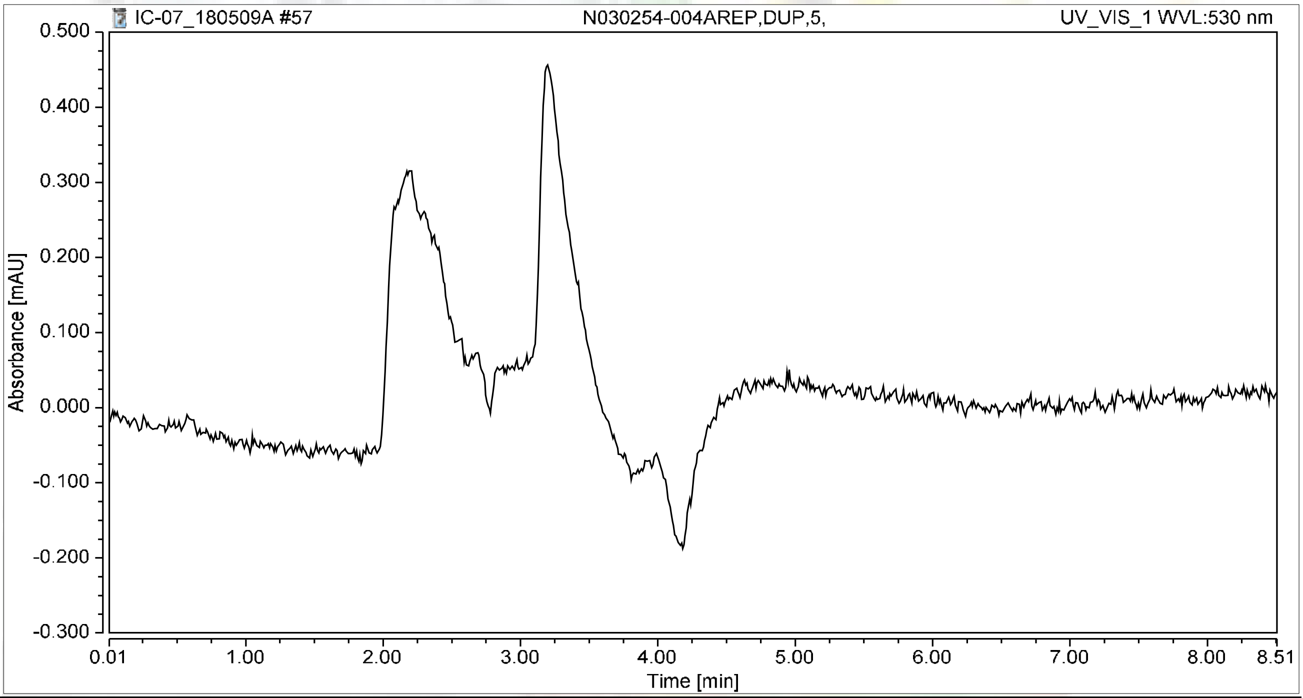
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-004AREP,DUP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 16:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

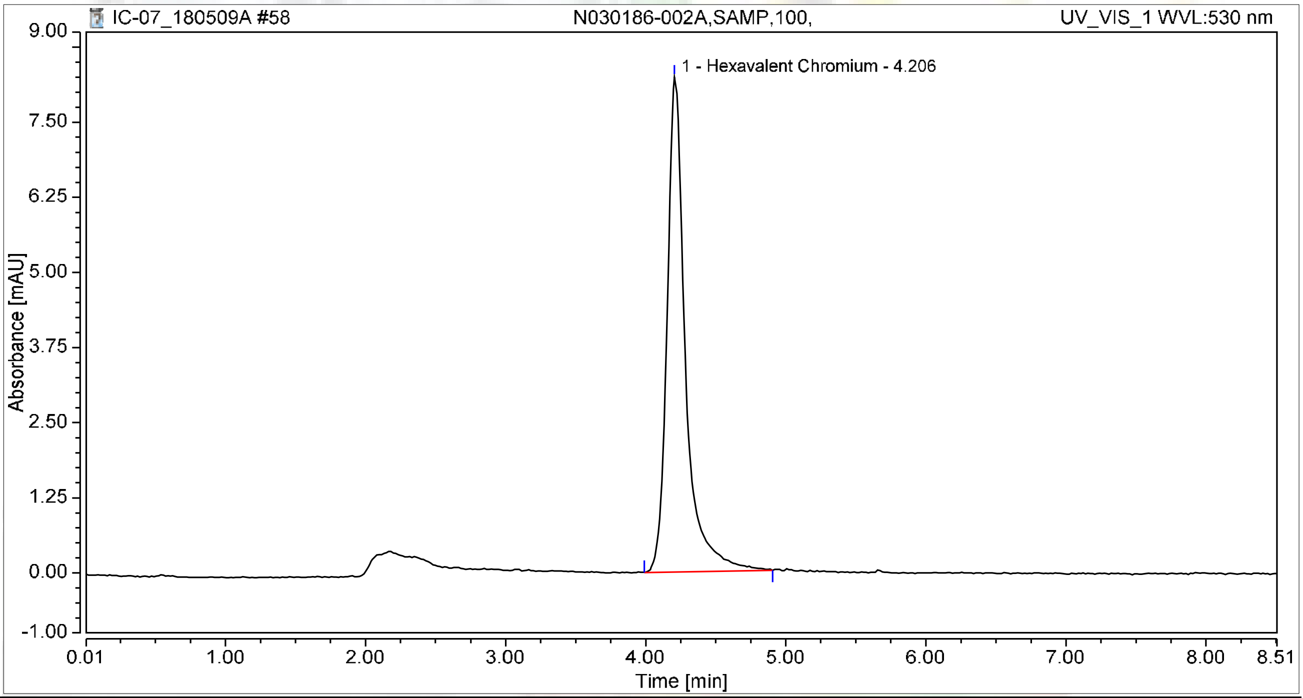
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030186-002A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 16:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

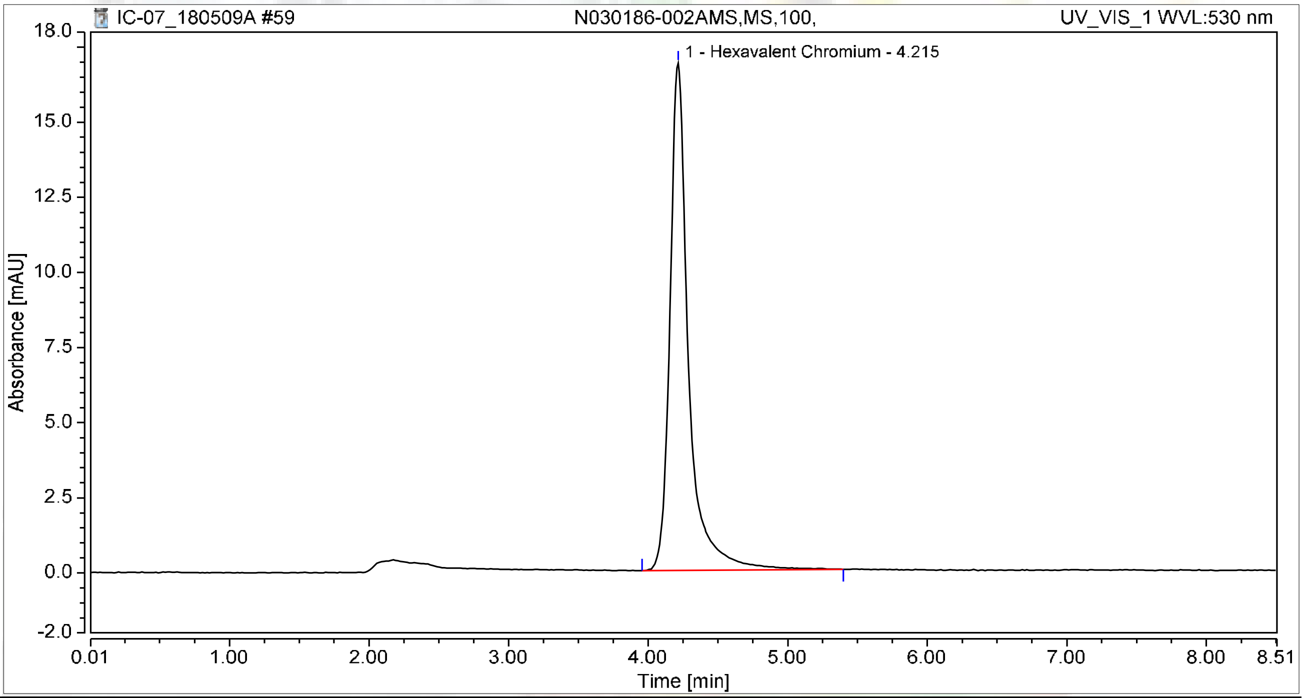
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	1.255	8.235	100.00	100.00	4.8917
Total:			**1.255**	**8.235**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030186-002AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 16:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

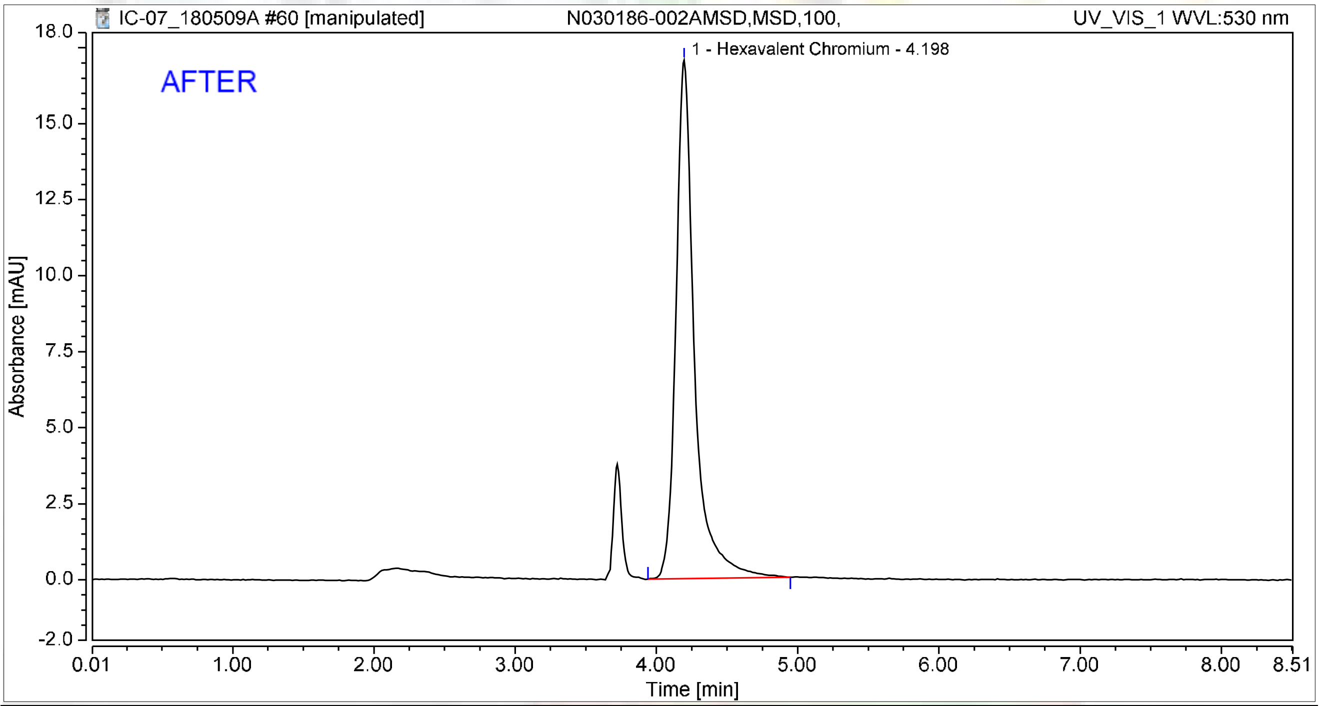
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.616	16.893	100.00	100.00	10.1943
Total:			**2.616**	**16.893**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030186-002AMSD,MSD,100,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 17:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	2.601	17.058	100.00	100.00	10.1355
Total:			**2.601**	**17.058**	**100.00**	**100.00**	

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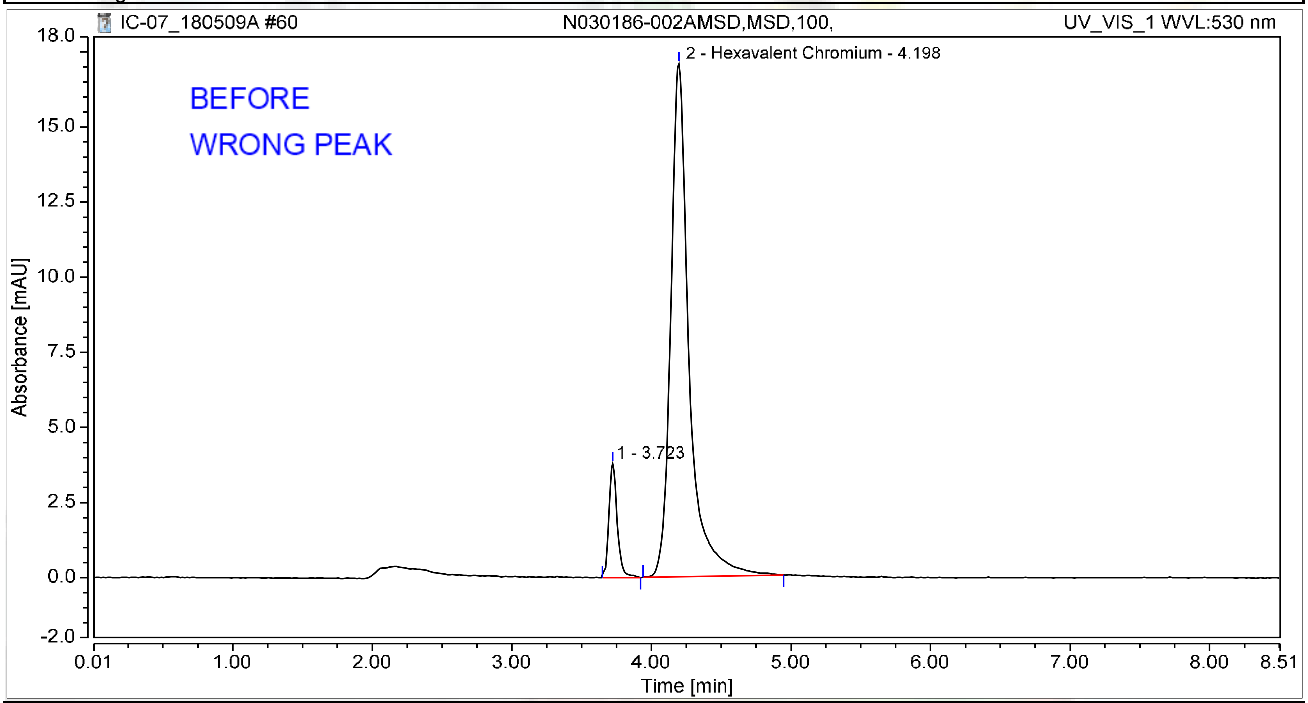
Chromatogram and Results

Injection Details

Injection Name:	**N030186-002AMSD,MSD,100,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 17:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.723	0.262	3.792	9.16	18.19	n.a.
2	Hexavalent Chromium	4.198	2.601	17.058	90.84	81.81	10.1355
Total:			**2.864**	**20.850**	**100.00**	**100.00**	

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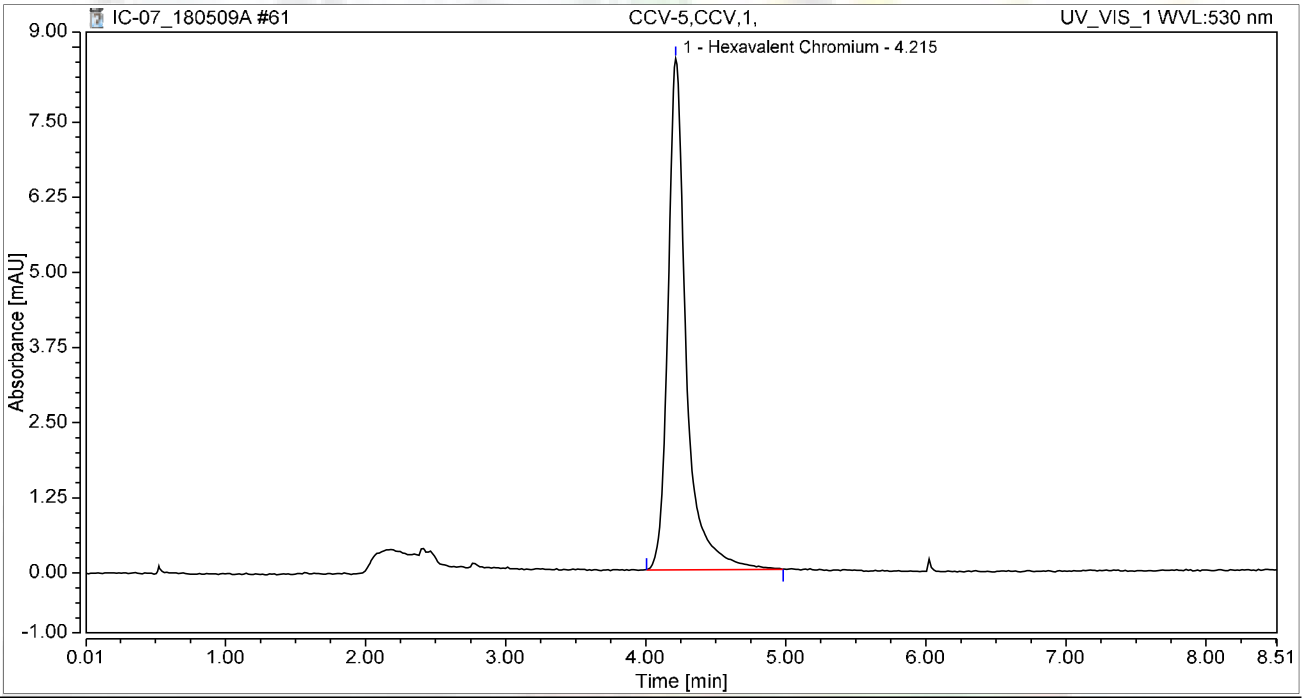
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 17:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

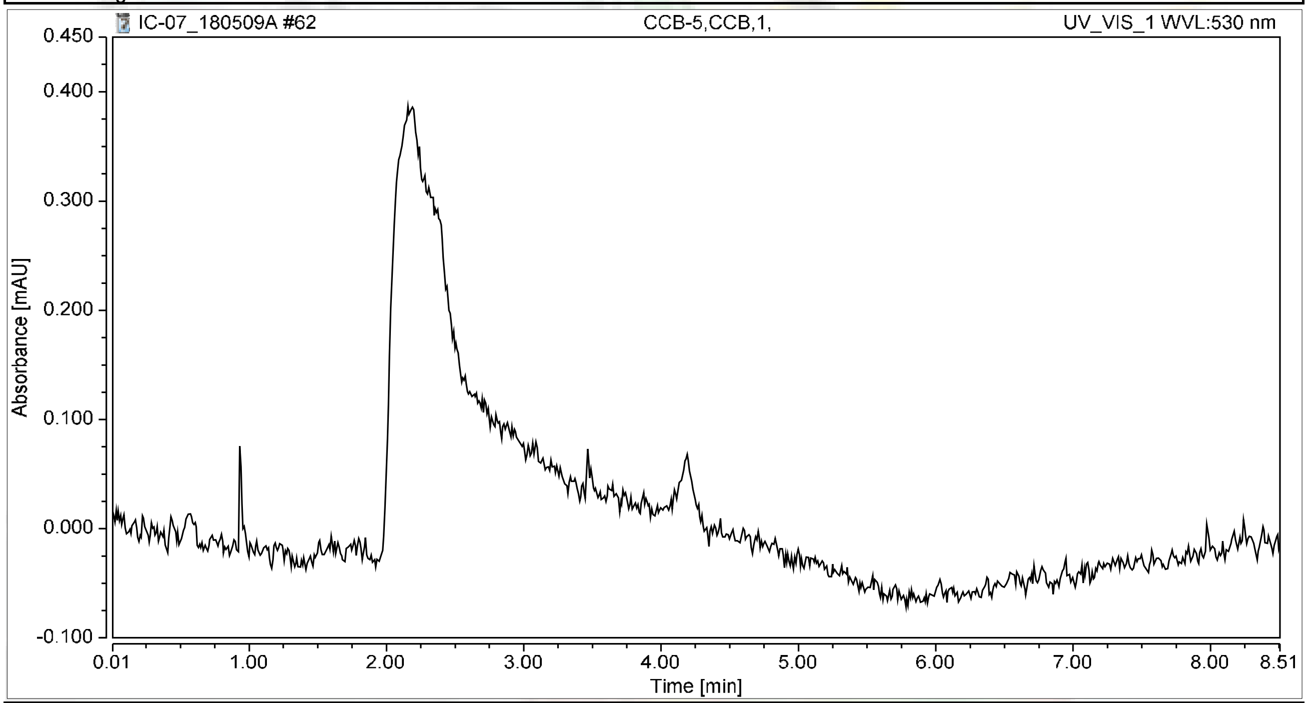
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.288	8.512	100.00	100.00	5.0175
Total:			**1.288**	**8.512**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 17:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

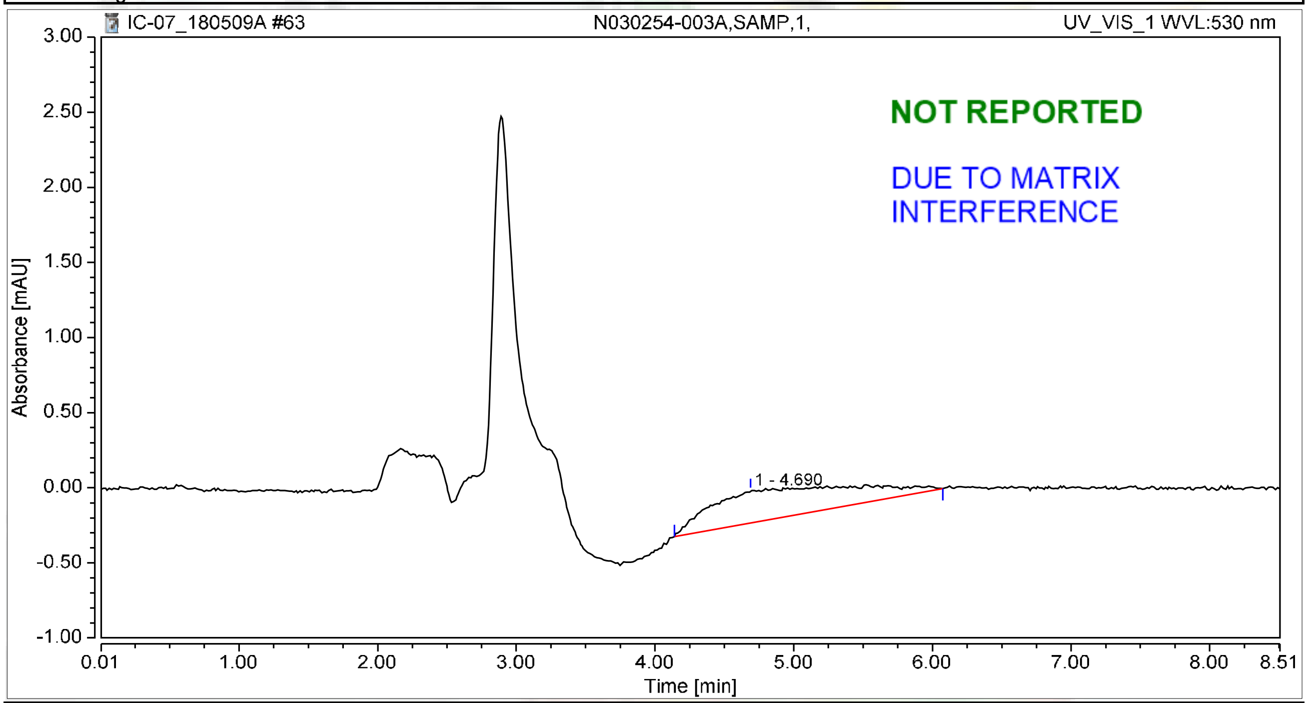
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 17:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

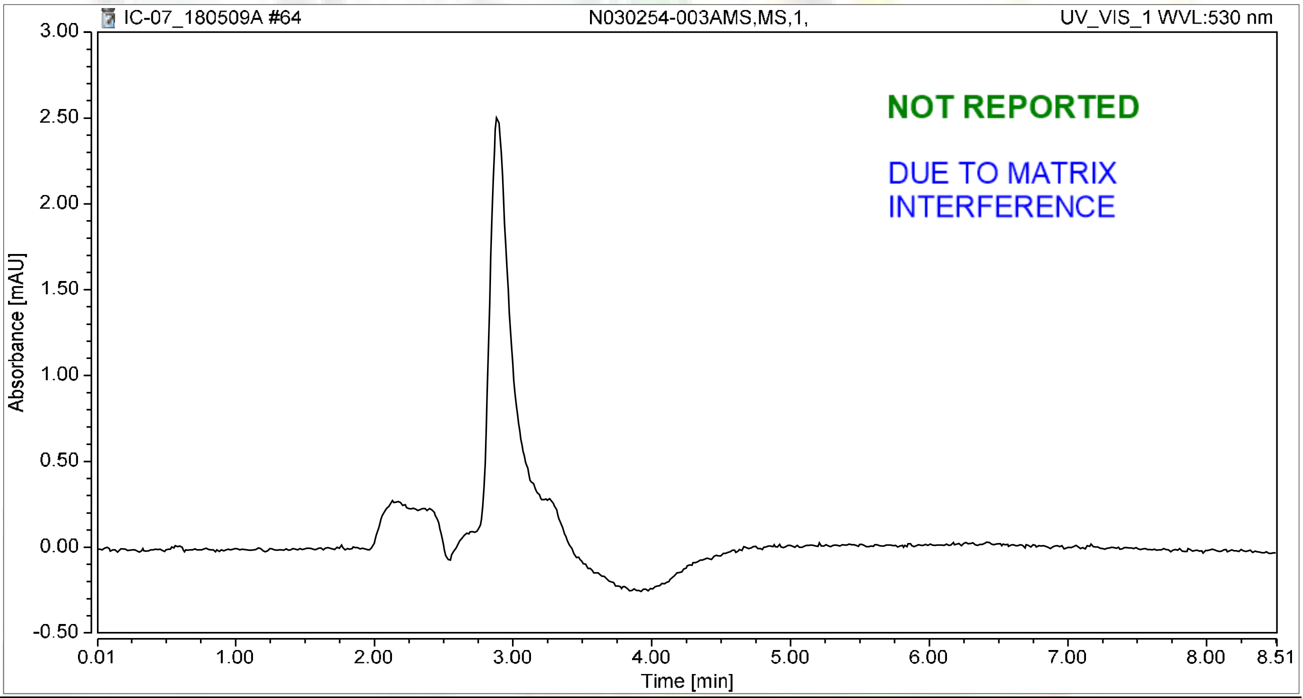
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		4.690	0.246	0.215	100.00	100.00	n.a.
Total:			**0.246**	**0.215**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 17:38**	*Sample Weight:*	**1.0000**

Chromatogram



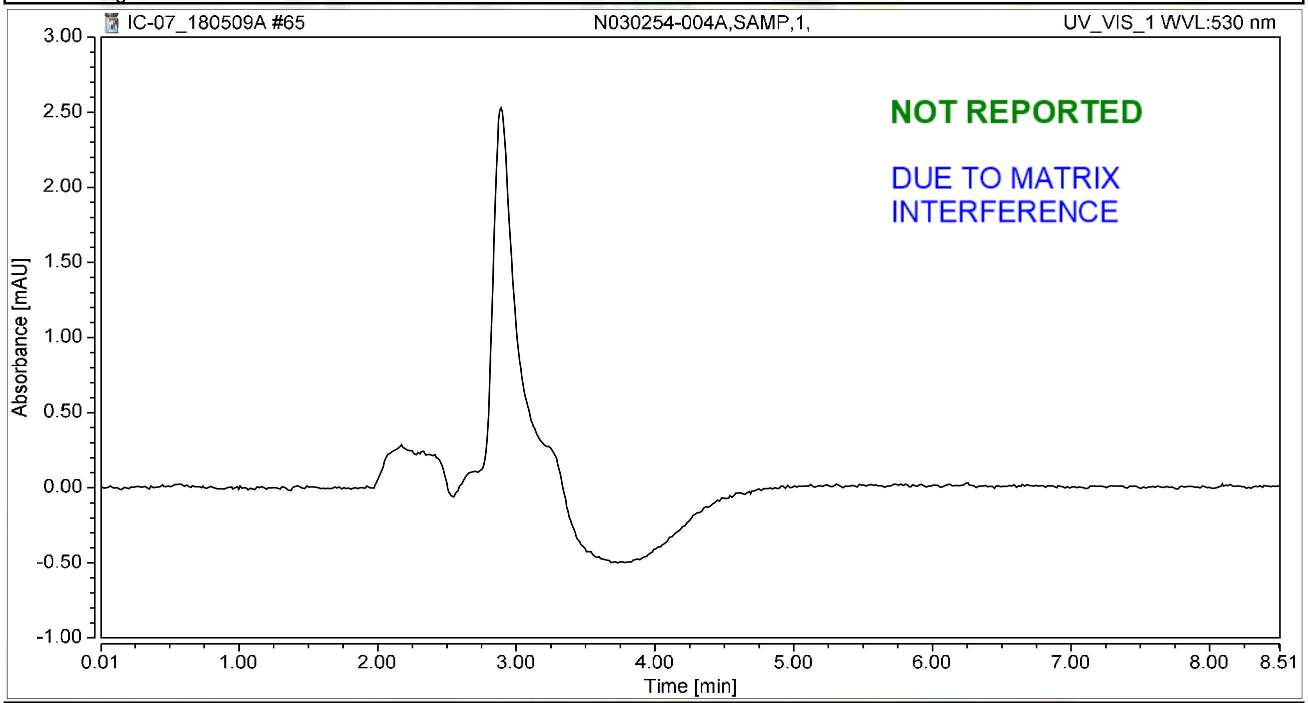
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details			
Injection Name:	**N030254-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 17:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

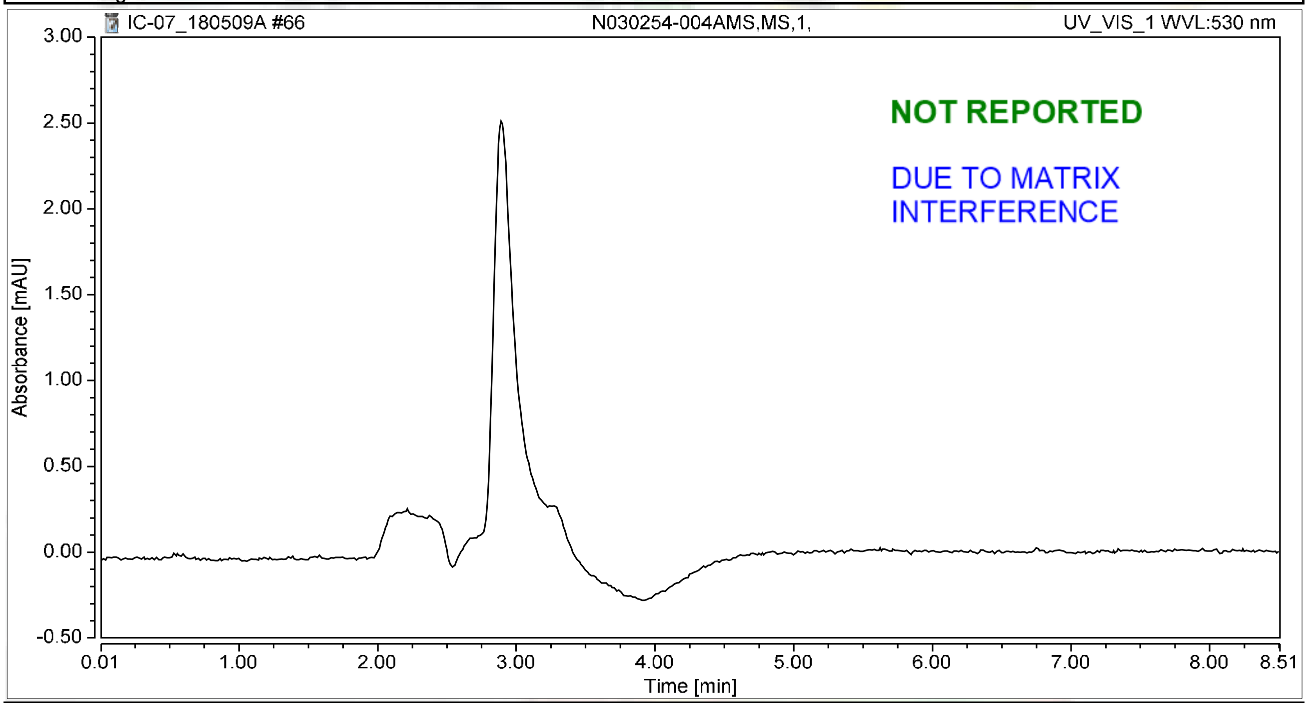
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030254-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 17:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

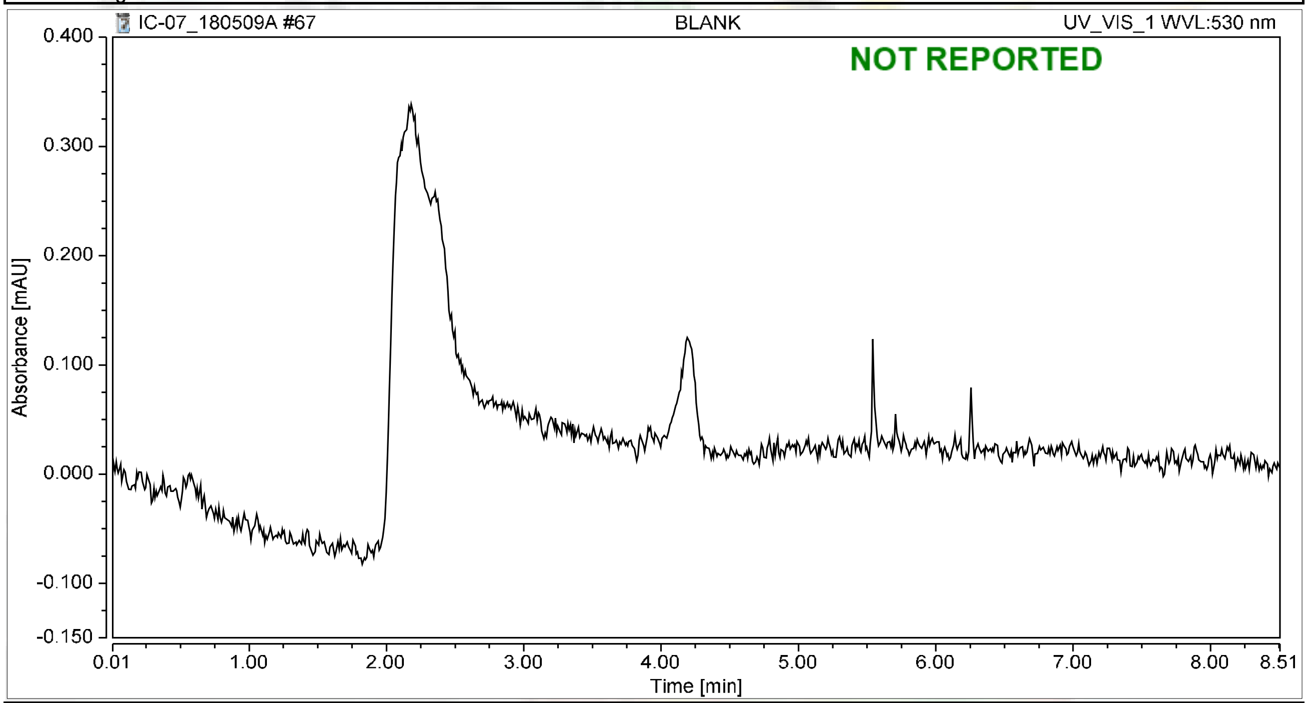
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

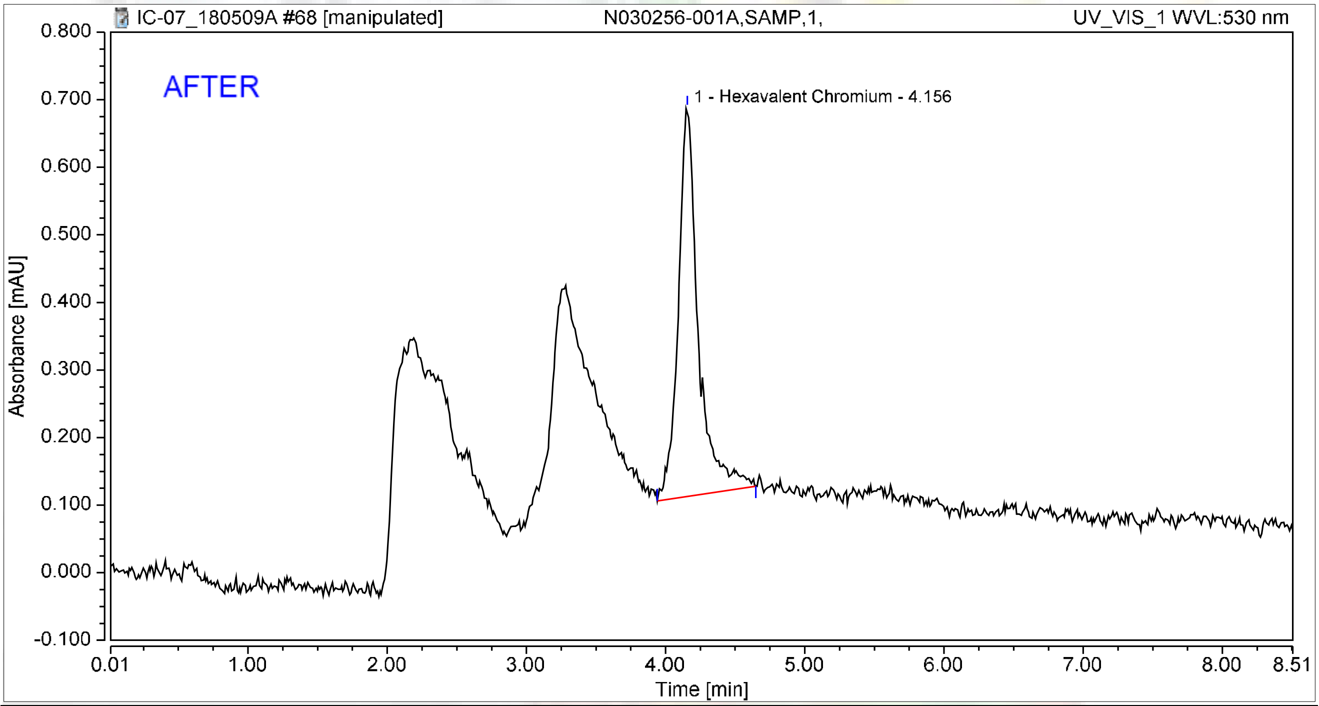
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 18:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.096	0.575	100.00	100.00	0.3744
Total:			**0.096**	**0.575**	**100.00**	**100.00**	

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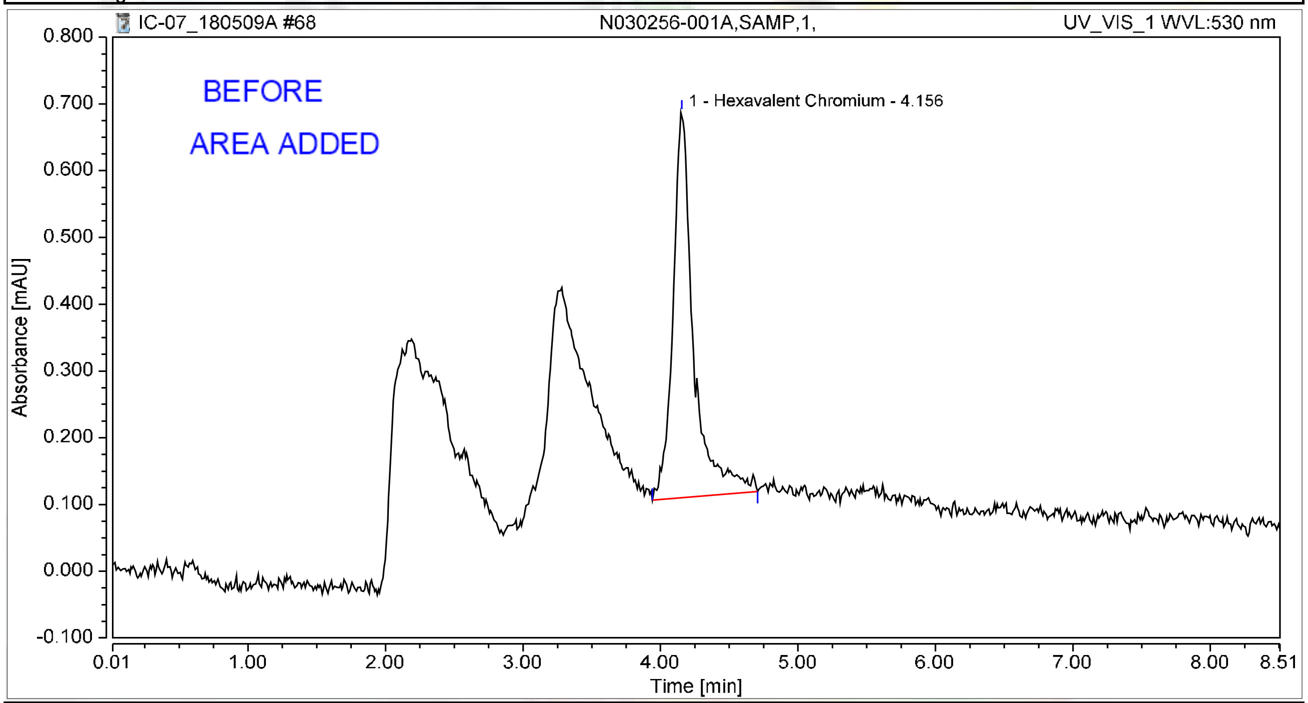
Chromatogram and Results

Injection Details

Injection Name:	**N030256-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 18:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.100	0.578	100.00	100.00	0.3913
Total:			**0.100**	**0.578**	**100.00**	**100.00**	

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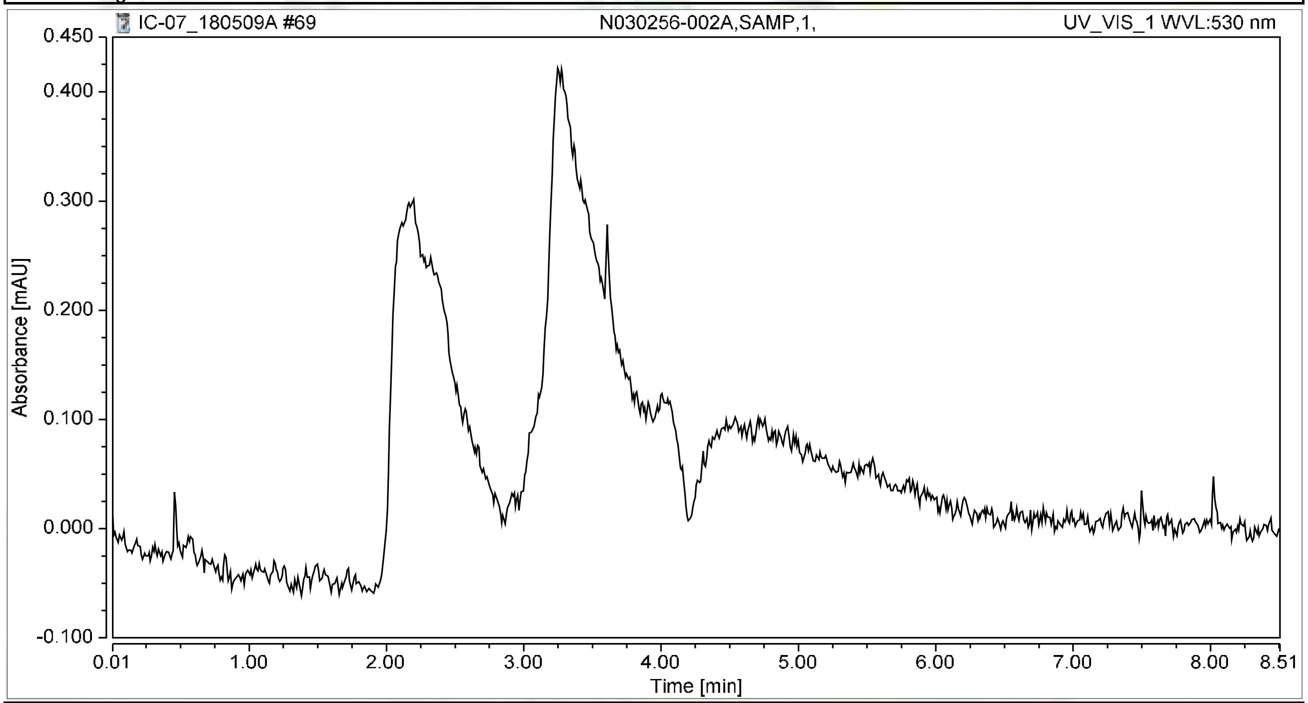
Chromatogram and Results

Injection Details

Injection Name:	**N030256-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

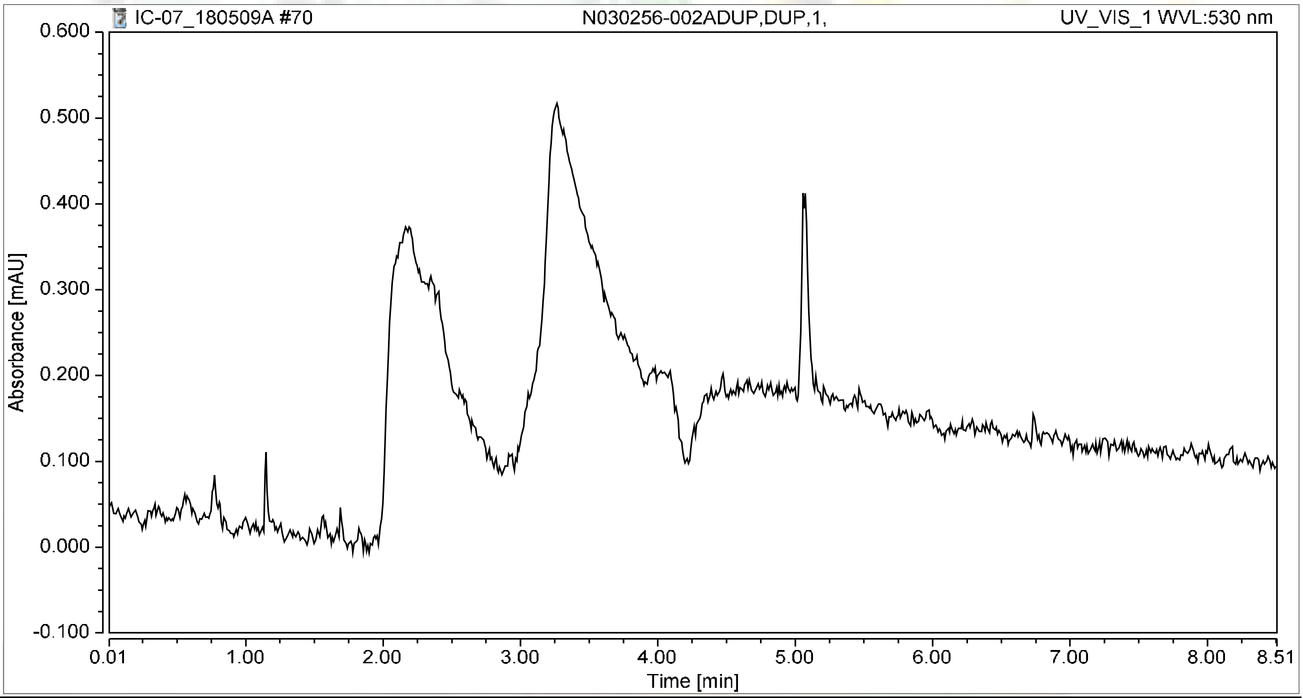
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-002ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 18:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

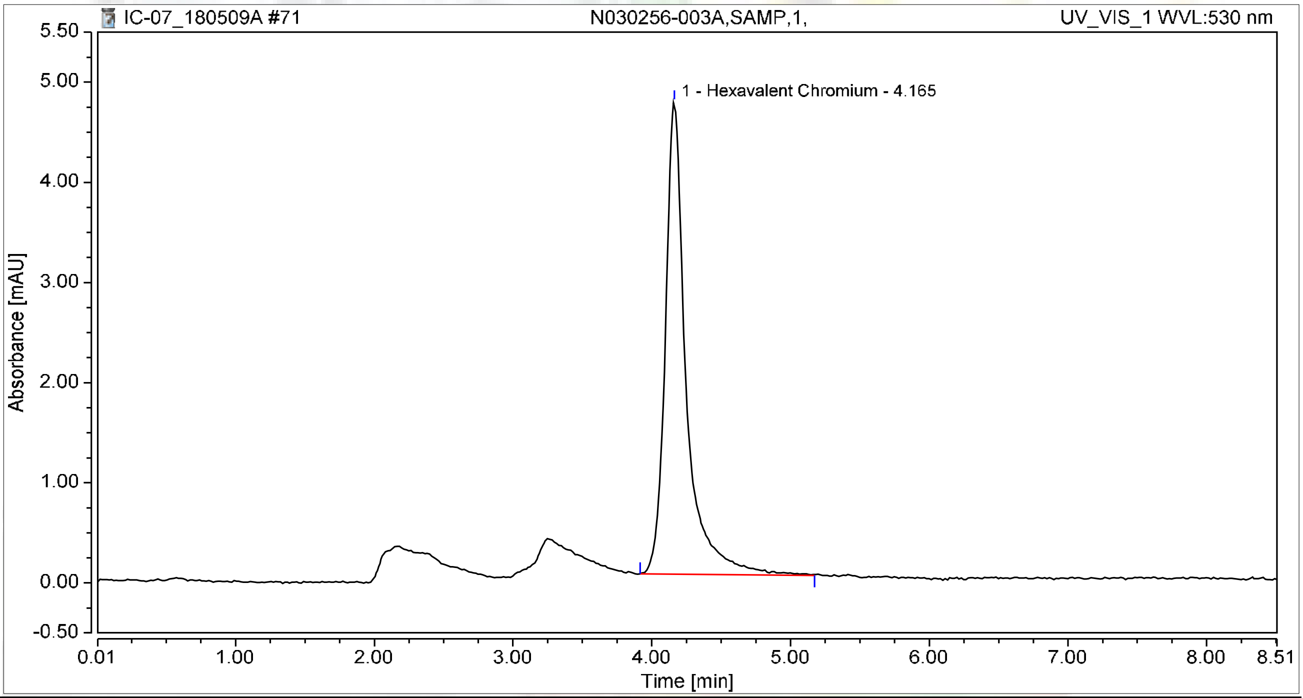
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

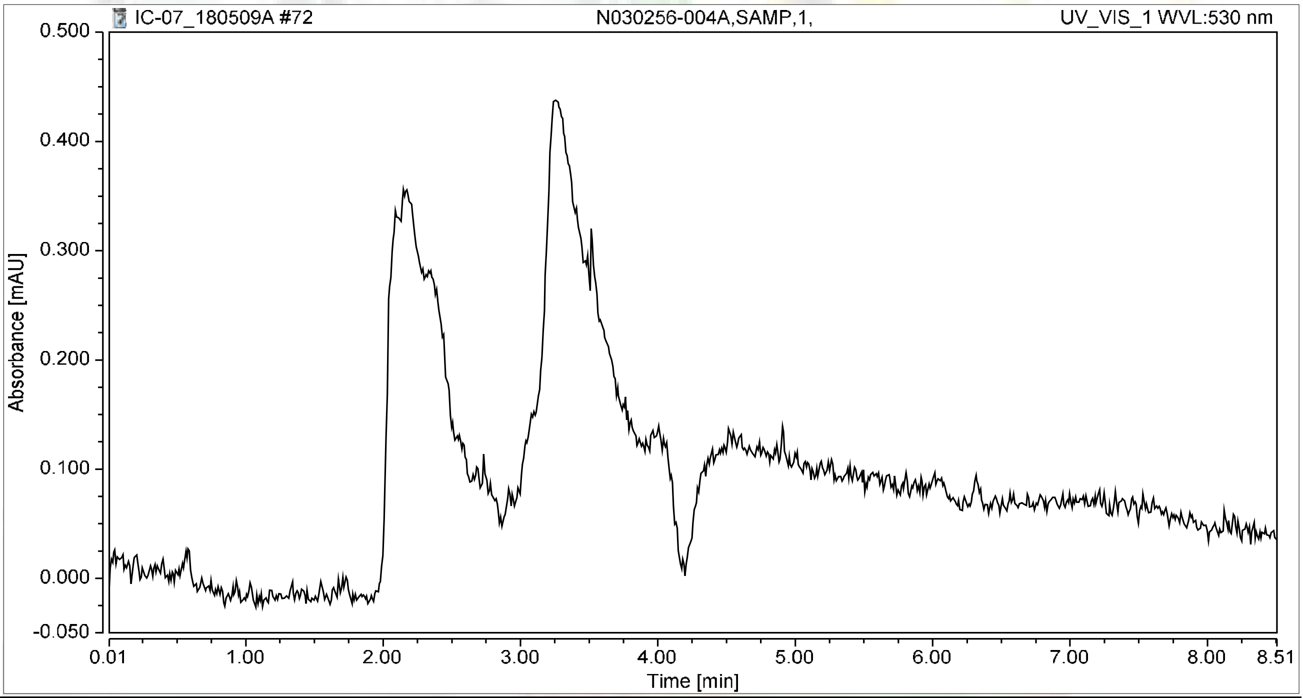
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.827	4.715	100.00	100.00	3.2227
Total:			**0.827**	**4.715**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 18:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

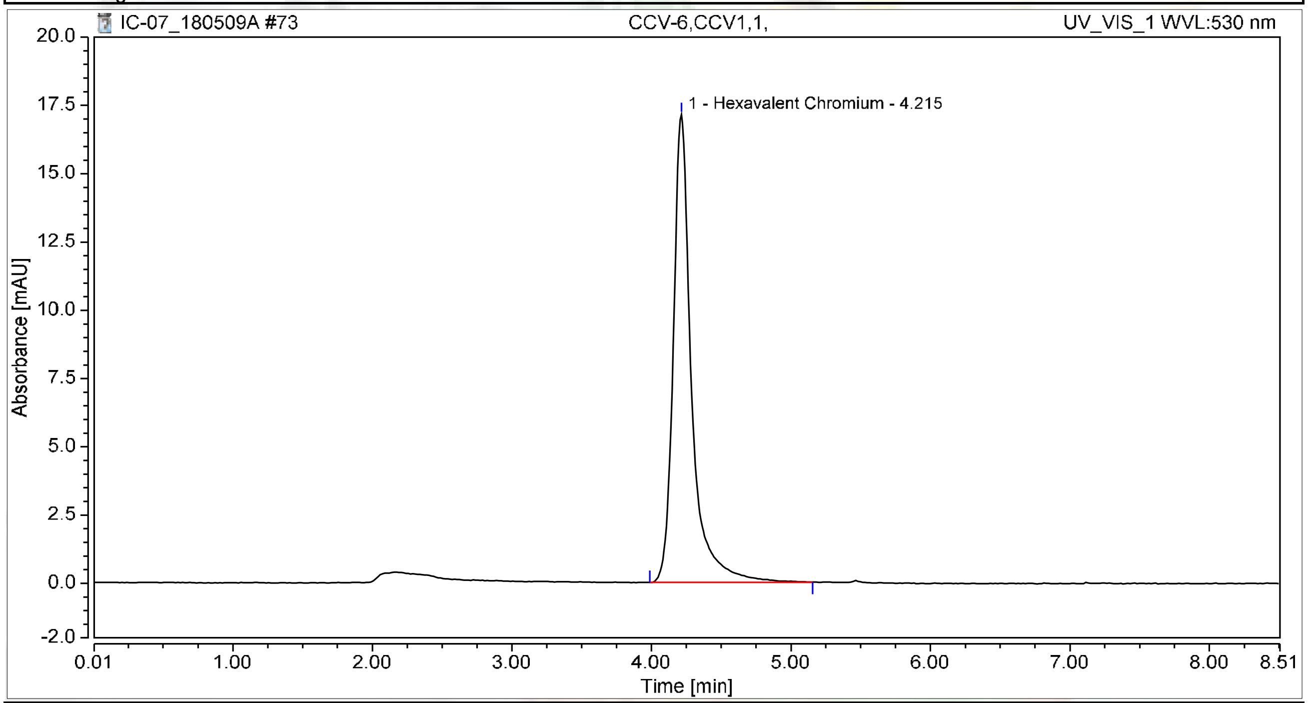
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 19:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

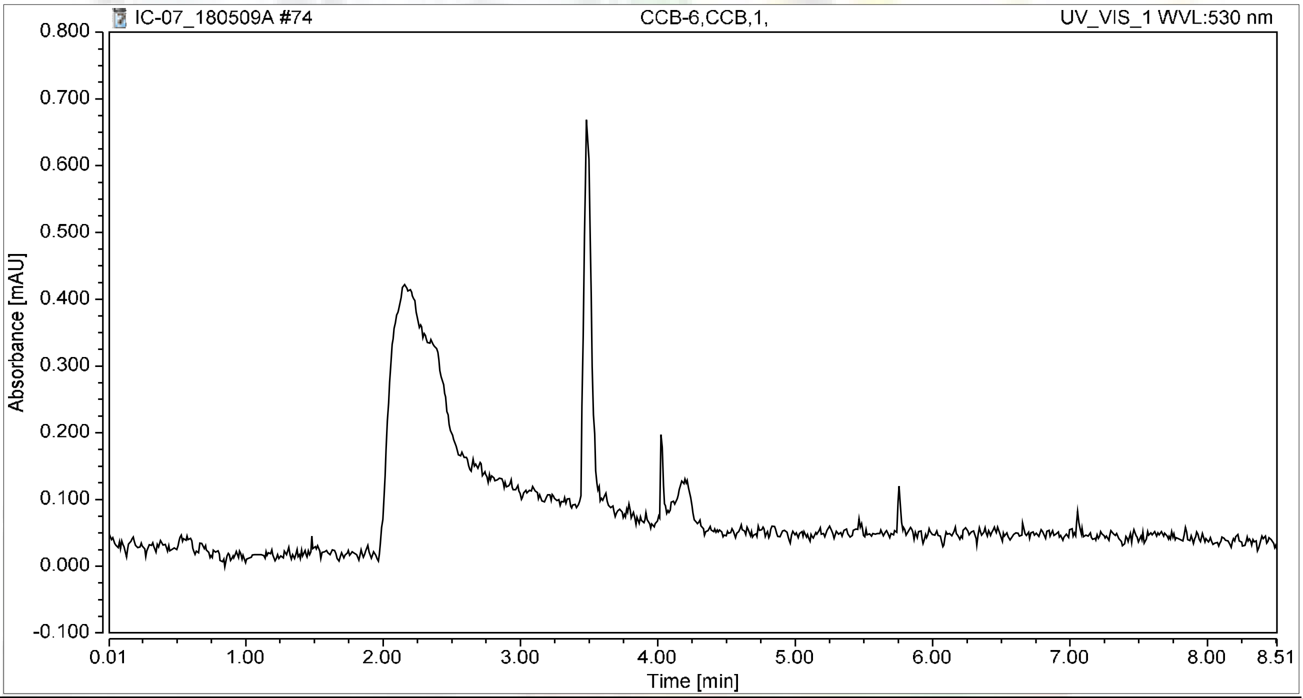
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.600	17.133	100.00	100.00	10.1322
Total:			**2.600**	**17.133**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 19:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

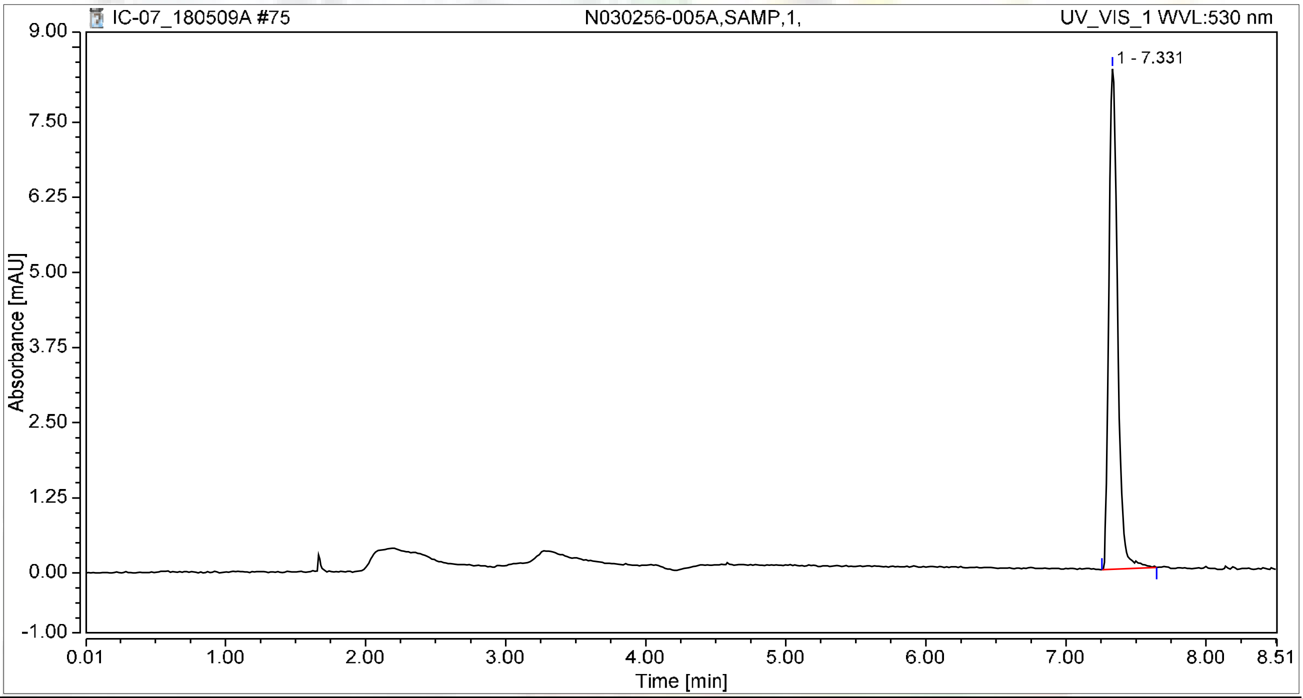
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 19:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

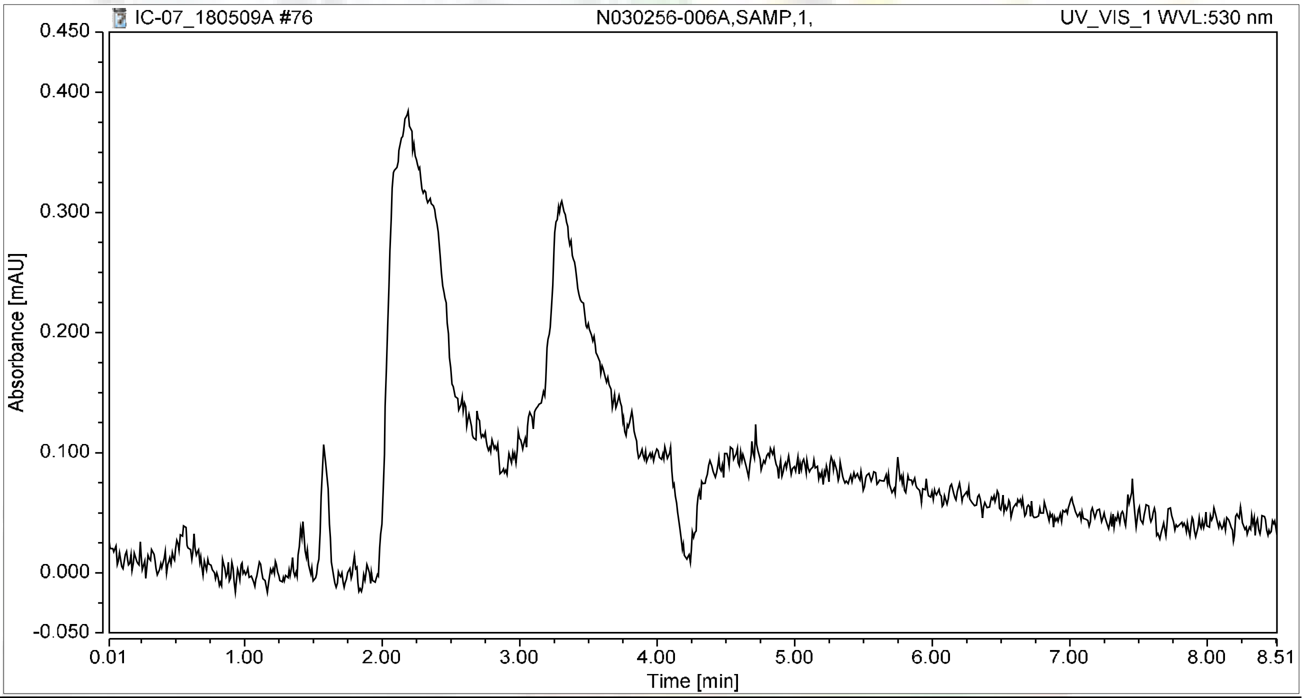
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.331	0.601	8.328	100.00	100.00	n.a.
Total:			**0.601**	**8.328**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 19:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

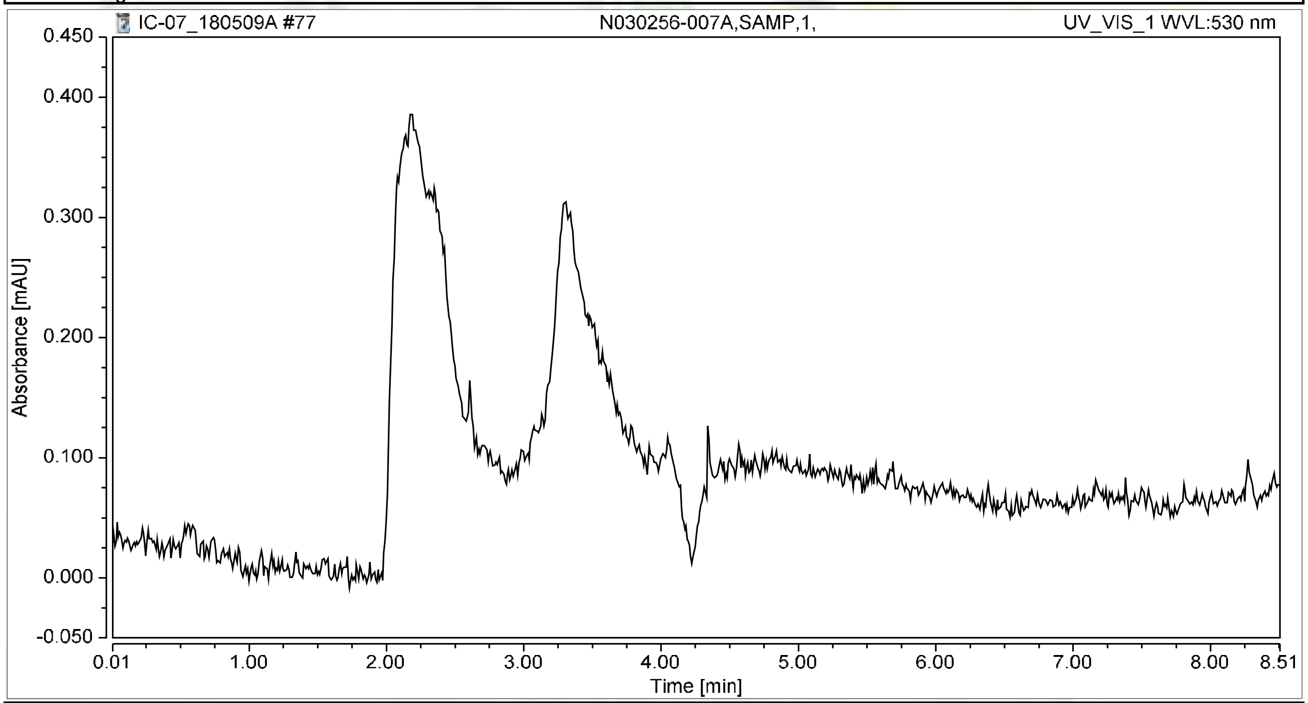
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 19:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

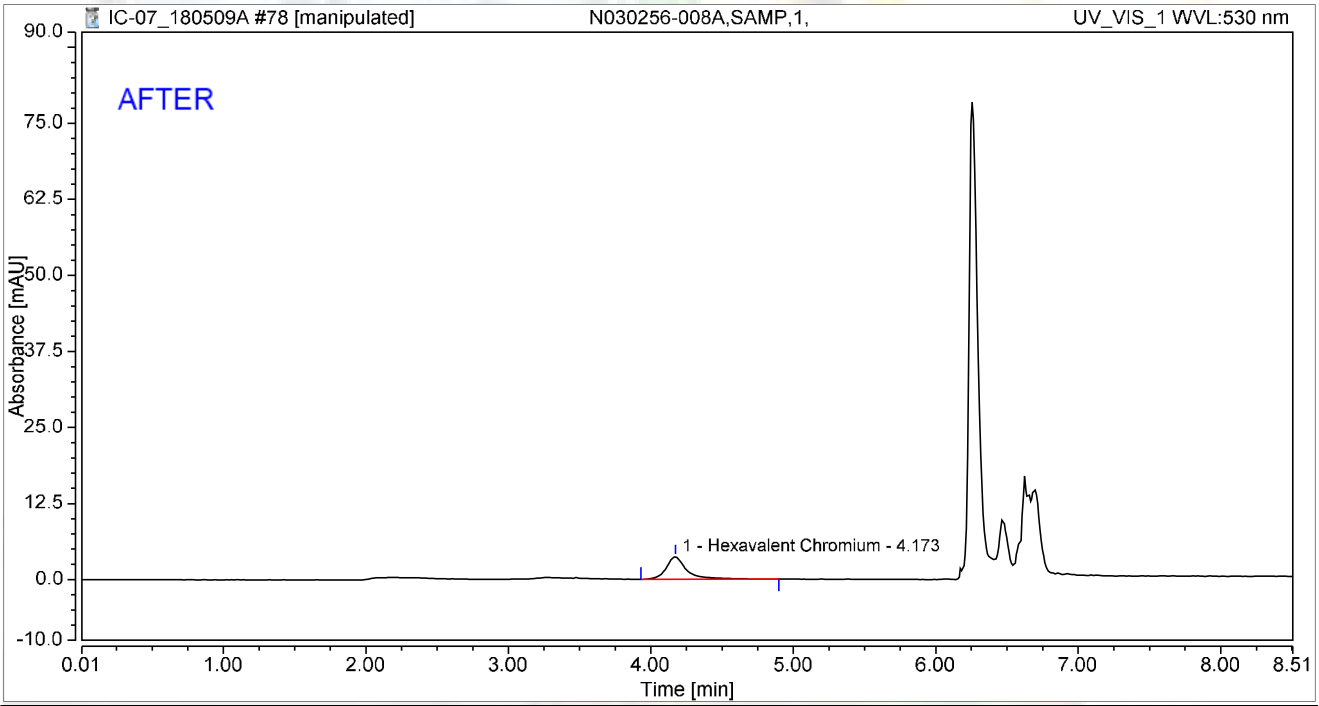
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 19:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.626	3.665	100.00	100.00	2.4381
Total:			**0.626**	**3.665**	**100.00**	**100.00**	

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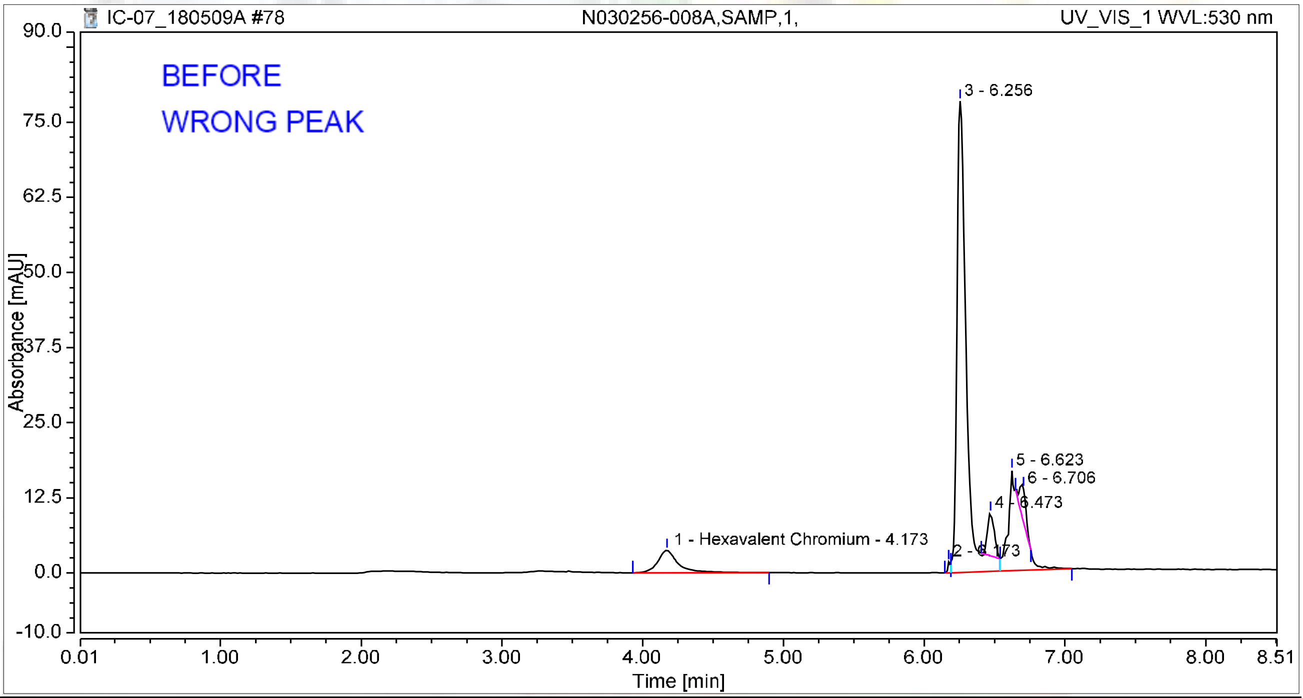
Chromatogram and Results

Injection Details

Injection Name:	**N030256-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 19:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.626	3.665	6.71	3.24	2.4381
2		6.173	0.036	1.811	0.39	1.60	n.a.
3		6.256	6.061	78.395	64.94	69.32	n.a.
4		6.473	0.409	7.052	4.38	6.24	n.a.
5		6.623	1.919	16.630	20.57	14.71	n.a.
6		6.706	0.282	5.530	3.02	4.89	n.a.
Total:			**9.332**	**113.084**	**100.00**	**100.00**	

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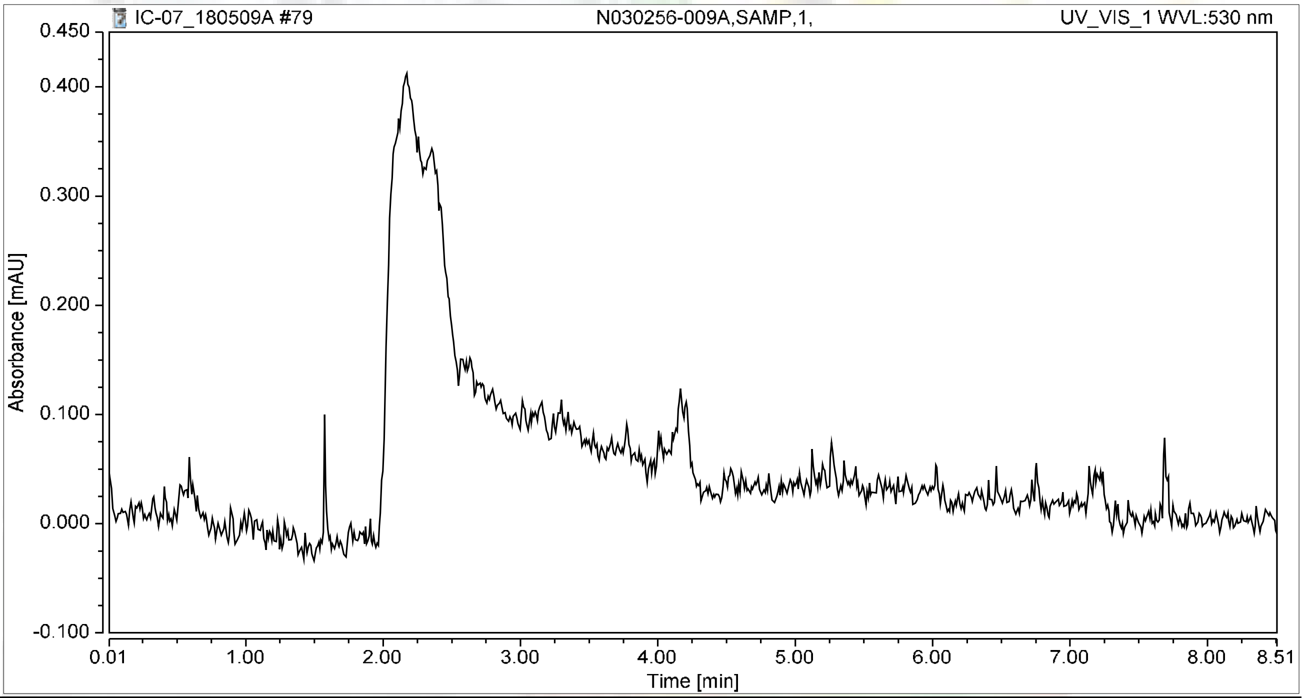
Chromatogram and Results

Injection Details

Injection Name:	**N030256-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 20:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

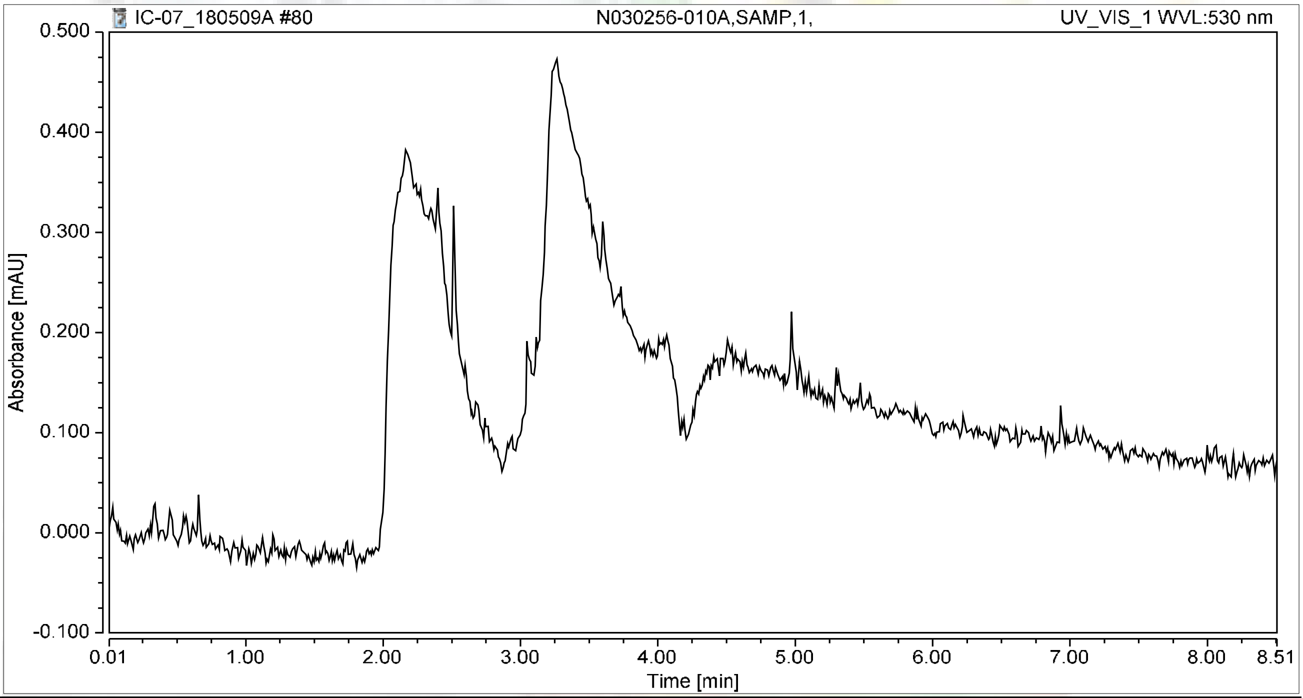
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030256-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 20:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

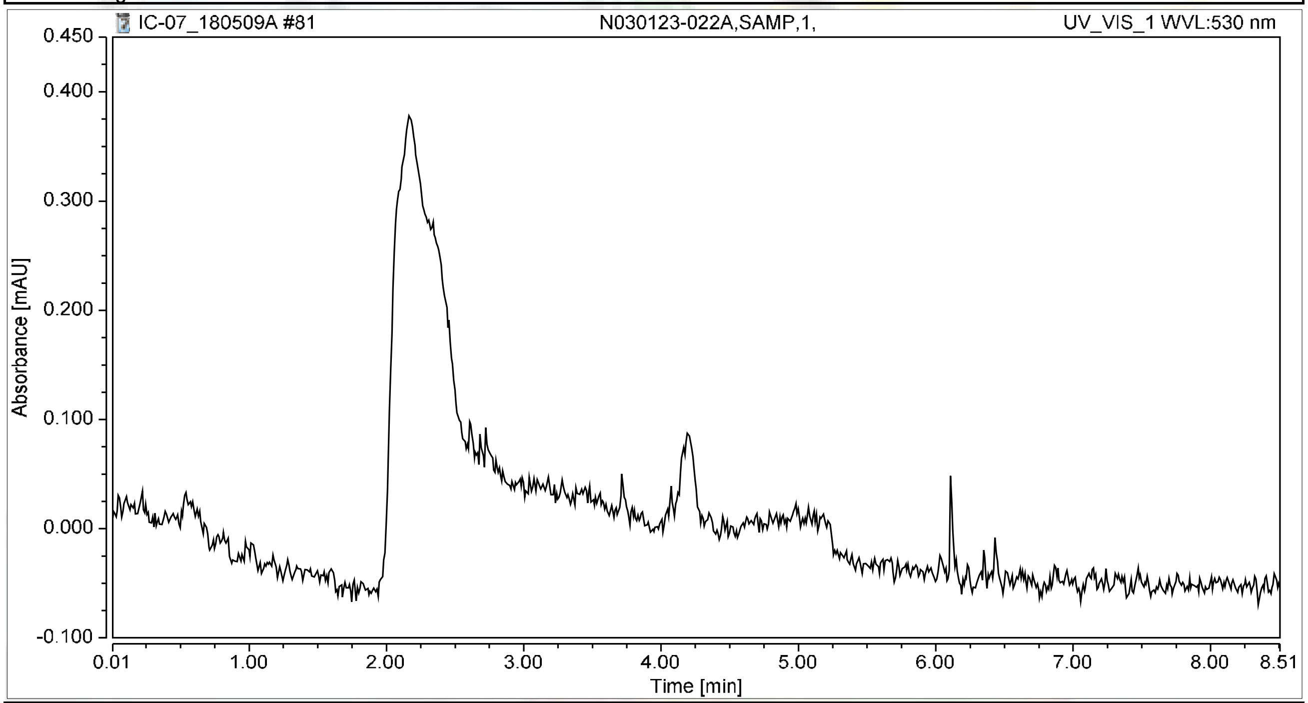
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-022A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 20:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

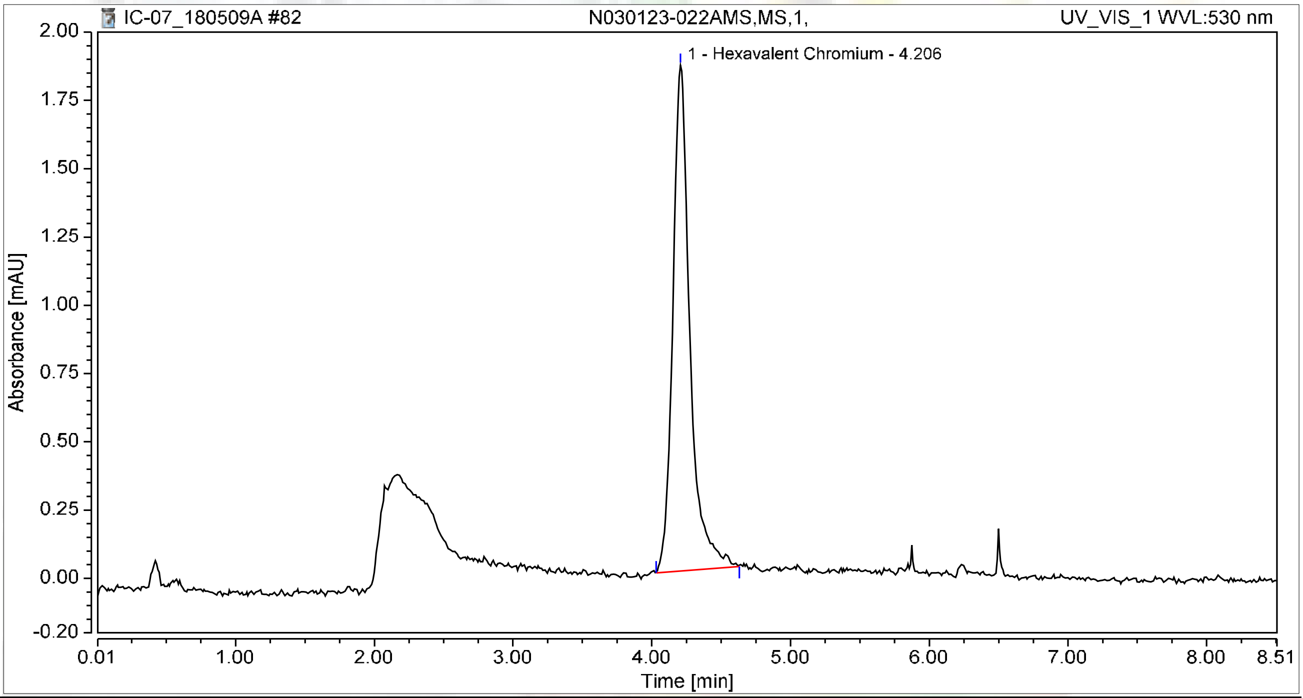
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-022AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 20:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

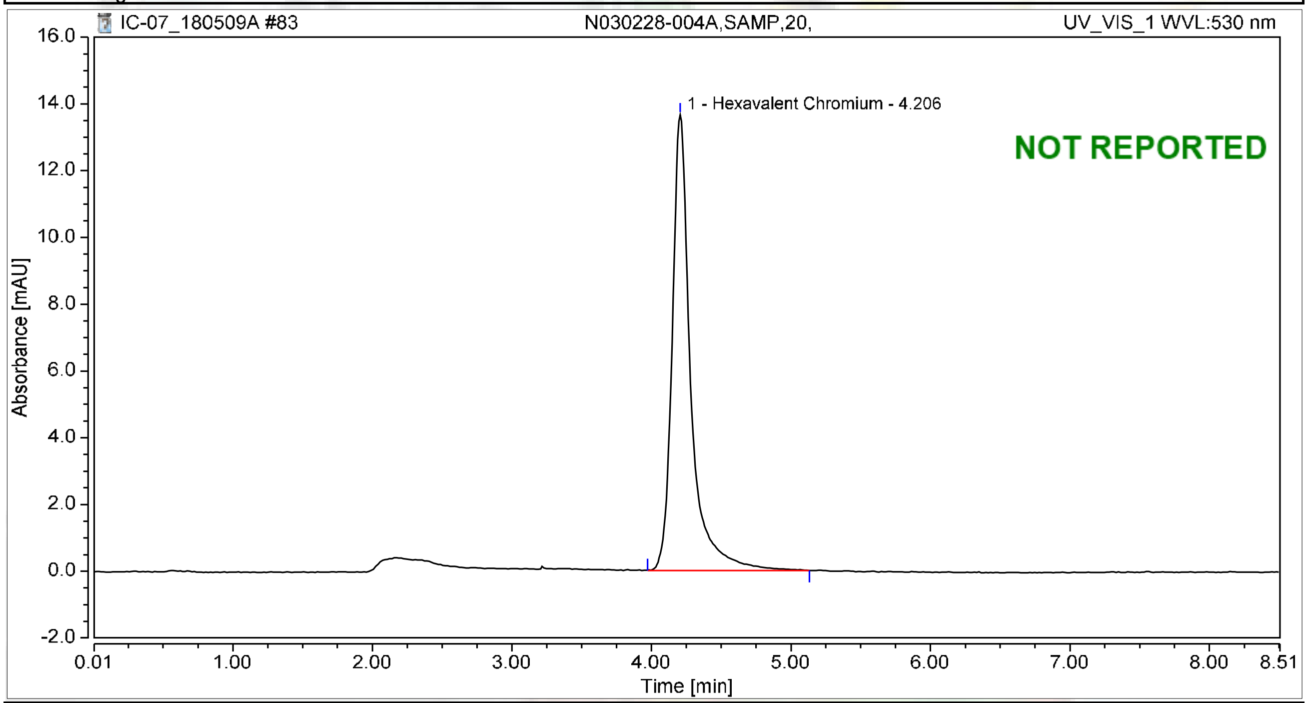
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.265	1.852	100.00	100.00	1.0338
Total:			**0.265**	**1.852**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030228-004A,SAMP,20,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 20:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

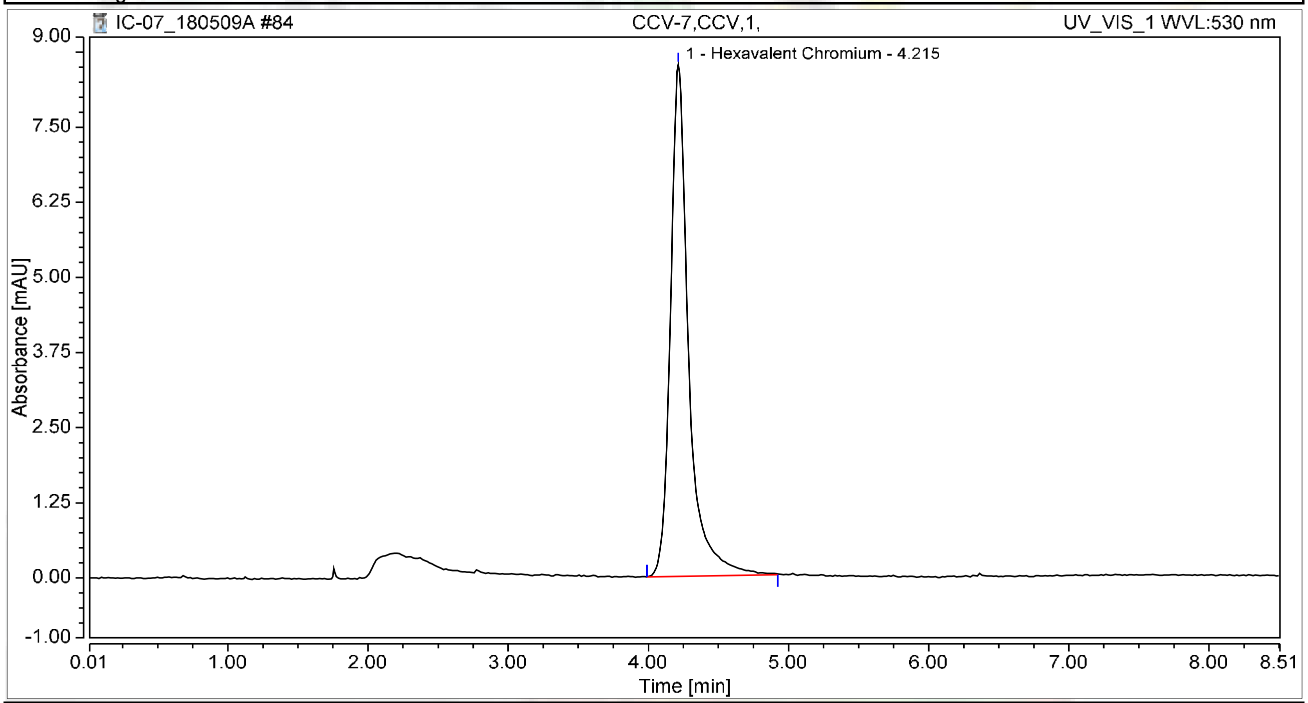
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	2.106	13.648	100.00	100.00	8.2050
Total:			**2.106**	**13.648**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 20:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

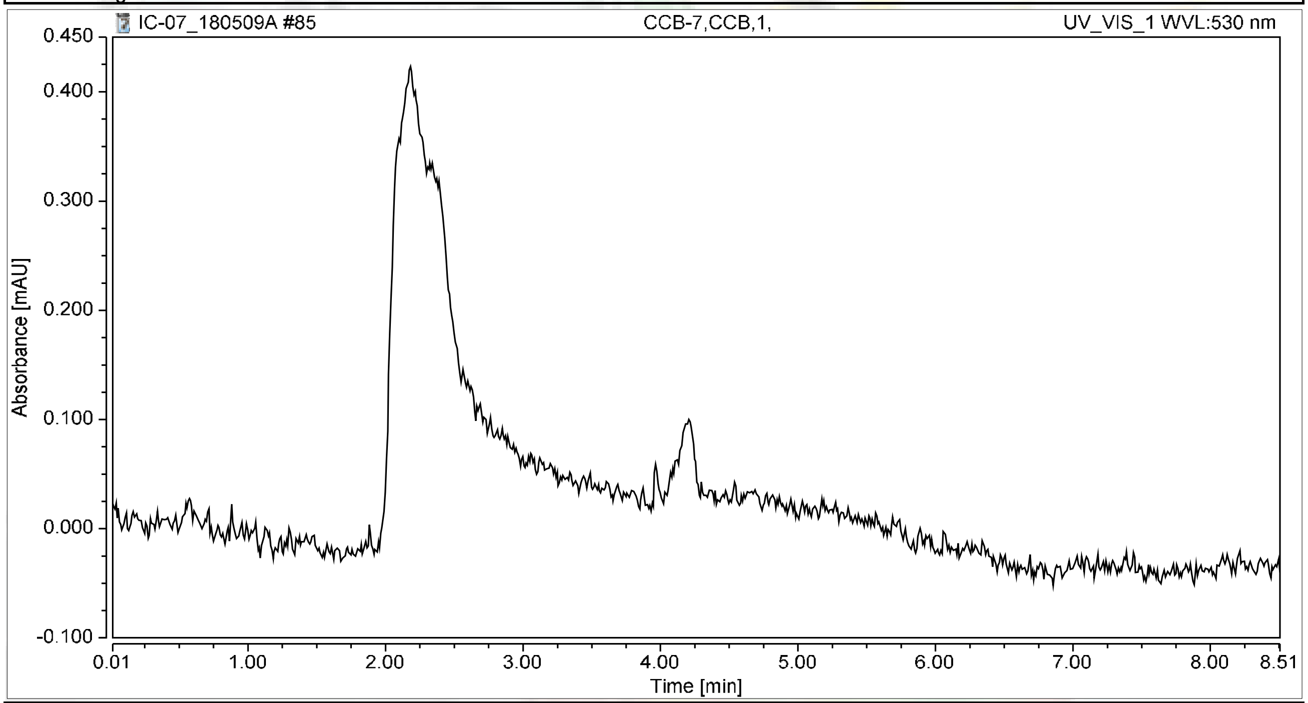
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	1.281	8.513	100.00	100.00	4.9911
Total:			**1.281**	**8.513**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 20:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

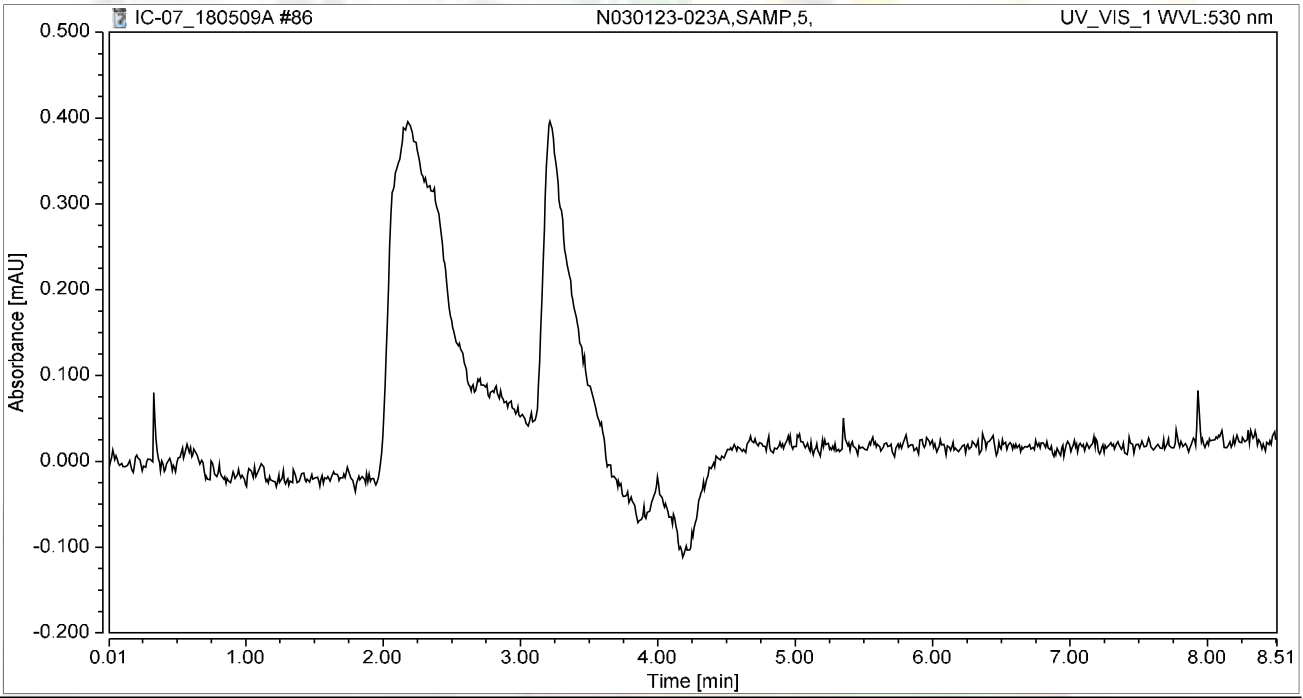
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-023A,SAMP,5,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 21:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

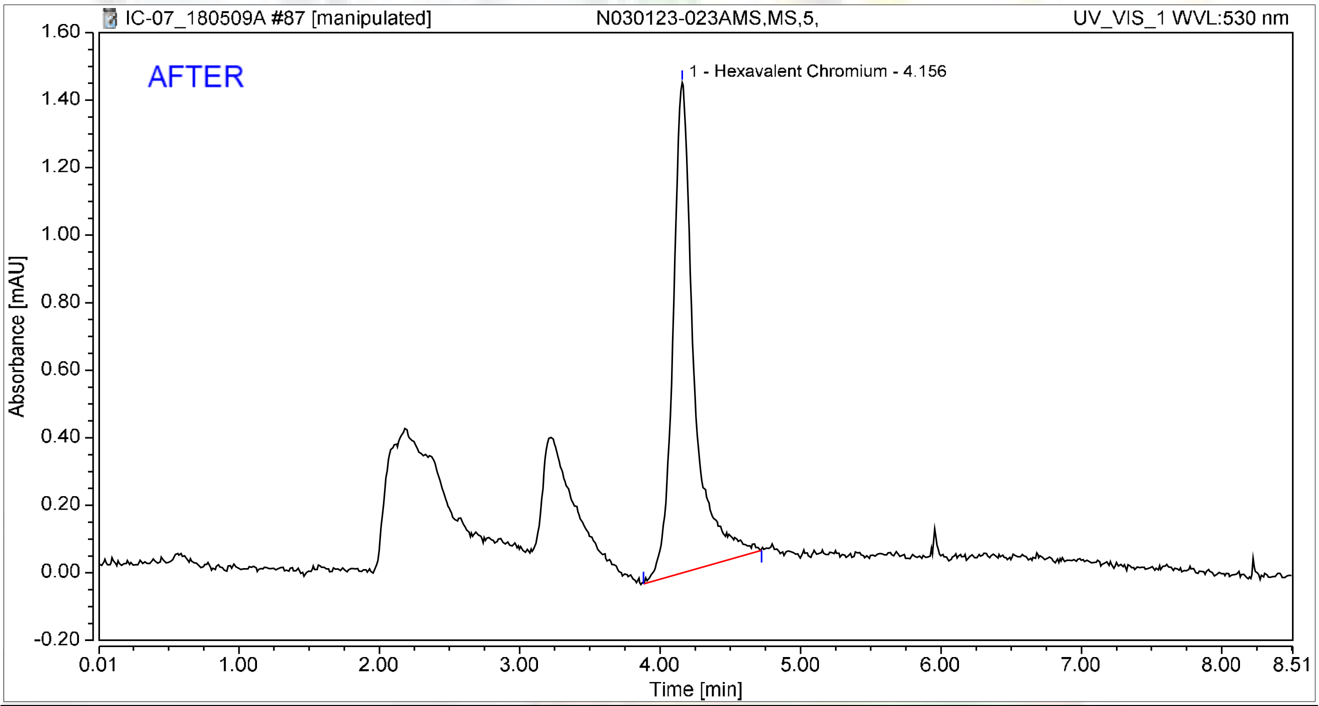
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-023AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 21:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.255	1.452	100.00	100.00	0.9935
Total:			**0.255**	**1.452**	**100.00**	**100.00**	

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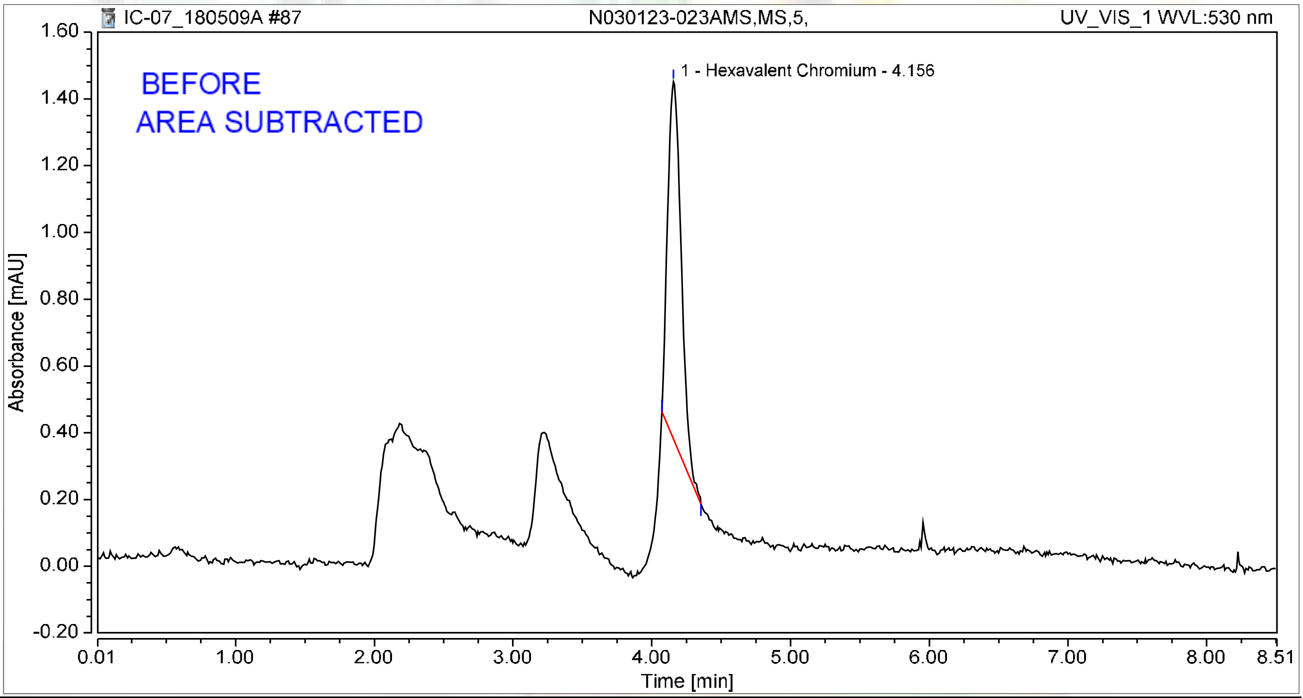
Chromatogram and Results

Injection Details

Injection Name:	**N030123-023AMS,MS,5,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 21:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.121	1.069	100.00	100.00	0.4726
Total:			**0.121**	**1.069**	**100.00**	**100.00**	

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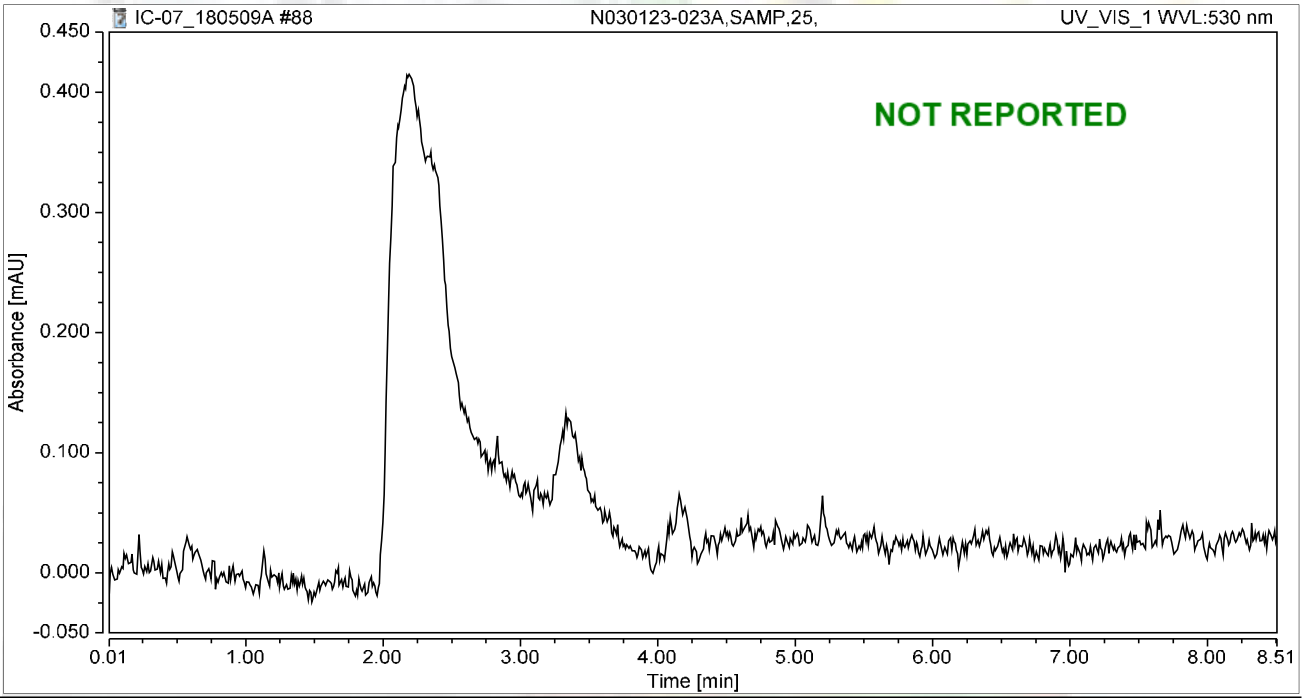
Chromatogram and Results

Injection Details

Injection Name:	**N030123-023A,SAMP,25,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 21:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

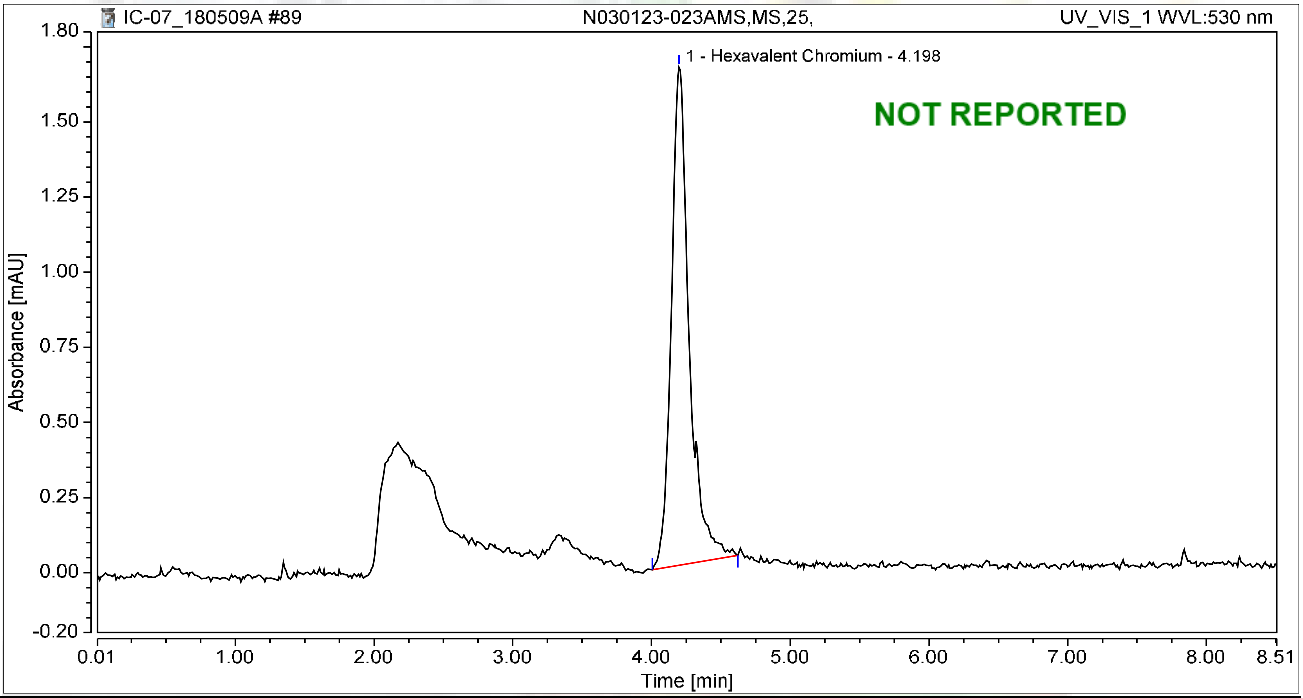
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030123-023AMS,MS,25,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 21:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

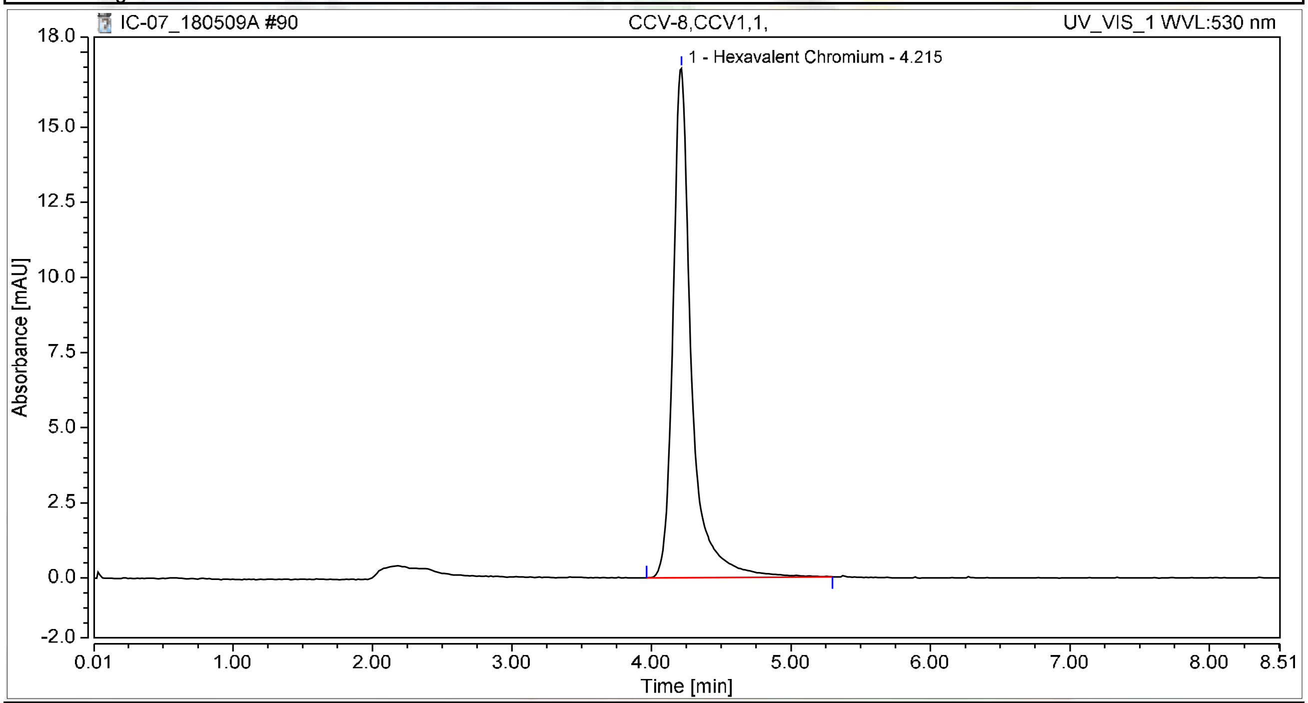
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.249	1.658	100.00	100.00	0.9687
Total:			**0.249**	**1.658**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-8,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 21:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

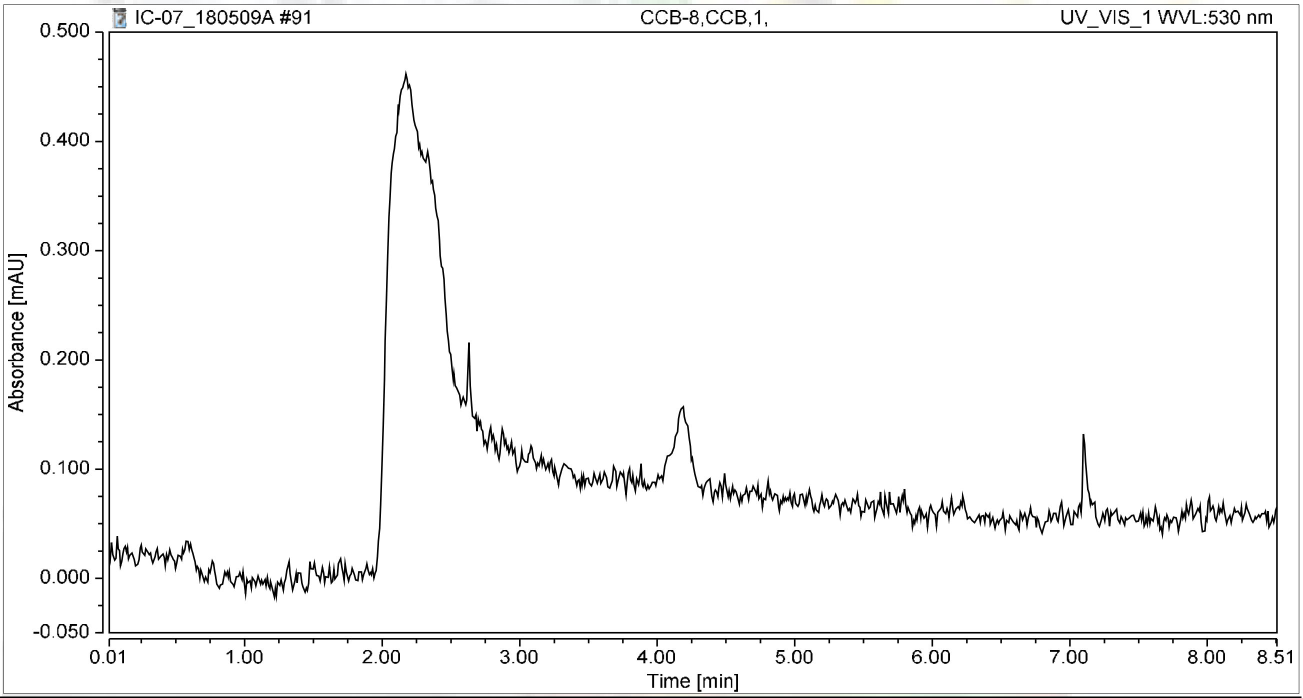
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	2.605	16.953	100.00	100.00	10.1500
Total:			**2.605**	**16.953**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-8,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**09/May/18 21:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

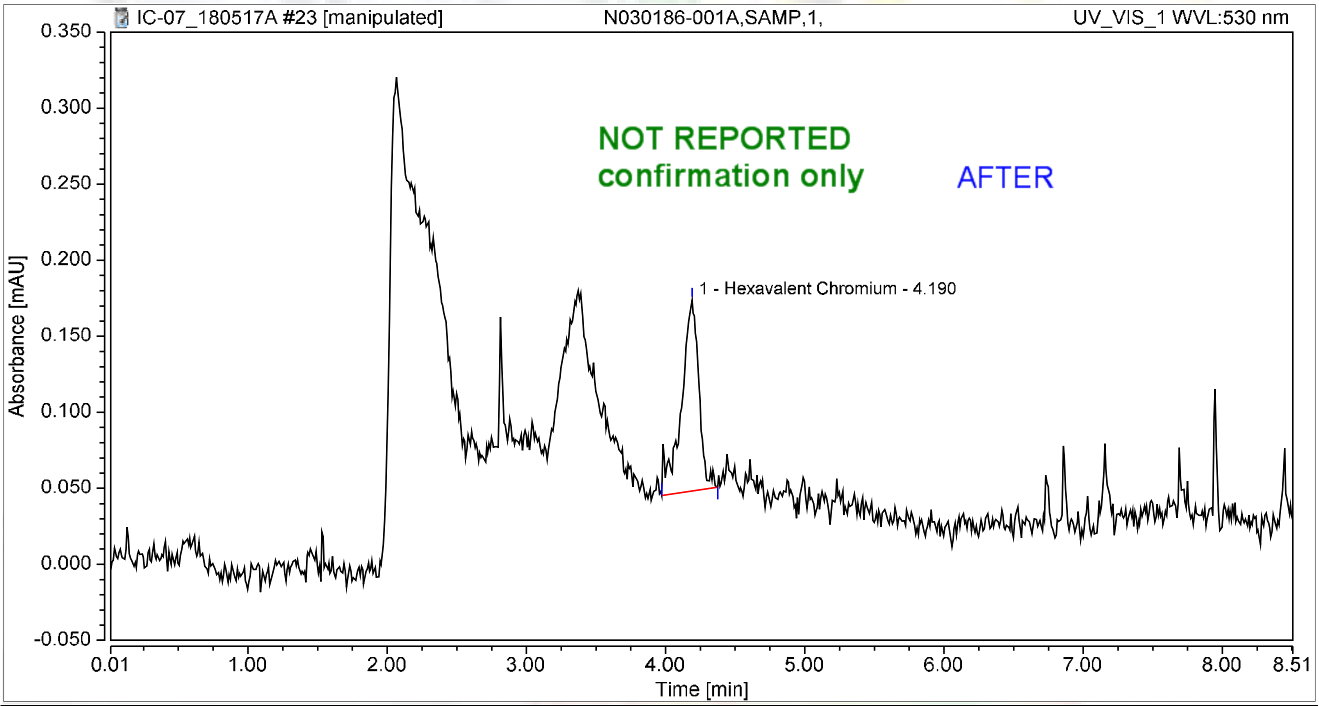
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030186-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/18 13:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.018	0.126	100.00	100.00	0.0712
Total:			**0.018**	**0.126**	**100.00**	**100.00**	

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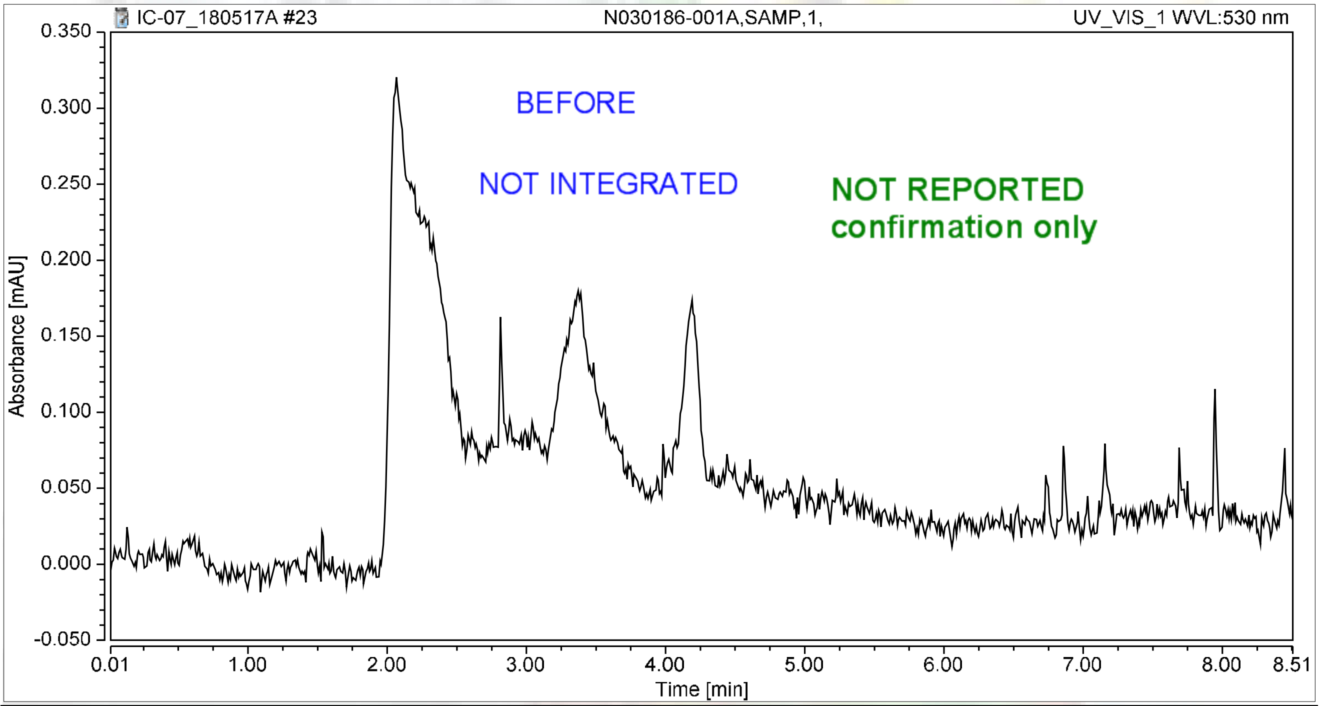
Chromatogram and Results

Injection Details

Injection Name:	**N030186-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/18 13:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

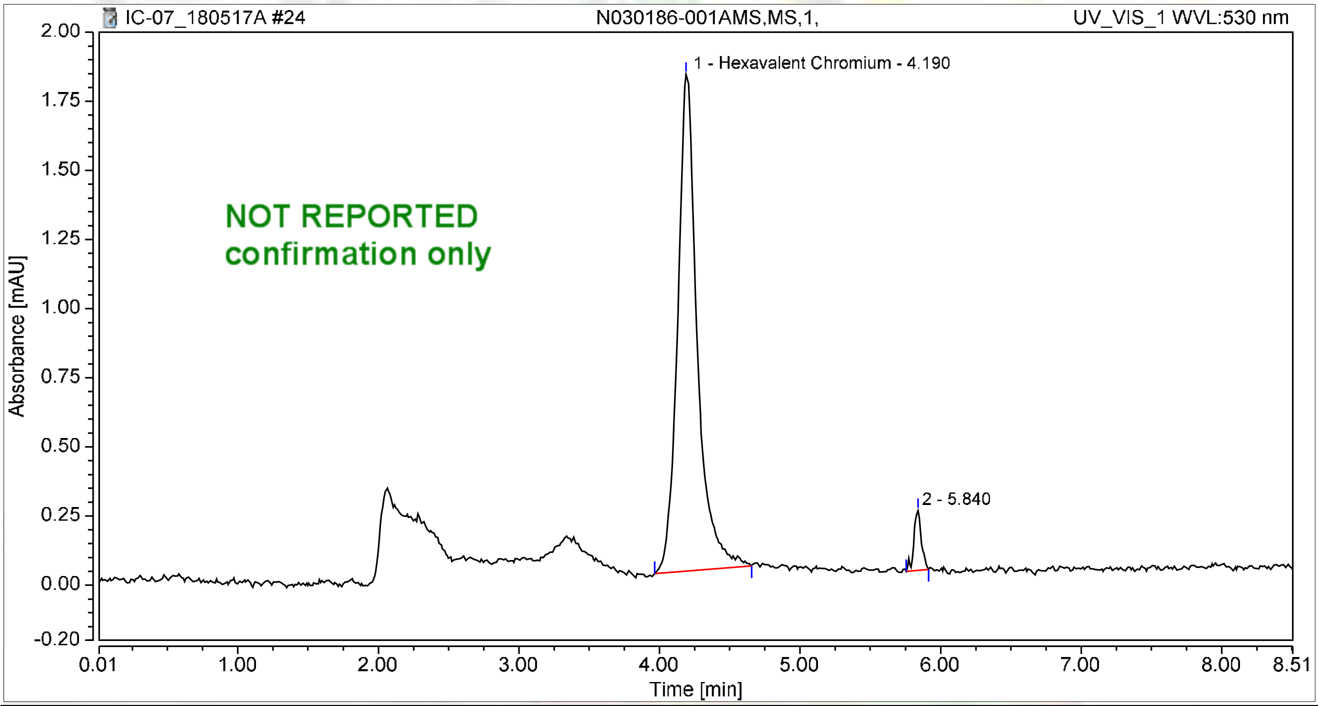
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030186-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180430_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**17/May/18 13:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.292	1.797	95.57	89.24	1.1368
2		5.840	0.014	0.217	4.43	10.76	n.a.
Total:			**0.305**	**2.014**	**100.00**	**100.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R123911 **Analyst:** LSR

ASSET #: N030186 **Date Analyzed:** 5/7/2018

Method: EPA 2320

	Ist Level Review			2nd Level Review		
Initial Calibration	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			X
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			X
3. ICV within ± 15% of expected value.			X			X
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			X
5. CCV within ± 15% of expected value.			X			X
6. Calibration blanks run after ICV and CCV?			X			X
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			X
Sample Information						
8. All samples are within linear range.			X			X
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X			X		
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct	X		
3. Does batch meet QC requirements?	X		
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)	X		
5. Is first level review correct and complete?	X		

1st Level Reviewer: Lidia Ramit Date: 5/9/2018

2nd Level Reviewer: [signature] 05/16/18 Date:

SAMPLE CALCULATION

Sample ID: **N030186-001B @ pH 7.96**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.75 mL)

= **0.02128 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (8.30) (0.02128 N) (1) * 1000

= 176.6240 mg/**L**

Reporting results in two significant figures,

= **180 mg/L** as CaCO3

Julia Ramit 5/9/2018

RB 05/22/2018

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02128 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (8.30 mL) (0.02128) (1) * 1000

= 176.6240 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 176.6240 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **180 mg/L**

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RB 05/22/2018

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.53	50	0.00	0.050	MBLK
LCS-1	8.63	50	0.10	4.60	LCS
N030185-002B	7.67	50	0.00	4.20	SAMP
N030185-003B	7.77	50	0.00	6.50	SAMP
N030186-001B	7.96	50	0.00	8.30	SAMP
N030186-002B	7.82	50	0.00	7.20	SAMP
N030185-002BDUP	7.76	50	0.00	4.20	DUP
N030185-003BMS	8.00	50	0.00	10.90	MS
N030185-003BMSD	7.98	50	0.00	10.70	MSD
N030212-001B	6.39	50	0.00	0.60	SAMP
N030212-001BDUP	6.40	50	0.00	0.60	DUP

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.750**	ml
N H_2SO_4	**0.02128**	Normal

Date Analyzed:	**5/7/18**
Time:	**1:40 PM**
Analyzed By:	**LSR**

Sodium Carbonate:	**CINV-161205A**
Sodium Bicarbonate:	**CINV-150601A**
Sulfuric Acid:	**R180507B**

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Date Analyzed:	5/7/18		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	1:40 PM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**LSR**			Hydrochloric Acid:		0			Titrant used:	11.75	**mL**		**P = 1/2 T**
				Sulfuric Acid:		R180507B							**P > 1/2 T**
									N H2SO4	0.02128	**N**		**P = T**

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.53				0.02128	0.00	0.05	0.05	1	0.00	1.06	
LCS-1	50	8.63				0.02128	0.10	4.50	4.60	1	2.13	97.87	
N030185-002B	50	7.67				0.02128	0.00	4.20	4.20	1	0.00	89.36	
N030185-003B	50	7.77				0.02128	0.00	6.50	6.50	1	0.00	138.30	
N030186-001B	50	7.96				0.02128	0.00	8.30	8.30	1	0.00	176.60	
N030186-002B	50	7.82				0.02128	0.00	7.20	7.20	1	0.00	153.19	
N030185-002BDU	50	7.76				0.02128	0.00	4.20	4.20	1	0.00	89.36	
N030185-003BMS	50	8				0.02128	0.00	10.90	10.90	1	0.00	231.91	
N030185-003BMS	50	7.98				0.02128	0.00	10.70	10.70	1	0.00	227.66	
N030212-001B	50	6.39				0.02128	0.00	0.60	0.60	1	0.00	12.77	
N030212-001BDU	50	6.4				0.02128	0.00	0.60	0.60	1	0.00	12.77	

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RB 05/22/2018

Speciated, Alkalinity as $CaCO_3$

SM 2320B

Date Analyzed:	5/7/18
Time:	1:40 PM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.06	1.06	1.06		P = 0
LCS-1	0.00	4.26	93.62	97.87	97.87		P < 1/2 T
N030185-002B	0.00	0.00	89.36	89.36	89.36		P = 0
N030185-003B	0.00	0.00	138.30	138.30	138.30		P = 0
N030186-001B	0.00	0.00	176.60	176.60	176.60		P = 0
N030186-002B	0.00	0.00	153.19	153.19	153.19		P = 0
N030185-002BDUP	0.00	0.00	89.36	89.36	89.36		P = 0
N030185-003BMS	0.00	0.00	231.91	231.91	231.91		P = 0
N030185-003BMSD	0.00	0.00	227.66	227.66	227.66		P = 0
N030212-001B	0.00	0.00	12.77	12.77	12.77		P = 0
N030212-001BDUP	0.00	0.00	12.77	12.77	12.77		P = 0

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RB 05/22/2018

Matrix: H_2O

Date Extracted: 5/7/18
Time Extracted: 5/7/18
Extracted By: LSN

Date Analyzed: 5/7/18
Time Analyzed: 1240
Analyzed By: LSN

Reagent Lot # / Reagent ID
Sodium Carbonate: CIN161205A
Hydrochloric Acid: –
Sulfuric Acid: R180507B
Sodium Bicarbonate: CIN150601A

pH meter Calibration:
SLOPE: 98.0%
pH 7 - 7.01 - CIN171215P
4 - 4.02 - 171208A
10 - 10.02 - 180119A

	Sample ID	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50mL	10.69	IWST180430A	5mL	0.05N	–	–	11.80	50/50	$N\ H_2SO_4 = \frac{(2.65g/L)(5mL)}{(53)(V\ titrant)}$	= 0.02118644
	#2	↓	10.69	↓	↓	↓	–	–	11.70	↓		= 0.02136752
1)	MBLK	50mL	5.53	–	–	–	0.02128	0	0.05	50/50		Ave: 0.02127698
2)	LCS	↓	8.63	IWST180430B	1mL	0.05N	↓	0.10	4.60	↓		
3)	N030185-2B	↓	7.67				↓	0	4.20	↓		
4)	↓ 3B	↓	7.77				↓	0	6.50	↓		
5)	N030186-1B	↓	7.96				↓	0	8.30	↓		
6)	↓ 2B	↓	7.82				↓	0	7.20	↓		
7)	N030185-2BDUP	↓	7.76				↓	0	4.20	↓		
8)	↓ 3BMS	↓	8.00	IWST180430B	1mL	0.05N	↓	0	10.90	↓		
9)	↓ 3B MSD	↓	7.98	↓	↓	↓	↓	0	10.70	↓		
10)	N030212-1B	↓	6.39				↓	0	0.60	↓		
11)	↓ 1BDUP	↓	6.46				↓	0	0.60	↓		
12)												
13)												
14)												
15)												
16)												
17)												
18)												
19)												
20)												
	MS											
	MSD											
	LCS											

$$P = \frac{(V\ pH\ 8.3)(N\ H_2SO_4)(50,000)}{V_{sx}}$$

$$T = \frac{(V\ pH\ 4.5)(N\ H_2SO_4)(50,000)}{V_{sx}}$$

Julia Ramit 5/9/2018

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R123903

ASSET #: ~~N030121~~ / N030097 / N030188 N030185 / N030186

Instrument ID: IC-08

Analyst: RBA

Date Analyzed: 5/7/2018

Method:

- [X] EPA 300.0
- [ ] EPA 7199
- [ ] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ____________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 5/14/2018

2nd Level Reviewer 5/22/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N030186-001B** concentration in mg/L is calculated as follows:

Chloride, mg/L = 7.0442 * 50

= 352.21

Reporting result in two significant values,

Chloride, mg/L = 350

rba 5/18/2018

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS
#Samples: 61
Created: 5/5/2018 8:43:21 AM by IC-05
Last Update: 5/6/2018 12:18:53 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
2	Std - 0	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
3	Std - 1	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
4	Std - 2	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
5	Std - 3	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
6	Std - 4	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
7	Std - 5	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
8	ICV	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
9	ICB	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
10	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
11	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
12	N030189-003C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
13	N030189-007C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
14	N030189-001C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
15	N030146-003A,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
16	N030189-003CMS,MS,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
17	N030189-003CMSD,MSD,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
18	N030189-007CMS,MS,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
19	N030189-001CDUP,DUP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
20	CCV-1,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
21	CCB-1,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
22	N030189-004C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
23	N030189-005C,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
24	N030189-006C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
25	N030189-006C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
26	N030189-009C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
27	N030189-011C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
28	N030189-012C,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
29	N030189-013A,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
30	N030189-002C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
31	N030189-012C,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
32	CCV-2,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
33	CCB-2,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
34	N030188-009A,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
35	N030188-001A,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
36	N030188-002A,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
37	N030188-001ADUP,DUP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
38	N030188-001AMS,MS,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
39	N030188-001AMSD,MSD,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
40	N030188-003A,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
41	N030188-004A,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished

rba 5/14/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 5/5/2018 8:43:21 AM by IC-05
#Samples: 61 Last Update: 5/6/2018 12:18:53 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	5/5/2018 8:44:01 AM	BLANK
2	Std - 0	5/5/2018 8:59:30 AM	IBLANK
3	Std - 1	5/5/2018 9:14:48 AM	STD-LOW
4	Std - 2	5/5/2018 9:31:43 AM	STD
5	Std - 3	5/5/2018 9:47:01 AM	STD
6	Std - 4	5/5/2018 10:02:19 AM	STD
7	Std - 5	5/5/2018 10:17:37 AM	STD-HIGH
8	ICV	5/5/2018 10:32:55 AM	ICV
9	ICB	5/5/2018 10:48:13 AM	ICB
10	MB-H2O,MBLK,1	5/5/2018 11:03:30 AM	METHOD BLANK
11	LCS-H2O,LCS,1	5/5/2018 11:18:49 AM	LCS
12	N030189-003C,SAMP,2	5/5/2018 11:34:07 AM	SAMP,5>10mL
13	N030189-007C,SAMP,2	5/5/2018 11:49:25 AM	SAMP,5>10mL
14	N030189-001C,SAMP,1	5/5/2018 12:04:42 PM	SAMP,10mL
15	N030146-003A,SAMP,1	5/5/2018 12:19:05 PM	SAMP,10mL
16	N030189-003CMS,MS,2	5/5/2018 12:34:23 PM	MS,5>10mL
17	N030189-003CMSD,MSD,2	5/5/2018 12:49:41 PM	MSD,5>10mL
18	N030189-007CMS,MS,2	5/5/2018 1:04:59 PM	MS,5>10mL
19	N030189-001CDUP,DUP,1	5/5/2018 1:20:17 PM	DUP,10mL
20	CCV-1,CCV,1	5/5/2018 1:35:35 PM	CCV
21	CCB-1,CCB,1	5/5/2018 1:50:52 PM	CCB
22	N030189-004C,SAMP,10	5/5/2018 2:06:10 PM	SAMP,1>10mL
23	N030189-005C,SAMP,10	5/5/2018 2:21:28 PM	SAMP,1>10mL
24	N030189-006C,SAMP,1	5/5/2018 2:36:46 PM	SAMP,10mL
25	N030189-006C,SAMP,2	5/5/2018 2:52:04 PM	SAMP,5>10mL
26	N030189-009C,SAMP,1	5/5/2018 3:07:21 PM	SAMP,10mL
27	N030189-011C,SAMP,5	5/5/2018 3:22:39 PM	SAMP,2>10mL
28	N030189-012C,SAMP,2	5/5/2018 3:37:57 PM	SAMP,5>10mL
29	N030189-013A,SAMP,2	5/5/2018 3:53:15 PM	SAMP,5>10mL
30	N030189-002C,SAMP,1	5/5/2018 4:08:32 PM	SAMP,10mL
31	N030189-012C,SAMP,5	5/5/2018 4:23:50 PM	SAMP,2>10mL
32	CCV-2,CCV,1	5/5/2018 4:39:08 PM	CCV
33	CCB-2,CCB,1	5/5/2018 4:54:27 PM	CCB
34	N030188-009A,SAMP,5	5/5/2018 5:09:45 PM	SAMP,2>10mL
35	N030188-001A,SAMP,1	5/5/2018 5:25:02 PM	SAMP,10mL
36	N030188-002A,SAMP,1	5/5/2018 5:40:20 PM	SAMP,10mL
37	N030188-001ADUP,DUP,1	5/5/2018 5:55:38 PM	DUP,10mL
38	N030188-001AMS,MS,1	5/5/2018 6:10:56 PM	MS,10mL
39	N030188-001AMSD,MSD,1	5/5/2018 6:26:14 PM	MSD,10mL
40	N030188-003A,SAMP,20	5/5/2018 6:41:31 PM	SAMP,0.5>10mL
41	N030188-004A,SAMP,20	5/5/2018 6:56:49 PM	SAMP,0.5>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 5/5/2018 8:43:21 AM by IC-05
#Samples: 61 Last Update: 5/6/2018 12:18:53 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N030188-005A,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
43	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
44	CCV-3,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
45	CCB-3,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
46	N030188-007A,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
47	N030188-006A,SAMP,100	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
48	N030188-008A,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
49	N030188-005A,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
50	N030188-005ADUP,DUP,10	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
51	N030188-005AMS,MS,10	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
52	N030188-005AMSD,MSD,10	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
53	N030188-001A,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
54	N030188-002A,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
55	N030189-011C,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
56	CCV-4,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
57	CCB-4,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
58	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
59	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
60	CCV-4,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
61	CCB-4,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished

rba 5/14/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 5/5/2018 8:43:21 AM by IC-05
#Samples: 61 Last Update: 5/6/2018 12:18:53 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N030188-005A,SAMP,20	5/5/2018 7:12:07 PM	SAMP,0.5>10mL
43	BLANK,BLANK,1	5/5/2018 7:27:25 PM	BLANK
44	CCV-3,CCV,1	5/5/2018 7:42:43 PM	CCV
45	CCB-3,CCB,1	5/5/2018 7:58:01 PM	CCB
46	N030188-007A,SAMP,50	5/5/2018 8:13:18 PM	SAMP,0.2>10mL
47	N030188-006A,SAMP,100	5/5/2018 8:28:36 PM	SAMP,0.1>10mL
48	N030188-008A,SAMP,5	5/5/2018 8:43:54 PM	SAMP,2>10mL
49	N030188-005A,SAMP,10	5/5/2018 8:59:12 PM	SAMP,1>10mL
50	N030188-005ADUP,DUP,10	5/5/2018 9:14:30 PM	DUP,1>10mL
51	N030188-005AMS,MS,10	5/5/2018 9:29:48 PM	MS,1>10mL
52	N030188-005AMSD,MSD,10	5/5/2018 9:45:06 PM	MSD,1>10mL
53	N030188-001A,SAMP,2	5/5/2018 10:00:23 PM	SAMP,5>10mL
54	N030188-002A,SAMP,2	5/5/2018 10:15:41 PM	SAMP,5>10mL
55	N030189-011C,SAMP,1	5/5/2018 10:30:59 PM	SAMP,10mL
56	CCV-4,CCV,1	5/5/2018 10:46:17 PM	CCV
57	CCB-4,CCB,1	5/5/2018 11:01:35 PM	CCB
58	BLANK,BLANK,1	5/5/2018 11:16:53 PM	BLANK
59	BLANK,BLANK,1	5/5/2018 11:32:11 PM	BLANK
60	CCV-4,CCV,1	5/6/2018 12:18:56 AM	CCV
61	CCB-4,CCB,1	5/6/2018 12:34:14 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 5/7/2018 8:44:17 AM by IC-05
#Samples: 68 Last Update: 5/7/2018 4:46:32 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
2	Std - 0	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
3	Std - 1	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
4	Std - 2	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
5	Std - 3	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
6	Std - 4	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
7	Std - 5	Standard	1000.0	Anions Default	EPA 300_0_180505	Finished
8	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
9	CCV-1,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
10	CCB-1,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
13	N030121-002B,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
14	N030097-009A,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
15	N030097-010A,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
16	N030097-011A,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
17	N030097-012A,SAMP,100	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
18	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
19	N030188-009A,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
20	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
21	CCV-2,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
22	CCB-2,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
23	N030121-002BDUP,DUP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
24	N030188-011A,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
25	N030188-006A,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
26	N030097-009A,SAMP,100	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
27	N030097-010A,SAMP,100	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
28	N030097-012A,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
29	N030097-011AMS,MS,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
30	N030097-011AMSD,MSD,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
31	N030185-002B,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
32	N030185-003B,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
33	CCV-3,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
34	CCB-3,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
35	N030186-001B,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
36	N030186-001B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
37	N030186-002B,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
38	N030186-002B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
39	N030185-002BMS,MS,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
40	N030185-002BMSD,MSD,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
41	N030186-002BMS,MS,500	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished

rba 5/14/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS
#Samples: 68
Created: 5/7/2018 8:44:17 AM by IC-05
Last Update: 5/7/2018 4:46:32 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	5/5/2018 8:44:01 AM	BLANK
2	Std - 0	5/5/2018 8:59:30 AM	IBLANK
3	Std - 1	5/5/2018 9:14:48 AM	STD-LOW
4	Std - 2	5/5/2018 9:31:43 AM	STD
5	Std - 3	5/5/2018 9:47:01 AM	STD
6	Std - 4	5/5/2018 10:02:19 AM	STD
7	Std - 5	5/5/2018 10:17:37 AM	STD-HIGH
8	BLANK,BLANK,1	5/7/2018 8:45:47 AM	BLANK
9	CCV-1,CCV,1	5/7/2018 9:01:05 AM	CCV
10	CCB-1,CCB,1	5/7/2018 9:16:22 AM	CCB
11	MB-H2O,MBLK,1	5/7/2018 9:31:40 AM	METHOD BLANK
12	LCS-H2O,LCS,1	5/7/2018 9:46:58 AM	LCS
13	N030121-002B,SAMP,5	5/7/2018 10:07:51 AM	SAMP,2>10mL
14	N030097-009A,SAMP,50	5/7/2018 10:35:41 AM	SAMP,0.2>10mL
15	N030097-010A,SAMP,50	5/7/2018 10:50:59 AM	SAMP,0.2>10mL
16	N030097-011A,SAMP,50	5/7/2018 11:06:17 AM	SAMP,0.2>10mL
17	N030097-012A,SAMP,100	5/7/2018 11:21:35 AM	SAMP,0.1>10mL
18	BLANK,BLANK,1	5/7/2018 11:36:53 AM	BLANK
19	N030188-009A,SAMP,1	5/7/2018 11:52:11 AM	SAMP,10mL
20	BLANK,BLANK,1	5/7/2018 12:07:29 PM	BLANK
21	CCV-2,CCV,1	5/7/2018 12:22:47 PM	CCV
22	CCB-2,CCB,1	5/7/2018 12:38:04 PM	CCB
23	N030121-002BDUP,DUP,5	5/7/2018 12:53:22 PM	DUP,2>10mL
24	N030188-011A,SAMP,1	5/7/2018 1:08:40 PM	SAMP,10mL
25	N030188-006A,SAMP,5	5/7/2018 1:23:58 PM	SAMP,2>10mL
26	N030097-009A,SAMP,100	5/7/2018 1:39:16 PM	SAMP,0.1>10mL
27	N030097-010A,SAMP,100	5/7/2018 1:54:34 PM	SAMP,0.1>10mL
28	N030097-012A,SAMP,200	5/7/2018 2:09:52 PM	SAMP,0.05>10mL
29	N030097-011AMS,MS,50	5/7/2018 2:25:09 PM	MSD,0.2>10mL
30	N030097-011AMSD,MSD,50	5/7/2018 2:40:27 PM	MS,0.2>10mL
31	N030185-002B,SAMP,5	5/7/2018 2:55:45 PM	SAMP,2>10mL
32	N030185-003B,SAMP,5	5/7/2018 3:11:03 PM	SAMP,2>10mL
33	CCV-3,CCV,1	5/7/2018 3:26:21 PM	CCV
34	CCB-3,CCB,1	5/7/2018 3:41:39 PM	CCB
35	N030186-001B,SAMP,200	5/7/2018 3:56:57 PM	SAMP,0.05>10mL
36	N030186-001B,SAMP,50	5/7/2018 4:12:15 PM	SAMP,0.2>10mL
37	N030186-002B,SAMP,500	5/7/2018 4:28:12 PM	SAMP,0.02>10mL
38	N030186-002B,SAMP,50	5/7/2018 4:43:40 PM	SAMP,0.2>10mL
39	N030185-002BMS,MS,5	5/7/2018 4:58:58 PM	MS,2>10mL
40	N030185-002BMSD,MSD,5	5/7/2018 5:14:16 PM	MSD,2>10mL
41	N030186-002BMS,MS,500	5/7/2018 5:29:34 PM	MS,0.02>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 5/7/2018 8:44:17 AM by IC-05
#Samples: 68 Last Update: 5/7/2018 4:46:32 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N030186-002BMSD,MSD,500	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
43	N030186-001BMS,MS,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
44	N030186-001BMSD,MSD,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
45	CCV-4,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
46	CCB-4,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
47	N030121-002B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
48	N030186-001BDUP,DUP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
49	N030185-002BDUP,DUP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
50	N030185-002B,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
51	N030185-003B,SAMP,5	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
52	N030185-002B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
53	N030185-003B,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
54	N030185-002B,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
55	N030185-003B,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
56	CCV-5,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
57	CCB-5,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
58	N030188-011A,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
59	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
60	N030105-001A,SAMP,5	Unknown	1000.0	Anions Default2	EPA 300_0_180505	Finished
61	N030105-001B,SAMP,5	Unknown	1000.0	Anions Default2	EPA 300_0_180505	Finished
62	N030105-002A,SAMP,5	Unknown	1000.0	Anions Default2	EPA 300_0_180505	Finished
63	N030105-002B,SAMP,5	Unknown	1000.0	Anions Default2	EPA 300_0_180505	Finished
64	N030105-003A,SAMP,5	Unknown	1000.0	Anions Default2	EPA 300_0_180505	Finished
65	N030105-003B,SAMP,5	Unknown	1000.0	Anions Default2	EPA 300_0_180505	Finished
66	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
67	CCV-6,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished
68	CCB-6,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180505	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 5/7/2018 8:44:17 AM by IC-05
#Samples: 68 Last Update: 5/7/2018 4:46:32 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N030186-002BMSD,MSD,500	5/7/2018 5:44:51 PM	MSD,0.02>10mL
43	N030186-001BMS,MS,50	5/7/2018 6:00:09 PM	MS,0.2>10mL
44	N030186-001BMSD,MSD,50	5/7/2018 6:15:28 PM	MSD,0.2>10mL
45	CCV-4,CCV,1	5/7/2018 6:30:45 PM	CCV
46	CCB-4,CCB,1	5/7/2018 6:46:03 PM	CCB
47	N030121-002B,SAMP,50	5/7/2018 7:01:21 PM	SAMP,0.2>10mL
48	N030186-001BDUP,DUP,50	5/7/2018 7:16:39 PM	DUP,0.2>10mL
49	N030185-002BDUP,DUP,5	5/7/2018 7:31:57 PM	DUP,2>10mL
50	N030185-002B,SAMP,5	5/7/2018 7:47:15 PM	SAMP,2>10mL
51	N030185-003B,SAMP,5	5/7/2018 8:02:32 PM	SAMP,2>10mL
52	N030185-002B,SAMP,50	5/7/2018 8:17:50 PM	SAMP,0.2>10mL
53	N030185-003B,SAMP,50	5/7/2018 8:33:08 PM	SAMP,0.2>10mL
54	N030185-002B,SAMP,500	5/7/2018 8:48:26 PM	SAMP,0.02>10mL
55	N030185-003B,SAMP,500	5/7/2018 9:03:44 PM	SAMP,0.02>10mL
56	CCV-5,CCV,1	5/7/2018 9:19:01 PM	CCV
57	CCB-5,CCB,1	5/7/2018 9:34:19 PM	CCB
58	N030188-011A,SAMP,2	5/7/2018 9:49:37 PM	SAMP,5>10mL
59	BLANK,BLANK,1	5/7/2018 10:04:55 PM	BLANK
60	N030105-001A,SAMP,5	5/7/2018 10:20:13 PM	SAMP,2>10mL
61	N030105-001B,SAMP,5	5/7/2018 10:42:31 PM	SAMP,2>10mL
62	N030105-002A,SAMP,5	5/7/2018 11:04:48 PM	SAMP,2>10mL
63	N030105-002B,SAMP,5	5/7/2018 11:27:07 PM	SAMP,2>10mL
64	N030105-003A,SAMP,5	5/7/2018 11:49:25 PM	SAMP,2>10mL
65	N030105-003B,SAMP,5	5/8/2018 12:11:43 AM	SAMP,2>10mL
66	BLANK,BLANK,1	5/8/2018 12:34:01 AM	BLANK
67	CCV-6,CCV,1	5/8/2018 12:49:19 AM	CCV
68	CCB-6,CCB,1	5/8/2018 1:04:37 AM	CCB

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 5/5/2018

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0718	0.1435	0.2889	0.7378	1.5636	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 5/5/2018

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0043	0.0538	0.2164	0.4354	1.1054	2.3061	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

ASSET Laboratories

Date: *17-May-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ICV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/5/2018** SeqNo: **3019471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.991	0.50	2.000	0	99.6	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.946	0.50	2.000	0	97.3	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019477**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.919	0.50	2.000	0	96.0	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.936	0.50	2.000	0	96.8	90	110				

Sample ID **CCV-4** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.958	0.50	2.000	0	97.9	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019490**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.941	0.50	2.000	0	97.1	90	110				

Sample ID **CCV-6** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/8/2018** SeqNo: **3019498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.955	0.50	2.000	0	97.7	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ICV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/5/2018** SeqNo: **3019521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.902	0.50	4.000	0	97.6	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.879	0.50	4.000	0	97.0	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.943	0.50	4.000	0	98.6	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.894	0.50	4.000	0	97.4	90	110				

Sample ID **CCV-4** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCV** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.892	0.50	4.000	0	97.3	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_SO4P** Units: **mg/L**		Prep Date:				RunNo: **123903**		
Client ID: **CCV**	Batch ID: **R123903**	TestNo: **EPA 300.0**		Analysis Date: **5/7/2018**				SeqNo: **3019541**		
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Sulfate	3.895	0.50	4.000	0	97.4	90	110				

Sample ID **CCV-6**	SampType: **CCV**	TestCode: **300_W_SO4P** Units: **mg/L**		Prep Date:				RunNo: **123903**		
Client ID: **CCV**	Batch ID: **R123903**	TestNo: **EPA 300.0**		Analysis Date: **5/8/2018**				SeqNo: **3019543**		
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Sulfate	3.936	0.50	4.000	0	98.4	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB** SampType: **ICB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ICB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/5/2018** SeqNo: **3019472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-6** SampType: **CCB** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/8/2018** SeqNo: **3019499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.137	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB** SampType: **ICB** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **ICB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/5/2018** SeqNo: **3019522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1** SampType: **CCB** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2** SampType: **CCB** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3** SampType: **CCB** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4** SampType: **CCB** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **123903**
Client ID: **CCB** Batch ID: **R123903** TestNo: **EPA 300.0** Analysis Date: **5/7/2018** SeqNo: **3019536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **123903**
Client ID: **CCB**	Batch ID: **R123903**	TestNo: **EPA 300.0**	Analysis Date: **5/7/2018**	SeqNo: **3019542**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **123903**
Client ID: **CCB**	Batch ID: **R123903**	TestNo: **EPA 300.0**	Analysis Date: **5/8/2018**	SeqNo: **3019544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.207	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 5/7/2018

Sample Name	Retention Time		Evaluation
ICV	Chloride	4.054	
CCV-1	Chloride	4.040	
CCV-2	Chloride	4.037	
CCV-3	Chloride	4.037	
CCV-4	Chloride	4.040	
CCV-5	Chloride	4.034	
CCV-6	Chloride	4.037	

Average 4.038

Applied RT Window 3.838 - 4.238

MB-R123903_CL	Chloride	N.A.	N.A.
LCS-R123903_CL	Chloride	4.040	PASS
N030186-001B	Chloride	4.040	PASS
N030186-002B	Chloride	4.040	PASS
N030186-002BMS	Chloride	4.040	PASS
N030186-002BMSD	Chloride	4.040	PASS
N030186-001BDUP	Chloride	4.040	PASS

rba 5/18/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 5/7/2018

Sample Name		Retention Time	Evaluation
ICV	Sulfate	8.850	
CCV-1	Sulfate	8.804	
CCV-2	Sulfate	8.790	
CCV-3	Sulfate	8.787	
CCV-4	Sulfate	8.800	
CCV-5	Sulfate	8.787	
CCV-6	Sulfate	8.797	

Average 8.794

Applied RT Window 8.594 - 8.994

MB-R123903_SO4	Sulfate	N.A.	N.A.
LCS-R123903_SO4	Sulfate	8.800	PASS
N030186-001B	Sulfate	8.790	PASS
N030186-002B	Sulfate	8.807	PASS
N030186-001BMS	Sulfate	8.803	PASS
N030186-001BMSD	Sulfate	8.807	PASS
N030186-001BDUP	Sulfate	8.800	PASS

rba 5/18/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2018 (1st Quarter)

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)**
Method Number: EPA Method 300.0
Analysis Date(s): 3/29-30/2018
Analyst: Ria B. Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.0252	0.10	0.087	**87**
Chloride	**0.0091**	0.020	0.1193	0.50	0.5757	**115**
Nitrite	**0.0030**	0.010	0.0237	0.05	0.0638	**128**
Bromide	**0.0196**	0.040	0.0405	0.20	0.1993	**100**
Nitrate	**0.0050**	0.010	0.0191	0.05	0.0561	**112**
Phosphate	**0.0135**	0.030	0.0415	0.10	0.1216	**122**
Sulfate	**0.0229**	0.050	0.3682	0.50	0.6549	**131**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R124137 **Analyst:** QBM

ASSET #: N030147, N030185, N030186, N030188 **Date Analyzed:** 5/18/2018

Method: **4500_NO3**

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date:

2nd Level Reviewer RB 05/22/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N030186-002C**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N = 0.5318 * 5
= 2.659 mg/L

Reporting result in two significant figures,

Nitrate/Nitrite-N = 2.7 mg/L

RB 05/22/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

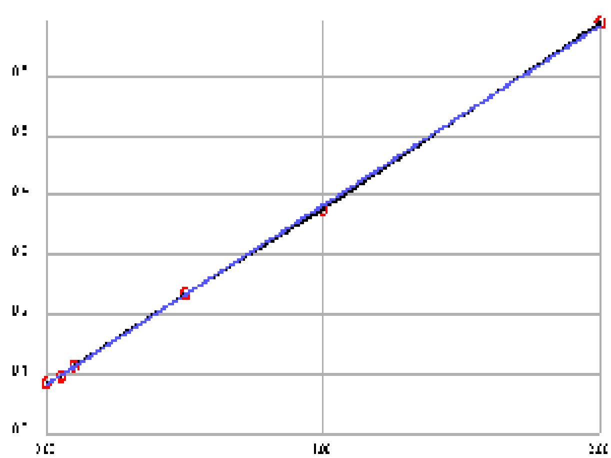
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.301x + 0.0834
Correlation	.999805

Calibrant	Energy	Set	Conc
1	0.0858	0.0000	0.0081
2	0.0984	0.0500	0.0500
3	0.1144	0.1000	0.1032
4	0.2354	0.5000	0.5052
5	0.3753	1.0000	0.9700
6	0.6894	2.0000	2.0136



Notes:

05/22/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ICV** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031739**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.535	0.050	0.5000	0	107	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **CCV** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031750**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.508	0.050	0.5000	0	102	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **CCV** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.462	0.050	0.5000	0	92.4	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **CCV** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030186
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **ICB** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **CCB** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **CCB** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124137**
Client ID: **CCB** Batch ID: **R124137** TestNo: **SM4500-NO3** Analysis Date: **5/18/2018** SeqNo: **3031772**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 05-18-2018 16:39
Time end: 05-18-2018 19:34

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	18:53:25	0.0078		0.0857
2	<BLANK>	18:54:19	0.0088		0.0860
3	<CAL1>	18:55:20	0.0081	[0]	0.0858
4	<CAL2>	18:56:16	0.0500	[0.05]	0.0984
5	<CAL3>	18:57:17	0.1032	[0.1]	0.1144
6	<CAL4>	18:58:11	0.5052	[0.5]	0.2354
7	<CAL5>	18:59:07	0.9700	[1]	0.3753
8	<CAL6>	19:00:02	2.0136	[2]	0.6894
9	,BLANK,BLANK,1, NOT REPORTED	19:01:02	0.0347		0.0938
10	,ICV,ICV,1,	19:01:58	0.5347		0.2443
11	,ICB,ICB,1,	19:02:59	0.0048		0.0848
12	,MB-H2O,MBLK,1,	19:03:55	0.0058		0.0851
13	,LCS-H2O,LCS,1,	19:04:49	0.5145		0.2382
14	,N030147-007C,SAMP,5,	19:05:50	0.7125		0.2978
15	,N030147-008C,SAMP,5,	19:06:46	0.6268		0.2720
16	,N030147-009C,SAMP,1,	19:07:40	0.4374		0.2150
17	,N030147-010C,SAMP,1,	19:08:42	0.8726		0.3460
18	,N030186-002C,SAMP,5,	19:09:37	0.5318		0.2434
19	,N030186-002CMS,MS,5,	19:10:33	1.1202		0.4205
20	,N030186-002CMSD,MSD,5,	19:11:33	1.0520		0.4000
21	,BLANK, NOT REPORTED	19:12:29	0.0277		0.0917
22	,CCV-1,CCV,1,	19:13:24	0.5082		0.2363
23	,CCB-1,CCB,1,	19:14:25	0.0154		0.0880
24	,N030186-001C,SAMP,1,	19:15:20	0.0457		0.0971
25	,N030186-001CDUP,DUP,1,	19:16:16	0.0357		0.0941
26	,N030147-011C,SAMP,1,	19:17:17	0.0224		0.0901

RJB 05/22/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N030147-012C,SAMP,1,	19:18:11	0.0490		0.0981
28	,N030185-001C,SAMP,1,	19:19:01	0.4410		0.2161
29	,N030185-004C,SAMP,1,	19:19:43	0.5308		0.2431
30	,N030188-006B,SAMP,5,	19:20:33	0.5540		0.2501
31	,N030188-007B,SAMP,1,	19:21:16	0.8773		0.3474
32	,N030188-008B,SAMP,10,	19:21:58	0.7012		0.2944
33	,BLANK, NOT REPORTED	19:22:48	0.0121		0.0870
34	,CCV-2,CCV,1, NOT REPORTED	19:23:30	0.4597		0.2217
35	,CCV-2,CCV,1,	19:24:13	0.4620		0.2224
36	,CCB-2,CCB,1,	19:25:01	0.0045		0.0847
37	,N030188-005B,SAMP,1,	19:25:45	0.0257		0.0911
38	,N030188-003B,SAMP,1,	19:26:28	0.6773		0.2872
39	,N030188-004B,SAMP,1,	19:27:16	0.0988		0.1131
40	,N030188-010A,SAMP,1,	19:28:00	0.2184		0.1491
41	,N030188-009B,SAMP,5,	19:28:48	0.9740		0.3765
42	,N030188-011B,SAMP,5,	19:29:31	1.0969		0.4135
43	,BLANK, NOT REPORTED	19:30:13	0.0340		0.0936
44	,CCV-3,CCV,1,	19:30:57	0.5105		0.2370
45	,CCV-3,CCV,1, NOT REPORTED	19:31:46	0.4321		0.2134
46	,CCB-3,CCB,1,	19:32:28	0.0194		0.0892

RB 05/22/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 5/18/2018
Time Analyzed: 4:39 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180504F
Color reagent: R180509C
2% Copper Sulfate: R180504E
Ammonium Hydroxide: CINV-180423A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N030147-007C		8.24							
N030147-008C		8.73							
N030147-009C		8.38							
N030147-010C		8.03							
N030147-011C		7.92							
N030147-012C		8.02							
N030185-001C		8.19							
N030185-004C		7.56							
N030186-001C		7.52							
N030186-002C		8.28							
N030188-003B		8.09							
N030188-004B		8.01							
N030188-005B		8.30							
N030188-006B		7.19							
N030188-007B		7.43							
N030188-008B		7.00							
N030188-009B		6.42							
N030188-010A		7.35							
N030188-011B		6.20							

Advanced Technology Laboratories, Inc.
Book # 1

RB 05/22/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name:	**Nitrate/Nitrite by Cadmium Reduction**	Matrix:	**Water**
Method Number:	SM4500NO3F	Unit:	mg/L
Analysis Date(s):	10/25,2017, 10/26/2017, 10/27/2017	Spike Conc:	0.05 mg/L
Analyst/Technician:	Quennie B. Manimtim		

Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Ave**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

June 25, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030686

RE: PG&E Topock - PMP, RC000753.801D

Attention: Dan Bush

Enclosed are the results for sample(s) received on June 07, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Libucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - PMP, RC000753.801D
Lab Order:	N030686

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N030686-002B-MS2 and N030686-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 218.6:

Method Blank has hit greater than 0.02 ppb. Sample results were either non-detect (ND) or greater than 5x the Method Blank concentration therefore, reanalysis of the samples was not necessary.

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - PMP, RC000753.801D
Lab Order:	N030686
Contract No:	

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030686-001A	PE-01-0618	Groundwater	6/7/2018 7:40:00 AM	6/7/2018	6/25/2018
N030686-001B	PE-01-0618	Groundwater	6/7/2018 7:40:00 AM	6/7/2018	6/25/2018
N030686-001C	PE-01-0618	Groundwater	6/7/2018 7:40:00 AM	6/7/2018	6/25/2018
N030686-001D	PE-01-0618	Groundwater	6/7/2018 7:40:00 AM	6/7/2018	6/25/2018
N030686-002A	TW-03D-0618	Groundwater	6/7/2018 7:35:00 AM	6/7/2018	6/25/2018
N030686-002B	TW-03D-0618	Groundwater	6/7/2018 7:35:00 AM	6/7/2018	6/25/2018
N030686-002C	TW-03D-0618	Groundwater	6/7/2018 7:35:00 AM	6/7/2018	6/25/2018
N030686-002D	TW-03D-0618	Groundwater	6/7/2018 7:35:00 AM	6/7/2018	6/25/2018

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *25-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180608C**	QC Batch: **R124537**			PrepDate			Analyst: **LR**
Specific Conductance	1200	0.10	0.10		umhos/cm	1	6/8/2018 10:45 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	**Result**	**MDL**	**PQL**	**Qual**	**Units**	**DF**	**Date Analyzed**
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180608C**	QC Batch: **R124537**			PrepDate			Analyst: **LR**
Specific Conductance	7200	0.10	0.10		umhos/cm	1	6/8/2018 10:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030686-002CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **124537**
Client ID: **ZZZZZZ** Batch ID: **R124537** TestNo: **EPA 120.1** Analysis Date: **6/8/2018** SeqNo: **3048399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7160.000	0.10						7170	0.140	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180608D**	QC Batch: **R124538**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	6/8/2018 10:35 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/8/2018 10:35 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180608D**	QC Batch: **R124538**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	6/8/2018 10:35 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/8/2018 10:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N030686-001CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **124538**
Client ID: **ZZZZZZ** Batch ID: **R124538** TestNo: **SM4500-H+B** Analysis Date: **6/8/2018** SeqNo: **3048401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.670	0.10						7.630	0.523	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180611F**	QC Batch: **68415**			PrepDate **6/11/2018**			Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	760	10	10		mg/L	1	6/11/2018 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ELAP Cert 2676 | NV Cert NV00922
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ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
SM2540C							
RunID: **NV00922-WC_180611F** QC Batch: **68415** PrepDate **6/11/2018** Analyst: **LR**							
Total Dissolved Solids (Residue, Filterable)	4000	50	50		mg/L	1	6/11/2018 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-68415** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **6/11/2018** RunNo: **124614**
Client ID: **LCSW** Batch ID: **68415** TestNo: **SM2540C** Analysis Date: **6/11/2018** SeqNo: **3052837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	963.000	10	1000	0	96.3	80	120				

Sample ID **MB-68415** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **6/11/2018** RunNo: **124614**
Client ID: **PBW** Batch ID: **68415** TestNo: **SM2540C** Analysis Date: **6/11/2018** SeqNo: **3052838**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N030686-002CDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **6/11/2018** RunNo: **124614**
Client ID: **ZZZZZZ** Batch ID: **68415** TestNo: **SM2540C** Analysis Date: **6/11/2018** SeqNo: **3052844**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4170.000	50						4020	3.66	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **NV00922-ICP2_180620E** QC Batch: **68496** PrepDate **6/19/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Calcium	130000	85	500		µg/L	1	6/21/2018 02:27 AM
Iron	ND	18	20		µg/L	1	6/21/2018 02:27 AM
Magnesium	34000	48	100		µg/L	1	6/21/2018 02:27 AM
Sodium	540000	9600	50000		µg/L	100	6/20/2018 09:33 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_180620E**	QC Batch: **68496**			PrepDate **6/19/2018**			Analyst: **CEI**
Calcium	190000	85	500		µg/L	1	6/21/2018 03:32 AM
Iron	ND	18	20		µg/L	1	6/21/2018 03:32 AM
Magnesium	26000	48	100		µg/L	1	6/21/2018 03:32 AM
Sodium	1400000	9600	50000		µg/L	100	6/20/2018 09:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-68496** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/19/2018** RunNo: **125741**
Client ID: **PBW** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-68496** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/19/2018** RunNo: **125741**
Client ID: **LCSW** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19640.715	500	20000	0	98.2	85	115				

Sample ID **N030686-002B-MS2** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/19/2018** RunNo: **125741**
Client ID: **ZZZZZZ** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1397829.323	50000	20000	1390000	39.3	75	125				S

Sample ID **N030686-002B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/19/2018** RunNo: **125741**
Client ID: **ZZZZZZ** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1388120.687	50000	20000	1390000	-9.20	75	125	1398000	0.697	20	S

Sample ID **MB-68496** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/19/2018** RunNo: **125758**
Client ID: **PBW** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030686
Project:	PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **LCS1-68496** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/19/2018** RunNo: **125758**
Client ID: **LCSW** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9210.466	500	10000	0	92.1	85	115				
Iron	102.274	20	100.0	0	102	85	115				
Magnesium	9641.963	100	10000	0	96.4	85	115				

Sample ID **N030686-001B-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/19/2018** RunNo: **125758**
Client ID: **ZZZZZZ** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	144446.356	500	10000	133100	114	75	125				
Iron	115.512	20	100.0	0	116	75	125				
Magnesium	43343.636	100	10000	33640	97.0	75	125				

Sample ID **N030686-001B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/19/2018** RunNo: **125758**
Client ID: **ZZZZZZ** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	143902.445	500	10000	133100	108	75	125	144400	0.377	20	
Iron	112.574	20	100.0	0	113	75	125	115.5	2.58	20	
Magnesium	43371.288	100	10000	33640	97.3	75	125	43340	0.0638	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180618C**	QC Batch: **68369**			PrepDate **6/8/2018**			Analyst: **CEI**
Manganese	440	1.3	2.5		µg/L	5	6/19/2018 12:46 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180618C**	QC Batch: **68369**			PrepDate	**6/8/2018**		Analyst: **CEI**
Manganese	14	0.26	0.50		µg/L	1	6/19/2018 12:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-68369**	SampType: **MBLK**	TestCode: **200.8_WDISS** Units: **µg/L**			Prep Date: **6/8/2018**		RunNo: **124728**				
Client ID: **PBW**	Batch ID: **68369**	TestNo: **EPA 200.8**			Analysis Date: **6/18/2018**		SeqNo: **3058269**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-68369**	SampType: **LCS**	TestCode: **200.8_WDISS** Units: **µg/L**			Prep Date: **6/8/2018**		RunNo: **124728**				
Client ID: **LCSW**	Batch ID: **68369**	TestNo: **EPA 200.8**			Analysis Date: **6/18/2018**		SeqNo: **3058270**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	106.104	0.50	100.0	0	106	85	115				

Sample ID **N030668-001B-MS**	SampType: **MS**	TestCode: **200.8_WDISS** Units: **µg/L**			Prep Date: **6/8/2018**		RunNo: **124728**				
Client ID: **ZZZZZZ**	Batch ID: **68369**	TestNo: **EPA 200.8**			Analysis Date: **6/18/2018**		SeqNo: **3058276**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.089	0.50	100.0	0	93.1	75	125				

Sample ID **N030668-001B-MSD**	SampType: **MSD**	TestCode: **200.8_WDISS** Units: **µg/L**			Prep Date: **6/8/2018**		RunNo: **124728**				
Client ID: **ZZZZZZ**	Batch ID: **68369**	TestNo: **EPA 200.8**			Analysis Date: **6/18/2018**		SeqNo: **3058278**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.359	0.50	100.0	0	92.4	75	125	93.09	0.787	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180611A**	QC Batch: **R124583**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/11/2018 11:25 AM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180618C**	QC Batch: **68369**			PrepDate		**6/8/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/19/2018 12:41 AM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180611A** QC Batch: **R124583** PrepDate							Analyst: **RAB**
Hexavalent Chromium	470	3.3	20		µg/L	100	6/11/2018 11:46 AM
DISSOLVED METALS BY ICP-MS							
EPA 200.8							
RunID: **NV00922-ICP7_180618C** QC Batch: **68369** PrepDate **6/8/2018**							Analyst: **CEI**
Chromium	480	0.65	5.0		µg/L	5	6/19/2018 01:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **MB-68369** SampType: **MBLK** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **6/8/2018** RunNo: **124728**
Client ID: **PBW** Batch ID: **68369** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-68369** SampType: **LCS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **6/8/2018** RunNo: **124728**
Client ID: **LCSW** Batch ID: **68369** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.512	1.0	10.00	0	105	85	115				

Sample ID **N030668-001B-MS** SampType: **MS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **6/8/2018** RunNo: **124728**
Client ID: **ZZZZZZ** Batch ID: **68369** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.620	1.0	10.00	10.09	105	75	125				

Sample ID **N030668-001B-MSD** SampType: **MSD** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **6/8/2018** RunNo: **124728**
Client ID: **ZZZZZZ** Batch ID: **68369** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.430	1.0	10.00	10.09	93.4	75	125	20.62	5.94	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R124583** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124583**
Client ID: **PBW** Batch ID: **R124583** TestNo: **EPA 218.6** Analysis Date: **6/11/2018** SeqNo: **3051115**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.060	0.20									

Sample ID **LCS-R124583** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124583**
Client ID: **LCSW** Batch ID: **R124583** TestNo: **EPA 218.6** Analysis Date: **6/11/2018** SeqNo: **3051116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.205	0.20	5.000	0	104	90	110				

Sample ID **N030686-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124583**
Client ID: **ZZZZZZ** Batch ID: **R124583** TestNo: **EPA 218.6** Analysis Date: **6/11/2018** SeqNo: **3051118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.099	0.20	1.000	0.09930	99.9	90	110				

Sample ID **N030686-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124583**
Client ID: **ZZZZZZ** Batch ID: **R124583** TestNo: **EPA 218.6** Analysis Date: **6/11/2018** SeqNo: **3051120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	980.050	20	500.0	472.9	101	90	110				

Sample ID **N030686-002AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124583**
Client ID: **ZZZZZZ** Batch ID: **R124583** TestNo: **EPA 218.6** Analysis Date: **6/11/2018** SeqNo: **3051131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	997.840	20	500.0	472.9	105	90	110	980.0	1.80	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030687-005ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **124583**
Client ID: **ZZZZZZ**	Batch ID: **R124583**	TestNo: **EPA 218.6**	Analysis Date: **6/11/2018**	SeqNo: **3051132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	265.665	10						263.9	0.668	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180608A**	QC Batch: **R124535**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	170	1.2	5.0		mg/L	1	6/8/2018 09:20 AM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
SM 2320 B							
RunID: **NV00922-WC_180608A** QC Batch: **R124535** PrepDate Analyst: **LR**							
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	6/8/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R124535** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **124535**
Client ID: **LCSW** Batch ID: **R124535** TestNo: **SM 2320 B** Analysis Date: **6/8/2018** SeqNo: **3048378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.517	5.0	100.0	0	98.5	85	115				

Sample ID **MB-R124535** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **124535**
Client ID: **PBW** Batch ID: **R124535** TestNo: **SM 2320 B** Analysis Date: **6/8/2018** SeqNo: **3048379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N030668-003DDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **124535**
Client ID: **ZZZZZZ** Batch ID: **R124535** TestNo: **SM 2320 B** Analysis Date: **6/8/2018** SeqNo: **3048381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	63.559	5.0						63.56	0	30	

Sample ID **N030668-010DMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **124535**
Client ID: **ZZZZZZ** Batch ID: **R124535** TestNo: **SM 2320 B** Analysis Date: **6/8/2018** SeqNo: **3048387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	180.085	5.0	100.0	84.75	95.3	75	125				

Sample ID **N030668-010DMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **124535**
Client ID: **ZZZZZZ** Batch ID: **R124535** TestNo: **SM 2320 B** Analysis Date: **6/8/2018** SeqNo: **3048388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	177.966	5.0	100.0	84.75	93.2	75	125	180.1	1.18	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180614A** QC Batch: **R124732** PrepDate							Analyst: **RAB**
Chloride	160	0.46	25		mg/L	50	6/14/2018 09:07 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180614A** QC Batch: **R124732** PrepDate							Analyst: **RAB**
Sulfate	230	1.1	25		mg/L	50	6/14/2018 09:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180614A** QC Batch: **R124732** PrepDate Analyst: **RAB**							
Chloride	2100	4.6	250		mg/L	500	6/14/2018 10:17 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180614A** QC Batch: **R124732** PrepDate Analyst: **RAB**							
Sulfate	500	1.1	25		mg/L	50	6/14/2018 10:33 AM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R124732_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **PBW** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R124732_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **LCSW** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.146	0.50	2.000	0	107	90	110				

Sample ID **N030686-001CDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **ZZZZZZ** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	155.370	25						156.6	0.817	20	

Sample ID **N030686-001CMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **ZZZZZZ** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	256.085	25	100.0	156.6	99.4	80	120				

Sample ID **N030686-001CMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **ZZZZZZ** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	256.720	25	100.0	156.6	100	80	120	256.1	0.248	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R124732_SO4** SampType: **MBLK** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **PBW** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.210	0.50									

Sample ID **LCS-R124732_SO4** SampType: **LCS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **LCSW** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.884	0.50	4.000	0	97.1	90	110				

Sample ID **N030686-001CDUP** SampType: **DUP** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **ZZZZZZ** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	231.320	25						228.7	1.14	20	

Sample ID **N030686-001CMS** SampType: **MS** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **ZZZZZZ** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	423.180	25	200.0	228.7	97.2	80	120				

Sample ID **N030686-001CMSD** SampType: **MSD** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **ZZZZZZ** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	424.420	25	200.0	228.7	97.9	80	120	423.2	0.293	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180616A** QC Batch: **R124671** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	6/16/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180616A**	QC Batch: **R124671**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	2.7	0.16	0.25		mg/L	5	6/16/2018

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124671** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **PBW** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124671** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **LCSW** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.461	0.050	0.5000	0	92.1	85	115				

Sample ID **N030668-001DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **ZZZZZZ** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055406**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.951	0.25						3.326	12.0	20	

Sample ID **N030668-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **ZZZZZZ** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055408**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.611	0.25	2.500	2.871	110	75	125				

Sample ID **N030668-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **ZZZZZZ** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.468	0.25	2.500	2.871	104	75	125	5.611	2.58	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By:
Title:
Signature: Date:
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - PMP
Project Number: RC000753.801D

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Spencer Doolittle
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for
Signature: SDool Date: 6/7/18

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	7	
6. Method of Cooling: Ice		
Sample Temp: 2.6°C		

Courier:
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)		Dissolved metals (EPA 200.8) FF; HNO3, 500 mL poly Cr, Mn (1 L poly)	Dissolved metals (EPA200.7) FF; HNO3 Ca, Mg, Fe, Na, (1 L poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (1 L poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030686 - 01	PE-01-0618	6/7/18	0740		X		X	X			X	X	X	X	X		X	E	4	P	BN	
2	- 02	TW-03D-0618	6/7/18	0735		X		X	X			X	X	X	X	X		X	E	4	P	BN	
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
SDool	6/7/18 1100	pmgalang	6/7/18 1105
pmgalang	6/7/18 1930	pmgalang	6/7/18 1930

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
x	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	6/7/2018	Workorder:	N030686
Rep sample Temp (Deg C):	2.6	IR Gun ID:	2
Temp Blank:	[x] Yes [ ] No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	[x] Ice [ ] Ice Pack [ ] Dry Ice [ ] Other [ ] None		

Sample Receipt Checklist

	Yes	No	Not Present / NA
1. Shipping container/cooler in good condition?	[x]	[ ]	Not Present [ ]
2. Custody seals intact, signed, dated on shippping container/cooler?	[ ]	[ ]	Not Present [x]
3. Custody seals intact on sample bottles?	[ ]	[ ]	Not Present [x]
4. Chain of custody present?	[x]	[ ]	
5. Sampler's name present in COC?	[x]	[ ]	
6. Chain of custody signed when relinquished and received?	[x]	[ ]	
7. Chain of custody agrees with sample labels?	[x]	[ ]	
8. Samples in proper container/bottle?	[x]	[ ]	
9. Sample containers intact?	[x]	[ ]	
10. Sufficient sample volume for indicated test?	[x]	[ ]	
11. All samples received within holding time?	[ ]	[x]	
12. Temperature of rep sample or Temp Blank within acceptable limit?	[x]	[ ]	NA [ ]
13. Water - VOA vials have zero headspace?	[ ]	[ ]	NA [x]
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	[x]	[ ]	NA [ ]
15. Did the bottle labels indicate correct preservatives used?	[x]	[ ]	NA [ ]
16. Were there Non-Conformance issues at login?	[x]	[ ]	NA [ ]
Was Client notified?	[ ]	[ ]	NA [x]

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 6/8/2018

Reviewed By: LR 6/9/18

ASSET Laboratories

WORK ORDER Summary

09-Jun-18

WorkOrder: N030686

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/7/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030686-001A	PE-01-0618	6/7/2018 7:40:00 AM	6/21/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030686-001B			6/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			6/21/2018		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030686-001C			6/21/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/21/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/21/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/21/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			6/21/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			6/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			6/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			6/21/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N030686-001D			6/21/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030686-002A	TW-03D-0618	6/7/2018 7:35:00 AM	6/21/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030686-002B			6/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			6/21/2018		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030686-002C			6/21/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

09-Jun-18

WorkOrder: N030686

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/7/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030686-002C	TW-03D-0618	6/7/2018 7:35:00 AM	6/21/2018	Groundwater	SM4500-H+B	pH	☐	☐	☐	LSR
			6/21/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/21/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			6/21/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			6/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			6/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			6/21/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N030686-002D			6/21/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030686-003A	FOLDER	6/21/2018	6/21/2018		EDD	RWQCB	☐	☐	☐	LAB
			6/21/2018		Folder	Folder	☐	☐	☐	LAB
			6/21/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - PMP
Project No.: RC000753.801D

ASSET Laboratories Work Order:
N030686

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N030686

June 25, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030686

RE: PG&E Topock - PMP, RC000753.801D

Attention: Dan Bush

Enclosed are the results for sample(s) received on June 07, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - PMP, RC000753.801D
Lab Order:	N030686

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium in QC samples N030686-002B-MS2 and N030686-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 218.6:

Method Blank has hit greater than 0.02 ppb. Sample results were either non-detect (ND) or greater than 5x the Method Blank concentration therefore, reanalysis of the samples was not necessary.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801D
Lab Order: N030686
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030686-001A	PE-01-0618	Groundwater	6/7/2018 7:40:00 AM	6/7/2018	6/25/2018
N030686-001B	PE-01-0618	Groundwater	6/7/2018 7:40:00 AM	6/7/2018	6/25/2018
N030686-001C	PE-01-0618	Groundwater	6/7/2018 7:40:00 AM	6/7/2018	6/25/2018
N030686-001D	PE-01-0618	Groundwater	6/7/2018 7:40:00 AM	6/7/2018	6/25/2018
N030686-002A	TW-03D-0618	Groundwater	6/7/2018 7:35:00 AM	6/7/2018	6/25/2018
N030686-002B	TW-03D-0618	Groundwater	6/7/2018 7:35:00 AM	6/7/2018	6/25/2018
N030686-002C	TW-03D-0618	Groundwater	6/7/2018 7:35:00 AM	6/7/2018	6/25/2018
N030686-002D	TW-03D-0618	Groundwater	6/7/2018 7:35:00 AM	6/7/2018	6/25/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180608C** QC Batch: **R124537** PrepDate Analyst: **LR**							
Specific Conductance	1200	0.10	0.10		umhos/cm	1	6/8/2018 10:45 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180608C** QC Batch: **R124537** PrepDate Analyst: **LR**							
Specific Conductance	7200	0.10	0.10		umhos/cm	1	6/8/2018 10:45 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030686-002CDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **124537**
Client ID: **ZZZZZZ** Batch ID: **R124537** TestNo: **EPA 120.1** Analysis Date: **6/8/2018** SeqNo: **3048399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7160.000	0.10						7170	0.140	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180608D** QC Batch: **R124538**				PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	6/8/2018 10:35 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/8/2018 10:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180608D**	QC Batch: **R124538**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	6/8/2018 10:35 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/8/2018 10:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N030686-001CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **124538**

Client ID: **ZZZZZZ** Batch ID: **R124538** TestNo: **SM4500-H+B** Analysis Date: **6/8/2018** SeqNo: **3048401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.670	0.10						7.630	0.523	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180611F** QC Batch: **68415**				PrepDate **6/11/2018**			Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	760	10	10		mg/L	1	6/11/2018 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_180611F** QC Batch: **68415**				PrepDate **6/11/2018**			Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4000	50	50		mg/L	1	6/11/2018 01:07 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-68415** SampType: **LCS** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **6/11/2018** RunNo: **124614**
Client ID: **LCSW** Batch ID: **68415** TestNo: **SM2540C** Analysis Date: **6/11/2018** SeqNo: **3052837**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	963.000	10	1000	0	96.3	80	120				

Sample ID **MB-68415** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **6/11/2018** RunNo: **124614**
Client ID: **PBW** Batch ID: **68415** TestNo: **SM2540C** Analysis Date: **6/11/2018** SeqNo: **3052838**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N030686-002CDUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **6/11/2018** RunNo: **124614**
Client ID: **ZZZZZZ** Batch ID: **68415** TestNo: **SM2540C** Analysis Date: **6/11/2018** SeqNo: **3052844**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4170.000	50						4020	3.66	5	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **NV00922-ICP2_180620E** QC Batch: **68496** PrepDate **6/19/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Calcium	130000	85	500		µg/L	1	6/21/2018 02:27 AM
Iron	ND	18	20		µg/L	1	6/21/2018 02:27 AM
Magnesium	34000	48	100		µg/L	1	6/21/2018 02:27 AM
Sodium	540000	9600	50000		µg/L	100	6/20/2018 09:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **NV00922-ICP2_180620E** QC Batch: **68496** PrepDate **6/19/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Calcium	190000	85	500		µg/L	1	6/21/2018 03:32 AM
Iron	ND	18	20		µg/L	1	6/21/2018 03:32 AM
Magnesium	26000	48	100		µg/L	1	6/21/2018 03:32 AM
Sodium	1400000	9600	50000		µg/L	100	6/20/2018 09:36 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-68496** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/19/2018** RunNo: **125741**
Client ID: **PBW** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-68496** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/19/2018** RunNo: **125741**
Client ID: **LCSW** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19640.715	500	20000	0	98.2	85	115				

Sample ID **N030686-002B-MS2** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/19/2018** RunNo: **125741**
Client ID: **ZZZZZZ** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1397829.323	50000	20000	1390000	39.3	75	125				S

Sample ID **N030686-002B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/19/2018** RunNo: **125741**
Client ID: **ZZZZZZ** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1388120.687	50000	20000	1390000	-9.20	75	125	1398000	0.697	20	S

Sample ID **MB-68496** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/19/2018** RunNo: **125758**
Client ID: **PBW** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **LCS1-68496** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/19/2018** RunNo: **125758**
Client ID: **LCSW** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9210.466	500	10000	0	92.1	85	115				
Iron	102.274	20	100.0	0	102	85	115				
Magnesium	9641.963	100	10000	0	96.4	85	115				

Sample ID **N030686-001B-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/19/2018** RunNo: **125758**
Client ID: **ZZZZZZ** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060713**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	144446.356	500	10000	133100	114	75	125				
Iron	115.512	20	100.0	0	116	75	125				
Magnesium	43343.636	100	10000	33640	97.0	75	125				

Sample ID **N030686-001B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **6/19/2018** RunNo: **125758**
Client ID: **ZZZZZZ** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	143902.445	500	10000	133100	108	75	125	144400	0.377	20	
Iron	112.574	20	100.0	0	113	75	125	115.5	2.58	20	
Magnesium	43371.288	100	10000	33640	97.3	75	125	43340	0.0638	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180618C**	QC Batch: **68369**			PrepDate	**6/8/2018**		Analyst: **CEI**
Manganese	440	1.3	2.5		µg/L	5	6/19/2018 12:46 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_180618C**	QC Batch: **68369**			PrepDate	**6/8/2018**		Analyst: **CEI**
Manganese	14	0.26	0.50		µg/L	1	6/19/2018 12:52 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-68369** SampType: **MBLK** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **6/8/2018** RunNo: **124728**
Client ID: **PBW** Batch ID: **68369** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058269**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-68369** SampType: **LCS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **6/8/2018** RunNo: **124728**
Client ID: **LCSW** Batch ID: **68369** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	106.104	0.50	100.0	0	106	85	115				

Sample ID **N030668-001B-MS** SampType: **MS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **6/8/2018** RunNo: **124728**
Client ID: **ZZZZZZ** Batch ID: **68369** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058276**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.089	0.50	100.0	0	93.1	75	125				

Sample ID **N030668-001B-MSD** SampType: **MSD** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: **6/8/2018** RunNo: **124728**
Client ID: **ZZZZZZ** Batch ID: **68369** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058278**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.359	0.50	100.0	0	92.4	75	125	93.09	0.787	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *25-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180611A** QC Batch: **R124583**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/11/2018 11:25 AM
DISSOLVED METALS BY ICP-MS			**EPA 200.8**				
RunID: **NV00922-ICP7_180618C** QC Batch: **68369**				PrepDate	**6/8/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/19/2018 12:41 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180611A**	QC Batch: **R124583**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	470	3.3	20		µg/L	100	6/11/2018 11:46 AM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_180618C**	QC Batch: **68369**			PrepDate		**6/8/2018**	Analyst: **CEI**
Chromium	480	0.65	5.0		µg/L	5	6/19/2018 01:09 AM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **MB-68369** SampType: **MBLK** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **6/8/2018** RunNo: **124728**
Client ID: **PBW** Batch ID: **68369** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-68369** SampType: **LCS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **6/8/2018** RunNo: **124728**
Client ID: **LCSW** Batch ID: **68369** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058159**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.512	1.0	10.00	0	105	85	115				

Sample ID **N030668-001B-MS** SampType: **MS** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **6/8/2018** RunNo: **124728**
Client ID: **ZZZZZZ** Batch ID: **68369** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.620	1.0	10.00	10.09	105	75	125				

Sample ID **N030668-001B-MSD** SampType: **MSD** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: **6/8/2018** RunNo: **124728**
Client ID: **ZZZZZZ** Batch ID: **68369** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058167**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.430	1.0	10.00	10.09	93.4	75	125	20.62	5.94	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R124583**	SampType: **MBLK**	TestCode: **218.6_WPGE** Units: **µg/L**		Prep Date:			RunNo: **124583**				
Client ID: **PBW**	Batch ID: **R124583**	TestNo: **EPA 218.6**		Analysis Date: **6/11/2018**			SeqNo: **3051115**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.060	0.20									

Sample ID **LCS-R124583**	SampType: **LCS**	TestCode: **218.6_WPGE** Units: **µg/L**		Prep Date:			RunNo: **124583**				
Client ID: **LCSW**	Batch ID: **R124583**	TestNo: **EPA 218.6**		Analysis Date: **6/11/2018**			SeqNo: **3051116**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.205	0.20	5.000	0	104	90	110				

Sample ID **N030686-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**		Prep Date:			RunNo: **124583**				
Client ID: **ZZZZZZ**	Batch ID: **R124583**	TestNo: **EPA 218.6**		Analysis Date: **6/11/2018**			SeqNo: **3051118**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.099	0.20	1.000	0.09930	99.9	90	110				

Sample ID **N030686-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**		Prep Date:			RunNo: **124583**				
Client ID: **ZZZZZZ**	Batch ID: **R124583**	TestNo: **EPA 218.6**		Analysis Date: **6/11/2018**			SeqNo: **3051120**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	980.050	20	500.0	472.9	101	90	110				

Sample ID **N030686-002AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE** Units: **µg/L**		Prep Date:			RunNo: **124583**				
Client ID: **ZZZZZZ**	Batch ID: **R124583**	TestNo: **EPA 218.6**		Analysis Date: **6/11/2018**			SeqNo: **3051131**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	997.840	20	500.0	472.9	105	90	110	980.0	1.80	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030687-005ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124583**
Client ID: **ZZZZZZ** Batch ID: **R124583** TestNo: **EPA 218.6** Analysis Date: **6/11/2018** SeqNo: **3051132**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	265.665	10						263.9	0.668	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *25-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180608A** QC Batch: **R124535**				PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	170	1.2	5.0		mg/L	1	6/8/2018 09:20 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_180608A** QC Batch: **R124535**				PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	6/8/2018 09:20 AM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R124535** SampType: **LCS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **124535**
Client ID: **LCSW** Batch ID: **R124535** TestNo: **SM 2320 B** Analysis Date: **6/8/2018** SeqNo: **3048378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	98.517	5.0	100.0	0	98.5	85	115				

Sample ID **MB-R124535** SampType: **MBLK** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **124535**
Client ID: **PBW** Batch ID: **R124535** TestNo: **SM 2320 B** Analysis Date: **6/8/2018** SeqNo: **3048379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N030668-003DDUP** SampType: **DUP** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **124535**
Client ID: **ZZZZZZ** Batch ID: **R124535** TestNo: **SM 2320 B** Analysis Date: **6/8/2018** SeqNo: **3048381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	63.559	5.0						63.56	0	30	

Sample ID **N030668-010DMS** SampType: **MS** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **124535**
Client ID: **ZZZZZZ** Batch ID: **R124535** TestNo: **SM 2320 B** Analysis Date: **6/8/2018** SeqNo: **3048387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	180.085	5.0	100.0	84.75	95.3	75	125				

Sample ID **N030668-010DMSD** SampType: **MSD** TestCode: **2320_W_SP** Units: **mg/L** Prep Date: RunNo: **124535**
Client ID: **ZZZZZZ** Batch ID: **R124535** TestNo: **SM 2320 B** Analysis Date: **6/8/2018** SeqNo: **3048388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	177.966	5.0	100.0	84.75	93.2	75	125	180.1	1.18	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180614A** QC Batch: **R124732** PrepDate Analyst: **RAB**							
Chloride	160	0.46	25		mg/L	50	6/14/2018 09:07 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_180614A** QC Batch: **R124732** PrepDate Analyst: **RAB**							
Sulfate	230	1.1	25		mg/L	50	6/14/2018 09:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180614A**	QC Batch: **R124732**			PrepDate			Analyst: **RAB**
Chloride	2100	4.6	250		mg/L	500	6/14/2018 10:17 AM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_180614A**	QC Batch: **R124732**			PrepDate			Analyst: **RAB**
Sulfate	500	1.1	25		mg/L	50	6/14/2018 10:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **MB-R124732_CL** SampType: **MBLK** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **PBW** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **LCS-R124732_CL** SampType: **LCS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **LCSW** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.146	0.50	2.000	0	107	90	110				

Sample ID **N030686-001CDUP** SampType: **DUP** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **ZZZZZZ** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	155.370	25						156.6	0.817	20	

Sample ID **N030686-001CMS** SampType: **MS** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **ZZZZZZ** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	256.085	25	100.0	156.6	99.4	80	120				

Sample ID **N030686-001CMSD** SampType: **MSD** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **ZZZZZZ** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058663**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	256.720	25	100.0	156.6	100	80	120	256.1	0.248	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **MB-R124732_SO4**	SampType: **MBLK**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **124732**
Client ID: **PBW**	Batch ID: **R124732**	TestNo: **EPA 300.0**	Analysis Date: **6/14/2018**	SeqNo: **3058676**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.210	0.50									

Sample ID **LCS-R124732_SO4**	SampType: **LCS**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **124732**
Client ID: **LCSW**	Batch ID: **R124732**	TestNo: **EPA 300.0**	Analysis Date: **6/14/2018**	SeqNo: **3058677**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.884	0.50	4.000	0	97.1	90	110				

Sample ID **N030686-001CDUP**	SampType: **DUP**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **124732**
Client ID: **ZZZZZZ**	Batch ID: **R124732**	TestNo: **EPA 300.0**	Analysis Date: **6/14/2018**	SeqNo: **3058679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	231.320	25						228.7	1.14	20	

Sample ID **N030686-001CMS**	SampType: **MS**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **124732**
Client ID: **ZZZZZZ**	Batch ID: **R124732**	TestNo: **EPA 300.0**	Analysis Date: **6/14/2018**	SeqNo: **3058680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	423.180	25	200.0	228.7	97.2	80	120				

Sample ID **N030686-001CMSD**	SampType: **MSD**	TestCode: **300_W_SO4P** Units: **mg/L**	Prep Date:	RunNo: **124732**
Client ID: **ZZZZZZ**	Batch ID: **R124732**	TestNo: **EPA 300.0**	Analysis Date: **6/14/2018**	SeqNo: **3058681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	424.420	25	200.0	228.7	97.9	80	120	423.2	0.293	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:40:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180616A** QC Batch: **R124671**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	ND	0.032	0.050		mg/L	1	6/16/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0618
Lab Order:	N030686	**Collection Date:**	6/7/2018 7:35:00 AM
Project:	PG&E Topock - PMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030686-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180616A** QC Batch: **R124671**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	2.7	0.16	0.25		mg/L	5	6/16/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124671** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **PBW** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124671** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **LCSW** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.461	0.050	0.5000	0	92.1	85	115				

Sample ID **N030668-001DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **ZZZZZZ** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055406**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.951	0.25						3.326	12.0	20	

Sample ID **N030668-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **ZZZZZZ** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055408**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.611	0.25	2.500	2.871	110	75	125				

Sample ID **N030668-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **ZZZZZZ** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.468	0.25	2.500	2.871	104	75	125	5.611	2.58	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SAMPLE RECEIVING ITEMS

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By:		Phone: 949-727-1400, ext 200 Fax:
Title:	Phone: 916-786-3302 Fax:	
Signature: Date:	Sampled By: Spencer Doolittle	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for	
Project Name: PG&E Topock - PMP	Signature: SDoo Date: 6/7/18	
Project Number: RC000753.801D		

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	7	
6. Method of Cooling: Ice		
Sample Temp: 2.6°C		

Courier:

Tracking No.:

Matrix: Ground, x Sediment, Potable, Soil, NPDES, Other Solid, Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 mL poly)		Dissolved metals (EPA 200.8) FF; HNO3, 500 mL poly Cr, Mn (1 L poly)	Dissolved metals (EPA200.7) FF; HNO3 Ca, Mg, Fe, Na, (1 L poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (1 L poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030686 - 01	PE-01-0618	6/7/18	0740		X		X	X			X	X	X	X	X		X	E	4	P	BN	
2	- 02	TW-03D-0618	6/7/18	0735		X		X	X			X	X	X	X	X		X	E	4	P	BN	
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
SDoo	6/7/18 1100	pmg alang	6/7/18 1105
pmg alang	6/7/18 1930	pmg alang	6/7/18 1930

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	6/7/2018	Workorder:	N030686
Rep sample Temp (Deg C):	2.6	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

	Yes	No	Not Present / NA
1. Shipping container/cooler in good condition?	☑	☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	☐	☐	Not Present ☑
3. Custody seals intact on sample bottles?	☐	☐	Not Present ☑
4. Chain of custody present?	☑	☐	
5. Sampler's name present in COC?	☑	☐	
6. Chain of custody signed when relinquished and received?	☑	☐	
7. Chain of custody agrees with sample labels?	☑	☐	
8. Samples in proper container/bottle?	☑	☐	
9. Sample containers intact?	☑	☐	
10. Sufficient sample volume for indicated test?	☑	☐	
11. All samples received within holding time?	☐	☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	☑	☐	NA ☐
13. Water - VOA vials have zero headspace?	☐	☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	☑	☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	☑	☐	NA ☐
16. Were there Non-Conformance issues at login?	☑	☐	NA ☐
Was Client notified?	☐	☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR [signature] 6/8/2018

Reviewed By: [signature] LR 6/9/18

ASSET Laboratories

WORK ORDER Summary

09-Jun-18

WorkOrder: N030686

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/7/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030686-001A	PE-01-0618	6/7/2018 7:40:00 AM	6/21/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030686-001B			6/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			6/21/2018		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030686-001C			6/21/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/21/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/21/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/21/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			6/21/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			6/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			6/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			6/21/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N030686-001D			6/21/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030686-002A	TW-03D-0618	6/7/2018 7:35:00 AM	6/21/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030686-002B			6/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2018		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/21/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2018		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			6/21/2018		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030686-002C			6/21/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

09-Jun-18

WorkOrder: N030686

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/7/2018

Comments: EDD RWQCB

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030686-002C	TW-03D-0618	6/7/2018 7:35:00 AM	6/21/2018	Groundwater	SM4500-H+B	pH	☐	☐	☐	LSR
			6/21/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/21/2018			Total Dissolved Solids Prep	☐	☐	☐	LSR
			6/21/2018		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	LSR
			6/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			6/21/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			6/21/2018		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	LSR
N030686-002D			6/21/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030686-003A	FOLDER	6/21/2018	6/21/2018		EDD	RWQCB	☐	☐	☐	LAB
			6/21/2018		Folder	Folder	☐	☐	☐	LAB
			6/21/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N030686

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 200.7_Dissolved, EPA 200.8_Dissolved
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540C, SM 2320 B

EPA 120.1

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R124537 **Analyst:** LSR

ASSET #: N030686 **Date Analyzed:** 6/8/2018

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 6/15/2018

2nd Level Reviewer Nancy 6/21/2018 Date:

LOGBOOK DATA,
QUANTITATION REPORT and/or
SPECTRA

Conductivity Logbook

Date: 6/8/18 1045
Analyst: LSK

Standard	Std ID	Reading	Comments
9.70 uS/cm	CWN-180417A	9.94 @22.8C	% Rec: (90-110%)
1412	180131A	1412 @22.8C	
10020	180417C	9930 @22.8C	
99601	180201A	99600 @22.8C	

	Sample ID	Matrix	Reading	Comments
1	N030686-001C	H2O	1166 @21.8C	
2	2C		7170 @21.5C	
3	2C DUP		7160 @21.5C	
4				
5				
6				
7			Julia Ramit	6/15/2018
8				
9	1413 uS/cm	CWN-171121C	1475 @22.4C	
10	10000	180108C	10030 @22.3C	2% 6/8/18 LSK
Dup	99672	171215A	101400 @22.3C	Accept: 10% water, ~~20% soil~~
Std Chk:				% Rec: (90-110%)

Date: 6/13/18 1345
Analyst: LSK

Standard	Std ID	Reading	Comments
9.70 uS/cm	CWN-180417A	9.82 @25.8C	% Rec: (90-110%)
1412	180131A	1424 @24.9C	
10020	180417C	10220 @25.0C	
99601	180201A	99400 @25.3C	

	Sample ID	Matrix	Reading	Comments
1	N030762-001D	H2O	899 @25.1C	
2	1D DUP		903 @24.8C	
3	2D		914 @24.4C	1413 CWN-171121C
4	3D		913 @24.5C	= 1470 @24.5C
5	4C		958 @24.6C	10000 CWN 180108C
6	5D		917 @24.6C	= 10300 @24.8C
7	6D		911 @24.6C	99672 CWN 171215A
8	7D		923 @24.6C	= 101100 @24.9C
9	8D		919 @24.4C	
10	9D		920 @24.4C	2% 6/13/18 LSK
~~Dup~~	10D		914 @24.4C	Accept: ~~10% water~~, 20% soil
Std Chk:				% Rec: (90-110%)

Logbook # 6

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R124538
Instrument ID: pH meter
ASSET #: N030686
Analyst: LSR
Date Analyzed: 8-Jun
Method: EPA 150.1

	Ist Level Review			2nd Level Review		
pH Meter Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?			X			
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 6/14/2018

2nd Level Reviewer: Nancy 6/21/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 6/6/18 1445
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CIW-171215D	7.00 @ 25.0C	
Buffer 4	171208A	4.02 @ 25.0C	
Buffer 10	180119A	10.01 @ 25.0C	
Slope		98.2%	Acceptance Criteria: 95%-105%

	Sample ID	Matrix	pH	Comments
1	N030643-001B	H2O	6.19 @ 25.0C	
2	1BDUP		6.17 @ 25.0C	
3	N030644-001A	Liquid	5.97 @ 25.0C	
4	1ADUP		5.88 @ 25.0C	
5				
6				6/12/18
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CIW-180320C	7.02 @ 25.0C	Accept: +/-~~0.1~~ 0.05 pH units from expected value

6/15/18

Date: 6/8/18 1035
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CIW-171215D	6.99 @ 25.0C	
Buffer 4	171208A	4.01 @ 25.0C	
Buffer 10	180119A	9.99 @ 25.0C	
Slope		97.5%	Acceptance Criteria: 95%-105%

	Sample ID	Matrix	pH	Comments
1	N030686-001C	H2O	7.63 @ 25.0C	
2	1CDUP		7.67 @ 25.0C	
3	2C		7.29 @ 25.0C	
4				
5				
6				
7				
8			Julia Ramit	6/14/2018
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CIW-180320C	7.01 @ 25.0C	Accept: +/-~~0.1~~ 0.05 pH units from expected value

6/15/18

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68415 **Analyst:** LSR

ASSET #: N030686 **Date Analyzed:** 6/11/2018

Method: EPA 160.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 6/14/2018

2nd Level Reviewer Nancy 6/21/2018 Date:

SAMPLE CALCULATION

3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.26
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SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N030686-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(69.0700 - 68.9940)*1000000}{100}$$
$$= 760 \text{ mg/L}$$

Reporting result in two significant figures,

TDS= 760 mg/L

Julia Ramit 6/14/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Reviewed/ Date: Nancy 6/21/2018

Prep Start Date: **6/11/2018 1:07:06 P**
Prep End Date: **6/12/2018 10:05:00**

Initials/ Date: Lilia Ramit 6/14/2018

Prep Factor Units **mL / mL**

Temp. (°C): **180**

Prep Batch **68415** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68415	Water		100	☐	0	0	100	1.000		
MB-68415	Water		100	☐	0	0	100	1.000		
N030668-009D	Groundwater		20	☐	0	0	100	5.000		
N030668-010D	Groundwater		20	☐	0	0	100	5.000		
N030668-011D	Groundwater		20	☐	0	0	100	5.000		
N030686-001C	Groundwater		100	☐	0	0	100	1.000		
N030686-002C	Groundwater		20	☐	0	0	100	5.000		
N030686-002C-DU	Groundwater		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
10009	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180607C	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/11/2018 1:07:06 P**
Prep End Date:
Prep Batch **68415** Prep Code: **160.1_W_PRE**

Reviewed/ Date:
Initials/ Date: Lilia Ramit 6/14/2018
Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68415	Water	IWST180607C	100	☐	0	0	100	1.000		
MB-68415	Water		100	☐	0	0	100	1.000		
N030668-009D	Groundwater	7020	100 /20	☐	0	0	100	1.000		
N030668-010D	Groundwater	7040	100 /20	☐	0	0	100	1.000		
N030668-011D	Groundwater	7010	100 /20	☐	0	0	100	1.000		
N030686-001C	Groundwater	1166	100 ~~/20~~	NSE ☐	0	0	100	1.000		
N030686-002C	Groundwater	7170	100 /20	☐	0	0	100	1.000		
N030686-002C-DU	Groundwater	↓	100 /20	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

16009

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST : TSS/ TDS/ TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
6/11/18 1307 CC	MB 68415	100	70.1065 70.1068	70.1068 70.1069	
IA	LCS 68415	100	76.5772 76.5774	76.6733 76.6737	
V	N030668-009D	20	48.8811 48.8808	48.9634 48.9633	
IS	10D	20	48.8794 48.8798	48.9607 48.9606	
E	11D	20	49.3438 49.3441	49.4254 49.4257	
H	N030686-001C	~~20~~ 100	~~46.03~~ 68.9940 68.9940	69.0696 69.0700	
T	2C	20	46.0383 46.0385	46.1185 46.1189	
A	2C DUP	20	62.4165 62.4169	62.5007 62.5003	
	Julia Ramit 6/14/2018				
	Closing wt:	49.9997 @ 1005	6/13/18	lsn	

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CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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ELAP Cert 2676 | NV Cert NV00922

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
6/12/2018									
MB-68415	100	70.1068	70.1069	1	1	1			MBLK
LCS-68415	100	76.5774	76.6737	963	1	963			LCS
N030668-009D	20	48.8808	48.9633	825	5	4125	7020	0.588	SAMP
N030668-010D	20	48.8798	48.9606	808	5	4040	7040	0.574	SAMP
N030668-011D	20	49.3441	49.4257	816	5	4080	7010	0.582	SAMP
N030686-001C	100	68.994	69.07	760	1	760	1166	0.652	SAMP
N030686-002C	20	46.0385	46.1189	804	5	4020	7170	0.561	SAMP
N030686-002CDUP	20	62.4169	62.5003	834	5	4170	7170	0.582	DUP

Julia Ramit 6/14/2018

EPA 200.7
Dissolved

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

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3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68496 **Instrument ID:** ICP-02
ASSET #: N030686 **Analyst:** CEI
Method: **Date Analyzed:** 6/20/2018

[X] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[ ] EPA 6020 / 200.8 [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Na run only.
%Rec of Na in N030686-002B PS/MS/MSD failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct	|		
3. Does batch meet QC requirements?	|		
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)	|		
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 6/25/18
2nd Level Reviewer [signature] 6/25/2018 Date: ________

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68496 **Instrument ID:** ICP-02
ASSET #: N030686 **Analyst:** CEI
Method: **Date Analyzed:** 6/20/2018

[X] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[ ] EPA 6020 / 200.8 [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%Rec of Ca in N030686-001B PS. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 6/25/18
2nd Level Reviewer Nancy 6/25/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B / 200.7
TEST NAME: Heavy Metals by ICP
MATRIX: Water

FORMULA:

Calculate the ~~Boron~~ Calcium concentration, in ug/L , in the original sample as follows:

Boron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **~~N020679-001B~~** N030686-001B , the concentration ir ug/L is calculated as follows:

~~Boron~~ Calcium , ug/L = ~~5.357~~14 133.058 * ~~100~~ 1 * (25/25) * 1000

~~Boron~~ , ug/L = ~~5357~~14 133058

Reporting results in two significant figures,

~~Boron~~ Calcium , ug/L = ~~540000~~ 130000

Nancy for 6/25/2018

% RSD SUMMARY

RSD SUMMARY: 180620A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	6.27	15	PASS
Standard1	ICAL	1	Na	0.1	8.2	15	PASS
Standard2	ICAL	1	Na	1	0.71	15	PASS
Standard3	ICAL	1	Na	5	0.19	15	PASS
Standard4	ICAL	1	Na	10	0.11	15	PASS
Standard5	ICAL	1	Na	20	0.19	15	PASS
Standard6	ICAL	1	Na	40	0.044	15	PASS
ICV	ICV	1	Na	10	0.28	15	PASS
ICB	ICB	1	Na	-0.12	2.73	15	PASS
ICSA1	ICSA	1	Na	-0.12	3.89	15	PASS
ICSAB1	ICSAB	1	Na	9.95	0.17	15	PASS
CCV1	CCV	1	Na	10.012	0.16	15	PASS
CCB1	CCB	1	Na	-0.16	2.56	15	PASS
MB-68496	MBLK	1	Na	-0.18	3.038	15	PASS
LCS2-68496	LCS	1	Na	19.64	0.35	15	PASS
N030686-001B	SAMP	100	Na	5.36	0.22	15	PASS
N030686-002B	SAMP	100	Na	13.9	0.38	15	PASS
N030686-002B	SAMP	500	Na	2.67	0.13	15	PASS
CCV2	CCV	1	Na	10.016	0.19	15	PASS
CCB2	CCB	1	Na	-0.17	3.19	15	PASS
N030686-002B-PS	PS	100	Na	14.045	0.11	15	PASS
N030686-002B-MS2	MS	100	Na	13.98	0.15	15	PASS
N030686-002B-MSD2	MSD	100	Na	13.88	0.12	15	PASS
CCV3	CCV	1	Na	9.96	0.19	15	PASS
CCB3	CCB	1	Na	-0.18	3.17	15	PASS
ICSA2	ICSA	1	Na	-0.18	4.044	15	PASS
ICSAB2	ICSAB	1	Na	9.96	0.14	15	PASS

RSD SUMMARY: 180620D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	2.16	15	PASS
Standard1	ICAL	1	Ca	0.2	8.089	15	PASS
Standard2	ICAL	1	Ca	1	2.91	15	PASS
Standard3	ICAL	1	Ca	2	1.63	15	PASS
Standard4	ICAL	1	Ca	5	1.25	15	PASS
Standard5	ICAL	1	Ca	7.5	0.98	15	PASS
Standard6	ICAL	1	Ca	10	0.063	15	PASS
Standard7	ICAL	1	Ca	20	0.32	15	PASS
ICV	ICV	1	Ca	10.044	0.52	15	PASS
ICB	ICB	1	Ca	-0.0059	274.79	15	<PQL
LLICV1	CCV1	1	Ca	0.18	8.2	20	PASS
ICSA1	ICSA	1	Ca	459.11	0.26	15	PASS
ICSAB1	ICSAB	1	Ca	537.67	0.17	15	PASS
CCV1	CCV	1	Ca	9.56	0.22	15	PASS
CCB1	CCB	1	Ca	-0.12	16.3	15	<PQL
CCV2	CCV	1	Ca	9.5	0.29	15	PASS
CCB2	CCB	1	Ca	-0.16	9.91	15	PASS
MB-68496	MBLK	1	Ca	-0.12	46.62	15	<PQL
LCS1-68496	LCS	1	Ca	9.21	1.07	15	PASS
N030686-001B	SAMP	1	Ca	133.06	0.27	15	PASS
N030686-001B	SAMP	5	Ca	26.31	0.32	15	PASS
N030686-001B-PS	PS	1	Ca	139.05	0.83	15	PASS
CCV3	CCV	1	Ca	9.62	0.28	15	PASS
CCB3	CCB	1	Ca	-0.089	43.95	15	<PQL
LLCCV1	CCV2	1	Ca	0.1	7.38	20	PASS
ICSA2	ICSA	1	Ca	446.46	0.16	15	PASS
ICSAB2	ICSAB	1	Ca	523.47	0.1	15	PASS
N030686-001B-MS1	MS	1	Ca	144.45	0.23	15	PASS
N030686-001B-MSD1	MSD	1	Ca	143.9	0.77	15	PASS
N030686-002B	SAMP	1	Ca	189.8	0.61	15	PASS
CCV4	CCV	1	Ca	9.56	0.92	15	PASS
CCB4	CCB	1	Ca	-0.13	11.2	15	PASS
LLCCV2	CCV2	1	Ca	0.09	30.21	20	<PQL
ICSA3	ICSA	1	Ca	446.4	0.075	15	PASS
ICSAB3	ICSAB	1	Ca	521.53	0.16	15	PASS
CalBlk	IBLK	1	Fe	0	21.85	15	<PQL
Standard1	ICAL	1	Fe	0.02	0.45	15	PASS
Standard2	ICAL	1	Fe	0.05	0.28	15	PASS
Standard3	ICAL	1	Fe	2	0.27	15	PASS
Standard4	ICAL	1	Fe	5	0.64	15	PASS
Standard5	ICAL	1	Fe	7.5	0.14	15	PASS
Standard6	ICAL	1	Fe	10	0.1	15	PASS

RSD SUMMARY: 180620D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard7	ICAL	1	Fe	20	0.17	15	PASS
ICV	ICV	1	Fe	10.16	0.049	15	PASS
ICB	ICB	1	Fe	0.00034	106.96	15	<PQL
LLICV1	CCV1	1	Fe	0.021	1.37	20	PASS
ICSA1	ICSA	1	Fe	185.18	0.3	15	PASS
ICSAB1	ICSAB	1	Fe	184.65	0.28	15	PASS
CCV1	CCV	1	Fe	9.79	0.12	15	PASS
CCB1	CCB	1	Fe	0.00015	242.92	15	<PQL
CCV2	CCV	1	Fe	9.8	0.22	15	PASS
CCB2	CCB	1	Fe	0.00088	146.36	15	<PQL
MB-68496	MBLK	1	Fe	-0.0011	4.0086	15	PASS
LCS1-68496	LCS	1	Fe	0.1	0.6	15	PASS
N030686-001B	SAMP	1	Fe	0.0034	4.33	15	PASS
N030686-001B	SAMP	5	Fe	0.00027	141.43	15	<PQL
N030686-001B-PS	PS	1	Fe	0.1	1.41	15	PASS
CCV3	CCV	1	Fe	9.95	0.14	15	PASS
CCB3	CCB	1	Fe	0.0011	85.19	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	0.43	20	PASS
ICSA2	ICSA	1	Fe	185.24	0.27	15	PASS
ICSAB2	ICSAB	1	Fe	182.36	0.68	15	PASS
N030686-001B-MS1	MS	1	Fe	0.12	1.095	15	PASS
N030686-001B-MSD1	MSD	1	Fe	0.11	0.11	15	PASS
N030686-002B	SAMP	1	Fe	0.013	4.46	15	PASS
CCV4	CCV	1	Fe	9.77	0.25	15	PASS
CCB4	CCB	1	Fe	0.0011	87.5	15	<PQL
LLCCV2	CCV2	1	Fe	0.02	3.8	20	PASS
ICSA3	ICSA	1	Fe	182.93	0.54	15	PASS
ICSAB3	ICSAB	1	Fe	181.18	0.27	15	PASS
CalBlk	IBLK	1	Mg	0	7.21	15	PASS
Standard1	ICAL	1	Mg	0.1	0.44	15	PASS
Standard2	ICAL	1	Mg	1	0.29	15	PASS
Standard3	ICAL	1	Mg	2	0.4	15	PASS
Standard4	ICAL	1	Mg	5	0.67	15	PASS
Standard5	ICAL	1	Mg	7.5	0.36	15	PASS
Standard6	ICAL	1	Mg	10	0.14	15	PASS
Standard7	ICAL	1	Mg	20	0.2	15	PASS
ICV	ICV	1	Mg	10.15	0.056	15	PASS
ICB	ICB	1	Mg	0.00045	155.9	15	<PQL
LLICV1	CCV1	1	Mg	0.11	0.49	20	PASS
ICSA1	ICSA	1	Mg	423.68	0.51	15	PASS
ICSAB1	ICSAB	1	Mg	520.58	0.22	15	PASS
CCV1	CCV	1	Mg	9.72	0.18	15	PASS

RSD SUMMARY: 180620D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB1	CCB	1	Mg	0.0021	45.19	15	<PQL
CCV2	CCV	1	Mg	9.75	0.47	15	PASS
CCB2	CCB	1	Mg	0.0024	20.95	15	<PQL
MB-68496	MBLK	1	Mg	0.0028	18.42	15	<PQL
LCS1-68496	LCS	1	Mg	9.64	0.57	15	PASS
N030686-001B	SAMP	1	Mg	33.64	0.11	15	PASS
N030686-001B	SAMP	5	Mg	6.89	0.43	15	PASS
N030686-001B-PS	PS	1	Mg	42.75	0.23	15	PASS
CCV3	CCV	1	Mg	9.98	0.18	15	PASS
CCB3	CCB	1	Mg	0.0021	51.57	15	<PQL
LLCCV1	CCV2	1	Mg	0.11	1.35	20	PASS
ICSA2	ICSA	1	Mg	420.53	0.4	15	PASS
ICSAB2	ICSAB	1	Mg	509.36	0.71	15	PASS
N030686-001B-MS1	MS	1	Mg	43.34	0.073	15	PASS
N030686-001B-MSD1	MSD	1	Mg	43.37	0.092	15	PASS
N030686-002B	SAMP	1	Mg	26.37	0.038	15	PASS
CCV4	CCV	1	Mg	9.71	0.31	15	PASS
CCB4	CCB	1	Mg	0.0027	20.2	15	<PQL
LLCCV2	CCV2	1	Mg	0.1	0.83	20	PASS
ICSA3	ICSA	1	Mg	413.89	0.48	15	PASS
ICSAB3	ICSAB	1	Mg	504.6	0.3	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180620A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-180601K0.025<50mL
Standard2	MWST-180601K,0.25<50mL
Standard3	MWST-180601K,1.25<50mL
Standard4	MWST-180601K,2.5<50mL
Standard5	MWST-180601K,5<50mL
Standard6	MWST-180601K,10<50mL
ICV	MWST-180430H
CCV	MWST-180601K,2.5<50mL
ICSA/ICSAB	MWST-180430F/ MWST-180601L
Int. Std. (Sc):	MSST-180420B/A
PS Spike	MSST-140120B/ -130329E/ -170116A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	06/20/2018	07:47:06 AM
26	Standard1	ICAL	1	06/20/2018	07:50:22 AM
27	Standard2	ICAL	1	06/20/2018	07:53:40 AM
28	Standard3	ICAL	1	06/20/2018	07:57:28 AM
29	Standard4	ICAL	1	06/20/2018	08:01:17 AM
30	Standard5	ICAL	1	06/20/2018	08:05:08 AM
31	Standard6	ICAL	1	06/20/2018	08:09:02 AM
32	ICV	ICV	1	06/20/2018	08:13:27 AM
1	ICB	ICB	1	06/20/2018	08:17:19 AM
33	ICSA1	ICSA	1	06/20/2018	08:20:37 AM
34	ICSAB1	ICSAB	1	06/20/2018	08:23:56 AM
38	MB-68349	MBLK	1	06/20/2018	08:27:50 AM
39	LCS2-68349	LCS	1	06/20/2018	08:31:07 AM
40	N030668-001B	SAMP	100	06/20/2018	08:35:02 AM
41	N030668-002B	SAMP	100	06/20/2018	08:38:20 AM
42	N030668-003C	SAMP	100	06/20/2018	08:41:39 AM
43	N030668-004C	SAMP	100	06/20/2018	08:44:58 AM
44	N030668-005C	SAMP	100	06/20/2018	08:48:17 AM
45	N030668-006C	SAMP	100	06/20/2018	08:51:36 AM
46	N030668-009C	SAMP	100	06/20/2018	08:54:55 AM
47	N030668-010C	SAMP	100	06/20/2018	08:58:15 AM
29	CCV1	CCV	1	06/20/2018	09:01:34 AM
1	CCB1	CCB	1	06/20/2018	09:05:25 AM
48	N030668-011C	SAMP	100	06/20/2018	09:08:42 AM
49	N030668-001B	SAMP	500	06/20/2018	09:12:03 AM
50	N030668-001B-PS	PS	100	06/20/2018	09:15:23 AM
51	N030668-001B-MS2	MS	100	06/20/2018	09:18:42 AM
52	N030668-001B-MSD2	MSD	100	06/20/2018	09:22:12 AM
65	MB-68496	MBLK	1	06/20/2018	09:26:02 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
66	LCS2-68496	LCS	1	06/20/2018	09:29:22 AM
67	N030686-001B	SAMP	100	06/20/2018	09:33:27 AM
68	N030686-002B	SAMP	100	06/20/2018	09:36:46 AM
71	N030686-002B	SAMP	500	06/20/2018	09:44:36 AM
29	CCV2	CCV	1	06/20/2018	09:47:55 AM
1	CCB2	CCB	1	06/20/2018	09:51:46 AM
72	N030686-002B-PS	PS	100	06/20/2018	09:55:02 AM
73	N030686-002B-MS2	MS	100	06/20/2018	09:58:22 AM
74	N030686-002B-MSD2	MSD	100	06/20/2018	10:01:42 AM
29	CCV3	CCV	1	06/20/2018	10:04:07 AM
1	CCB3	CCB	1	06/20/2018	10:07:59 AM
33	ICSA2	ICSA	1	06/20/2018	10:11:17 AM
34	ICSAB2	ICSAB	1	06/20/2018	10:14:36 AM
53	N030668-001B	SAMP	1	06/20/2018	10:17:20 AM
54	N030668-001B	SAMP	5	06/20/2018	10:23:12 AM
55	N030668-001B-PS	PS	1	06/20/2018	10:28:36 AM
56	N030668-001B-MS2	MS	1	06/20/2018	10:34:29 AM
57	N030668-001B-MSD2	MSD	1	06/20/2018	10:39:21 AM
58	N030668-003C	SAMP	1	06/20/2018	10:45:15 AM
59	N030668-004C	SAMP	1	06/20/2018	10:50:28 AM
60	N030668-005C	SAMP	1	06/20/2018	10:55:46 AM
61	N030668-006C	SAMP	1	06/20/2018	11:00:46 AM
62	N030668-009C	SAMP	1	06/20/2018	11:06:01 AM
29	CCV4	CCV	1	06/20/2018	11:11:14 AM
1	CCB4	CCB	1	06/20/2018	11:15:09 AM
63	N030668-010C	SAMP	1	06/20/2018	11:18:27 AM
64	N030668-011C	SAMP	1	06/20/2018	11:23:27 AM
75	N030668-001B	SAMP	25	06/20/2018	11:30:17 AM
76	N030668-001B-PS	PS	5	06/20/2018	11:34:08 AM
77	N030668-001B-MS2	MS	5	06/20/2018	11:39:04 AM
78	N030668-001B-MSD2	MSD	5	06/20/2018	11:44:00 AM
1	RINSE	RINSE	1	06/20/2018	11:48:57 AM
29	CCV5	CCV	1	06/20/2018	11:52:13 AM
1	CCB5	CCB	1	06/20/2018	11:56:08 AM
33	ICSA3	ICSA	1	06/20/2018	11:59:25 AM
34	ICSAB3	ICSAB	1	06/20/2018	12:02:43 PM

INJECTION LOG: 180620D

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-180420A,0.5<50mL
Standard2	MWST-180420C
Standard3	MWST-180420E,5<50mL
Standard4	MWST-180420E,12.5<50mL
Standard5	MWST-180420E,15<40mL
Standard6	MWST-180420E,25<50mL
Standard7	MWST-180420E
ICV	MWST-180430E
CCV	MWST-180420E,25<50mL
ICSA/ICSAB	MWST-180430F/G
Int. Std. (Y)	MSST-180420B/A
PS Spike	MWST-180108A/ -180430G/ -180601A/ -180517A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	06/20/2018	10:14:07 PM
2	Standard1	ICAL	1	06/20/2018	10:19:00 PM
3	Standard2	ICAL	1	06/20/2018	10:24:18 PM
11	Standard3	ICAL	1	06/20/2018	10:29:37 PM
12	Standard4	ICAL	1	06/20/2018	10:34:58 PM
6	Standard5	ICAL	1	06/20/2018	10:40:20 PM
7	Standard6	ICAL	1	06/20/2018	10:45:13 PM
8	Standard7	ICAL	1	06/20/2018	10:50:06 PM
9	ICV	ICV	1	06/20/2018	10:56:59 PM
1	ICB	ICB	1	06/20/2018	11:03:53 PM
2	LLICV1	CCV1	1	06/20/2018	11:08:42 PM
4	ICSA1	ICSA	1	06/20/2018	11:15:27 PM
5	ICSAB1	ICSAB	1	06/20/2018	11:23:01 PM
38	MB-68438	MBLK	1	06/20/2018	11:40:11 PM
39	LCS-68438	LCS	1	06/20/2018	11:45:00 PM
40	N030687-002B	SAMP	1	06/20/2018	11:50:20 PM
41	N030687-002B	SAMP	5	06/20/2018	11:55:41 PM
42	N030687-002B-PS	PS	1	06/21/2018	12:01:01 AM
43	N030687-002B-MS	MS	1	06/21/2018	12:08:36 AM
44	N030687-002B-MSD	MSD	1	06/21/2018	12:13:57 AM
45	N030687-003B	SAMP	1	06/21/2018	12:19:18 AM
46	N030687-004B	SAMP	1	06/21/2018	12:24:39 AM
47	N030687-005B	SAMP	1	06/21/2018	12:32:01 AM
7	CCV1	CCV	1	06/21/2018	12:37:22 AM
1	CCB1	CCB	1	06/21/2018	12:42:15 AM
48	N030687-006B	SAMP	1	06/21/2018	12:47:03 AM
49	N030703-001B	SAMP	1	06/21/2018	12:52:25 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
50	N030703-002B	SAMP	1	06/21/2018	12:57:47 AM
51	N030762-001B	SAMP	1	06/21/2018	01:03:28 AM
52	N030762-002B	SAMP	1	06/21/2018	01:08:49 AM
53	N030762-003B	SAMP	1	06/21/2018	01:14:11 AM
54	N030762-005B	SAMP	1	06/21/2018	01:19:32 AM
55	N030762-006B	SAMP	1	06/21/2018	01:24:53 AM
56	N030762-007B	SAMP	1	06/21/2018	01:30:14 AM
57	N030762-008B	SAMP	1	06/21/2018	01:35:35 AM
7	CCV2	CCV	1	06/21/2018	01:40:57 AM
1	CCB2	CCB	1	06/21/2018	01:45:50 AM
58	N030762-009B	SAMP	1	06/21/2018	01:50:39 AM
59	N030762-010B	SAMP	1	06/21/2018	01:56:00 AM
60	N030762-011B	SAMP	1	06/21/2018	02:01:22 AM
61	N030762-012B	SAMP	1	06/21/2018	02:06:44 AM
62	N030762-013B	SAMP	1	06/21/2018	02:12:07 AM
63	MB-68496	MBLK	1	06/21/2018	02:17:29 AM
64	LCS1-68496	LCS	1	06/21/2018	02:22:20 AM
65	N030686-001B	SAMP	1	06/21/2018	02:27:41 AM
66	N030686-001B	SAMP	5	06/21/2018	02:35:03 AM
67	N030686-001B-PS	PS	1	06/21/2018	02:40:24 AM
7	CCV3	CCV	1	06/21/2018	02:47:47 AM
1	CCB3	CCB	1	06/21/2018	02:52:40 AM
2	LLCCV1	CCV2	1	06/21/2018	02:57:29 AM
4	ICSA2	ICSA	1	06/21/2018	03:02:18 AM
5	ICSAB2	ICSAB	1	06/21/2018	03:09:52 AM
68	N030686-001B-MS1	MS	1	06/21/2018	03:16:55 AM
69	N030686-001B-MSD1	MSD	1	06/21/2018	03:24:55 AM
70	N030686-002B	SAMP	1	06/21/2018	03:32:19 AM
7	CCV4	CCV	1	06/21/2018	03:39:41 AM
1	CCB4	CCB	1	06/21/2018	03:44:35 AM
2	LLCCV2	CCV2	1	06/21/2018	03:49:24 AM
4	ICSA3	ICSA	1	06/21/2018	03:54:13 AM
5	ICSAB3	ICSAB	1	06/21/2018	04:01:48 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

6/25/2018

Prep Start Date: **6/19/2018 7:29:23 A**
Prep End Date: **6/19/2018 11:30:00**
Prep Batch **68496** Prep Code: **200.7_PR**

Reviewed/ Date: ~~6/25/2018~~
Initials/ Date: ________________
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-22**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-68496	Aqueous		25	☐	0	0	25	1.000		
LCS2-68496	Aqueous		25	☐	0	0	25	1.000		
MB-68496	Aqueous		25	☐	0	0	25	1.000		
N030686-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N030686-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030686-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030686-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N030686-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030686-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
10014	HYDROCHLORIC ACID
10019	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-130329E	Potassium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-180430F	ICP Solution B	LCS,MS,MSD	0.5
MWST-180517E	ICP Solution A	LCS,MS,MSD	0.5
MWST-180601B	ICP Solution C	LCS,MS,MSD	0.5

INITIAL CALIBRATION
DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180620A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	06/20/2018	07:47:06 AM	Na	589.594	873	0.00	mg/L	
Standard1	06/20/2018	07:50:22 AM	Na	589.594	425	0.1000	mg/L	
Standard2	06/20/2018	07:53:40 AM	Na	589.594	3465	1.000	mg/L	
Standard3	06/20/2018	07:57:28 AM	Na	589.594	17878	5.000	mg/L	
Standard4	06/20/2018	08:01:17 AM	Na	589.594	36368	10.000	mg/L	
Standard5	06/20/2018	08:05:08 AM	Na	589.594	71582	20.000	mg/L	
Standard6	06/20/2018	08:09:02 AM	Na	589.594	142622	40.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180620D

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	06/20/2018	10:14:07 PM	Mg	279.079	126	0.00	mg/L	
Standard1	06/20/2018	10:19:00 PM	Mg	279.079	2180	0.1000	mg/L	
Standard2	06/20/2018	10:24:18 PM	Mg	279.079	20329	1.000	mg/L	
Standard3	06/20/2018	10:29:37 PM	Mg	279.079	42959	2.000	mg/L	
Standard4	06/20/2018	10:34:58 PM	Mg	279.079	108202	5.000	mg/L	
Standard5	06/20/2018	10:40:20 PM	Mg	279.079	156790	7.500	mg/L	
Standard6	06/20/2018	10:45:13 PM	Mg	279.079	208743	10.000	mg/L	
Standard7	06/20/2018	10:50:06 PM	Mg	279.079	418111	20.000	mg/L	1.0000
Calcium								
CalBlk	06/20/2018	10:14:07 PM	Ca	227.546	-181	0.00	mg/L	
Standard1	06/20/2018	10:19:00 PM	Ca	227.546	88	0.2000	mg/L	
Standard2	06/20/2018	10:24:18 PM	Ca	227.546	437	1.000	mg/L	
Standard3	06/20/2018	10:29:37 PM	Ca	227.546	932	2.000	mg/L	
Standard4	06/20/2018	10:34:58 PM	Ca	227.546	2340	5.000	mg/L	
Standard5	06/20/2018	10:40:20 PM	Ca	227.546	3460	7.500	mg/L	
Standard6	06/20/2018	10:45:13 PM	Ca	227.546	4637	10.000	mg/L	
Standard7	06/20/2018	10:50:06 PM	Ca	227.546	9326	20.000	mg/L	1.0000
Iron								
CalBlk	06/20/2018	10:14:07 PM	Fe	273.953	-106	0.00	mg/L	
Standard1	06/20/2018	10:19:00 PM	Fe	273.953	777	0.0200	mg/L	
Standard2	06/20/2018	10:24:18 PM	Fe	273.953	2436	0.050	mg/L	
Standard3	06/20/2018	10:29:37 PM	Fe	273.953	79359	2.000	mg/L	
Standard4	06/20/2018	10:34:58 PM	Fe	273.953	200747	5.000	mg/L	
Standard5	06/20/2018	10:40:20 PM	Fe	273.953	290947	7.500	mg/L	
Standard6	06/20/2018	10:45:13 PM	Fe	273.953	387228	10.000	mg/L	
Standard7	06/20/2018	10:50:06 PM	Fe	273.953	770000	20.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** | SampType: **ICV** | TestCode: **200.7_WDPG** | Units: **µg/L** | Prep Date: | RunNo: **125741**
Client ID: **ICV** | Batch ID: **R125741** | TestNo: **EPA 200.7** | Analysis Date: **6/20/2018** | SeqNo: **3059915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9995.413	500	10000	0	100	90	110				

Sample ID **CCV1** | SampType: **CCV** | TestCode: **200.7_WDPG** | Units: **µg/L** | Prep Date: | RunNo: **125741**
Client ID: **CCV** | Batch ID: **R125741** | TestNo: **EPA 200.7** | Analysis Date: **6/20/2018** | SeqNo: **3059929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10012.376	500	10000	0	100	90	110				

Sample ID **CCV2** | SampType: **CCV** | TestCode: **200.7_WDPG** | Units: **µg/L** | Prep Date: | RunNo: **125741**
Client ID: **CCV** | Batch ID: **R125741** | TestNo: **EPA 200.7** | Analysis Date: **6/20/2018** | SeqNo: **3059941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10015.855	500	10000	0	100	90	110				

Sample ID **CCV3** | SampType: **CCV** | TestCode: **200.7_WDPG** | Units: **µg/L** | Prep Date: | RunNo: **125741**
Client ID: **CCV** | Batch ID: **R125741** | TestNo: **EPA 200.7** | Analysis Date: **6/20/2018** | SeqNo: **3059946**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9959.970	500	10000	0	99.6	90	110				

Sample ID **CCV4** | SampType: **CCV** | TestCode: **200.7_WDPG** | Units: **µg/L** | Prep Date: | RunNo: **125741**
Client ID: **CCV** | Batch ID: **R125741** | TestNo: **EPA 200.7** | Analysis Date: **6/20/2018** | SeqNo: **3059960**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10887.106	500	10000	0	109	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030686
Project:	PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV5** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125741**

Client ID: **CCV** Batch ID: **R125741** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059968**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10726.625	500	10000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **ICV** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3060669**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10043.853	500	10000	0	100	90	110				
Iron	10160.768	20	10000	0	102	90	110				
Magnesium	10150.244	100	10000	0	102	90	110				

Sample ID **LLICV1** SampType: **CCV1** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **ZZZZZZ** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3060671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	179.864	500	200.0	0	89.9	80	120				
Iron	20.558	20	20.00	0	103	80	120				
Magnesium	105.606	100	100.0	0	106	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **CCV** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9562.542	500	10000	0	95.6	90	110				
Iron	9789.351	20	10000	0	97.9	90	110				
Magnesium	9724.184	100	10000	0	97.2	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **CCV** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9497.262	500	10000	0	95.0	90	110				
Iron	9797.350	20	10000	0	98.0	90	110				
Magnesium	9749.505	100	10000	0	97.5	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCV3** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **CCV** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9620.947	500	10000	0	96.2	90	110				
Iron	9950.073	20	10000	0	99.5	90	110				
Magnesium	9982.910	100	10000	0	99.8	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **ZZZZZZ** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060710**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	100.044	500	200.0	0	50.0	70	130				S
Iron	20.343	20	20.00	0	102	70	130				
Magnesium	105.843	100	100.0	0	106	70	130				

Sample ID **CCV4** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **CCV** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9555.219	500	10000	0	95.6	90	110				
Iron	9774.562	20	10000	0	97.7	90	110				
Magnesium	9713.225	100	10000	0	97.1	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **ZZZZZZ** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060718**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	89.680	500	200.0	0	44.8	70	130				S
Iron	20.283	20	20.00	0	101	70	130				
Magnesium	102.214	100	100.0	0	102	70	130				

Ca on LLCCV1 & LLCCV2 is biased low however, samples for this analyte are greater than the regular CCV which passed QC criteria.

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Nancy 6/25/2018

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125741**
Client ID: **ICB** Batch ID: **R125741** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-121.802791	500									

Sample ID **CCB1** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125741**
Client ID: **CCB** Batch ID: **R125741** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-159.717554	500									

Sample ID **CCB2** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125741**
Client ID: **CCB** Batch ID: **R125741** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-165.967721	500									

Sample ID **CCB3** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125741**
Client ID: **CCB** Batch ID: **R125741** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-177.727091	500									

Sample ID **CCB4** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125741**
Client ID: **CCB** Batch ID: **R125741** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059961**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	127.225	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCB5**		SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**		Prep Date:			RunNo: **125741**		
Client ID: **CCB**		Batch ID: **R125741**	TestNo: **EPA 200.7**			Analysis Date: **6/20/2018**			SeqNo: **3059969**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-69.905687	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **ICB** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3060670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-5.920806	500									
Iron	0.342	20									
Magnesium	0.446	100									

Sample ID **CCB1** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **CCB** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-123.356823	500									
Iron	0.154	20									
Magnesium	2.129	100									

Sample ID **CCB2** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **CCB** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-161.295477	500									
Iron	0.883	20									
Magnesium	2.383	100									

Sample ID **CCB3** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **CCB** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-89.04508	500									
Iron	1.094	20									
Magnesium	2.100	100									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030686
Project:	PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **CCB4** SampType: **CCB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**

Client ID: **CCB** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060717**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-132.430426	500									
Iron	1.140	20									
Magnesium	2.715	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125741**
Client ID: **ICSA** Batch ID: **R125741** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-117.199697	500									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125741**
Client ID: **ICSAB** Batch ID: **R125741** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9946.687	500	10000	0	99.5	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125741**
Client ID: **ICSA** Batch ID: **R125741** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-176.058307	500									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125741**
Client ID: **ICSAB** Batch ID: **R125741** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9956.998	500	10000	0	99.6	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125741**
Client ID: **ICSA** Batch ID: **R125741** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059970**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-61.52001	500									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125741**
Client ID: **ICSAB** Batch ID: **R125741** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10637.079	500	10000	0	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **ICSA** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3060672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	449727.337	50	500000	0	89.9	80	120				
Calcium	459106.615	500	500000	0	91.8	80	120				
Iron	185179.728	20	200000	0	92.6	80	120				
Magnesium	423681.536	100	500000	0	84.7	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **ICSAB** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3060673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	542146.581	50	500000	0	108	80	120				
Calcium	537672.194	500	500000	0	108	80	120				
Iron	184645.434	20	200000	0	92.3	80	120				
Magnesium	520578.963	100	500000	0	104	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **ICSA** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	438619.234	50	500000	0	87.7	80	120				
Calcium	446456.783	500	500000	0	89.3	80	120				
Iron	185241.802	20	200000	0	92.6	80	120				
Magnesium	420534.542	100	500000	0	84.1	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **ICSAB** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	541392.444	50	500000	0	108	80	120				
Calcium	523465.371	500	500000	0	105	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **ICSAB** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060712**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	182363.731	20	200000	0	91.2	80	120				
Magnesium	509360.931	100	500000	0	102	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **ICSA** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060719**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	435319.299	50	500000	0	87.1	80	120				
Calcium	446398.538	500	500000	0	89.3	80	120				
Iron	182930.189	20	200000	0	91.5	80	120				
Magnesium	413887.872	100	500000	0	82.8	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **ICSAB** Batch ID: **R125758** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060720**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	538180.221	50	500000	0	108	80	120				
Calcium	521532.938	500	500000	0	104	80	120				
Iron	181177.280	20	200000	0	90.6	80	120				
Magnesium	504602.052	100	500000	0	101	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180620A

Instrument ID: ICP-02

Sample Name	Type	DF	Sc, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.014	101.4	65-125	PASS
Standard2	ICAL	1	1.029	102.91	65-125	PASS
Standard3	ICAL	1	1.018	101.81	65-125	PASS
Standard4	ICAL	1	0.99	99.49	65-125	PASS
Standard5	ICAL	1	0.99	99.17	65-125	PASS
Standard6	ICAL	1	0.95	95.08	65-125	PASS
ICV	ICV	1	1	99.72	65-125	PASS
ICB	ICB	1	0.98	97.97	65-125	PASS
ICSA1	ICSA	1	0.99	98.51	65-125	PASS
ICSAB1	ICSAB	1	0.97	96.65	65-125	PASS
CCV1	CCV	1	1.0041	100.41	65-125	PASS
CCB1	CCB	1	1.035	103.49	65-125	PASS
MB-68496	MBLK	1	1.0018	100.18	65-125	PASS
LCS2-68496	LCS	1	1.045	104.47	65-125	PASS
N030686-001B	SAMP	100	1.0077	100.77	65-125	PASS
N030686-002B	SAMP	100	0.98	98.48	65-125	PASS
N030686-002B	SAMP	500	1.02	101.99	65-125	PASS
CCV2	CCV	1	1	99.87	65-125	PASS
CCB2	CCB	1	1.022	102.25	65-125	PASS
N030686-002B-PS	PS	100	1	99.88	65-125	PASS
N030686-002B-MS2	MS	100	1.0037	100.37	65-125	PASS
N030686-002B-MSD2	MSD	100	1.024	102.37	65-125	PASS
CCV3	CCV	1	0.99	99.027	65-125	PASS
CCB3	CCB	1	1.013	101.33	65-125	PASS
ICSA2	ICSA	1	1.016	101.59	65-125	PASS
ICSAB2	ICSAB	1	1.0021	100.21	65-125	PASS

INTERNAL STANDARD: 180620D

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.039	103.86	65-125	PASS
Standard2	ICAL	1	1.044	104.35	65-125	PASS
Standard3	ICAL	1	1.01	101.02	65-125	PASS
Standard4	ICAL	1	1.007	100.7	65-125	PASS
Standard5	ICAL	1	1.018	101.84	65-125	PASS
Standard6	ICAL	1	0.99	98.91	65-125	PASS
Standard7	ICAL	1	0.97	97.11	65-125	PASS
ICV	ICV	1	0.98	97.73	65-125	PASS
ICB	ICB	1	0.98	98.39	65-125	PASS
LLICV1	CCV1	1	1.031	103.11	65-125	PASS
ICSA1	ICSA	1	1.15	114.94	65-125	PASS
ICSAB1	ICSAB	1	0.82	81.93	65-125	PASS
CCV1	CCV	1	0.81	81.23	65-125	PASS
CCB1	CCB	1	0.83	82.71	65-125	PASS
CCV2	CCV	1	0.81	81.44	65-125	PASS
CCB2	CCB	1	0.83	82.84	65-125	PASS
MB-68496	MBLK	1	0.82	82.36	65-125	PASS
LCS1-68496	LCS	1	0.84	84.12	65-125	PASS
N030686-001B	SAMP	1	0.75	75.3	65-125	PASS
N030686-001B	SAMP	5	0.78	78.24	65-125	PASS
N030686-001B-PS	PS	1	0.75	75.21	65-125	PASS
CCV3	CCV	1	0.81	81.002	65-125	PASS
CCB3	CCB	1	0.82	82.41	65-125	PASS
LLCCV1	CCV2	1	0.86	85.96	65-125	PASS
ICSA2	ICSA	1	0.95	95.18	65-125	PASS
ICSAB2	ICSAB	1	0.68	68.11	65-125	PASS
N030686-001B-MS1	MS	1	0.74	74.44	65-125	PASS
N030686-001B-MSD1	MSD	1	0.74	73.9	65-125	PASS
N030686-002B	SAMP	1	0.7	70.45	65-125	PASS
CCV4	CCV	1	0.8	80.43	65-125	PASS
CCB4	CCB	1	0.82	81.55	65-125	PASS
LLCCV2	CCV2	1	0.85	85.28	65-125	PASS
ICSA3	ICSA	1	0.94	94.089	65-125	PASS
ICSAB3	ICSAB	1	0.67	67.43	65-125	PASS

SERIAL DILUTION/ POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N030686
Test Method: EPA 200.7
Analysis Date: 6/20/2018

Matrix: Groundwater
Batch No.: 68496

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N0306868-002B DT 500X	Sodium	ug/L	1333467	PASS	1389962	4.06%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water **Dilution Test Summary**

Work Order No.: N030686
Test Method: EPA 200.7
Analysis Date: 6/20/2018

Matrix: Groundwater
Batch No.: 68496

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030686-001B DT 5X	Calcium	ug/L	131561.1	PASS	133058	1.12%	10
N030686-001B DT 5X	Iron	ug/L	0	NA	0		10
N030686-001B DT 5X	Magnesium	ug/L	34472.76	PASS	33643.67	2.46%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N030686-002B-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125741**
Client ID: **ZZZZZZ** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/20/2018** SeqNo: **3059943**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1404512.228	50000	20000	1390000	72.8	80	120				S

Sample ID **N030686-001B-PS** SampType: **PS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **125758**
Client ID: **ZZZZZZ** Batch ID: **68496** TestNo: **EPA 200.7** Analysis Date: **6/21/2018** SeqNo: **3060707**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	139052.948	500	10000	133100	59.9	80	120				S
Iron	104.688	20	100.0	0	105	80	120				
Magnesium	42750.847	100	10000	33640	91.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 200.7
Date of Analysis: 4/26/2018,4/27/18, 4/28/18
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	MDL	PQL
Potassium	0.52047	0.51468	0.50982	0.46507	0.46016	0.45873	0.49093	0.02710	0.48855	0.5000	0.08509	0.5
Sodium	0.55314	0.5464	0.5354	0.4861	0.49466	0.48423	0.49053	0.03061	0.51292	0.5000	0.09611	0.5
Strontium	0.0543	0.05418	0.05429	0.05295	0.05353	0.05251	0.05341	0.00070	0.05360	0.0250	0.00220	0.05

MBLK

Analyte	1	2	3	4	5	6	7	SD	Ave	MDL
Potassium	0.046	0.02365	0.01213	-0.00541	-0.0022	-0.00535	0.03047	0.02002	0.01418	0.0771
Sodium	0.04731	0.03661	0.02294	-0.0006	-0.00135	-0.00646	-0.00911	0.02270	0.01276	0.0841
Strontium	0.00006	-0.0006	-0.0002	0.00003	-0.00002	0.00001	0.00035	0.00029	-0.00005	0.0009

Note: MDL spike is used since it's value is greater than the MDL blank.

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7
Date of Analysis: 4/30/2018
Instrument Name: ICP2
Analyst: MI

Matrix: Water
Units: mg/L

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Potassium	0.08509	0.250	0.304	0.500	0.544	108.9
Sodium	0.09611	0.250	0.274	0.500	0.521	104.1
Strontium	0.00220	0.025	0.027	0.050	0.054	108.0

EPA 200.8
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68369
ASSET #: N030686
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 6/18/2018

Method:
[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X			X		
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 6/25/18

2nd Level Reviewer [signature] 6/25/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N030686-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 96.1191 * 5 * (25/25)

Chromium , ug/L = 480.5955

Reporting results in two significant figures,

Chromium , ug/L = 480

% RSD SUMMARY

PERCENT RSD SUMMARY: 180618B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	4.59	15	PASS	0.11	4.14	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	5.83	15	PASS	0.54	3.57	15	PASS
Std3-5/50 ppb	ICAL	1	5.07	2.45	15	PASS	4.99	4.51	15	PASS
Std4-10/100 ppb	ICAL	1	10.066	0.65	15	PASS	10.096	2.067	15	PASS
Std5-20/200 ppb	ICAL	1	20.038	0.97	15	PASS	20.019	0.86	15	PASS
Std6-40/400 ppb	ICAL	1	40.34	0.87	15	PASS	40.24	0.41	15	PASS
Std7-100/1000 ppb	ICAL	1	99.96	0.44	15	PASS	100.15	0.93	15	PASS
Std8-200/2000 ppb	ICAL	1	199.94	0.73	15	PASS	199.87	0.6	15	PASS
ICV	ICV	1	10.87	1.11	15	PASS	105.86	0.83	15	PASS
ICB	ICB	1	0.017	46.93	15	<PQL	0.1	16.3	15	<PQL
LLICV	CCV1	1	1.018	2.84	20	PASS	0.51	6.37	20	PASS
ICSA1	ICSA	1	0.052	37.43	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.2	0.84	15	PASS	19.76	0.8	15	PASS
LLICV	CCV1	1	1.0054	1.24	20	PASS	0.49	5.41	20	PASS
MB-68369	MBLK	1	<0.000	N/A	15	<PQL	0.0051	114.86	15	<PQL
LCS-68369	LCS	1	10.51	0.61	15	PASS	106.1	0.54	15	PASS
N030668-001B	SAMP	1	10.092	1.81	15	PASS	<0.000	N/A	15	<PQL
N030668-001B	SAMP	5	2.058	3.79	15	PASS	<0.000	N/A	15	<PQL
N030668-001B	SAMP	25	0.41	6.68	15	PASS	<0.000	N/A	15	<PQL
N030668-001B-PS	PS	1	19.63	1.19	15	PASS	93.86	1.11	15	PASS
N030668-001B-PS	PS	1	4.098	1.56	15	PASS	19.033	1.28	15	PASS
N030668-001B-MS	MS	1	20.62	0.79	15	PASS	93.089	0.11	15	PASS
N030668-001B-MS	MS	5	4.2	1.68	15	PASS	19.19	0.73	15	PASS
N030668-001B-MSD	MSD	1	19.43	0.36	15	PASS	92.36	0.61	15	PASS
CCV1	CCV	1	19.68	0.48	15	PASS	19.71	0.51	15	PASS
CCB1	CCB	1	0.0018	343.45	15	<PQL	0.0082	173.0098	15	<PQL
N030668-001B-MSD	MSD	1	4.13	3.075	15	PASS	19.47	1.3	15	PASS
N030668-002B	SAMP	1	8.45	1.17	15	PASS	<0.000	N/A	15	<PQL
N030668-002B	SAMP	5	1.68	1.68	15	PASS	<0.000	N/A	15	<PQL
N030668-003C	SAMP	1	0.25	8.11	15	PASS	1.84	3.57	15	PASS
N030668-003C	SAMP	5	0.06	23.88	15	<PQL	0.37	2.18	15	PASS
N030668-004C	SAMP	1	0.36	5.49	15	PASS	1.82	1.17	15	PASS
N030668-004C	SAMP	5	0.069	20.93	15	<PQL	0.37	3.27	15	PASS
N030668-005C	SAMP	1	1.16	3.36	15	PASS	1.42	2.29	15	PASS
N030668-005C	SAMP	5	0.23	5.29	15	PASS	0.3	5.078	15	PASS
N030668-006C	SAMP	1	1.23	4.34	15	PASS	1.35	2.41	15	PASS
CCV2	CCV	1	19.42	1.65	15	PASS	19.65	1.46	15	PASS
CCB2	CCB	1	0.0013	435.52	15	<PQL	0.0012	365.19	15	<PQL
N030668-006C	SAMP	5	0.24	10.096	15	PASS	0.27	4.22	15	PASS
N030668-009C	SAMP	1	0.77	7.12	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 180618B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030668-009C	SAMP	5	0.18	10.31	15	PASS	0.024	70.82	15	<PQL
N030668-010C	SAMP	1	2.78	2.69	15	PASS	2.052	2.31	15	PASS
N030668-010C	SAMP	5	0.58	3.42	15	PASS	0.44	5.4	15	PASS
N030668-011C	SAMP	1	1.0052	4.85	15	PASS	0.44	1.27	15	PASS
N030668-011C	SAMP	5	0.22	3.69	15	PASS	0.11	39.47	15	<PQL
N030686-001B	SAMP	1	0.1	16.66	15	<PQL	420.3	1.26	15	PASS
N030686-001B	SAMP	5	0.027	13.91	15	PASS	87.048	0.34	15	PASS
N030686-002B	SAMP	1	479.61	2.55	15	PASS	13.54	1.42	15	PASS
CCV3	CCV	1	19.31	0.36	15	PASS	19.53	1.17	15	PASS
CCB3	CCB	1	0.027	11.59	15	PASS	0.0066	35.31	15	<PQL
N030686-002B	SAMP	5	96.12	0.4	15	PASS	2.84	1.66	15	PASS
CCV4	CCV	1	19.36	0.92	15	PASS	19.55	0.7	15	PASS
CCB4	CCB	1	0.021	26.8	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1	1.51	20	PASS	0.53	0.71	20	PASS
ICSA2	ICSA	1	0.06	24.39	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.85	0.64	15	PASS	19.52	0.22	15	PASS
CCV5	CCV	1	20.019	2.0062	15	PASS	20.37	0.62	15	PASS
CCB5	CCB	1	0.011	35.95	15	<PQL	0.05	23.91	15	<PQL
CCV6	CCV	1	20.12	2.43	15	PASS	20.63	1.47	15	PASS
CCB6	CCB	1	0.0057	116.82	15	<PQL	0.031	57.63	15	<PQL
CCV7	CCV	1	20.076	1.51	15	PASS	20.59	1.35	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL	0.11	14.76	15	PASS
CCV8	CCV	1	20.33	0.48	15	PASS	20.54	0.26	15	PASS
CCB8	CCB	1	0.01	26.92	15	<PQL	0.12	2.19	15	PASS
CCV9	CCV	1	20.14	1.18	15	PASS	20.46	0.81	15	PASS
CCB9	CCB	1	0.0078	49.3	15	<PQL	0.12	10.12	15	PASS
LLCCV1	CCV2	1	1.017	2.65	20	PASS	0.64	5.8	20	PASS
ICSA2	ICSA	1	0.065	5.86	15	PASS	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.39	1.61	15	PASS	20.62	2.69	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180618B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0618001.D	RINSE	RINSE	1	06/18/18 8:11 PM
B0618002.D	Cal Blank	IBLK	1	06/18/18 8:16 PM
B0618003.D	Std1-0.1/1 ppb	ICAL	1	06/18/18 8:22 PM
B0618004.D	Std2-0.5/5 ppb	ICAL	1	06/18/18 8:27 PM
B0618005.D	Std3-5/50 ppb	ICAL	1	06/18/18 8:33 PM
B0618006.D	Std4-10/100 ppb	ICAL	1	06/18/18 8:38 PM
B0618007.D	Std5-20/200 ppb	ICAL	1	06/18/18 8:44 PM
B0618008.D	Std6-40/400 ppb	ICAL	1	06/18/18 8:50 PM
B0618009.D	Std7-100/1000 ppb	ICAL	1	06/18/18 8:55 PM
B0618010.D	Std8-200/2000 ppb	ICAL	1	06/18/18 9:01 PM
B0618011.D	ICV	ICV	1	06/18/18 9:06 PM
B0618012.D	ICB	ICB	1	06/18/18 9:12 PM
B0618013.D	LLICV	CCV1	1	06/18/18 9:17 PM
B0618014.D	ICSA1	ICSA	1	06/18/18 9:23 PM
B0618015.D	ICSAB1	ICSAB	1	06/18/18 9:29 PM
B0618016.D	LLICV	CCV1	1	06/18/18 9:34 PM
B0618017.D	MB-68369	MBLK	1	06/18/18 9:40 PM
B0618018.D	LCS-68369	LCS	1	06/18/18 9:45 PM
B0618019.D	N030668-001B	SAMP	1	06/18/18 9:51 PM
B0618020.D	N030668-001B	SAMP	5	06/18/18 9:56 PM
B0618021.D	N030668-001B	SAMP	25	06/18/18 10:02 PM
B0618022.D	N030668-001B-PS	PS	1	06/18/18 10:08 PM
B0618023.D	N030668-001B-PS	PS	1	06/18/18 10:13 PM
B0618024.D	N030668-001B-MS	MS	1	06/18/18 10:19 PM
B0618025.D	N030668-001B-MS	MS	5	06/18/18 10:24 PM
B0618026.D	N030668-001B-MSD	MSD	1	06/18/18 10:30 PM
B0618027.D	CCV1	CCV	1	06/18/18 10:35 PM
B0618028.D	CCB1	CCB	1	06/18/18 10:41 PM
B0618029.D	N030668-001B-MSD	MSD	1	06/18/18 10:47 PM
B0618030.D	N030668-002B	SAMP	1	06/18/18 10:52 PM
B0618031.D	N030668-002B	SAMP	5	06/18/18 10:58 PM
B0618032.D	N030668-003C	SAMP	1	06/18/18 11:03 PM
B0618033.D	N030668-003C	SAMP	5	06/18/18 11:17 PM
B0618034.D	N030668-004C	SAMP	1	06/18/18 11:23 PM
B0618035.D	N030668-004C	SAMP	5	06/18/18 11:28 PM
B0618036.D	N030668-005C	SAMP	1	06/18/18 11:34 PM
B0618037.D	N030668-005C	SAMP	5	06/18/18 11:40 PM
B0618038.D	N030668-006C	SAMP	1	06/18/18 11:45 PM
B0618039.D	CCV2	CCV	1	06/18/18 11:51 PM
B0618040.D	CCB2	CCB	1	06/18/18 11:56 PM
B0618041.D	N030668-006C	SAMP	5	06/19/18 12:02 AM
B0618042.D	N030668-009C	SAMP	1	06/19/18 12:07 AM

INJECTION LOG: 180618B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0618043.D	N030668-009C	SAMP	5	06/19/18 12:13 AM
B0618044.D	N030668-010C	SAMP	1	06/19/18 12:19 AM
B0618045.D	N030668-010C	SAMP	5	06/19/18 12:24 AM
B0618046.D	N030668-011C	SAMP	1	06/19/18 12:30 AM
B0618047.D	N030668-011C	SAMP	5	06/19/18 12:35 AM
B0618048.D	N030686-001B	SAMP	1	06/19/18 12:41 AM
B0618049.D	N030686-001B	SAMP	5	06/19/18 12:46 AM
B0618050.D	N030686-002B	SAMP	1	06/19/18 12:52 AM
B0618051.D	CCV3	CCV	1	06/19/18 12:57 AM
B0618052.D	CCB3	CCB	1	06/19/18 1:03 AM
B0618053.D	N030686-002B	SAMP	5	06/19/18 1:09 AM
B0618054.D	CCV4	CCV	1	06/19/18 1:14 AM
B0618055.D	CCB4	CCB	1	06/19/18 1:20 AM
B0618056.D	LLCCV1	CCV2	1	06/19/18 1:25 AM
B0618057.D	ICSA2	ICSA	1	06/19/18 1:31 AM
B0618058.D	ICSAB2	ICSAB	1	06/19/18 1:36 AM
B0618059.D	MB-68451	MBLK	1	06/19/18 1:42 AM
B0618060.D	LCS-68451	LCS	1	06/19/18 1:47 AM
B0618061.D	N030779-001A	SAMP	1	06/19/18 1:53 AM
B0618062.D	N030779-002A	SAMP	1	06/19/18 1:58 AM
B0618063.D	N030779-002A	SAMP	5	06/19/18 2:04 AM
B0618064.D	N030779-002A-PS	PS	1	06/19/18 2:10 AM
B0618065.D	N030779-002A-MS	MS	1	06/19/18 2:15 AM
B0618066.D	N030779-002A-MSD	MSD	1	06/19/18 2:21 AM
B0618067.D	N030779-004A	SAMP	1	06/19/18 2:27 AM
B0618068.D	N030779-005A	SAMP	1	06/19/18 2:32 AM
B0618069.D	CCV5	CCV	1	06/19/18 2:38 AM
B0618070.D	CCB5	CCB	1	06/19/18 2:43 AM
B0618071.D	N030779-007A	SAMP	1	06/19/18 2:49 AM
B0618072.D	N030779-008A	SAMP	1	06/19/18 2:54 AM
B0618073.D	N030779-010A	SAMP	1	06/19/18 3:00 AM
B0618074.D	N030779-011A	SAMP	1	06/19/18 3:05 AM
B0618075.D	N030779-013A	SAMP	1	06/19/18 3:11 AM
B0618076.D	N030779-014A	SAMP	1	06/19/18 3:17 AM
B0618077.D	N030779-016A	SAMP	1	06/19/18 3:22 AM
B0618078.D	N030779-017A	SAMP	1	06/19/18 3:28 AM
B0618079.D	N030779-018A	SAMP	1	06/19/18 3:33 AM
B0618080.D	N030779-019A	SAMP	1	06/19/18 3:39 AM
B0618081.D	CCV6	CCV	1	06/19/18 3:44 AM
B0618082.D	CCB6	CCB	1	06/19/18 3:50 AM
B0618083.D	N030780-001A	SAMP	1	06/19/18 3:56 AM
B0618084.D	N030780-002A	SAMP	1	06/19/18 4:01 AM

INJECTION LOG: 180618B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0618085.D	N030780-004A	SAMP	1	06/19/18 4:07 AM
B0618086.D	N030780-005A	SAMP	1	06/19/18 4:12 AM
B0618087.D	N030780-007A	SAMP	1	06/19/18 4:18 AM
B0618088.D	N030780-008A	SAMP	1	06/19/18 4:23 AM
B0618089.D	MB-68452	MBLK	1	06/19/18 4:29 AM
B0618090.D	LCS-68452	LCS	1	06/19/18 4:35 AM
B0618091.D	N030780-010A	SAMP	1	06/19/18 4:40 AM
B0618092.D	N030780-011A	SAMP	1	06/19/18 4:46 AM
B0618093.D	CCV7	CCV	1	06/19/18 4:51 AM
B0618094.D	CCB7	CCB	1	06/19/18 4:57 AM
B0618095.D	N030780-011A	SAMP	5	06/19/18 5:02 AM
B0618096.D	N030780-011A-PS	PS	1	06/19/18 5:08 AM
B0618097.D	N030780-011A-MS	MS	1	06/19/18 5:14 AM
B0618098.D	N030780-011A-MSD	MSD	1	06/19/18 5:19 AM
B0618099.D	N030780-013A	SAMP	1	06/19/18 5:25 AM
B0618100.D	N030780-014A	SAMP	1	06/19/18 5:31 AM
B0618101.D	N030780-016A	SAMP	1	06/19/18 5:36 AM
B0618102.D	N030780-017A	SAMP	1	06/19/18 5:42 AM
B0618103.D	N030780-019A	SAMP	1	06/19/18 5:47 AM
B0618104.D	N030780-020A	SAMP	1	06/19/18 5:53 AM
B0618105.D	CCV8	CCV	1	06/19/18 5:59 AM
B0618106.D	CCB8	CCB	1	06/19/18 6:04 AM
B0618107.D	N030780-022A	SAMP	1	06/19/18 6:10 AM
B0618108.D	N030780-023A	SAMP	1	06/19/18 6:15 AM
B0618109.D	N030780-025A	SAMP	1	06/19/18 6:21 AM
B0618110.D	N030780-026A	SAMP	1	06/19/18 6:27 AM
B0618111.D	N030780-028A	SAMP	1	06/19/18 6:33 AM
B0618112.D	N030780-029A	SAMP	1	06/19/18 6:38 AM
B0618113.D	N030780-030A	SAMP	1	06/19/18 6:44 AM
B0618114.D	N030780-031A	SAMP	1	06/19/18 6:49 AM
B0618115.D	N030780-032A	SAMP	1	06/19/18 6:55 AM
B0618116.D	N030780-033A	SAMP	1	06/19/18 7:00 AM
B0618117.D	CCV9	CCV	1	06/19/18 7:06 AM
B0618118.D	CCB9	CCB	1	06/19/18 7:12 AM
B0618119.D	LLCCV1	CCV2	1	06/19/18 7:17 AM
B0618120.D	ICSA2	ICSA	1	06/19/18 7:23 AM
B0618121.D	ICSAB2	ICSAB	1	06/19/18 7:28 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/8/2018 6:55:55 A**
Prep End Date: **6/8/2018 11:30:00 A**
Prep Batch **68369** Prep Code: **200.8_DISS_P**

Reviewed/ Date: Nancy 6/25/2018
Initials/ Date: 6/25/2018
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-32**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68369	Aqueous		25	☐	0	0	25	1.000		
MB-68369	Aqueous		25	☐	0	0	25	1.000		
N030668-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N030668-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030668-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030668-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N030668-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N030668-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N030668-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N030668-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N030668-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N030668-010C	Groundwater	<2	25	☐	0	0	25	1.000		
N030668-011C	Groundwater	<2	25	☐	0	0	25	1.000		
N030686-001B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-180517	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/8/2018 6:55:55 A**
Prep End Date: **6/8/2018 11:30:00 A**
Prep Batch **68369** Prep Code: **200.8_DISS_P**

Reviewed/ Date: 6/25/2018
Initials/ Date: 6/25/2018
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-32**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N030686-002B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-180517	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 18 Jun 2018 11:44:07 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	94133.80	0.00	
24	Mg	371152.00	0.00	
25	Mg	48684.80	0.00	
26	Mg	56008.30	0.00	
59	Co	391946.00	0.00	
115	In	714677.00	0.00	
206	Pb	211727.00	0.00	
207	Pb	185821.00	0.00	
208	Pb	452561.00	0.00	

RSD (%)

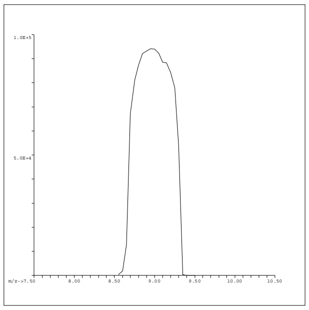
Element		Actual	Required	Flag
9	Be	0.77	5.00	
24	Mg	0.72	5.00	
25	Mg	1.37	5.00	
26	Mg	1.28	5.00	
59	Co	0.69	5.00	
115	In	0.81	5.00	
206	Pb	0.76	5.00	
207	Pb	0.57	5.00	
208	Pb	0.62	5.00	

Ion Ratio

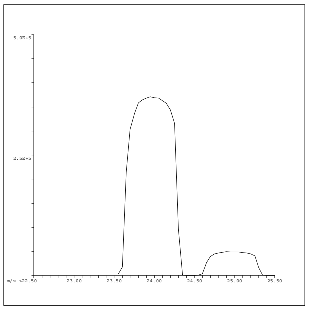
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

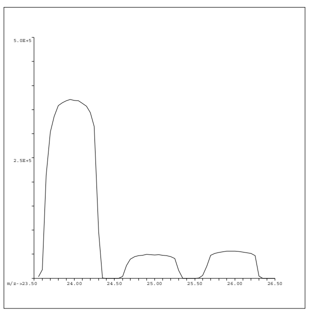
Element	Actual	Required	Flag



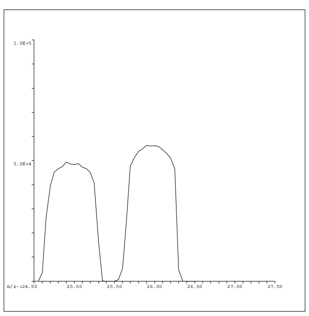
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



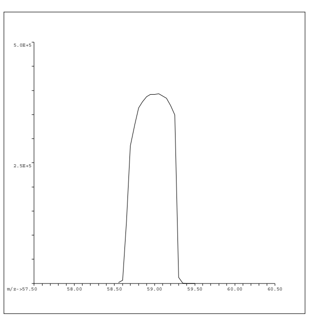
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



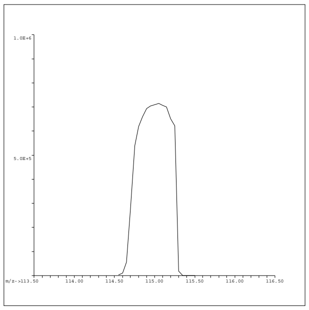
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



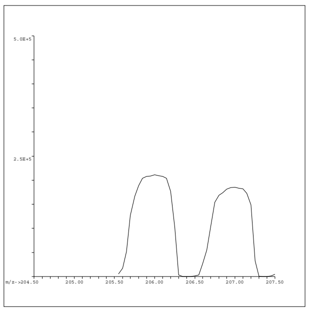
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



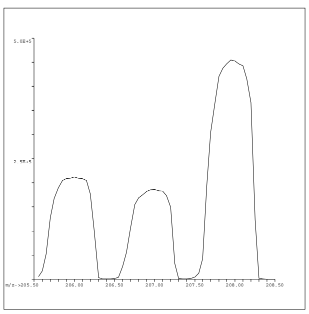
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



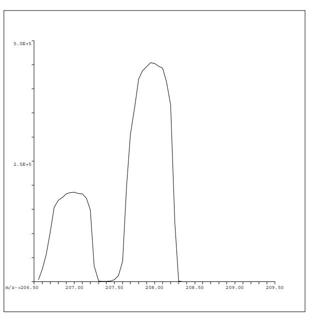
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180618B

Instrument ID: ICPMS-02

Analyte	Data File	B0618002.D	B0618004.D	B0618005.D	B0618006.D	B0618007.D	B0618008.D	B0618009.D	B0618010.D	
	Acq. Date-Time	06/18/2018 08:16 PM	06/18/2018 08:27 PM	06/18/2018 08:33 PM	06/18/2018 08:38 PM	06/18/2018 08:44 PM	06/18/2018 08:50 PM	06/18/2018 08:55 PM	06/18/2018 09:01 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	64050.1	62725.4	62341.8	61971.5	62534.8	62031.7	61254.2	61339.2	
55 Mn [2]	CPS	72.3	1372.7	11976	24009.6	47973.4	95588.7	234820.4	469203.4	1.0000
52 Cr [2]	CPS	168.7	2656.9	25556.7	50292	100860.1	201267.4	492230	985673.5	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MSST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV** SampType: **ICV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **ICV** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	105.865	0.50	100.0	0	106	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **ZZZZZZ** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.508	0.50	0.5000	0	102	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **CCV** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058279**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.712	0.50	20.00	0	98.6	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **CCV** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.652	0.50	20.00	0	98.3	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **CCV** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/19/2018** SeqNo: **3058303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.528	0.50	20.00	0	97.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCV4** SampType: **CCV** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **CCV** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/19/2018** SeqNo: **3058306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.553	0.50	20.00	0	97.8	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **ZZZZZZ** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/19/2018** SeqNo: **3058308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.527	0.50	0.5000	0	105	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID ICV	SampType: ICV	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date:	RunNo: 124728
Client ID: ICV	Batch ID: R124728	TestNo: EPA 200.8		Analysis Date: 6/18/2018	SeqNo: 3058152

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.871	1.0	10.00	0	109	90	110				

Sample ID LLICV	SampType: CCV1	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date:	RunNo: 124728
Client ID: ZZZZZZ	Batch ID: R124728	TestNo: EPA 200.8		Analysis Date: 6/18/2018	SeqNo: 3058154

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.018	1.0	1.000	0	102	80	120				

Sample ID CCV1	SampType: CCV	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date:	RunNo: 124728
Client ID: CCV	Batch ID: R124728	TestNo: EPA 200.8		Analysis Date: 6/18/2018	SeqNo: 3058168

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.681	1.0	20.00	0	98.4	90	110				

Sample ID CCV2	SampType: CCV	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date:	RunNo: 124728
Client ID: CCV	Batch ID: R124728	TestNo: EPA 200.8		Analysis Date: 6/18/2018	SeqNo: 3058180

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.420	1.0	20.00	0	97.1	90	110				

Sample ID CCV3	SampType: CCV	TestCode: 200.8DIS_Cr	Units: µg/L	Prep Date:	RunNo: 124728
Client ID: CCV	Batch ID: R124728	TestNo: EPA 200.8		Analysis Date: 6/19/2018	SeqNo: 3058192

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.315	1.0	20.00	0	96.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **CCV4** SampType: **CCV** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **CCV** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/19/2018** SeqNo: **3058195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.359	1.0	20.00	0	96.8	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **ZZZZZZ** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/19/2018** SeqNo: **3058197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.000	1.0	1.000	0	100	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB** SampType: **ICB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **ICB** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **CCB** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058280**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **CCB** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058292**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB3** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **CCB** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/19/2018** SeqNo: **3058304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB4** SampType: **CCB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **CCB** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/19/2018** SeqNo: **3058307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8DIS_Cr** Units: **µg/L**	Prep Date:	RunNo: **124728**
Client ID: **ICB**	Batch ID: **R124728**	TestNo: **EPA 200.8**	Analysis Date: **6/18/2018**	SeqNo: **3058153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8DIS_Cr** Units: **µg/L**	Prep Date:	RunNo: **124728**
Client ID: **CCB**	Batch ID: **R124728**	TestNo: **EPA 200.8**	Analysis Date: **6/18/2018**	SeqNo: **3058169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8DIS_Cr** Units: **µg/L**	Prep Date:	RunNo: **124728**
Client ID: **CCB**	Batch ID: **R124728**	TestNo: **EPA 200.8**	Analysis Date: **6/18/2018**	SeqNo: **3058181**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8DIS_Cr** Units: **µg/L**	Prep Date:	RunNo: **124728**
Client ID: **CCB**	Batch ID: **R124728**	TestNo: **EPA 200.8**	Analysis Date: **6/19/2018**	SeqNo: **3058193**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.8DIS_Cr** Units: **µg/L**	Prep Date:	RunNo: **124728**
Client ID: **CCB**	Batch ID: **R124728**	TestNo: **EPA 200.8**	Analysis Date: **6/19/2018**	SeqNo: **3058196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **ICSA** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **ICSAB** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.760	0.50	20.00	0	98.8	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **ICSA** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/19/2018** SeqNo: **3058309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **ICSAB** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/19/2018** SeqNo: **3058310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.524	0.50	20.00	0	97.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **ICSA** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **ICSAB** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.204	1.0	20.00	0	101	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **ICSA** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/19/2018** SeqNo: **3058198**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **200.8DIS_Cr** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **ICSAB** Batch ID: **R124728** TestNo: **EPA 200.8** Analysis Date: **6/19/2018** SeqNo: **3058199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.846	1.0	20.00	0	99.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180618B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	64050.1	64050.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	63532.7	64050.1	99.19	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	62725.4	64050.1	97.93	PASS	70-125
Std3-5/50 ppb	ICAL	1	62341.8	64050.1	97.33	PASS	70-125
Std4-10/100 ppb	ICAL	1	61971.5	64050.1	96.75	PASS	70-125
Std5-20/200 ppb	ICAL	1	62534.8	64050.1	97.63	PASS	70-125
Std6-40/400 ppb	ICAL	1	62031.7	64050.1	96.85	PASS	70-125
Std7-100/1000 ppb	ICAL	1	61254.2	64050.1	95.63	PASS	70-125
Std8-200/2000 ppb	ICAL	1	61339.2	64050.1	95.77	PASS	70-125
ICV	ICV	1	61108.1	64050.1	95.41	PASS	70-125
ICB	ICB	1	58485.5	64050.1	91.31	PASS	70-125
LLICV	CCV1	1	62861.4	64050.1	98.14	PASS	70-125
ICSA1	ICSA	1	66540.3	64050.1	103.89	PASS	70-125
ICSAB1	ICSAB	1	64759.9	64050.1	101.11	PASS	70-125
LLICV	CCV1	1	74917.7	64050.1	116.97	PASS	70-125
MB-68369	MBLK	1	69598	64050.1	108.66	PASS	70-125
LCS-68369	LCS	1	73051.7	64050.1	114.05	PASS	70-125
N030668-001B	SAMP	1	67370	64050.1	105.18	PASS	70-125
N030668-001B	SAMP	5	68410	64050.1	106.81	PASS	70-125
N030668-001B	SAMP	25	67123.8	64050.1	104.8	PASS	70-125
N030668-001B-PS	PS	1	65973.5	64050.1	103	PASS	70-125
N030668-001B-PS	PS	1	71101.2	64050.1	111.01	PASS	70-125
N030668-001B-MS	MS	1	68267.1	64050.1	106.58	PASS	70-125
N030668-001B-MS	MS	5	73751.2	64050.1	115.15	PASS	70-125
N030668-001B-MSD	MSD	1	69767.5	64050.1	108.93	PASS	70-125
CCV1	CCV	1	72992.5	64050.1	113.96	PASS	70-125
CCB1	CCB	1	67347.4	64050.1	105.15	PASS	70-125
N030668-001B-MSD	MSD	1	67040.7	64050.1	104.67	PASS	70-125
N030668-002B	SAMP	1	63014.2	64050.1	98.38	PASS	70-125
N030668-002B	SAMP	5	68427.7	64050.1	106.83	PASS	70-125
N030668-003C	SAMP	1	64577.9	64050.1	100.82	PASS	70-125
N030668-003C	SAMP	5	78989.5	64050.1	123.32	PASS	70-125
N030668-004C	SAMP	1	67070	64050.1	104.71	PASS	70-125
N030668-004C	SAMP	5	74197.7	64050.1	115.84	PASS	70-125
N030668-005C	SAMP	1	67431.6	64050.1	105.28	PASS	70-125
N030668-005C	SAMP	5	71748.1	64050.1	112.02	PASS	70-125
N030668-006C	SAMP	1	67400.4	64050.1	105.23	PASS	70-125
CCV2	CCV	1	76249.4	64050.1	119.05	PASS	70-125
CCB2	CCB	1	75067.1	64050.1	117.2	PASS	70-125
N030668-006C	SAMP	5	72366.5	64050.1	112.98	PASS	70-125
N030668-009C	SAMP	1	68199.8	64050.1	106.48	PASS	70-125

INTERNAL STANDARD: 180618B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N030668-009C	SAMP	5	73835.3	64050.1	115.28	PASS	70-125
N030668-010C	SAMP	1	69450.6	64050.1	108.43	PASS	70-125
N030668-010C	SAMP	5	72886.7	64050.1	113.8	PASS	70-125
N030668-011C	SAMP	1	69366.9	64050.1	108.3	PASS	70-125
N030668-011C	SAMP	5	73931.3	64050.1	115.43	PASS	70-125
N030686-001B	SAMP	1	69567.8	64050.1	108.61	PASS	70-125
N030686-001B	SAMP	5	73428.9	64050.1	114.64	PASS	70-125
N030686-002B	SAMP	1	68510.4	64050.1	106.96	PASS	70-125
CCV3	CCV	1	77675.4	64050.1	121.27	PASS	70-125
CCB3	CCB	1	75099.7	64050.1	117.25	PASS	70-125
N030686-002B	SAMP	5	72704.4	64050.1	113.51	PASS	70-125
CCV4	CCV	1	75317	64050.1	117.59	PASS	70-125
CCB4	CCB	1	73244.7	64050.1	114.36	PASS	70-125
LLCCV1	CCV2	1	74852.8	64050.1	116.87	PASS	70-125
ICSA2	ICSA	1	74651	64050.1	116.55	PASS	70-125
ICSAB2	ICSAB	1	70355.5	64050.1	109.84	PASS	70-125
CCV5	CCV	1	61633.6	64050.1	96.23	PASS	70-125
CCB5	CCB	1	60259.6	64050.1	94.082	PASS	70-125
CCV6	CCV	1	60163.7	64050.1	93.93	PASS	70-125
CCB6	CCB	1	59506.9	64050.1	92.91	PASS	70-125
CCV7	CCV	1	62884.9	64050.1	98.18	PASS	70-125
CCB7	CCB	1	61908.9	64050.1	96.66	PASS	70-125
CCV8	CCV	1	64217.8	64050.1	100.26	PASS	70-125
CCB8	CCB	1	62918.3	64050.1	98.23	PASS	70-125
CCV9	CCV	1	63295.4	64050.1	98.82	PASS	70-125
CCB9	CCB	1	62698.9	64050.1	97.89	PASS	70-125
LLCCV1	CCV2	1	62761.1	64050.1	97.99	PASS	70-125
ICSA2	ICSA	1	59512.4	64050.1	92.92	PASS	70-125
ICSAB2	ICSAB	1	59131.3	64050.1	92.32	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water **Dilution Test Summary**

Work Order No.: N030686
Test Method: EPA 200.8
Analysis Date: 6/18/2018

Matrix: Groundwater
Batch No.: 68369

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr and Mn . The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030668-001B DT 5X	Chromium	ug/L	10.29009	NA	10.09216	1.96%	10
N030668-001B DT 5X	Manganese	ug/L	0	NA	0		10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N030668-001B-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **124728**
Client ID: **ZZZZZZ** Batch ID: **68369** TestNo: **EPA 200.8** Analysis Date: **6/18/2018** SeqNo: **3058274**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.855	0.50	100.0	0	93.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **N030668-001B-PS**	SampType: **PS**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **124728**
Client ID: **ZZZZZZ**	Batch ID: **68369**	TestNo: **EPA 200.8**		Analysis Date: **6/18/2018**	SeqNo: **3058163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.627	1.0	10.00	10.09	95.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method:	**EPA 6020 / 200.8**	**Matrix:**	**Water**
Digestion Method:	**EPA 3010A**	**Amount of Sample:**	**25 mL**
Date of Analysis:	**9/25,10/2,11/3/17**	**Units:**	**ug/L**
Digestion Date:	**9/21, 9/28,10/9/17**		
Instrument Name:	**ICPMS2**		
Analysts:	**MEI**		

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8 **Matrix: Water**

Digestion Method: EPA 3010A **Units: ug/L**

Date of Analysis: 9/25,10/2,11/3/17

Digestion Date: 9/21, 9/28,10/9/17

Instrument Name: ICPMS2

Analysts: MEI

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

EPA 218.6

IC ARCUS
REV 2.0
011416

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R124583
ASSET #: N030686

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 6/11/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ____________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)		X				
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X		X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)		X				
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

Detections in MB and CCB-1are >0.02 ppb. However, samples affected are ND and >5X the blank detections. ~~CAR 2388~~

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 6/18/2018

2nd Level Reviewer: [illegible signature] 6/20/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6} ,µg/L = A * DF

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N030686-002A** , the concentration in µg/L is calculated as follows:

Cr^{+6} ,µg/L = 4.7294 * 100

Cr^{+6} ,µg/L = 472.9400

Reporting results in two significant figures,

Cr^{+6} ,µg/L = 470

rba 6/18/2018

ANALYSIS RUN LOG

INJECTION LOG: 180521A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/21/18 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/21/18 9:52 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:11 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:30 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/21/18 10:49 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/21/18 10:58 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/21/18 11:08 AM	Reported
13	MB-R124155	MBLK	1	Hexavalent Chromium	05/21/18 11:17 AM	Reported
14	LCS-R124155	LCS	1	Hexavalent Chromium	05/21/18 11:27 AM	Reported
15	N030123-015A	SAMP	5	Hexavalent Chromium	05/21/18 11:36 AM	Not Reported
16	N030123-015AMS	MS	5	Hexavalent Chromium	05/21/18 11:45 AM	Not Reported
17	N030189-011A	SAMP	1	Hexavalent Chromium	05/21/18 11:55 AM	Not Reported
18	N030189-011AMS	MS	1	Hexavalent Chromium	05/21/18 12:04 PM	Not Reported
19	N030189-012A	SAMP	1	Hexavalent Chromium	05/21/18 12:14 PM	Not Reported
20	N030189-012AMS	MS	1	Hexavalent Chromium	05/21/18 12:23 PM	Not Reported
21	N030402-001A	SAMP	20	Hexavalent Chromium	05/21/18 12:33 PM	Not Reported
22	N030402-001A	SAMP	1	Hexavalent Chromium	05/21/18 1:26 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	05/21/18 1:38 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	05/21/18 1:47 PM	Reported
25	N030402-001ADUP	DUP	1	Hexavalent Chromium	05/21/18 1:57 PM	Reported
26	N030402-001AMS	MS	1	Hexavalent Chromium	05/21/18 2:06 PM	Reported
27	N030402-001AMSD	MSD	1	Hexavalent Chromium	05/21/18 2:15 PM	Reported
28	CCV-2	CCV	1	Hexavalent Chromium	05/21/18 2:25 PM	Reported
29	CCB-2	CCB	1	Hexavalent Chromium	05/21/18 2:34 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180521A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**21/May/18 15:44:36**
No. of Injections:	**32**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/21/2018 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		05/21/2018 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/21/2018 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/21/2018 09:52	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/21/2018 10:01	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/21/2018 10:11	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/21/2018 10:20	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/21/2018 10:30	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/21/2018 10:39	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		05/21/2018 10:49	Finished	CCV @5ppb, IWST-180129A
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		05/21/2018 10:58	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		05/21/2018 11:08	Finished	CCB R180409B
13	MB-H2O,MBLK,1,	13	1000	Unknown		05/21/2018 11:17	Finished	MB R180409B
14	LCS-H2O,LCS,1,	14	1000	Unknown		05/21/2018 11:27	Finished	LCS, IWST-180129B
15	N030123-015A,SAMF	15	1000	Unknown		05/21/2018 11:36	Finished	SAMP,2>10mL
16	N030123-015AMS,MS	16	1000	Unknown		05/21/2018 11:45	Finished	MS (1ppb), IWST-180129B,2>1
17	N030189-011A,SAMF	17	1000	Unknown		05/21/2018 11:55	Finished	SAMP,10mL
18	N030189-011AMS,MS	18	1000	Unknown		05/21/2018 12:04	Finished	MS (1ppb), IWST-180129B,10
19	N030189-012A,SAMF	19	1000	Unknown		05/21/2018 12:14	Finished	SAMP,10mL
20	N030189-012AMS,MS	20	1000	Unknown		05/21/2018 12:23	Finished	MS (5ppb), IWST-180129B,10
21	N030402-001A,SAMF	21	1000	Unknown		05/21/2018 12:33	Finished	SAMP,0.5>10mL
22	N030402-001A,SAMF	23	1000	Unknown		05/21/2018 13:26	Finished	SAMP,10mL
23	CCV-1,CCV1,1,	24	1000	Unknown		05/21/2018 13:38	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	25	1000	Unknown		05/21/2018 13:47	Finished	CCB R180409B
25	N030402-001ADUP,D	26	1000	Unknown		05/21/2018 13:57	Finished	DUP,10mL
26	N030402-001AMS,MS	27	1000	Unknown		05/21/2018 14:06	Finished	MS (5ppb), IWST-180129B,10
27	N030402-001AMSD,M	28	1000	Unknown		05/21/2018 14:15	Finished	MSD (5ppb), IWST-180129B,10
28	CCV-2,CCV,1,	29	1000	Unknown		05/21/2018 14:25	Finished	CCV @5ppb, IWST-180129A
29	CCB-2,CCB,1,	30	1000	Unknown		05/21/2018 14:34	Finished	CCB R180409B
30	SHUTDOWN	31	1000	Unknown		05/21/2018 14:44	Finished	
31	Eluent: R180518A	32	1000	Unknown		n.a.	Finished	Eluent
32	PCR: R180516B	33	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180611A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/21/18 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/21/18 9:52 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:11 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:30 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	06/11/18 9:29 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	06/11/18 9:40 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	06/11/18 9:49 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	06/11/18 9:59 AM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	06/11/18 10:35 AM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	06/11/18 10:50 AM	Reported
16	MB-R124583	MBLK	1	Hexavalent Chromium	06/11/18 11:01 AM	Reported
17	LCS-R124583	LCS	1	Hexavalent Chromium	06/11/18 11:10 AM	Reported
18	N030686-001A	SAMP	1	Hexavalent Chromium	06/11/18 11:25 AM	Reported
19	N030686-001AMS	MS	1	Hexavalent Chromium	06/11/18 11:36 AM	Reported
20	N030686-002A	SAMP	100	Hexavalent Chromium	06/11/18 11:46 AM	Reported
21	N030686-002AMS	MS	100	Hexavalent Chromium	06/11/18 11:55 AM	Reported
22	N030687-001A	SAMP	1	Hexavalent Chromium	06/11/18 12:05 PM	Reported
23	N030687-002A	SAMP	50	Hexavalent Chromium	06/11/18 12:14 PM	Reported
24	N030687-003A	SAMP	1	Hexavalent Chromium	06/11/18 12:24 PM	Reported
25	N030687-004A	SAMP	200	Hexavalent Chromium	06/11/18 12:33 PM	Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	06/11/18 12:43 PM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	06/11/18 12:52 PM	Reported
28	N030687-005A	SAMP	50	Hexavalent Chromium	06/11/18 1:01 PM	Reported
29	N030687-006A	SAMP	50	Hexavalent Chromium	06/11/18 1:11 PM	Reported
30	N030687-007A	SAMP	1	Hexavalent Chromium	06/11/18 1:20 PM	Reported
31	N030687-008A	SAMP	1	Hexavalent Chromium	06/11/18 1:30 PM	Reported
32	N030637-002A	SAMP	1	Hexavalent Chromium	06/11/18 1:39 PM	Not Reported
33	N030637-002AMS	MS	1	Hexavalent Chromium	06/11/18 1:49 PM	Not Reported
34	N030676-003A	SAMP	1	Hexavalent Chromium	06/11/18 1:58 PM	Not Reported
35	N030676-003AMS	MS	1	Hexavalent Chromium	06/11/18 2:08 PM	Reported
36	N030686-002AMSD	MSD	100	Hexavalent Chromium	06/11/18 2:17 PM	~~Not~~ Reported
37	N030687-005ADUP	DUP	50	Hexavalent Chromium	06/11/18 2:27 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	06/11/18 2:36 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	06/11/18 2:46 PM	Reported
40	LCS-R124584	LCS	1	Hexavalent Chromium	06/11/18 2:59 PM	Reported
41	MB-R124584	MBLK	1	Hexavalent Chromium	06/11/18 3:10 PM	Reported
42	N030703-001A	SAMP	1	Hexavalent Chromium	06/11/18 3:19 PM	Reported

IC7 RBA 6/13/2018 2:45 PM

Nancy 6/20/2018

INJECTION LOG: 180611A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030703-002A	SAMP	1	Hexavalent Chromium	06/11/18 3:28 PM	Not Reported
44	N030704-002A	SAMP	1	Hexavalent Chromium	06/11/18 3:38 PM	Reported
45	N030689-001A	SAMP	1	Hexavalent Chromium	06/11/18 3:47 PM	Reported
46	N030689-001AMS	MS	1	Hexavalent Chromium	06/11/18 3:57 PM	Reported
47	N030689-001AMSD	MSD	1	Hexavalent Chromium	06/11/18 4:06 PM	Reported
48	N030704-001A	SAMP	1	Hexavalent Chromium	06/11/18 4:16 PM	Reported
49	N030704-001AMS	MS	1	Hexavalent Chromium	06/11/18 4:25 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	06/11/18 4:35 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	06/11/18 4:44 PM	Reported
52	N030689-002A	SAMP	1	Hexavalent Chromium	06/11/18 4:54 PM	Reported
53	N030689-003A	SAMP	1	Hexavalent Chromium	06/11/18 5:03 PM	Reported
54	N030689-004A	SAMP	1	Hexavalent Chromium	06/11/18 5:13 PM	Reported
55	N030689-004ADUP	DUP	1	Hexavalent Chromium	06/11/18 5:22 PM	Reported
56	N030689-005A	SAMP	1	Hexavalent Chromium	06/11/18 5:31 PM	Reported
57	N030689-006A	SAMP	1	Hexavalent Chromium	06/11/18 5:41 PM	Reported
58	N030689-007A	SAMP	1	Hexavalent Chromium	06/11/18 5:50 PM	Reported
59	N030689-008A	SAMP	1	Hexavalent Chromium	06/11/18 6:00 PM	Reported
60	N030689-009A	SAMP	1	Hexavalent Chromium	06/11/18 6:09 PM	Reported
61	N030704-003A	SAMP	1	Hexavalent Chromium	06/11/18 6:19 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	06/11/18 6:28 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	06/11/18 6:38 PM	Reported
64	N030638-001A	SAMP	1	Hexavalent Chromium	06/11/18 6:47 PM	Not Reported
65	N030638-001AMS	MS	1	Hexavalent Chromium	06/11/18 6:57 PM	Not Reported
66	N030638-002A	SAMP	1	Hexavalent Chromium	06/11/18 7:06 PM	Not Reported
67	N030638-002AMS	MS	1	Hexavalent Chromium	06/11/18 7:16 PM	Not Reported
68	N030638-004A	SAMP	1	Hexavalent Chromium	06/11/18 7:25 PM	Not Reported
69	N030638-004AMS	MS	1	Hexavalent Chromium	06/11/18 7:35 PM	Not Reported
70	N030646-007A	SAMP	1	Hexavalent Chromium	06/11/18 7:44 PM	Not Reported
71	N030646-007AMS	MS	1	Hexavalent Chromium	06/11/18 7:53 PM	Not Reported
72	N030646-009A	SAMP	1	Hexavalent Chromium	06/11/18 8:03 PM	Not Reported
73	N030646-009AMS	MS	1	Hexavalent Chromium	06/11/18 8:12 PM	Not Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	06/11/18 8:22 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	06/11/18 8:31 PM	Reported
76	N030703-002A	SAMP	20	Hexavalent Chromium	06/11/18 8:41 PM	Reported
77	CCV-7	CCV	1	Hexavalent Chromium	06/11/18 8:50 PM	Reported
78	CCB-7	CCB	1	Hexavalent Chromium	06/11/18 9:00 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180611A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Jun/18 17:18:24**
No. of Injections:	**81**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/21/2018 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		05/21/2018 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/21/2018 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/21/2018 09:52	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/21/2018 10:01	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/21/2018 10:11	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/21/2018 10:20	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/21/2018 10:30	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/21/2018 10:39	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		06/11/2018 09:29	Finished	20 ppb, IWST-180129A
11	BLANK	2	1000	Unknown		06/11/2018 09:40	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		06/11/2018 09:49	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		06/11/2018 09:59	Finished	PQL @ 0.2ppb
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		06/11/2018 10:35	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		06/11/2018 10:50	Finished	CCB R180531A
16	MB-H2O,MBLK,1,	6	1000	Unknown		06/11/2018 11:01	Finished	MB R180531A
17	LCS-H2O,LCS,1,	7	1000	Unknown		06/11/2018 11:10	Finished	LCS, IWST-180129B
18	N030686-001A,SAMF	1	1000	Unknown		06/11/2018 11:25	Finished	SAMP,10mL
19	N030686-001AMS,MS	2	1000	Unknown		06/11/2018 11:36	Finished	MS (1ppb), IWST-180129B,10
20	N030686-002A,SAMF	3	1000	Unknown		06/11/2018 11:46	Finished	SAMP,0.1>10mL
21	N030686-002AMS,MS	4	1000	Unknown		06/11/2018 11:55	Finished	MS (5ppb), IWST-180129B,0.1
22	N030687-001A,SAMF	5	1000	Unknown		06/11/2018 12:05	Finished	SAMP,10mL
23	N030687-002A,SAMF	6	1000	Unknown		06/11/2018 12:14	Finished	SAMP,0.2>10mL
24	N030687-003A,SAMF	7	1000	Unknown		06/11/2018 12:24	Finished	SAMP,10mL
25	N030687-004A,SAMF	8	1000	Unknown		06/11/2018 12:33	Finished	SAMP,0.05>10mL
26	CCV-2,CCV1,1,	9	1000	Unknown		06/11/2018 12:43	Finished	CCV @10ppb, IWST-180129A
27	CCB-2,CCB,1,	10	1000	Unknown		06/11/2018 12:52	Finished	CCB R180531A
28	N030687-005A,SAMF	11	1000	Unknown		06/11/2018 13:01	Finished	SAMP,0.2>10mL
29	N030687-006A,SAMF	12	1000	Unknown		06/11/2018 13:11	Finished	SAMP,0.2>10mL
30	N030687-007A,SAMF	13	1000	Unknown		06/11/2018 13:20	Finished	SAMP,10mL
31	N030687-008A,SAMF	14	1000	Unknown		06/11/2018 13:30	Finished	SAMP,10mL
32	N030637-002A,SAMF	15	1000	Unknown		06/11/2018 13:39	Finished	SAMP,10mL
33	N030637-002AMS,MS	16	1000	Unknown		06/11/2018 13:49	Finished	MS (5ppb), IWST-180129B,10
34	N030676-003A,SAMF	17	1000	Unknown		06/11/2018 13:58	Finished	SAMP,10mL
35	N030676-003AMS,MS	18	1000	Unknown		06/11/2018 14:08	Finished	MS (5ppb), IWST-180129B,10
36	N030686-002AMSD,M	19	1000	Unknown		06/11/2018 14:17	Finished	MSD (5ppb), IWST-180129B,0.
37	N030687-005ADUP,D	20	1000	Unknown		06/11/2018 14:27	Finished	DUP,0.2>10mL
38	CCV-3,CCV,1,	21	1000	Unknown		06/11/2018 14:36	Finished	CCV @5ppb, IWST-180129A
39	CCB-3,CCB,1,	22	1000	Unknown		06/11/2018 14:46	Finished	CCB R180531A
40	LCS-2,LCS,1,	1	1000	Unknown		06/11/2018 14:59	Finished	LCS, IWST-180129B
41	MB-2,MBLK,1,	2	1000	Unknown		06/11/2018 15:10	Finished	MB R180531A
42	N030703-001A,SAMF	3	1000	Unknown		06/11/2018 15:19	Finished	SAMP,10mL
43	N030703-002A,SAMF	4	1000	Unknown		06/11/2018 15:28	Finished	SAMP,10mL
44	N030704-002A,SAMF	5	1000	Unknown		06/11/2018 15:38	Finished	SAMP,10mL
45	N030689-001A,SAMF	6	1000	Unknown		06/11/2018 15:47	Finished	SAMP,10mL
46	N030689-001AMS,MS	7	1000	Unknown		06/11/2018 15:57	Finished	MS (5ppb), IWST-180129B,10
47	N030689-001AMSD,M	8	1000	Unknown		06/11/2018 16:06	Finished	MSD (5ppb), IWST-180129B,10
48	N030704-001A,SAMF	9	1000	Unknown		06/11/2018 16:16	Finished	SAMP,10mL
49	N030704-001AMS,MS	10	1000	Unknown		06/11/2018 16:25	Finished	MS (1ppb), IWST-180129B,10
50	CCV-4,CCV1,1,	11	1000	Unknown		06/11/2018 16:35	Finished	CCV @10ppb, IWST-180129A
51	CCB-4,CCB,1,	12	1000	Unknown		06/11/2018 16:44	Finished	CCB R180531A
52	N030689-002A,SAMF	13	1000	Unknown		06/11/2018 16:54	Finished	SAMP,10mL
53	N030689-003A,SAMF	14	1000	Unknown		06/11/2018 17:03	Finished	SAMP,10mL
54	N030689-004A,SAMF	15	1000	Unknown		06/11/2018 17:13	Finished	SAMP,10mL
55	N030689-004ADUP,D	16	1000	Unknown		06/11/2018 17:22	Finished	DUP,10mL
56	N030689-005A,SAMF	17	1000	Unknown		06/11/2018 17:31	Finished	SAMP,10mL
57	N030689-006A,SAMF	18	1000	Unknown		06/11/2018 17:41	Finished	SAMP,10mL
58	N030689-007A,SAMF	19	1000	Unknown		06/11/2018 17:50	Finished	SAMP,10mL
59	N030689-008A,SAMF	20	1000	Unknown		06/11/2018 18:00	Finished	SAMP,10mL
60	N030689-009A,SAMF	21	1000	Unknown		06/11/2018 18:09	Finished	SAMP,10mL

61	N030704-003A,SAMF	22	1000	Unknown		06/11/2018 18:19	Finished	SAMP,10mL
62	CCV-5,CCV,1,	23	1000	Unknown		06/11/2018 18:28	Finished	CCV @5ppb, IWST-180129A
63	CCB-5,CCB,1,	24	1000	Unknown		06/11/2018 18:38	Finished	CCB R180531A
64	N030638-001A,SAMF	25	1000	Unknown		06/11/2018 18:47	Finished	SAMP,10mL
65	N030638-001AMS,MS	26	1000	Unknown		06/11/2018 18:57	Finished	MS (5ppb), IWST-180129B,10
66	N030638-002A,SAMF	27	1000	Unknown		06/11/2018 19:06	Finished	SAMP,10mL
67	N030638-002AMS,MS	28	1000	Unknown		06/11/2018 19:16	Finished	MS (1ppb), IWST-180129B,10
68	N030638-004A,SAMF	29	1000	Unknown		06/11/2018 19:25	Finished	SAMP,10mL
69	N030638-004AMS,MS	30	1000	Unknown		06/11/2018 19:35	Finished	MS (1ppb), IWST-180129B,10
70	N030646-007A,SAMF	31	1000	Unknown		06/11/2018 19:44	Finished	SAMP,10mL
71	N030646-007AMS,MS	32	1000	Unknown		06/11/2018 19:53	Finished	MS (1ppb), IWST-180129B,10
72	N030646-009A,SAMF	33	1000	Unknown		06/11/2018 20:03	Finished	SAMP,10mL
73	N030646-009AMS,MS	34	1000	Unknown		06/11/2018 20:12	Finished	MS (1ppb), IWST-180129B,10
74	CCV-6,CCV1,1,	35	1000	Unknown		06/11/2018 20:22	Finished	CCV @10ppb, IWST-180129A
75	CCB-6,CCB,1,	36	1000	Unknown		06/11/2018 20:31	Finished	CCB R180531A
76	N030703-002A,SAMF	37	1000	Unknown		06/11/2018 20:41	Finished	SAMP,0.5>10mL
77	CCV-7,CCV,1,	38	1000	Unknown		06/11/2018 20:50	Finished	CCV @5ppb, IWST-180129A
78	CCB-7,CCB,1,	39	1000	Unknown		06/11/2018 21:00	Finished	CCB R180531A
79	SHUTDOWN	40	1000	Unknown		06/11/2018 21:09	Finished	
80	Eluent: R180608A	41	1000	Unknown		n.a.	Finished	Eluent
81	PCR: R180611A	42	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 6/7/18
Time Prepared: 1501H
Prepared By: NBA

Reagent ID:
Sulfuric Acid: 10017
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M80606A
NH4OH + NH4SO4 buffer: M80523C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M030682-001A	7.11	9.31	~250ml	~250ml	+5ml M80523C	
2)	2A	7.05	9.32				
3)	3A	7.26	9.34				
4)	4A	7.47	9.36				
5)	5A	7.39	9.36				
6)	6A	7.53	9.33				
7)	7A	7.31	9.31				
8)	8A	7.44	9.30				
9)	9A	7.52	9.34				
10)	10A	7.25	9.36				
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 6/8/18
Time Prepared: 0849H
Prepared By: NBA

Slope: 97.5%
pH 4: 4.01 @ 25.0°C
7: 6.99 @ 25.0°C
10: 9.99 @ 25.0°C
LS: 7.00 @ 25.0°C

Reagent ID:
Sulfuric Acid: 10017
Diphenylcarbazide: CINV-171116A
NH4OH + NH4SO4 eluent: M80608A
NH4OH + NH4SO4 buffer: M80531A

6N NaOH: M71225A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M030688-001A	9.18	9.37	~250ml	~250ml	+3 drops NaOH	
2)	M030686-1A	9.20	9.59			+4 " "	
3)	2A	9.21	9.51			+4 " "	
4)	M030687-1A	9.50	–				
5)	2A	9.37	–				
6)	3A	9.16	9.45			+4 " "	
7)	4A	9.35	–				
8)	5A	9.34	–				
9)	6A	9.48	–				
10)	7A	9.61	–				
11)	8A	9.57	–				
12)	M030689-1A	9.41	–				
13)	2A	9.52	–				
14)	3A	9.42	–				
15)	4A	9.37	–				
	5A	9.49					

Logbook No. 14

nba 6/18/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 5/21/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0627	0.2668	1.3224	2.6085	3.9312	5.1733	0.9999

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124583**
Client ID: **ICV** Batch ID: **R124583** TestNo: **EPA 218.6** Analysis Date: **5/21/2018** SeqNo: **3051109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.175	0.20	5.000	0	103	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124583**
Client ID: **ZZZZZZ** Batch ID: **R124583** TestNo: **EPA 218.6** Analysis Date: **5/21/2018** SeqNo: **3051110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.211	0.20	0.2000	0	106	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124583**
Client ID: **CCV** Batch ID: **R124583** TestNo: **EPA 218.6** Analysis Date: **6/11/2018** SeqNo: **3051112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.201	0.20	5.000	0	104	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124583**
Client ID: **ZZZZZZ** Batch ID: **R124583** TestNo: **EPA 218.6** Analysis Date: **6/11/2018** SeqNo: **3051113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.238	0.20	0.2000	0	119	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124583**
Client ID: **ZZZZZZ** Batch ID: **R124583** TestNo: **EPA 218.6** Analysis Date: **6/11/2018** SeqNo: **3051125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.275	0.20	10.00	0	103	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE** Units: **µg/L**	Prep Date:	RunNo: **124583**
Client ID: **CCV**	Batch ID: **R124583**	TestNo: **EPA 218.6**	Analysis Date: **6/11/2018**	SeqNo: **3051133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.137	0.20	5.000	0	103	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124583**
Client ID: **ICB** Batch ID: **R124583** TestNo: **EPA 218.6** Analysis Date: **5/21/2018** SeqNo: **3051111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124583**
Client ID: **CCB** Batch ID: **R124583** TestNo: **EPA 218.6** Analysis Date: **6/11/2018** SeqNo: **3051114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.068	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124583**
Client ID: **CCB** Batch ID: **R124583** TestNo: **EPA 218.6** Analysis Date: **6/11/2018** SeqNo: **3051126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124583**
Client ID: **CCB** Batch ID: **R124583** TestNo: **EPA 218.6** Analysis Date: **6/11/2018** SeqNo: **3051134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

CCB-1 has hit greater than 0.02 ppb. Sample results were either non-detect (ND) or greater than 5x the ~~Method Blank~~ CCB-1 concentration therefore, reanalysis of the samples was not necessary.

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Nancy 6/20/2018

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 6/11/2018

Sample Name	Retention Time		Evaluation
ICV	4.198		
CCV-1	4.173		
CCV-2	4.173		
CCV-3	4.181		
CCV-4	4.181		
CCV-5	4.181		
CCV-6	4.181		
CCV-7	4.190		
Average	4.180		
Actual RT Window	4.100 -	4.260	
Applied RT Window	3.980 -	4.380	
MB-R124583	4.156		PASS
LCS-R124583	4.173		PASS
N030686-001A	4.123		PASS
N030686-001AMS	4.140		PASS
N030686-002A	4.173		PASS
N030686-002AMS	4.173		PASS
N030687-001A	4.173		PASS
N030687-002A	4.173		PASS
N030687-003A	4.165		PASS
N030687-004A	4.181		PASS
N030687-005A	4.173		PASS
N030687-006A	4.173		PASS
N030687-007A	4.156		PASS
N030687-008A	4.156		PASS
N030637-002A	4.098		PASS
N030637-002AMS	4.098		PASS
N030676-003A	4.181		PASS
N030676-003AMS	4.181		PASS
N030686-002AMSD	4.181		PASS
N030687-005ADUP	4.181		PASS

rba 6/18/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 6/11/2018

Sample Name	Retention Time		Evaluation
ICV	4.198		
CCV-1	4.173		
CCV-2	4.173		
CCV-3	4.181		
CCV-4	4.181		
CCV-5	4.181		
CCV-6	4.181		
CCV-7	4.190		
Average	4.180		
Actual RT Window	4.100 -	4.260	
Applied RT Window	3.980 -	4.380	
LCS-R124584	4.181		PASS
MB-R124584	N.A.		N.A.
N030703-001A	4.165		PASS
N030703-002A	4.173		PASS
N030704-002A	4.165		PASS
N030689-001A	4.181		PASS
N030689-001AMS	4.181		PASS
N030689-001AMSD	4.181		PASS
N030704-001A	4.173		PASS
N030704-001AMS	4.165		PASS
N030689-002A	4.181		PASS
N030689-003A	4.181		PASS
N030689-004A	4.173		PASS
N030689-004ADUP	4.173		PASS
N030689-005A	4.156		PASS
N030689-006A	4.173		PASS
N030689-007A	4.031		PASS
N030689-008A	4.173		PASS
N030689-009A	N.A.		N.A.
N030704-003A	N.A.		N.A.
N030638-001A	4.181		PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 6/11/2018

Sample Name	Retention Time		Evaluation
ICV	4.198		
CCV-1	4.173		
CCV-2	4.173		
CCV-3	4.181		
CCV-4	4.181		
CCV-5	4.181		
CCV-6	4.181		
CCV-7	4.190		
Average	4.180		
Actual RT Window	4.100 -	4.260	
Applied RT Window	3.980 -	4.380	
N030638-001AMS	4.181		PASS
N030638-002A	N.A.		N.A.
N030638-002AMS	4.181		PASS
N030638-004A	4.173		PASS
N030638-004AMS	4.181		PASS
N030646-007A	4.048		PASS
N030646-007AMS	4.056		PASS
N030646-009A	4.048		PASS
N030646-009AMS	4.048		PASS
N030703-002A	4.181		PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

ASSET LABORATORIES

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

LOD & PQL Verification 2018 (1st Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 3/21/2018
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	**MDL**	**LOD Spike Conc., µg/L**	**LOD actual Conc., µg/L**
Hexavalent Chromium	0.0331	0.100	0.116

Compound	**PQL**	**PQL Spike Conc., µg/L**	**PQL actual Conc., µg/L**	**% Recovery**
Hexavalent Chromium	0.200	0.200	0.201	**100**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180521A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/21/18 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/21/18 9:52 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:11 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:30 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/21/18 10:49 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/21/18 10:58 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/21/18 11:08 AM	Reported
13	MB-R124155	MBLK	1	Hexavalent Chromium	05/21/18 11:17 AM	Reported
14	LCS-R124155	LCS	1	Hexavalent Chromium	05/21/18 11:27 AM	Reported
15	N030123-015A	SAMP	5	Hexavalent Chromium	05/21/18 11:36 AM	Not Reported
16	N030123-015AMS	MS	5	Hexavalent Chromium	05/21/18 11:45 AM	Not Reported
17	N030189-011A	SAMP	1	Hexavalent Chromium	05/21/18 11:55 AM	Not Reported
18	N030189-011AMS	MS	1	Hexavalent Chromium	05/21/18 12:04 PM	Not Reported
19	N030189-012A	SAMP	1	Hexavalent Chromium	05/21/18 12:14 PM	Not Reported
20	N030189-012AMS	MS	1	Hexavalent Chromium	05/21/18 12:23 PM	Not Reported
21	N030402-001A	SAMP	20	Hexavalent Chromium	05/21/18 12:33 PM	Not Reported
22	N030402-001A	SAMP	1	Hexavalent Chromium	05/21/18 1:26 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	05/21/18 1:38 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	05/21/18 1:47 PM	Reported
25	N030402-001ADUP	DUP	1	Hexavalent Chromium	05/21/18 1:57 PM	Reported
26	N030402-001AMS	MS	1	Hexavalent Chromium	05/21/18 2:06 PM	Reported
27	N030402-001AMSD	MSD	1	Hexavalent Chromium	05/21/18 2:15 PM	Reported
28	CCV-2	CCV	1	Hexavalent Chromium	05/21/18 2:25 PM	Reported
29	CCB-2	CCB	1	Hexavalent Chromium	05/21/18 2:34 PM	Reported

rba 5/28/2018

Nancy 5/30/2018

Injection Log Summary

Sequence Details

Name:	**IC-07_180521A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**21/May/18 15:44:36**
No. of Injections:	**32**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/21/2018 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		05/21/2018 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/21/2018 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/21/2018 09:52	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/21/2018 10:01	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/21/2018 10:11	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/21/2018 10:20	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/21/2018 10:30	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/21/2018 10:39	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		05/21/2018 10:49	Finished	CCV @5ppb, IWST-180129A
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		05/21/2018 10:58	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		05/21/2018 11:08	Finished	CCB R180409B
13	MB-H2O,MBLK,1,	13	1000	Unknown		05/21/2018 11:17	Finished	MB R180409B
14	LCS-H2O,LCS,1,	14	1000	Unknown		05/21/2018 11:27	Finished	LCS, IWST-180129B
15	N030123-015A,SAMF	15	1000	Unknown		05/21/2018 11:36	Finished	SAMP,2>10mL
16	N030123-015AMS,MS	16	1000	Unknown		05/21/2018 11:45	Finished	MS (1ppb), IWST-180129B,2>1
17	N030189-011A,SAMF	17	1000	Unknown		05/21/2018 11:55	Finished	SAMP,10mL
18	N030189-011AMS,MS	18	1000	Unknown		05/21/2018 12:04	Finished	MS (1ppb), IWST-180129B,10
19	N030189-012A,SAMF	19	1000	Unknown		05/21/2018 12:14	Finished	SAMP,10mL
20	N030189-012AMS,MS	20	1000	Unknown		05/21/2018 12:23	Finished	MS (5ppb), IWST-180129B,10
21	N030402-001A,SAMF	21	1000	Unknown		05/21/2018 12:33	Finished	SAMP,0.5>10mL
22	N030402-001A,SAMF	23	1000	Unknown		05/21/2018 13:26	Finished	SAMP,10mL
23	CCV-1,CCV1,1,	24	1000	Unknown		05/21/2018 13:38	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	25	1000	Unknown		05/21/2018 13:47	Finished	CCB R180409B
25	N030402-001ADUP,D	26	1000	Unknown		05/21/2018 13:57	Finished	DUP,10mL
26	N030402-001AMS,MS	27	1000	Unknown		05/21/2018 14:06	Finished	MS (5ppb), IWST-180129B,10
27	N030402-001AMSD,M	28	1000	Unknown		05/21/2018 14:15	Finished	MSD (5ppb), IWST-180129B,1(
28	CCV-2,CCV,1,	29	1000	Unknown		05/21/2018 14:25	Finished	CCV @5ppb, IWST-180129A
29	CCB-2,CCB,1,	30	1000	Unknown		05/21/2018 14:34	Finished	CCB R180409B
30	SHUTDOWN	31	1000	Unknown		05/21/2018 14:44	Finished	
31	Eluent: R180518A	32	1000	Unknown		n.a.	Finished	Eluent
32	PCR: R180516B	33	1000	Unknown		n.a.	Finished	Post-Column Reagent

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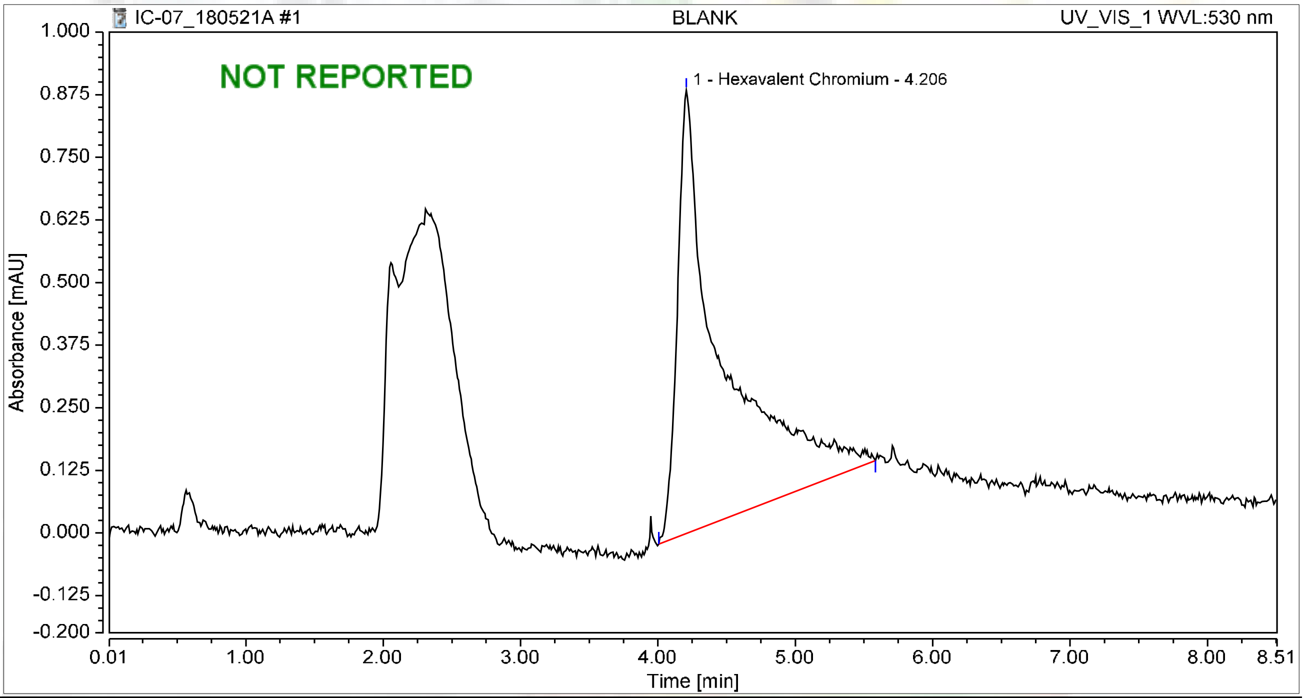
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

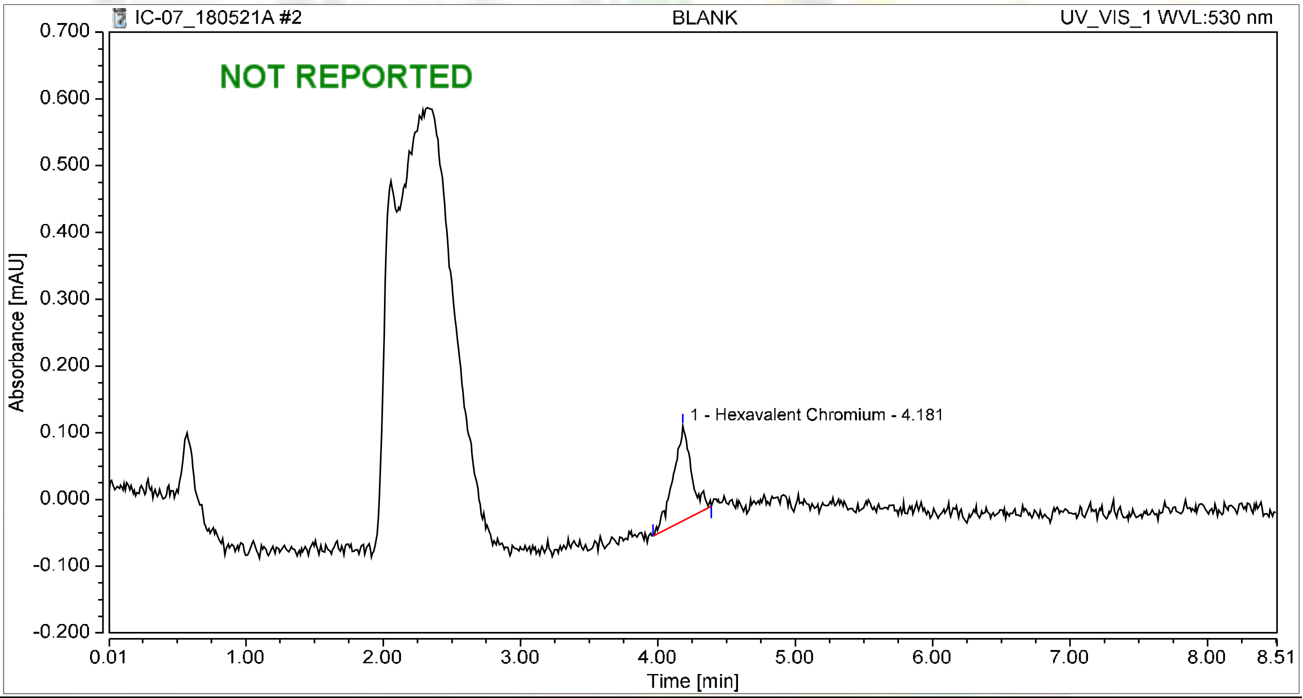
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.337	0.885	100.00	100.00	1.2960
Total:			**0.337**	**0.885**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

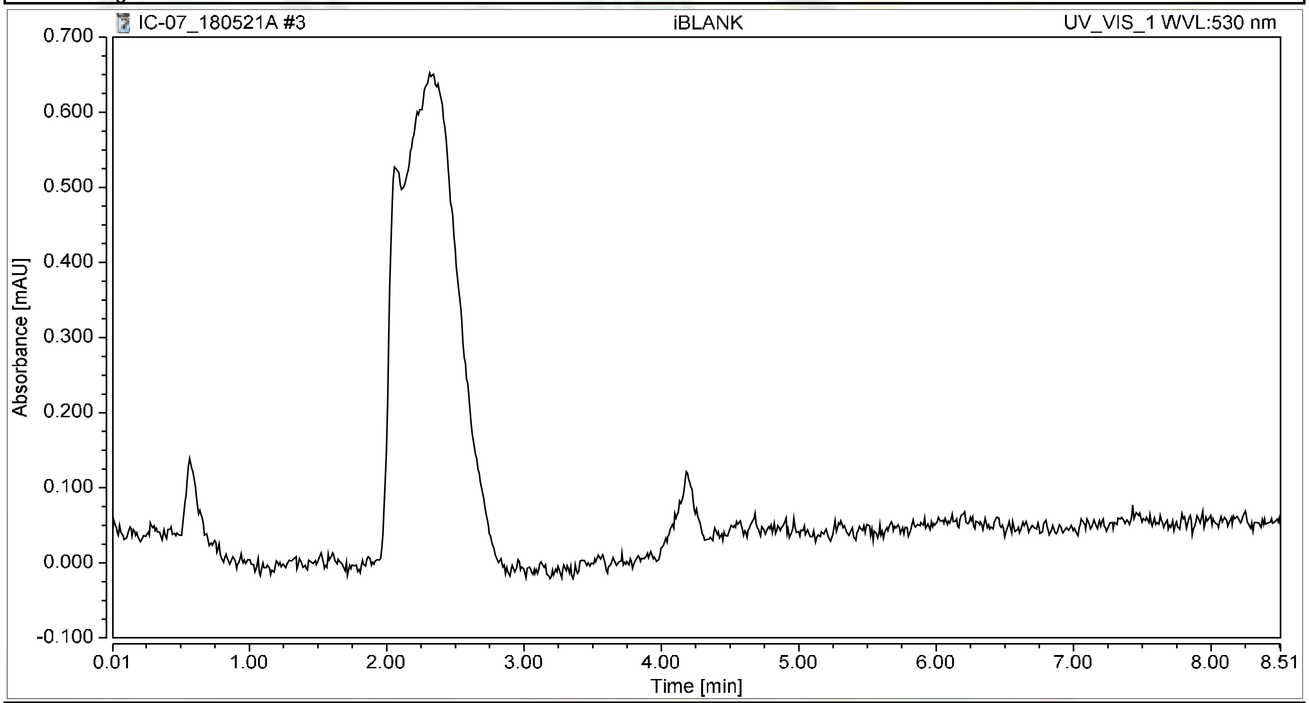
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.022	0.142	100.00	100.00	0.0836
Total:			**0.022**	**0.142**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

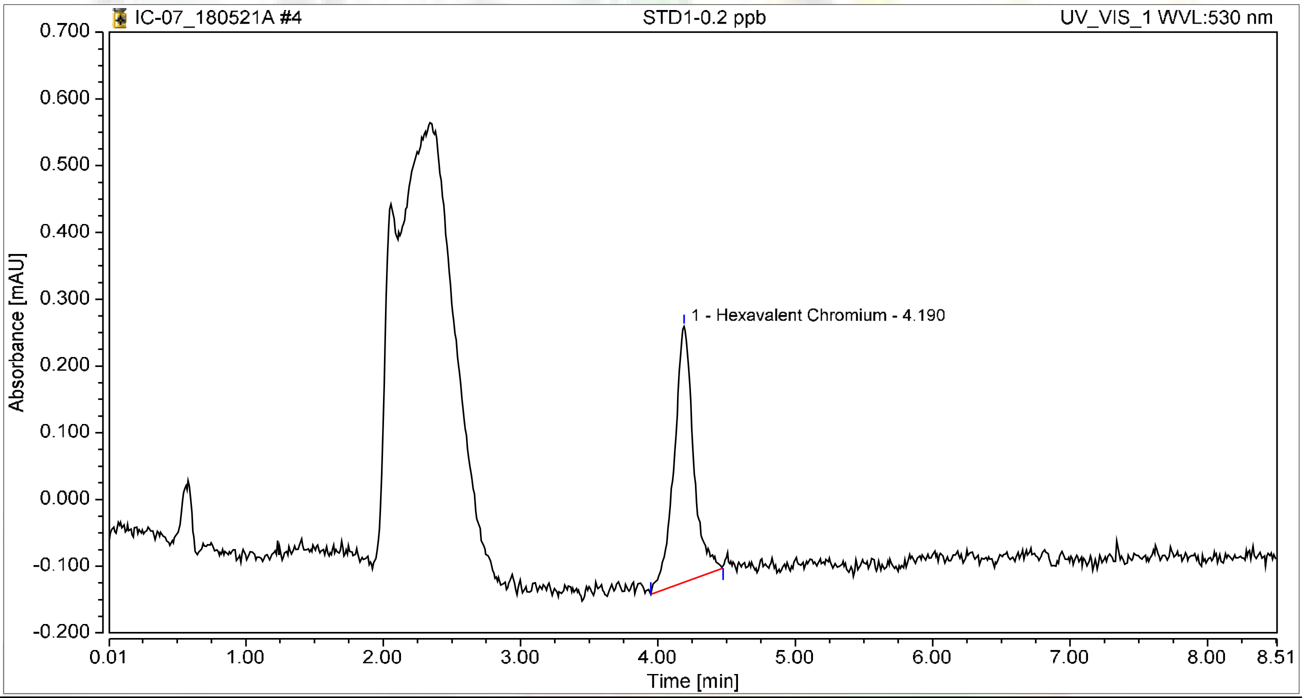
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 09:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

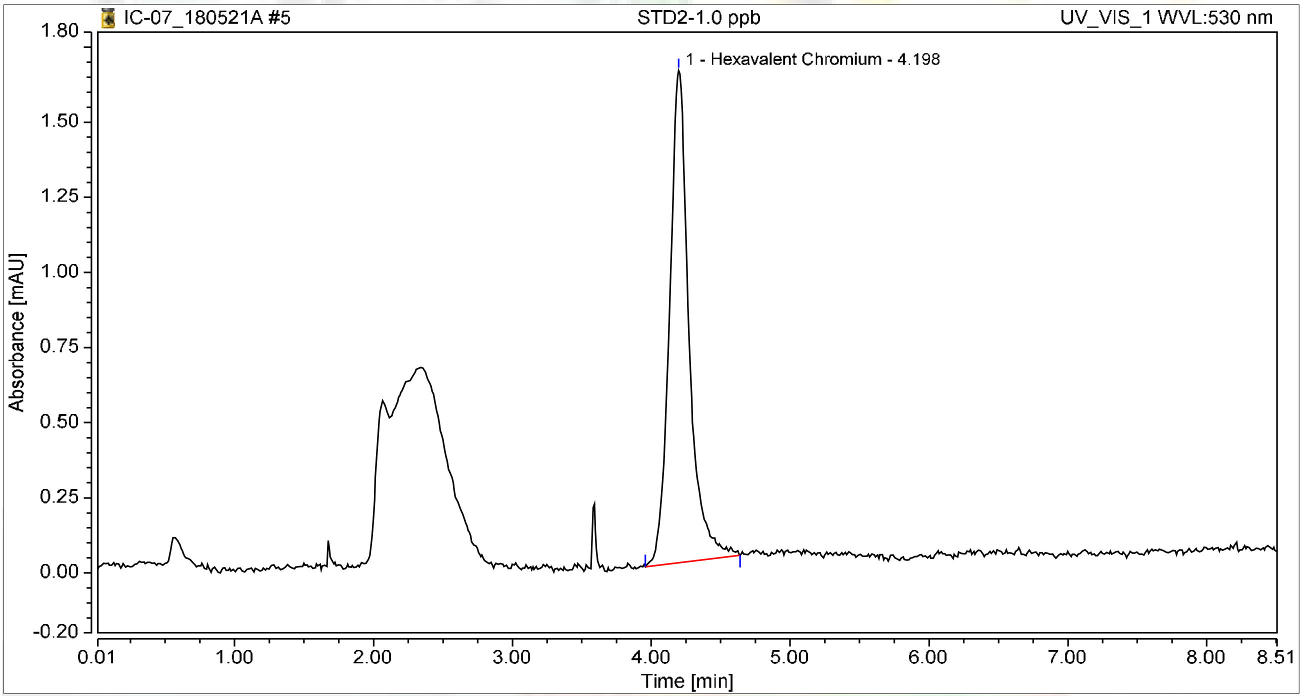
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.063	0.383	100.00	100.00	0.2408
Total:			**0.063**	**0.383**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

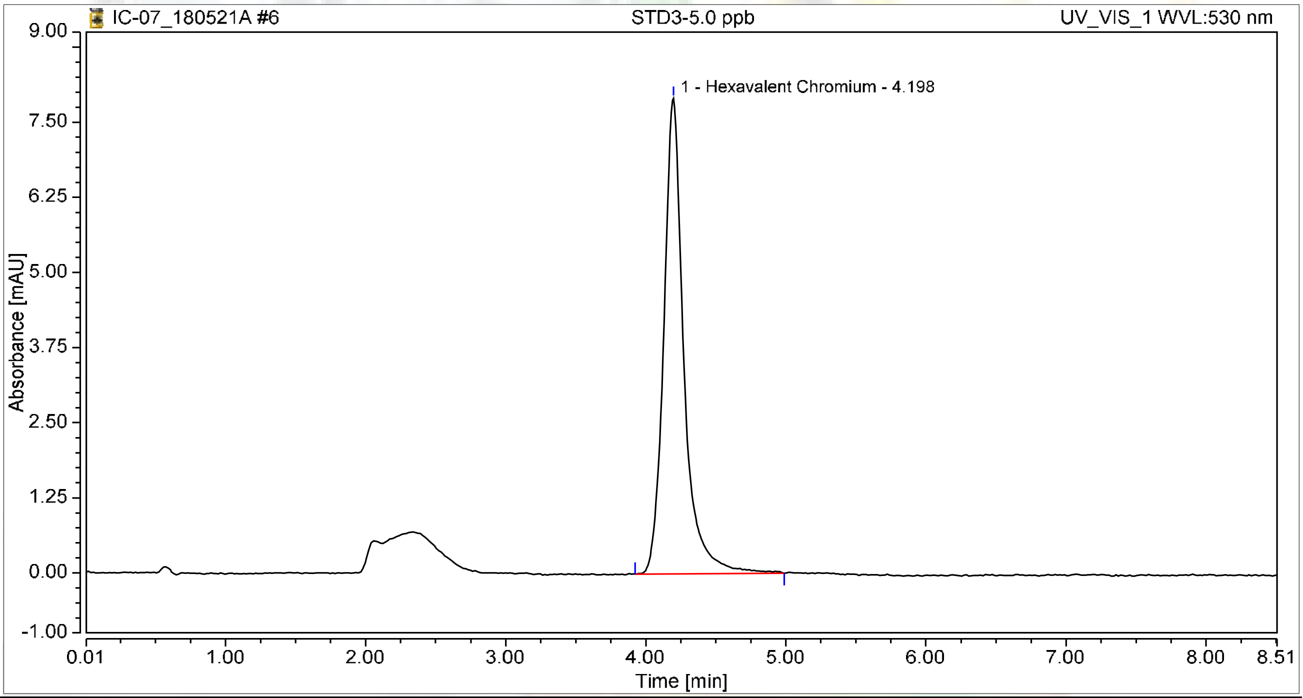
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.267	1.639	100.00	100.00	1.0254
Total:			**0.267**	**1.639**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

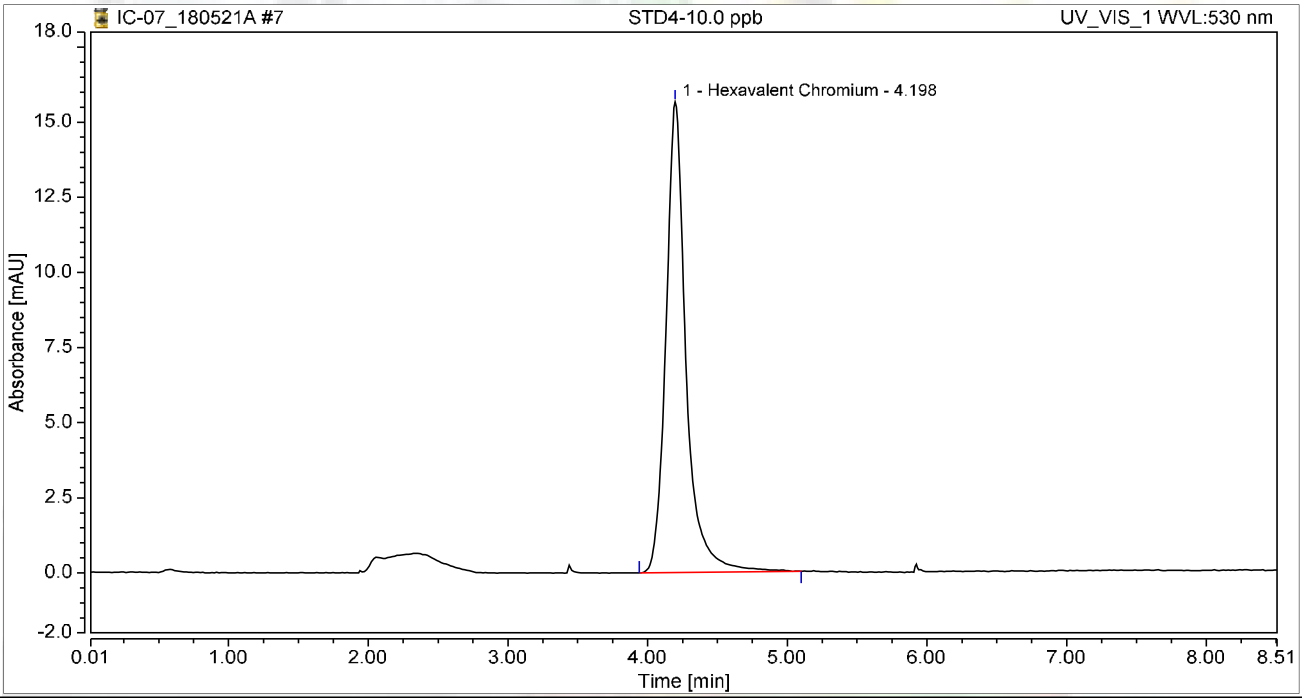
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.322	7.919	100.00	100.00	5.0827
Total:			**1.322**	**7.919**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

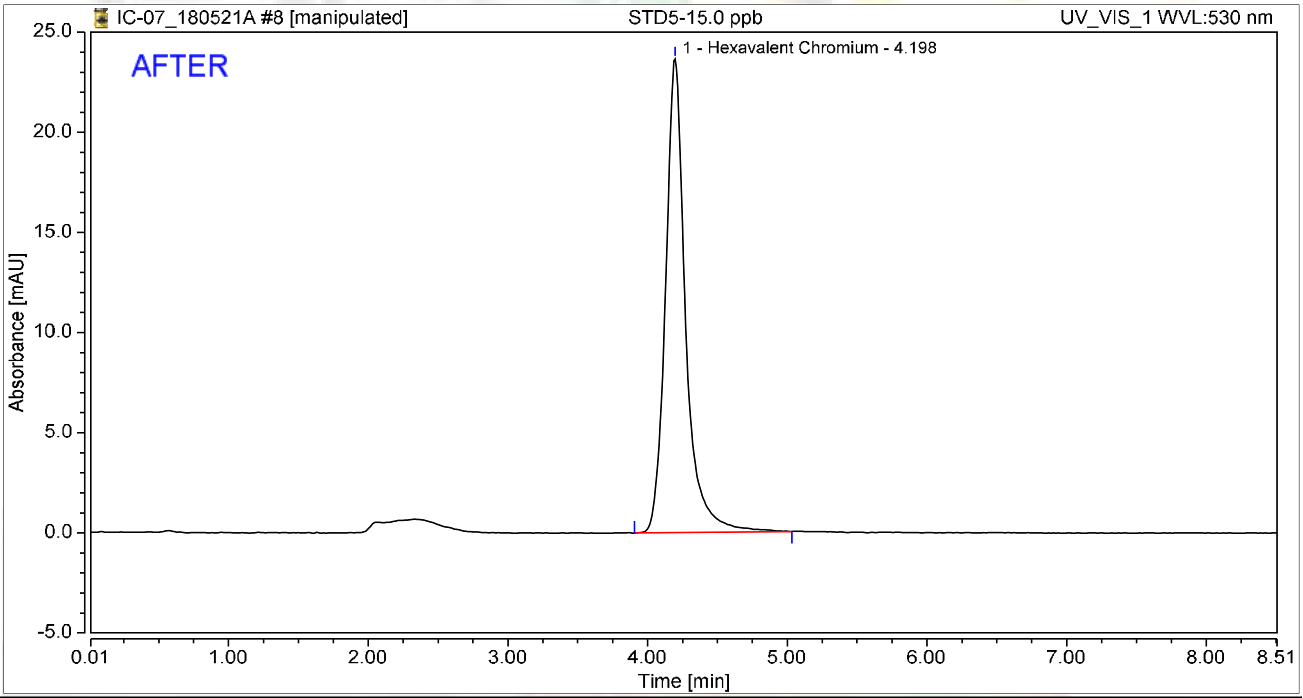
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	2.608	15.671	100.00	100.00	10.0254
Total:			**2.608**	**15.671**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	3.931	23.650	100.00	100.00	15.1090
Total:			**3.931**	**23.650**	**100.00**	**100.00**	

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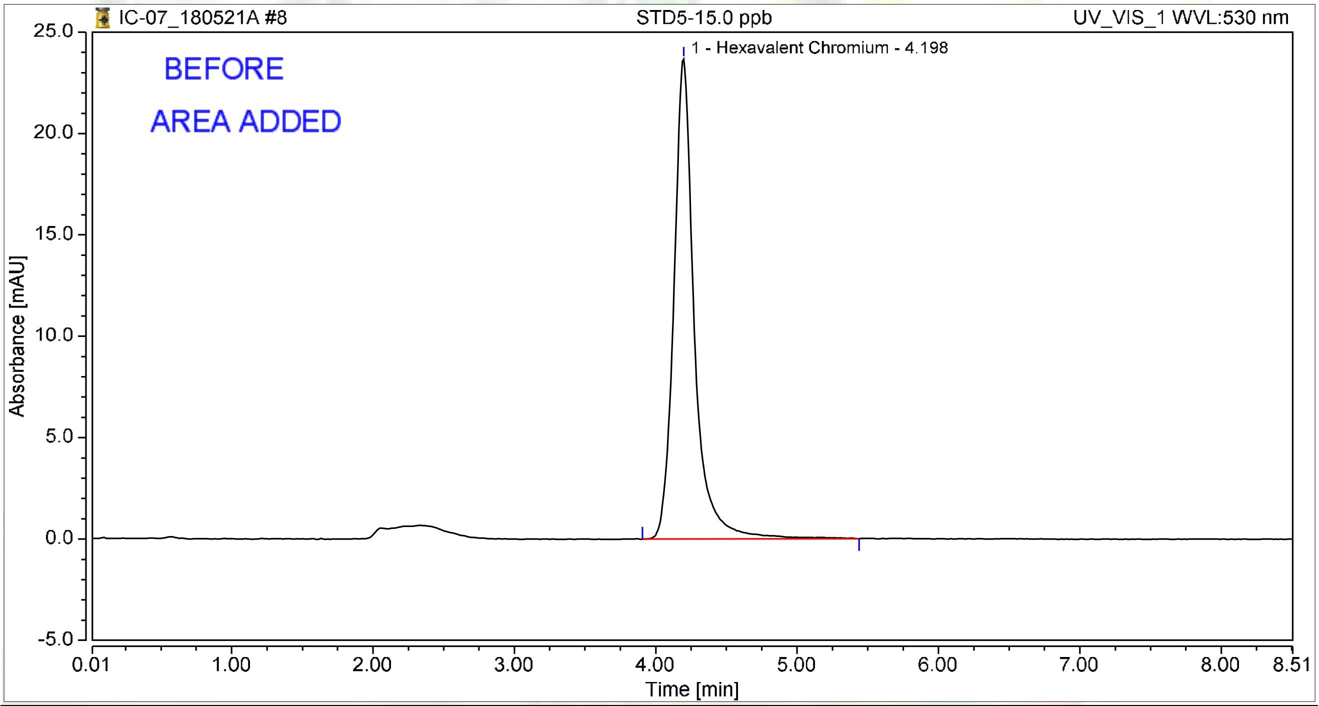
Reviewed by:
Nancy 5/30/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	3.988	23.668	100.00	100.00	15.1521
Total:			**3.988**	**23.668**	**100.00**	**100.00**	

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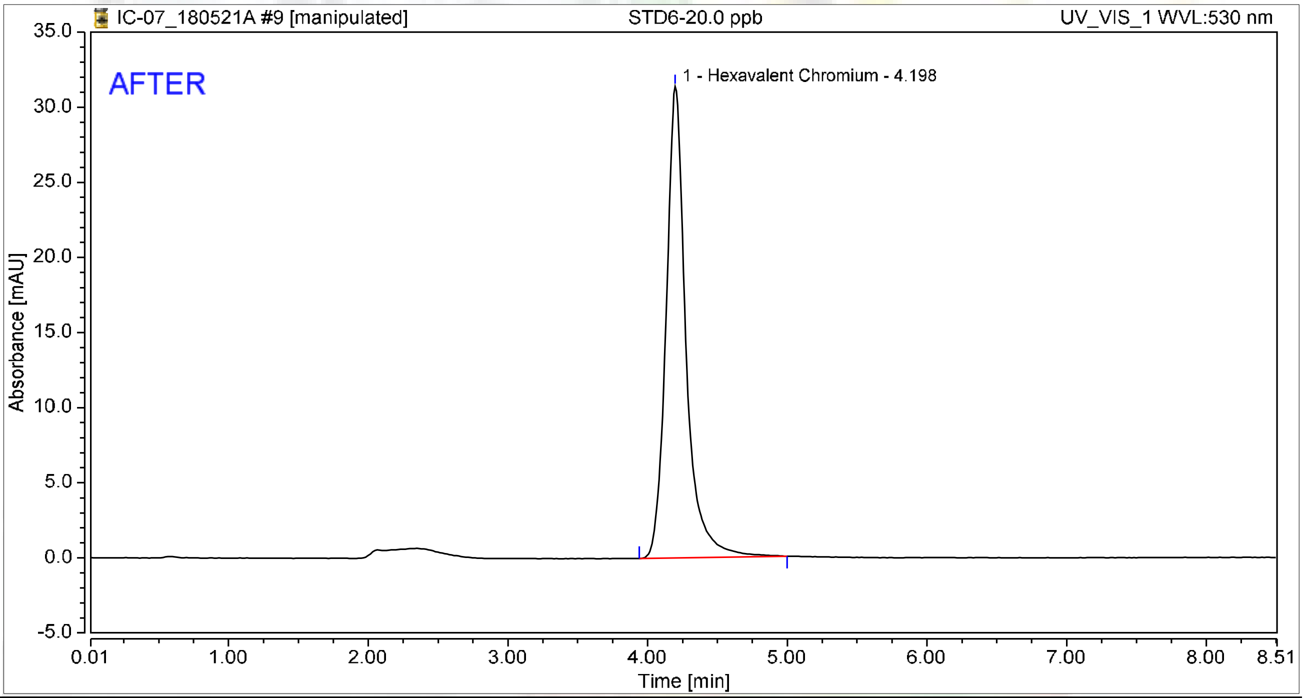
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	5.173	31.358	100.00	100.00	19.8832
Total:			**5.173**	**31.358**	**100.00**	**100.00**	

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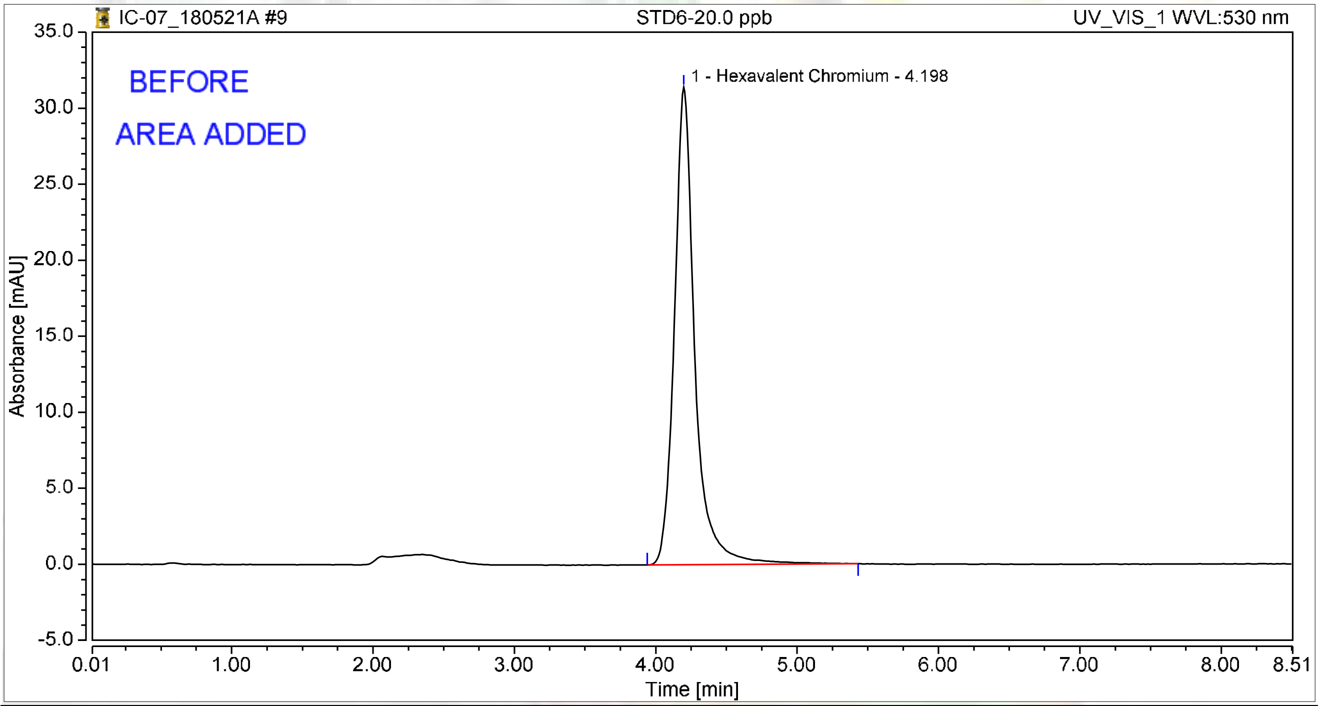
Reviewed by:
Nancy 5/30/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	5.243	31.381	100.00	100.00	19.9231
Total:			**5.243**	**31.381**	**100.00**	**100.00**	

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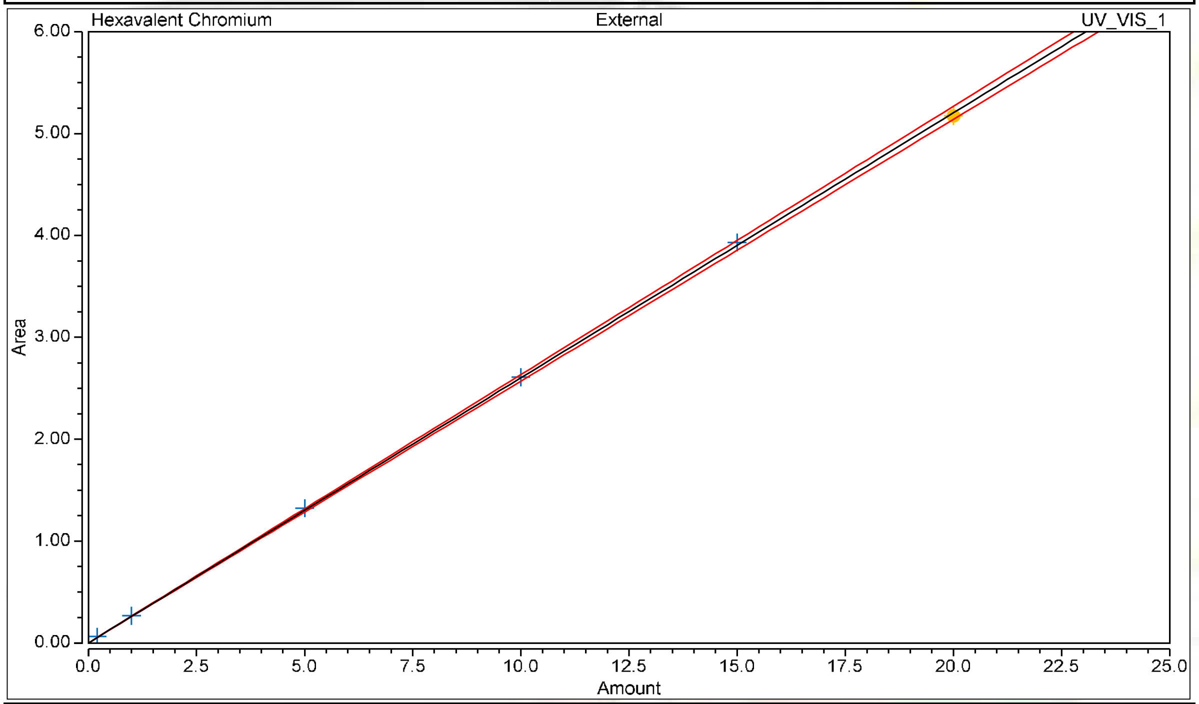
Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2602
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99989

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

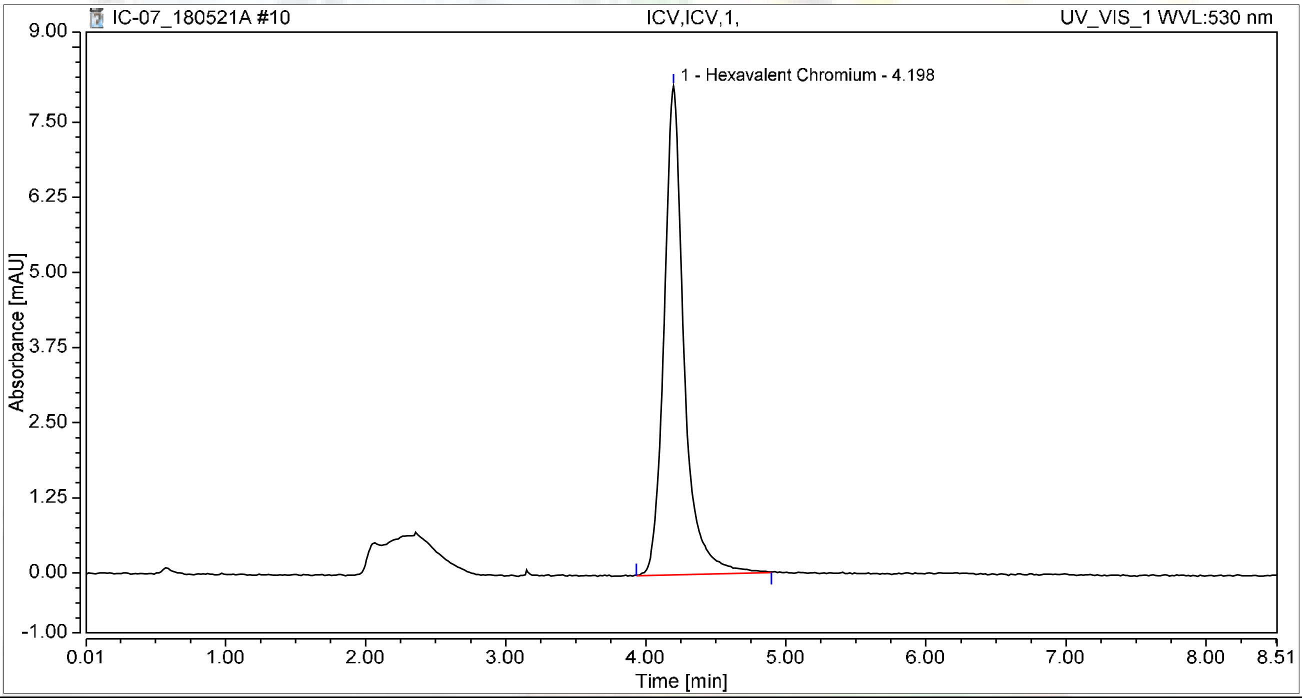
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0627	0.063	0.383
5	STD2-1.0 ppb	02	1.0000	0.2668	0.267	1.639
6	STD3-5.0 ppb	03	5.0000	1.3224	1.322	7.919
7	STD4-10.0 ppb	04	10.0000	2.6085	2.608	15.671
8	STD5-15.0 ppb	05	15.0000	3.9312	3.931	23.650
9	STD6-20.0 ppb	06	20.0000	5.1733	5.173	31.358

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

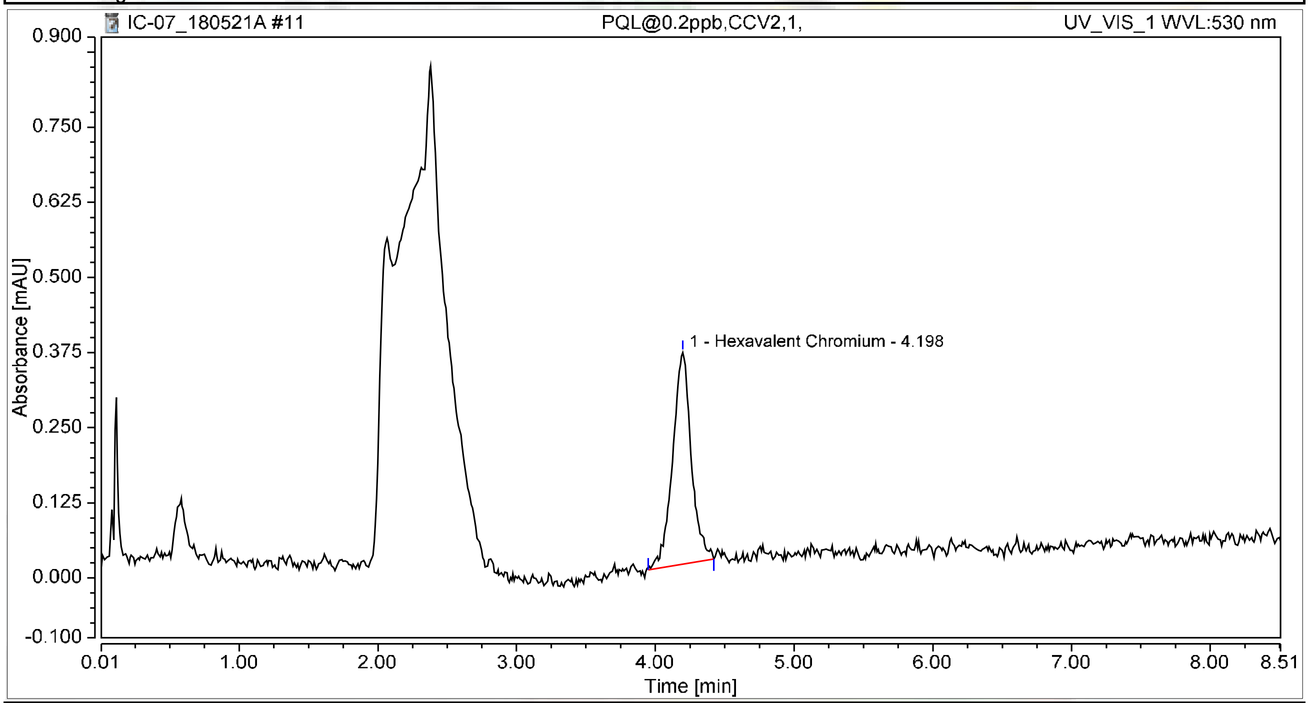
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.346	8.133	100.00	100.00	5.1749
Total:			**1.346**	**8.133**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

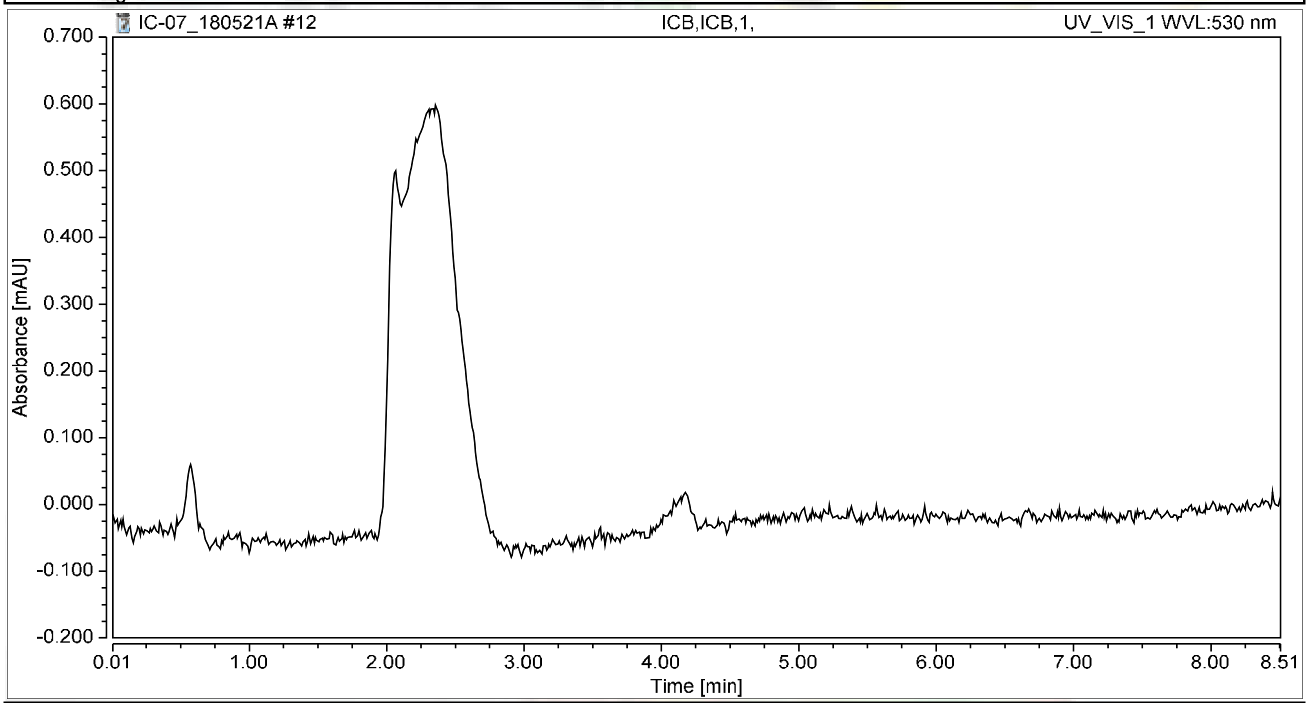
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.055	0.352	100.00	100.00	0.2113
Total:			**0.055**	**0.352**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180611A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/21/18 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/21/18 9:52 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:11 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:30 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	06/11/18 9:29 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	06/11/18 9:40 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	06/11/18 9:49 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	06/11/18 9:59 AM	Not Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	06/11/18 10:35 AM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	06/11/18 10:50 AM	Reported
16	MB-R124583	MBLK	1	Hexavalent Chromium	06/11/18 11:01 AM	Reported
17	LCS-R124583	LCS	1	Hexavalent Chromium	06/11/18 11:10 AM	Reported
18	N030686-001A	SAMP	1	Hexavalent Chromium	06/11/18 11:25 AM	Reported
19	N030686-001AMS	MS	1	Hexavalent Chromium	06/11/18 11:36 AM	Reported
20	N030686-002A	SAMP	100	Hexavalent Chromium	06/11/18 11:46 AM	Reported
21	N030686-002AMS	MS	100	Hexavalent Chromium	06/11/18 11:55 AM	Reported
22	N030687-001A	SAMP	1	Hexavalent Chromium	06/11/18 12:05 PM	Reported
23	N030687-002A	SAMP	50	Hexavalent Chromium	06/11/18 12:14 PM	Reported
24	N030687-003A	SAMP	1	Hexavalent Chromium	06/11/18 12:24 PM	Reported
25	N030687-004A	SAMP	200	Hexavalent Chromium	06/11/18 12:33 PM	Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	06/11/18 12:43 PM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	06/11/18 12:52 PM	Reported
28	N030687-005A	SAMP	50	Hexavalent Chromium	06/11/18 1:01 PM	Reported
29	N030687-006A	SAMP	50	Hexavalent Chromium	06/11/18 1:11 PM	Reported
30	N030687-007A	SAMP	1	Hexavalent Chromium	06/11/18 1:20 PM	Reported
31	N030687-008A	SAMP	1	Hexavalent Chromium	06/11/18 1:30 PM	Reported
32	N030637-002A	SAMP	1	Hexavalent Chromium	06/11/18 1:39 PM	Not Reported
33	N030637-002AMS	MS	1	Hexavalent Chromium	06/11/18 1:49 PM	Not Reported
34	N030676-003A	SAMP	1	Hexavalent Chromium	06/11/18 1:58 PM	Not Reported
35	N030676-003AMS	MS	1	Hexavalent Chromium	06/11/18 2:08 PM	Reported
36	N030686-002AMSD	MSD	100	Hexavalent Chromium	06/11/18 2:17 PM	~~Not~~ Reported
37	N030687-005ADUP	DUP	50	Hexavalent Chromium	06/11/18 2:27 PM	Reported
38	CCV-3	CCV	1	Hexavalent Chromium	06/11/18 2:36 PM	Reported
39	CCB-3	CCB	1	Hexavalent Chromium	06/11/18 2:46 PM	Reported
40	LCS-R124584	LCS	1	Hexavalent Chromium	06/11/18 2:59 PM	Reported
41	MB-R124584	MBLK	1	Hexavalent Chromium	06/11/18 3:10 PM	Reported
42	N030703-001A	SAMP	1	Hexavalent Chromium	06/11/18 3:19 PM	Reported

Nancy 6/20/2018

IC7 RBA 6/13/2018 2:45 PM

rba 6/17/2018

INJECTION LOG: 180611A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030703-002A	SAMP	1	Hexavalent Chromium	06/11/18 3:28 PM	Not Reported
44	N030704-002A	SAMP	1	Hexavalent Chromium	06/11/18 3:38 PM	Reported
45	N030689-001A	SAMP	1	Hexavalent Chromium	06/11/18 3:47 PM	Reported
46	N030689-001AMS	MS	1	Hexavalent Chromium	06/11/18 3:57 PM	Reported
47	N030689-001AMSD	MSD	1	Hexavalent Chromium	06/11/18 4:06 PM	Reported
48	N030704-001A	SAMP	1	Hexavalent Chromium	06/11/18 4:16 PM	Reported
49	N030704-001AMS	MS	1	Hexavalent Chromium	06/11/18 4:25 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	06/11/18 4:35 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	06/11/18 4:44 PM	Reported
52	N030689-002A	SAMP	1	Hexavalent Chromium	06/11/18 4:54 PM	Reported
53	N030689-003A	SAMP	1	Hexavalent Chromium	06/11/18 5:03 PM	Reported
54	N030689-004A	SAMP	1	Hexavalent Chromium	06/11/18 5:13 PM	Reported
55	N030689-004ADUP	DUP	1	Hexavalent Chromium	06/11/18 5:22 PM	Reported
56	N030689-005A	SAMP	1	Hexavalent Chromium	06/11/18 5:31 PM	Reported
57	N030689-006A	SAMP	1	Hexavalent Chromium	06/11/18 5:41 PM	Reported
58	N030689-007A	SAMP	1	Hexavalent Chromium	06/11/18 5:50 PM	Reported
59	N030689-008A	SAMP	1	Hexavalent Chromium	06/11/18 6:00 PM	Reported
60	N030689-009A	SAMP	1	Hexavalent Chromium	06/11/18 6:09 PM	Reported
61	N030704-003A	SAMP	1	Hexavalent Chromium	06/11/18 6:19 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	06/11/18 6:28 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	06/11/18 6:38 PM	Reported
64	N030638-001A	SAMP	1	Hexavalent Chromium	06/11/18 6:47 PM	Not Reported
65	N030638-001AMS	MS	1	Hexavalent Chromium	06/11/18 6:57 PM	Not Reported
66	N030638-002A	SAMP	1	Hexavalent Chromium	06/11/18 7:06 PM	Not Reported
67	N030638-002AMS	MS	1	Hexavalent Chromium	06/11/18 7:16 PM	Not Reported
68	N030638-004A	SAMP	1	Hexavalent Chromium	06/11/18 7:25 PM	Not Reported
69	N030638-004AMS	MS	1	Hexavalent Chromium	06/11/18 7:35 PM	Not Reported
70	N030646-007A	SAMP	1	Hexavalent Chromium	06/11/18 7:44 PM	Not Reported
71	N030646-007AMS	MS	1	Hexavalent Chromium	06/11/18 7:53 PM	Not Reported
72	N030646-009A	SAMP	1	Hexavalent Chromium	06/11/18 8:03 PM	Not Reported
73	N030646-009AMS	MS	1	Hexavalent Chromium	06/11/18 8:12 PM	Not Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	06/11/18 8:22 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	06/11/18 8:31 PM	Reported
76	N030703-002A	SAMP	20	Hexavalent Chromium	06/11/18 8:41 PM	Reported
77	CCV-7	CCV	1	Hexavalent Chromium	06/11/18 8:50 PM	Reported
78	CCB-7	CCB	1	Hexavalent Chromium	06/11/18 9:00 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180611A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**12/Jun/18 17:18:24**
No. of Injections:	**81**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/21/2018 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		05/21/2018 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/21/2018 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/21/2018 09:52	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/21/2018 10:01	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/21/2018 10:11	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/21/2018 10:20	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/21/2018 10:30	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/21/2018 10:39	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		06/11/2018 09:29	Finished	20 ppb, IWST-180129A
11	BLANK	2	1000	Unknown		06/11/2018 09:40	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		06/11/2018 09:49	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		06/11/2018 09:59	Finished	PQL @ 0.2ppb
14	PQL@0.2ppb,CCV2,1	4	1000	Unknown		06/11/2018 10:35	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1,	5	1000	Unknown		06/11/2018 10:50	Finished	CCB R180531A
16	MB-H2O,MBLK,1,	6	1000	Unknown		06/11/2018 11:01	Finished	MB R180531A
17	LCS-H2O,LCS,1,	7	1000	Unknown		06/11/2018 11:10	Finished	LCS, IWST-180129B
18	N030686-001A,SAMF	1	1000	Unknown		06/11/2018 11:25	Finished	SAMP,10mL
19	N030686-001AMS,MS	2	1000	Unknown		06/11/2018 11:36	Finished	MS (1ppb), IWST-180129B,10
20	N030686-002A,SAMF	3	1000	Unknown		06/11/2018 11:46	Finished	SAMP,0.1>10mL
21	N030686-002AMS,MS	4	1000	Unknown		06/11/2018 11:55	Finished	MS (5ppb), IWST-180129B,0.1
22	N030687-001A,SAMF	5	1000	Unknown		06/11/2018 12:05	Finished	SAMP,10mL
23	N030687-002A,SAMF	6	1000	Unknown		06/11/2018 12:14	Finished	SAMP,0.2>10mL
24	N030687-003A,SAMF	7	1000	Unknown		06/11/2018 12:24	Finished	SAMP,10mL
25	N030687-004A,SAMF	8	1000	Unknown		06/11/2018 12:33	Finished	SAMP,0.05>10mL
26	CCV-2,CCV1,1,	9	1000	Unknown		06/11/2018 12:43	Finished	CCV @10ppb, IWST-180129A
27	CCB-2,CCB,1,	10	1000	Unknown		06/11/2018 12:52	Finished	CCB R180531A
28	N030687-005A,SAMF	11	1000	Unknown		06/11/2018 13:01	Finished	SAMP,0.2>10mL
29	N030687-006A,SAMF	12	1000	Unknown		06/11/2018 13:11	Finished	SAMP,0.2>10mL
30	N030687-007A,SAMF	13	1000	Unknown		06/11/2018 13:20	Finished	SAMP,10mL
31	N030687-008A,SAMF	14	1000	Unknown		06/11/2018 13:30	Finished	SAMP,10mL
32	N030637-002A,SAMF	15	1000	Unknown		06/11/2018 13:39	Finished	SAMP,10mL
33	N030637-002AMS,MS	16	1000	Unknown		06/11/2018 13:49	Finished	MS (5ppb), IWST-180129B,10
34	N030676-003A,SAMF	17	1000	Unknown		06/11/2018 13:58	Finished	SAMP,10mL
35	N030676-003AMS,MS	18	1000	Unknown		06/11/2018 14:08	Finished	MS (5ppb), IWST-180129B,10
36	N030686-002AMSD,M	19	1000	Unknown		06/11/2018 14:17	Finished	MSD (5ppb), IWST-180129B,0.
37	N030687-005ADUP,D	20	1000	Unknown		06/11/2018 14:27	Finished	DUP,0.2>10mL
38	CCV-3,CCV,1,	21	1000	Unknown		06/11/2018 14:36	Finished	CCV @5ppb, IWST-180129A
39	CCB-3,CCB,1,	22	1000	Unknown		06/11/2018 14:46	Finished	CCB R180531A
40	LCS-2,LCS,1,	1	1000	Unknown		06/11/2018 14:59	Finished	LCS, IWST-180129B
41	MB-2,MBLK,1,	2	1000	Unknown		06/11/2018 15:10	Finished	MB R180531A
42	N030703-001A,SAMF	3	1000	Unknown		06/11/2018 15:19	Finished	SAMP,10mL
43	N030703-002A,SAMF	4	1000	Unknown		06/11/2018 15:28	Finished	SAMP,10mL
44	N030704-002A,SAMF	5	1000	Unknown		06/11/2018 15:38	Finished	SAMP,10mL
45	N030689-001A,SAMF	6	1000	Unknown		06/11/2018 15:47	Finished	SAMP,10mL
46	N030689-001AMS,MS	7	1000	Unknown		06/11/2018 15:57	Finished	MS (5ppb), IWST-180129B,10
47	N030689-001AMSD,M	8	1000	Unknown		06/11/2018 16:06	Finished	MSD (5ppb), IWST-180129B,1(
48	N030704-001A,SAMF	9	1000	Unknown		06/11/2018 16:16	Finished	SAMP,10mL
49	N030704-001AMS,MS	10	1000	Unknown		06/11/2018 16:25	Finished	MS (1ppb), IWST-180129B,10
50	CCV-4,CCV1,1,	11	1000	Unknown		06/11/2018 16:35	Finished	CCV @10ppb, IWST-180129A
51	CCB-4,CCB,1,	12	1000	Unknown		06/11/2018 16:44	Finished	CCB R180531A
52	N030689-002A,SAMF	13	1000	Unknown		06/11/2018 16:54	Finished	SAMP,10mL
53	N030689-003A,SAMF	14	1000	Unknown		06/11/2018 17:03	Finished	SAMP,10mL
54	N030689-004A,SAMF	15	1000	Unknown		06/11/2018 17:13	Finished	SAMP,10mL
55	N030689-004ADUP,D	16	1000	Unknown		06/11/2018 17:22	Finished	DUP,10mL
56	N030689-005A,SAMF	17	1000	Unknown		06/11/2018 17:31	Finished	SAMP,10mL
57	N030689-006A,SAMF	18	1000	Unknown		06/11/2018 17:41	Finished	SAMP,10mL
58	N030689-007A,SAMF	19	1000	Unknown		06/11/2018 17:50	Finished	SAMP,10mL
59	N030689-008A,SAMF	20	1000	Unknown		06/11/2018 18:00	Finished	SAMP,10mL
60	N030689-009A,SAMF	21	1000	Unknown		06/11/2018 18:09	Finished	SAMP,10mL

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IC-07 RBA 6/12/2018 5:22:09 PM

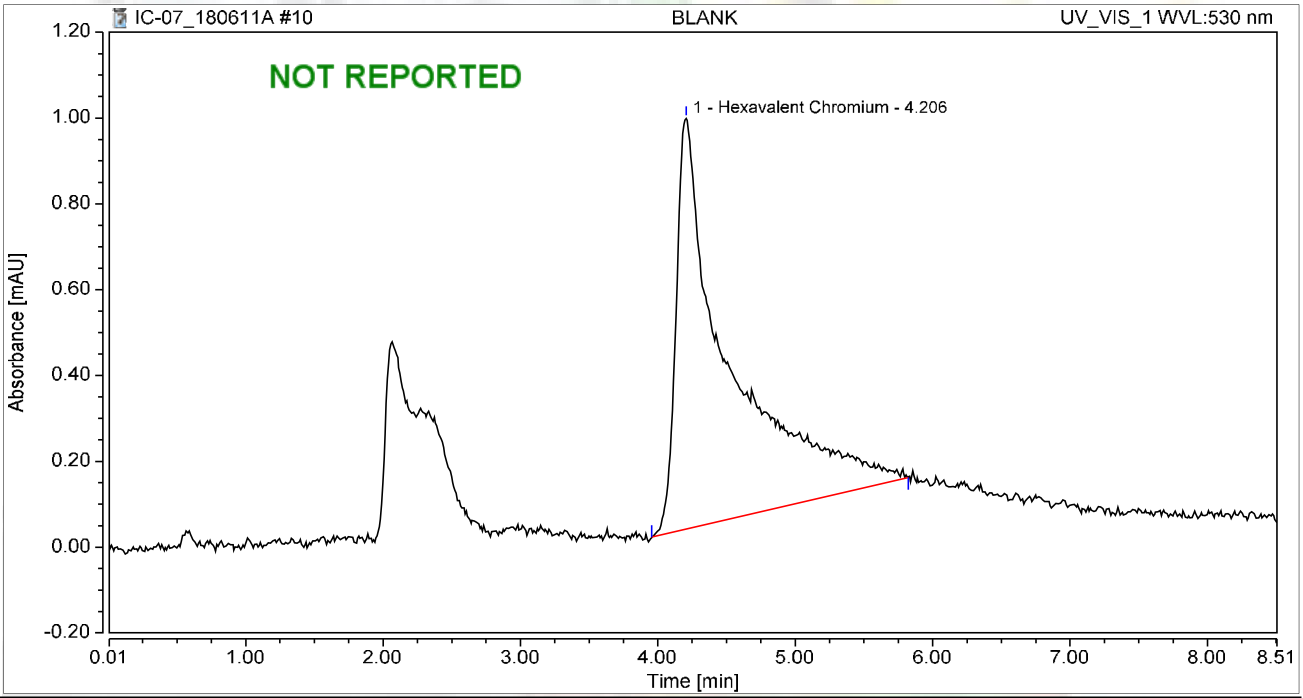
61	N030704-003A,SAMF	22	1000	Unknown		06/11/2018 18:19	Finished	SAMP,10mL
62	CCV-5,CCV,1,	23	1000	Unknown		06/11/2018 18:28	Finished	CCV @5ppb, IWST-180129A
63	CCB-5,CCB,1,	24	1000	Unknown		06/11/2018 18:38	Finished	CCB R180531A
64	N030638-001A,SAMF	25	1000	Unknown		06/11/2018 18:47	Finished	SAMP,10mL
65	N030638-001AMS,MS	26	1000	Unknown		06/11/2018 18:57	Finished	MS (5ppb), IWST-180129B,10
66	N030638-002A,SAMF	27	1000	Unknown		06/11/2018 19:06	Finished	SAMP,10mL
67	N030638-002AMS,MS	28	1000	Unknown		06/11/2018 19:16	Finished	MS (1ppb), IWST-180129B,10
68	N030638-004A,SAMF	29	1000	Unknown		06/11/2018 19:25	Finished	SAMP,10mL
69	N030638-004AMS,MS	30	1000	Unknown		06/11/2018 19:35	Finished	MS (1ppb), IWST-180129B,10
70	N030646-007A,SAMF	31	1000	Unknown		06/11/2018 19:44	Finished	SAMP,10mL
71	N030646-007AMS,MS	32	1000	Unknown		06/11/2018 19:53	Finished	MS (1ppb), IWST-180129B,10
72	N030646-009A,SAMF	33	1000	Unknown		06/11/2018 20:03	Finished	SAMP,10mL
73	N030646-009AMS,MS	34	1000	Unknown		06/11/2018 20:12	Finished	MS (1ppb), IWST-180129B,10
74	CCV-6,CCV1,1,	35	1000	Unknown		06/11/2018 20:22	Finished	CCV @10ppb, IWST-180129A
75	CCB-6,CCB,1,	36	1000	Unknown		06/11/2018 20:31	Finished	CCB R180531A
76	N030703-002A,SAMF	37	1000	Unknown		06/11/2018 20:41	Finished	SAMP,0.5>10mL
77	CCV-7,CCV,1,	38	1000	Unknown		06/11/2018 20:50	Finished	CCV @5ppb, IWST-180129A
78	CCB-7,CCB,1,	39	1000	Unknown		06/11/2018 21:00	Finished	CCB R180531A
79	SHUTDOWN	40	1000	Unknown		06/11/2018 21:09	Finished	
80	Eluent: R180608A	41	1000	Unknown		n.a.	Finished	Eluent
81	PCR: R180611A	42	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 09:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

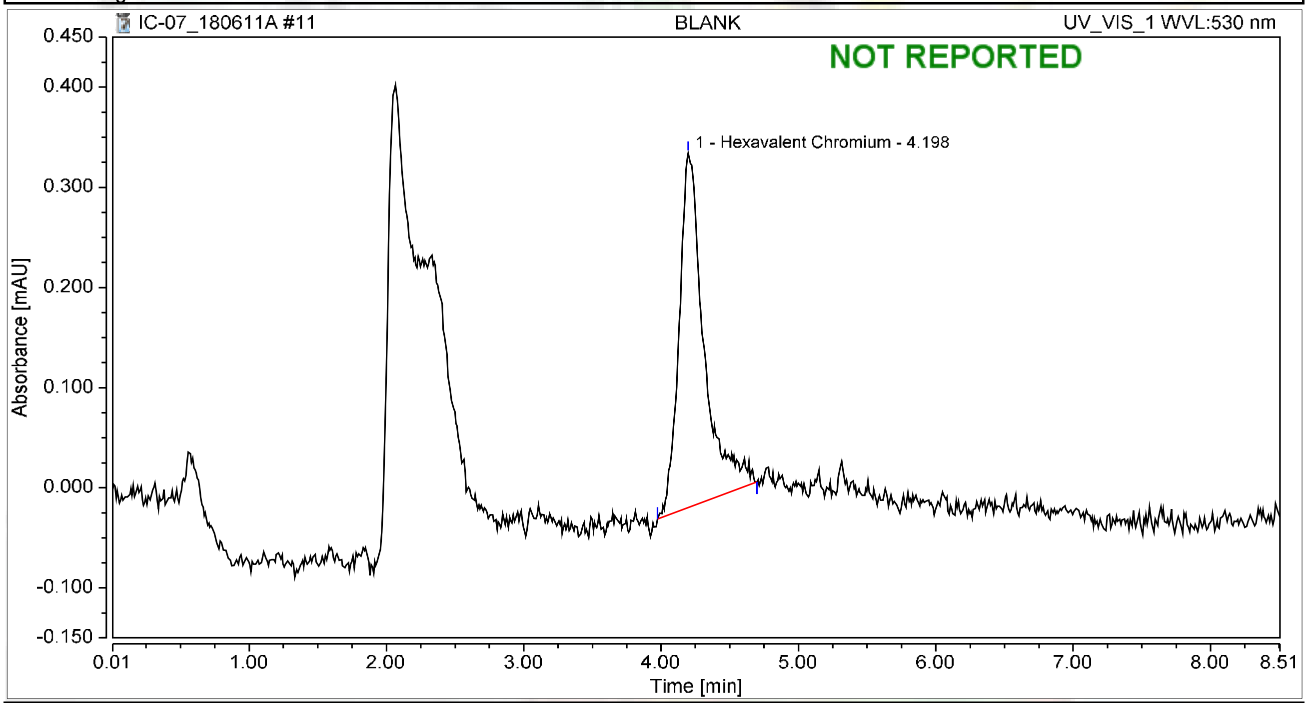
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.436	0.957	100.00	100.00	1.6755
Total:			**0.436**	**0.957**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 09:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

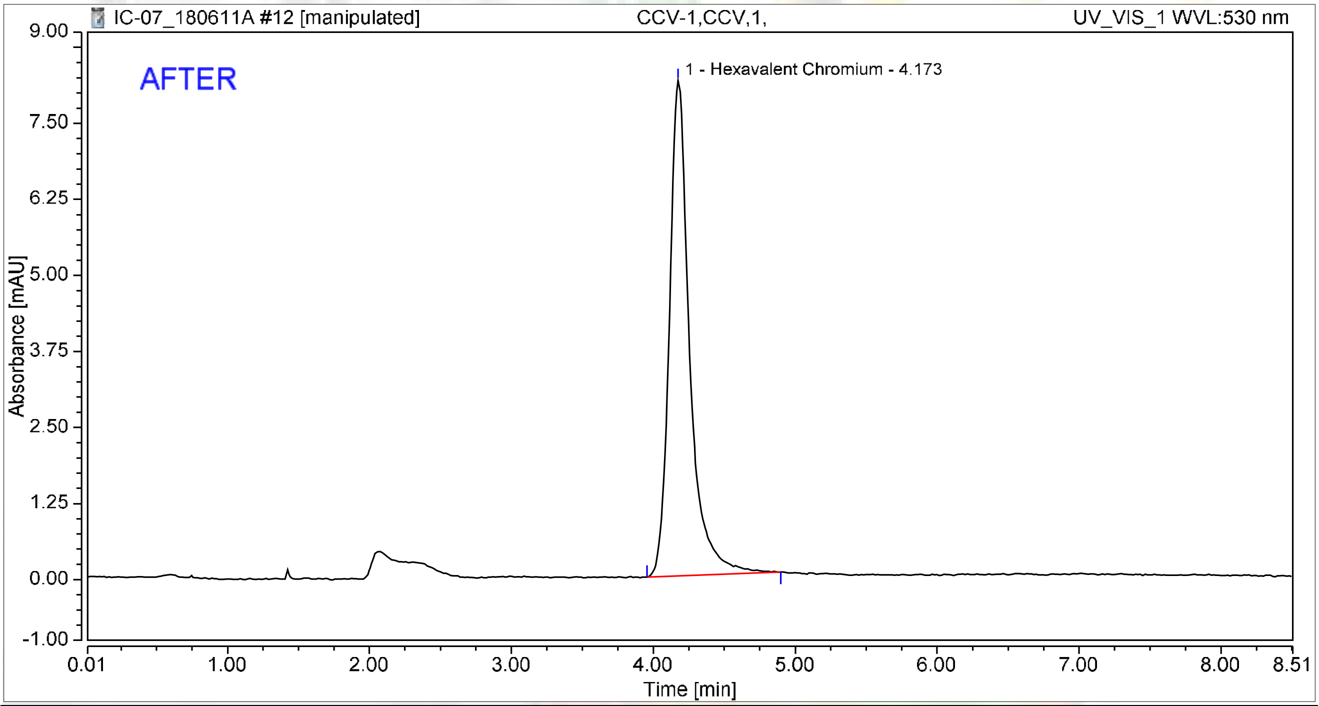
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.074	0.354	100.00	100.00	0.2862
Total:			**0.074**	**0.354**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 09:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.353	8.143	100.00	100.00	5.2007
Total:			**1.353**	**8.143**	**100.00**	**100.00**	

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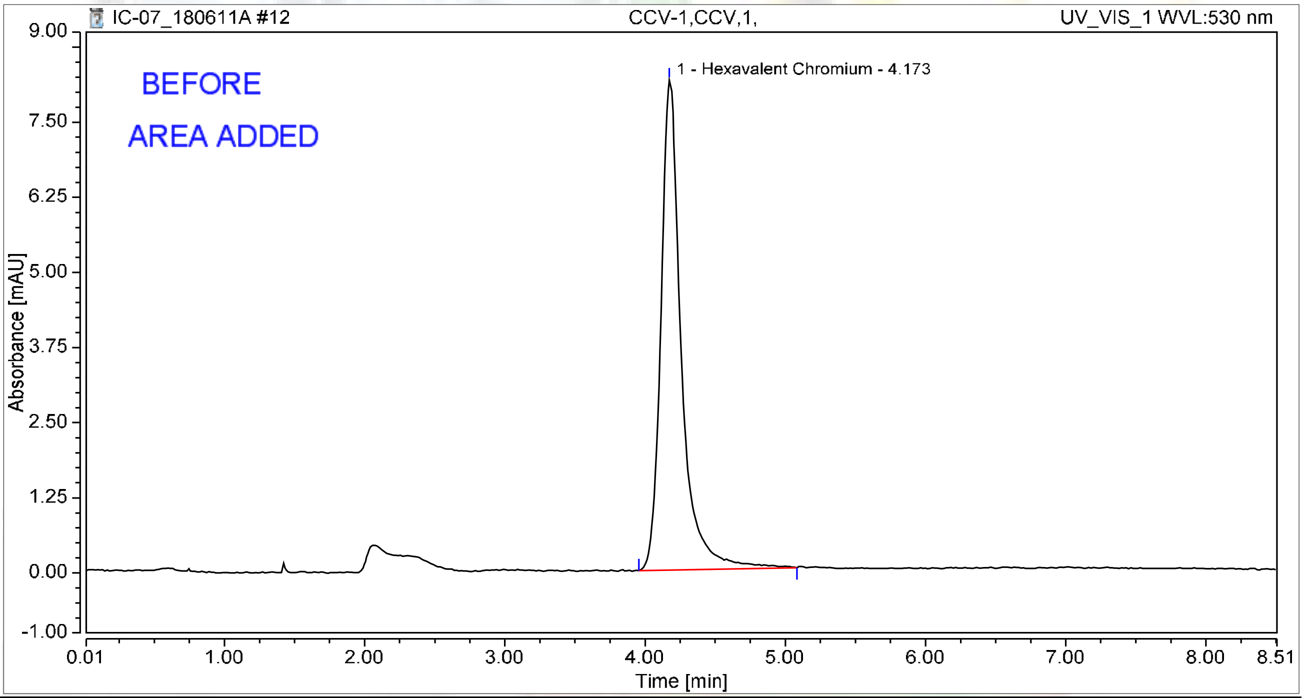
Reviewed by:
Nancy 6/20/2018

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 09:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.378	8.153	100.00	100.00	5.2967
Total:			**1.378**	**8.153**	**100.00**	**100.00**	

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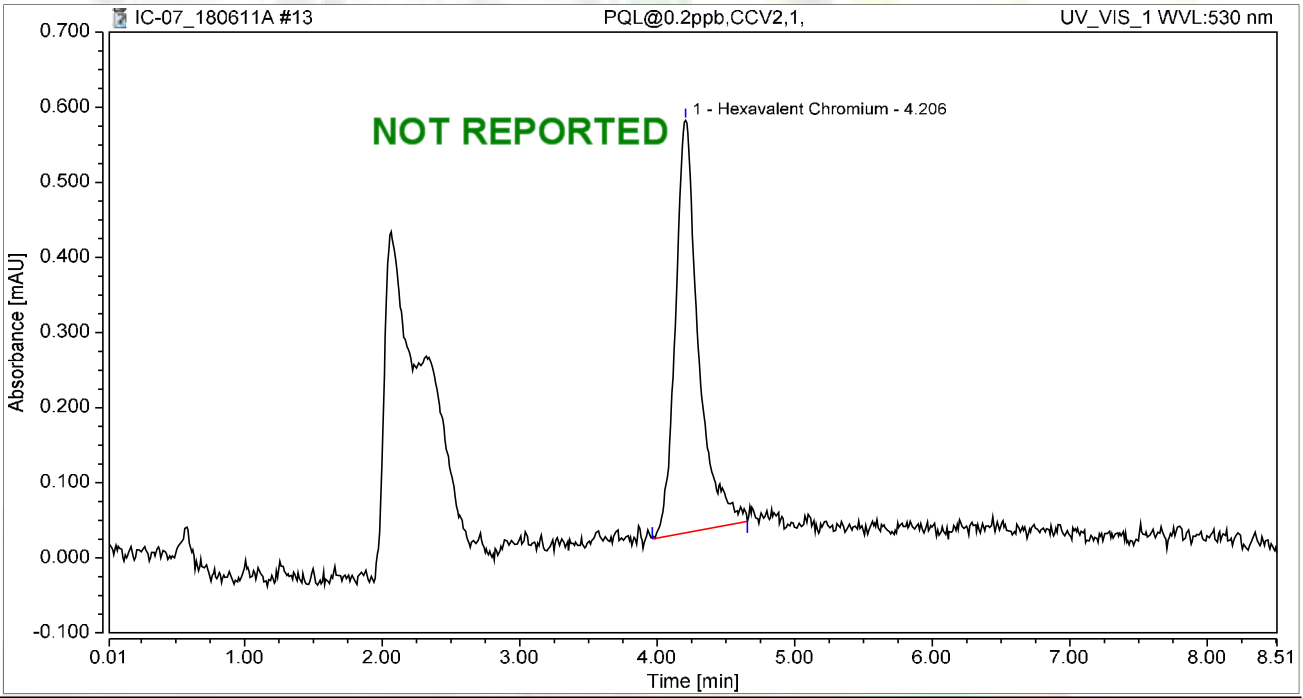
Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 09:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

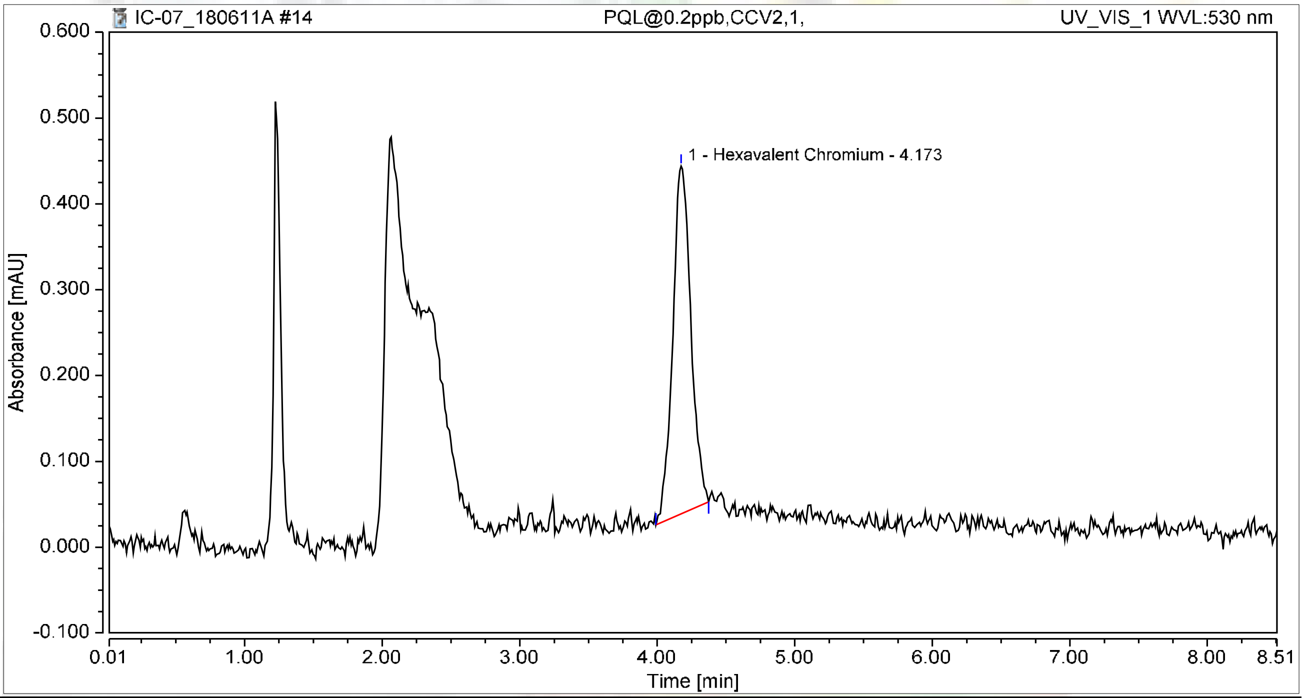
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.107	0.549	100.00	100.00	0.4102
Total:			**0.107**	**0.549**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 10:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

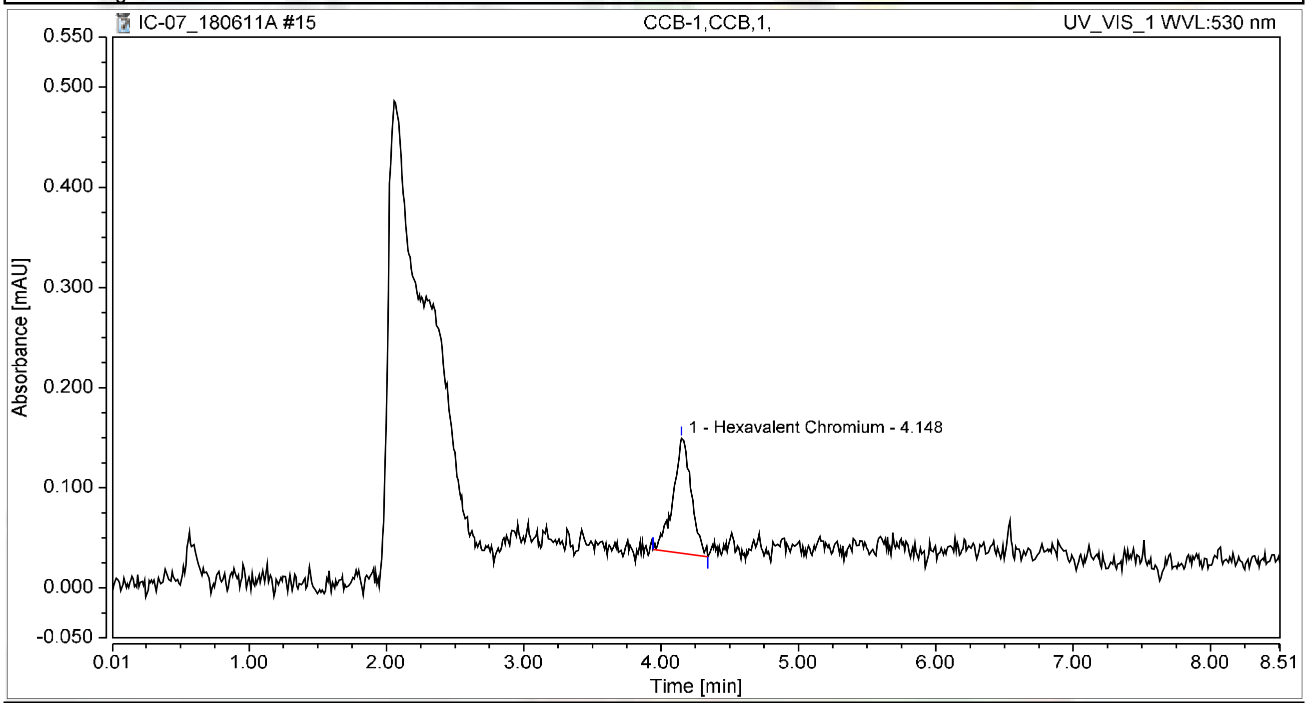
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.062	0.405	100.00	100.00	0.2380
Total:			**0.062**	**0.405**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 10:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

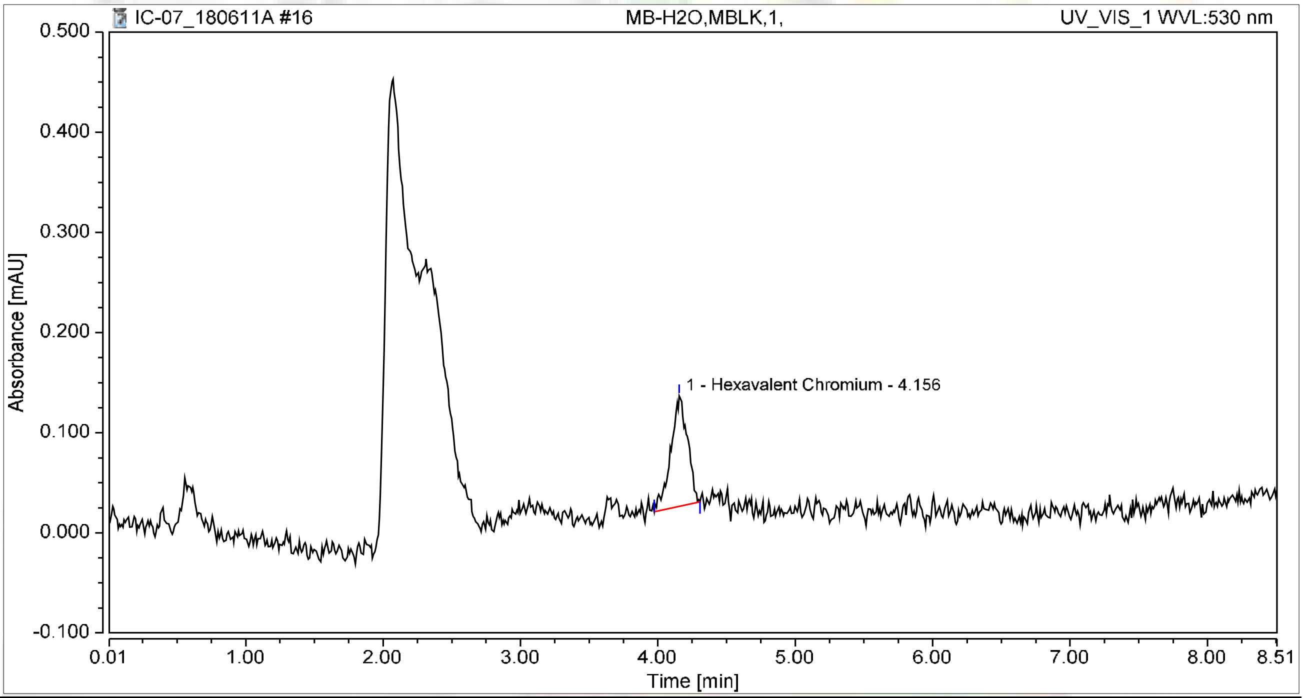
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.018	0.115	100.00	100.00	0.0681
Total:			**0.018**	**0.115**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

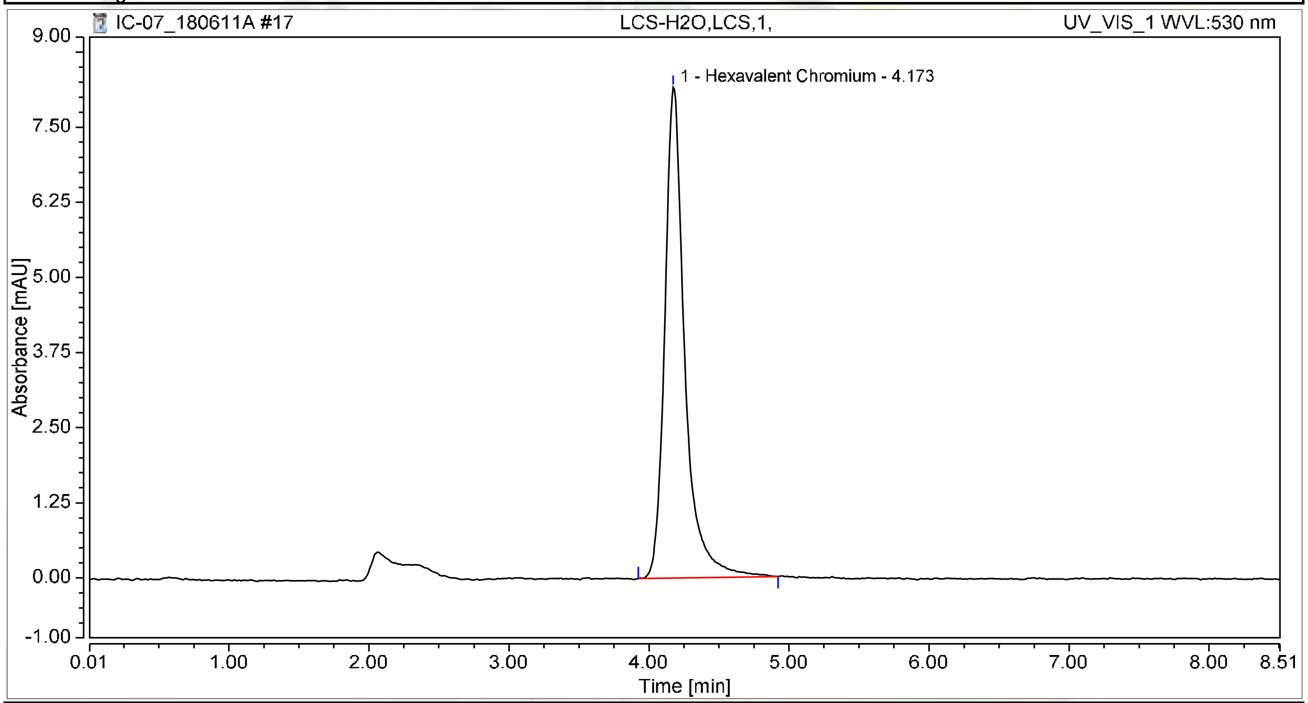
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.015	0.110	100.00	100.00	0.0595
Total:			**0.015**	**0.110**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

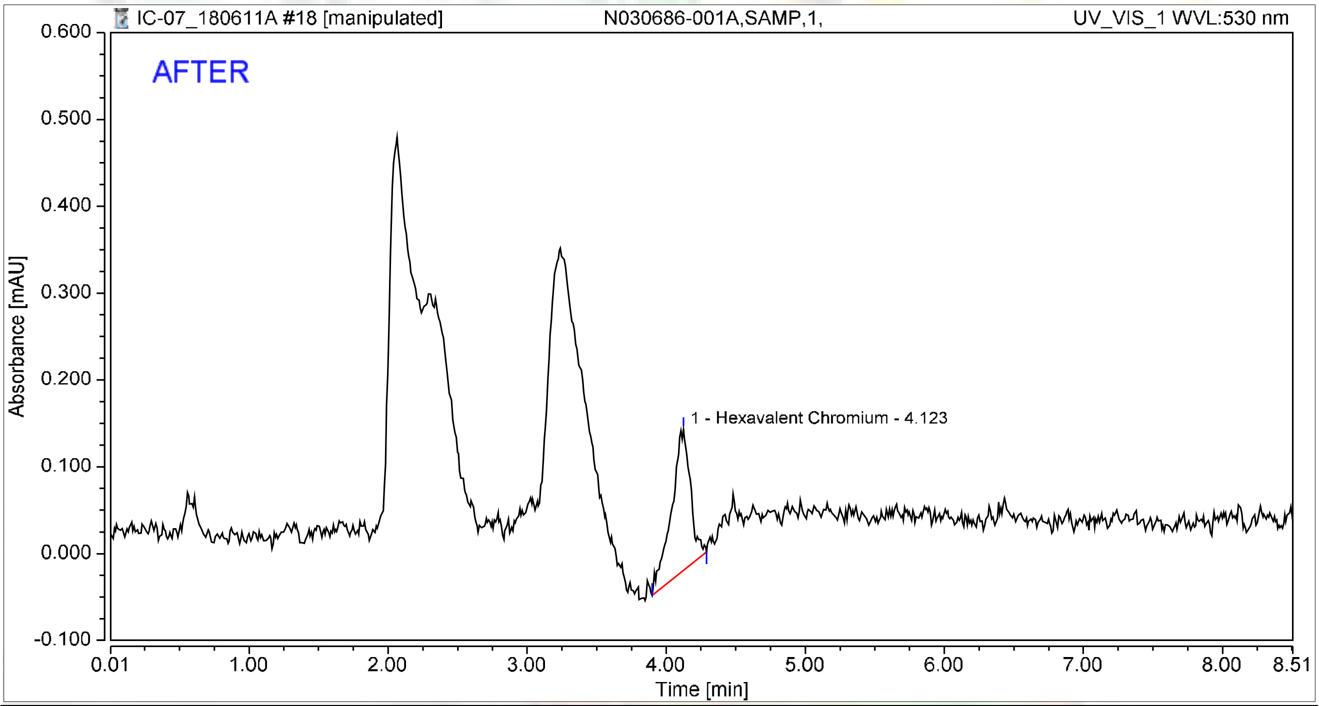
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.354	8.168	100.00	100.00	5.2049
Total:			**1.354**	**8.168**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030686-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 11:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.026	0.163	100.00	100.00	0.0993
Total:			**0.026**	**0.163**	**100.00**	**100.00**	

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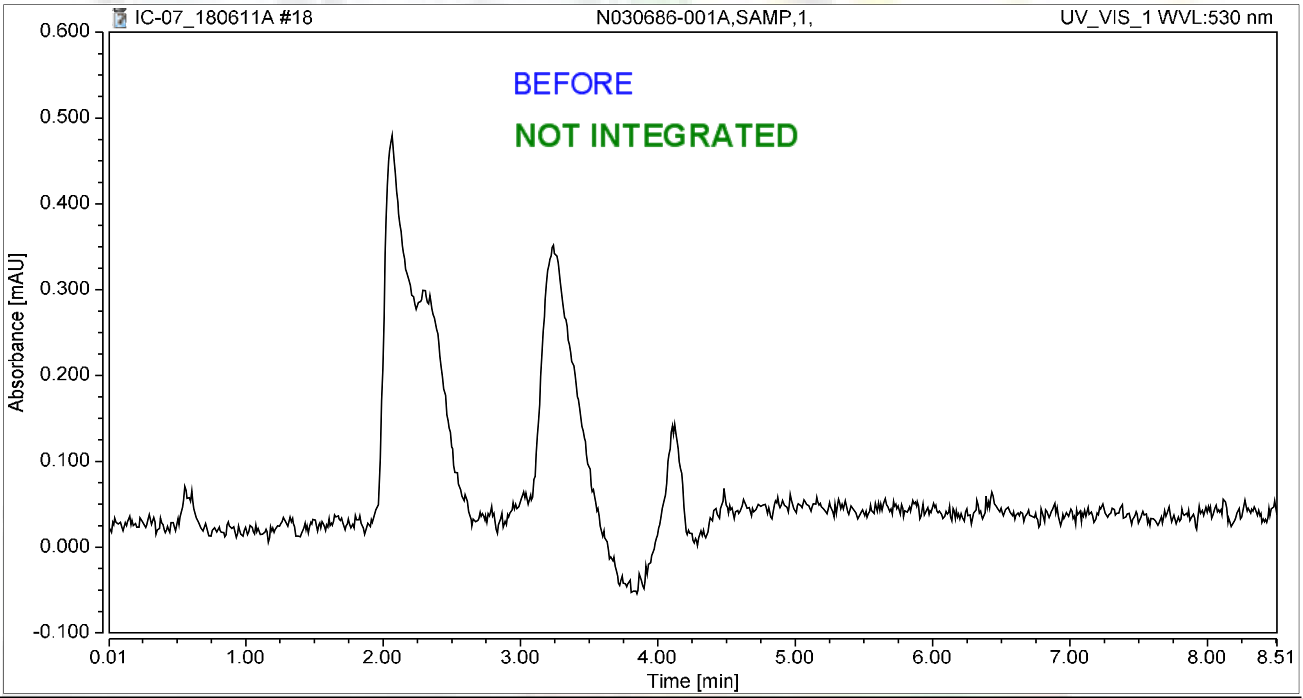
Chromatogram and Results

Injection Details

Injection Name:	**N030686-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 11:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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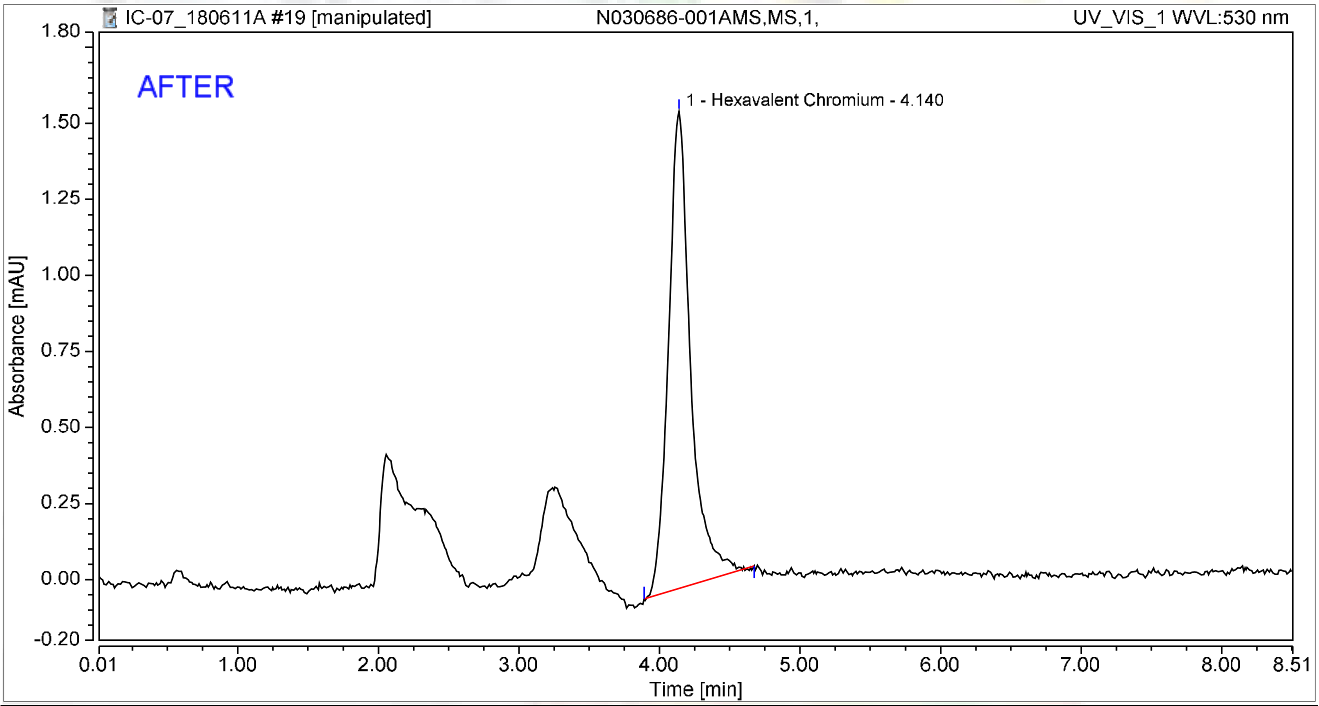
Chromatogram and Results

Injection Details

Injection Name:	**N030686-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.286	1.568	100.00	100.00	1.0986
Total:			**0.286**	**1.568**	**100.00**	**100.00**	

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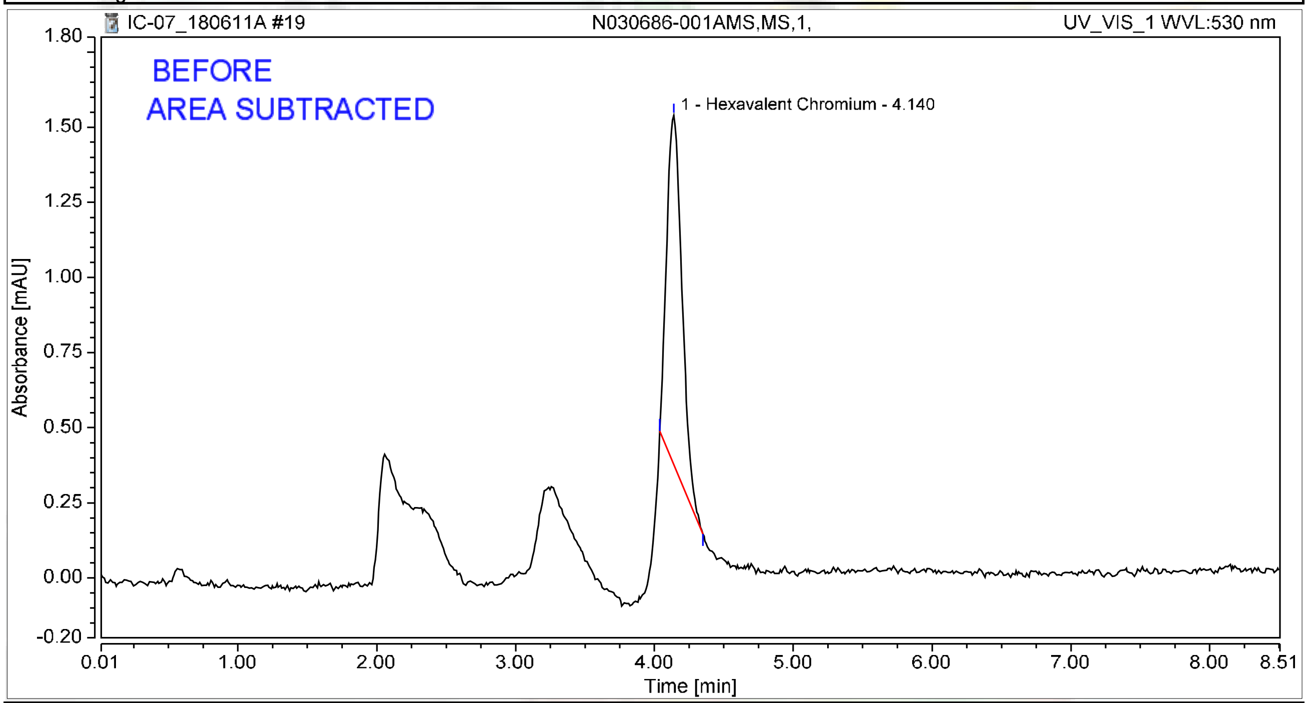
Chromatogram and Results

Injection Details

Injection Name:	**N030686-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.148	1.161	100.00	100.00	0.5675
Total:			**0.148**	**1.161**	**100.00**	**100.00**	

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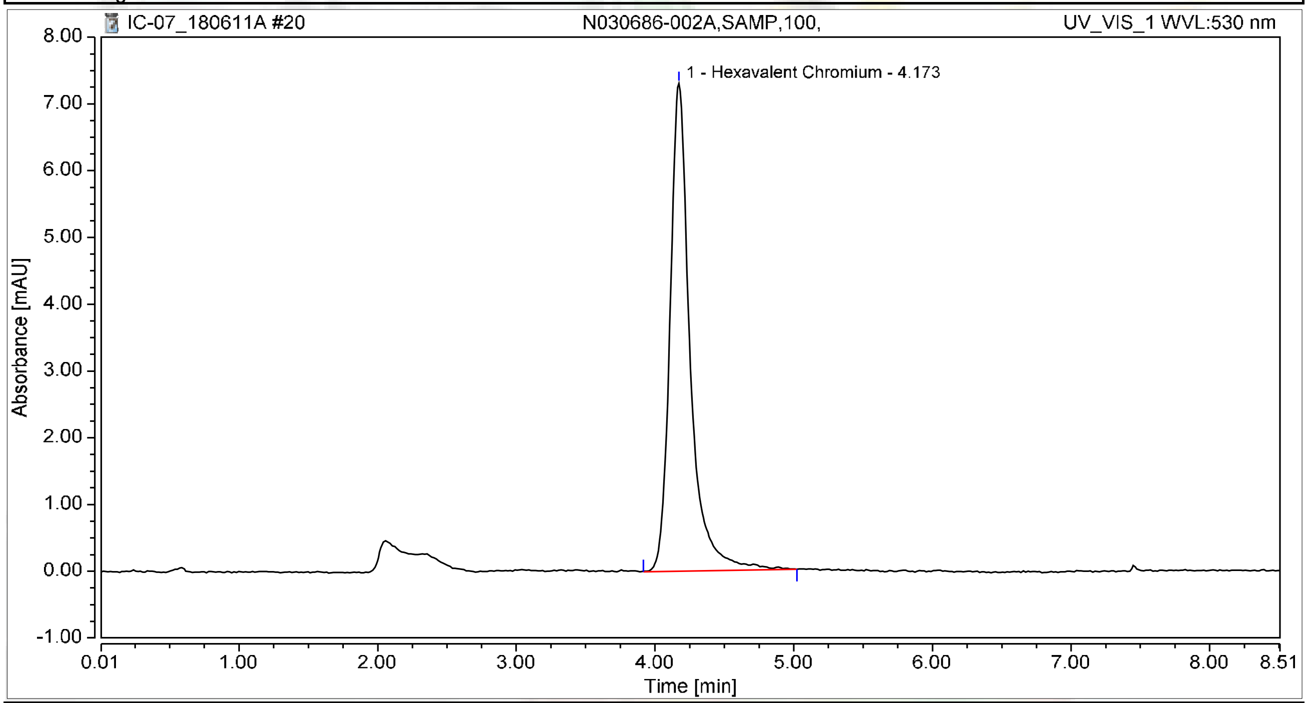
Chromatogram and Results

Injection Details

Injection Name:	**N030686-002A,SAMP,100,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 11:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

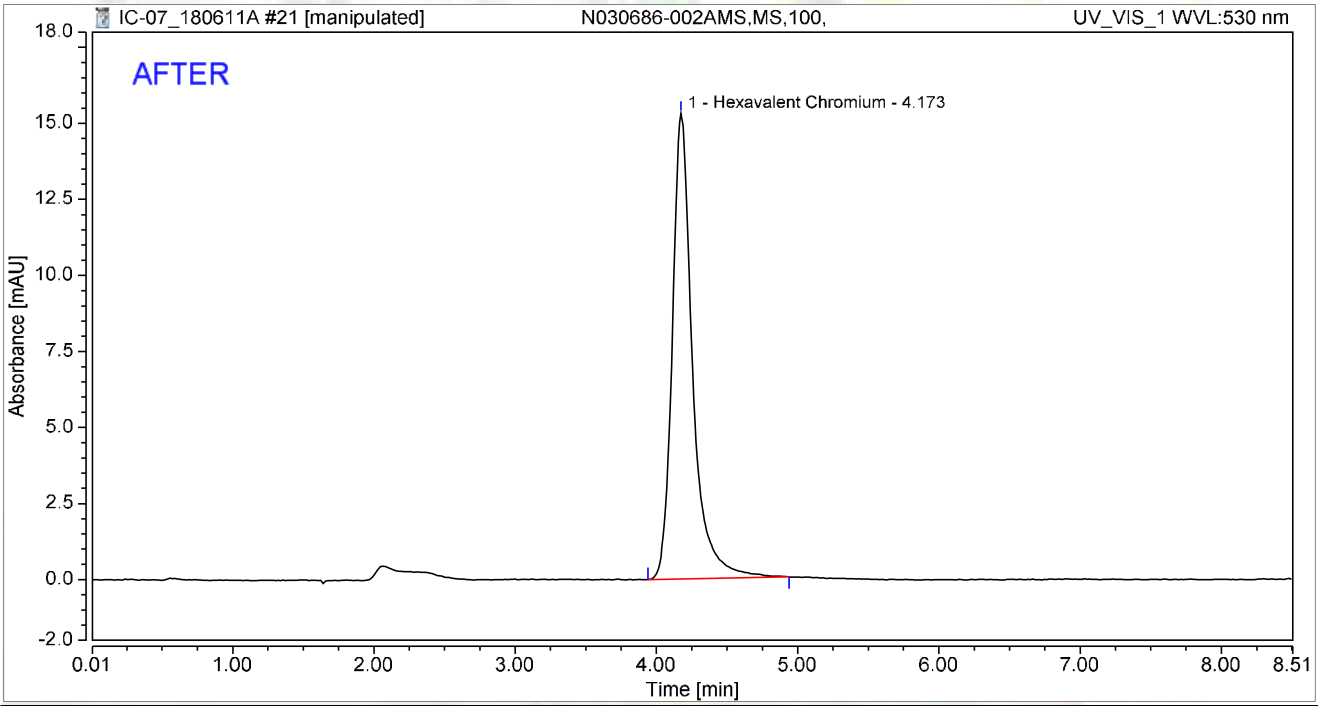
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.231	7.305	100.00	100.00	4.7294
Total:			**1.231**	**7.305**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030686-002AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 11:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.550	15.312	100.00	100.00	9.8005
Total:			**2.550**	**15.312**	**100.00**	**100.00**	

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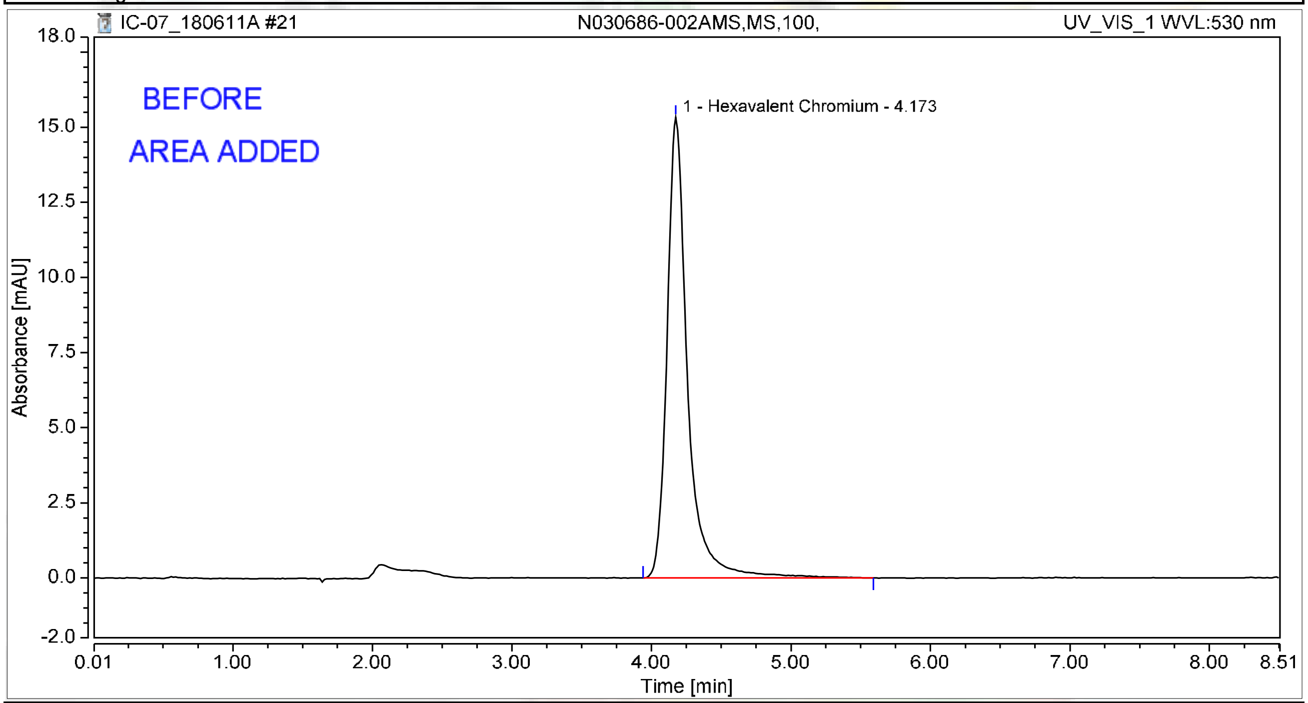
Chromatogram and Results

Injection Details

Injection Name:	**N030686-002AMS,MS,100,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 11:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.629	15.335	100.00	100.00	10.1053
Total:			**2.629**	**15.335**	**100.00**	**100.00**	

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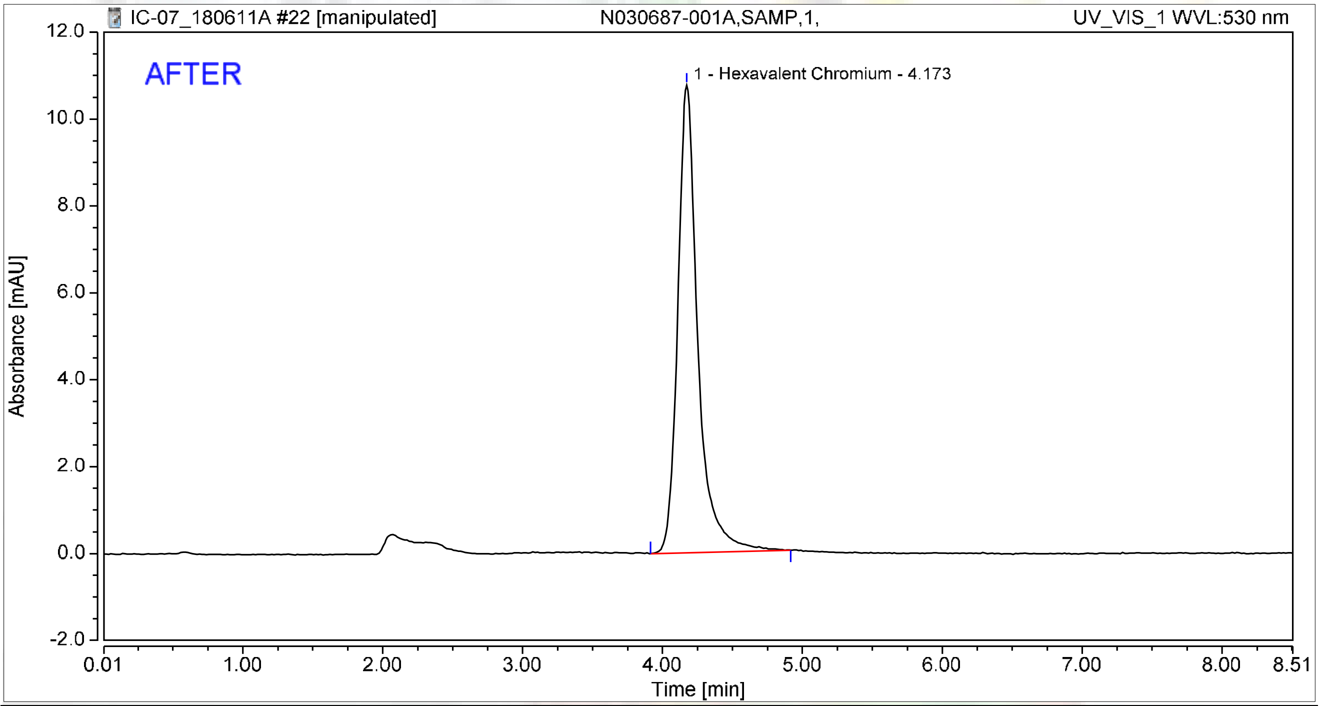
Chromatogram and Results

Injection Details

Injection Name:	**N030687-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 12:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.787	10.763	100.00	100.00	6.8688
Total:			**1.787**	**10.763**	**100.00**	**100.00**	

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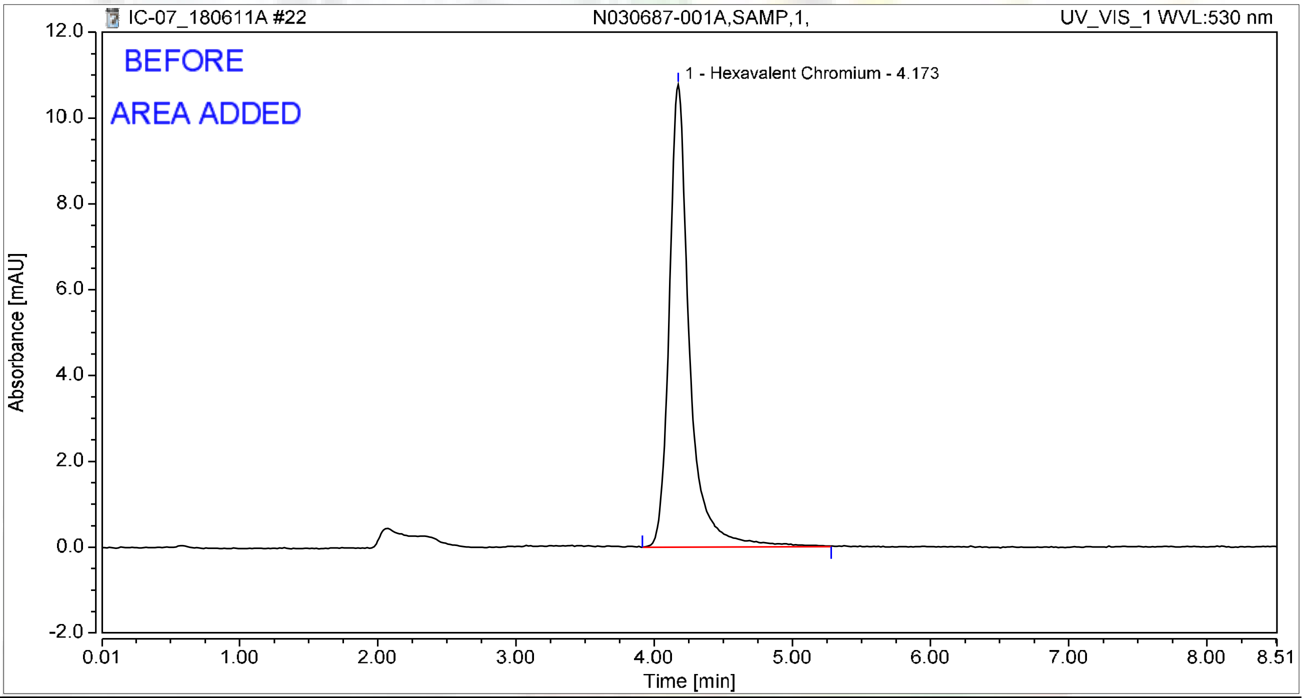
Chromatogram and Results

Injection Details

Injection Name:	**N030687-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 12:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.835	10.781	100.00	100.00	7.0535
Total:			**1.835**	**10.781**	**100.00**	**100.00**	

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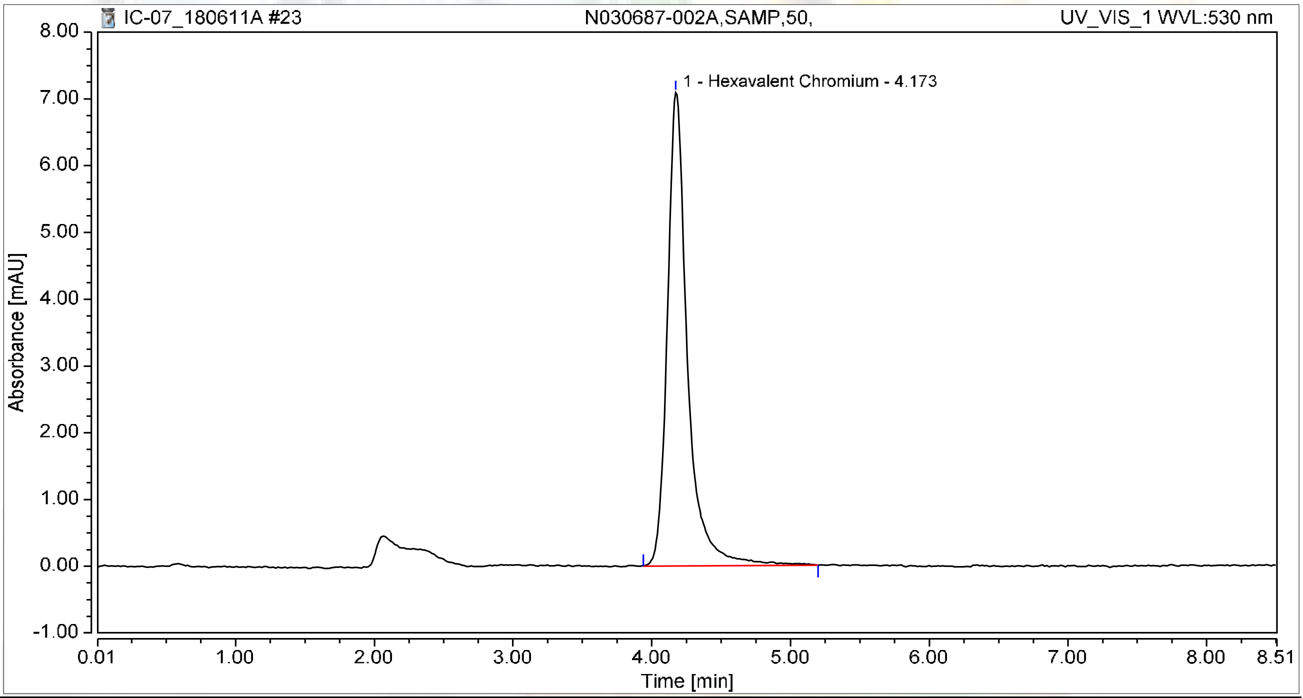
Chromatogram and Results

Injection Details

Injection Name:	**N030687-002A,SAMP,50,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 12:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

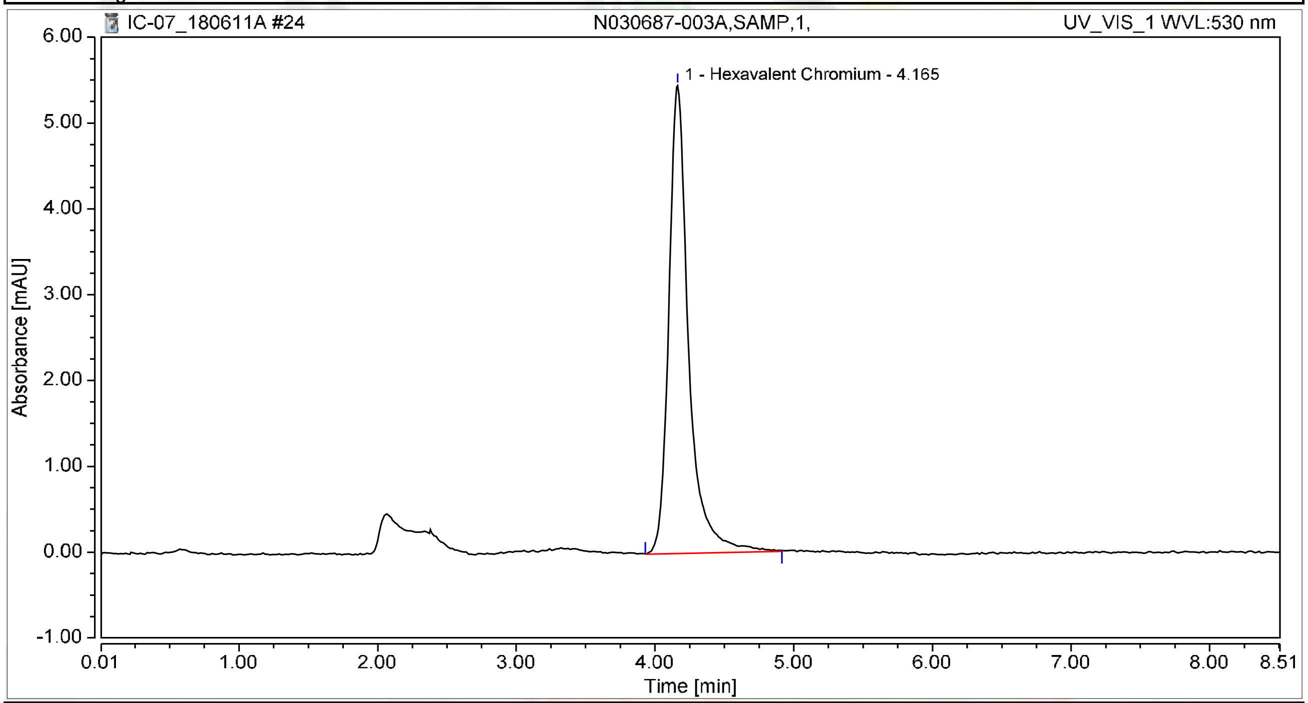
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.199	7.090	100.00	100.00	4.6074
Total:			**1.199**	**7.090**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030687-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 12:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

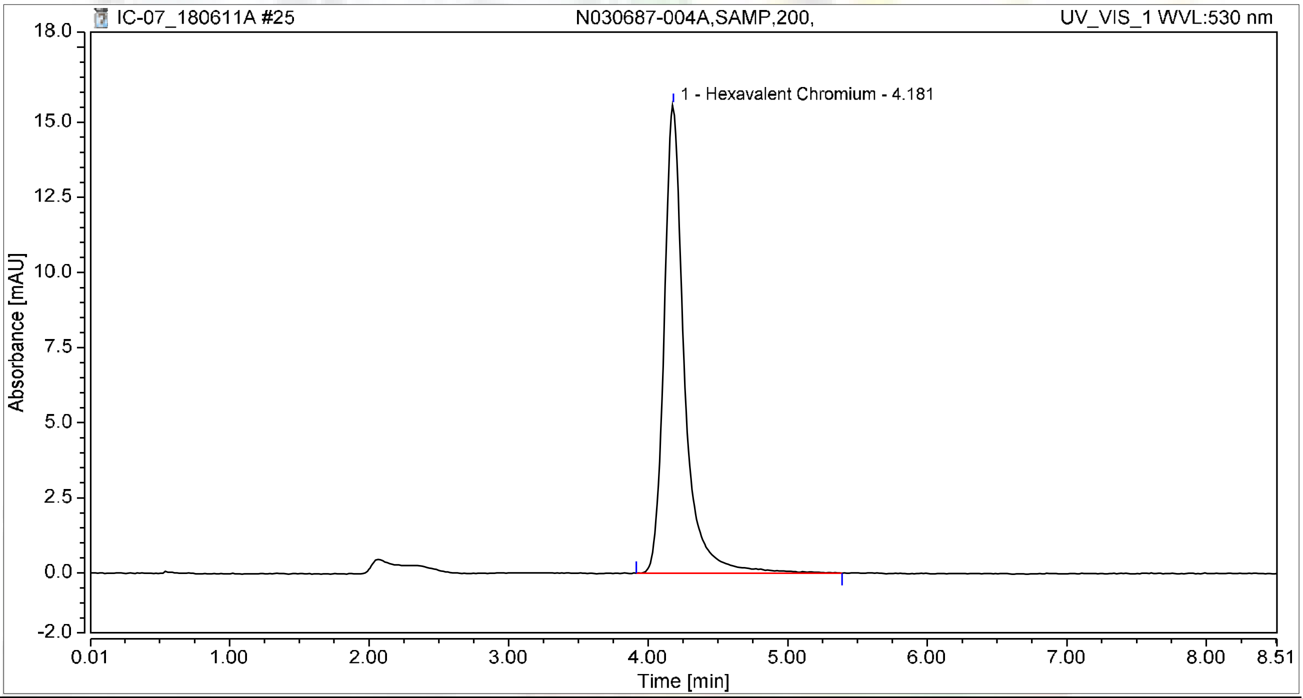
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.905	5.450	100.00	100.00	3.4788
Total:			**0.905**	**5.450**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030687-004A,SAMP,200,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 12:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

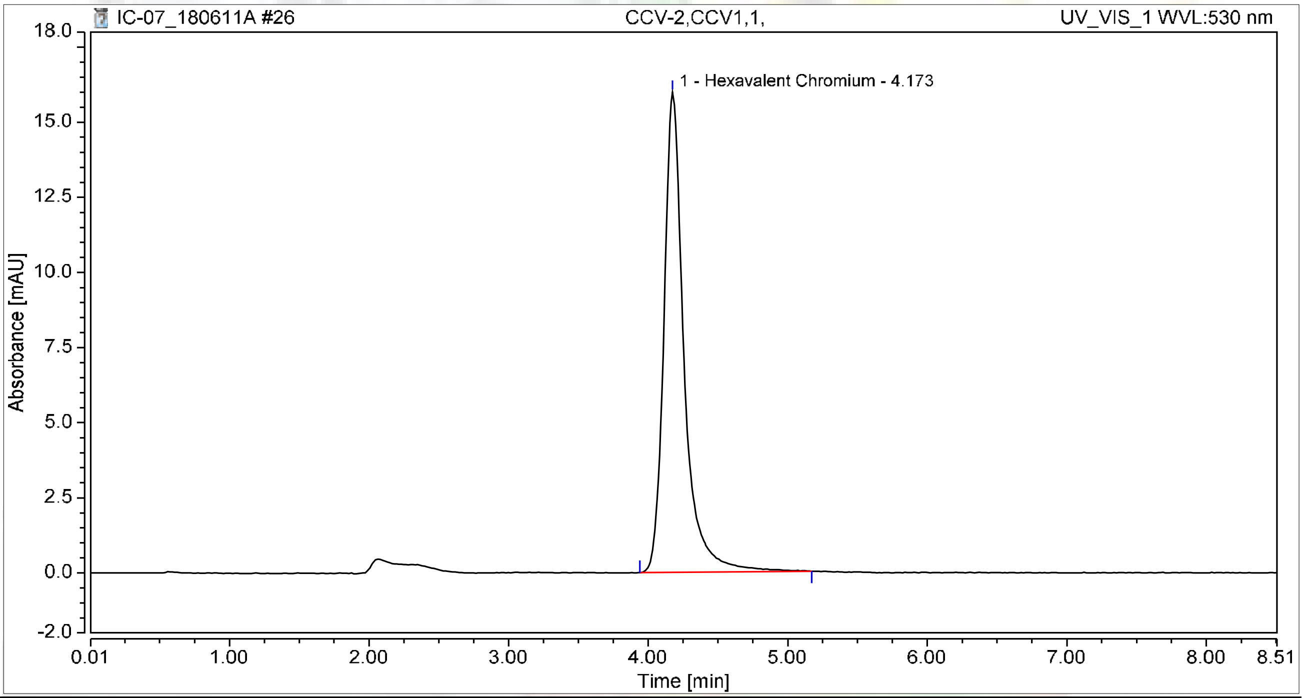
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.637	15.577	100.00	100.00	10.1367
Total:			**2.637**	**15.577**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

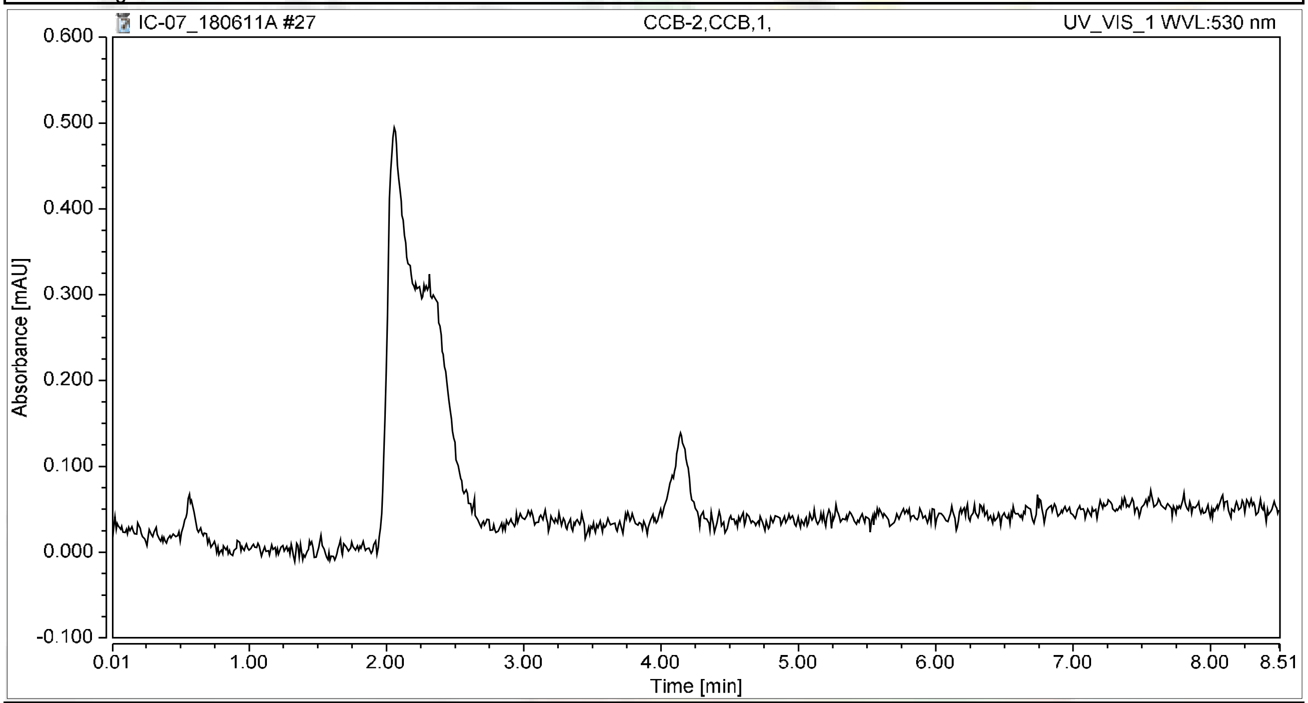
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.674	15.978	100.00	100.00	10.2754
Total:			**2.674**	**15.978**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 12:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

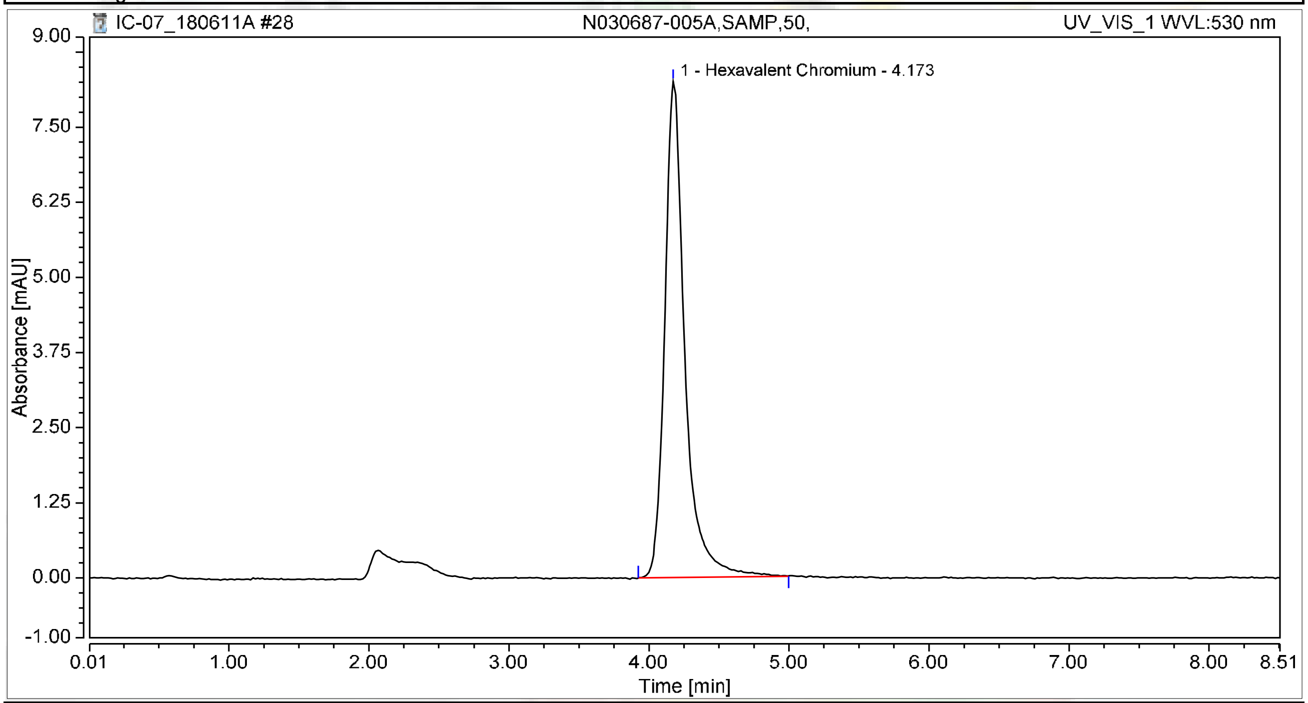
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030687-005A,SAMP,50,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 13:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

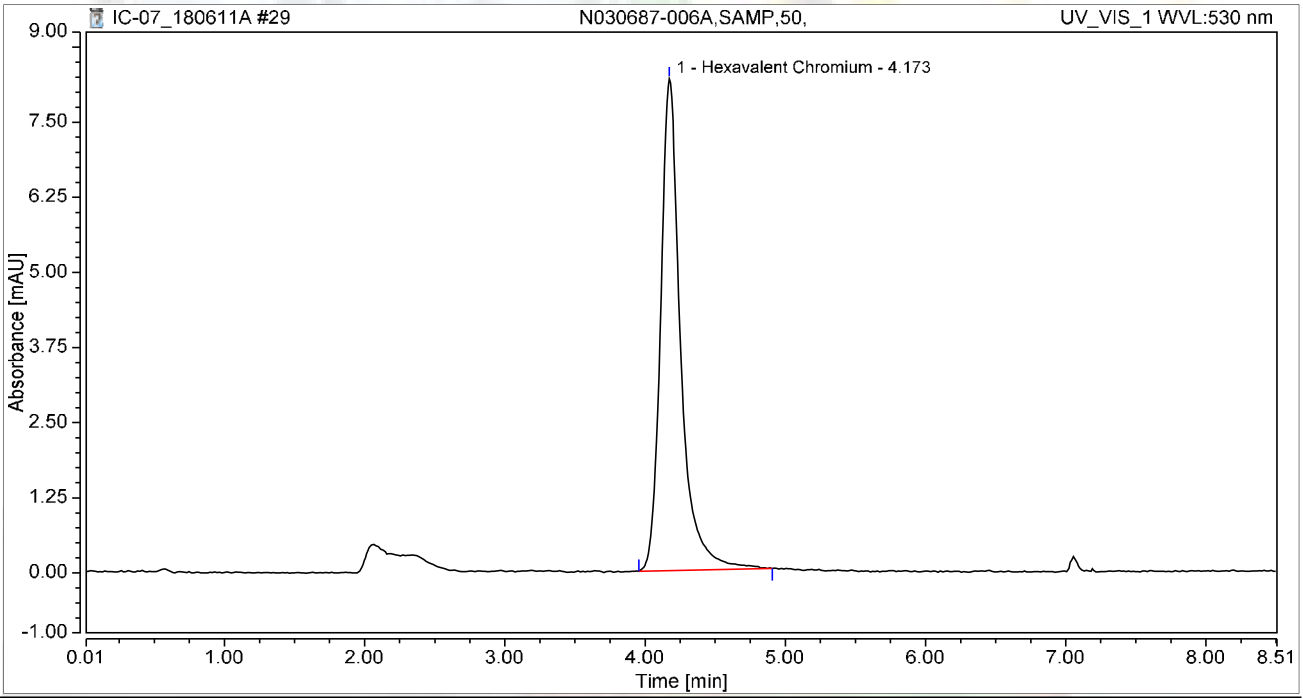
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.373	8.255	100.00	100.00	5.2779
Total:			**1.373**	**8.255**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030687-006A,SAMP,50,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 13:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

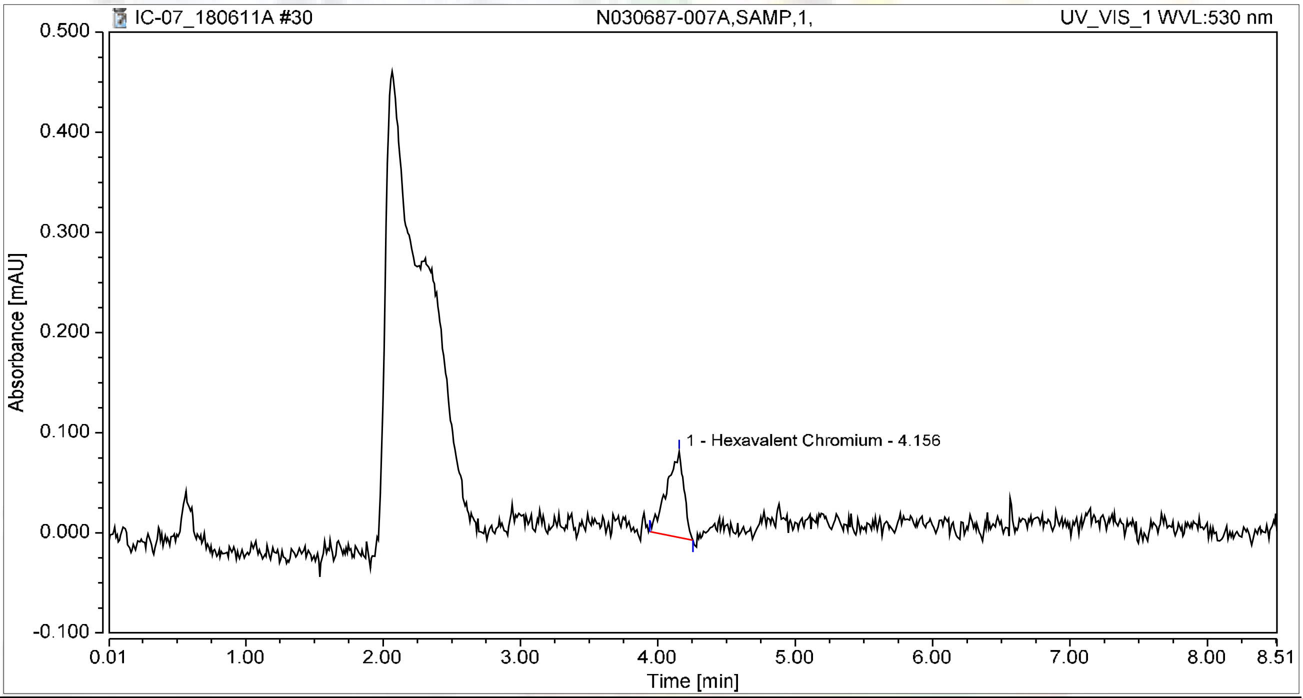
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.357	8.187	100.00	100.00	5.2137
Total:			**1.357**	**8.187**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030687-007A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 13:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

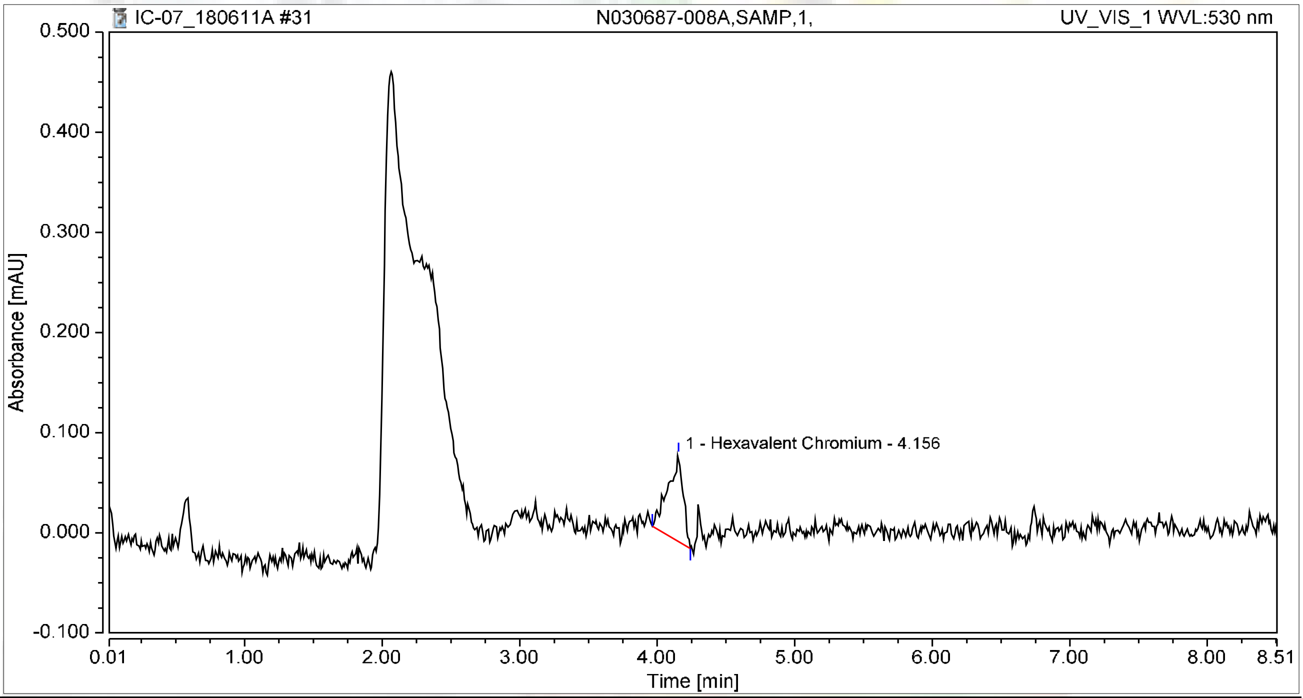
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.012	0.086	100.00	100.00	0.0474
Total:			**0.012**	**0.086**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030687-008A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 13:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

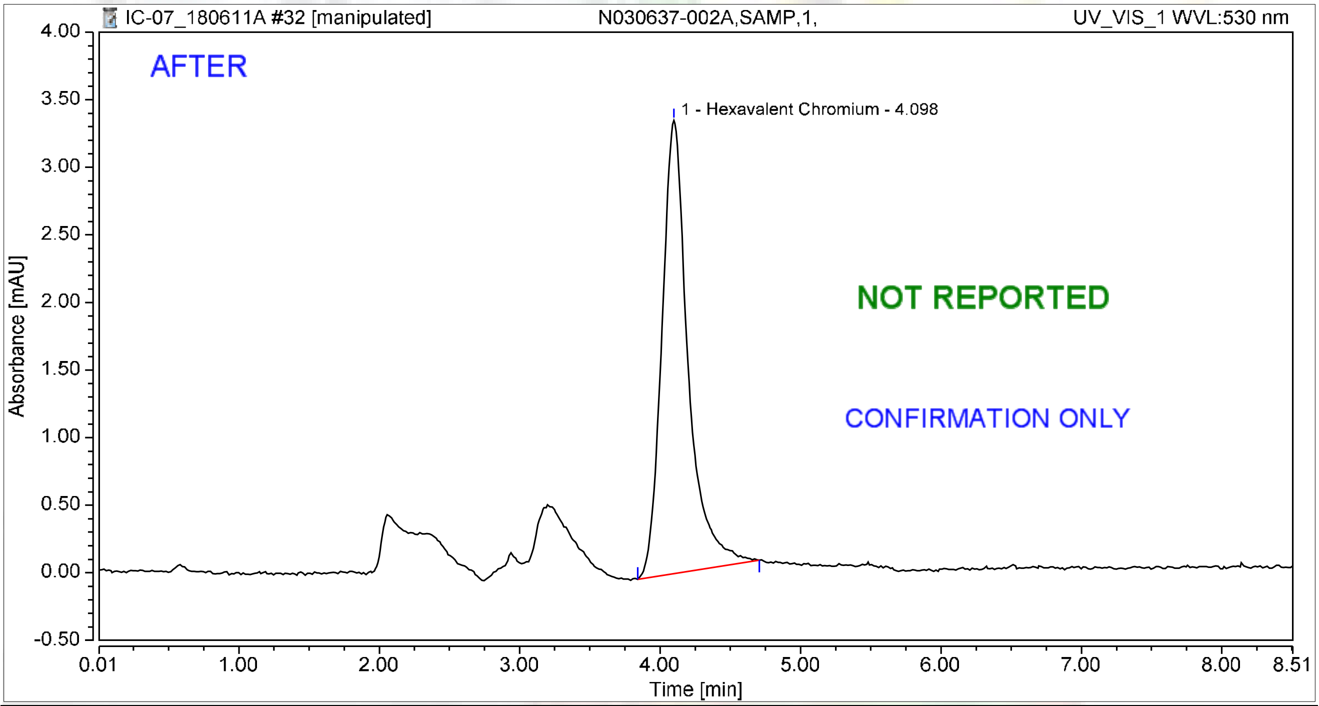
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.011	0.087	100.00	100.00	0.0421
Total:			**0.011**	**0.087**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030637-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 13:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.729	3.352	100.00	100.00	2.8003
Total:			**0.729**	**3.352**	**100.00**	**100.00**	

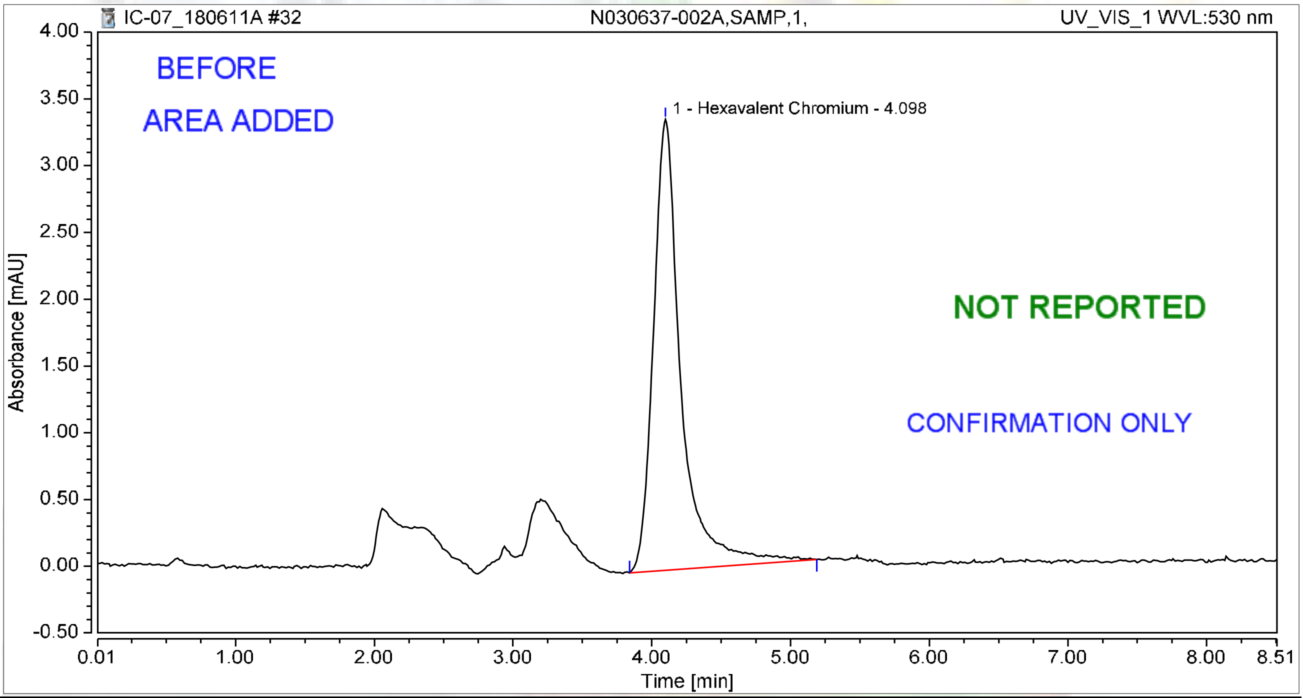
rba 6/13/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030637-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 13:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.780	3.375	100.00	100.00	2.9972
Total:			**0.780**	**3.375**	**100.00**	**100.00**	

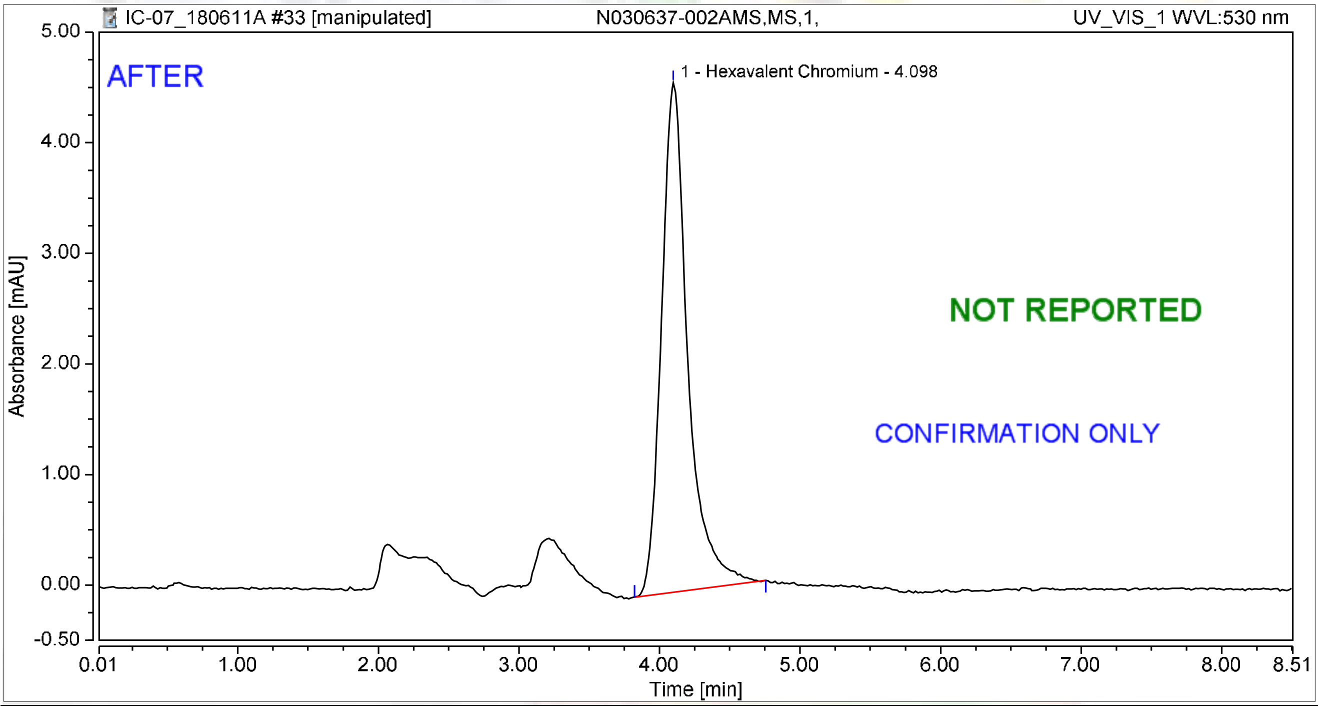
rba 6/13/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030637-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 13:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	1.000	4.607	100.00	100.00	3.8429
Total:			**1.000**	**4.607**	**100.00**	**100.00**	

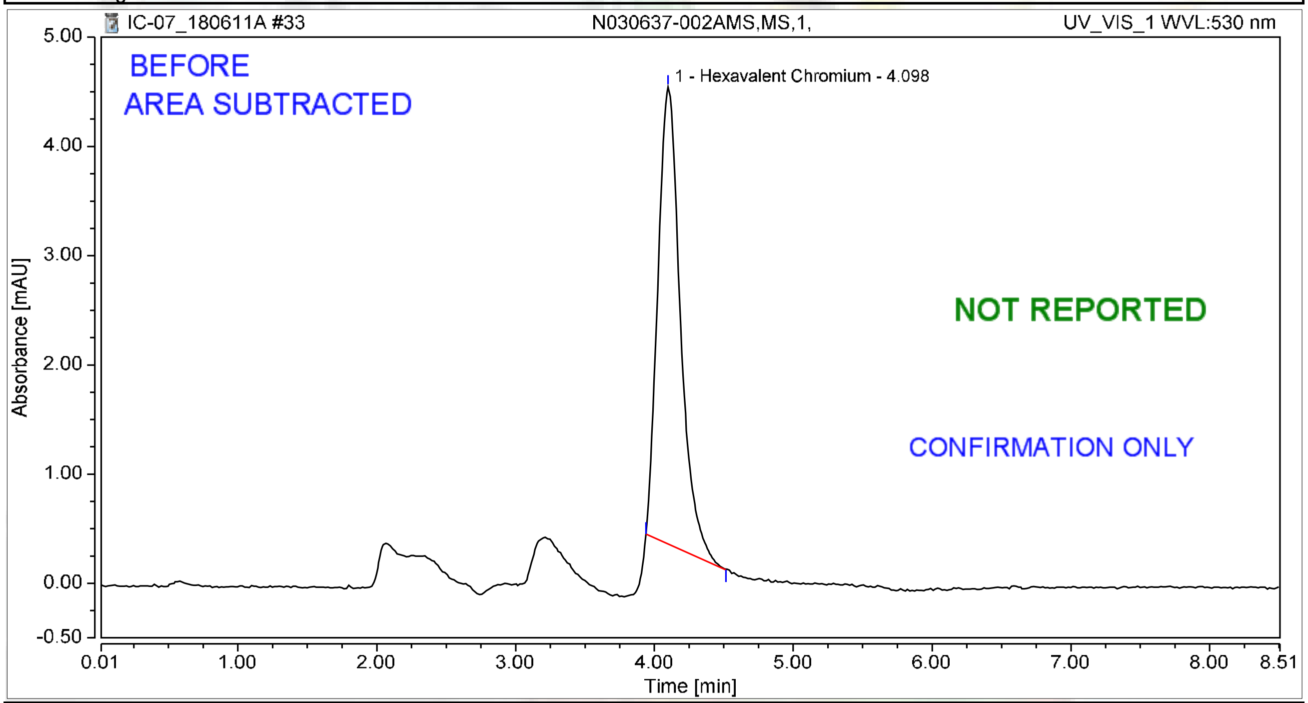
rba 6/13/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030637-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 13:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.784	4.181	100.00	100.00	3.0123
Total:			**0.784**	**4.181**	**100.00**	**100.00**	

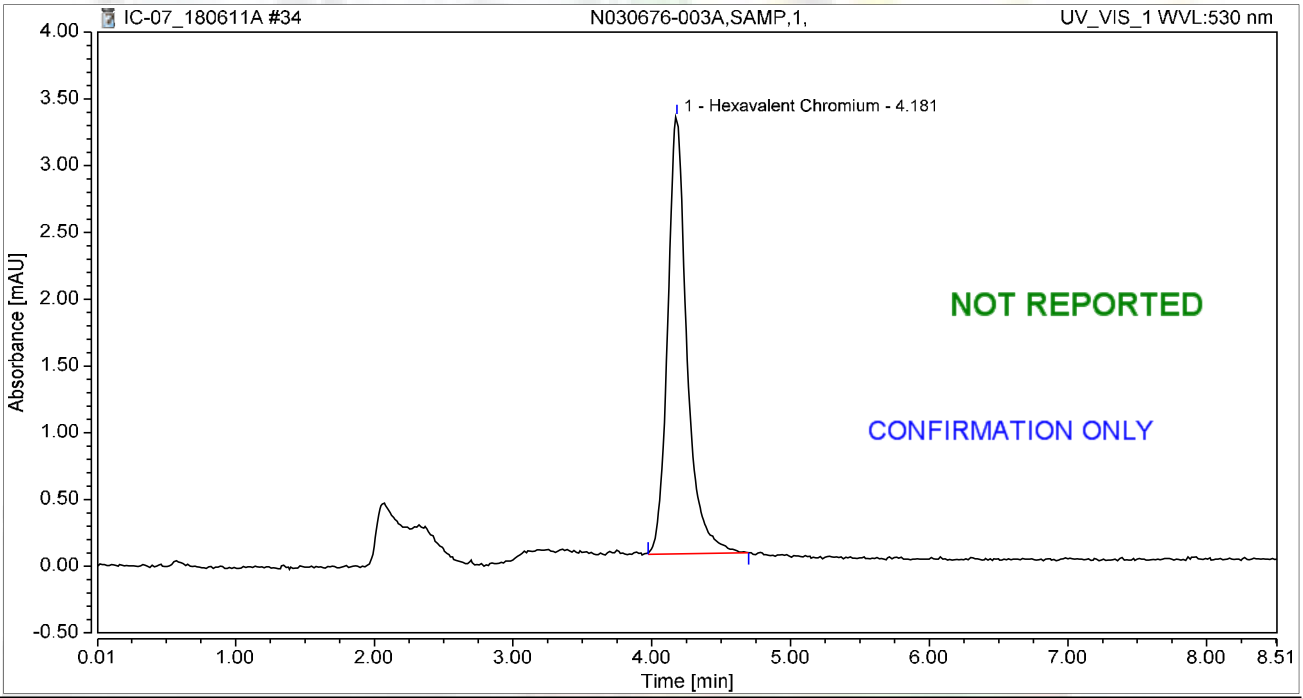
rba 6/13/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030676-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 13:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.529	3.271	100.00	100.00	2.0316
Total:			**0.529**	**3.271**	**100.00**	**100.00**	

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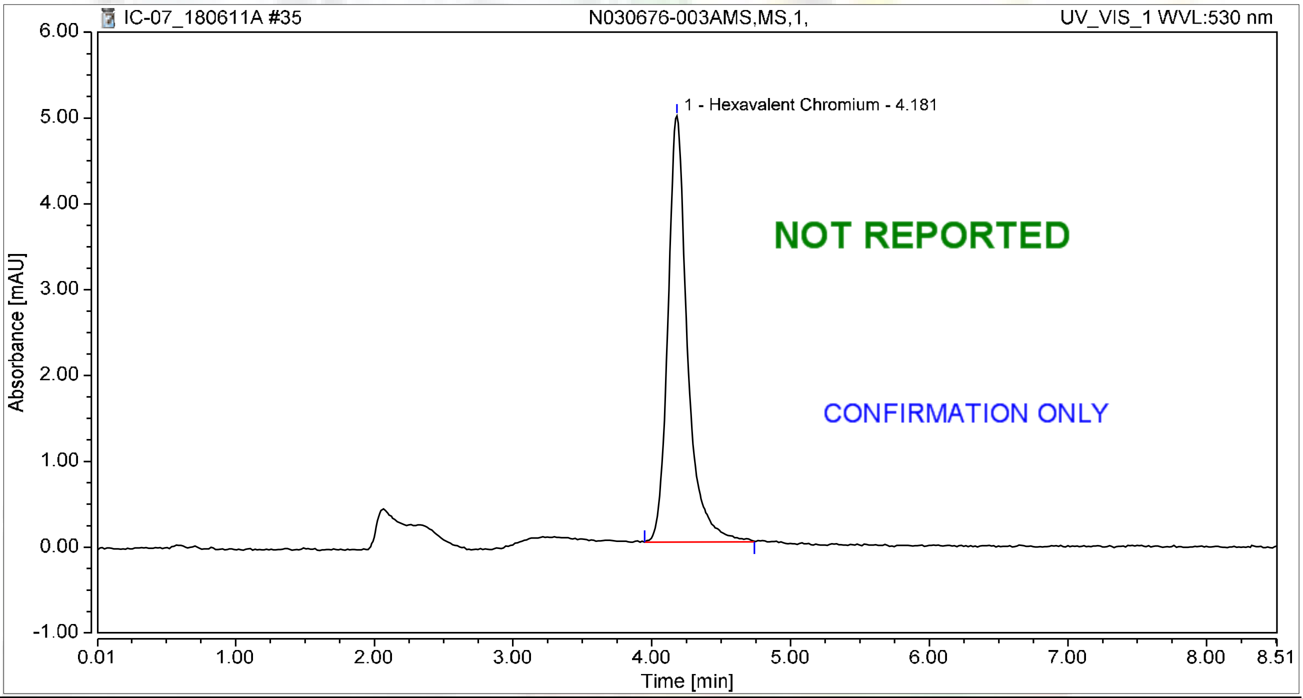
Chromatogram and Results

Injection Details

Injection Name:	**N030676-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 14:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.813	4.965	100.00	100.00	3.1247
Total:			**0.813**	**4.965**	**100.00**	**100.00**	

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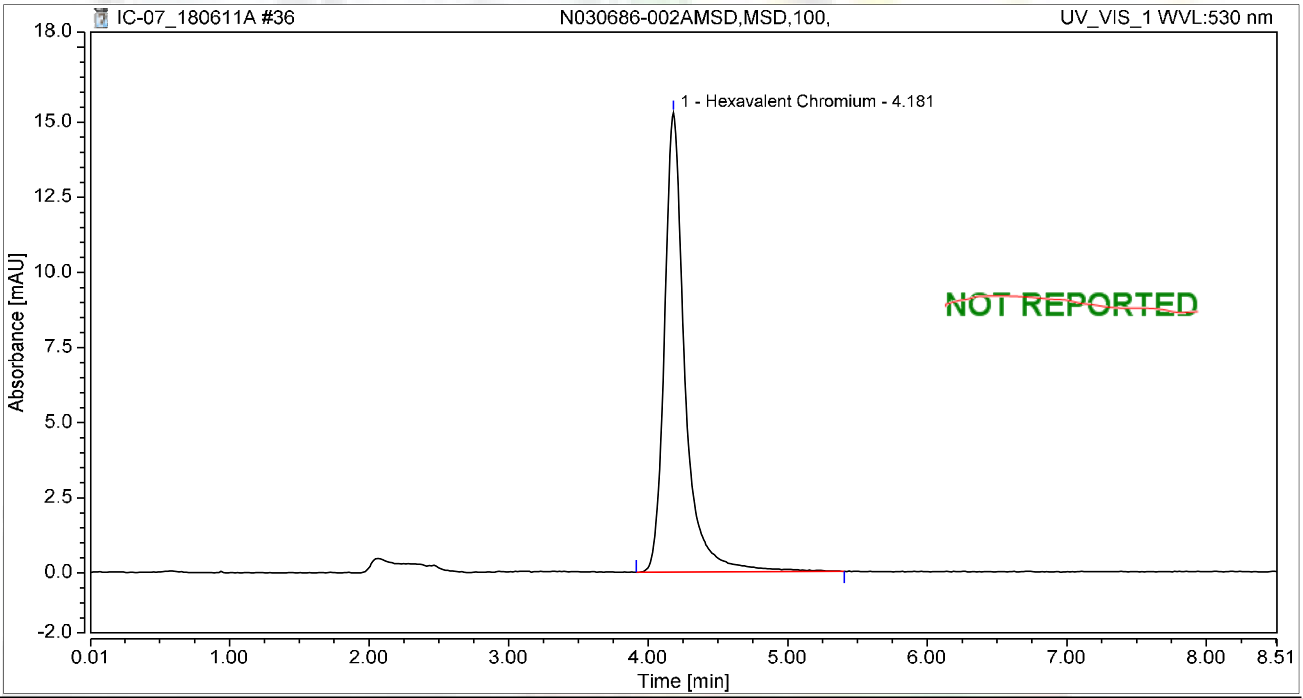
Chromatogram and Results

Injection Details

Injection Name:	**N030686-002AMSD,MSD,100,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 14:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.596	15.293	100.00	100.00	9.9784
Total:			**2.596**	**15.293**	**100.00**	**100.00**	

Nancy for 6/20/2018

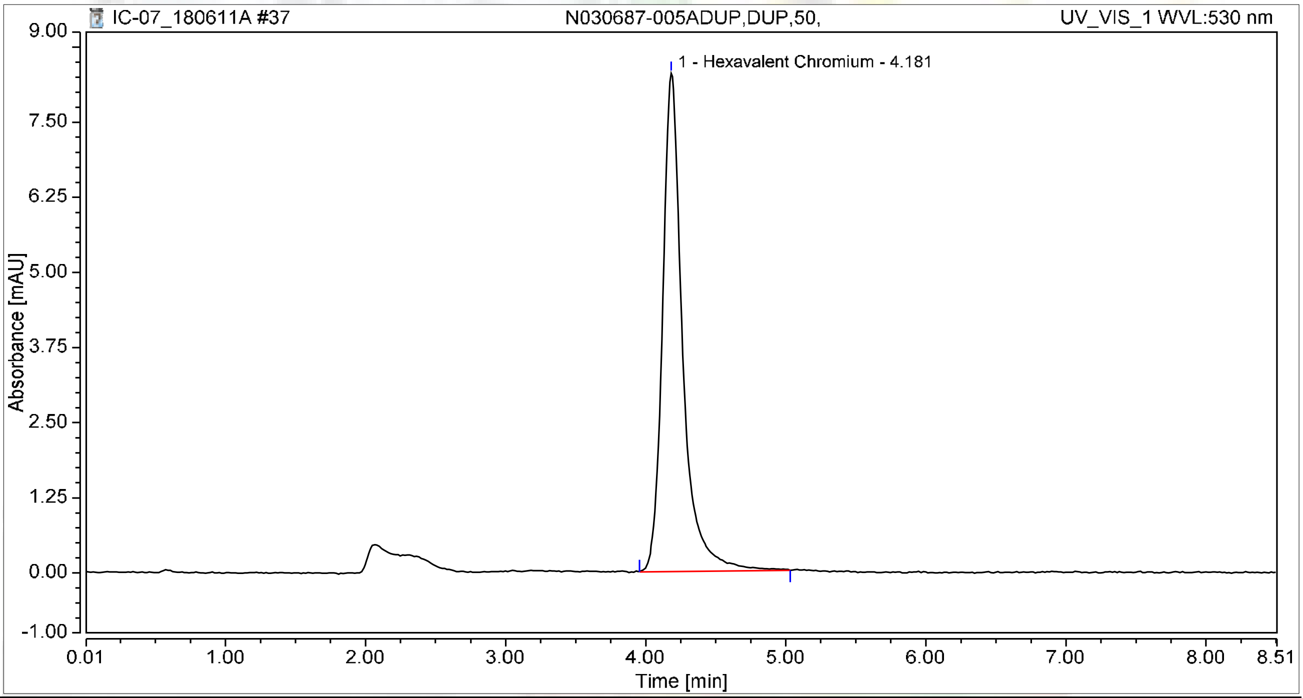
IC-07   RBA 6/12/2018 5:22:11 PM

Chromatogram and Results

Injection Details

Injection Name:	**N030687-005ADUP,DUP,50,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 14:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

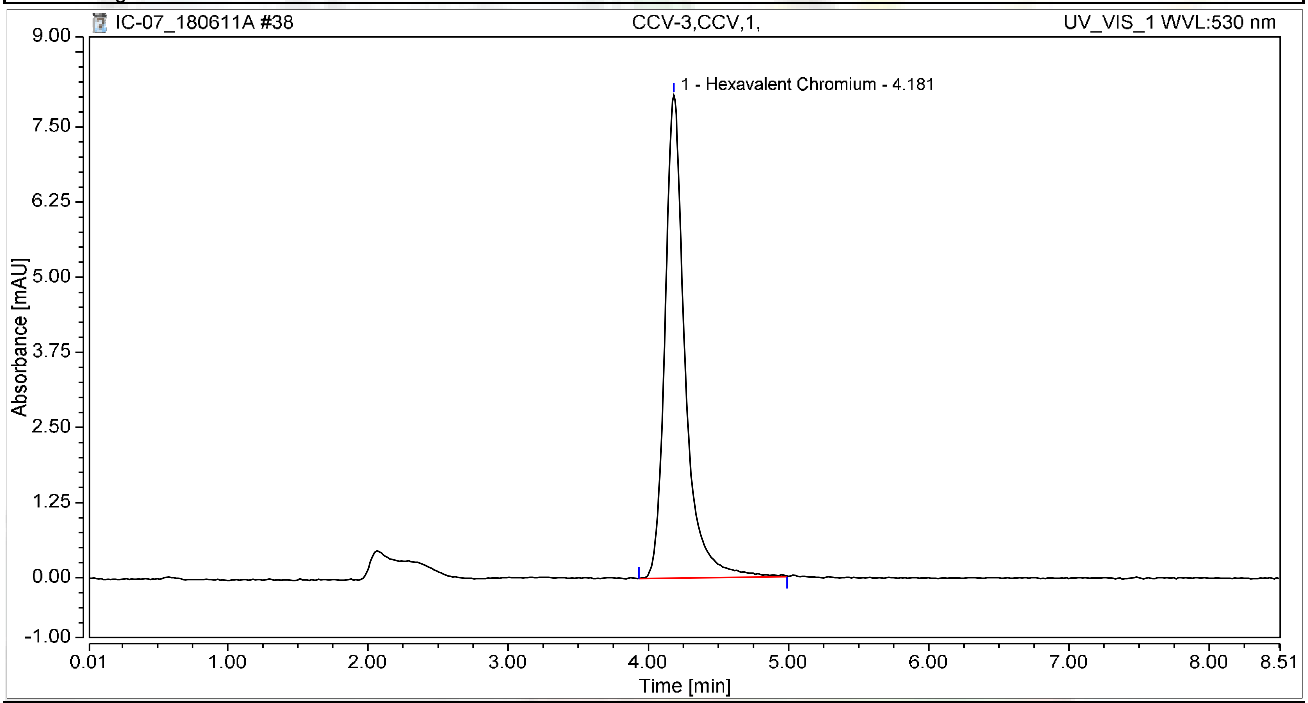
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.382	8.289	100.00	100.00	5.3133
Total:			**1.382**	**8.289**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 14:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

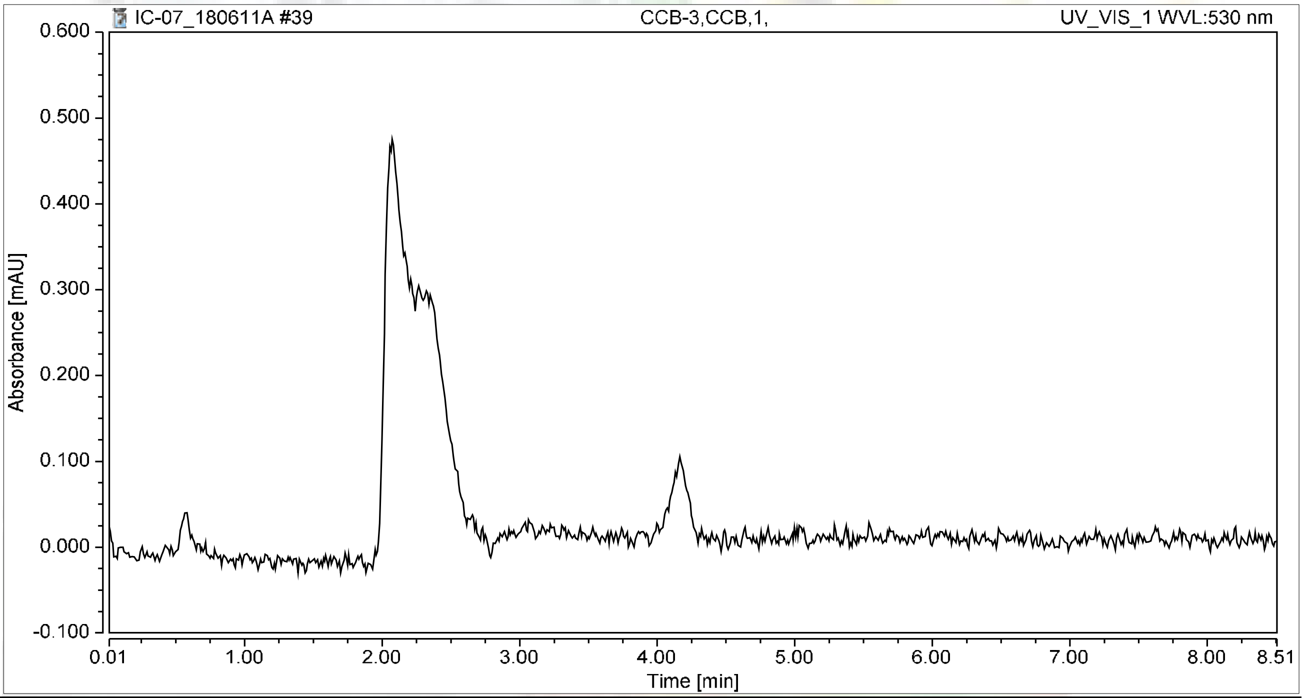
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.337	8.035	100.00	100.00	5.1370
Total:			**1.337**	**8.035**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/Jun/18 14:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R124535 **Analyst:** LSR

ASSET #: N030686 **Date Analyzed:** 6/8/2018

Method: EPA 2320

Initial Calibration	Ist Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 6/12/2018

2nd Level Reviewer [signature] 6/21/2018 Date:

SAMPLE CALCULATION

Sample ID: **N030686-001C @ pH 7.86**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.80 mL)

= **0.02119 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (7.90) (0.02119 N) (1) * 1000

= 167.4010 mg/**L**

Reporting results in two significant figures,

= **170 mg/L** as CaCO3

Julia Ramit 6/12/2018

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02119 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (7.90 mL) (0.02119) (1) * 1000

= 167.4010 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	OH Alkalinity as $CaCO_3$	CO_3 Alkalinity as $CaCO_3$	HCO_3 Alkalinity as $CaCO_3$
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = 167.4010 **mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **170 mg/L**

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LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.33	50	0.00	0.050	MBLK
LCS-1	8.47	50	0.05	4.65	LCS
N030668-003D	7.96	50	0.00	3.00	SAMP
N030668-004D	7.98	50	0.00	3.05	SAMP
N030668-005D	7.85	50	0.00	2.75	SAMP
N030668-006D	7.86	50	0.00	2.70	SAMP
N030668-009D	7.84	50	0.00	3.80	SAMP
N030668-010D	7.78	50	0.00	4.00	SAMP
N030668-011D	7.79	50	0.00	3.95	SAMP
N030686-001C	7.86	50	0.00	7.90	SAMP
N030686-002C	7.60	50	0.00	7.10	SAMP
N030668-003DDUP	7.99	50	0.00	3.00	DUP
N030668-010DMS	8.21	50	0.00	8.50	MS
N030668-010DMSD	8.21	50	0.00	8.40	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.800**	ml
N H_2SO_4	**0.02119**	Normal

Date Analyzed:	**6/8/18**
Time:	**9:20 AM**
Analyzed By:	**LSR**

Sodium Carbonate:	**CINV-161205A**
Sodium Bicarbonate:	**CINV-150601A**
Sulfuric Acid:	**R180507B**

Julia Ramit 6/12/2018

Date Analyzed:	6/8/18		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	9:20 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**LSR**			Hydrochloric Acid:		0			Titrant used:	11.8	**mL**		**P = 1/2 T**
				Sulfuric Acid:		R180507B							**P > 1/2 T**
									N H2SO4	0.02119	**N**		**P = T**

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.33				0.02119	0.00	0.05	0.05	1	0.00	1.06	
LCS-1	50	8.47				0.02119	0.05	4.60	4.65	1	1.06	98.52	
N030668-003D	50	7.96				0.02119	0.00	3.00	3.00	1	0.00	63.56	
N030668-004D	50	7.98				0.02119	0.00	3.05	3.05	1	0.00	64.62	
N030668-005D	50	7.85				0.02119	0.00	2.75	2.75	1	0.00	58.26	
N030668-006D	50	7.86				0.02119	0.00	2.70	2.70	1	0.00	57.20	
N030668-009D	50	7.84				0.02119	0.00	3.80	3.80	1	0.00	80.51	
N030668-010D	50	7.78				0.02119	0.00	4.00	4.00	1	0.00	84.75	
N030668-011D	50	7.79				0.02119	0.00	3.95	3.95	1	0.00	83.69	
N030686-001C	50	7.86				0.02119	0.00	7.90	7.90	1	0.00	167.37	
N030686-002C	50	7.6				0.02119	0.00	7.10	7.10	1	0.00	150.42	
N030668-003DDU	50	7.99				0.02119	0.00	3.00	3.00	1	0.00	63.56	
N030668-010DMS	50	8.21				0.02119	0.00	8.50	8.50	1	0.00	180.08	
N030668-010DMS	50	8.21				0.02119	0.00	8.40	8.40	1	0.00	177.97	

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Speciated, Alkalinity as $CaCO_3$

SM 2320B

Date Analyzed:	6/8/18
Time:	9:20 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.06	1.06	1.06		P = 0
LCS-1	0.00	2.12	96.40	98.52	98.52		P < 1/2 T
N030668-003D	0.00	0.00	63.56	63.56	63.56		P = 0
N030668-004D	0.00	0.00	64.62	64.62	64.62		P = 0
N030668-005D	0.00	0.00	58.26	58.26	58.26		P = 0
N030668-006D	0.00	0.00	57.20	57.20	57.20		P = 0
N030668-009D	0.00	0.00	80.51	80.51	80.51		P = 0
N030668-010D	0.00	0.00	84.75	84.75	84.75		P = 0
N030668-011D	0.00	0.00	83.69	83.69	83.69		P = 0
N030686-001C	0.00	0.00	167.37	167.37	167.37		P = 0
N030686-002C	0.00	0.00	150.42	150.42	150.42		P = 0
N030668-003DDUP	0.00	0.00	63.56	63.56	63.56		P = 0
N030668-010DMS	0.00	0.00	180.08	180.08	180.08		P = 0
N030668-010DMSD	0.00	0.00	177.97	177.97	177.97		P = 0

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Matrix: H2O

Date Extracted: 6/8/18
Time Extracted:
Extracted By:

Date Analyzed: 6/8/18
Time Analyzed: 920
Analyzed By: BK

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV1612051A
Hydrochloric Acid: —
Sulfuric Acid: R1805078
Sodium Bicarbonate: CINV1706014

pH meter Calibration:
SLOPE: 97.5%
pH 7 - 6.99 CINV171215D
4 - 4.01 171205A
10 - 9.99 180119A

Sample ID	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
STANDARDIZATION											
#1	50mL	10.69	W5T180607A	5mL	0.05N	-	-	11.80	50/50	$N_{H_2SO_4} = \frac{(2.65g/L)(5mL)}{(53)(V_{titrant})}$	= 0.02118644
#2	↓	10.71	↓	↓	↓	-	-	11.80	↓		
1) MBLK	50mL	5.33	-	-	-	0.02119	0	0.85	50/50		
2) LCS		8.43	W5T180607B	1mL	0.05N		0.05	4.65			
3) N030668-3D		7.96					0	3.00			
4) 4D		7.98					0	3.05			
5) 5D		7.85					0	2.75			
6) 6D		7.86					0	2.70			
7) 9D		7.84					0	3.80			
8) 10D		7.78					0	4.00			
9) 11D		7.79					0	3.95			
10) N030686-1C		7.86					0	7.90			
11) 2C		7.60					0	7.10			
12) N030668-3DDUP		7.99					0	3.00			
13) 10D MS		8.21	W5T180607B	1mL	0.05N		0	8.50			
14) 10 MSD	↓	8.21	↓	↓	↓	↓	0	8.40	↓		
15)											
16)											
17)											
18)											
19)											
20)											
MS											
MSD											
LCS											

$$P = \frac{(V_{pH\ 8.3})(N_{H_2SO_4})(50{,}000)}{V_{sx}}$$

$$T = \frac{(V_{pH\ 4.5})(N_{H_2SO_4})(50{,}000)}{V_{sx}}$$

Julia Ramit 6/12/2018

EPA 300.0

IC ARCUS
REV 2.0
011416

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R124732
ASSET #: N030686 / N030668

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 6/14/2018

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others ____________

Initial Calibration and Initial Calibration Verification	Ist Level Review Y	Ist Level Review N	Ist Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba — Date: 6/20/2018

2nd Level Reviewer: Nancy 6/21/2018 — Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N030686-001C** concentration in mg/L is calculated as follows:

Chloride, mg/L = 3.1329 * 50

= 156.645

Reporting result in two significant values,

Chloride, mg/L = 160

rba 6/20/2018

ANALYSIS RUN LOG

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 6/4/2018 8:20:44 AM by IC-05
#Samples: 61 Last Update: 6/6/2018 1:19:47 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
3	Std - 0	Standard	1000.0	Anions Default	EPA 300_0_180604	Finished
4	Std - 1	Standard	1000.0	Anions Default	EPA 300_0_180604	Finished
5	Std - 2	Standard	1000.0	Anions Default	EPA 300_0_180604	Finished
6	Std - 3	Standard	1000.0	Anions Default	EPA 300_0_180604	Finished
7	Std - 4	Standard	1000.0	Anions Default	EPA 300_0_180604	Finished
8	Std - 5	Standard	1000.0	Anions Default	EPA 300_0_180604	Finished
9	ICV	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
10	ICB	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
13	N030534-001A,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
14	N030534-001ADUP,DUP,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
15	N030535-001A,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
16	N030535-001AMS,MS,5	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
17	N030535-001AMSD,MSD,5	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
18	N030536-001A,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
19	N030536-001AMS,MS,5	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
20	N030537-001A,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
21	CCV-1,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
22	CCB-1,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
23	N030538-001A,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
24	N030539-001A,SAMP,20	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
25	N030539-001A,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
26	N030616-001B,SAMP,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
27	N030541-001A,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
28	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
29	N030542-001A,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
30	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
31	N030543-001A,SAMP,100	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
32	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
33	CCV-2,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
34	CCB-2,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
35	N030544-001A,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
36	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
37	N030545-001A,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
38	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
39	N030546-001A,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
40	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
41	N030547-001A,SAMP,100	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished

rba 6/10/2018

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 6/4/2018 8:20:44 AM by IC-05
#Samples: 61 Last Update: 6/6/2018 1:19:47 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	6/4/2018 8:49:04 AM	BLANK
2	BLANK,BLANK,1	6/4/2018 9:04:22 AM	BLANK
3	Std - 0	6/4/2018 9:26:53 AM	IBLANK
4	Std - 1	6/4/2018 9:42:11 AM	STD-LOW
5	Std - 2	6/4/2018 9:57:28 AM	STD
6	Std - 3	6/4/2018 10:12:46 AM	STD
7	Std - 4	6/4/2018 10:28:04 AM	STD
8	Std - 5	6/4/2018 10:43:22 AM	STD-HIGH
9	ICV	6/4/2018 10:58:39 AM	CCV
10	ICB	6/4/2018 11:13:57 AM	CCB
11	MB-H2O,MBLK,1	6/4/2018 11:29:15 AM	METHOD BLANK
12	LCS-H2O,LCS,1	6/4/2018 11:44:33 AM	LCS
13	N030534-001A,SAMP,1	6/4/2018 11:59:52 AM	SAMP,10mL
14	N030534-001ADUP,DUP,1	6/4/2018 12:15:09 PM	DUP,10mL
15	N030535-001A,SAMP,2	6/4/2018 12:30:27 PM	SAMP,5>10mL
16	N030535-001AMS,MS,5	6/4/2018 12:45:45 PM	MS,2>10mL
17	N030535-001AMSD,MSD,5	6/4/2018 1:01:03 PM	MSD,2>10mL
18	N030536-001A,SAMP,2	6/4/2018 1:16:21 PM	SAMP,5>10mL
19	N030536-001AMS,MS,5	6/4/2018 1:31:39 PM	MS,2>10mL
20	N030537-001A,SAMP,1	6/4/2018 1:46:57 PM	SAMP,10mL
21	CCV-1,CCV,1	6/4/2018 2:02:15 PM	CCV
22	CCB-1,CCB,1	6/4/2018 2:17:33 PM	CCB
23	N030538-001A,SAMP,1	6/4/2018 2:32:51 PM	SAMP,10mL
24	N030539-001A,SAMP,20	6/4/2018 2:48:09 PM	SAMP,0.5>10mL
25	N030539-001A,SAMP,2	6/4/2018 3:09:34 PM	SAMP,5>10mL
26	N030616-001B,SAMP,1	6/4/2018 3:24:52 PM	SAMP,10mL
27	N030541-001A,SAMP,200	6/4/2018 3:40:10 PM	SAMP,0.05>10mL
28	BLANK,BLANK,1	6/4/2018 3:55:28 PM	BLANK
29	N030542-001A,SAMP,200	6/4/2018 4:10:46 PM	SAMP,0.05>10mL
30	BLANK,BLANK,1	6/4/2018 4:26:04 PM	BLANK
31	N030543-001A,SAMP,100	6/4/2018 4:41:21 PM	SAMP,0.1>10mL
32	BLANK,BLANK,1	6/4/2018 4:56:39 PM	BLANK
33	CCV-2,CCV,1	6/4/2018 5:11:58 PM	CCV
34	CCB-2,CCB,1	6/4/2018 5:27:15 PM	CCB
35	N030544-001A,SAMP,200	6/4/2018 5:42:33 PM	SAMP,0.05>10mL
36	BLANK,BLANK,1	6/4/2018 5:57:51 PM	BLANK
37	N030545-001A,SAMP,200	6/4/2018 6:13:09 PM	SAMP,0.05>10mL
38	BLANK,BLANK,1	6/4/2018 6:28:26 PM	BLANK
39	N030546-001A,SAMP,200	6/4/2018 6:43:44 PM	SAMP,0.05>10mL
40	BLANK,BLANK,1	6/4/2018 6:59:02 PM	BLANK
41	N030547-001A,SAMP,100	6/4/2018 7:14:20 PM	SAMP,0.1>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 6/4/2018 8:20:44 AM by IC-05
#Samples: 61 Last Update: 6/6/2018 1:19:47 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
43	N030540-001A,SAMP,200	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
44	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
45	CCV-3,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
46	CCB-3,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
47	N030616-001BDUP,DUP,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
48	N030616-001BMS,MS,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
49	N030616-001BMSD,MSD,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
50	N030616-001B,SAMP,2	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
51	N030616-001BDUP,DUP,2	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
52	N030616-001BMS,MS,2	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
53	N030616-001BMSD,MSD,2	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
54	N030616-001B,SAMP,10	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
55	N030616-001BDUP,DUP,10	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
56	N030616-001BMS,MS,10	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
57	CCV-4,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
58	CCB-4,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
59	N030616-001BMSD,MSD,10	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
60	CCV-5,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
61	CCB-5,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 6/4/2018 8:20:44 AM by IC-05
#Samples: 61 Last Update: 6/6/2018 1:19:47 AM by IC-05

No.	Name	Inj. Date/Time	Comment
42	BLANK,BLANK,1	6/4/2018 7:29:39 PM	BLANK
43	N030540-001A,SAMP,200	6/4/2018 7:44:56 PM	SAMP,0.05>10mL
44	BLANK,BLANK,1	6/4/2018 8:00:14 PM	BLANK
45	CCV-3,CCV,1	6/4/2018 8:15:32 PM	CCV
46	CCB-3,CCB,1	6/4/2018 8:30:50 PM	CCB
47	N030616-001BDUP,DUP,1	6/4/2018 8:46:07 PM	DUP,10mL
48	N030616-001BMS,MS,1	6/4/2018 9:01:25 PM	MS,10mL
49	N030616-001BMSD,MSD,1	6/4/2018 9:16:43 PM	MSD,10mL
50	N030616-001B,SAMP,2	6/4/2018 9:32:01 PM	SAMP,5>10mL
51	N030616-001BDUP,DUP,2	6/4/2018 9:47:18 PM	DUP,5>10mL
52	N030616-001BMS,MS,2	6/4/2018 10:02:36 PM	MS,5>10mL
53	N030616-001BMSD,MSD,2	6/4/2018 10:17:55 PM	MSD,5>10mL
54	N030616-001B,SAMP,10	6/4/2018 10:33:13 PM	SAMP,1>10mL
55	N030616-001BDUP,DUP,10	6/4/2018 10:48:31 PM	DUP,1>10mL
56	N030616-001BMS,MS,10	6/4/2018 11:03:49 PM	MS,1>10mL
57	CCV-4,CCV,1	6/4/2018 11:19:06 PM	CCV
58	CCB-4,CCB,1	6/4/2018 11:34:24 PM	CCB
59	N030616-001BMSD,MSD,10	6/4/2018 11:49:42 PM	MSD,1>10mL
60	CCV-5,CCV,1	6/5/2018 12:05:00 AM	CCV
61	CCB-5,CCB,1	6/5/2018 12:20:18 AM	CCB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 6/14/2018 7:44:42 AM by IC-05
#Samples: 29 Last Update: 6/14/2018 1:09:31 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
3	Std - 0	Standard	1000.0	Anions Default	EPA 300_0_180604	Finished
4	Std - 1	Standard	1000.0	Anions Default	EPA 300_0_180604	Finished
5	Std - 2	Standard	1000.0	Anions Default	EPA 300_0_180604	Finished
6	Std - 3	Standard	1000.0	Anions Default	EPA 300_0_180604	Finished
7	Std - 4	Standard	1000.0	Anions Default	EPA 300_0_180604	Finished
8	Std - 5	Standard	1000.0	Anions Default	EPA 300_0_180604	Finished
9	CCV-1,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
10	CCB-1,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
11	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
12	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
13	N030686-001C,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
14	N030686-001CDUP,DUP,50	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
15	N030686-001CMS,MS,50	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
16	N030686-001CMSD,MSD,50	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
17	N030686-002C,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
18	N030686-002C,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
19	N030668-009D,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
20	N030668-009D,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
21	CCV-2,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
22	CCB-2,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
23	N030668-010D,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
24	N030668-010D,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
25	N030668-011D,SAMP,500	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
26	N030668-011D,SAMP,50	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
27	CCV-3,CCV,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
28	CCB-3,CCB,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished
29	BLANK,BLANK,1	Unknown	1000.0	Anions Default	EPA 300_0_180604	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2018_Anions
Timebase: IC-08_ANIONS Created: 6/14/2018 7:44:42 AM by IC-05
#Samples: 29 Last Update: 6/14/2018 1:09:31 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	6/4/2018 8:49:04 AM	BLANK
2	BLANK,BLANK,1	6/4/2018 9:04:22 AM	BLANK
3	Std - 0	6/4/2018 9:26:53 AM	IBLANK
4	Std - 1	6/4/2018 9:42:11 AM	STD-LOW
5	Std - 2	6/4/2018 9:57:28 AM	STD
6	Std - 3	6/4/2018 10:12:46 AM	STD
7	Std - 4	6/4/2018 10:28:04 AM	STD
8	Std - 5	6/4/2018 10:43:22 AM	STD-HIGH
9	CCV-1,CCV,1	6/14/2018 8:02:04 AM	CCV
10	CCB-1,CCB,1	6/14/2018 8:17:23 AM	CCB
11	MB-H2O,MBLK,1	6/14/2018 8:32:41 AM	METHOD BLANK
12	LCS-H2O,LCS,1	6/14/2018 8:47:59 AM	LCS
13	N030686-001C,SAMP,50	6/14/2018 9:07:28 AM	SAMP,0.2>10mL
14	N030686-001CDUP,DUP,50	6/14/2018 9:31:59 AM	DUP,0.2>10mL
15	N030686-001CMS,MS,50	6/14/2018 9:47:16 AM	MS,0.2>10mL
16	N030686-001CMSD,MSD,50	6/14/2018 10:02:34 AM	MSD,0.2>10mL
17	N030686-002C,SAMP,500	6/14/2018 10:17:52 AM	SAMP,0.02>10mL
18	N030686-002C,SAMP,50	6/14/2018 10:33:10 AM	SAMP,0.2>10mL
19	N030668-009D,SAMP,500	6/14/2018 10:48:27 AM	SAMP,0.02>10mL
20	N030668-009D,SAMP,50	6/14/2018 11:03:45 AM	SAMP,0.2>10mL
21	CCV-2,CCV,1	6/14/2018 11:19:03 AM	CCV
22	CCB-2,CCB,1	6/14/2018 11:34:21 AM	CCB
23	N030668-010D,SAMP,500	6/14/2018 11:49:39 AM	SAMP,0.02>10mL
24	N030668-010D,SAMP,50	6/14/2018 12:04:57 PM	SAMP,0.2>10mL
25	N030668-011D,SAMP,500	6/14/2018 12:20:15 PM	SAMP,0.02>10mL
26	N030668-011D,SAMP,50	6/14/2018 12:35:33 PM	SAMP,0.2>10mL
27	CCV-3,CCV,1	6/14/2018 12:50:51 PM	CCV
28	CCB-3,CCB,1	6/14/2018 1:06:09 PM	CCB
29	BLANK,BLANK,1	6/14/2018 1:21:27 PM	BLANK

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 6/4/2018

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0712	0.1446	0.2943	0.7727	1.5999	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 6/4/2018

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0565	0.2235	0.4505	1.1460	2.3912	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST-170814G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **ICV** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/4/2018** SeqNo: **3058654**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.931	0.50	2.000	0	96.5	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **CCV** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058656**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.980	0.50	2.000	0	99.0	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **CCV** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058666**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.941	0.50	2.000	0	97.0	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **CCV** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.934	0.50	2.000	0	96.7	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV** SampType: **ICV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **ICV** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/4/2018** SeqNo: **3058672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.877	0.50	4.000	0	96.9	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **CCV** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058674**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.937	0.50	4.000	0	98.4	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **CCV** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.915	0.50	4.000	0	97.9	90	110				

Sample ID **CCV-3** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **CCV** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058688**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.912	0.50	4.000	0	97.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB** | SampType: **ICB** | TestCode: **300_W_CLP** | Units: **mg/L** | Prep Date: | RunNo: **124732**
Client ID: **ICB** | Batch ID: **R124732** | TestNo: **EPA 300.0** | Analysis Date: **6/4/2018** | SeqNo: **3058655**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1** | SampType: **CCB** | TestCode: **300_W_CLP** | Units: **mg/L** | Prep Date: | RunNo: **124732**
Client ID: **CCB** | Batch ID: **R124732** | TestNo: **EPA 300.0** | Analysis Date: **6/14/2018** | SeqNo: **3058657**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.134	0.50									

Sample ID **CCB-2** | SampType: **CCB** | TestCode: **300_W_CLP** | Units: **mg/L** | Prep Date: | RunNo: **124732**
Client ID: **CCB** | Batch ID: **R124732** | TestNo: **EPA 300.0** | Analysis Date: **6/14/2018** | SeqNo: **3058667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3** | SampType: **CCB** | TestCode: **300_W_CLP** | Units: **mg/L** | Prep Date: | RunNo: **124732**
Client ID: **CCB** | Batch ID: **R124732** | TestNo: **EPA 300.0** | Analysis Date: **6/14/2018** | SeqNo: **3058671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.134	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB** SampType: **ICB** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **ICB** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/4/2018** SeqNo: **3058673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.197	0.50									

Sample ID **CCB-1** SampType: **CCB** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **CCB** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058675**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2** SampType: **CCB** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **CCB** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3** SampType: **CCB** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **124732**
Client ID: **CCB** Batch ID: **R124732** TestNo: **EPA 300.0** Analysis Date: **6/14/2018** SeqNo: **3058689**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.193	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 6/14/2018

Sample Name	Retention Time		Evaluation
ICV	Chloride	3.930	
CCV-1	Chloride	3.904	
CCV-2	Chloride	3.900	
CCV-3	Chloride	3.900	

Average 3.901

Applied RT Window 3.701 - 4.101

MB-R124732_CL	Chloride	N.A.	N.A.
LCS-R124732_CL	Chloride	3.900	PASS
N030686-001C	Chloride	3.900	PASS
N030686-001CDUP	Chloride	3.900	PASS
N030686-001CMS	Chloride	3.900	PASS
N030686-001CMSD	Chloride	3.900	PASS
N030686-002C	Chloride	3.904	PASS

rba 6/20/2018

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 6/14/2018

Sample Name	Retention Time		Evaluation
ICV	Sulfate	8.297	
CCV-1	Sulfate	8.157	
CCV-2	Sulfate	8.150	
CCV-3	Sulfate	8.150	

Average 8.152

Applied RT Window 7.952 - 8.352

MB-R124732_SO4	Sulfate	8.287	PASS
LCS-R124732_SO4	Sulfate	8.153	PASS
N030686-001C	Sulfate	8.150	PASS
N030686-001CDUP	Sulfate	8.150	PASS
N030686-001CMS	Sulfate	8.150	PASS
N030686-001CMSD	Sulfate	8.153	PASS
N030686-002C	Sulfate	8.154	PASS

rba 6/20/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 5/23/2017 ; 5/24/2017; 5/25/2017
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Datafile	170523A D36	170523A D37	170523A D38	170524A D17	170524A D18	170525A D45	170525A D46					
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**MDL**	**LOD**	**PQL**
Fluoride	0.020	0.022	0.021	0.020	0.023	0.026	0.024	0.020	0.0021	**0.0065**	0.020	0.10
Chloride	0.133	0.136	0.136	0.133	0.141	0.133	0.136	0.025	0.0029	**0.0091**	0.020	0.50
Nitrite	0.030	0.028	0.027	0.028	0.028	0.027	0.027	0.020	0.0010	**0.0030**	0.010	0.05
Bromide	0.037	0.042	0.043	0.038	0.040	0.032	0.025	0.040	0.0062	**0.0196**	0.040	0.20
Nitrate	0.035	0.034	0.033	0.033	0.033	0.031	0.030	0.020	0.0016	**0.0050**	0.010	0.05
Phosphate	0.047	0.051	0.049	0.046	0.052	0.047	0.059	0.040	0.0043	**0.0135**	0.030	0.10
Sulfate	0.213	0.199	0.208	0.216	0.199	0.201	0.198	0.050	0.0073	**0.0229**	0.050	0.50

MDL/LOD & PQL Verification 2018 (1st Quarter)

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)**
Method Number: EPA Method 300.0
Analysis Date(s): 3/29-30/2018
Analyst: Ria B. Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0065**	0.020	0.0252	0.10	0.087	**87**
Chloride	**0.0091**	0.020	0.1193	0.50	0.5757	**115**
Nitrite	**0.0030**	0.010	0.0237	0.05	0.0638	**128**
Bromide	**0.0196**	0.040	0.0405	0.20	0.1993	**100**
Nitrate	**0.0050**	0.010	0.0191	0.05	0.0561	**112**
Phosphate	**0.0135**	0.030	0.0415	0.10	0.1216	**122**
Sulfate	**0.0229**	0.050	0.3682	0.50	0.6549	**131**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R124671 **Analyst:** QBM

ASSET #: N030668, N030686, N030762 **Date Analyzed:** 6/16/2018

Method: **4500_NO3**

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.		X				
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec of Nitrate/Nitrite as N in CCV-3 failed, low bias. Affected samples were not reported.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 06/21/2018

2nd Level Reviewer RB 06/21/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N030686-002D**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.5436	*	5
	=	2.718	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 2.7 mg/L

RB 06/21/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

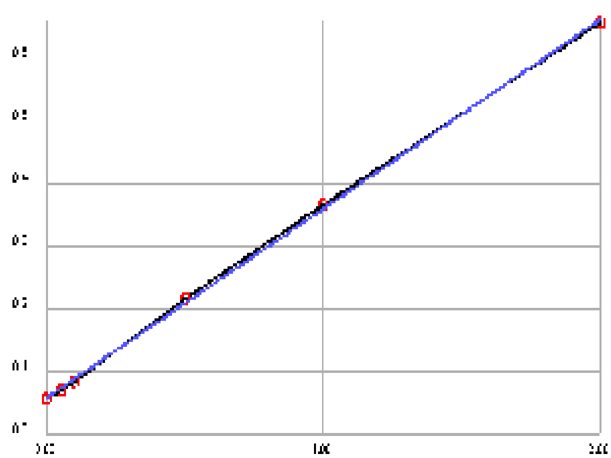
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.3011x + 0.0574
Correlation	.999762

Calibrant	Energy	Set	Conc
1	0.0556	0.0000	-0.0060
2	0.0701	0.0500	0.0421
3	0.0832	0.1000	0.0857
4	0.2150	0.5000	0.5234
5	0.3644	1.0000	1.0195
6	0.6552	2.0000	1.9853



Notes:

RJB 06/21/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **ICV** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.488	0.050	0.5000	0	97.6	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **CCV** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.476	0.050	0.5000	0	95.2	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **CCV** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.508	0.050	0.5000	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030686
Project: PG&E Topock - PMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **ICB** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **CCB** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **CCB** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 06-16-2018 11:23
Time end: 06-16-2018 14:15

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	13:35:29	-0.0266		0.0494
2	<BLANK>	13:36:22	-0.0103		0.0543
3	<CAL1>	13:37:24	-0.0060	[0]	0.0556
4	<CAL2>	13:38:19	0.0421	[0.05]	0.0701
5	<CAL3>	13:39:21	0.0857	[0.1]	0.0832
6	<CAL4>	13:40:15	0.5234	[0.5]	0.2150
7	<CAL5>	13:41:10	1.0195	[1]	0.3644
8	<CAL6>	13:42:06	1.9853	[2]	0.6552
9	,BLANK,BLANK,1, NOT REPORTED	13:43:06	0.0634		0.0765
10	,ICV,ICV,1,	13:44:01	0.4878		0.2043
11	,ICB,ICB,1,	13:44:57	0.0196		0.0633
12	,MB-H2O,MBLK,1,	13:45:58	-0.0030		0.0565
13	,LCS-H2O,LCS,1,	13:46:52	0.4606		0.1961
14	,N030668-003E,SAMP,5,	13:47:54	0.5446		0.2214
15	,N030668-004E,SAMP,5,	13:48:49	0.5141		0.2122
16	,N030668-001D,SAMP,5,	13:49:44	0.6652		0.2577
17	,N030668-001DDUP,DUP,5,	13:50:45	0.5901		0.2351
18	,N030668-002D,SAMP,5,	13:51:41	0.5742		0.2303
19	,N030668-002DMS,MS,5,	13:52:36	1.1222		0.3953
20	,N030668-002DMSD,MSD,5,	13:53:37	1.0936		0.3867
21	,BLANK, NOT REPORTED	13:54:32	0.0332		0.0674
22	,CCV-1,CCV,1,	13:55:28	0.4762		0.2008
23	,CCB-1,CCB,1,	13:56:28	0.0139		0.0616
24	,N030686-001D,SAMP,1,	13:57:23	0.0116		0.0609
25	,N030686-002D,SAMP,5,	13:58:19	0.5436		0.2211
26	,N030668-005E,SAMP,5,	13:59:21	0.5489		0.2227

RB 06/21/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N030668-006E,SAMP,5,	14:00:03	0.5572		0.2252
28	,N030668-009E,SAMP,5,	14:00:52	0.4945		0.2063
29	,N030668-010E,SAMP,5,	14:01:34	0.5722		0.2297
30	,N030668-011E,SAMP,5,	14:02:24	0.5526		0.2238
31	,N030762-001E,SAMP,1,	14:03:06	0.4071		0.1800
32	,N030762-002E,SAMP,1,	14:03:49	0.4158		0.1826
33	,BLANK, NOT REPORTED	14:04:39	0.0059		0.0592
34	,CCV-2,CCV,1,	14:05:21	0.5081		0.2104
35	,CCB-2,CCB,1,	14:06:04	-0.0027		0.0566
36	,N030762-003E,SAMP,1, NOT REPORTED	14:06:52	0.3796		0.1717
37	,N030762-005E,SAMP,1,	14:07:36	0.3483		0.1623
38	,N030762-006E,SAMP,1,	14:08:18	0.4058		0.1796
39	,N030762-007E,SAMP,1,	14:09:07	0.3567		0.1648
40	,N030762-008E,SAMP,1,	14:09:51	0.3759		0.1706
41	,N030762-009E,SAMP,1,	14:10:33	0.3832		0.1728
42	,N030762-010E,SAMP,1,	14:11:23	0.3796		0.1717
43	,BLANK,	14:12:05	-0.0007		0.0572
44	,CCV-3,CCV,1,	14:12:48	0.4360		0.1887
45	,CCB-3,CCB,1,	14:13:36	0.0010		0.0577

RJB 06/21/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 6/16/2018
Time Analyzed: 11:23 AM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180604D
Color reagent: R180604E
2% Copper Sulfate: R180604C
Ammonium Hydroxide: CINV-180521C

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N030668-001D		8.79							
N030668-002D		8.26							
N030668-003E		7.19							
N030668-004E		7.55							
N030668-005E		7.67							
N030668-006E		7.73							
N030668-009E		7.91							
N030668-010E		7.11							
N030668-011E		6.93							
N030686-001D		7.76							
N030686-002D		7.93							
N030762-001E		6.75							
N030762-002E		7.24							
N030762-003E		7.89							
N030762-005E		8.00							
N030762-006E		6.99							
N030762-007E		8.18							
N030762-008E		8.64							
N030762-009E		7.84							
N030762-010E		8.52							

Advanced Technology Laboratories, Inc.
Book # 1

RB 06/21/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

June 26, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030762

RE: PG&E Topock - RMP, RC000753.801D

Attention: Dan Bush

Enclosed are the results for sample(s) received on June 12, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - RMP, RC000753.801D
Lab Order:	N030762

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Sample N030762-012 (R-28-Q218) was not analyzed for several analytes. Please refer to the attached correspondence.

Samples N030762-016 and -017 (AB-1-Q218 and AB-2-Q218,respectively) were not analyzed for Hexavalent Chromium. Please refer to the attached correspondence.

Analytical Comments for SM 2540D:

RPD for Sample Duplicate (N030759-001ADUP) is outside criteria ; however, the associated Laboratory Control Sample (LCS) recovery was acceptable.

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories **Date:** *26-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.801D
Lab Order: N030762
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030762-001A	C-BNS-Q218	Groundwater	6/12/2018 11:44:00 AM	6/12/2018	6/26/2018
N030762-001B	C-BNS-Q218	Groundwater	6/12/2018 11:44:00 AM	6/12/2018	6/26/2018
N030762-001C	C-BNS-Q218	Groundwater	6/12/2018 11:44:00 AM	6/12/2018	6/26/2018
N030762-001D	C-BNS-Q218	Groundwater	6/12/2018 11:44:00 AM	6/12/2018	6/26/2018
N030762-001E	C-BNS-Q218	Groundwater	6/12/2018 11:44:00 AM	6/12/2018	6/26/2018
N030762-002A	C-I-3-D-Q218	Groundwater	6/12/2018 9:25:00 AM	6/12/2018	6/26/2018
N030762-002B	C-I-3-D-Q218	Groundwater	6/12/2018 9:25:00 AM	6/12/2018	6/26/2018
N030762-002C	C-I-3-D-Q218	Groundwater	6/12/2018 9:25:00 AM	6/12/2018	6/26/2018
N030762-002D	C-I-3-D-Q218	Groundwater	6/12/2018 9:25:00 AM	6/12/2018	6/26/2018
N030762-002E	C-I-3-D-Q218	Groundwater	6/12/2018 9:25:00 AM	6/12/2018	6/26/2018
N030762-003A	C-I-3-S-Q218	Groundwater	6/12/2018 9:40:00 AM	6/12/2018	6/26/2018
N030762-003B	C-I-3-S-Q218	Groundwater	6/12/2018 9:40:00 AM	6/12/2018	6/26/2018
N030762-003C	C-I-3-S-Q218	Groundwater	6/12/2018 9:40:00 AM	6/12/2018	6/26/2018
N030762-003D	C-I-3-S-Q218	Groundwater	6/12/2018 9:40:00 AM	6/12/2018	6/26/2018
N030762-003E	C-I-3-S-Q218	Groundwater	6/12/2018 9:40:00 AM	6/12/2018	6/26/2018
N030762-004A	MW-916-Q218	Groundwater	6/12/2018 2:15:00 PM	6/12/2018	6/26/2018
N030762-004B	MW-916-Q218	Groundwater	6/12/2018 2:15:00 PM	6/12/2018	6/26/2018
N030762-004C	MW-916-Q218	Groundwater	6/12/2018 2:15:00 PM	6/12/2018	6/26/2018
N030762-005A	C-R22A-D-Q218	Groundwater	6/12/2018 10:44:00 AM	6/12/2018	6/26/2018
N030762-005B	C-R22A-D-Q218	Groundwater	6/12/2018 10:44:00 AM	6/12/2018	6/26/2018
N030762-005C	C-R22A-D-Q218	Groundwater	6/12/2018 10:44:00 AM	6/12/2018	6/26/2018
N030762-005D	C-R22A-D-Q218	Groundwater	6/12/2018 10:44:00 AM	6/12/2018	6/26/2018
N030762-005E	C-R22A-D-Q218	Groundwater	6/12/2018 10:44:00 AM	6/12/2018	6/26/2018
N030762-006A	C-R22A-S-Q218	Groundwater	6/12/2018 11:00:00 AM	6/12/2018	6/26/2018
N030762-006B	C-R22A-S-Q218	Groundwater	6/12/2018 11:00:00 AM	6/12/2018	6/26/2018
N030762-006C	C-R22A-S-Q218	Groundwater	6/12/2018 11:00:00 AM	6/12/2018	6/26/2018
N030762-006D	C-R22A-S-Q218	Groundwater	6/12/2018 11:00:00 AM	6/12/2018	6/26/2018
N030762-006E	C-R22A-S-Q218	Groundwater	6/12/2018 11:00:00 AM	6/12/2018	6/26/2018
N030762-007A	C-R27-D-Q218	Groundwater	6/12/2018 12:08:00 PM	6/12/2018	6/26/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.801D
Lab Order: N030762
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030762-007B	C-R27-D-Q218	Groundwater	6/12/2018 12:08:00 PM	6/12/2018	6/26/2018
N030762-007C	C-R27-D-Q218	Groundwater	6/12/2018 12:08:00 PM	6/12/2018	6/26/2018
N030762-007D	C-R27-D-Q218	Groundwater	6/12/2018 12:08:00 PM	6/12/2018	6/26/2018
N030762-007E	C-R27-D-Q218	Groundwater	6/12/2018 12:08:00 PM	6/12/2018	6/26/2018
N030762-008A	C-R27-S-Q218	Groundwater	6/12/2018 12:25:00 PM	6/12/2018	6/26/2018
N030762-008B	C-R27-S-Q218	Groundwater	6/12/2018 12:25:00 PM	6/12/2018	6/26/2018
N030762-008C	C-R27-S-Q218	Groundwater	6/12/2018 12:25:00 PM	6/12/2018	6/26/2018
N030762-008D	C-R27-S-Q218	Groundwater	6/12/2018 12:25:00 PM	6/12/2018	6/26/2018
N030762-008E	C-R27-S-Q218	Groundwater	6/12/2018 12:25:00 PM	6/12/2018	6/26/2018
N030762-009A	C-TAZ-D-Q218	Groundwater	6/12/2018 8:28:00 AM	6/12/2018	6/26/2018
N030762-009B	C-TAZ-D-Q218	Groundwater	6/12/2018 8:28:00 AM	6/12/2018	6/26/2018
N030762-009C	C-TAZ-D-Q218	Groundwater	6/12/2018 8:28:00 AM	6/12/2018	6/26/2018
N030762-009D	C-TAZ-D-Q218	Groundwater	6/12/2018 8:28:00 AM	6/12/2018	6/26/2018
N030762-009E	C-TAZ-D-Q218	Groundwater	6/12/2018 8:28:00 AM	6/12/2018	6/26/2018
N030762-010A	MW-915-Q218	Groundwater	6/12/2018 10:18:00 AM	6/12/2018	6/26/2018
N030762-010B	MW-915-Q218	Groundwater	6/12/2018 10:18:00 AM	6/12/2018	6/26/2018
N030762-010C	MW-915-Q218	Groundwater	6/12/2018 10:18:00 AM	6/12/2018	6/26/2018
N030762-010D	MW-915-Q218	Groundwater	6/12/2018 10:18:00 AM	6/12/2018	6/26/2018
N030762-010E	MW-915-Q218	Groundwater	6/12/2018 10:18:00 AM	6/12/2018	6/26/2018
N030762-011A	C-TAZ-S-Q218	Groundwater	6/12/2018 8:50:00 AM	6/12/2018	6/26/2018
N030762-011B	C-TAZ-S-Q218	Groundwater	6/12/2018 8:50:00 AM	6/12/2018	6/26/2018
N030762-011C	C-TAZ-S-Q218	Groundwater	6/12/2018 8:50:00 AM	6/12/2018	6/26/2018
N030762-011D	C-TAZ-S-Q218	Groundwater	6/12/2018 8:50:00 AM	6/12/2018	6/26/2018
N030762-011E	C-TAZ-S-Q218	Groundwater	6/12/2018 8:50:00 AM	6/12/2018	6/26/2018
N030762-012A	R-28-Q218	Groundwater	6/12/2018 12:45:00 PM	6/12/2018	6/26/2018
N030762-012B	R-28-Q218	Groundwater	6/12/2018 12:45:00 PM	6/12/2018	6/26/2018
N030762-012C	R-28-Q218	Groundwater	6/12/2018 12:45:00 PM	6/12/2018	6/26/2018
N030762-012D	R-28-Q218	Groundwater	6/12/2018 12:45:00 PM	6/12/2018	6/26/2018
N030762-012E	R-28-Q218	Groundwater	6/12/2018 12:45:00 PM	6/12/2018	6/26/2018
N030762-012F	R-28-Q218	Groundwater	6/12/2018 12:45:00 PM	6/12/2018	6/26/2018

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - RMP, RC000753.801D
Lab Order:	N030762
Contract No:	

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030762-013A	R63-Q218	Groundwater	6/12/2018 10:08:00 AM	6/12/2018	6/26/2018
N030762-013B	R63-Q218	Groundwater	6/12/2018 10:08:00 AM	6/12/2018	6/26/2018
N030762-013C	R63-Q218	Groundwater	6/12/2018 10:08:00 AM	6/12/2018	6/26/2018
N030762-013D	R63-Q218	Groundwater	6/12/2018 10:08:00 AM	6/12/2018	6/26/2018
N030762-013E	R63-Q218	Groundwater	6/12/2018 10:08:00 AM	6/12/2018	6/26/2018
N030762-014A	SW1-Q218	Groundwater	6/12/2018 1:45:00 PM	6/12/2018	6/26/2018
N030762-014B	SW1-Q218	Groundwater	6/12/2018 1:45:00 PM	6/12/2018	6/26/2018
N030762-014C	SW1-Q218	Groundwater	6/12/2018 1:45:00 PM	6/12/2018	6/26/2018
N030762-015A	SW2-Q218	Groundwater	6/12/2018 2:05:00 PM	6/12/2018	6/26/2018
N030762-015B	SW2-Q218	Groundwater	6/12/2018 2:05:00 PM	6/12/2018	6/26/2018
N030762-015C	SW2-Q218	Groundwater	6/12/2018 2:05:00 PM	6/12/2018	6/26/2018
N030762-016A	AB-1-Q218	Groundwater	6/12/2018 8:40:00 AM	6/12/2018	6/26/2018
N030762-017A	AB-2-Q218	Groundwater	6/12/2018 1:00:00 PM	6/12/2018	6/26/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D**	QC Batch: **R124616**			PrepDate			Analyst: **LR**
Specific Conductance	900	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180613D** QC Batch: **R124616** PrepDate Analyst: **LR**							
Specific Conductance	910	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180613D** QC Batch: **R124616** PrepDate							Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-916-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 2:15:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180613D** QC Batch: **R124616** PrepDate							Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D**	QC Batch: **R124616**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D**	QC Batch: **R124616**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:08:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D**	QC Batch: **R124616**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D** QC Batch: **R124616**			PrepDate				Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:28:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D**	QC Batch: **R124616**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:18:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D**	QC Batch: **R124616**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180613D** QC Batch: **R124616** PrepDate							Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D**	QC Batch: **R124616**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:08:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180613D** QC Batch: **R124616** PrepDate							Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D**	QC Batch: **R124616**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 2:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180613D** QC Batch: **R124616** PrepDate							Analyst: **LR**
Specific Conductance	980	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030762-001DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **124616**
Client ID: **ZZZZZZ** Batch ID: **R124616** TestNo: **EPA 120.1** Analysis Date: **6/13/2018** SeqNo: **3052853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	903.000	0.10						899.0	0.444	2	

Sample ID **N030762-011DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **124616**
Client ID: **ZZZZZZ** Batch ID: **R124616** TestNo: **EPA 120.1** Analysis Date: **6/13/2018** SeqNo: **3052865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	925.000	0.10						921.0	0.433	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C** QC Batch: **R124613**				PrepDate			Analyst: **LR**
pH	8.1	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-002		

PH

SM4500-H+B

RunID: **NV00922-WC_180613C** QC Batch: **R124613** PrepDate Analyst: **LR**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
pH	7.6	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
SM4500-H+B							
RunID: **NV00922-WC_180613C** QC Batch: **R124613** PrepDate							Analyst: **LR**
pH	7.7	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-916-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 2:15:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
SM4500-H+B							
RunID: **NV00922-WC_180613C** QC Batch: **R124613** PrepDate Analyst: **LR**							
pH	7.2	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
SM4500-H+B							
RunID: **NV00922-WC_180613C** QC Batch: **R124613** PrepDate Analyst: **LR**							
pH	7.8	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
SM4500-H+B							
RunID: **NV00922-WC_180613C** QC Batch: **R124613** PrepDate Analyst: **LR**							
pH	7.6	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:08:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C**	QC Batch: **R124613**			PrepDate			Analyst: **LR**
pH	7.8	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C**	QC Batch: **R124613**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:28:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C**	QC Batch: **R124613**			PrepDate			Analyst: **LR**
pH	7.7	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:18:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C**	QC Batch: **R124613**			PrepDate			Analyst: **LR**
pH	7.7	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
SM4500-H+B							
RunID: **NV00922-WC_180613C** QC Batch: **R124613** PrepDate							Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
SM4500-H+B							
RunID: **NV00922-WC_180613C** QC Batch: **R124613** PrepDate							Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:08:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-013		

PH

SM4500-H+B

RunID: **NV00922-WC_180613C** QC Batch: **R124613** PrepDate Analyst: **LR**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
pH	8.2	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
SM4500-H+B							
RunID: **NV00922-WC_180613C** QC Batch: **R124613** PrepDate Analyst: **LR**							
pH	7.7	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 2:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C**	QC Batch: **R124613**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N030762-001DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **124613**
Client ID: **ZZZZZZ** Batch ID: **R124613** TestNo: **SM4500-H+B** Analysis Date: **6/13/2018** SeqNo: **3052811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.120	0.10						8.090	0.370	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N030762-011DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **124613**
Client ID: **ZZZZZZ** Batch ID: **R124613** TestNo: **SM4500-H+B** Analysis Date: **6/13/2018** SeqNo: **3052823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.270	0.10						8.260	0.121	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614D**	QC Batch: **68445**			PrepDate	**6/14/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614D**	QC Batch: **68445**			PrepDate	**6/14/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614D** QC Batch: **68445**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:				
B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614D** QC Batch: **68445**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
				SM2540D			
RunID: **NV00922-WC_180614D** QC Batch: **68445**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:08:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_180614D** QC Batch: **68445** PrepDate **6/14/2018** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614D**	QC Batch: **68445**			PrepDate	**6/14/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:28:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_180614D** QC Batch: **68445** PrepDate **6/14/2018** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:18:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE			**SM2540D**				
RunID: **NV00922-WC_180614D**	QC Batch: **68445**			PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614D** QC Batch: **68445**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE			**SM2540D**				
RunID: **NV00922-WC_180614E** QC Batch: **68446**				PrepDate		**6/14/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:08:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614E** QC Batch: **68446**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-68445** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124651**
Client ID: **LCSW** Batch ID: **68445** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	996.000	10	1000	0	99.6	80	120				

Sample ID **MB-68445** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124651**
Client ID: **PBW** Batch ID: **68445** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054702**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N030762-001DDUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124651**
Client ID: **ZZZZZZ** Batch ID: **68445** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-68446** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124652**
Client ID: **LCSW** Batch ID: **68446** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	979.000	10	1000	0	97.9	80	120				

Sample ID **MB-68446** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124652**
Client ID: **PBW** Batch ID: **68446** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N030759-001ADUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124652**
Client ID: **ZZZZZZ** Batch ID: **68446** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054717**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	16.000	10						15.00	6.45	5	R

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030762
Project: PG&E Topock - RMP, RC000753.801D
Lab ID: N030762-001

Client Sample ID: C-BNS-Q218
Collection Date: 6/12/2018 11:44:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180613A** QC Batch: **R124635**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 10:52 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180615C** QC Batch: **68436**				PrepDate		**6/13/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 09:28 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180613A** QC Batch: **R124635** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 11:11 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 09:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180613A** QC Batch: **R124635**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 11:30 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180615C** QC Batch: **68436**				PrepDate		**6/13/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 09:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-916-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 2:15:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180613A** QC Batch: **R124635**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 12:17 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180615C** QC Batch: **68436**				PrepDate		**6/13/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 09:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180613A** QC Batch: **R124635** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 12:36 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 09:50 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180613A** QC Batch: **R124635** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 12:55 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 09:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:08:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180613A** QC Batch: **R124635** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 01:14 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**							
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180613A** QC Batch: **R124635** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 02:48 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:28:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180613A** QC Batch: **R124635**			PrepDate				Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 03:07 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436**			PrepDate **6/13/2018**				Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:18:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180613A** QC Batch: **R124635**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 03:26 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		EPA 6020				
RunID: **NV00922-ICP7_180615C** QC Batch: **68436**				PrepDate		**6/13/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:29 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180613B** QC Batch: **R124636** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 07:54 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180613B** QC Batch: **R124636**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 06:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180615C** QC Batch: **68436**				PrepDate		**6/13/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:41 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:08:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180613B** QC Batch: **R124636** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 07:07 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**							
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:46 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180613B** QC Batch: **R124636**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 08:13 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180615C** QC Batch: **68436**				PrepDate		**6/13/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:52 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 2:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180613B** QC Batch: **R124636** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 08:32 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R124635** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **PBW** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R124635** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **LCSW** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.173	0.20	5.000	0	103	90	110				

Sample ID **N030762-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053862**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.072	0.20	1.000	0	107	90	110				

Sample ID **N030762-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID **N030762-003AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0	104	90	110	1.079	3.42	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030762-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.001	0.20	1.000	0	100	90	110				

Sample ID **N030762-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.014	0.20	1.000	0.05060	96.3	90	110				

Sample ID **N030762-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053881**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.007	0.20	1.000	0	101	90	110				

Sample ID **N030762-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.993	0.20	1.000	0	99.3	90	110				

Sample ID **N030762-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.010	0.20	1.000	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030762-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.996	0.20	1.000	0	99.6	90	110				

Sample ID **N030762-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053888**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.025	0.20	1.000	0	102	90	110				

Sample ID **N030762-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053891**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.994	0.20	1.000	0	99.4	90	110				

Sample ID **N030775-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053893**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16039.600	400						15880	1.02	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R124636**	SampType: **LCS**	TestCode: **218.6_WPGE** Units: **µg/L**		Prep Date:		RunNo: **124636**				
Client ID: **LCSW**	Batch ID: **R124636**	TestNo: **EPA 218.6**		Analysis Date: **6/13/2018**		SeqNo: **3053995**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.233	0.20	5.000	0	105	90	110				

Sample ID **MB-R124636**	SampType: **MBLK**	TestCode: **218.6_WPGE** Units: **µg/L**		Prep Date:		RunNo: **124636**				
Client ID: **PBW**	Batch ID: **R124636**	TestNo: **EPA 218.6**		Analysis Date: **6/13/2018**		SeqNo: **3053996**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N030762-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE** Units: **µg/L**		Prep Date:		RunNo: **124636**				
Client ID: **ZZZZZZ**	Batch ID: **R124636**	TestNo: **EPA 218.6**		Analysis Date: **6/13/2018**		SeqNo: **3053998**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.960	0.20	1.000	0	96.0	90	110				

Sample ID **N030762-012AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE** Units: **µg/L**		Prep Date:		RunNo: **124636**				
Client ID: **ZZZZZZ**	Batch ID: **R124636**	TestNo: **EPA 218.6**		Analysis Date: **6/13/2018**		SeqNo: **3053999**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.992	0.20	1.000	0	99.2	90	110	0.9597	3.33	20	

Sample ID **N030762-013ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE** Units: **µg/L**		Prep Date:		RunNo: **124636**				
Client ID: **ZZZZZZ**	Batch ID: **R124636**	TestNo: **EPA 218.6**		Analysis Date: **6/13/2018**		SeqNo: **3054001**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030762-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **ZZZZZZ** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3054002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.962	0.20	1.000	0	96.2	90	110				

Sample ID **N030762-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **ZZZZZZ** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3054006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.990	0.20	1.000	0	99.0	90	110				

Sample ID **N030762-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **ZZZZZZ** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3054008**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.973	0.20	1.000	0	97.3	90	110				

Sample ID **N030762-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **ZZZZZZ** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3054010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.018	0.20	1.000	0.05090	96.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-68436** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/13/2018** RunNo: **124675**
Client ID: **PBW** Batch ID: **68436** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2018** SeqNo: **3055639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-68436** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/13/2018** RunNo: **124675**
Client ID: **LCSW** Batch ID: **68436** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2018** SeqNo: **3055640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.419	1.0	10.00	0	104	85	115				

Sample ID **N030703-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/13/2018** RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **68436** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2018** SeqNo: **3055644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.197	1.0	10.00	2.384	98.1	75	125				

Sample ID **N030703-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/13/2018** RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **68436** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2018** SeqNo: **3055645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.131	1.0	10.00	2.384	97.5	75	125	12.20	0.545	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180616A** QC Batch: **R124671** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.41	0.032	0.050		mg/L	1	6/16/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180616A**	QC Batch: **R124671**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.42	0.032	0.050		mg/L	1	6/16/2018

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180618E** QC Batch: **R124703** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.43	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-005		

NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: **NV00922-WC_180618E** QC Batch: **R124703** PrepDate Analyst: **QBM**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Nitrate/Nitrite as N	0.41	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030762
Project: PG&E Topock - RMP, RC000753.801D
Lab ID: N030762-006

Client Sample ID: C-R22A-S-Q218
Collection Date: 6/12/2018 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180618E** QC Batch: **R124703** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.40	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:08:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180618E** QC Batch: **R124703** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.38	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180618E**	QC Batch: **R124703**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

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Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:28:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180618E**	QC Batch: **R124703**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.41	0.032	0.050		mg/L	1	6/18/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:18:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180618E**	QC Batch: **R124703**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180618E** QC Batch: **R124703** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.43	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180618E** QC Batch: **R124703** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:08:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-013		

NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: **NV00922-WC_180618E** QC Batch: **R124703** PrepDate Analyst: **QBM**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Nitrate/Nitrite as N	0.43	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124671** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **PBW** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124671** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **LCSW** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.461	0.050	0.5000	0	92.1	85	115				

Sample ID **N030668-001DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **ZZZZZZ** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055406**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.951	0.25						3.326	12.0	20	

Sample ID **N030668-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **ZZZZZZ** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055408**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.611	0.25	2.500	2.871	110	75	125				

Sample ID **N030668-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **ZZZZZZ** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.468	0.25	2.500	2.871	104	75	125	5.611	2.58	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124703**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **124703**				
Client ID: **PBW**	Batch ID: **R124703**	TestNo: **SM4500-NO3**		Analysis Date: **6/18/2018**		SeqNo: **3056914**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124703**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **124703**				
Client ID: **LCSW**	Batch ID: **R124703**	TestNo: **SM4500-NO3**		Analysis Date: **6/18/2018**		SeqNo: **3056915**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.525	0.050	0.5000	0	105	85	115				

Sample ID **N030762-006EDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **124703**				
Client ID: **ZZZZZZ**	Batch ID: **R124703**	TestNo: **SM4500-NO3**		Analysis Date: **6/18/2018**		SeqNo: **3056919**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.383	0.050						0.3995	4.24	20	

Sample ID **N030762-007EMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **124703**				
Client ID: **ZZZZZZ**	Batch ID: **R124703**	TestNo: **SM4500-NO3**		Analysis Date: **6/18/2018**		SeqNo: **3056921**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.908	0.050	0.5000	0.3812	105	75	125				

Sample ID **N030762-007EMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **124703**				
Client ID: **ZZZZZZ**	Batch ID: **R124703**	TestNo: **SM4500-NO3**		Analysis Date: **6/18/2018**		SeqNo: **3056922**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.839	0.050	0.5000	0.3812	91.6	75	125	0.9078	7.85	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180620E** QC Batch: **68438** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 01:03 AM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68437** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	44	18	20		ug/L	1	6/21/2018 09:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180620E**	QC Batch: **68438**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 01:08 AM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68437**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	42	18	20		ug/L	1	6/21/2018 09:38 AM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180620E** QC Batch: **68438** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 01:14 AM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68437** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	63	18	20		ug/L	1	6/21/2018 09:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180620E**	QC Batch: **68438**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 01:19 AM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68437**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	34	18	20		ug/L	1	6/21/2018 09:49 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180620E** QC Batch: **68438**				PrepDate **6/13/2018**			Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 01:24 AM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68437**				PrepDate **6/13/2018**			Analyst: **CEI**
Iron	44	18	20		ug/L	1	6/21/2018 10:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:08:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180620E**	QC Batch: **68438**			PrepDate		**6/13/2018**	Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 01:30 AM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68437**			PrepDate		**6/13/2018**	Analyst: **CEI**
Iron	45	18	20		ug/L	1	6/21/2018 10:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180620E**	QC Batch: **68438**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 01:35 AM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68437**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	38	18	20		ug/L	1	6/21/2018 10:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:28:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180620E** QC Batch: **68438** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 01:50 AM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68437** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	25	18	20		ug/L	1	6/21/2018 10:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:18:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180620E**	QC Batch: **68438**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 01:56 AM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68437**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	30	18	20		ug/L	1	6/21/2018 10:44 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180620E** QC Batch: **68438** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 02:01 AM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68437** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	20	18	20		ug/L	1	6/21/2018 10:49 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180620E**	QC Batch: **68438**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 02:06 AM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68437**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	76	18	20		ug/L	1	6/21/2018 10:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:08:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180620E** QC Batch: **68438** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 02:12 AM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68437** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	57	18	20		ug/L	1	6/21/2018 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-68438** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/13/2018** RunNo: **125758**
Client ID: **PBW** Batch ID: **68438** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/20/2018** SeqNo: **3060622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-68438** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/13/2018** RunNo: **125758**
Client ID: **LCSW** Batch ID: **68438** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/20/2018** SeqNo: **3060623**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	106.484	20	100.0	0	106	85	115				

Sample ID **N030687-002B-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/13/2018** RunNo: **125758**
Client ID: **ZZZZZZ** Batch ID: **68438** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3060627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	101.577	20	100.0	0	102	75	125				

Sample ID **N030687-002B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/13/2018** RunNo: **125758**
Client ID: **ZZZZZZ** Batch ID: **68438** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3060628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	100.270	20	100.0	0	100	75	125	101.6	1.30	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **MB-68437** SampType: **MBLK** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/13/2018** RunNo: **125775**
Client ID: **PBW** Batch ID: **68437** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3060980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-68437** SampType: **LCS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/13/2018** RunNo: **125775**
Client ID: **LCSW** Batch ID: **68437** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3060981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	107.130	20	100.0	0	107	85	115				

Sample ID **N030762-001C-MS** SampType: **MS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/13/2018** RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **68437** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3060985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	130.514	20	100.0	43.60	86.9	75	125				

Sample ID **N030762-001C-MSD** SampType: **MSD** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/13/2018** RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **68437** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3060986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	132.115	20	100.0	43.60	88.5	75	125	130.5	1.22	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-001		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.4	0.081	0.10		µg/L	1	6/15/2018 09:28 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 09:28 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 09:28 PM
Molybdenum	4.8	0.21	0.50		µg/L	1	6/15/2018 09:28 PM
Selenium	1.8	0.36	0.50		µg/L	1	6/15/2018 09:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180615C**	QC Batch: **68436**			PrepDate **6/13/2018**			Analyst: **CEI**
Arsenic	2.3	0.081	0.10		µg/L	1	6/15/2018 09:33 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 09:33 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 09:33 PM
Molybdenum	4.6	0.21	0.50		µg/L	1	6/15/2018 09:33 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/15/2018 09:33 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180615C**	QC Batch: **68436**			PrepDate **6/13/2018**			Analyst: **CEI**
Arsenic	2.3	0.081	0.10		µg/L	1	6/15/2018 09:39 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 09:39 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 09:39 PM
Molybdenum	4.6	0.21	0.50		µg/L	1	6/15/2018 09:39 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/15/2018 09:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-005		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.4	0.081	0.10		µg/L	1	6/15/2018 09:50 PM
Barium	120	0.15	1.0		µg/L	1	6/15/2018 09:50 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 09:50 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	6/15/2018 09:50 PM
Selenium	2.0	0.36	0.50		µg/L	1	6/15/2018 09:50 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California

Lab Order: N030762

Project: PG&E Topock - RMP, RC000753.801D

Lab ID: N030762-006

Client Sample ID: C-R22A-S-Q218

Collection Date: 6/12/2018 11:00:00 AM

Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180615C**	QC Batch: **68436**			PrepDate	**6/13/2018**		Analyst: **CEI**
Arsenic	2.4	0.081	0.10		µg/L	1	6/15/2018 09:56 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 09:56 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 09:56 PM
Molybdenum	4.8	0.21	0.50		µg/L	1	6/15/2018 09:56 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/15/2018 09:56 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:08:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180615C**	QC Batch: **68436**			PrepDate **6/13/2018**			Analyst: **CEI**
Arsenic	2.4	0.081	0.10		µg/L	1	6/15/2018 10:01 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 10:01 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 10:01 PM
Molybdenum	4.8	0.21	0.50		µg/L	1	6/15/2018 10:01 PM
Selenium	1.9	0.36	0.50		µg/L	1	6/18/2018 04:02 PM

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-008		

DISSOLVED METALS BY ICP-MS — EPA 3010A — EPA 6020

RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.3	0.081	0.10		µg/L	1	6/15/2018 10:18 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 10:18 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 10:18 PM
Molybdenum	4.7	0.21	0.50		µg/L	1	6/15/2018 10:18 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/15/2018 10:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:28:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-009		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.3	0.081	0.10		µg/L	1	6/15/2018 10:24 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 10:24 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 10:24 PM
Molybdenum	4.7	0.21	0.50		µg/L	1	6/15/2018 10:24 PM
Selenium	1.8	0.36	0.50		µg/L	1	6/15/2018 10:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:18:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-010		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.4	0.081	0.10		µg/L	1	6/15/2018 10:29 PM
Barium	120	0.15	1.0		µg/L	1	6/15/2018 10:29 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 10:29 PM
Molybdenum	4.9	0.21	0.50		µg/L	1	6/15/2018 10:29 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/15/2018 10:29 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-011		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.5	0.081	0.10		µg/L	1	6/15/2018 10:35 PM
Barium	120	0.15	1.0		µg/L	1	6/15/2018 10:35 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 10:35 PM
Molybdenum	5.1	0.21	0.50		µg/L	1	6/15/2018 10:35 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/18/2018 04:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180615C** QC Batch: **68436**				PrepDate	**6/13/2018**		Analyst: **CEI**
Arsenic	2.4	0.081	0.10		µg/L	1	6/15/2018 10:41 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 10:41 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 10:41 PM
Molybdenum	4.6	0.21	0.50		µg/L	1	6/15/2018 10:41 PM
Selenium	1.5	0.36	0.50		µg/L	1	6/15/2018 10:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030762
Project: PG&E Topock - RMP, RC000753.801D
Lab ID: N030762-013

Client Sample ID: R63-Q218
Collection Date: 6/12/2018 10:08:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180615C**	QC Batch: **68436**			PrepDate	**6/13/2018**		Analyst: **CEI**
Arsenic	2.4	0.081	0.10		µg/L	1	6/15/2018 10:46 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 10:46 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 10:46 PM
Molybdenum	4.8	0.21	0.50		µg/L	1	6/15/2018 10:46 PM
Selenium	1.6	0.36	0.50		µg/L	1	6/15/2018 10:46 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-68436** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/13/2018** RunNo: **124675**
Client ID: **PBW** Batch ID: **68436** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2018** SeqNo: **3055562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-68436** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/13/2018** RunNo: **124675**
Client ID: **LCSW** Batch ID: **68436** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2018** SeqNo: **3055563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.725	0.10	10.00	0	107	85	115				
Barium	10.702	1.0	10.00	0	107	85	115				
Manganese	106.272	0.50	100.0	0	106	85	115				
Molybdenum	10.735	0.50	10.00	0	107	85	115				
Selenium	10.742	0.50	10.00	0	107	85	115				

Sample ID **N030703-001B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/13/2018** RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **68436** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2018** SeqNo: **3055567**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.827	0.10	10.00	1.176	107	75	125				
Barium	131.607	1.0	10.00	123.9	77.3	75	125				
Manganese	103.882	0.50	100.0	3.400	100	75	125				
Molybdenum	12.582	0.50	10.00	1.277	113	75	125				
Selenium	11.570	0.50	10.00	0	116	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030703-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/13/2018** RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **68436** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2018** SeqNo: **3055568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.871	0.10	10.00	1.176	107	75	125	11.83	0.372	20	
Barium	131.602	1.0	10.00	123.9	77.3	75	125	131.6	0.00333	20	
Manganese	103.150	0.50	100.0	3.400	99.7	75	125	103.9	0.707	20	
Molybdenum	12.692	0.50	10.00	1.277	114	75	125	12.58	0.869	20	
Selenium	11.088	0.50	10.00	0	111	75	125	11.57	4.25	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Nara Tey
Title: sample tech
Signature: [signature] Date: 6/12/18
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - RMP
Project Number: RC000753.801D

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com
daniel.moore@cringen.com
Address: 1410 Rocky Ridge Dr # 330
Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Nara Tey
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for
Signature: [signature] Date: 6/12/18

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	✓	
6. Method of Cooling: Ice		
Sample Temp: 4.1°C/4.8°C/5.9°C/5.6°C		
Courier:		
Tracking No.:		

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030762-01	C-BNS-Q218	6/12/18	11:44		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
2		~~C-CON-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	
3		~~C-CON-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	
4	-02	C-I-3-D-Q218	6/12/18	09:25		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
5		~~MW-914-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	
6	-03	C-I-3-S-Q218	6/12/18	09:40		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
7		~~C-MAR-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	
8		~~C-MAR-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	
9		~~C-NR1-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	
10		~~C-NR1-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	
11		~~C-NR3-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	
12		~~C-NR3-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	
13	-04	MW-916-Q218	6/12/18	14:15		X		X					X	X					E	~~3~~ 5	P	BNS	
14		~~C-NR4-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tey	6/12/18 15:40	[signature]	6/12/18 1540
[signature]	6/12/18 1750	[signature]	6/12/18 1750

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:		
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:		
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#:		
Submitted By: Nara Tep	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:		
Title: sample tech				
Signature: Date: 6/12/18	Sampled By: Nara Tep			
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for			
Project Name: PG&E Topock - RMP	Signature: Date: 6/12/18			
Project Number: RC000753.0801				

Sample Receipt Condition (Y / N)
1. Chilled
2. Headspace
3. Container Intact
4. Seal Present
5. IR number
6. Method of Cooling:

Sample Temp: 4.1°/4.3°/3.9°/3.6°C

Courier:

Tracking No.:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Container sizes: Cr(VI) FF = 3x250 mL poly; Dissolved metals = 3x500mL poly (three columns); Total metals = 500 mL poly; Anions, Specific Conductance, pH, TDS, Alkalinity, TSS = 1 liter poly; Nitrate/Nitrite = 125 mL poly; Oxygen and deuterium = 1 250 mL poly

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3	Total metals (SW6010B); HNO3 Fe	Anions (E300.0); Br, Cl, SO4	Specific Conductance (E120.1)	pH (SM4500HB)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4	Oxygen and deuterium stable isotopes (CFIRM)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1		~~C-NR4-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
2	N030762-05	C-R22A-D-Q218	6/12/18	10:44		X		X		X	X		X	X			X	X		E	~~5~~ 7	P	BNS	
3	-06	C-R22A-S-Q218	6/12/18	11:00		X		X		X	X		X	X			X	X		E	~~5~~ 7	P	BNS	
4	-07	C-R27-D-Q218	6/12/18	12:08		X		X		X	X		X	X			X	X		E	~~5~~ 7	P	BNS	
5	-08	C-R27-S-Q218	6/12/18	12:25		X		X		X	X		X	X			X	X		E	~~5~~ 7	P	BNS	
	-09	C-TAZ-D-Q218	6/12/18	08:28		X		X		X	X		X	X			X	X		E	~~5~~ 7	P	BNS	
7	-10	MW-915-Q218	6/12/18	10:18		X		X		X	X		X	X			X	X		E	~~5~~ 7	P	BNS	
8	-11	C-TAZ-S-Q218	6/12/18	08:50		X		X		X	X		X	X			X	X		E	~~5~~ 7	P	BNS	
9		~~R-19-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
10	-12	R-28-Q218	6/28/18	12:45		X		X	X	X	X	X	X	X	X	X	X	X	X	E	~~5~~ 7	P	BNS	
11	-13	R63-Q218	6/12/18	10:08		X		X		X	X		X	X			X	X		E	~~5~~ 7	P	BNS	
12		~~RRB-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
13	-14	SW1-Q218	6/12/18	13:45		X		X					X	X						E	~~3~~ 5	P	BNS	
14	-15	SW2-Q218	6/12/18	14:05		X		X					X	X						E	~~3~~ 5	P	BNS	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tep	6/12/18 1540		6/12/18 1540
	6/12/18 1750		6/12/18 1750

Turn Around Time (TAT)
- [ ] A < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn$(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critizen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Nara Tep		Phone: 949-727-1400, ext 200 Fax:
Title: sample tech	Phone: 916-786-3302 Fax:	
Signature: Date: 6/12/18 I hereby authorize ASSET Labs to perform the tests indicated below.	Sampled By: Nara Tep I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for	
Project Name: PG&E Topock - RMP	Signature: Date: 6/12/18	
Project Number: RC000753.0801		

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		✓
3. Container Intact		
4. Seal Present		
5. IR number	✓	
6. Method of Cooling: Ice		
Sample Temp: 4.3°C		

Courier:
Tracking No.:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Analyses (container / method):
1. 3x250 mL poly — Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH
2. 250 ml Poly — Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH
3. 3x500mL poly — Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr
4. 3x500mL poly — Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B
5. 3x500mL poly — Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba
6. 500 mL poly — Total metals (SW6010B); HNO3 Fe
7. 1 liter poly — Anions (E300.0); Br, Cl, SO4
8. 1 liter poly — Specific Conductance (E120.1)
9. 1 liter poly — pH (SM4500HB)
10. 1 liter poly — TDS (SM2540C)
11. 1 liter poly — Alkalinity (Total, reported as CaCO3) (SM2320B)
12. 1 liter poly — TSS (SM2540)
13. 125 mL poly — Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF	Field QC Cr(VI) FF	Diss. metals Cr	Diss. metals Ca, Mg, K, Na, B	Diss. metals As, Mn, Fe, Se, Mo, Ba	Total metals Fe	Anions	Spec. Cond.	pH	TDS	Alkalinity	TSS	Nitrate/Nitrite	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
	N030762-16	AB1-Q218	6/12/18	08:40			X												E	1	P	BN	Hold
	-17	AB2-Q218	6/12/18	13:00			X												E	1	P	BN	Hold
		~~AB3-Q218~~					~~X~~												~~E~~	~~1~~	~~P~~	~~BN~~	~~Hold~~

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tep	6/12/18 15:40	[signature]	6/12/18 1540
[signature]	6/12/18 1750	[signature]	6/12/18 1750

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
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4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
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Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn$(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 6/12/2018 — Workorder: N030762

Rep sample Temp (Deg C): 4.1/4.3/3.9/3.6 — IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA — Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☐	No ☑	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☑	No ☐	NA ☐

Comments:

See Correspondence.
Samples for pH were past holding time upon receipt.
Sample 12 (R-28-Q218): Used collection date on labels (6/12/2018).

YLT 6/15/2018

Checklist Completed By: YR YLT 6/13/2018

Reviewed By: LR 061518

Subject: RE: PG&E Topock - RMP, RC000753.801D (Asset Labs No. N030762)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 6/13/2018 5:04 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>, "jmahn@blainetech.com" <jmahn@blainetech.com>, "Marlon B. Cartin" <marlon@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>

Hi Yoandra,
That is correct the dissolved metals requested on page 1 is the same as page 2. I apologize they were cut off on the first page.

Thanks,
Laura

From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Wednesday, June 13, 2018 7:12 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>; jmahn@blainetech.com; Marlon B. Cartin <marlon@assetlaboratories.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: Re: PG&E Topock - RMP, RC000753.801D (Asset Labs No. N030762)

Hi Laura,

Finally I'd just want to confirm that Diss Metals requested on page 2 (columns 3 and 5) should be the same listed on page 1. Correct?

Thanks,

On 6/13/2018 3:24 PM, Madsen, Laura wrote:

> Hi Yoandra,
> That is correct for sample R-28-Q218
>
> Please cancel the following:
> Oxygen/Deuterium
> Alkalinity
> TDS
> Anions (Br, Cl, SO4)
> Dissolved metals "Ca, Mg, K, Na, B"
>
> I apologize for any confusion.
>
> Thanks,
> Laura
>
> ---
>
> **From:** Jason Mahn <jmahn@blainetech.com>
> **Sent:** Wednesday, June 13, 2018 4:13 PM
> **To:** Marlon B. Cartin <marlon@assetlaboratories.com>; Madsen, Laura <Laura.Madsen@arcadis.com>;

'Yoandra Rodriguez' <yoandra@assetlaboratories.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: RE: PG&E Topock - RMP, RC000753.801D (Asset Labs No. N030762)

Hi Marlon,

I also believe that the Dissolved Metals analysis for "Ca, Mg, K, Na, B" from the R-28-2018 sample needs to be crossed out as well.

Laura, can you confirm?

Thank you,

Jason Mahn
Project Manager
Blaine Tech Services, Inc.
20735 Belshaw Avenue, Carson, CA 90746
Office: (310) 885-4455 x 108
Cell: (310)987-0118
jmahn@blainetech.com

From: Marlon B. Cartin [mailto:marlon@assetlaboratories.com]
Sent: Wednesday, June 13, 2018 2:00 PM
To: 'Madsen, Laura' <Laura.Madsen@arcadis.com>; 'Yoandra Rodriguez' <yoandra@assetlaboratories.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; Jason Mahn <jmahn@blainetech.com>
Subject: RE: PG&E Topock - RMP, RC000753.801D (Asset Labs No. N030762)

Hi Laura,

We received an instruction this morning from Blaine tech to cancel the following test for sample R-28-2018

Oxygen/Deuterium
Alkalinity
TDS
Anions (Br, Cl, SO4)

Please confirm.

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 **I F:** 702.307.2691 **I M:** 702.439.0421

From: Madsen, Laura [mailto:Laura.Madsen@arcadis.com]
Sent: Wednesday, June 13, 2018 11:59 AM

To: Yoandra Rodriguez
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo'; 'Sonny. Lorenzo'; 'Marlon B. Cartin'
Subject: RE: PG&E Topock - RMP, RC000753.801D (Asset Labs No. N030762)

Hi Yoandra,
I'm checking with my field staff on the missing bottle. If for some reason it wasn't collected, can you take some sample left over from the 1 liter poly to send for the O/D analysis? Is there enough left?

- Sample 16: ID should be AB-1-Q218. Please hold for analysis

- Sample 17: ID should be AB-2-Q218. Please hold for analysis

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Wednesday, June 13, 2018 1:38 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; 'Marlon B. Cartin' <marlon@assetlaboratories.com>
Subject: PG&E Topock - RMP, RC000753.801D (Asset Labs No. N030762)

Hi Laura,

Please kindly advise on the following issues for the attached COC:

- Sample 12 (R-28-Q218): 250 mL poly for Oxygen/Deuterium is missing.

- Sample 16: ID is AB1-Q218 on COC and AB-1-Q218 on label.

- Sample 17: ID is AB2-Q218 on COC and AB-2-Q218 on label.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

Subject: RE: PG&E Topock - RMP (Asset Labs No. N030762 and N030781)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 6/14/2018 9:18 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

Hi Yoandra,
Please use RC00753.801D

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Thursday, June 14, 2018 11:28 AM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; maryann.balilu@assetlaboratoriesph.com
Subject: PG&E Topock - RMP (Asset Labs No. N030762 and N030781)
Importance: High

Hi Laura,

Please kindly check the attached COCs and confirm which project # to use: RC000753.801 or RC000753.801D.

Or must we report 801 apart from 801D?

Please advise.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-001A	C-BNS-Q218	6/12/2018 11:44:00 AM	6/26/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-001B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-001C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-001D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-001E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-002A	C-I-3-D-Q218	6/12/2018 9:25:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-002B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-002C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-002D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-002D	C-I-3-D-Q218	6/12/2018 9:25:00 AM	6/26/2018	Groundwater	SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-002E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-003A	C-I-3-S-Q218	6/12/2018 9:40:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-003B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-003C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-003D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-003E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-004A	MW-916-Q218	6/12/2018 2:15:00 PM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-004B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-004C			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-004C	MW-916-Q218	6/12/2018 2:15:00 PM	6/26/2018	Groundwater	SM4500-H+B	pH	☐	☐	☐	LSR
N030762-005A	C-R22A-D-Q218	6/12/2018 10:44:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-005B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-005C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-005D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-005E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-006A	C-R22A-S-Q218	6/12/2018 11:00:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-006B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-006C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-006D	C-R22A-S-Q218	6/12/2018 11:00:00 AM	6/26/2018	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-006E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-007A	C-R27-D-Q218	6/12/2018 12:08:00 PM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-007B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-007C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-007D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-007E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-008A	C-R27-S-Q218	6/12/2018 12:25:00 PM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-008B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-008B	C-R27-S-Q218	6/12/2018 12:25:00 PM	6/26/2018	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-008C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-008D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-008E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-009A	C-TAZ-D-Q218	6/12/2018 8:28:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-009B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-009C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-009D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-009E	C-TAZ-D-Q218	6/12/2018 8:28:00 AM	6/26/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-010A	MW-915-Q218	6/12/2018 10:18:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-010B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-010C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-010D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-010E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-011A	C-TAZ-S-Q218	6/12/2018 8:50:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-011B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-011C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-011C	C-TAZ-S-Q218	6/12/2018 8:50:00 AM	6/26/2018	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-011D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-011E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-012A	R-28-Q218	6/12/2018 12:45:00 PM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-012B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-012C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-012D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☑	☐	☐	LSR
			6/26/2018			Total Dissolved Solids Prep	☑	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
			6/26/2018		SM 2320 B	ALKALINITY, SPECIATED	☑	☐	☐	LSR
			6/26/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☑	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-012D	R-28-Q218	6/12/2018 12:45:00 PM	6/26/2018	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☑	☐	☐	LSR
			6/26/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☑	☐	☐	LSR
			6/26/2018		SM 1030F1	Cation-Anion Balance Calculation	☑	☐	☐	LSR
N030762-012E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-012F			6/26/2018		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☑	☐	☑	SUB
N030762-013A	R63-Q218	6/12/2018 10:08:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-013B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-013C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-013D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-013E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-014A	SW1-Q218	6/12/2018 1:45:00 PM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-014B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-014C	SW1-Q218	6/12/2018 1:45:00 PM	6/26/2018	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
N030762-015A	SW2-Q218	6/12/2018 2:05:00 PM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-015B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-015C			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
N030762-016A	AB-1-Q218	6/12/2018 8:40:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N030762-017A	AB-2-Q218	6/12/2018 1:00:00 PM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N030762-018A	FOLDER	6/26/2018	6/26/2018		EDD	Client specific project	☐	☐	☐	LAB
			6/26/2018		Folder	Folder	☐	☐	☐	LAB
			6/26/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - RMP

Project No.: RC000753.801D

ASSET Laboratories Work Order:

N030762

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N030762

June 26, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030762

RE: PG&E Topock - RMP, RC000753.801D

Attention: Dan Bush

Enclosed are the results for sample(s) received on June 12, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Sibucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - RMP, RC000753.801D
Lab Order:	N030762

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Sample N030762-012 (R-28-Q218) was not analyzed for several analytes. Please refer to the attached correspondence.

Samples N030762-016 and -017 (AB-1-Q218 and AB-2-Q218,respectively) were not analyzed for Hexavalent Chromium. Please refer to the attached correspondence.

Analytical Comments for SM 2540D:

RPD for Sample Duplicate (N030759-001ADUP) is outside criteria ; however, the associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories

Date: *26-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.801D
Lab Order: N030762
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030762-001A	C-BNS-Q218	Groundwater	6/12/2018 11:44:00 AM	6/12/2018	6/26/2018
N030762-001B	C-BNS-Q218	Groundwater	6/12/2018 11:44:00 AM	6/12/2018	6/26/2018
N030762-001C	C-BNS-Q218	Groundwater	6/12/2018 11:44:00 AM	6/12/2018	6/26/2018
N030762-001D	C-BNS-Q218	Groundwater	6/12/2018 11:44:00 AM	6/12/2018	6/26/2018
N030762-001E	C-BNS-Q218	Groundwater	6/12/2018 11:44:00 AM	6/12/2018	6/26/2018
N030762-002A	C-I-3-D-Q218	Groundwater	6/12/2018 9:25:00 AM	6/12/2018	6/26/2018
N030762-002B	C-I-3-D-Q218	Groundwater	6/12/2018 9:25:00 AM	6/12/2018	6/26/2018
N030762-002C	C-I-3-D-Q218	Groundwater	6/12/2018 9:25:00 AM	6/12/2018	6/26/2018
N030762-002D	C-I-3-D-Q218	Groundwater	6/12/2018 9:25:00 AM	6/12/2018	6/26/2018
N030762-002E	C-I-3-D-Q218	Groundwater	6/12/2018 9:25:00 AM	6/12/2018	6/26/2018
N030762-003A	C-I-3-S-Q218	Groundwater	6/12/2018 9:40:00 AM	6/12/2018	6/26/2018
N030762-003B	C-I-3-S-Q218	Groundwater	6/12/2018 9:40:00 AM	6/12/2018	6/26/2018
N030762-003C	C-I-3-S-Q218	Groundwater	6/12/2018 9:40:00 AM	6/12/2018	6/26/2018
N030762-003D	C-I-3-S-Q218	Groundwater	6/12/2018 9:40:00 AM	6/12/2018	6/26/2018
N030762-003E	C-I-3-S-Q218	Groundwater	6/12/2018 9:40:00 AM	6/12/2018	6/26/2018
N030762-004A	MW-916-Q218	Groundwater	6/12/2018 2:15:00 PM	6/12/2018	6/26/2018
N030762-004B	MW-916-Q218	Groundwater	6/12/2018 2:15:00 PM	6/12/2018	6/26/2018
N030762-004C	MW-916-Q218	Groundwater	6/12/2018 2:15:00 PM	6/12/2018	6/26/2018
N030762-005A	C-R22A-D-Q218	Groundwater	6/12/2018 10:44:00 AM	6/12/2018	6/26/2018
N030762-005B	C-R22A-D-Q218	Groundwater	6/12/2018 10:44:00 AM	6/12/2018	6/26/2018
N030762-005C	C-R22A-D-Q218	Groundwater	6/12/2018 10:44:00 AM	6/12/2018	6/26/2018
N030762-005D	C-R22A-D-Q218	Groundwater	6/12/2018 10:44:00 AM	6/12/2018	6/26/2018
N030762-005E	C-R22A-D-Q218	Groundwater	6/12/2018 10:44:00 AM	6/12/2018	6/26/2018
N030762-006A	C-R22A-S-Q218	Groundwater	6/12/2018 11:00:00 AM	6/12/2018	6/26/2018
N030762-006B	C-R22A-S-Q218	Groundwater	6/12/2018 11:00:00 AM	6/12/2018	6/26/2018
N030762-006C	C-R22A-S-Q218	Groundwater	6/12/2018 11:00:00 AM	6/12/2018	6/26/2018
N030762-006D	C-R22A-S-Q218	Groundwater	6/12/2018 11:00:00 AM	6/12/2018	6/26/2018
N030762-006E	C-R22A-S-Q218	Groundwater	6/12/2018 11:00:00 AM	6/12/2018	6/26/2018
N030762-007A	C-R27-D-Q218	Groundwater	6/12/2018 12:08:00 PM	6/12/2018	6/26/2018

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - RMP, RC000753.801D
Lab Order:	N030762
Contract No:	

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030762-007B	C-R27-D-Q218	Groundwater	6/12/2018 12:08:00 PM	6/12/2018	6/26/2018
N030762-007C	C-R27-D-Q218	Groundwater	6/12/2018 12:08:00 PM	6/12/2018	6/26/2018
N030762-007D	C-R27-D-Q218	Groundwater	6/12/2018 12:08:00 PM	6/12/2018	6/26/2018
N030762-007E	C-R27-D-Q218	Groundwater	6/12/2018 12:08:00 PM	6/12/2018	6/26/2018
N030762-008A	C-R27-S-Q218	Groundwater	6/12/2018 12:25:00 PM	6/12/2018	6/26/2018
N030762-008B	C-R27-S-Q218	Groundwater	6/12/2018 12:25:00 PM	6/12/2018	6/26/2018
N030762-008C	C-R27-S-Q218	Groundwater	6/12/2018 12:25:00 PM	6/12/2018	6/26/2018
N030762-008D	C-R27-S-Q218	Groundwater	6/12/2018 12:25:00 PM	6/12/2018	6/26/2018
N030762-008E	C-R27-S-Q218	Groundwater	6/12/2018 12:25:00 PM	6/12/2018	6/26/2018
N030762-009A	C-TAZ-D-Q218	Groundwater	6/12/2018 8:28:00 AM	6/12/2018	6/26/2018
N030762-009B	C-TAZ-D-Q218	Groundwater	6/12/2018 8:28:00 AM	6/12/2018	6/26/2018
N030762-009C	C-TAZ-D-Q218	Groundwater	6/12/2018 8:28:00 AM	6/12/2018	6/26/2018
N030762-009D	C-TAZ-D-Q218	Groundwater	6/12/2018 8:28:00 AM	6/12/2018	6/26/2018
N030762-009E	C-TAZ-D-Q218	Groundwater	6/12/2018 8:28:00 AM	6/12/2018	6/26/2018
N030762-010A	MW-915-Q218	Groundwater	6/12/2018 10:18:00 AM	6/12/2018	6/26/2018
N030762-010B	MW-915-Q218	Groundwater	6/12/2018 10:18:00 AM	6/12/2018	6/26/2018
N030762-010C	MW-915-Q218	Groundwater	6/12/2018 10:18:00 AM	6/12/2018	6/26/2018
N030762-010D	MW-915-Q218	Groundwater	6/12/2018 10:18:00 AM	6/12/2018	6/26/2018
N030762-010E	MW-915-Q218	Groundwater	6/12/2018 10:18:00 AM	6/12/2018	6/26/2018
N030762-011A	C-TAZ-S-Q218	Groundwater	6/12/2018 8:50:00 AM	6/12/2018	6/26/2018
N030762-011B	C-TAZ-S-Q218	Groundwater	6/12/2018 8:50:00 AM	6/12/2018	6/26/2018
N030762-011C	C-TAZ-S-Q218	Groundwater	6/12/2018 8:50:00 AM	6/12/2018	6/26/2018
N030762-011D	C-TAZ-S-Q218	Groundwater	6/12/2018 8:50:00 AM	6/12/2018	6/26/2018
N030762-011E	C-TAZ-S-Q218	Groundwater	6/12/2018 8:50:00 AM	6/12/2018	6/26/2018
N030762-012A	R-28-Q218	Groundwater	6/12/2018 12:45:00 PM	6/12/2018	6/26/2018
N030762-012B	R-28-Q218	Groundwater	6/12/2018 12:45:00 PM	6/12/2018	6/26/2018
N030762-012C	R-28-Q218	Groundwater	6/12/2018 12:45:00 PM	6/12/2018	6/26/2018
N030762-012D	R-28-Q218	Groundwater	6/12/2018 12:45:00 PM	6/12/2018	6/26/2018
N030762-012E	R-28-Q218	Groundwater	6/12/2018 12:45:00 PM	6/12/2018	6/26/2018
N030762-012F	R-28-Q218	Groundwater	6/12/2018 12:45:00 PM	6/12/2018	6/26/2018

CLIENT:	ARCADIS U.S., Inc. - California	
Project:	PG&E Topock - RMP, RC000753.801D	**Work Order Sample Summary**
Lab Order:	N030762	
Contract No:		

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030762-013A	R63-Q218	Groundwater	6/12/2018 10:08:00 AM	6/12/2018	6/26/2018
N030762-013B	R63-Q218	Groundwater	6/12/2018 10:08:00 AM	6/12/2018	6/26/2018
N030762-013C	R63-Q218	Groundwater	6/12/2018 10:08:00 AM	6/12/2018	6/26/2018
N030762-013D	R63-Q218	Groundwater	6/12/2018 10:08:00 AM	6/12/2018	6/26/2018
N030762-013E	R63-Q218	Groundwater	6/12/2018 10:08:00 AM	6/12/2018	6/26/2018
N030762-014A	SW1-Q218	Groundwater	6/12/2018 1:45:00 PM	6/12/2018	6/26/2018
N030762-014B	SW1-Q218	Groundwater	6/12/2018 1:45:00 PM	6/12/2018	6/26/2018
N030762-014C	SW1-Q218	Groundwater	6/12/2018 1:45:00 PM	6/12/2018	6/26/2018
N030762-015A	SW2-Q218	Groundwater	6/12/2018 2:05:00 PM	6/12/2018	6/26/2018
N030762-015B	SW2-Q218	Groundwater	6/12/2018 2:05:00 PM	6/12/2018	6/26/2018
N030762-015C	SW2-Q218	Groundwater	6/12/2018 2:05:00 PM	6/12/2018	6/26/2018
N030762-016A	AB-1-Q218	Groundwater	6/12/2018 8:40:00 AM	6/12/2018	6/26/2018
N030762-017A	AB-2-Q218	Groundwater	6/12/2018 1:00:00 PM	6/12/2018	6/26/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180613D** QC Batch: **R124616** PrepDate							Analyst: **LR**
Specific Conductance	900	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D**	QC Batch: **R124616**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D** QC Batch: **R124616**				PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-916-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 2:15:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D** QC Batch: **R124616**				PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D**	QC Batch: **R124616**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D**	QC Batch: **R124616**			PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:08:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D** QC Batch: **R124616**				PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D** QC Batch: **R124616**				PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:28:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180613D** QC Batch: **R124616** PrepDate							Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:18:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D** QC Batch: **R124616**				PrepDate			Analyst: **LR**
Specific Conductance	910	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California

Lab Order: N030762

Project: PG&E Topock - RMP, RC000753.801D

Lab ID: N030762-011

Client Sample ID: C-TAZ-S-Q218

Collection Date: 6/12/2018 8:50:00 AM

Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180613D** QC Batch: **R124616** PrepDate							Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030762
Project: PG&E Topock - RMP, RC000753.801D
Lab ID: N030762-012

Client Sample ID: R-28-Q218
Collection Date: 6/12/2018 12:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D**	QC Batch: **R124616**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:08:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180613D**	QC Batch: **R124616**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE			**EPA 120.1**				
RunID: **NV00922-WC_180613D** QC Batch: **R124616**				PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 2:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180613D** QC Batch: **R124616** PrepDate Analyst: **LR**							
Specific Conductance	980	0.10	0.10		umhos/cm	1	6/13/2018 01:45 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030762-001DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **124616**
Client ID: **ZZZZZZ** Batch ID: **R124616** TestNo: **EPA 120.1** Analysis Date: **6/13/2018** SeqNo: **3052853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	903.000	0.10						899.0	0.444	2	

Sample ID **N030762-011DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **124616**
Client ID: **ZZZZZZ** Batch ID: **R124616** TestNo: **EPA 120.1** Analysis Date: **6/13/2018** SeqNo: **3052865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	925.000	0.10						921.0	0.433	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C**	QC Batch: **R124613**			PrepDate			Analyst: **LR**
pH	8.1	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C**	QC Batch: **R124613**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C**	QC Batch: **R124613**			PrepDate			Analyst: **LR**
pH	7.7	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-916-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 2:15:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C**	QC Batch: **R124613**			PrepDate			Analyst: **LR**
pH	7.2	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C**	QC Batch: **R124613**			PrepDate			Analyst: **LR**
pH	7.8	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C**	QC Batch: **R124613**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:08:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-007		

PH

SM4500-H+B

RunID: **NV00922-WC_180613C** QC Batch: **R124613** PrepDate Analyst: **LR**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
pH	7.8	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C** QC Batch: **R124613**				PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:28:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
SM4500-H+B							
RunID: **NV00922-WC_180613C** QC Batch: **R124613** PrepDate							Analyst: **LR**
pH	7.7	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:18:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C**	QC Batch: **R124613**			PrepDate			Analyst: **LR**
pH	7.7	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030762
Project: PG&E Topock - RMP, RC000753.801D
Lab ID: N030762-011

Client Sample ID: C-TAZ-S-Q218
Collection Date: 6/12/2018 8:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C**	QC Batch: **R124613**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-012		

PH

SM4500-H+B

RunID: **NV00922-WC_180613C** QC Batch: **R124613** PrepDate Analyst: **LR**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
pH	8.3	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:08:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C**	QC Batch: **R124613**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C**	QC Batch: **R124613**			PrepDate			Analyst: **LR**
pH	7.7	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 2:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180613C**	QC Batch: **R124613**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	6/13/2018 01:00 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/13/2018 01:00 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N030762-001DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **124613**
Client ID: **ZZZZZZ** Batch ID: **R124613** TestNo: **SM4500-H+B** Analysis Date: **6/13/2018** SeqNo: **3052811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.120	0.10						8.090	0.370	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N030762-011DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **124613**
Client ID: **ZZZZZZ** Batch ID: **R124613** TestNo: **SM4500-H+B** Analysis Date: **6/13/2018** SeqNo: **3052823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.270	0.10						8.260	0.121	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614D** QC Batch: **68445**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614D** QC Batch: **68445**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614D**	QC Batch: **68445**			PrepDate	**6/14/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

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ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
				SM2540D			
RunID: **NV00922-WC_180614D** QC Batch: **68445**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_180614D** QC Batch: **68445** PrepDate **6/14/2018** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:08:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614D** QC Batch: **68445**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_180614D** QC Batch: **68445** PrepDate **6/14/2018** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030762
Project: PG&E Topock - RMP, RC000753.801D
Lab ID: N030762-009

Client Sample ID: C-TAZ-D-Q218
Collection Date: 6/12/2018 8:28:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614D** QC Batch: **68445**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:18:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614D** QC Batch: **68445**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614D**	QC Batch: **68445**			PrepDate	**6/14/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614E**	QC Batch: **68446**			PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:08:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_180614E** QC Batch: **68446** PrepDate **6/14/2018** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-68445** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124651**
Client ID: **LCSW** Batch ID: **68445** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054701**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	996.000	10	1000	0	99.6	80	120				

Sample ID **MB-68445** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124651**
Client ID: **PBW** Batch ID: **68445** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054702**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N030762-001DDUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124651**
Client ID: **ZZZZZZ** Batch ID: **68445** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-68446** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124652**
Client ID: **LCSW** Batch ID: **68446** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	979.000	10	1000	0	97.9	80	120				

Sample ID **MB-68446** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124652**
Client ID: **PBW** Batch ID: **68446** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N030759-001ADUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124652**
Client ID: **ZZZZZZ** Batch ID: **68446** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054717**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	16.000	10						15.00	6.45	5	R

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180613A**	QC Batch: **R124635**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 10:52 AM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180615C**	QC Batch: **68436**			PrepDate	**6/13/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 09:28 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180613A** QC Batch: **R124635** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 11:11 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 09:33 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180613A** QC Batch: **R124635** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 11:30 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 09:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030762
Project: PG&E Topock - RMP, RC000753.801D
Lab ID: N030762-004

Client Sample ID: MW-916-Q218
Collection Date: 6/12/2018 2:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180613A** QC Batch: **R124635** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 12:17 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 09:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180613A** QC Batch: **R124635** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 12:36 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 09:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180613A** QC Batch: **R124635** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 12:55 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**							
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 09:56 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:08:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180613A** QC Batch: **R124635** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 01:14 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**							
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180613A** QC Batch: **R124635** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 02:48 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:18 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:28:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180613A** QC Batch: **R124635**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 03:07 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180615C** QC Batch: **68436**				PrepDate		**6/13/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:24 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:18:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180613A** QC Batch: **R124635** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 03:26 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180613B** QC Batch: **R124636** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 07:54 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**							
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:35 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180613B** QC Batch: **R124636** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 06:38 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:41 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:08:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180613B** QC Batch: **R124636**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 07:07 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180615C** QC Batch: **68436**				PrepDate		**6/13/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:46 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW1-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 1:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180613B** QC Batch: **R124636**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 08:13 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180615C** QC Batch: **68436**				PrepDate		**6/13/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:52 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW2-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 2:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180613B** QC Batch: **R124636** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/13/2018 08:32 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** **EPA 6020**							
RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**							
Chromium	ND	0.13	1.0		µg/L	1	6/15/2018 10:57 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R124635** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **PBW** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R124635** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **LCSW** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053860**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.173	0.20	5.000	0	103	90	110				

Sample ID **N030762-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053862**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.072	0.20	1.000	0	107	90	110				

Sample ID **N030762-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.079	0.20	1.000	0	108	90	110				

Sample ID **N030762-003AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0	104	90	110	1.079	3.42	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California
Work Order:	N030762
Project:	PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030762-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053871**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.001	0.20	1.000	0	100	90	110				

Sample ID **N030762-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.014	0.20	1.000	0.05060	96.3	90	110				

Sample ID **N030762-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053881**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.007	0.20	1.000	0	101	90	110				

Sample ID **N030762-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.993	0.20	1.000	0	99.3	90	110				

Sample ID **N030762-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.010	0.20	1.000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030762-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.996	0.20	1.000	0	99.6	90	110				

Sample ID **N030762-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053888**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.025	0.20	1.000	0	102	90	110				

Sample ID **N030762-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053891**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.994	0.20	1.000	0	99.4	90	110				

Sample ID **N030775-001ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053893**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	16039.600	400						15880	1.02	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R124636** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **LCSW** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.233	0.20	5.000	0	105	90	110				

Sample ID **MB-R124636** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **PBW** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N030762-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **ZZZZZZ** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053998**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.960	0.20	1.000	0	96.0	90	110				

Sample ID **N030762-012AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **ZZZZZZ** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.992	0.20	1.000	0	99.2	90	110	0.9597	3.33	20	

Sample ID **N030762-013ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **ZZZZZZ** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3054001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	
Work Order:	N030762	
Project:	PG&E Topock - RMP, RC000753.801D	

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030762-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **ZZZZZZ** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3054002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.962	0.20	1.000	0	96.2	90	110				

Sample ID **N030762-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **ZZZZZZ** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3054006**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.990	0.20	1.000	0	99.0	90	110				

Sample ID **N030762-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **ZZZZZZ** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3054008**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.973	0.20	1.000	0	97.3	90	110				

Sample ID **N030762-015AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **ZZZZZZ** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3054010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.018	0.20	1.000	0.05090	96.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-68436** SampType: **MBLK** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/13/2018** RunNo: **124675**
Client ID: **PBW** Batch ID: **68436** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2018** SeqNo: **3055639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-68436** SampType: **LCS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/13/2018** RunNo: **124675**
Client ID: **LCSW** Batch ID: **68436** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2018** SeqNo: **3055640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.419	1.0	10.00	0	104	85	115				

Sample ID **N030703-001B-MS** SampType: **MS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/13/2018** RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **68436** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2018** SeqNo: **3055644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.197	1.0	10.00	2.384	98.1	75	125				

Sample ID **N030703-001B-MSD** SampType: **MSD** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: **6/13/2018** RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **68436** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2018** SeqNo: **3055645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.131	1.0	10.00	2.384	97.5	75	125	12.20	0.545	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180616A**	QC Batch: **R124671**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.41	0.032	0.050		mg/L	1	6/16/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180616A** QC Batch: **R124671** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.42	0.032	0.050		mg/L	1	6/16/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180618E** QC Batch: **R124703** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.43	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180618E** QC Batch: **R124703** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.41	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180618E** QC Batch: **R124703** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.40	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:08:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180618E** QC Batch: **R124703** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.38	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180618E** QC Batch: **R124703** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.36	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030762
Project: PG&E Topock - RMP, RC000753.801D
Lab ID: N030762-009

Client Sample ID: C-TAZ-D-Q218
Collection Date: 6/12/2018 8:28:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180618E**	QC Batch: **R124703**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.41	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:18:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180618E** QC Batch: **R124703** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.36	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180618E**	QC Batch: **R124703**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.43	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180618E** QC Batch: **R124703** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.36	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:08:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180618E** QC Batch: **R124703** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.43	0.032	0.050		mg/L	1	6/18/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124671** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **PBW** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124671** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **LCSW** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.461	0.050	0.5000	0	92.1	85	115				

Sample ID **N030668-001DDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **ZZZZZZ** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055406**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.951	0.25						3.326	12.0	20	

Sample ID **N030668-002DMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **ZZZZZZ** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055408**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.611	0.25	2.500	2.871	110	75	125				

Sample ID **N030668-002DMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **ZZZZZZ** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.468	0.25	2.500	2.871	104	75	125	5.611	2.58	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124703** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124703**
Client ID: **PBW** Batch ID: **R124703** TestNo: **SM4500-NO3** Analysis Date: **6/18/2018** SeqNo: **3056914**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124703** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124703**
Client ID: **LCSW** Batch ID: **R124703** TestNo: **SM4500-NO3** Analysis Date: **6/18/2018** SeqNo: **3056915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.525	0.050	0.5000	0	105	85	115				

Sample ID **N030762-006EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124703**
Client ID: **ZZZZZZ** Batch ID: **R124703** TestNo: **SM4500-NO3** Analysis Date: **6/18/2018** SeqNo: **3056919**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.383	0.050						0.3995	4.24	20	

Sample ID **N030762-007EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124703**
Client ID: **ZZZZZZ** Batch ID: **R124703** TestNo: **SM4500-NO3** Analysis Date: **6/18/2018** SeqNo: **3056921**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.908	0.050	0.5000	0.3812	105	75	125				

Sample ID **N030762-007EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124703**
Client ID: **ZZZZZZ** Batch ID: **R124703** TestNo: **SM4500-NO3** Analysis Date: **6/18/2018** SeqNo: **3056922**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.839	0.050	0.5000	0.3812	91.6	75	125	0.9078	7.85	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180620E** QC Batch: **68438** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 01:03 AM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68437** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	44	18	20		ug/L	1	6/21/2018 09:11 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180620E**	QC Batch: **68438**			PrepDate		**6/13/2018**	Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 01:08 AM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68437**			PrepDate		**6/13/2018**	Analyst: **CEI**
Iron	42	18	20		ug/L	1	6/21/2018 09:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180620E**	QC Batch: **68438**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 01:14 AM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68437**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	63	18	20		ug/L	1	6/21/2018 09:43 AM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180620E** QC Batch: **68438** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 01:19 AM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68437** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	34	18	20		ug/L	1	6/21/2018 09:49 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180620E**	QC Batch: **68438**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 01:24 AM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68437**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	44	18	20		ug/L	1	6/21/2018 10:22 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:08:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180620E**	QC Batch: **68438**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 01:30 AM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68437**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	45	18	20		ug/L	1	6/21/2018 10:28 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180620E**	QC Batch: **68438**			PrepDate		**6/13/2018**	Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 01:35 AM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68437**			PrepDate		**6/13/2018**	Analyst: **CEI**
Iron	38	18	20		ug/L	1	6/21/2018 10:33 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:28:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180620E**	QC Batch: **68438**				PrepDate **6/13/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 01:50 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180621A**	QC Batch: **68437**				PrepDate **6/13/2018**		Analyst: **CEI**
Iron	25	18	20		ug/L	1	6/21/2018 10:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:18:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180620E**	QC Batch: **68438**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 01:56 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180621A**	QC Batch: **68437**			PrepDate	**6/13/2018**		Analyst: **CEI**
Iron	30	18	20		ug/L	1	6/21/2018 10:44 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180620E** QC Batch: **68438** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 02:01 AM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68437** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	20	18	20		ug/L	1	6/21/2018 10:49 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180620E** QC Batch: **68438**					PrepDate **6/13/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 02:06 AM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68437**					PrepDate **6/13/2018**		Analyst: **CEI**
Iron	76	18	20		ug/L	1	6/21/2018 10:55 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:08:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180620E** QC Batch: **68438** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 02:12 AM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68437** PrepDate **6/13/2018** Analyst: **CEI**							
Iron	57	18	20		ug/L	1	6/21/2018 11:00 AM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-68438** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/13/2018** RunNo: **125758**
Client ID: **PBW** Batch ID: **68438** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/20/2018** SeqNo: **3060622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-68438** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/13/2018** RunNo: **125758**
Client ID: **LCSW** Batch ID: **68438** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/20/2018** SeqNo: **3060623**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	106.484	20	100.0	0	106	85	115				

Sample ID **N030687-002B-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/13/2018** RunNo: **125758**
Client ID: **ZZZZZZ** Batch ID: **68438** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3060627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	101.577	20	100.0	0	102	75	125				

Sample ID **N030687-002B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/13/2018** RunNo: **125758**
Client ID: **ZZZZZZ** Batch ID: **68438** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3060628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	100.270	20	100.0	0	100	75	125	101.6	1.30	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **MB-68437** SampType: **MBLK** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/13/2018** RunNo: **125775**
Client ID: **PBW** Batch ID: **68437** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3060980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-68437** SampType: **LCS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/13/2018** RunNo: **125775**
Client ID: **LCSW** Batch ID: **68437** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3060981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	107.130	20	100.0	0	107	85	115				

Sample ID **N030762-001C-MS** SampType: **MS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/13/2018** RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **68437** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3060985**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	130.514	20	100.0	43.60	86.9	75	125				

Sample ID **N030762-001C-MSD** SampType: **MSD** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/13/2018** RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **68437** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3060986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	132.115	20	100.0	43.60	88.5	75	125	130.5	1.22	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180615C**	QC Batch: **68436**			PrepDate	**6/13/2018**		Analyst: **CEI**
Arsenic	2.4	0.081	0.10		µg/L	1	6/15/2018 09:28 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 09:28 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 09:28 PM
Molybdenum	4.8	0.21	0.50		µg/L	1	6/15/2018 09:28 PM
Selenium	1.8	0.36	0.50		µg/L	1	6/15/2018 09:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-002		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.3	0.081	0.10		µg/L	1	6/15/2018 09:33 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 09:33 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 09:33 PM
Molybdenum	4.6	0.21	0.50		µg/L	1	6/15/2018 09:33 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/15/2018 09:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-003		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.3	0.081	0.10		µg/L	1	6/15/2018 09:39 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 09:39 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 09:39 PM
Molybdenum	4.6	0.21	0.50		µg/L	1	6/15/2018 09:39 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/15/2018 09:39 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:44:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-005		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.4	0.081	0.10		µg/L	1	6/15/2018 09:50 PM
Barium	120	0.15	1.0		µg/L	1	6/15/2018 09:50 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 09:50 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	6/15/2018 09:50 PM
Selenium	2.0	0.36	0.50		µg/L	1	6/15/2018 09:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180615C**	QC Batch: **68436**			PrepDate		**6/13/2018**	Analyst: **CEI**
Arsenic	2.4	0.081	0.10		µg/L	1	6/15/2018 09:56 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 09:56 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 09:56 PM
Molybdenum	4.8	0.21	0.50		µg/L	1	6/15/2018 09:56 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/15/2018 09:56 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:08:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-007		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.4	0.081	0.10		µg/L	1	6/15/2018 10:01 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 10:01 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 10:01 PM
Molybdenum	4.8	0.21	0.50		µg/L	1	6/15/2018 10:01 PM
Selenium	1.9	0.36	0.50		µg/L	1	6/18/2018 04:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:25:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180615C**	QC Batch: **68436**			PrepDate **6/13/2018**			Analyst: **CEI**
Arsenic	2.3	0.081	0.10		µg/L	1	6/15/2018 10:18 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 10:18 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 10:18 PM
Molybdenum	4.7	0.21	0.50		µg/L	1	6/15/2018 10:18 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/15/2018 10:18 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:28:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-009		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.3	0.081	0.10		µg/L	1	6/15/2018 10:24 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 10:24 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 10:24 PM
Molybdenum	4.7	0.21	0.50		µg/L	1	6/15/2018 10:24 PM
Selenium	1.8	0.36	0.50		µg/L	1	6/15/2018 10:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-915-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:18:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-010		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.4	0.081	0.10		µg/L	1	6/15/2018 10:29 PM
Barium	120	0.15	1.0		µg/L	1	6/15/2018 10:29 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 10:29 PM
Molybdenum	4.9	0.21	0.50		µg/L	1	6/15/2018 10:29 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/15/2018 10:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180615C**	QC Batch: **68436**			PrepDate	**6/13/2018**		Analyst: **CEI**
Arsenic	2.5	0.081	0.10		µg/L	1	6/15/2018 10:35 PM
Barium	120	0.15	1.0		µg/L	1	6/15/2018 10:35 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 10:35 PM
Molybdenum	5.1	0.21	0.50		µg/L	1	6/15/2018 10:35 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/18/2018 04:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-012		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180615C** QC Batch: **68436** PrepDate **6/13/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.4	0.081	0.10		µg/L	1	6/15/2018 10:41 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 10:41 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 10:41 PM
Molybdenum	4.6	0.21	0.50		µg/L	1	6/15/2018 10:41 PM
Selenium	1.5	0.36	0.50		µg/L	1	6/15/2018 10:41 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *26-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q218
Lab Order:	N030762	**Collection Date:**	6/12/2018 10:08:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030762-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180615C**	QC Batch: **68436**			PrepDate	**6/13/2018**		Analyst: **CEI**
Arsenic	2.4	0.081	0.10		µg/L	1	6/15/2018 10:46 PM
Barium	110	0.15	1.0		µg/L	1	6/15/2018 10:46 PM
Manganese	ND	0.26	0.50		µg/L	1	6/15/2018 10:46 PM
Molybdenum	4.8	0.21	0.50		µg/L	1	6/15/2018 10:46 PM
Selenium	1.6	0.36	0.50		µg/L	1	6/15/2018 10:46 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-68436**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/13/2018**	RunNo: **124675**
Client ID: **PBW**	Batch ID: **68436**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/15/2018**	SeqNo: **3055562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-68436**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/13/2018**	RunNo: **124675**
Client ID: **LCSW**	Batch ID: **68436**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/15/2018**	SeqNo: **3055563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.725	0.10	10.00	0	107	85	115				
Barium	10.702	1.0	10.00	0	107	85	115				
Manganese	106.272	0.50	100.0	0	106	85	115				
Molybdenum	10.735	0.50	10.00	0	107	85	115				
Selenium	10.742	0.50	10.00	0	107	85	115				

Sample ID **N030703-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/13/2018**	RunNo: **124675**
Client ID: **ZZZZZZ**	Batch ID: **68436**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/15/2018**	SeqNo: **3055567**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.827	0.10	10.00	1.176	107	75	125				
Barium	131.607	1.0	10.00	123.9	77.3	75	125				
Manganese	103.882	0.50	100.0	3.400	100	75	125				
Molybdenum	12.582	0.50	10.00	1.277	113	75	125				
Selenium	11.570	0.50	10.00	0	116	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030703-001B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/13/2018** RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **68436** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2018** SeqNo: **3055568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.871	0.10	10.00	1.176	107	75	125	11.83	0.372	20	
Barium	131.602	1.0	10.00	123.9	77.3	75	125	131.6	0.00333	20	
Manganese	103.150	0.50	100.0	3.400	99.7	75	125	103.9	0.707	20	
Molybdenum	12.692	0.50	10.00	1.277	114	75	125	12.58	0.869	20	
Selenium	11.088	0.50	10.00	0	111	75	125	11.57	4.25	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

SAMPLE RECEIVING ITEMS

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Nara Tey
Title: sample tech
Signature: Date: 6/12/18
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - RMP
Project Number: RC000753.801D

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com daniel.moore@cruigen.com
Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Nara Tey
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for
Signature: Date: 6/12/18

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	✓	
6. Method of Cooling: Ice		

Sample Temp: 4.1°C / 4.8°C / 5.9°C / 5.6°C
Courier:
Tracking No.:

Matrix: Ground [x] / Sediment / Potable / Soil / NPDES / Other Solid / Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030762-01	C-BNS-Q218	6/12/18	11:44		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
2		~~C-CON-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	m
3		~~C-CON-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	m
4	-02	C-I-3-D-Q218	6/12/18	09:25		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
5		~~MW-914-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	m
6	-03	C-I-3-S-Q218	6/12/18	09:40		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
7		~~C-MAR-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	m
8		~~C-MAR-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	m
9		~~C-NR1-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	m
10		~~C-NR1-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	m
11		~~C-NR3-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	m
12		~~C-NR3-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	m
13	-04	MW-916-Q218	6/12/18	14:15		X		X					X	X					E	~~3~~ 5	P	BNS	
14		~~C-NR4-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	m

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tey	6/12/18 15:40	Nyng alay	6/12/18 1540
Pung alay	6/12/18 1750	Pung alay	6/12/18 1750

Turn Around Time (TAT)

[ ]	A	< 24 Hrs or Same Day TAT
[ ]	B	= Next Workday
[ ]	C	= 2 Workdays
[ ]	D	= 3 Workdays
[x]	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

White=Laboratory Copy Yellow=Customer's Copy

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www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Nara Tep		Phone: 949-727-1400, ext 200	Fax:
Title: sample tech	Phone: 916-786-3302 Fax:		
Signature: Date: 6/12/18	Sampled By: Nara Tep		
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - RMP	Signature: Date: 6/12/18		
Project Number: RC000753.0801			

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled		
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		
6. Method of Cooling:		

Sample Temp: 4.1°C / 4.3°C / 3-9°C / 3-6°C

Courier:

Tracking No.:

Matrix

Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Containers: 3x250 mL poly; 3x500mL poly; 3x500mL poly; 3x500mL poly; 500 mL poly; 1 liter poly; 1 liter poly; 1 liter poly; 1 liter poly; 1 liter poly; 1 liter poly; 125 mL poly; 1 250 mL poly

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3	Total metals (SW6010B); HNO3 Fe	Anions (E300.0); Br, Cl, SO4	Specific Conductance (E120.1)	pH (SM4500HB)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4	Oxygen and deuterium stable isotopes (CFIRM)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1		~~C-NR4-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
2	N030762-05	• C-R22A-D-Q218	6/12/18	10:44		X		X		X	X		X	X			X	X		E	78	P	BNS	
3	-06	• C-R22A-S-Q218	6/12/18	11:00		X		X		X	X		X	X			X	X		E	78	P	BNS	
4	-07	• C-R27-D-Q218	6/12/18	12:08		X		X		X	X		X	X			X	X		E	78	P	BNS	
5	-08	• C-R27-S-Q218	6/12/18	12:25		X		X		X	X		X	X			X	X		E	75	P	BNS	
	-09	• C-TAZ-D-Q218	6/12/18	08:28		X		X		X	X		X	X			X	X		E	78	P	BNS	
7	-10	• MW-915-Q218	6/12/18	10:18		X		X		X	X		X	X			X	X		E	75	P	BNS	
8	-11	• C-TAZ-S-Q218	6/12/18	08:50		X		X		X	X		X	X			X	X		E	76	P	BNS	
9		~~R-19-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
10	-12	• R-28-Q218	6/28/18	12:45		X		X	X	X	X	X	X	X	X	X	X	X	X	E	78	P	BNS	
11	-13	• R63-Q218	6/12/18	10:08		X		X		X	X		X	X			X	X		E	75	P	BNS	
12		~~RRB-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
13	-14	• SW1-Q218	6/12/18	13:45		X		X					X	X						E	53	P	BNS	
14	-15	• SW2-Q218	6/12/18	14:05		X		X					X	X						E	53	P	BNS	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tep	6/12/18 1540		6/12/18 1540
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	6/12/18 1750		6/12/18 1750
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	$(NH_4)_2SO_4/NH_4OH$	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

White=Laboratory Copy Yellow=Customer's Copy

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www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Nara Tep		Phone: 949-727-1400, ext 200	Fax:
Title: sample tech	Phone: 916-786-3302 Fax:		
Signature: [signature] Date: 6/12/18 I hereby authorize ASSET Labs to perform the tests indicated below.	Sampled By: Nara Tep I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - RMP	Signature: [signature] Date: 6/12/18		
Project Number: RC000753.0801			

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		✓
3. Container Intact		
4. Seal Present		
5. IR number	✓	
6. Method of Cooling: Ice		
Sample Temp: 4.3°C		

Courier:
Tracking No.:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (250 ml Poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly)	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly)	Total metals (SW6010B); HNO3 Fe (500 mL poly)	Anions (E300.0); Br, Cl, SO4 (1 liter poly)	Specific Conductance (E120.1) (1 liter poly)	pH (SM4500HB) (1 liter poly)	TDS (SM2540C) (1 liter poly)	Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly)	TSS (SM2540) (1 liter poly)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 (125 mL poly)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
	N030762-16	AB1-Q218	6/12/18	08:40			X												E	1	P	BN	Hold
	-17	AB2-Q218	6/12/18	13:00			X												E	1	P	BN	Hold
		~~AB3-Q218~~					~~X~~												~~E~~	~~1~~	~~P~~	~~BN~~	~~Hold~~

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
[signature] Nara Tep	6/12/18 15:40	[signature]	6/12/18 1540
[signature]	6/12/18 1750	[signature]	6/12/18 1750

Turn Around Time (TAT)
- A < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- x E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 6/12/2018 — Workorder: N030762

Rep sample Temp (Deg C): 4.1/4.3/3.9/3.6 — IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA — Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☐	No ☑	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☑	No ☐	NA ☐

Comments:
See Correspondence.
Samples for pH were past holding time upon receipt.
Sample 12 (R-28-Q218): Used collection date on labels (6/12/2018). YRT 6/15/2018

Checklist Completed By: YR YRT 6/13/2018

Reviewed By: [signature] LR 061518

Subject: RE: PG&E Topock - RMP, RC000753.801D (Asset Labs No. N030762)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 6/13/2018 5:04 PM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>, "jmahn@blainetech.com" <jmahn@blainetech.com>, "Marlon B. Cartin" <marlon@assetlaboratories.com>
CC: "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>, "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>

Hi Yoandra,
That is correct the dissolved metals requested on page 1 is the same as page 2. I apologize they were cut off on the first page.

Thanks,
Laura

From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Wednesday, June 13, 2018 7:12 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>; jmahn@blainetech.com; Marlon B. Cartin <marlon@assetlaboratories.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: Re: PG&E Topock - RMP, RC000753.801D (Asset Labs No. N030762)

Hi Laura,

Finally I'd just want to confirm that Diss Metals requested on page 2 (columns 3 and 5) should be the same listed on page 1. Correct?

Thanks,

On 6/13/2018 3:24 PM, Madsen, Laura wrote:

> Hi Yoandra,
> That is correct for sample R-28-Q218
>
> Please cancel the following:
> Oxygen/Deuterium
> Alkalinity
> TDS
> Anions (Br, Cl, SO4)
> Dissolved metals "Ca, Mg, K, Na, B"
>
> I apologize for any confusion.
>
> Thanks,
> Laura
>
> ---
>
> **From:** Jason Mahn <jmahn@blainetech.com>
> **Sent:** Wednesday, June 13, 2018 4:13 PM
> **To:** Marlon B. Cartin <marlon@assetlaboratories.com>; Madsen, Laura <Laura.Madsen@arcadis.com>;

'Yoandra Rodriguez' <yoandra@assetlaboratories.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>
Subject: RE: PG&E Topock - RMP, RC000753.801D (Asset Labs No. N030762)

Hi Marlon,

I also believe that the Dissolved Metals analysis for "Ca, Mg, K, Na, B" from the R-28-2018 sample needs to be crossed out as well.

Laura, can you confirm?

Thank you,

Jason Mahn
Project Manager
Blaine Tech Services, Inc.
20735 Belshaw Avenue, Carson, CA 90746
Office: (310) 885-4455 x 108
Cell: (310)987-0118
jmahn@blainetech.com

From: Marlon B. Cartin [mailto:marlon@assetlaboratories.com]
Sent: Wednesday, June 13, 2018 2:00 PM
To: 'Madsen, Laura' <Laura.Madsen@arcadis.com>; 'Yoandra Rodriguez' <yoandra@assetlaboratories.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; Jason Mahn <jmahn@blainetech.com>
Subject: RE: PG&E Topock - RMP, RC000753.801D (Asset Labs No. N030762)

Hi Laura,

We received an instruction this morning from Blaine tech to cancel the following test for sample R-28-2018

Oxygen/Deuterium
Alkalinity
TDS
Anions (Br, Cl, SO4)

Please confirm.

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 **|** **F:** 702.307.2691 **|** **M:** 702.439.0421

From: Madsen, Laura [mailto:Laura.Madsen@arcadis.com]
Sent: Wednesday, June 13, 2018 11:59 AM

To: Yoandra Rodriguez
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo'; 'Sonny. Lorenzo'; 'Marlon B. Cartin'
Subject: RE: PG&E Topock - RMP, RC000753.801D (Asset Labs No. N030762)

Hi Yoandra,
I'm checking with my field staff on the missing bottle. If for some reason it wasn't collected, can you take some sample left over from the 1 liter poly to send for the O/D analysis? Is there enough left?

- Sample 16: ID should be AB-1-Q218. Please hold for analysis

- Sample 17: ID should be AB-2-Q218. Please hold for analysis

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Wednesday, June 13, 2018 1:38 PM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: maryann.balilu@assetlaboratoriesph.com; 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; 'Marlon B. Cartin' <marlon@assetlaboratories.com>
Subject: PG&E Topock - RMP, RC000753.801D (Asset Labs No. N030762)

Hi Laura,

Please kindly advise on the following issues for the attached COC:

- Sample 12 (R-28-Q218): 250 mL poly for Oxygen/Deuterium is missing.

- Sample 16: ID is AB1-Q218 on COC and AB-1-Q218 on label.

- Sample 17: ID is AB2-Q218 on COC and AB-2-Q218 on label.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

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endorsed by it.

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

Subject: RE: PG&E Topock - RMP (Asset Labs No. N030762 and N030781)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 6/14/2018 9:18 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

Hi Yoandra,
Please use RC00753.801D

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Thursday, June 14, 2018 11:28 AM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; maryann.balilu@assetlaboratoriesph.com
Subject: PG&E Topock - RMP (Asset Labs No. N030762 and N030781)
Importance: High

Hi Laura,

Please kindly check the attached COCs and confirm which project # to use: RC000753.801 or RC000753.801D.

Or must we report 801 apart from 801D?

Please advise.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-001A	C-BNS-Q218	6/12/2018 11:44:00 AM	6/26/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-001B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-001C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-001D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-001E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-002A	C-I-3-D-Q218	6/12/2018 9:25:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-002B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-002C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-002D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-002D	C-I-3-D-Q218	6/12/2018 9:25:00 AM	6/26/2018	Groundwater	SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-002E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-003A	C-I-3-S-Q218	6/12/2018 9:40:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-003B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-003C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-003D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-003E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-004A	MW-916-Q218	6/12/2018 2:15:00 PM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-004B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-004C			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-004C	MW-916-Q218	6/12/2018 2:15:00 PM	6/26/2018	Groundwater	SM4500-H+B	pH	☐	☐	☐	LSR
N030762-005A	C-R22A-D-Q218	6/12/2018 10:44:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-005B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-005C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-005D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-005E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-006A	C-R22A-S-Q218	6/12/2018 11:00:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-006B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-006C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-006D	C-R22A-S-Q218	6/12/2018 11:00:00 AM	6/26/2018	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-006E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-007A	C-R27-D-Q218	6/12/2018 12:08:00 PM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-007B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-007C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-007D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-007E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-008A	C-R27-S-Q218	6/12/2018 12:25:00 PM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-008B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-008B	C-R27-S-Q218	6/12/2018 12:25:00 PM	6/26/2018	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-008C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-008D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-008E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-009A	C-TAZ-D-Q218	6/12/2018 8:28:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-009B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-009C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-009D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-009E	C-TAZ-D-Q218	6/12/2018 8:28:00 AM	6/26/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-010A	MW-915-Q218	6/12/2018 10:18:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-010B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-010C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-010D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-010E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-011A	C-TAZ-S-Q218	6/12/2018 8:50:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-011B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-011C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-011C	C-TAZ-S-Q218	6/12/2018 8:50:00 AM	6/26/2018	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-011D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-011E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-012A	R-28-Q218	6/12/2018 12:45:00 PM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-012B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-012C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-012D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540C	TOTAL FILTERABLE RESIDUE	☑	☐	☐	LSR
			6/26/2018			Total Dissolved Solids Prep	☑	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
			6/26/2018		SM 2320 B	ALKALINITY, SPECIATED	☑	☐	☐	LSR
			6/26/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☑	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-012D	R-28-Q218	6/12/2018 12:45:00 PM	6/26/2018	Groundwater	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☑	☐	☐	LSR
			6/26/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☑	☐	☐	LSR
			6/26/2018		SM 1030F1	Cation-Anion Balance Calculation	☑	☐	☐	LSR
N030762-012E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-012F			6/26/2018		OXY_DEUT	Oxygen and Deuterium (CF-IRMS)	☑	☐	☑	SUB
N030762-013A	R63-Q218	6/12/2018 10:08:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-013B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-013C			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030762-013D			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030762-013E			6/26/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030762-014A	SW1-Q218	6/12/2018 1:45:00 PM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-014B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

13-Jun-18

WorkOrder: N030762

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/12/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030762-014C	SW1-Q218	6/12/2018 1:45:00 PM	6/26/2018	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
N030762-015A	SW2-Q218	6/12/2018 2:05:00 PM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030762-015B			6/26/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/26/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030762-015C			6/26/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/26/2018		SM4500-H+B	pH	☐	☐	☐	LSR
N030762-016A	AB-1-Q218	6/12/2018 8:40:00 AM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N030762-017A	AB-2-Q218	6/12/2018 1:00:00 PM	6/26/2018		EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N030762-018A	FOLDER	6/26/2018	6/26/2018		EDD	Client specific project	☐	☐	☐	LAB
			6/26/2018		Folder	Folder	☐	☐	☐	LAB
			6/26/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N030762

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6010B_Dissolved, EPA 6010B, EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540D

EPA 120.1

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R124616 **Analyst:** LSR

ASSET #: N030762 **Date Analyzed:** 6/13/2018

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 6/15/2018

2nd Level Reviewer 6/26/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 6/8/18 1045
Analyst: LSK

Standard	Std ID	Reading	Comments
9.70 uS/cm	CMV-180417A	9.94 @ 22.8°C	% Rec: (90-110%)
1412	180131A	1412 @ 22.8C	
10020	180417C	9930 @ 22.8C	
99601	180201A	99600 @ 22.8C	

	Sample ID	Matrix	Reading	Comments
1	N030686-001C	H2O	1166 @ 21.8C	
2	2C		7170 @ 21.5°C	
3	2C DUP		7160 @ 21.5°C	
4				
5				
6				
7				
8				
9	1413 uS/cm	CMV-171121C	1475 @ 22.4°C	
10	10000	180108C	10030 @ 22.3°C	2% 6/8/18 LK
Dup	99672	171215A	101400 @ 22.3°C	Accept: 10% water, 20% soil
Std Chk:				% Rec: (90-110%)

Date: 6/13/18 1345
Analyst: LSK

Standard	Std ID	Reading	Comments
9.70 uS/cm	CMV-180417A	9.82 @ 25.8°C	% Rec: (90-110%)
1412	180131A	1424 @ 24.9°C	
10020	180417C	10220 @ 25.0°C	
99601	180201A	99400 @ 25.3°C	

	Sample ID	Matrix	Reading	Comments
1	N030762-001D	H2O	899 @ 25.1°C	
2	1D DUP		903 @ 24.8°C	
3	2D		914 @ 24.4°C	1413 CMV-171121C
4	3D		913 @ 24.5°C	= 1470 @ 24.5°C
5	4C		958 @ 24.6°C	10000 CMV 180108C
6	5D		917 @ 24.6°C	= 10300 @ 24.8°C
7	6D		911 @ 24.6°C	99672 CMV 171215A
8	7D		923 @ 24.6°C	= 101100 @ 24.9°C
9	8D		919 @ 24.4°C	
10	9D		920 @ 24.4°C	2% 6/13/18 LK
~~Dup~~	10D		914 @ 24.4°C	Accept: ~~10% water~~, 20% soil
Std Chk:	Julia Ramit 6/15/2018			% Rec: (90-110%)

Logbook # 6

Conductivity Logbook

Date: 6/13/18 1345
Analyst: BSR

CONTD

Standard	Std ID	Reading	Comments
9.70 uS/cm	CMV-180417A	9.82 @ 25.5 C	% Rec: (90-110%)
1412	180131A	1424 @ 24.9 C	
10020	180417C	10320 @ 25.0 C	
99601	180201A	99400 @ 25.3 C	

	Sample ID	Matrix	Reading	Comments
1	N030762-011D	H2O	924 @ 24.4 C	
2	11D DUP		925 @ 24.1°C	
3	12D		923 @ 24.3 C	
4	13D		924 @ 24.4 C	
5	14C		956 @ 24.7 C	
6	15C		981 @ 24.7 C	
7				Julia Ramit 6/15/2018
8				
9	1413 uS/cm	CMV- 171121C	1465 @ 24.7 C	
10	10000	180108C	10320 @ 25.0 C	BSR 6/13/18
Dup	99672	171215A	101200 @ 25.0 C	Accept: ~~10% water, 20% soil~~
Std Chk:				% Rec: (90-110%)

Date: 6/14/18 1330
Analyst: BSR

Standard	Std ID	Reading	Comments
9.70 uS/cm	CMV-180417A	9.81 @ 25.8 C	% Rec: (90-110%)
1412	180131A	1424 @ 25.8 C	
10020	180417C	9940 @ 25.8 C	
99601	180201A	99200 @ 25.9 C	

	Sample ID	Matrix	Reading	Comments
1	N030781-002D	H2O	900 @ 25.5 C	
2	2D DUP		905 @ 25.1°C	STD CHECK:
3	3D		891 @ 25.3°C	1413 CMV 180417B
4	4D		889 @ 25.1°C	= 1407 @ 25.5 C
5	5D		895 @ 24.6 C	10000 CMV 180108C
6	6D		888 @ 24.9°C	= 10200 @ 25.3°C
7	7D		892 @ 25.0°C	99672 CMV 171215A
8	8D		890 @ 25.1°C	= 99400 @ 25.6°C
9	9D		893 @ 25.2°C	
10	10D		896 @ 25.0 C	BSR 6/14/18
~~Dup~~	11D		896 @ 25.1°C	Accept: ~~10% water, 20% soil~~
Std Chk:				% Rec: (90-110%)

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3151 W. Post Rd., Las Vegas, NV 89118
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CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

pH ARCUS
REV 0
101215

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number:	**R124613**	**Instrument ID:**	**pH meter**
ASSET #:	**N030762**	**Analyst:**	**LSR**
		Date Analyzed:	**13-Jun**
Method:	**EPA 150.1**		

	Ist Level Review			2nd Level Review		
pH Meter Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?	X					
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 6/15/2018

2nd Level Reviewer Nancy 6/26/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 6/11/18 1325
Analyst: USR

Standard	Std ID	pH	Comments
Buffer 7	GIW-171215D	6.99 @25.0°C	
Buffer 4	171208A	4.00 @25.0°C	
Buffer 10	180119A	9.99 @25.0°C	
Slope		97.4%	Acceptance Criteria: 95%-105%

	Sample ID	Matrix	pH	Comments
1	N030746-001A	H2O	7.68 @25.0°C	
2	1ADUP		7.71 @25.0°C	
3	2A		7.72 @25.0°C	
4	3A		7.73 @25.0°C	
5	4A		7.89 @25.0°C	
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	GIW-180320C	7.03 @25.0°C	Accept: +/- ~~0.1~~ 0.05 pH units from expected value

USR 6/15/18

Date: 6/13/18 1300
Analyst: USR

Standard	Std ID	pH	Comments
Buffer 7	GIW-171215D	7.00 @25.0°C	
Buffer 4	171208A	4.03 @25.0°C	
Buffer 10	180119A	10.02 @25.0°C	
Slope		97.4%	Acceptance Criteria: 95%-105%

	Sample ID	Matrix	pH	Comments
1	N030762-001D	H2O	8.09 @25.0°C	
2	1DDUP		8.12 @25.0°C	
3	2D		7.56 @25.0°C	
4	3D		7.68 @25.0°C	
5	4C		7.17 @25.0°C	
6	5D		7.84 @25.0°C	
7	6D		7.58 @25.0°C	Julia Ramit
8	7D		7.81 @25.0°C	6/15/2018
9	8D		7.63 @25.0°C	
10	9D		7.66 @25.0°C	
~~Dup~~	10D		7.70 @25.0°C	Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	GIW-180320C	6.98 @25.0°C	Accept: +/- ~~0.1~~ 0.05 pH units from expected value

USR 6/15/18

pH Logbook

Date: 6/13/18 1300

Analyst: LSR

Cont'D

Standard	Std ID	pH	Comments
Buffer 7	CIN-171215D	7.00 @25.0C	
Buffer 4	171208A	4.03 @25.0C	
Buffer 10	180119A	10.02 @25.0C	
Slope		97.4%	Acceptance Criteria: 95%-105%

	Sample ID	Matrix	pH	Comments
1	N030762-011D	H_2O	8.26 @25.0C	
2	11DDUP		8.27 @25.0C	
3	12D		8.20 @25.0C	
4	13D		8.23 @25.0C	
5	14C		7.70 @25.0C	
6	15C		7.61 @25.0C	
7	N030751-001D		12.45 @25.0C	
8	1DDUP		12.47 @25.0C	
9				
10				Julia Ramit 6/15/2018
Dup				Accept: 10% water, 20% soil
Buffer 7, 4, 10 (Circle one)		CIN-180320C	6.95 @25.0C	Accept: +/- ~~0.1~~ 0.05 pH units from expected value

LSR 6/15/18

Date: 6/13/18 1430

Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CIN-171215D	7.00 @25.0C	
Buffer 4	171208A	4.03 @25.0C	
Buffer 10	180119A	10.02 @25°C	
Slope		97.4%	Acceptance Criteria: 95%-105%

	Sample ID	Matrix	pH	Comments
1	N030734-001B	Liquid	4.75 @25.0C	
2	1BDUP		4.71 @25.0C	
3	2B		4.90 @25.0C	
4	N030764-001B	Sludge	7.24 @25.0C	
5	N030764-001BDUP		7.26 @25.0C	
6	N030765-001B		7.73 @25.0C	
7	N030766-001B		7.34 @25.0C	
8	N030776-001A	Soil	9.27 @25.0C	
9				
10				
Dup				Accept: 10% water, 20% soil
Buffer 7, 4, 10 (Circle one)		CIN-180320C	6.96 @25.0C	Accept: +/- ~~0.1~~ 0.05 pH units from expected value

LSR 6/15/18

SM 2540D

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68445/68446 **Analyst:** LSR

ASSET #: N030762 **Date Analyzed:** 6/14/2018

Method: EPA 160.2

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 6/15/2018

2nd Level Reviewer Nancy 6/26/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: Water

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N030762-001D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4117- 1.4115) *1000000}{100}$$
$$= 2 \text{ mg/L}$$

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Julia Ramit 6/15/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Page: *1 of 1*

Prep Start Date: **6/14/2018 8:13:18 A**
Prep End Date: **6/14/2018 2:50:00 P**
Prep Batch **68445** Prep Code: **160.2_W_PRE**

Reviewed/ Date: Nancy 6/26/2018
Initials/ Date: Lilia Ramit 6/15/2018
Technician: **Lilia Ramit**

Prep Factor Units **mL / mL**
Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68445	Water		100	☐	0	0	100	1.000		
MB-68445	Water		100	☐	0	0	100	1.000		
N030762-001D	Groundwater		100	☐	0	0	100	1.000		
N030762-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N030762-002D	Groundwater		100	☐	0	0	100	1.000		
N030762-003D	Groundwater		100	☐	0	0	100	1.000		
N030762-005D	Groundwater		100	☐	0	0	100	1.000		
N030762-006D	Groundwater		100	☐	0	0	100	1.000		
N030762-007D	Groundwater		100	☐	0	0	100	1.000		
N030762-008D	Groundwater		100	☐	0	0	100	1.000		
N030762-009D	Groundwater		100	☐	0	0	100	1.000		
N030762-010D	Groundwater		100	☐	0	0	100	1.000		
N030762-011D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
10009	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180521A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/14/2018 8:13:18 A**
Prep End Date:

Reviewed/ Date: ____________

Initials/ Date: Lilia Ramit 6/15/2018

Prep Factor Units mL / mL

Prep Batch **68445** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68445	Water	INST 180521A	100	☐	0	0	100	1.000		
MB-68445	Water		100	☐	0	0	100	1.000		
N030762-001D	Groundwater		100	☐	0	0	100	1.000		
N030762-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N030762-002D	Groundwater		100	☐	0	0	100	1.000		
N030762-003D	Groundwater		100	☐	0	0	100	1.000		
N030762-005D	Groundwater		100	☐	0	0	100	1.000		
N030762-006D	Groundwater		100	☐	0	0	100	1.000		
N030762-007D	Groundwater		100	☐	0	0	100	1.000		
N030762-008D	Groundwater		100	☐	0	0	100	1.000		
N030762-009D	Groundwater		100	☐	0	0	100	1.000		
N030762-010D	Groundwater		100	☐	0	0	100	1.000		
N030762-011D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

10009

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/14/2018 8:13:20 A**
Prep End Date: **6/14/2018 2:50:00 P**
Prep Batch **68446** Prep Code: **160.2_W_PRE**

Reviewed/ Date: Nancy 6/26/2018
Initials/ Date: Lilia Ramit 6/15/2018
Technician: **Lilia Ramit**

Prep Factor Units **mL / mL**
Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68446	Water		100	☐	0	0	100	1.000		
MB-68446	Water		100	☐	0	0	100	1.000		
N030759-001A	Water		100	☐	0	0	100	1.000		
N030759-001A-DU	Water		100	☐	0	0	100	1.000		
N030759-002A	Water		100	☐	0	0	100	1.000		
N030762-012D	Groundwater		100	☐	0	0	100	1.000		
N030762-013D	Groundwater		100	☐	0	0	100	1.000		
N030781-002D	Groundwater		100	☐	0	0	100	1.000		
N030781-003D	Groundwater		100	☐	0	0	100	1.000		
N030781-004D	Groundwater		100	☐	0	0	100	1.000		
N030781-005D	Groundwater		100	☐	0	0	100	1.000		
N030781-006D	Groundwater		100	☐	0	0	100	1.000		
N030781-007D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
10009	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180521A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/14/2018 8:13:20 A**
Prep End Date:

Prep Batch **68446** Prep Code: **160.2_W_PRE**

Reviewed/ Date:

Initials/ Date: Lilia Ramit 6/15/2018

Technician: **Lilia Ramit**

Prep Factor Units mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68446	Water	AWST1805014	100	☐	0	0	100	1.000		
MB-68446	Water		100	☐	0	0	100	1.000		
N030759-001A	Water		100	☐	0	0	100	1.000		
N030759-001A-DU	Water		100	☐	0	0	100	1.000		
N030759-002A	Water		100	☐	0	0	100	1.000		
N030762-012D	Groundwater		100	☐	0	0	100	1.000		
N030762-013D	Groundwater		100	☐	0	0	100	1.000		
N030781-002D	Groundwater		100	☐	0	0	100	1.000		
N030781-003D	Groundwater		100	☐	0	0	100	1.000		
N030781-004D	Groundwater		100	☐	0	0	100	1.000		
N030781-005D	Groundwater		100	☐	0	0	100	1.000		
N030781-006D	Groundwater		100	☐	0	0	100	1.000		
N030781-007D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

1000 g

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST : TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
6/14/18 813	MB1 68445	100	1.3994 1.3992	1.3994 1.3993	
	LCS1 68445	100	1.3965 1.3961	1.3959 1.4957	
1	N030762.001D	100	1.4117 1.4115	1.4116 1.4117	
D1	1D DUP	100	1.4140 1.4136	1.4136 1.4137	
2	2D	100	1.4068 1.4066	1.4070 1.4068	
3	3D	100	1.4017 1.4015	1.4021 1.4019	
4	5D	100	1.4054 1.4053	1.4053 1.4052	
5	6D	100	1.4002 1.4003	1.4004 1.4004	
6	7D	100	1.4017 1.4016	1.4017 1.4016	
7	8D	100	1.4075 1.4075	1.4074 1.4074	

Julia Ramit 6/15/2018

ASSET Laboratories

Logbook#11

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
6/14/18 8	N030762-009D	100	1.4015 1.4017	1.4017 1.4016	
9	10D	100	1.4085 1.4087	1.4088 1.4087	
10	11D	100	1.4105 1.4107	1.4106 1.4108	
	Julia Ramit	6/15/2018			

ASSET LABORATORIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922

TOTAL SUSPENDED SOLIDS, TSS
TSS, mg/L = (A-B) * 10000*PF

where:
A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
6/14/2018							
MB-68445	100	1.3992	1.3993	1.0000	1.00	1	MBLK
LCS-68445	100	1.3961	1.4957	996.0000	1.00	996	LCS
N030762-001D	100	1.4115	1.4117	2.0000	1.00	2	SAMP
N030762-001DDUP	100	1.4136	1.4137	1.0000	1.00	1	DUP
N030762-002D	100	1.4066	1.4068	2.0000	1.00	2	SAMP
N030762-003D	100	1.4015	1.4019	4.0000	1.00	4	SAMP
N030762-005D	100	1.4053	1.4052	-1.0000	1.00	-1	SAMP
N030762-006D	100	1.4003	1.4004	1.0000	1.00	1	SAMP
N030762-007D	100	1.4016	1.4016	0.0000	1.00	0	SAMP
N030762-008D	100	1.4075	1.4074	-1.0000	1.00	-1	SAMP
N030762-009D	100	1.4017	1.4016	-1.0000	1.00	-1	SAMP
N030762-010D	100	1.4087	1.4087	0.0000	1.00	0	SAMP
N030762-011D	100	1.4107	1.4108	1.0000	1.00	1	SAMP

Julia Ramit 6/15/2018 4:32 PM

SOLIDS RAW DATA

TEST (TSS) TDS/TS

Date	Sample ID	Sample Vol (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
6/11/18 813	MB2 68446	100	1.4025 1.4026	1.4024 1.4025	
	LCS2 68446	100	1.4057 1.4056	1.5034 1.50335	
11	N030759-001A	100	1.4104 1.4104	1.4118 1.4119	
D2	1A DUP	100	1.4046 1.4045	1.4060 1.4061	
12	2A	100	1.3968 1.3971	1.3981 1.3987	
13	N030762-012D	100	1.4076 1.4077	1.4079 1.4078	
14	13D	100	1.3990 1.3990	1.3989 1.3989	
15	N030751-002D	100	1.4003 1.4002	1.4004 1.4006	
16	3D	100	1.4023 1.4022	1.4021 1.4023	
17	4D	100	1.4109 1.4108	1.4109 1.4110	

Julia Ramit 6/15/2018 ASSET Laboratories Logbook#11

SOLIDS RAW DATA

TEST (TSS)/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
6/14/18 18	N030781-005D	100	1.4041 1.4042	1.4040 1.4042	
19	6D	100	1.3939 1.3941	1.3943 1.3943	
20	7D	100	1.4059 1.4063	1.4064 1.4066	
	Julia Ramit	6/15/2018			

ASSET LABORATORIES

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = **weight in g of aluminum dish + filter disc + residue after drying**
B = **weight in g of aluminum dish + filter disc**
PF = **100/volume of sample used in mL**

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
6/14/2018							
MB-68446	100	1.4026	1.4025	-1.0000	1.00	-1	MBLK
LCS-68446	100	1.4056	1.5035	979.0000	1.00	979	LCS
N030759-001A	100	1.4104	1.4119	15.0000	1.00	15	SAMP
N030759-001ADUP	100	1.4045	1.4061	16.0000	1.00	16	DUP
N030759-002A	100	1.3971	1.3981	10.0000	1.00	10	SAMP
N030762-012D	100	1.4077	1.4078	1.0000	1.00	1	SAMP
N030762-013D	100	1.399	1.3989	-1.0000	1.00	-1	SAMP
N030781-002D	100	1.4002	1.4006	4.0000	1.00	4	SAMP
N030781-003D	100	1.4022	1.4023	1.0000	1.00	1	SAMP
N030781-004D	100	1.4108	1.411	2.0000	1.00	2	SAMP
N030781-005D	100	1.4042	1.4042	0.0000	1.00	0	SAMP
N030781-006D	100	1.3941	1.3943	2.0000	1.00	2	SAMP
N030781-007D	100	1.4063	1.4066	3.0000	1.00	3	SAMP

Julia Ramit 6/15/2018

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R124635
ASSET #: N030762

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 6/13/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [x] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ___________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 6/20/2018

2nd Level Reviewer Nancy 6/26/2018 Date:

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R124636
ASSET #: N030762

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 6/13/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ___________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 6/20/2018

2nd Level Reviewer [signature] 6/26/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

Cr^{+6} ,µg/L = A * DF

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N030762-006A** , the concentration in µg/L is calculated as follows:

Cr^{+6} ,µg/L = 0.0506 * 1

Cr^{+6} ,µg/L = 0.0506

Since PQL is 0.2 µg/L,

Cr^{+6} ,µg/L = ND

rba 6/20/2018

ANALYSIS RUN LOG

INJECTION LOG: 180521A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/21/18 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/21/18 9:52 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:11 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:30 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/21/18 10:49 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/21/18 10:58 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/21/18 11:08 AM	Reported
13	MB-R124155	MBLK	1	Hexavalent Chromium	05/21/18 11:17 AM	Reported
14	LCS-R124155	LCS	1	Hexavalent Chromium	05/21/18 11:27 AM	Reported
15	N030123-015A	SAMP	5	Hexavalent Chromium	05/21/18 11:36 AM	Not Reported
16	N030123-015AMS	MS	5	Hexavalent Chromium	05/21/18 11:45 AM	Not Reported
17	N030189-011A	SAMP	1	Hexavalent Chromium	05/21/18 11:55 AM	Not Reported
18	N030189-011AMS	MS	1	Hexavalent Chromium	05/21/18 12:04 PM	Not Reported
19	N030189-012A	SAMP	1	Hexavalent Chromium	05/21/18 12:14 PM	Not Reported
20	N030189-012AMS	MS	1	Hexavalent Chromium	05/21/18 12:23 PM	Not Reported
21	N030402-001A	SAMP	20	Hexavalent Chromium	05/21/18 12:33 PM	Not Reported
22	N030402-001A	SAMP	1	Hexavalent Chromium	05/21/18 1:26 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	05/21/18 1:38 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	05/21/18 1:47 PM	Reported
25	N030402-001ADUP	DUP	1	Hexavalent Chromium	05/21/18 1:57 PM	Reported
26	N030402-001AMS	MS	1	Hexavalent Chromium	05/21/18 2:06 PM	Reported
27	N030402-001AMSD	MSD	1	Hexavalent Chromium	05/21/18 2:15 PM	Reported
28	CCV-2	CCV	1	Hexavalent Chromium	05/21/18 2:25 PM	Reported
29	CCB-2	CCB	1	Hexavalent Chromium	05/21/18 2:34 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180521A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**21/May/18 15:44:36**
No. of Injections:	**32**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/21/2018 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		05/21/2018 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/21/2018 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/21/2018 09:52	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/21/2018 10:01	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/21/2018 10:11	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/21/2018 10:20	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/21/2018 10:30	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/21/2018 10:39	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		05/21/2018 10:49	Finished	CCV @5ppb, IWST-180129A
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		05/21/2018 10:58	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		05/21/2018 11:08	Finished	CCB R180409B
13	MB-H2O,MBLK,1,	13	1000	Unknown		05/21/2018 11:17	Finished	MB R180409B
14	LCS-H2O,LCS,1,	14	1000	Unknown		05/21/2018 11:27	Finished	LCS, IWST-180129B
15	N030123-015A,SAMF	15	1000	Unknown		05/21/2018 11:36	Finished	SAMP,2>10mL
16	N030123-015AMS,MS	16	1000	Unknown		05/21/2018 11:45	Finished	MS (1ppb), IWST-180129B,2>1
17	N030189-011A,SAMF	17	1000	Unknown		05/21/2018 11:55	Finished	SAMP,10mL
18	N030189-011AMS,MS	18	1000	Unknown		05/21/2018 12:04	Finished	MS (1ppb), IWST-180129B,10
19	N030189-012A,SAMF	19	1000	Unknown		05/21/2018 12:14	Finished	SAMP,10mL
20	N030189-012AMS,MS	20	1000	Unknown		05/21/2018 12:23	Finished	MS (5ppb), IWST-180129B,10
21	N030402-001A,SAMF	21	1000	Unknown		05/21/2018 12:33	Finished	SAMP,0.5>10mL
22	N030402-001A,SAMF	23	1000	Unknown		05/21/2018 13:26	Finished	SAMP,10mL
23	CCV-1,CCV1,1,	24	1000	Unknown		05/21/2018 13:38	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	25	1000	Unknown		05/21/2018 13:47	Finished	CCB R180409B
25	N030402-001ADUP,D	26	1000	Unknown		05/21/2018 13:57	Finished	DUP,10mL
26	N030402-001AMS,MS	27	1000	Unknown		05/21/2018 14:06	Finished	MS (5ppb), IWST-180129B,10
27	N030402-001AMSD,M	28	1000	Unknown		05/21/2018 14:15	Finished	MSD (5ppb), IWST-180129B,1(
28	CCV-2,CCV,1,	29	1000	Unknown		05/21/2018 14:25	Finished	CCV @5ppb, IWST-180129A
29	CCB-2,CCB,1,	30	1000	Unknown		05/21/2018 14:34	Finished	CCB R180409B
30	SHUTDOWN	31	1000	Unknown		05/21/2018 14:44	Finished	
31	Eluent: R180518A	32	1000	Unknown		n.a.	Finished	Eluent
32	PCR: R180516B	33	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180613A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/21/18 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/21/18 9:52 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:11 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:30 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	06/13/18 9:17 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	06/13/18 9:28 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	06/13/18 9:38 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	06/13/18 9:47 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	06/13/18 9:57 AM	Reported
15	MB-R124635	MBLK	1	Hexavalent Chromium	06/13/18 10:06 AM	Reported
16	LCS-R124635	LCS	1	Hexavalent Chromium	06/13/18 10:16 AM	Not Reported
17	LCS-~~H2O~~ R124635	LCS	1	Hexavalent Chromium	06/13/18 10:40 AM	~~Not~~ Reported
18	N030762-001A	SAMP	1	Hexavalent Chromium	06/13/18 10:52 AM	Reported
19	N030762-001AMS	MS	1	Hexavalent Chromium	06/13/18 11:01 AM	Reported
20	N030762-002A	SAMP	1	Hexavalent Chromium	06/13/18 11:11 AM	Reported
21	N030762-002AMS	MS	1	Hexavalent Chromium	06/13/18 11:20 AM	Not Reported
22	N030762-003A	SAMP	1	Hexavalent Chromium	06/13/18 11:30 AM	Reported
23	N030762-003AMS	MS	1	Hexavalent Chromium	06/13/18 11:39 AM	Reported
24	N030762-003AMSD	MSD	1	Hexavalent Chromium	06/13/18 11:49 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	06/13/18 11:58 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	06/13/18 12:07 PM	Reported
27	N030762-004A	SAMP	1	Hexavalent Chromium	06/13/18 12:17 PM	Reported
28	N030762-004AMS	MS	1	Hexavalent Chromium	06/13/18 12:26 PM	Not Reported
29	N030762-005A	SAMP	1	Hexavalent Chromium	06/13/18 12:36 PM	Reported
30	N030762-005AMS	MS	1	Hexavalent Chromium	06/13/18 12:45 PM	Reported
31	N030762-006A	SAMP	1	Hexavalent Chromium	06/13/18 12:55 PM	Reported
32	N030762-006AMS	MS	1	Hexavalent Chromium	06/13/18 1:04 PM	Reported
33	N030762-007A	SAMP	1	Hexavalent Chromium	06/13/18 1:14 PM	Reported
34	N030762-007AMS	MS	1	Hexavalent Chromium	06/13/18 1:23 PM	Not Reported
35	MB-68409_STLC	MBLK	1	Hexavalent Chromium	06/13/18 1:33 PM	Not Reported
36	MB-68426_TCLP	MBLK	1	Hexavalent Chromium	06/13/18 1:42 PM	Not Reported
37	CCV-3	CCV	1	Hexavalent Chromium	06/13/18 1:52 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	06/13/18 2:01 PM	Reported
39	N030702-001B_STLC	SAMP	1	Hexavalent Chromium	06/13/18 2:10 PM	Not Reported
40	N030702-001B_TCLP	SAMP	1	Hexavalent Chromium	06/13/18 2:20 PM	Not Reported
41	N030762-002AMS	MS	1	Hexavalent Chromium	06/13/18 2:29 PM	Reported
42	N030762-004AMS	MS	1	Hexavalent Chromium	06/13/18 2:39 PM	Reported
43	N030762-008A	SAMP	1	Hexavalent Chromium	06/13/18 2:48 PM	Reported
44	N030762-008AMS	MS	1	Hexavalent Chromium	06/13/18 2:58 PM	Reported
45	N030762-009A	SAMP	1	Hexavalent Chromium	06/13/18 3:07 PM	Reported
46	N030762-009AMS	MS	1	Hexavalent Chromium	06/13/18 3:17 PM	Reported

INJECTION LOG: 180613A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
47	N030762-010A	SAMP	1	Hexavalent Chromium	06/13/18 3:26 PM	Reported
48	N030762-010AMS	MS	1	Hexavalent Chromium	06/13/18 3:36 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	06/13/18 3:45 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	06/13/18 3:55 PM	Reported
51	N030762-007AMS	MS	1	Hexavalent Chromium	06/13/18 4:04 PM	Reported
52	N030775-001A	SAMP	2000	Hexavalent Chromium	06/13/18 4:13 PM	Reported
53	N030775-001ADUP	DUP	2000	Hexavalent Chromium	06/13/18 4:23 PM	Reported
54	N030775-002A	SAMP	2000	Hexavalent Chromium	06/13/18 4:34 PM	Reported
55	N030775-003A	SAMP	2000	Hexavalent Chromium	06/13/18 4:45 PM	Reported
56	N030775-004A	SAMP	2000	Hexavalent Chromium	06/13/18 4:54 PM	Reported
57	N030775-005A	SAMP	2000	Hexavalent Chromium	06/13/18 5:04 PM	Reported
58	N030775-006A	SAMP	2000	Hexavalent Chromium	06/13/18 5:13 PM	Reported
59	N030775-007A	SAMP	2000	Hexavalent Chromium	06/13/18 5:23 PM	Reported
60	N030775-008A	SAMP	2000	Hexavalent Chromium	06/13/18 5:32 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	06/13/18 5:42 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	06/13/18 5:51 PM	Reported
63	N030702-001B-REP_STLC	DUP	1	Hexavalent Chromium	06/13/18 6:01 PM	Not Reported
64	N030702-001B-REP_TCLP	DUP	1	Hexavalent Chromium	06/13/18 6:10 PM	Not Reported
65	LCS-R124636	LCS	1	Hexavalent Chromium	06/13/18 6:20 PM	Reported
66	MB-R124636	MBLK	1	Hexavalent Chromium	06/13/18 6:29 PM	Reported
67	N030762-012A	SAMP	1	Hexavalent Chromium	06/13/18 6:38 PM	Reported
68	N030762-012AMS	MS	1	Hexavalent Chromium	06/13/18 6:48 PM	Reported
69	N030762-012AMSD	MSD	1	Hexavalent Chromium	06/13/18 6:57 PM	Reported
70	N030762-013A	SAMP	1	Hexavalent Chromium	06/13/18 7:07 PM	Reported
71	N030762-013ADUP	DUP	1	Hexavalent Chromium	06/13/18 7:16 PM	Reported
72	N030762-013AMS	MS	1	Hexavalent Chromium	06/13/18 7:26 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	06/13/18 7:35 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	06/13/18 7:45 PM	Reported
75	N030762-011A	SAMP	1	Hexavalent Chromium	06/13/18 7:54 PM	Reported
76	N030762-011AMS	MS	1	Hexavalent Chromium	06/13/18 8:04 PM	Reported
77	N030762-014A	SAMP	1	Hexavalent Chromium	06/13/18 8:13 PM	Reported
78	N030762-014AMS	MS	1	Hexavalent Chromium	06/13/18 8:23 PM	Reported
79	N030762-015A	SAMP	1	Hexavalent Chromium	06/13/18 8:32 PM	Reported
80	N030762-015AMS	MS	1	Hexavalent Chromium	06/13/18 8:41 PM	Reported
81	N030762-016A	SAMP	1	Hexavalent Chromium	06/13/18 8:51 PM	Reported
82	N030762-016AMS	MS	1	Hexavalent Chromium	06/13/18 9:00 PM	Reported
83	N030762-017A	SAMP	1	Hexavalent Chromium	06/13/18 9:10 PM	Reported
84	N030762-017AMS	MS	1	Hexavalent Chromium	06/13/18 9:19 PM	Reported
85	CCV-7	CCV	1	Hexavalent Chromium	06/13/18 9:29 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	06/13/18 9:38 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180613A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**13/Jun/18 22:09:00**
No. of Injections:	**89**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/21/2018 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		05/21/2018 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/21/2018 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/21/2018 09:52	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/21/2018 10:01	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/21/2018 10:11	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/21/2018 10:20	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/21/2018 10:30	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/21/2018 10:39	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		06/13/2018 09:17	Finished	20 ppb, IWST-180129A
11	BLANK	2	1000	Unknown		06/13/2018 09:28	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		06/13/2018 09:38	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		06/13/2018 09:47	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		06/13/2018 09:57	Finished	CCB R180531A
15	MB-H2O,MBLK,1,	6	1000	Unknown		06/13/2018 10:06	Finished	MB R180531A
16	LCS-H2O,LCS,1,	7	1000	Unknown		06/13/2018 10:16	Finished	LCS, IWST-180129B
17	LCS-H2O,LCS,1,	9	1000	Unknown		06/13/2018 10:40	Finished	LCS, IWST-180129B
18	N030762-001A,SAMF	10	1000	Unknown		06/13/2018 10:52	Finished	SAMP,10mL
19	N030762-001AMS,MS	11	1000	Unknown		06/13/2018 11:01	Finished	MS (1ppb), IWST-180129B,10
20	N030762-002A,SAMF	12	1000	Unknown		06/13/2018 11:11	Finished	SAMP,10mL
21	N030762-002AMS,MS	13	1000	Unknown		06/13/2018 11:20	Finished	MS (1ppb), IWST-180129B,10
22	N030762-003A,SAMF	14	1000	Unknown		06/13/2018 11:30	Finished	SAMP,10mL
23	N030762-003AMS,MS	15	1000	Unknown		06/13/2018 11:39	Finished	MS (1ppb), IWST-180129B,10
24	N030762-003AMSD,M	16	1000	Unknown		06/13/2018 11:49	Finished	MSD (1ppb), IWST-180129B,1(
25	CCV-2,CCV1,1,	17	1000	Unknown		06/13/2018 11:58	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	18	1000	Unknown		06/13/2018 12:07	Finished	CCB R180531A
27	N030762-004A,SAMF	19	1000	Unknown		06/13/2018 12:17	Finished	SAMP,10mL
28	N030762-004AMS,MS	20	1000	Unknown		06/13/2018 12:26	Finished	MS (1ppb), IWST-180129B,10
29	N030762-005A,SAMF	21	1000	Unknown		06/13/2018 12:36	Finished	SAMP,10mL
30	N030762-005AMS,MS	22	1000	Unknown		06/13/2018 12:45	Finished	MS (1ppb), IWST-180129B,10
31	N030762-006A,SAMF	23	1000	Unknown		06/13/2018 12:55	Finished	SAMP,10mL
32	N030762-006AMS,MS	24	1000	Unknown		06/13/2018 13:04	Finished	MS (1ppb), IWST-180129B,10
33	N030762-007A,SAMF	25	1000	Unknown		06/13/2018 13:14	Finished	SAMP,10mL
34	N030762-007AMS,MS	26	1000	Unknown		06/13/2018 13:23	Finished	MS (1ppb), IWST-180129B,10
35	MB-68409_STLC,MB	27	1000	Unknown		06/13/2018 13:33	Finished	MB_STLC R180531A
36	MB-68426_TCLP,MB	28	1000	Unknown		06/13/2018 13:42	Finished	MB_TCLP R180531A
37	CCV-3,CCV,1,	29	1000	Unknown		06/13/2018 13:52	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	30	1000	Unknown		06/13/2018 14:01	Finished	CCB R180531A
39	N030702-001B_STLC	31	1000	Unknown		06/13/2018 14:10	Finished	SAMP_STLC,10mL
40	N030702-001B_TCLF	32	1000	Unknown		06/13/2018 14:20	Finished	SAMP_TCLP,10mL
41	N030762-002AMS,MS	33	1000	Unknown		06/13/2018 14:29	Finished	MS (1ppb), IWST-180129B,10
42	N030762-004AMS,MS	34	1000	Unknown		06/13/2018 14:39	Finished	MS (1ppb), IWST-180129B,10
43	N030762-008A,SAMF	35	1000	Unknown		06/13/2018 14:48	Finished	SAMP,10mL
44	N030762-008AMS,MS	36	1000	Unknown		06/13/2018 14:58	Finished	MS (1ppb), IWST-180129B,10
45	N030762-009A,SAMF	37	1000	Unknown		06/13/2018 15:07	Finished	SAMP,10mL
46	N030762-009AMS,MS	38	1000	Unknown		06/13/2018 15:17	Finished	MS (1ppb), IWST-180129B,10
47	N030762-010A,SAMF	39	1000	Unknown		06/13/2018 15:26	Finished	SAMP,10mL
48	N030762-010AMS,MS	40	1000	Unknown		06/13/2018 15:36	Finished	MS (1ppb), IWST-180129B,10
49	CCV-4,CCV1,1,	41	1000	Unknown		06/13/2018 15:45	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	42	1000	Unknown		06/13/2018 15:55	Finished	CCB R180531A
51	N030762-007AMS,MS	43	1000	Unknown		06/13/2018 16:04	Finished	MS (1ppb), IWST-180129B,10
52	N030775-001A,SAMF	44	1000	Unknown		06/13/2018 16:13	Finished	SAMP,0.005>10mL
53	N030775-001ADUP,D	45	1000	Unknown		06/13/2018 16:23	Finished	DUP,0.005>10mL
54	N030775-002A,SAMF	1	1000	Unknown		06/13/2018 16:34	Finished	SAMP,0.005>10mL
55	N030775-003A,SAMF	2	1000	Unknown		06/13/2018 16:45	Finished	SAMP,0.005>10mL
56	N030775-004A,SAMF	3	1000	Unknown		06/13/2018 16:54	Finished	SAMP,0.005>10mL
57	N030775-005A,SAMF	4	1000	Unknown		06/13/2018 17:04	Finished	SAMP,0.005>10mL
58	N030775-006A,SAMF	5	1000	Unknown		06/13/2018 17:13	Finished	SAMP,0.005>10mL
59	N030775-007A,SAMF	6	1000	Unknown		06/13/2018 17:23	Finished	SAMP,0.005>10mL
60	N030775-008A,SAMF	7	1000	Unknown		06/13/2018 17:32	Finished	SAMP,0.005>10mL

61	CCV-5,CCV,1,	8	1000	Unknown		06/13/2018 17:42	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	9	1000	Unknown		06/13/2018 17:51	Finished	CCB R180531A
63	N030702-001B-REP	10	1000	Unknown		06/13/2018 18:01	Finished	REP_STLC,10mL
64	N030702-001B-REP	11	1000	Unknown		06/13/2018 18:10	Finished	REP_TCLP,10mL
65	LCS-2,LCS,1,	12	1000	Unknown		06/13/2018 18:20	Finished	LCS, IWST-180129B
66	MB-2,MBLK,1,	13	1000	Unknown		06/13/2018 18:29	Finished	MB R180531A
67	N030762-012A,SAMF	14	1000	Unknown		06/13/2018 18:38	Finished	SAMP,10mL
68	N030762-012AMS,MS	15	1000	Unknown		06/13/2018 18:48	Finished	MS (1ppb), IWST-180129B,10
69	N030762-012AMSD,M	16	1000	Unknown		06/13/2018 18:57	Finished	MSD (1ppb), IWST-180129B,1(
70	N030762-013A,SAMF	17	1000	Unknown		06/13/2018 19:07	Finished	SAMP,10mL
71	N030762-013ADUP,D	18	1000	Unknown		06/13/2018 19:16	Finished	DUP,10mL
72	N030762-013AMS,MS	19	1000	Unknown		06/13/2018 19:26	Finished	MS (1ppb), IWST-180129B,10
73	CCV-6,CCV1,1,	20	1000	Unknown		06/13/2018 19:35	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	21	1000	Unknown		06/13/2018 19:45	Finished	CCB R180531A
75	N030762-011A,SAMF	22	1000	Unknown		06/13/2018 19:54	Finished	SAMP,10mL
76	N030762-011AMS,MS	23	1000	Unknown		06/13/2018 20:04	Finished	MS (1ppb), IWST-180129B,10
77	N030762-014A,SAMF	24	1000	Unknown		06/13/2018 20:13	Finished	SAMP,10mL
78	N030762-014AMS,MS	25	1000	Unknown		06/13/2018 20:23	Finished	MS (1ppb), IWST-180129B,10
79	N030762-015A,SAMF	26	1000	Unknown		06/13/2018 20:32	Finished	SAMP,10mL
80	N030762-015AMS,MS	27	1000	Unknown		06/13/2018 20:41	Finished	MS (1ppb), IWST-180129B,10
81	N030762-016A,SAMF	28	1000	Unknown		06/13/2018 20:51	Finished	SAMP,10mL
82	N030762-016AMS,MS	29	1000	Unknown		06/13/2018 21:00	Finished	MS (1ppb), IWST-180129B,10
83	N030762-017A,SAMF	30	1000	Unknown		06/13/2018 21:10	Finished	SAMP,10mL
84	N030762-017AMS,MS	31	1000	Unknown		06/13/2018 21:19	Finished	MS (1ppb), IWST-180129B,10
85	CCV-7,CCV,1,	32	1000	Unknown		06/13/2018 21:29	Finished	CCV @5ppb, IWST-180129A
86	CCB-7,CCB,1,	33	1000	Unknown		06/13/2018 21:38	Finished	CCB R180531A
87	SHUTDOWN	34	1000	Unknown		06/13/2018 21:48	Finished	
88	Eluent: R180612A	35	1000	Unknown		n.a.	Finished	Eluent
89	PCR: R180611A	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 6/12/18
Time Prepared: 1544
Prepared By: MSA

Reagent ID:
Sulfuric Acid: 10017
Diphenylcarbazide: CIW-171116A
NH4OH + NH4SO4 eluent: M1806084A
NH4OH + NH4SO4 buffer: M1805232C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M030774-001A	7.46	9.34	~200ml	~250ml	45ml M1805232C	
2)	2A	7.32	9.32				
3)	3A	7.50	9.33				
4)	4A	7.79	9.37				
5)	5A	7.15	9.40				
6)	6A	7.37	9.33				
7)	7A	7.02	9.35				
8)	8A	7.05	9.39				
9)	9A	7.60	9.42				
10)	10A	7.78	9.40				
11)	11A	7.41	9.37				
12)	12A	7.23	9.34				
13)	13A	7.27	9.32				
14)	14D	7.14	9.38				
15)							

Sample Preparation

Date Prepared: 6/13/18
Time Prepared: 0915H
Prepared By: MSA

Slope: 97.42
pH 4: 4.03 @25.0°C
7: 7.00 @25.0°C
10: 10.02 @25.0°C

Reagent ID:
Sulfuric Acid: 10017
Diphenylcarbazide: CIW-171116A
NH4OH + NH4SO4 eluent: M1806122A
NH4OH + NH4SO4 buffer: M1805231A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M030762-001A	9.42	-	~50ml	~50ml		1/3
2)	1A	9.39	-				2/3
3)	1A	9.40	-				3/3
4)	2A	9.46	-				1/3
5)	2A	9.42	-				2/3
6)	2A	9.43	-				3/3
7)	3A	9.47	-				1/3
8)	3A	9.45	-				2/3
9)	3A	9.44	-				3/3
10)	4A	9.47	-				1/3
11)	4A	9.45	-				2/3
12)	4A	9.46	-				3/3
13)	5A	9.31	-				1/3
14)	5A	9.31	-				2/3
15)	5A	9.30	-				3/3
	6A	9.30	-				1/3

Logbook No. 14

rba 6/20/2018

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 6/13/18
Time Prepared: 0915H
Prepared By: NBA

Reagent ID:
Sulfuric Acid: 10217
Diphenylcarbazide: CAN-171116A
NH4OH + NH4SO4 eluent: M806USA 12A
NH4OH + NH4SO4 buffer: M805 31A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030762-6A	9.34	-	250ml	250ml		2/3
2)	6A	9.33	-				3/3
3)	7A	9.35	-				1/3
4)	7A	9.36	-				2/3
5)	7A	9.33	-				3/3
6)	8A	9.37	-				1/3
7)	8A	9.38	-				2/3
8)	8A	9.37	-				3/3
9)	9A	9.32	-				1/3
10)	9A	9.30	-				2/3
11)	9A	9.31	-				3/3
12)	10A	9.30	-				1/3
13)	10A	9.31	-				2/3
14)	10A	9.33	-				3/3
15)	11A	9.36	-				1/3
	11A	9.38	-				2/3

Sample Preparation

Date Prepared: 6/14/18
Time Prepared: 0915H
Prepared By: NBA

Reagent ID:
Sulfuric Acid: 10217
Diphenylcarbazide: CAN-171116A
NH4OH + NH4SO4 eluent: M806 12A
NH4OH + NH4SO4 buffer: M805 31A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030762-11A	9.35	-	250ml	250ml		3/3
2)	12A	9.31	-				1/3
3)	12A	9.34	-				2/3
4)	12A	9.35	-				3/3
5)	13A	9.33	-				1/3
6)	13A	9.32	-				2/3
7)	13A	9.32	-				3/3
8)	14A	9.34	-				1/3
9)	14A	9.38	-				2/3
10)	14A	9.37	-				3/3
11)	15A	9.39	-				1/3
12)	15A	9.40	-				2/3
13)	15A	9.43	-				3/3
14)	16A	9.40	-				1/1
15)	17A	9.43	-				1/1

Logbook No. 14

nba 6/20/2018

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 5/21/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0627	0.2668	1.3224	2.6085	3.9312	5.1733	0.9999

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ICV** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **5/21/2018** SeqNo: **3053853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.175	0.20	5.000	0	103	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **5/21/2018** SeqNo: **3053854**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.211	0.20	0.2000	0	106	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **CCV** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053856**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.099	0.20	5.000	0	102	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.204	0.20	0.2000	0	102	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.414	0.20	10.00	0	104	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **CCV** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053877**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.093	0.20	5.000	0	102	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.261	0.20	10.00	0	103	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **CCV** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053901**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.108	0.20	5.000	0	102	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ZZZZZZ** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053905**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.438	0.20	10.00	0	104	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **ICV** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **5/21/2018** SeqNo: **3053989**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.175	0.20	5.000	0	103	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **ZZZZZZ** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **5/21/2018** SeqNo: **3053990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.211	0.20	0.2000	0	106	80	120				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **ZZZZZZ** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.204	0.20	0.2000	0	102	80	120				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **CCV** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.108	0.20	5.000	0	102	95	105				

Sample ID **CCV-6** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **ZZZZZZ** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3054003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.438	0.20	10.00	0	104	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-7** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **CCV** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3054015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.996	0.20	5.000	0	99.9	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **ICB** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **5/21/2018** SeqNo: **3053855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **CCB** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **CCB** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **CCB** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **CCB** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **CCB** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053902**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124635**
Client ID: **CCB** Batch ID: **R124635** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053906**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **ICB** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **5/21/2018** SeqNo: **3053991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **CCB** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3053994**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **CCB** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3054004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124636**
Client ID: **CCB** Batch ID: **R124636** TestNo: **EPA 218.6** Analysis Date: **6/13/2018** SeqNo: **3054016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 6/13/2018

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.173	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	

Average	4.166	
Actual RT Window	4.086 -	4.246
Applied RT Window	3.966 -	4.366

	Sample Name	Retention Time	Evaluation
	MB-R124635	N.A.	N.A.
NR	LCS-R124635	4.156	PASS
	LCS-~~H2O~~ R124635	4.165	PASS
	N030762-001A	N.A.	N.A.
	N030762-001AMS	4.156	PASS
	N030762-002A	N.A.	N.A.
	N030762-002AMS	4.165	PASS
	N030762-003A	N.A.	N.A.
	N030762-003AMS	4.165	PASS
	N030762-003AMSD	4.165	PASS
	N030762-004A	N.A.	N.A.
	N030762-004AMS	4.165	PASS
	N030762-005A	N.A.	N.A.
	N030762-005AMS	4.165	PASS
	N030762-006A	4.148	PASS
	N030762-006AMS	4.156	PASS
	N030762-007A	N.A.	N.A.
	N030762-007AMS	4.156	PASS
	MB-68409_STLC	N.A.	N.A.
	MB-68426_TCLP	N.A.	N.A.
	N030702-001B_STLC	4.140	PASS
	N030702-001B_TCLP	4.156	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 6/13/2018

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.173	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	

Average	4.166	
Actual RT Window	4.086 -	4.246
Applied RT Window	3.966 -	4.366

N030762-002AMS	4.165	PASS
N030762-004AMS	4.165	PASS
N030762-008A	N.A.	N.A.
N030762-008AMS	4.156	PASS
N030762-009A	N.A.	N.A.
N030762-009AMS	4.156	PASS
N030762-010A	N.A.	N.A.
N030762-010AMS	4.165	PASS
N030762-007AMS	4.148	PASS
N030775-001A	4.165	PASS
N030775-001ADUP	4.165	PASS
N030775-002A	4.165	PASS
N030775-003A	4.165	PASS
N030775-004A	4.165	PASS
N030775-005A	4.165	PASS
N030775-006A	4.165	PASS
N030775-007A	4.165	PASS
N030775-008A	4.148	PASS
N030702-001B-REP_STLC	4.140	PASS
N030702-001B-REP_TCLP	4.156	PASS
LCS-R124636	4.165	PASS
MB-R124636	N.A.	N.A.

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 6/13/2018

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.173	
CCV-4	4.165	
CCV-5	4.165	
CCV-6	4.165	
CCV-7	4.165	

Average	4.166	
Actual RT Window	4.086 -	4.246
Applied RT Window	3.966 -	4.366

N030762-012A	N.A.	N.A.
N030762-012AMS	4.156	PASS
N030762-012AMSD	4.156	PASS
N030762-013A	N.A.	N.A.
N030762-013ADUP	N.A.	N.A.
N030762-013AMS	4.165	PASS
N030762-011A	N.A.	N.A.
N030762-011AMS	4.165	PASS
N030762-014A	N.A.	N.A.
N030762-014AMS	4.156	PASS
N030762-015A	4.215	PASS
N030762-015AMS	4.156	PASS
N030762-016A	N.A.	N.A.
N030762-016AMS	4.165	PASS
N030762-017A	N.A.	N.A.
N030762-017AMS	4.165	PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6
Analysis Date(s): 5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017
Analyst: Ria Abes

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2018 (1st Quarter)

Method Name:	**Hexavalent Chromium by IC**	Matrix:	**WATER**
Method Number:	EPA Method 218.6/7199	Unit:	µg/L
Analysis Date(s):	3/21/2018		
Analyst:	Ria Abes		
Instrument Name:	**IC-07**		

Compound	**MDL**	**LOD Spike Conc., µg/L**	**LOD actual Conc., µg/L**
Hexavalent Chromium	0.0331	0.100	0.116

Compound	**PQL**	**PQL Spike Conc., µg/L**	**PQL actual Conc., µg/L**	**% Recovery**
Hexavalent Chromium	0.200	0.200	0.201	**100**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180521A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/21/18 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/21/18 9:52 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:11 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:30 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/21/18 10:49 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/21/18 10:58 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/21/18 11:08 AM	Reported
13	MB-R124155	MBLK	1	Hexavalent Chromium	05/21/18 11:17 AM	Reported
14	LCS-R124155	LCS	1	Hexavalent Chromium	05/21/18 11:27 AM	Reported
15	N030123-015A	SAMP	5	Hexavalent Chromium	05/21/18 11:36 AM	Not Reported
16	N030123-015AMS	MS	5	Hexavalent Chromium	05/21/18 11:45 AM	Not Reported
17	N030189-011A	SAMP	1	Hexavalent Chromium	05/21/18 11:55 AM	Not Reported
18	N030189-011AMS	MS	1	Hexavalent Chromium	05/21/18 12:04 PM	Not Reported
19	N030189-012A	SAMP	1	Hexavalent Chromium	05/21/18 12:14 PM	Not Reported
20	N030189-012AMS	MS	1	Hexavalent Chromium	05/21/18 12:23 PM	Not Reported
21	N030402-001A	SAMP	20	Hexavalent Chromium	05/21/18 12:33 PM	Not Reported
22	N030402-001A	SAMP	1	Hexavalent Chromium	05/21/18 1:26 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	05/21/18 1:38 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	05/21/18 1:47 PM	Reported
25	N030402-001ADUP	DUP	1	Hexavalent Chromium	05/21/18 1:57 PM	Reported
26	N030402-001AMS	MS	1	Hexavalent Chromium	05/21/18 2:06 PM	Reported
27	N030402-001AMSD	MSD	1	Hexavalent Chromium	05/21/18 2:15 PM	Reported
28	CCV-2	CCV	1	Hexavalent Chromium	05/21/18 2:25 PM	Reported
29	CCB-2	CCB	1	Hexavalent Chromium	05/21/18 2:34 PM	Reported

rba 5/28/2018

Nancy 5/30/2018

Injection Log Summary

Sequence Details

Name:	**IC-07_180521A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**21/May/18 15:44:36**
No. of Injections:	**32**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/21/2018 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		05/21/2018 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/21/2018 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/21/2018 09:52	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/21/2018 10:01	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/21/2018 10:11	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/21/2018 10:20	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/21/2018 10:30	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/21/2018 10:39	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		05/21/2018 10:49	Finished	CCV @5ppb, IWST-180129A
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		05/21/2018 10:58	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		05/21/2018 11:08	Finished	CCB R180409B
13	MB-H2O,MBLK,1,	13	1000	Unknown		05/21/2018 11:17	Finished	MB R180409B
14	LCS-H2O,LCS,1,	14	1000	Unknown		05/21/2018 11:27	Finished	LCS, IWST-180129B
15	N030123-015A,SAMP	15	1000	Unknown		05/21/2018 11:36	Finished	SAMP,2>10mL
16	N030123-015AMS,MS	16	1000	Unknown		05/21/2018 11:45	Finished	MS (1ppb), IWST-180129B,2>1
17	N030189-011A,SAMP	17	1000	Unknown		05/21/2018 11:55	Finished	SAMP,10mL
18	N030189-011AMS,MS	18	1000	Unknown		05/21/2018 12:04	Finished	MS (1ppb), IWST-180129B,10
19	N030189-012A,SAMP	19	1000	Unknown		05/21/2018 12:14	Finished	SAMP,10mL
20	N030189-012AMS,MS	20	1000	Unknown		05/21/2018 12:23	Finished	MS (5ppb), IWST-180129B,10
21	N030402-001A,SAMP	21	1000	Unknown		05/21/2018 12:33	Finished	SAMP,0.5>10mL
22	N030402-001A,SAMP	23	1000	Unknown		05/21/2018 13:26	Finished	SAMP,10mL
23	CCV-1,CCV1,1,	24	1000	Unknown		05/21/2018 13:38	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	25	1000	Unknown		05/21/2018 13:47	Finished	CCB R180409B
25	N030402-001ADUP,D	26	1000	Unknown		05/21/2018 13:57	Finished	DUP,10mL
26	N030402-001AMS,MS	27	1000	Unknown		05/21/2018 14:06	Finished	MS (5ppb), IWST-180129B,10
27	N030402-001AMSD,M	28	1000	Unknown		05/21/2018 14:15	Finished	MSD (5ppb), IWST-180129B,1(
28	CCV-2,CCV,1,	29	1000	Unknown		05/21/2018 14:25	Finished	CCV @5ppb, IWST-180129A
29	CCB-2,CCB,1,	30	1000	Unknown		05/21/2018 14:34	Finished	CCB R180409B
30	SHUTDOWN	31	1000	Unknown		05/21/2018 14:44	Finished	
31	Eluent: R180518A	32	1000	Unknown		n.a.	Finished	Eluent
32	PCR: R180516B	33	1000	Unknown		n.a.	Finished	Post-Column Reagent

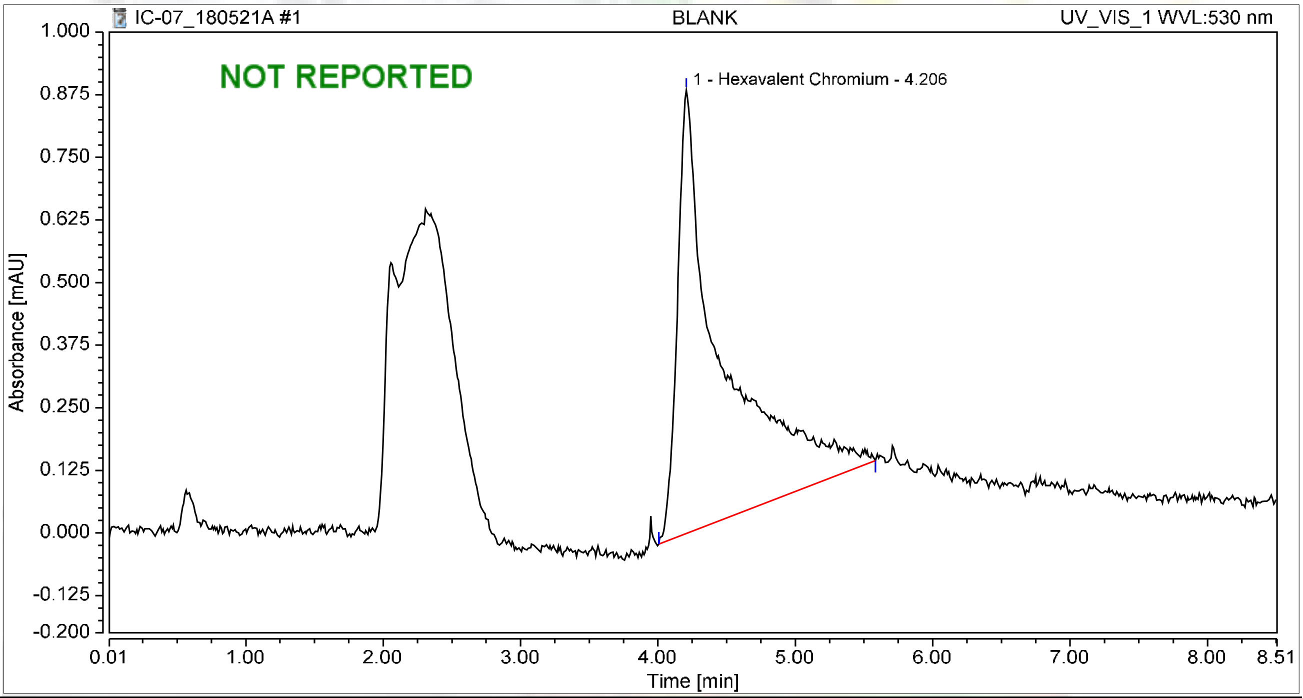
rba 5/28/2018

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

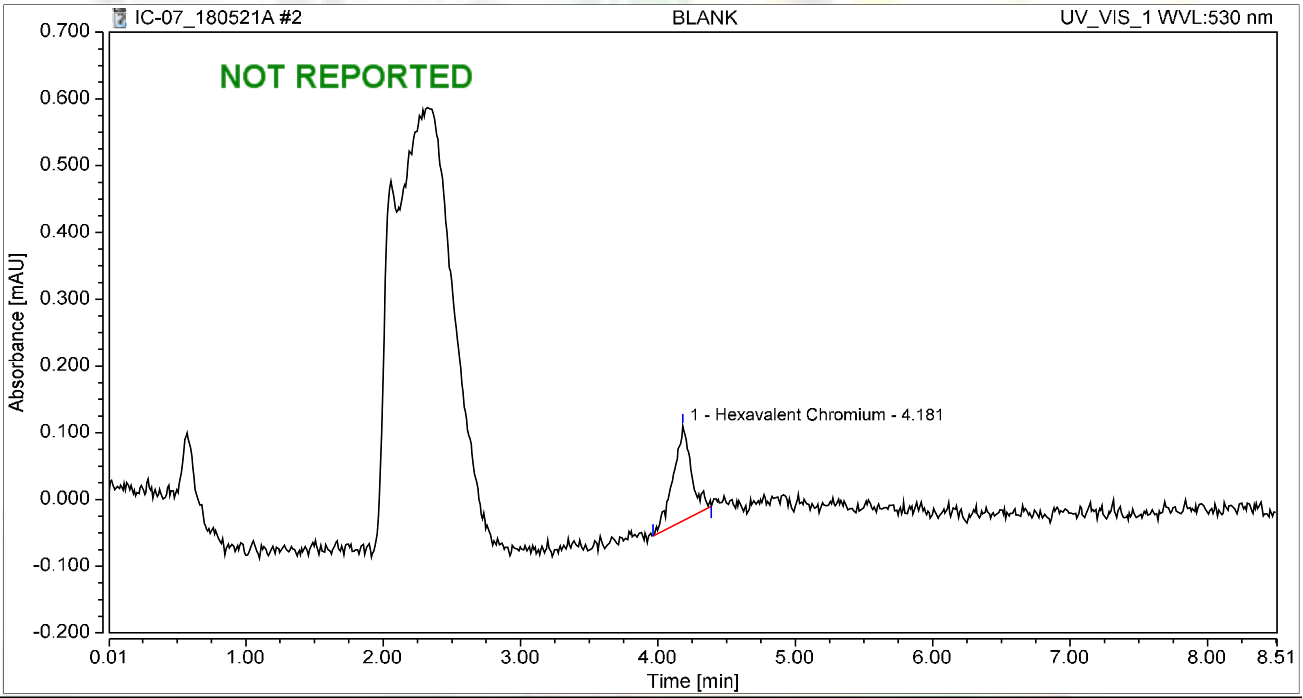
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.337	0.885	100.00	100.00	1.2960
Total:			**0.337**	**0.885**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

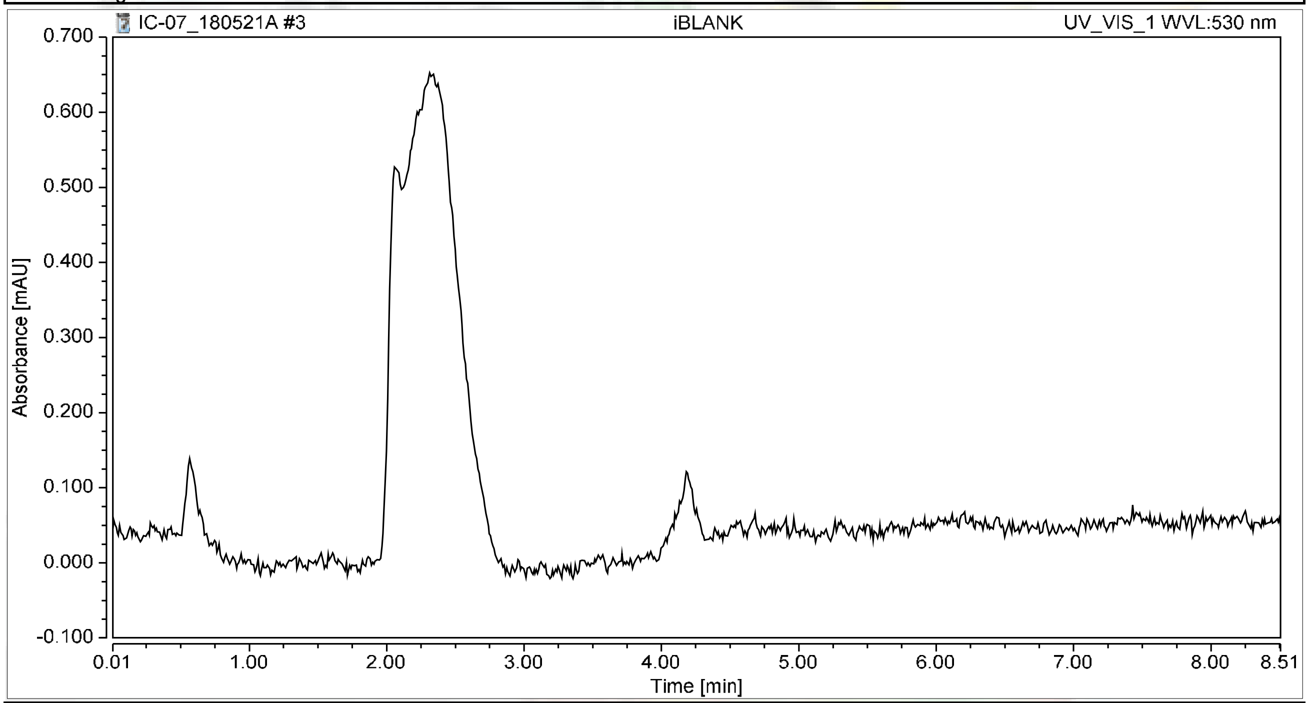
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.022	0.142	100.00	100.00	0.0836
Total:			**0.022**	**0.142**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

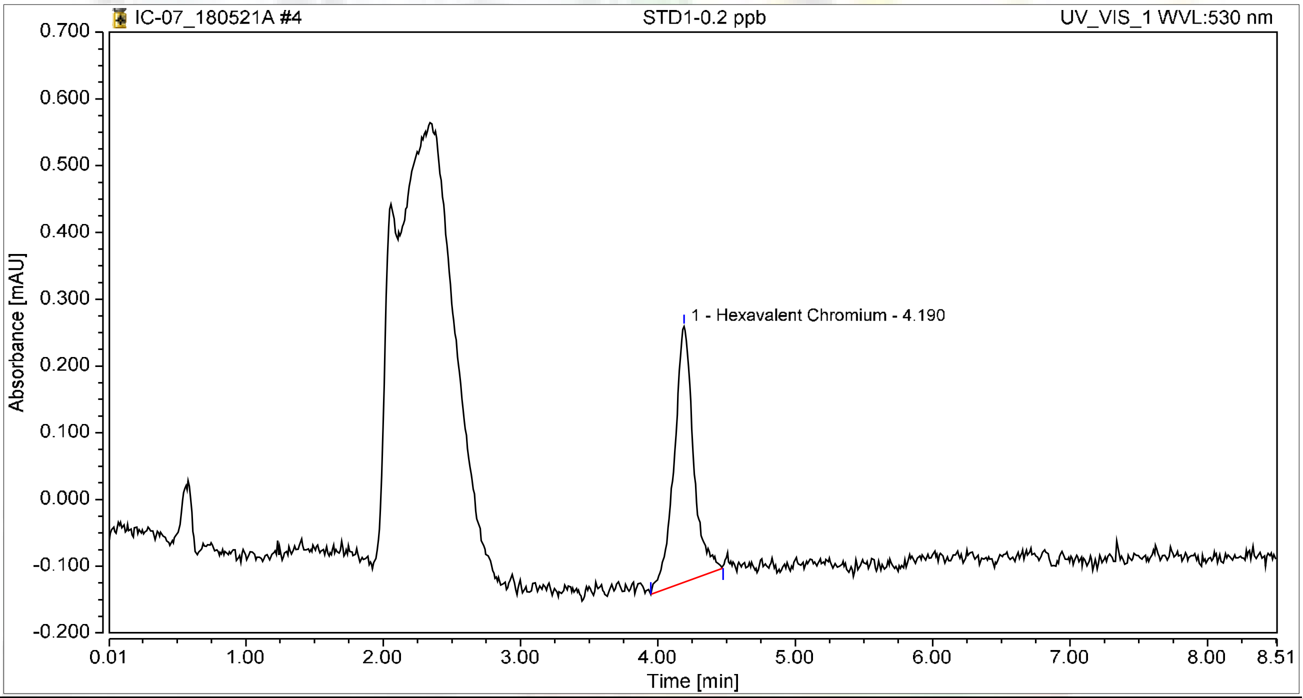
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 09:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

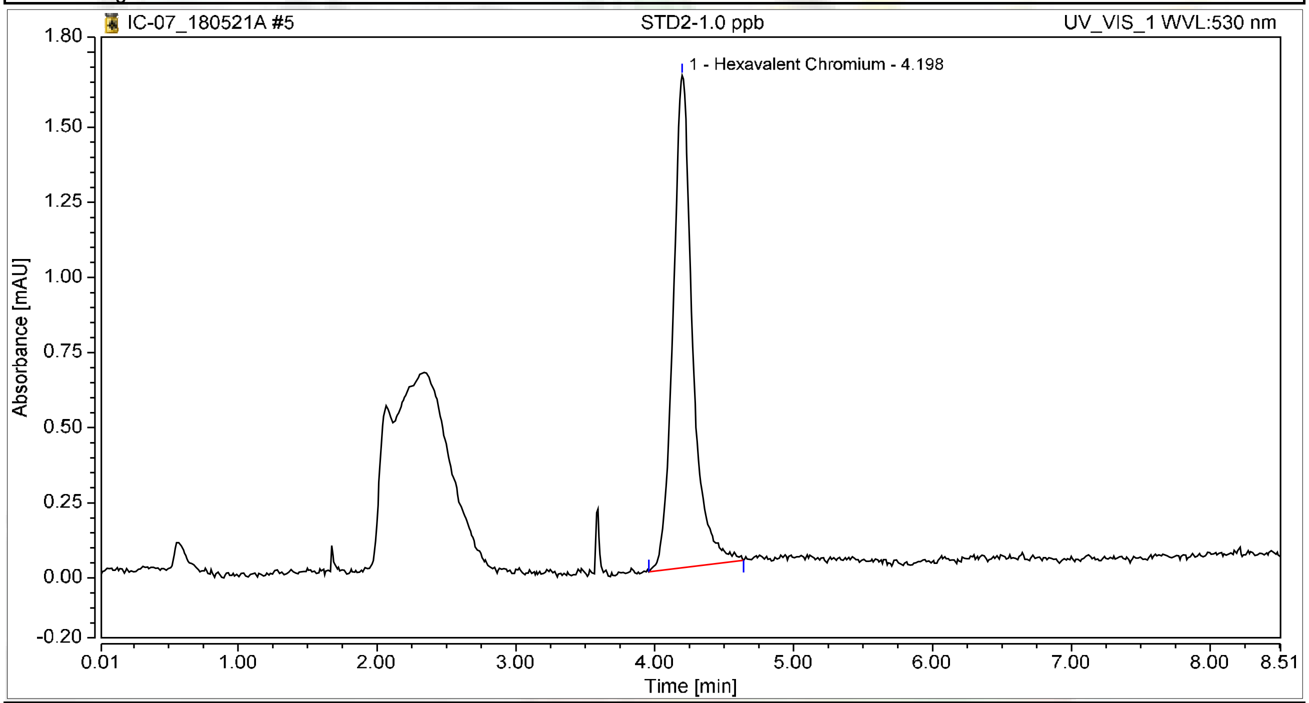
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.063	0.383	100.00	100.00	0.2408
Total:			**0.063**	**0.383**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

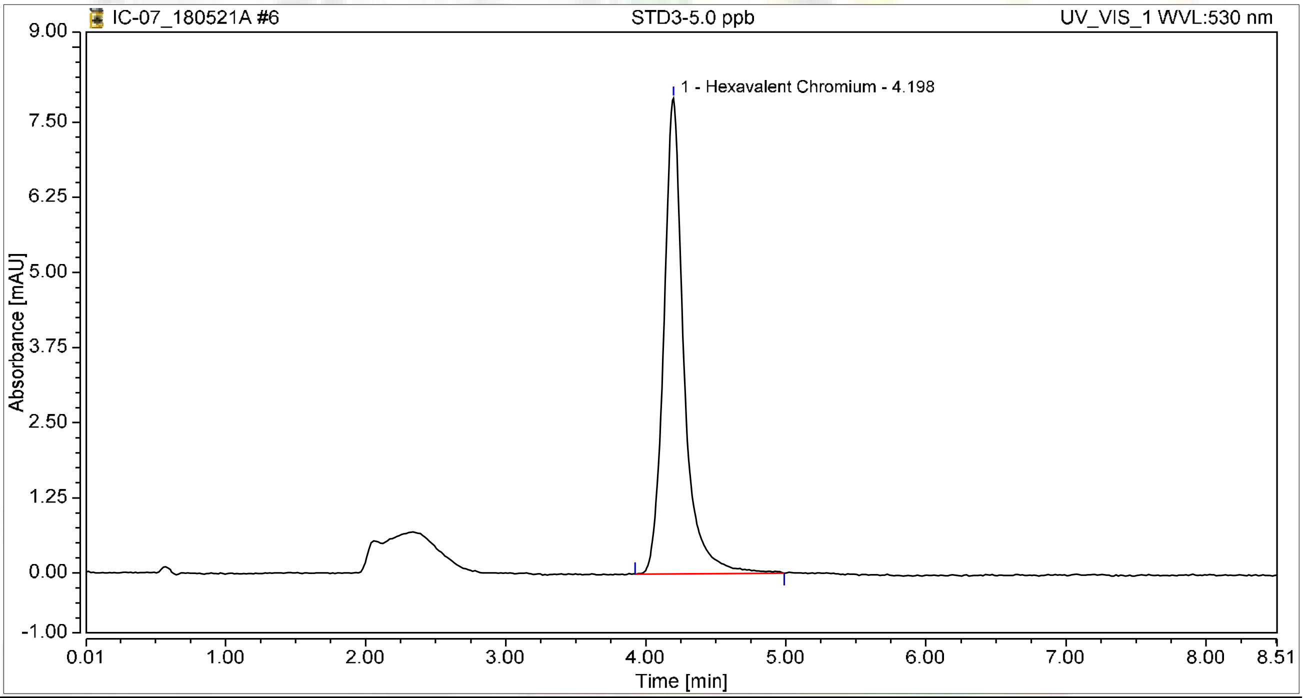
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.267	1.639	100.00	100.00	1.0254
Total:			**0.267**	**1.639**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

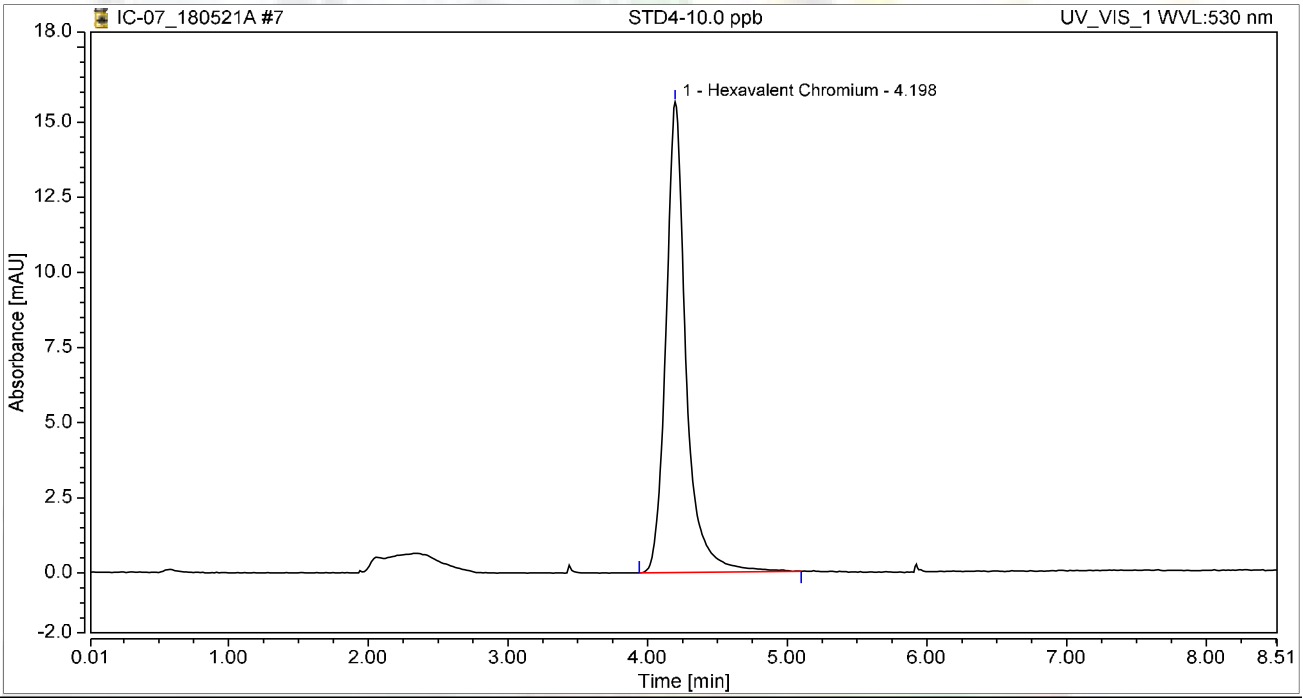
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.322	7.919	100.00	100.00	5.0827
Total:			**1.322**	**7.919**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

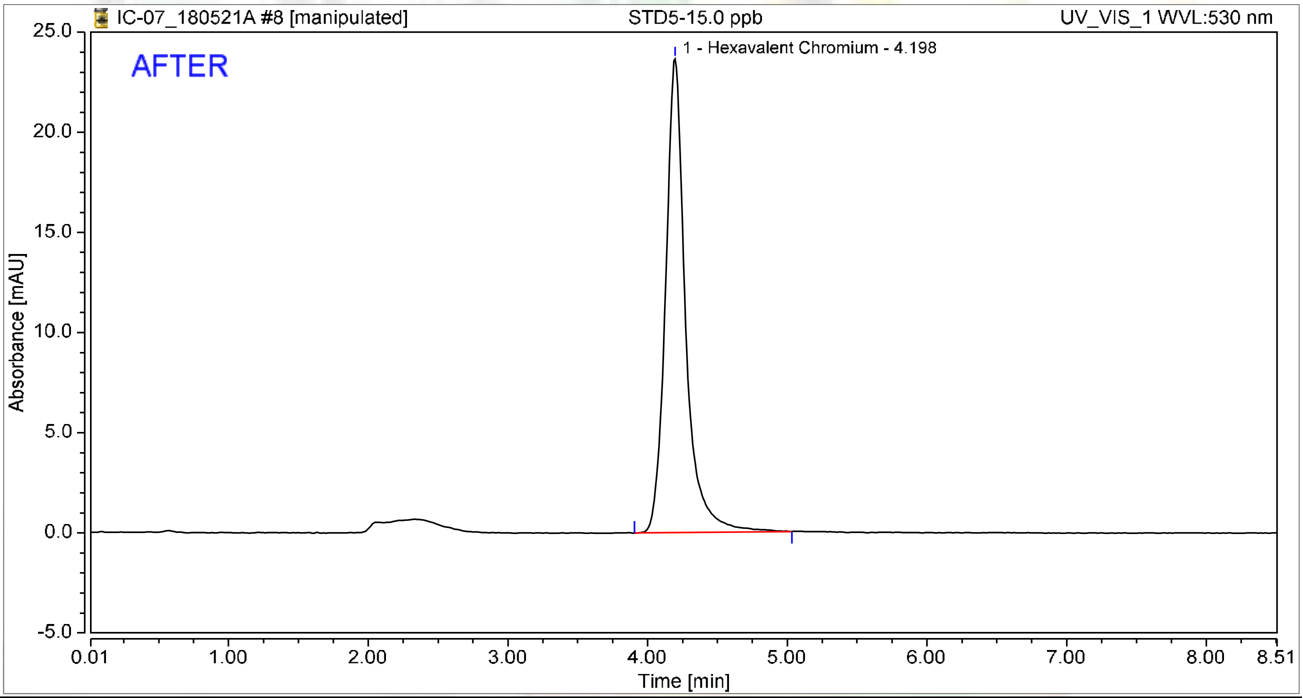
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	2.608	15.671	100.00	100.00	10.0254
Total:			**2.608**	**15.671**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	3.931	23.650	100.00	100.00	15.1090
Total:			**3.931**	**23.650**	**100.00**	**100.00**	

rba 5/28/2018

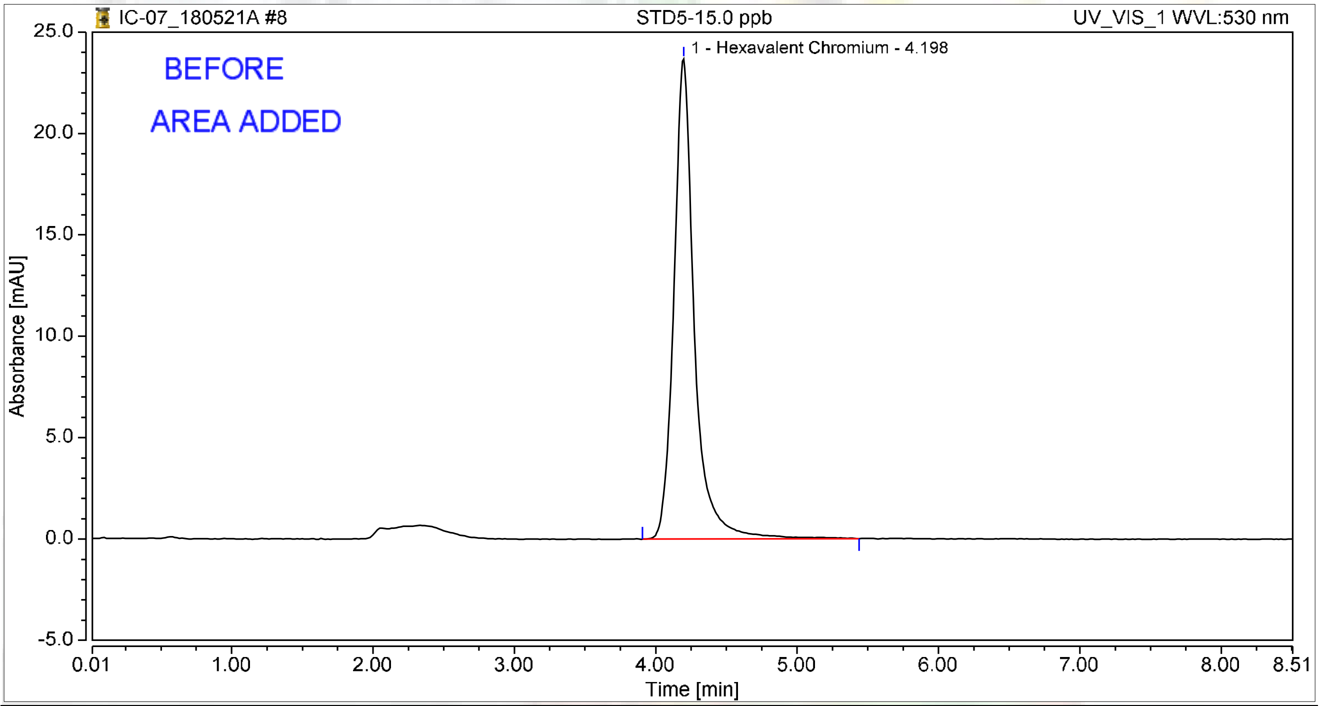
Reviewed by:
Nancy 5/30/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	3.988	23.668	100.00	100.00	15.1521
Total:			**3.988**	**23.668**	**100.00**	**100.00**	

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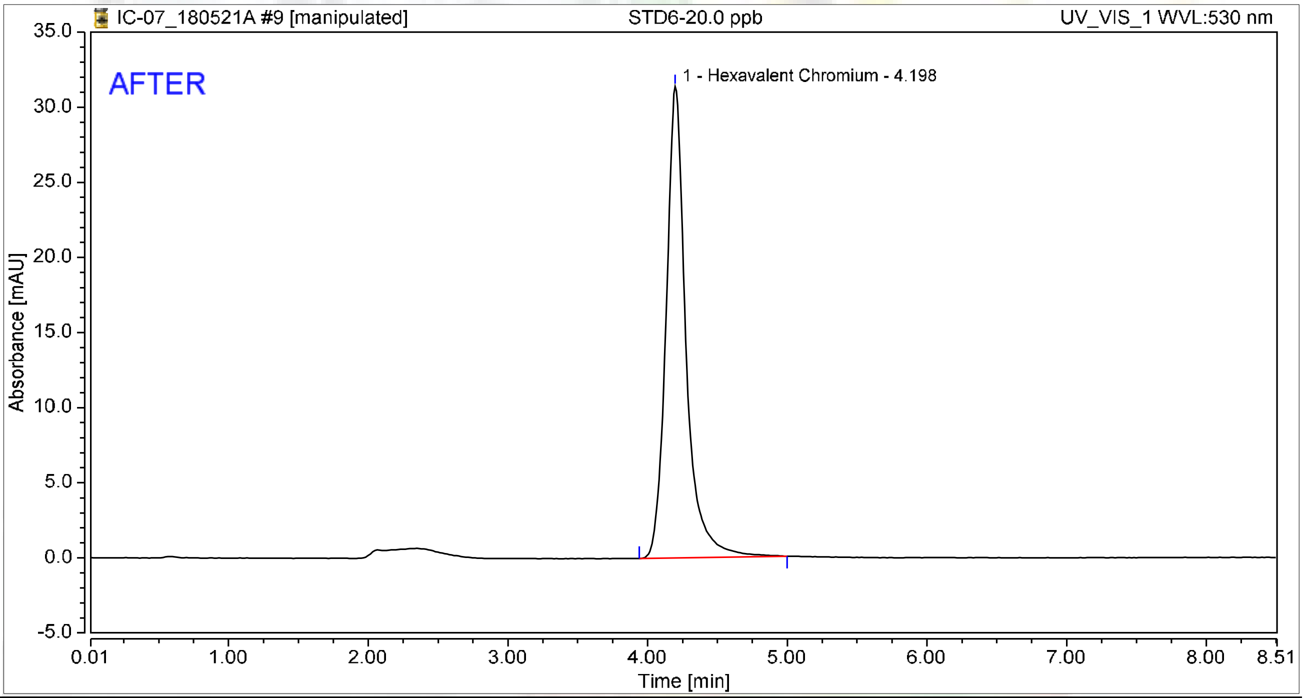
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	5.173	31.358	100.00	100.00	19.8832
Total:			**5.173**	**31.358**	**100.00**	**100.00**	

rba 5/28/2018

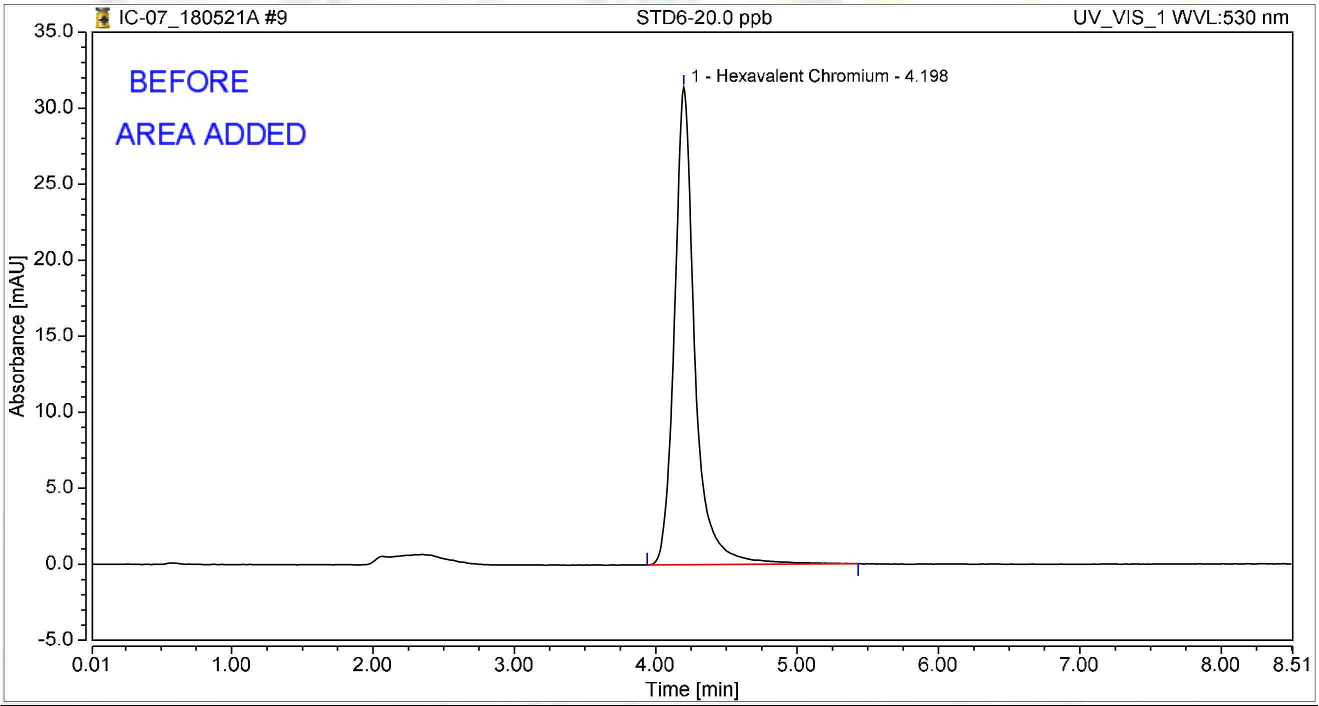
Reviewed by:
Nancy 5/30/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	5.243	31.381	100.00	100.00	19.9231
Total:			**5.243**	**31.381**	**100.00**	**100.00**	

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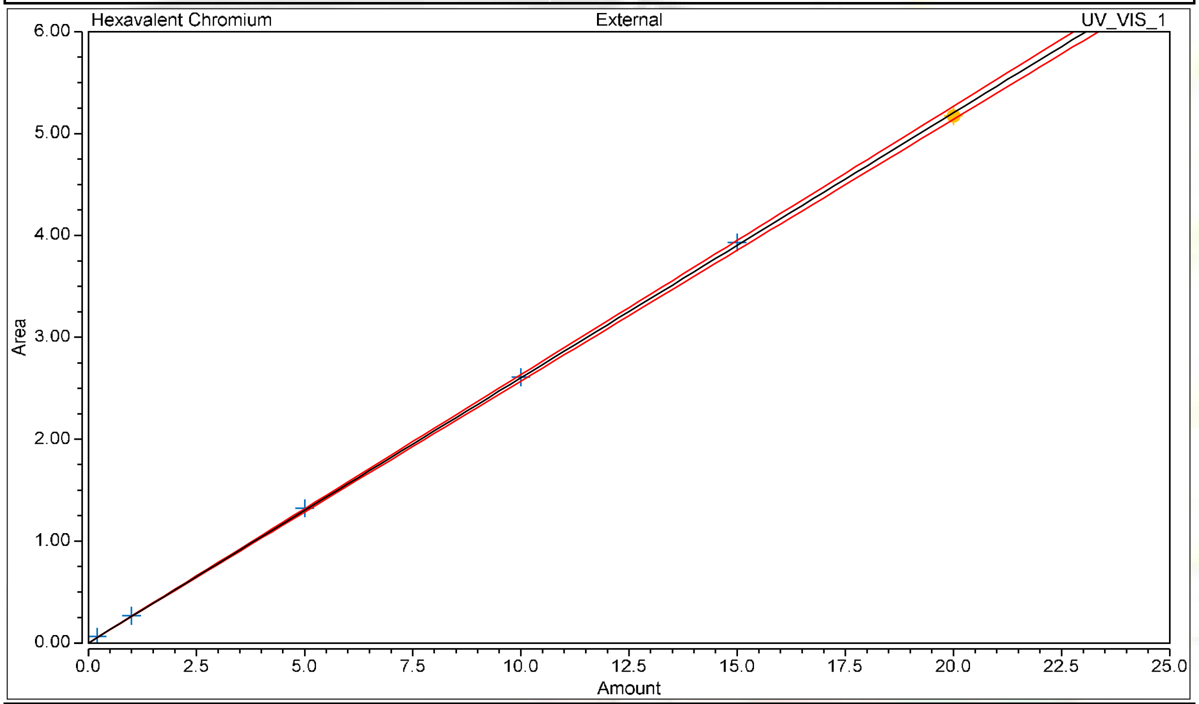
Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2602
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99989

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

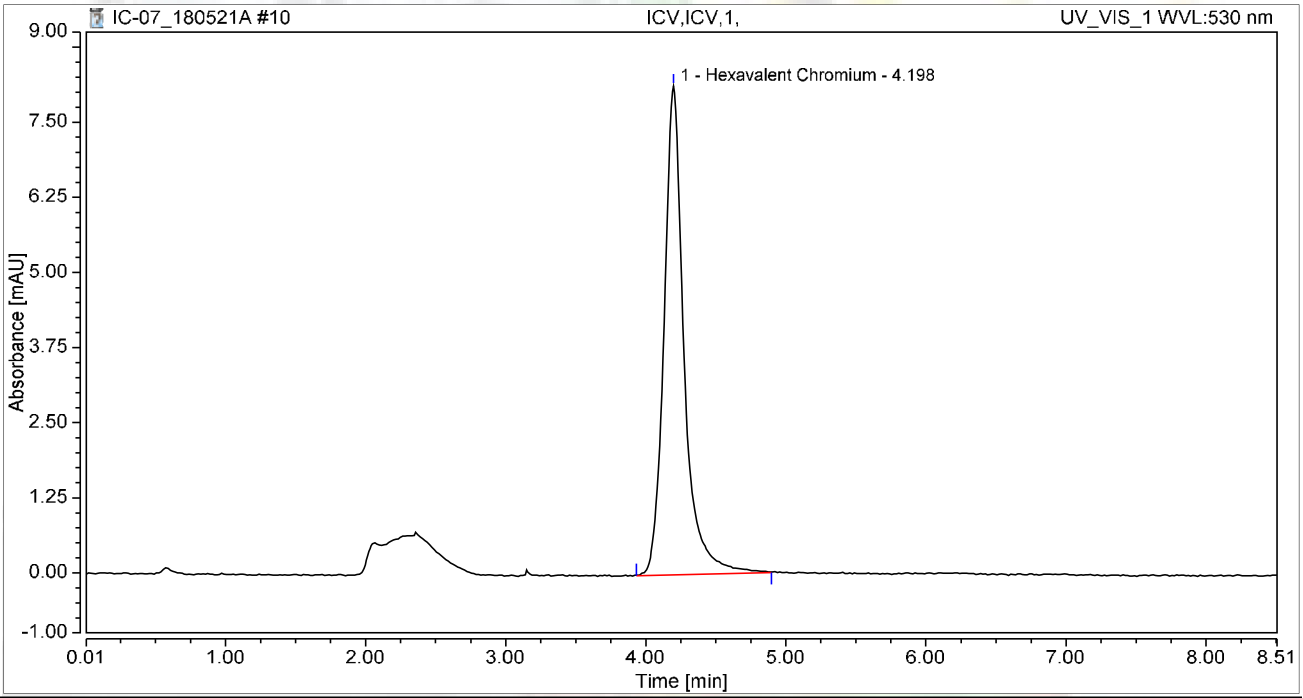
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0627	0.063	0.383
5	STD2-1.0 ppb	02	1.0000	0.2668	0.267	1.639
6	STD3-5.0 ppb	03	5.0000	1.3224	1.322	7.919
7	STD4-10.0 ppb	04	10.0000	2.6085	2.608	15.671
8	STD5-15.0 ppb	05	15.0000	3.9312	3.931	23.650
9	STD6-20.0 ppb	06	20.0000	5.1733	5.173	31.358

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

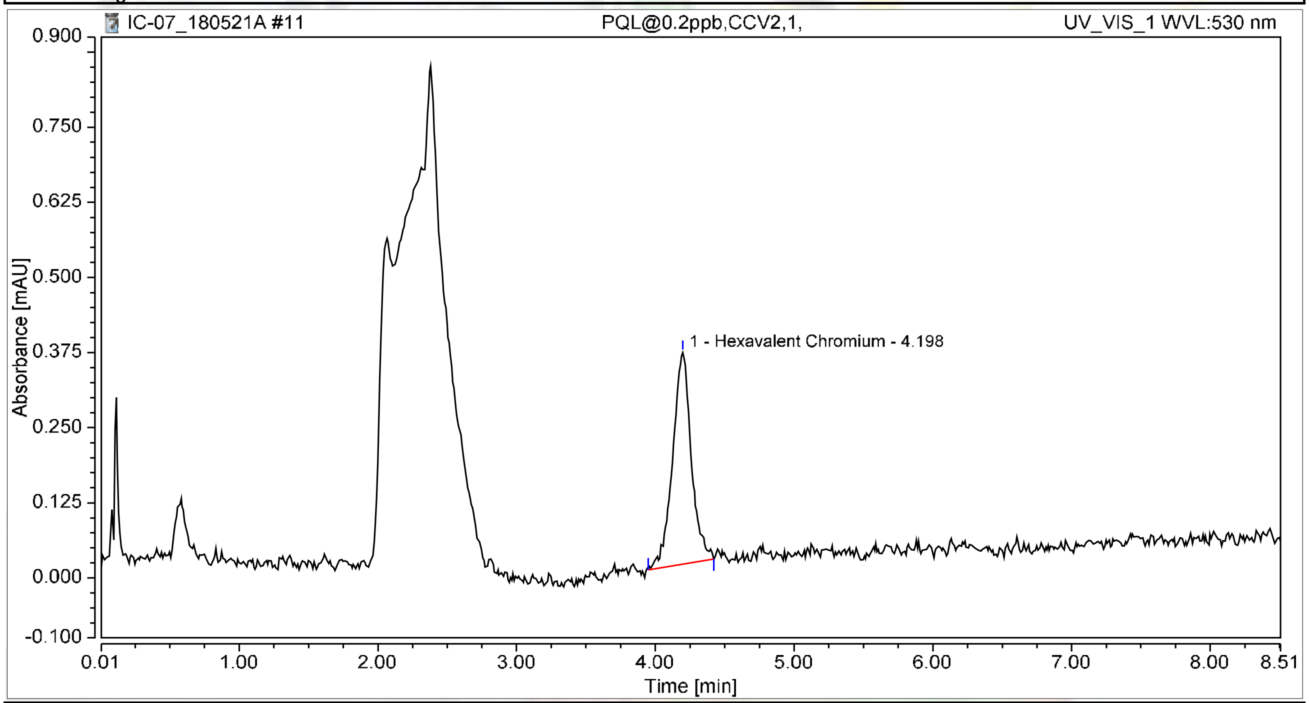
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.346	8.133	100.00	100.00	5.1749
Total:			**1.346**	**8.133**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

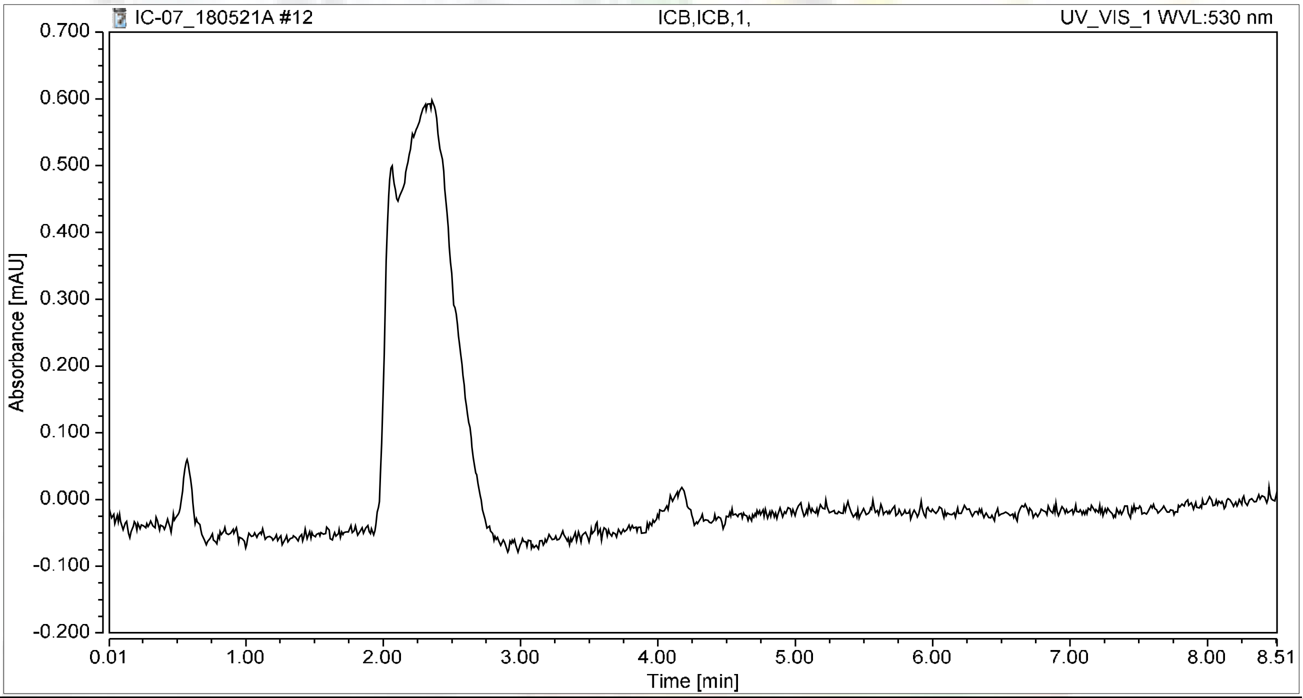
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.055	0.352	100.00	100.00	0.2113
Total:			**0.055**	**0.352**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180613A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/21/18 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/21/18 9:52 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:11 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:30 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	06/13/18 9:17 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	06/13/18 9:28 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	06/13/18 9:38 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	06/13/18 9:47 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	06/13/18 9:57 AM	Reported
15	MB-R124635	MBLK	1	Hexavalent Chromium	06/13/18 10:06 AM	Reported
16	LCS-R124635	LCS	1	Hexavalent Chromium	06/13/18 10:16 AM	Not Reported
17	LCS-~~H2O~~ R124635	LCS	1	Hexavalent Chromium	06/13/18 10:40 AM	~~Not~~ Reported
18	N030762-001A	SAMP	1	Hexavalent Chromium	06/13/18 10:52 AM	Reported
19	N030762-001AMS	MS	1	Hexavalent Chromium	06/13/18 11:01 AM	Reported
20	N030762-002A	SAMP	1	Hexavalent Chromium	06/13/18 11:11 AM	Reported
21	N030762-002AMS	MS	1	Hexavalent Chromium	06/13/18 11:20 AM	Not Reported
22	N030762-003A	SAMP	1	Hexavalent Chromium	06/13/18 11:30 AM	Reported
23	N030762-003AMS	MS	1	Hexavalent Chromium	06/13/18 11:39 AM	Reported
24	N030762-003AMSD	MSD	1	Hexavalent Chromium	06/13/18 11:49 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	06/13/18 11:58 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	06/13/18 12:07 PM	Reported
27	N030762-004A	SAMP	1	Hexavalent Chromium	06/13/18 12:17 PM	Reported
28	N030762-004AMS	MS	1	Hexavalent Chromium	06/13/18 12:26 PM	Not Reported
29	N030762-005A	SAMP	1	Hexavalent Chromium	06/13/18 12:36 PM	Reported
30	N030762-005AMS	MS	1	Hexavalent Chromium	06/13/18 12:45 PM	Reported
31	N030762-006A	SAMP	1	Hexavalent Chromium	06/13/18 12:55 PM	Reported
32	N030762-006AMS	MS	1	Hexavalent Chromium	06/13/18 1:04 PM	Reported
33	N030762-007A	SAMP	1	Hexavalent Chromium	06/13/18 1:14 PM	Reported
34	N030762-007AMS	MS	1	Hexavalent Chromium	06/13/18 1:23 PM	Not Reported
35	MB-68409_STLC	MBLK	1	Hexavalent Chromium	06/13/18 1:33 PM	Not Reported
36	MB-68426_TCLP	MBLK	1	Hexavalent Chromium	06/13/18 1:42 PM	Not Reported
37	CCV-3	CCV	1	Hexavalent Chromium	06/13/18 1:52 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	06/13/18 2:01 PM	Reported
39	N030702-001B_STLC	SAMP	1	Hexavalent Chromium	06/13/18 2:10 PM	Not Reported
40	N030702-001B_TCLP	SAMP	1	Hexavalent Chromium	06/13/18 2:20 PM	Not Reported
41	N030762-002AMS	MS	1	Hexavalent Chromium	06/13/18 2:29 PM	Reported
42	N030762-004AMS	MS	1	Hexavalent Chromium	06/13/18 2:39 PM	Reported
43	N030762-008A	SAMP	1	Hexavalent Chromium	06/13/18 2:48 PM	Reported
44	N030762-008AMS	MS	1	Hexavalent Chromium	06/13/18 2:58 PM	Reported
45	N030762-009A	SAMP	1	Hexavalent Chromium	06/13/18 3:07 PM	Reported
46	N030762-009AMS	MS	1	Hexavalent Chromium	06/13/18 3:17 PM	Reported

INJECTION LOG: 180613A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
47	N030762-010A	SAMP	1	Hexavalent Chromium	06/13/18 3:26 PM	Reported
48	N030762-010AMS	MS	1	Hexavalent Chromium	06/13/18 3:36 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	06/13/18 3:45 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	06/13/18 3:55 PM	Reported
51	N030762-007AMS	MS	1	Hexavalent Chromium	06/13/18 4:04 PM	Reported
52	N030775-001A	SAMP	2000	Hexavalent Chromium	06/13/18 4:13 PM	Reported
53	N030775-001ADUP	DUP	2000	Hexavalent Chromium	06/13/18 4:23 PM	Reported
54	N030775-002A	SAMP	2000	Hexavalent Chromium	06/13/18 4:34 PM	Reported
55	N030775-003A	SAMP	2000	Hexavalent Chromium	06/13/18 4:45 PM	Reported
56	N030775-004A	SAMP	2000	Hexavalent Chromium	06/13/18 4:54 PM	Reported
57	N030775-005A	SAMP	2000	Hexavalent Chromium	06/13/18 5:04 PM	Reported
58	N030775-006A	SAMP	2000	Hexavalent Chromium	06/13/18 5:13 PM	Reported
59	N030775-007A	SAMP	2000	Hexavalent Chromium	06/13/18 5:23 PM	Reported
60	N030775-008A	SAMP	2000	Hexavalent Chromium	06/13/18 5:32 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	06/13/18 5:42 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	06/13/18 5:51 PM	Reported
63	N030702-001B-REP_STLC	DUP	1	Hexavalent Chromium	06/13/18 6:01 PM	Not Reported
64	N030702-001B-REP_TCLP	DUP	1	Hexavalent Chromium	06/13/18 6:10 PM	Not Reported
65	LCS-R124636	LCS	1	Hexavalent Chromium	06/13/18 6:20 PM	Reported
66	MB-R124636	MBLK	1	Hexavalent Chromium	06/13/18 6:29 PM	Reported
67	N030762-012A	SAMP	1	Hexavalent Chromium	06/13/18 6:38 PM	Reported
68	N030762-012AMS	MS	1	Hexavalent Chromium	06/13/18 6:48 PM	Reported
69	N030762-012AMSD	MSD	1	Hexavalent Chromium	06/13/18 6:57 PM	Reported
70	N030762-013A	SAMP	1	Hexavalent Chromium	06/13/18 7:07 PM	Reported
71	N030762-013ADUP	DUP	1	Hexavalent Chromium	06/13/18 7:16 PM	Reported
72	N030762-013AMS	MS	1	Hexavalent Chromium	06/13/18 7:26 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	06/13/18 7:35 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	06/13/18 7:45 PM	Reported
75	N030762-011A	SAMP	1	Hexavalent Chromium	06/13/18 7:54 PM	Reported
76	N030762-011AMS	MS	1	Hexavalent Chromium	06/13/18 8:04 PM	Reported
77	N030762-014A	SAMP	1	Hexavalent Chromium	06/13/18 8:13 PM	Reported
78	N030762-014AMS	MS	1	Hexavalent Chromium	06/13/18 8:23 PM	Reported
79	N030762-015A	SAMP	1	Hexavalent Chromium	06/13/18 8:32 PM	Reported
80	N030762-015AMS	MS	1	Hexavalent Chromium	06/13/18 8:41 PM	Reported
81	N030762-016A	SAMP	1	Hexavalent Chromium	06/13/18 8:51 PM	Reported
82	N030762-016AMS	MS	1	Hexavalent Chromium	06/13/18 9:00 PM	Reported
83	N030762-017A	SAMP	1	Hexavalent Chromium	06/13/18 9:10 PM	Reported
84	N030762-017AMS	MS	1	Hexavalent Chromium	06/13/18 9:19 PM	Reported
85	CCV-7	CCV	1	Hexavalent Chromium	06/13/18 9:29 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	06/13/18 9:38 PM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_180613A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**13/Jun/18 22:09:00**
No. of Injections:	**89**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/21/2018 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		05/21/2018 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/21/2018 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/21/2018 09:52	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/21/2018 10:01	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/21/2018 10:11	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/21/2018 10:20	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/21/2018 10:30	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/21/2018 10:39	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		06/13/2018 09:17	Finished	20 ppb, IWST-180129A
11	BLANK	2	1000	Unknown		06/13/2018 09:28	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		06/13/2018 09:38	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		06/13/2018 09:47	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		06/13/2018 09:57	Finished	CCB R180531A
15	MB-H2O,MBLK,1,	6	1000	Unknown		06/13/2018 10:06	Finished	MB R180531A
16	LCS-H2O,LCS,1,	7	1000	Unknown		06/13/2018 10:16	Finished	LCS, IWST-180129B
17	LCS-H2O,LCS,1,	9	1000	Unknown		06/13/2018 10:40	Finished	LCS, IWST-180129B
18	N030762-001A,SAMP	10	1000	Unknown		06/13/2018 10:52	Finished	SAMP,10mL
19	N030762-001AMS,MS	11	1000	Unknown		06/13/2018 11:01	Finished	MS (1ppb), IWST-180129B,10
20	N030762-002A,SAMP	12	1000	Unknown		06/13/2018 11:11	Finished	SAMP,10mL
21	N030762-002AMS,MS	13	1000	Unknown		06/13/2018 11:20	Finished	MS (1ppb), IWST-180129B,10
22	N030762-003A,SAMP	14	1000	Unknown		06/13/2018 11:30	Finished	SAMP,10mL
23	N030762-003AMS,MS	15	1000	Unknown		06/13/2018 11:39	Finished	MS (1ppb), IWST-180129B,10
24	N030762-003AMSD,M	16	1000	Unknown		06/13/2018 11:49	Finished	MSD (1ppb), IWST-180129B,1(
25	CCV-2,CCV1,1,	17	1000	Unknown		06/13/2018 11:58	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	18	1000	Unknown		06/13/2018 12:07	Finished	CCB R180531A
27	N030762-004A,SAMP	19	1000	Unknown		06/13/2018 12:17	Finished	SAMP,10mL
28	N030762-004AMS,MS	20	1000	Unknown		06/13/2018 12:26	Finished	MS (1ppb), IWST-180129B,10
29	N030762-005A,SAMP	21	1000	Unknown		06/13/2018 12:36	Finished	SAMP,10mL
30	N030762-005AMS,MS	22	1000	Unknown		06/13/2018 12:45	Finished	MS (1ppb), IWST-180129B,10
31	N030762-006A,SAMP	23	1000	Unknown		06/13/2018 12:55	Finished	SAMP,10mL
32	N030762-006AMS,MS	24	1000	Unknown		06/13/2018 13:04	Finished	MS (1ppb), IWST-180129B,10
33	N030762-007A,SAMP	25	1000	Unknown		06/13/2018 13:14	Finished	SAMP,10mL
34	N030762-007AMS,MS	26	1000	Unknown		06/13/2018 13:23	Finished	MS (1ppb), IWST-180129B,10
35	MB-68409_STLC,MB	27	1000	Unknown		06/13/2018 13:33	Finished	MB_STLC R180531A
36	MB-68426_TCLP,MB	28	1000	Unknown		06/13/2018 13:42	Finished	MB_TCLP R180531A
37	CCV-3,CCV,1,	29	1000	Unknown		06/13/2018 13:52	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	30	1000	Unknown		06/13/2018 14:01	Finished	CCB R180531A
39	N030702-001B_STLC	31	1000	Unknown		06/13/2018 14:10	Finished	SAMP_STLC,10mL
40	N030702-001B_TCLP	32	1000	Unknown		06/13/2018 14:20	Finished	SAMP_TCLP,10mL
41	N030762-002AMS,MS	33	1000	Unknown		06/13/2018 14:29	Finished	MS (1ppb), IWST-180129B,10
42	N030762-004AMS,MS	34	1000	Unknown		06/13/2018 14:39	Finished	MS (1ppb), IWST-180129B,10
43	N030762-008A,SAMP	35	1000	Unknown		06/13/2018 14:48	Finished	SAMP,10mL
44	N030762-008AMS,MS	36	1000	Unknown		06/13/2018 14:58	Finished	MS (1ppb), IWST-180129B,10
45	N030762-009A,SAMP	37	1000	Unknown		06/13/2018 15:07	Finished	SAMP,10mL
46	N030762-009AMS,MS	38	1000	Unknown		06/13/2018 15:17	Finished	MS (1ppb), IWST-180129B,10
47	N030762-010A,SAMP	39	1000	Unknown		06/13/2018 15:26	Finished	SAMP,10mL
48	N030762-010AMS,MS	40	1000	Unknown		06/13/2018 15:36	Finished	MS (1ppb), IWST-180129B,10
49	CCV-4,CCV1,1,	41	1000	Unknown		06/13/2018 15:45	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	42	1000	Unknown		06/13/2018 15:55	Finished	CCB R180531A
51	N030762-007AMS,MS	43	1000	Unknown		06/13/2018 16:04	Finished	MS (1ppb), IWST-180129B,10
52	N030775-001A,SAMP	44	1000	Unknown		06/13/2018 16:13	Finished	SAMP,0.005>10mL
53	N030775-001ADUP,D	45	1000	Unknown		06/13/2018 16:23	Finished	DUP,0.005>10mL
54	N030775-002A,SAMP	1	1000	Unknown		06/13/2018 16:34	Finished	SAMP,0.005>10mL
55	N030775-003A,SAMP	2	1000	Unknown		06/13/2018 16:45	Finished	SAMP,0.005>10mL
56	N030775-004A,SAMP	3	1000	Unknown		06/13/2018 16:54	Finished	SAMP,0.005>10mL
57	N030775-005A,SAMP	4	1000	Unknown		06/13/2018 17:04	Finished	SAMP,0.005>10mL
58	N030775-006A,SAMP	5	1000	Unknown		06/13/2018 17:13	Finished	SAMP,0.005>10mL
59	N030775-007A,SAMP	6	1000	Unknown		06/13/2018 17:23	Finished	SAMP,0.005>10mL
60	N030775-008A,SAMP	7	1000	Unknown		06/13/2018 17:32	Finished	SAMP,0.005>10mL

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61	CCV-5,CCV,1,	8	1000	Unknown		06/13/2018 17:42	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	9	1000	Unknown		06/13/2018 17:51	Finished	CCB R180531A
63	N030702-001B-REP	10	1000	Unknown		06/13/2018 18:01	Finished	REP_STLC,10mL
64	N030702-001B-REP	11	1000	Unknown		06/13/2018 18:10	Finished	REP_TCLP,10mL
65	LCS-2,LCS,1,	12	1000	Unknown		06/13/2018 18:20	Finished	LCS, IWST-180129B
66	MB-2,MBLK,1,	13	1000	Unknown		06/13/2018 18:29	Finished	MB R180531A
67	N030762-012A,SAMF	14	1000	Unknown		06/13/2018 18:38	Finished	SAMP,10mL
68	N030762-012AMS,MS	15	1000	Unknown		06/13/2018 18:48	Finished	MS (1ppb), IWST-180129B,10
69	N030762-012AMSD,M	16	1000	Unknown		06/13/2018 18:57	Finished	MSD (1ppb), IWST-180129B,1(
70	N030762-013A,SAMF	17	1000	Unknown		06/13/2018 19:07	Finished	SAMP,10mL
71	N030762-013ADUP,D	18	1000	Unknown		06/13/2018 19:16	Finished	DUP,10mL
72	N030762-013AMS,MS	19	1000	Unknown		06/13/2018 19:26	Finished	MS (1ppb), IWST-180129B,10
73	CCV-6,CCV1,1,	20	1000	Unknown		06/13/2018 19:35	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	21	1000	Unknown		06/13/2018 19:45	Finished	CCB R180531A
75	N030762-011A,SAMF	22	1000	Unknown		06/13/2018 19:54	Finished	SAMP,10mL
76	N030762-011AMS,MS	23	1000	Unknown		06/13/2018 20:04	Finished	MS (1ppb), IWST-180129B,10
77	N030762-014A,SAMF	24	1000	Unknown		06/13/2018 20:13	Finished	SAMP,10mL
78	N030762-014AMS,MS	25	1000	Unknown		06/13/2018 20:23	Finished	MS (1ppb), IWST-180129B,10
79	N030762-015A,SAMF	26	1000	Unknown		06/13/2018 20:32	Finished	SAMP,10mL
80	N030762-015AMS,MS	27	1000	Unknown		06/13/2018 20:41	Finished	MS (1ppb), IWST-180129B,10
81	N030762-016A,SAMF	28	1000	Unknown		06/13/2018 20:51	Finished	SAMP,10mL
82	N030762-016AMS,MS	29	1000	Unknown		06/13/2018 21:00	Finished	MS (1ppb), IWST-180129B,10
83	N030762-017A,SAMF	30	1000	Unknown		06/13/2018 21:10	Finished	SAMP,10mL
84	N030762-017AMS,MS	31	1000	Unknown		06/13/2018 21:19	Finished	MS (1ppb), IWST-180129B,10
85	CCV-7,CCV,1,	32	1000	Unknown		06/13/2018 21:29	Finished	CCV @5ppb, IWST-180129A
86	CCB-7,CCB,1,	33	1000	Unknown		06/13/2018 21:38	Finished	CCB R180531A
87	SHUTDOWN	34	1000	Unknown		06/13/2018 21:48	Finished	
88	Eluent: R180612A	35	1000	Unknown		n.a.	Finished	Eluent
89	PCR: R180611A	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

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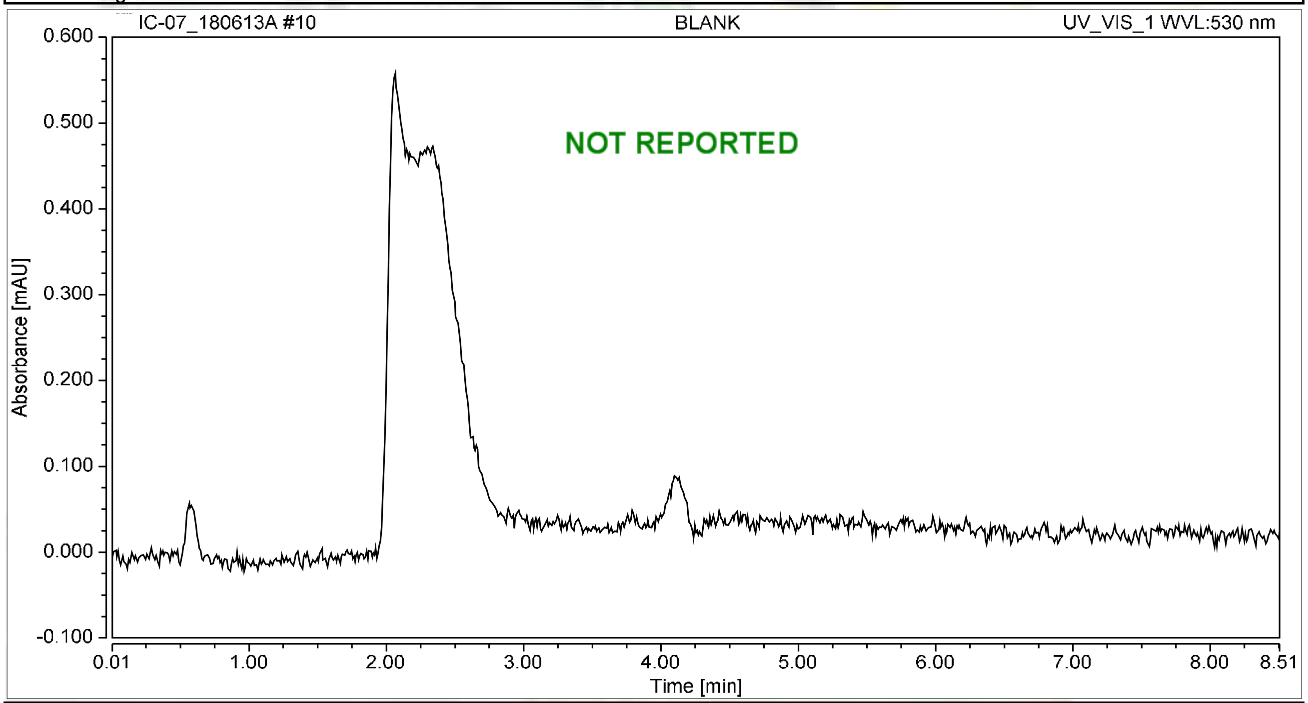
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 09:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

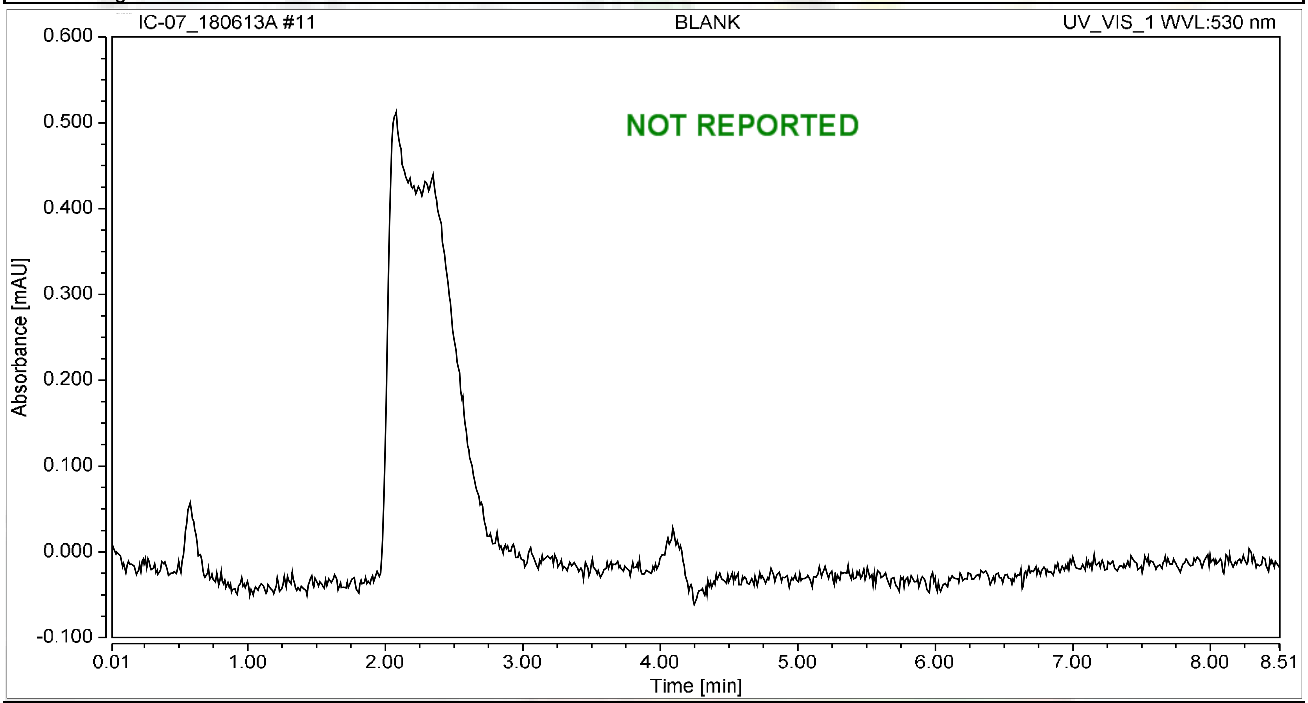
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 09:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

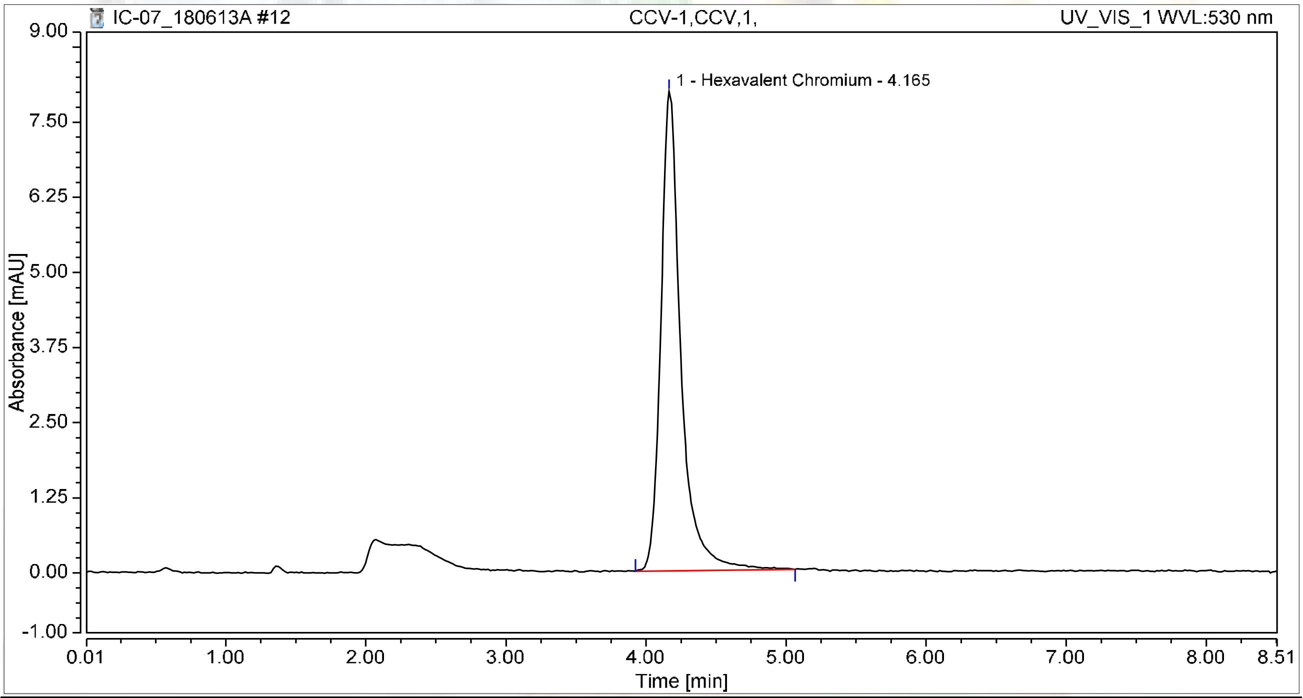
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 09:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

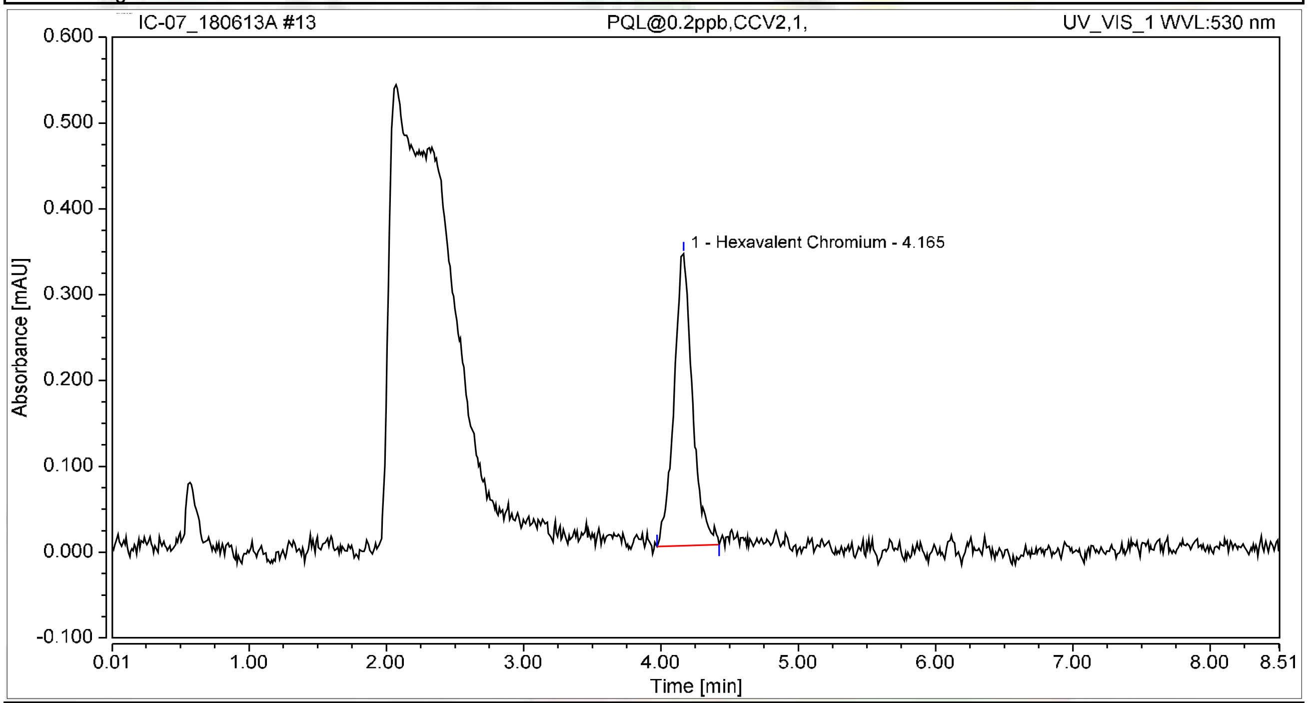
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.327	7.977	100.00	100.00	5.0991
Total:			**1.327**	**7.977**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 09:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

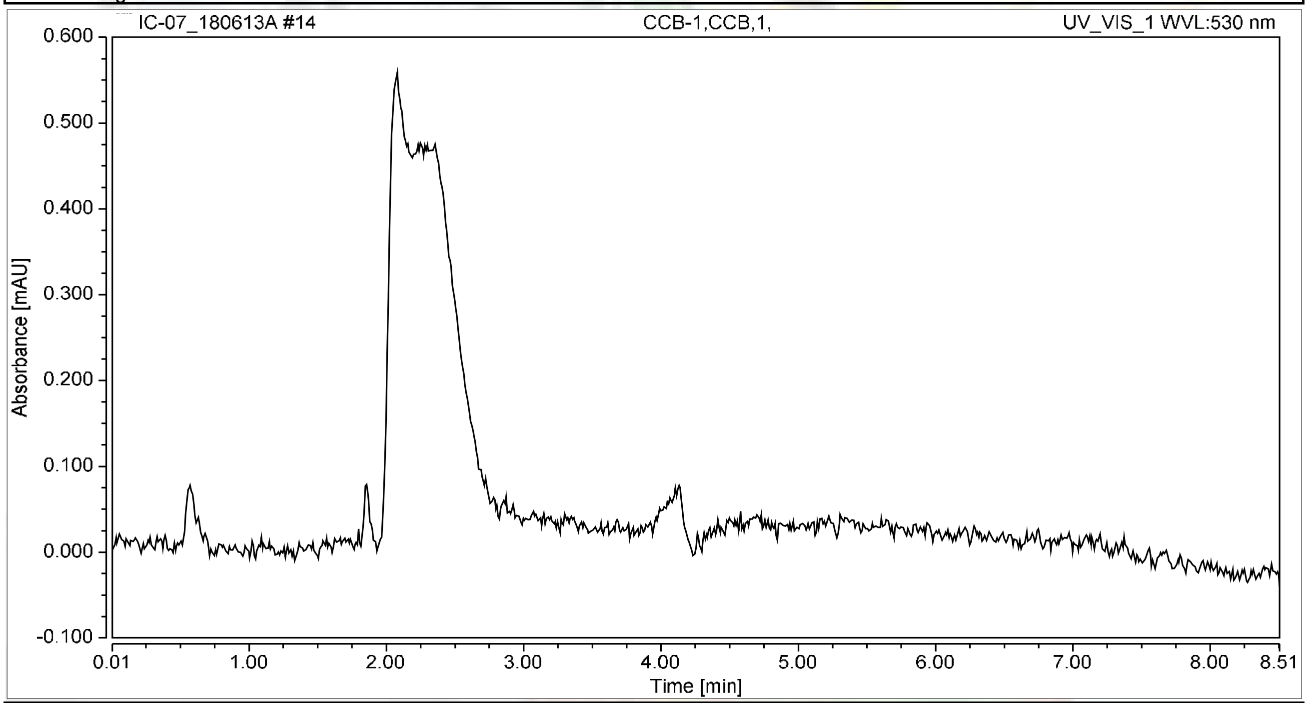
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.053	0.340	100.00	100.00	0.2040
Total:			**0.053**	**0.340**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 09:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

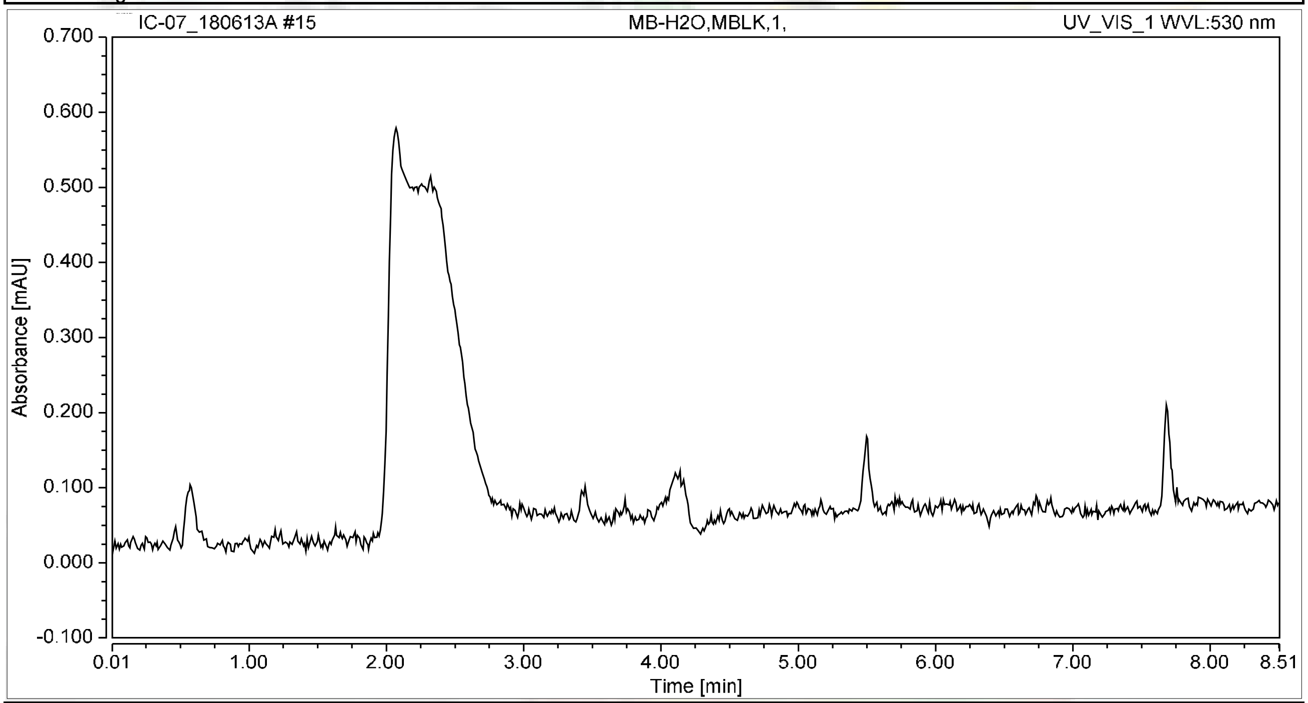
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 10:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

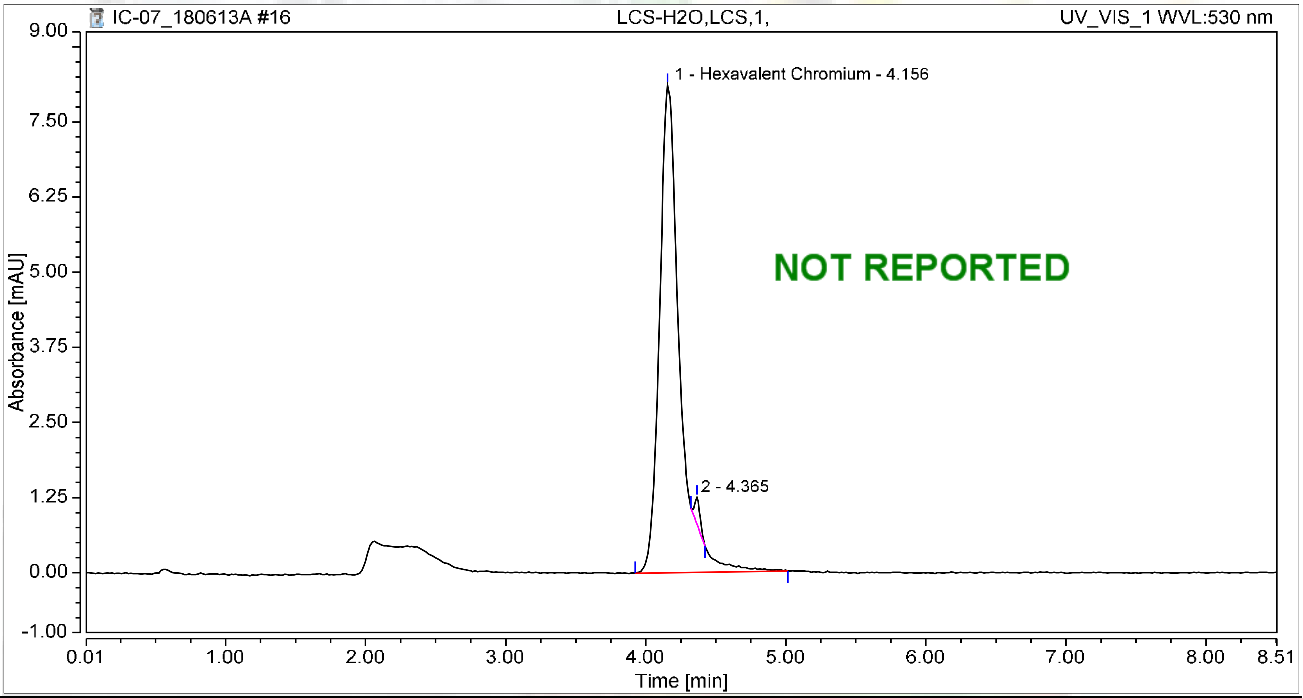
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 10:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

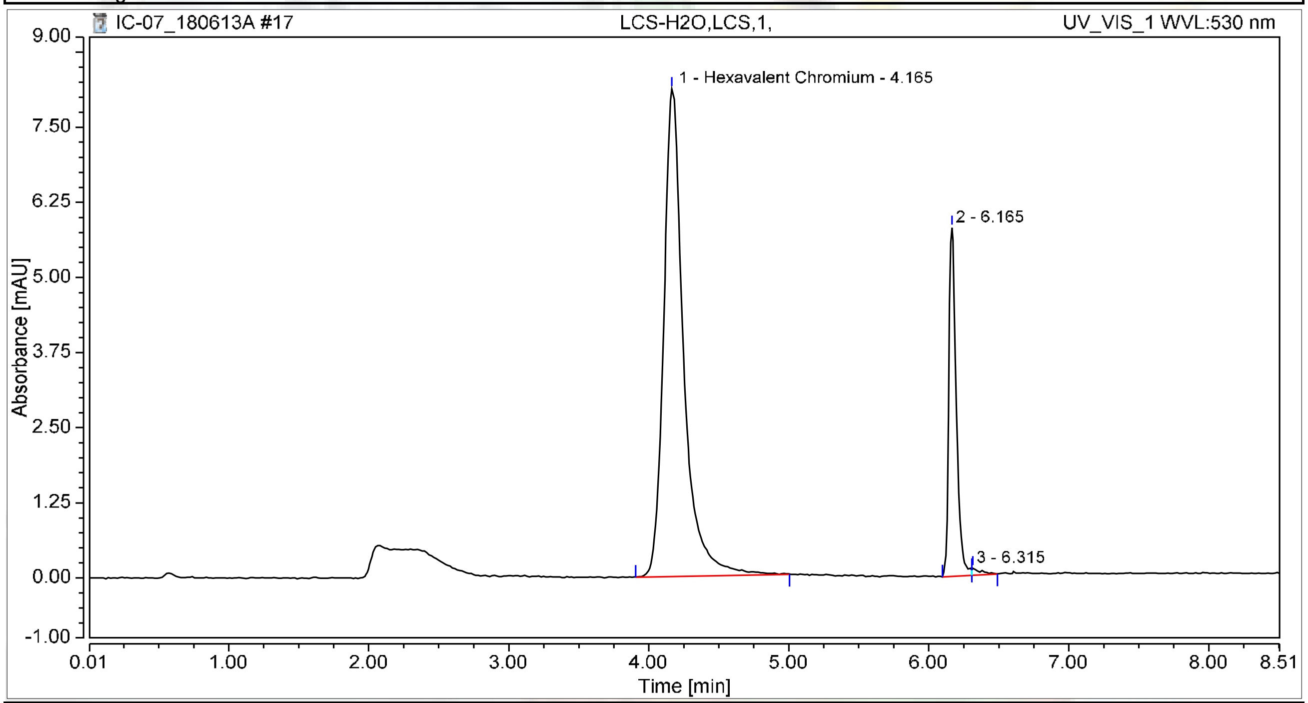
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	1.362	8.114	98.53	94.83	5.2330
2		4.365	0.020	0.443	1.47	5.17	n.a.
Total:			**1.382**	**8.557**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 10:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

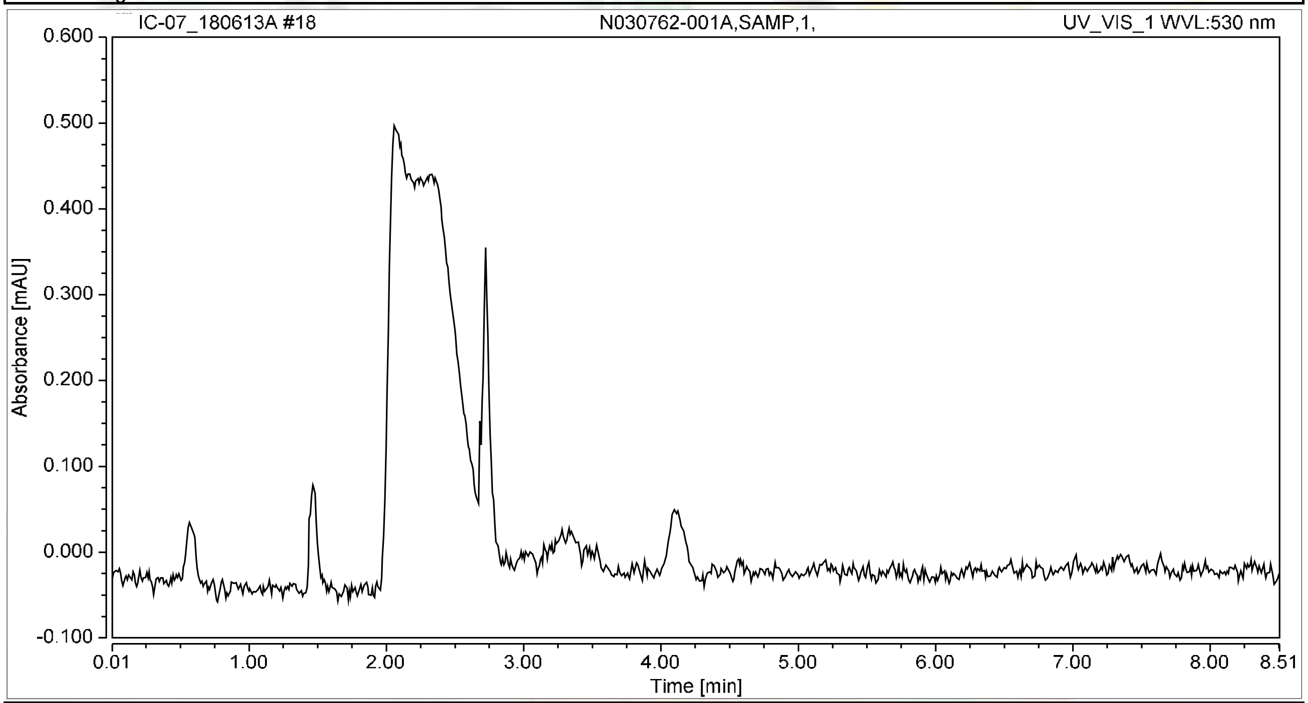
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.346	8.115	78.42	57.81	5.1731
2		6.165	0.361	5.804	21.03	41.34	n.a.
3		6.315	0.009	0.119	0.55	0.85	n.a.
Total:			**1.716**	**14.039**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

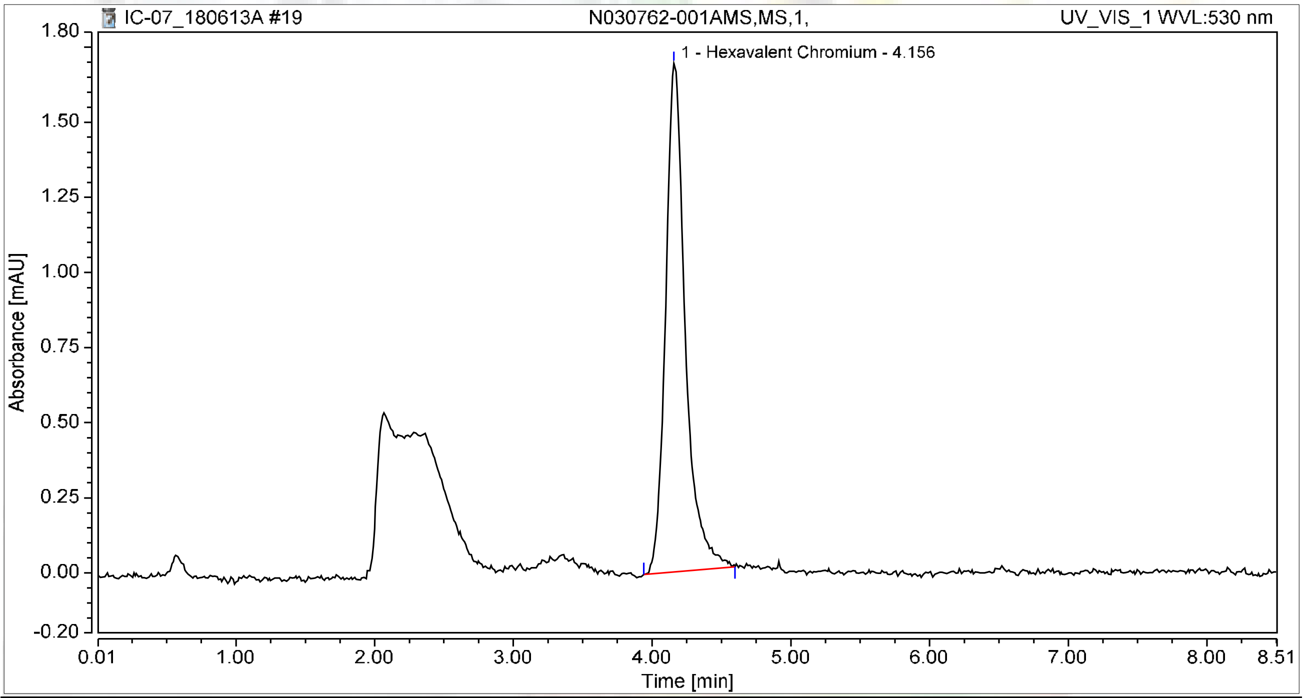
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

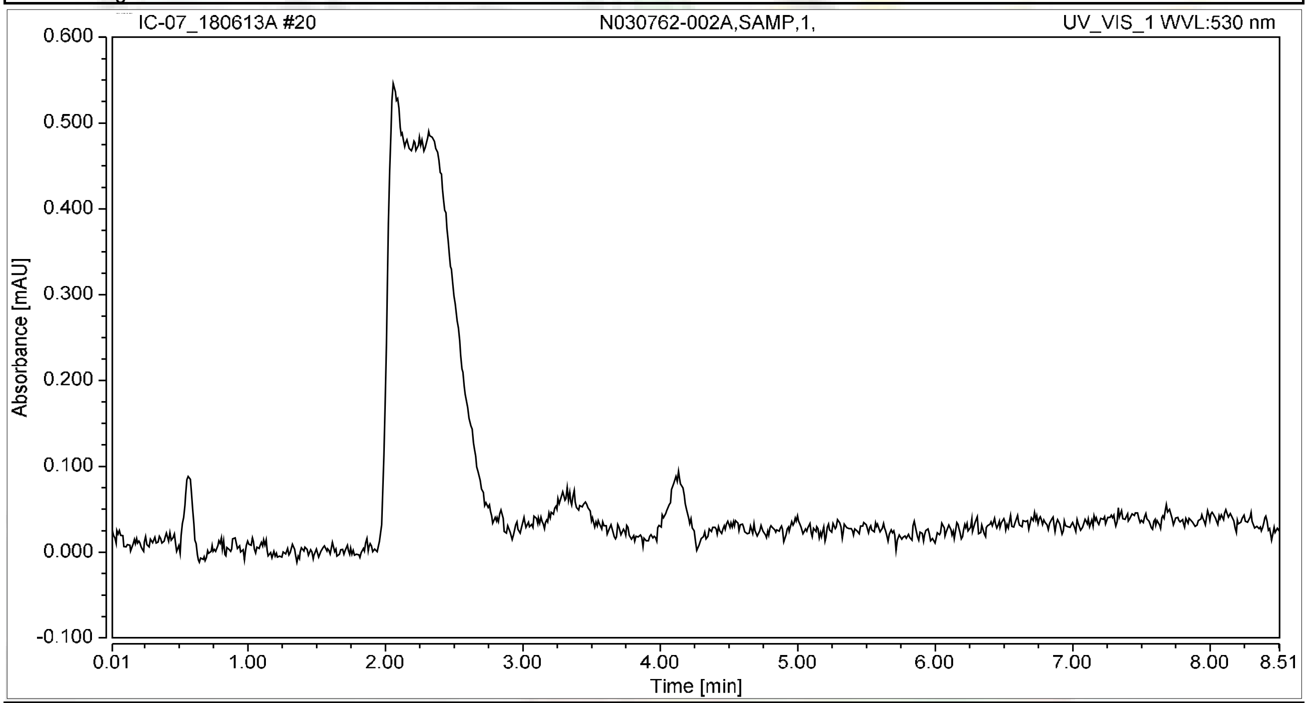
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.279	1.692	100.00	100.00	1.0716
Total:			**0.279**	**1.692**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-002A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 11:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

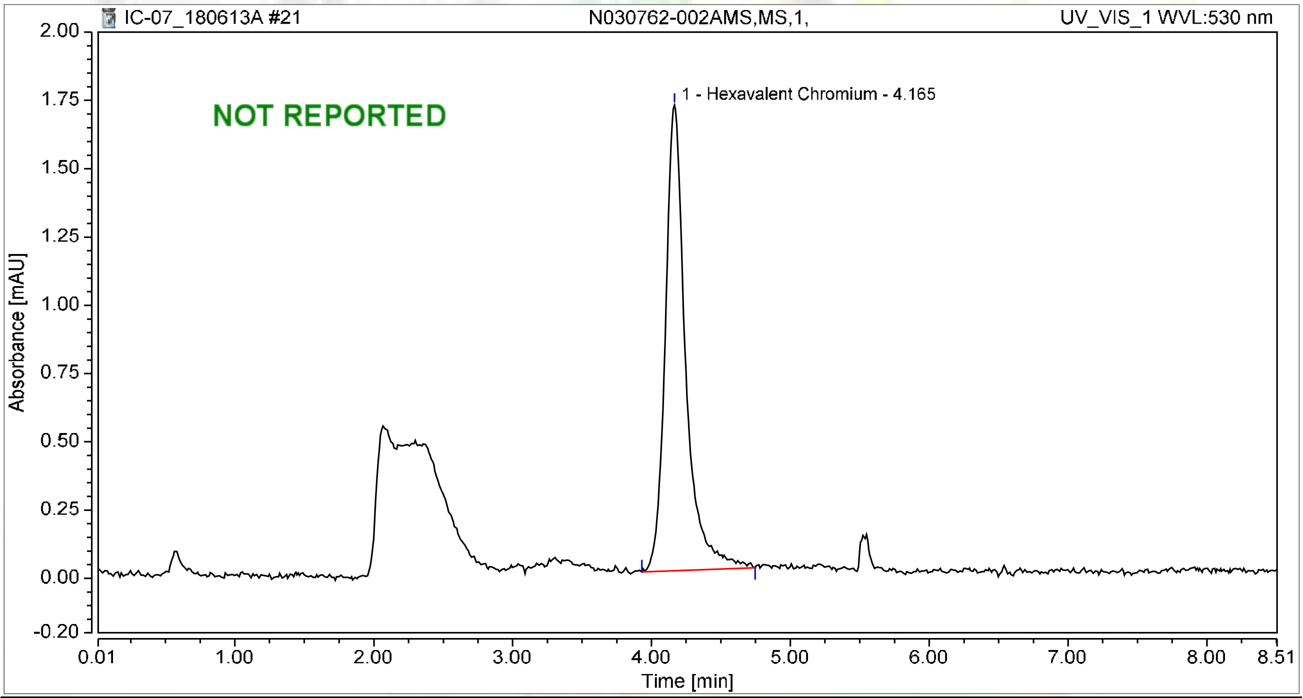
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-002AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 11:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

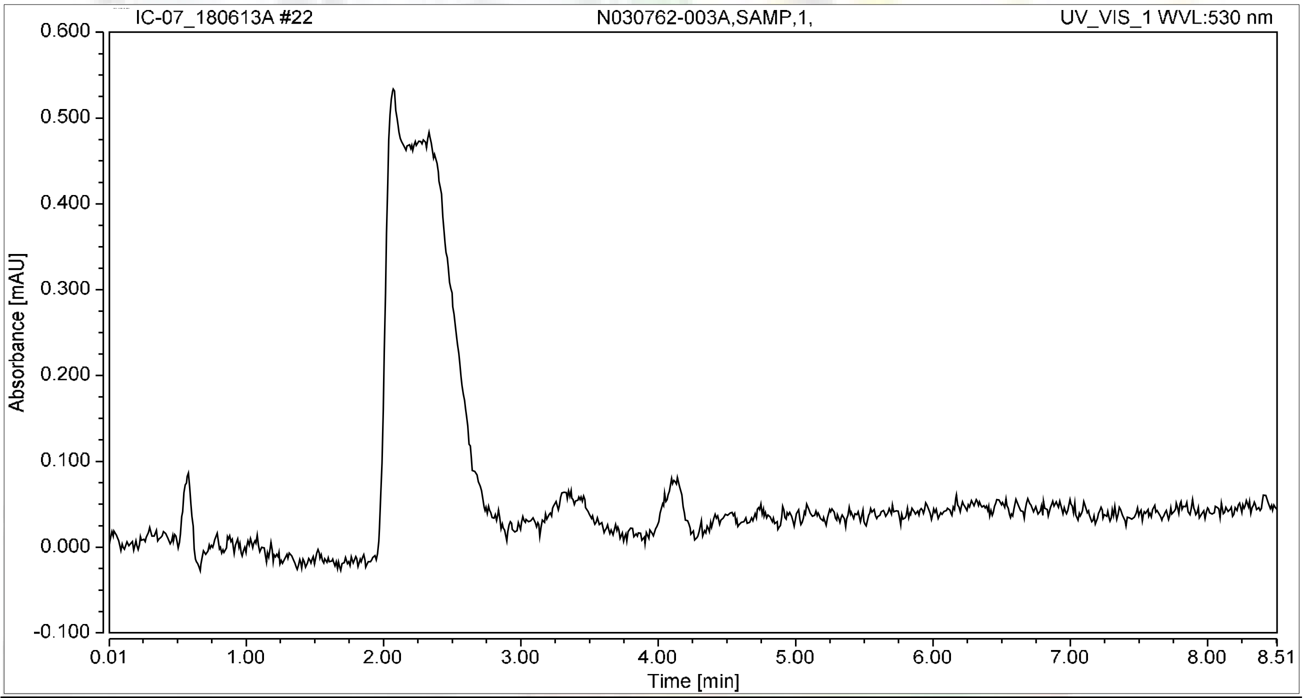
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.290	1.704	100.00	100.00	1.1131
Total:			**0.290**	**1.704**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 11:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

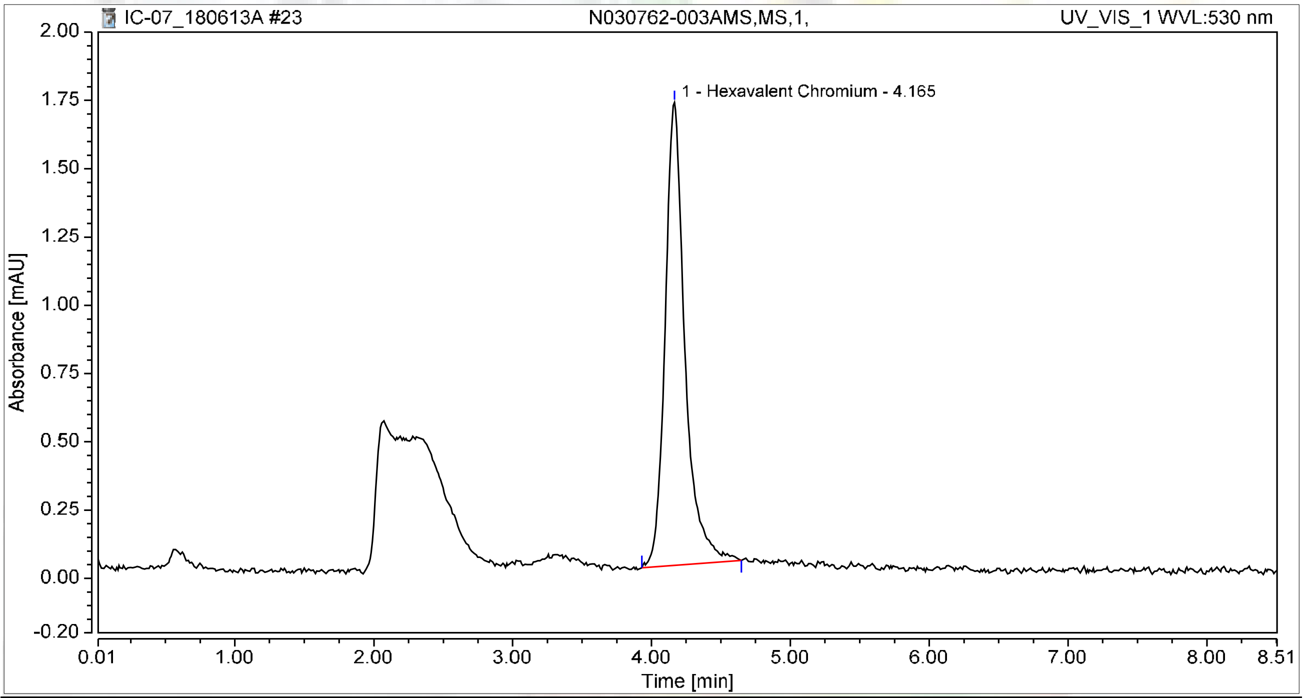
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-003AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 11:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

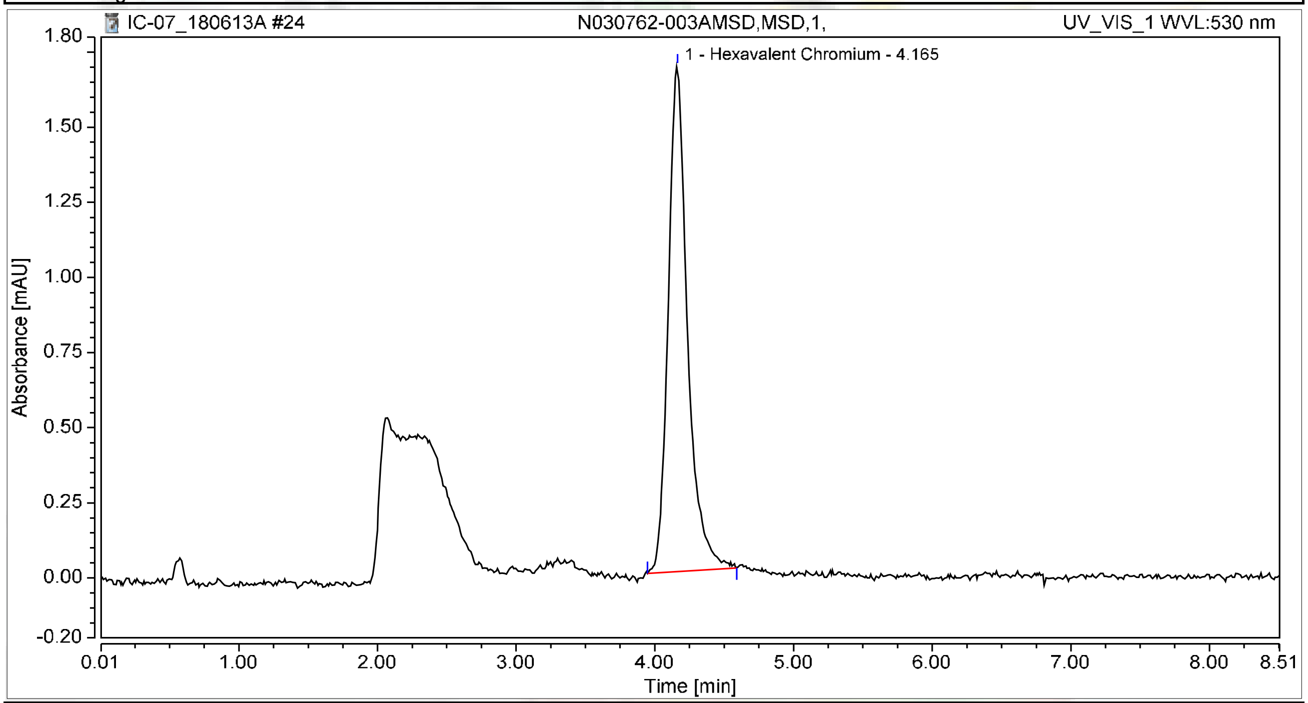
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.281	1.694	100.00	100.00	1.0789
Total:			**0.281**	**1.694**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-003AMSD,MSD,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 11:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

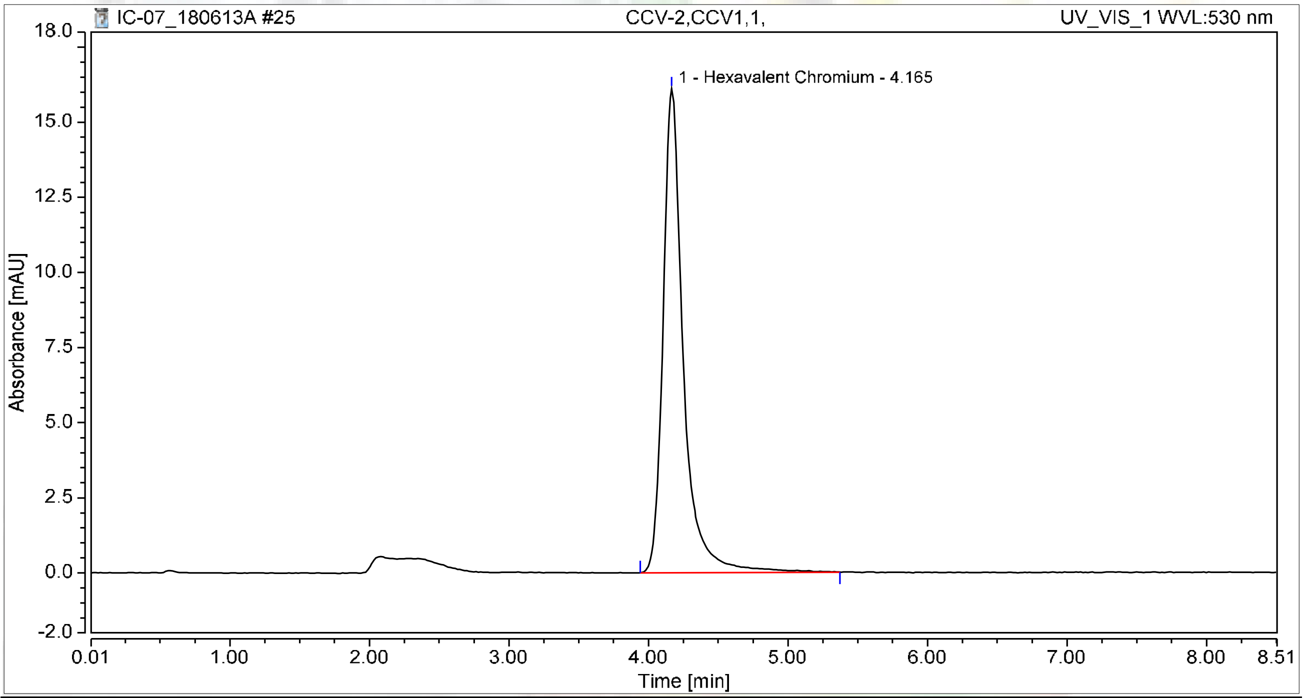
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.271	1.683	100.00	100.00	1.0426
Total:			**0.271**	**1.683**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 11:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

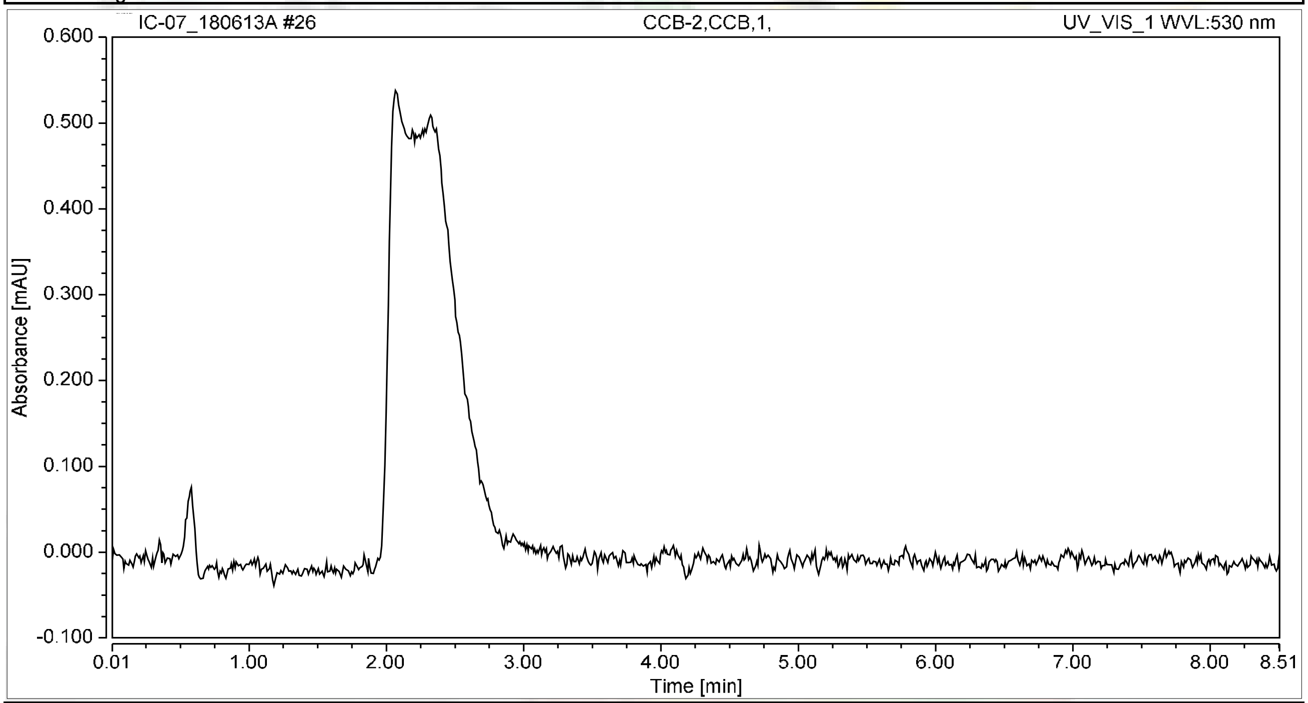
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.710	16.108	100.00	100.00	10.4142
Total:			**2.710**	**16.108**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 12:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

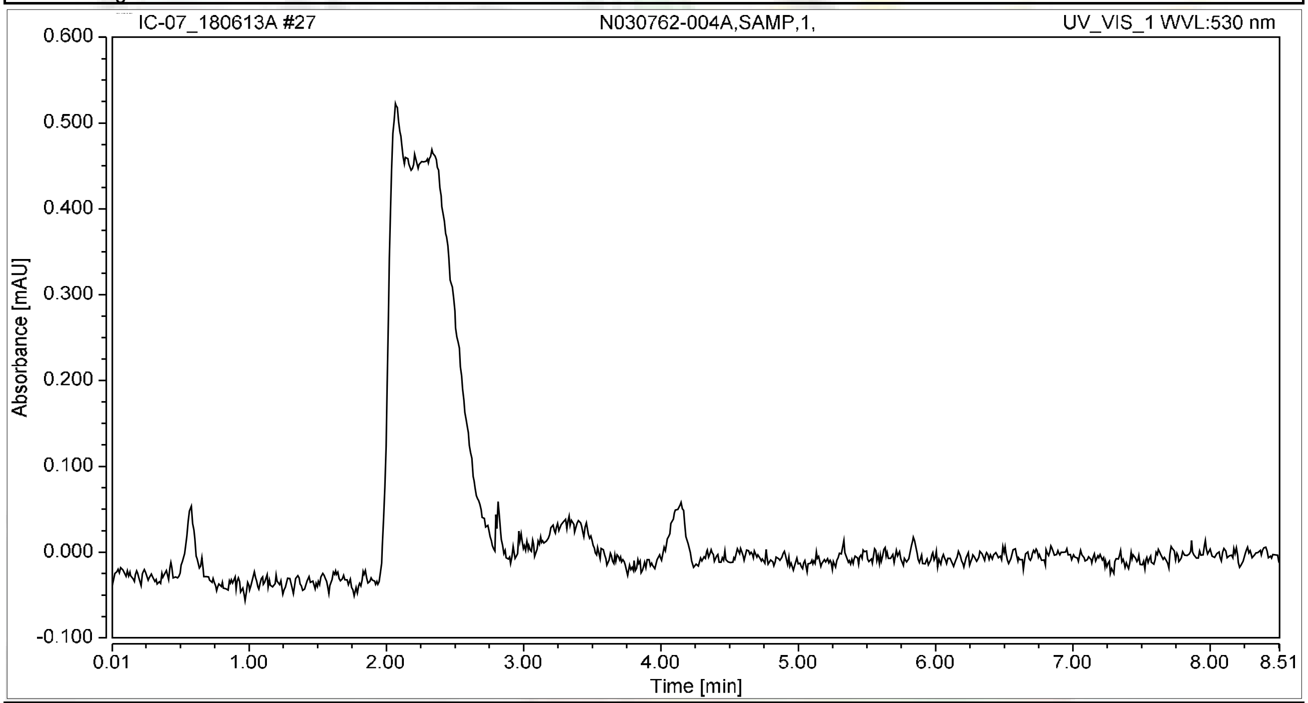
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 12:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

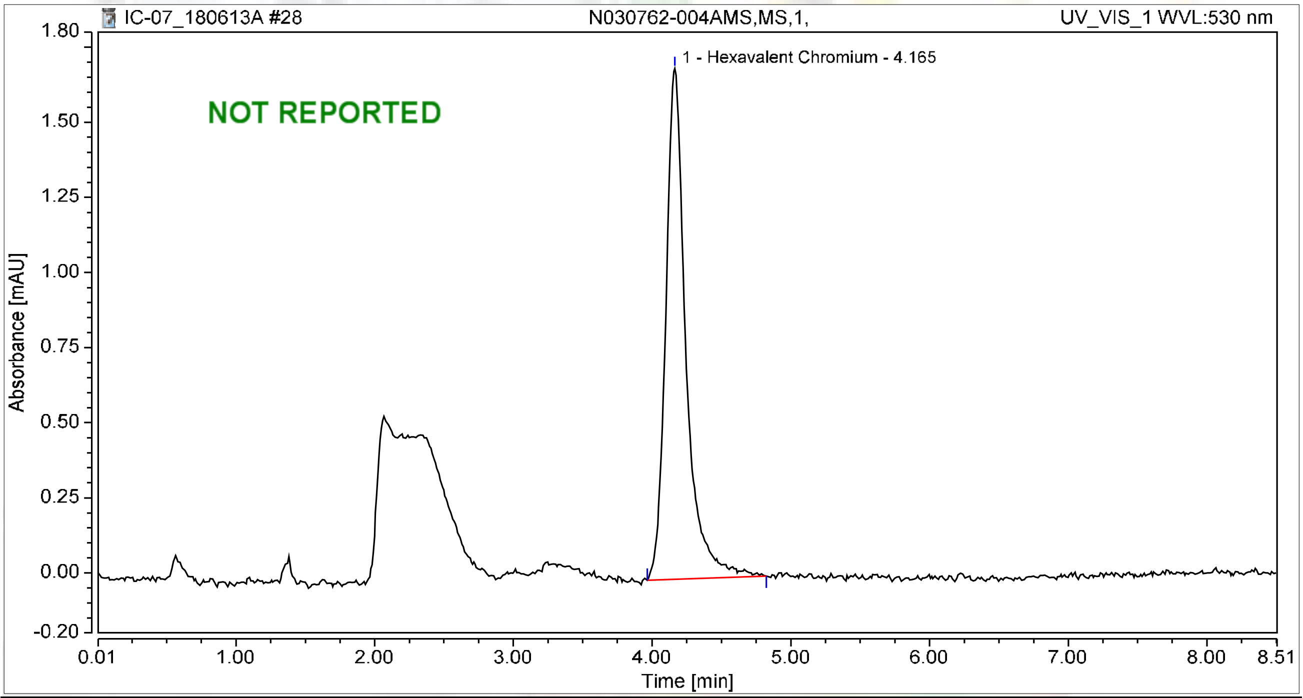
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 12:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

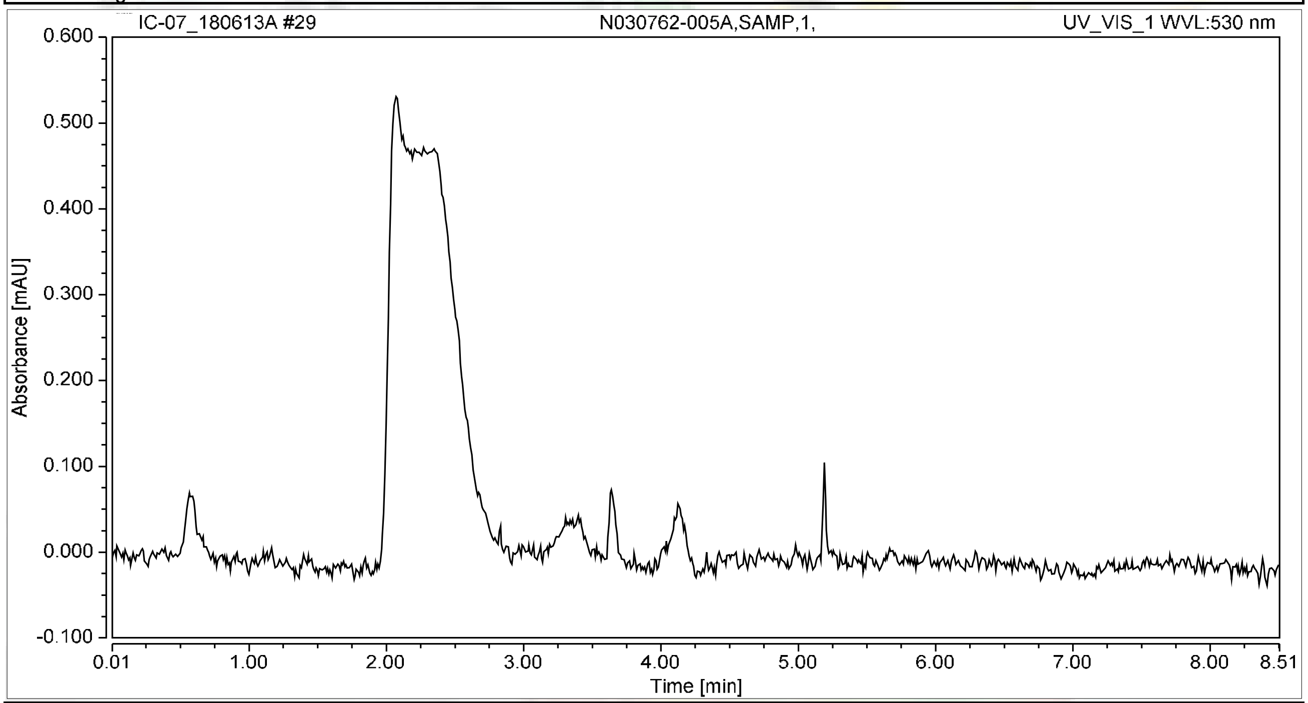
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.287	1.700	100.00	100.00	1.1025
Total:			**0.287**	**1.700**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

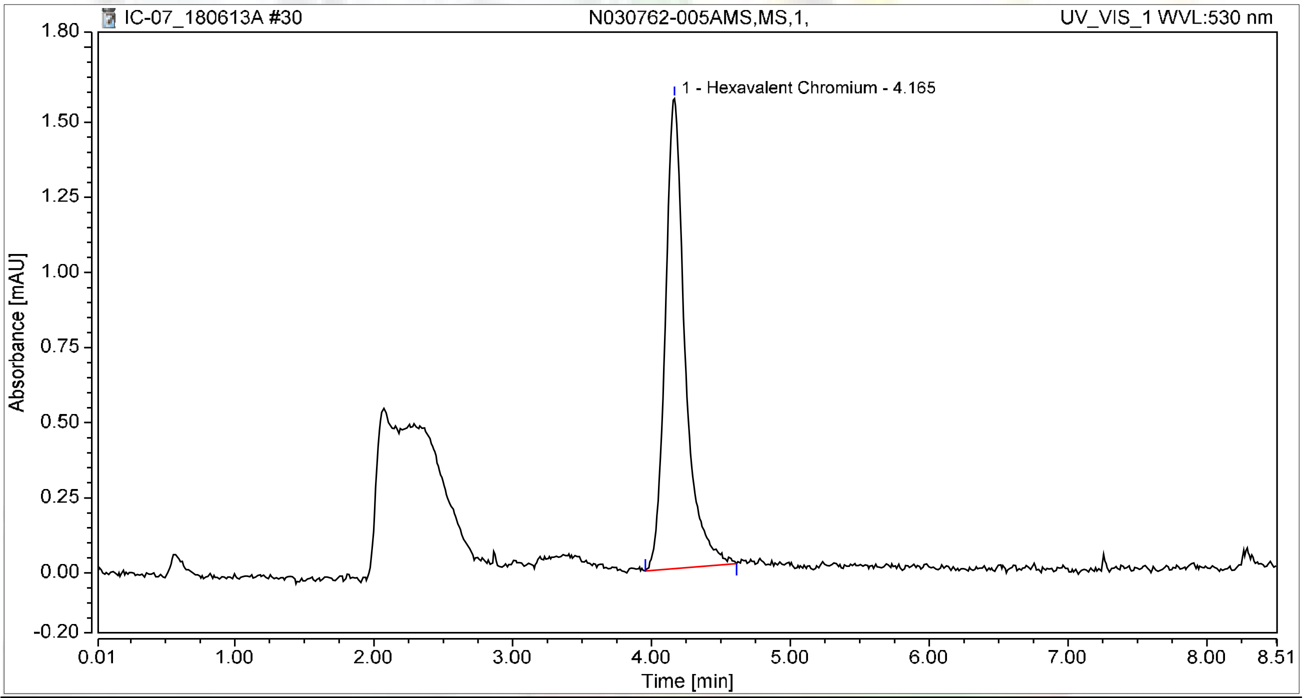
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-005AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 12:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

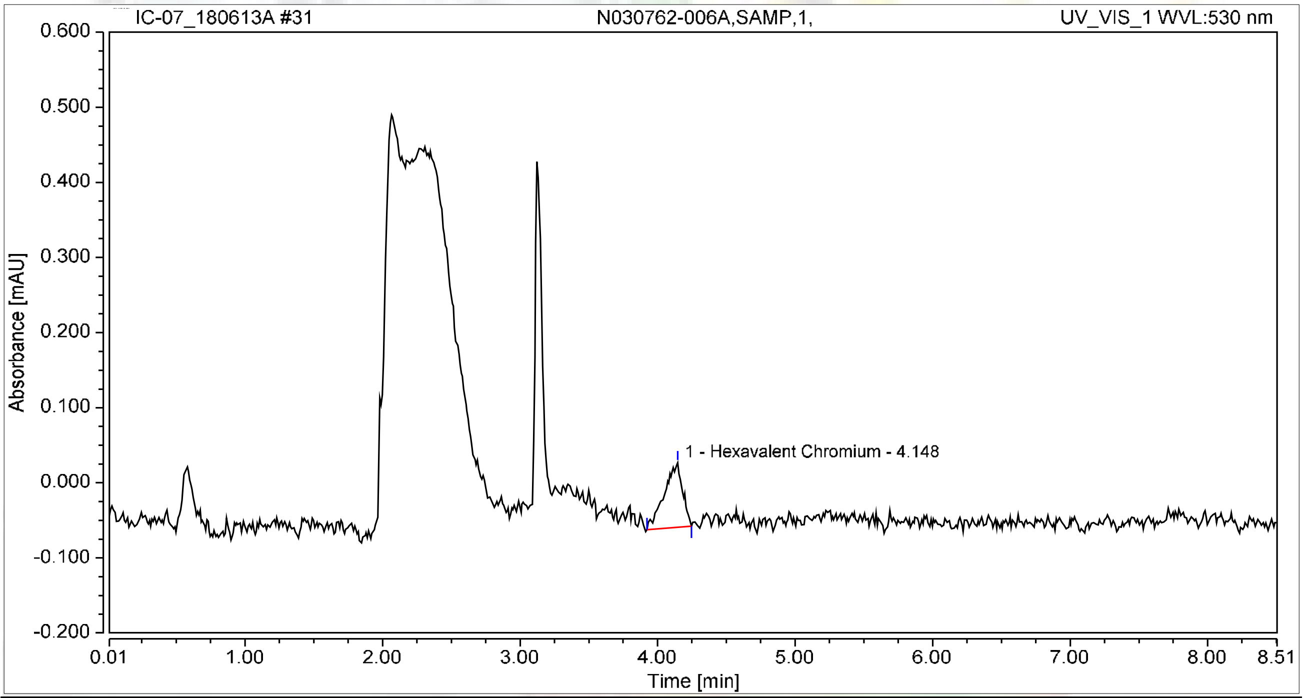
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.260	1.564	100.00	100.00	1.0006
Total:			**0.260**	**1.564**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-006A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



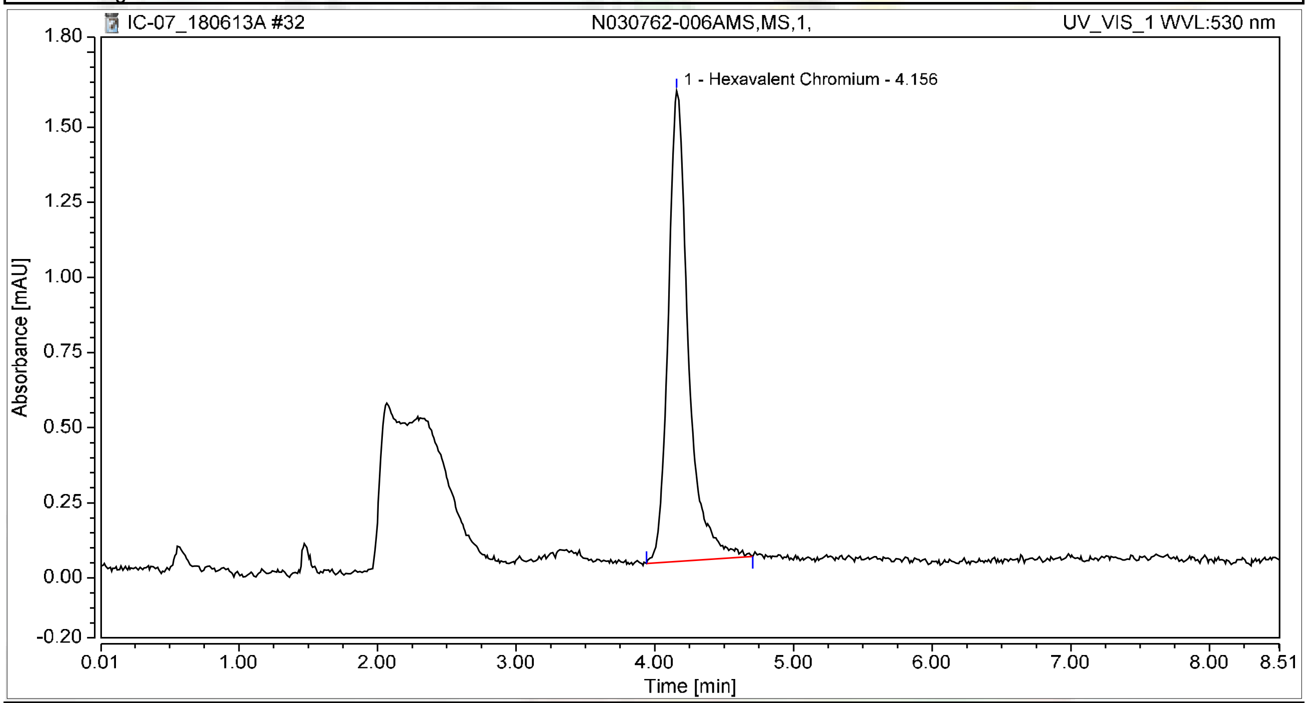
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.013	0.086	100.00	100.00	0.0506
Total:			**0.013**	**0.086**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details			
Injection Name:	**N030762-006AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 13:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

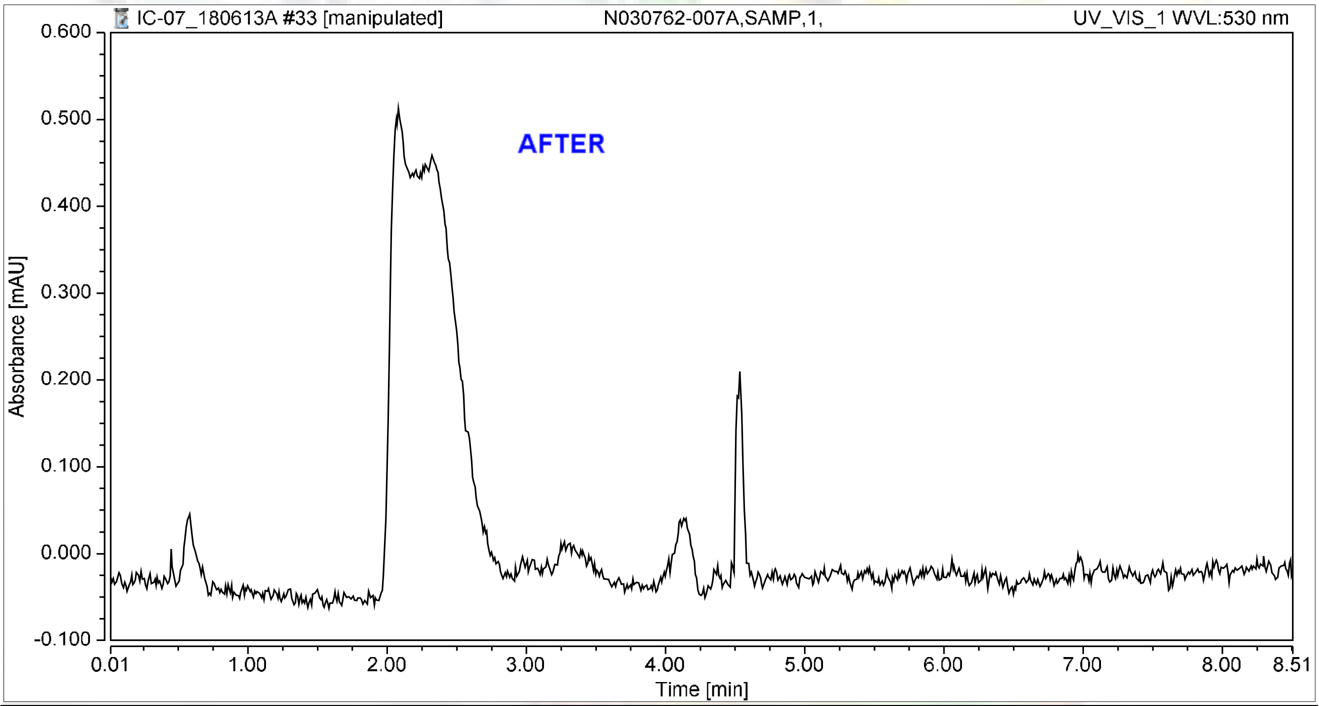
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.264	1.567	100.00	100.00	1.0138
Total:			**0.264**	**1.567**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-007A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 13:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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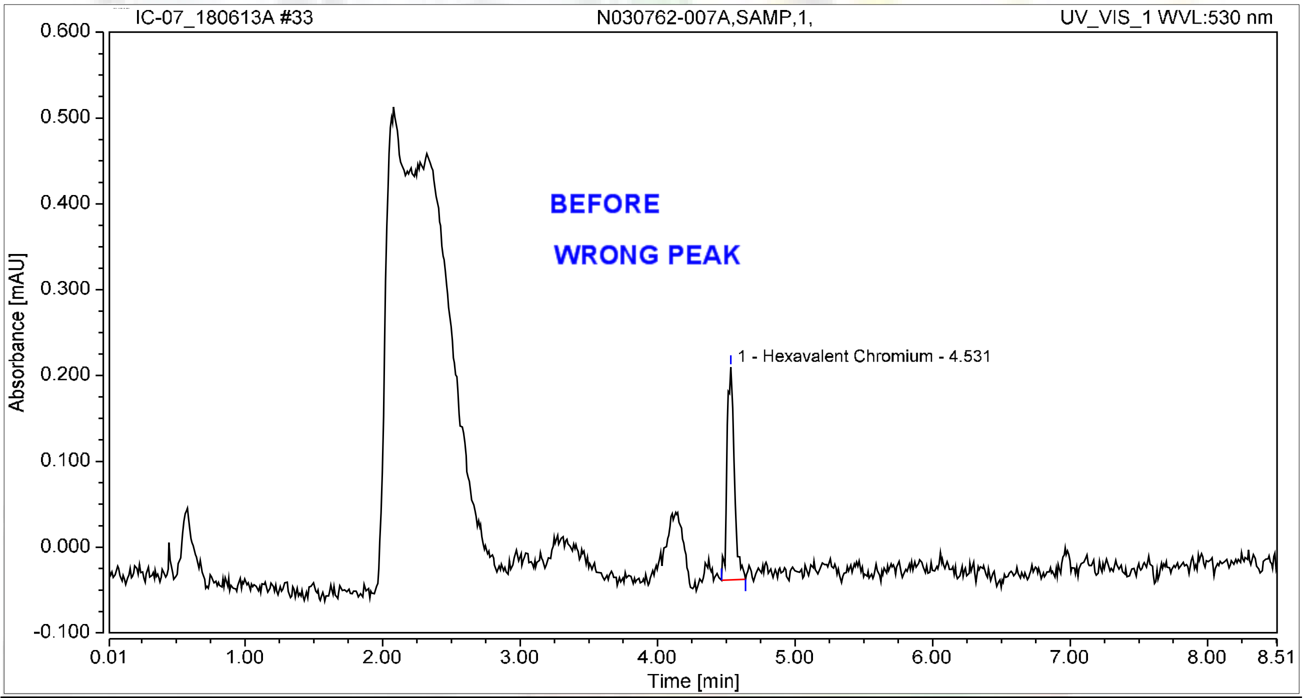
Reviewed by:
Nancy 6/26/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030762-007A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 13:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.531	0.016	0.248	100.00	100.00	0.0600
Total:			**0.016**	**0.248**	**100.00**	**100.00**	

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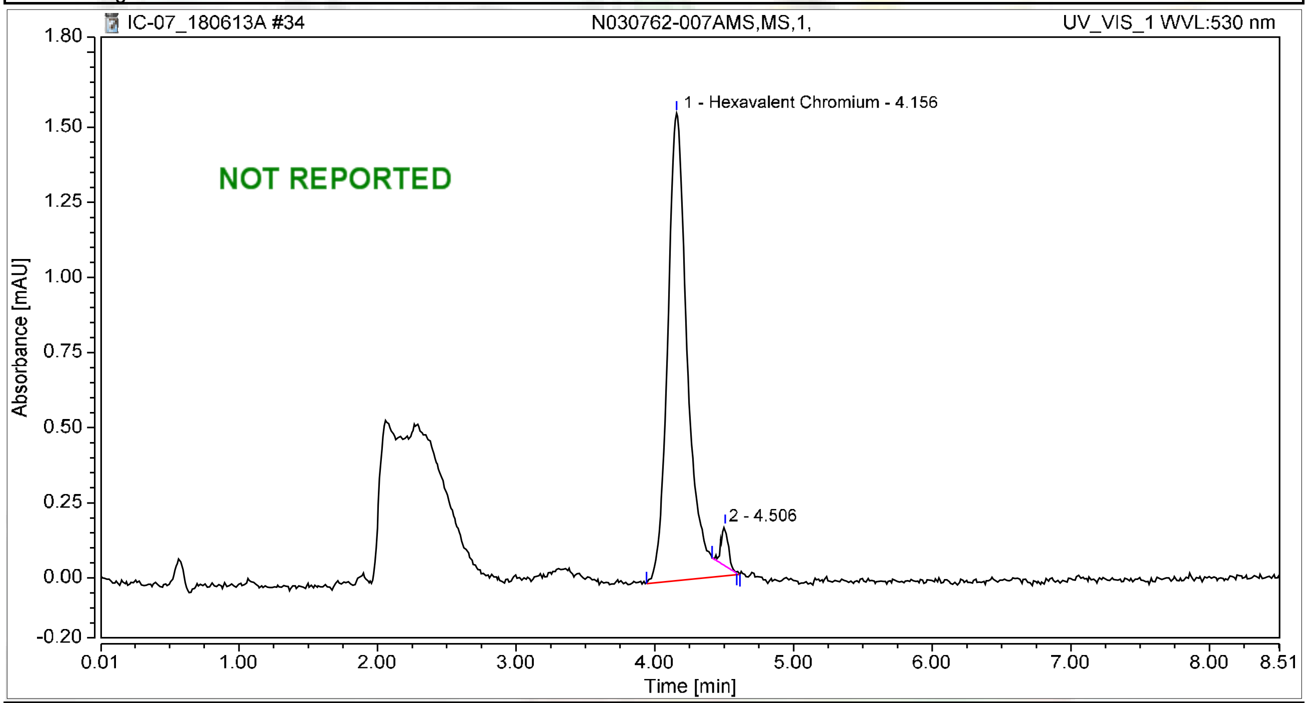
Chromatogram and Results

Injection Details

Injection Name:	**N030762-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 13:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

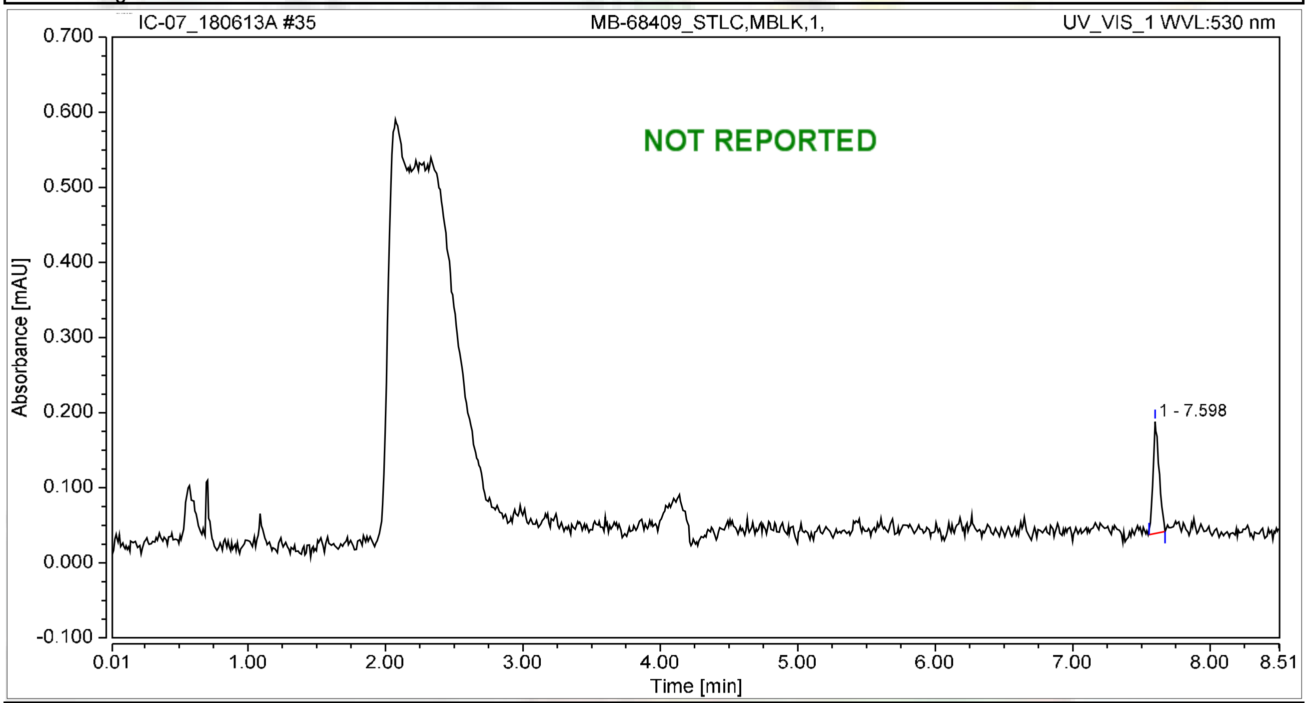
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.259	1.556	97.06	92.26	0.9963
2		4.506	0.008	0.131	2.94	7.74	n.a.
Total:			**0.267**	**1.687**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-68409_STLC,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 13:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

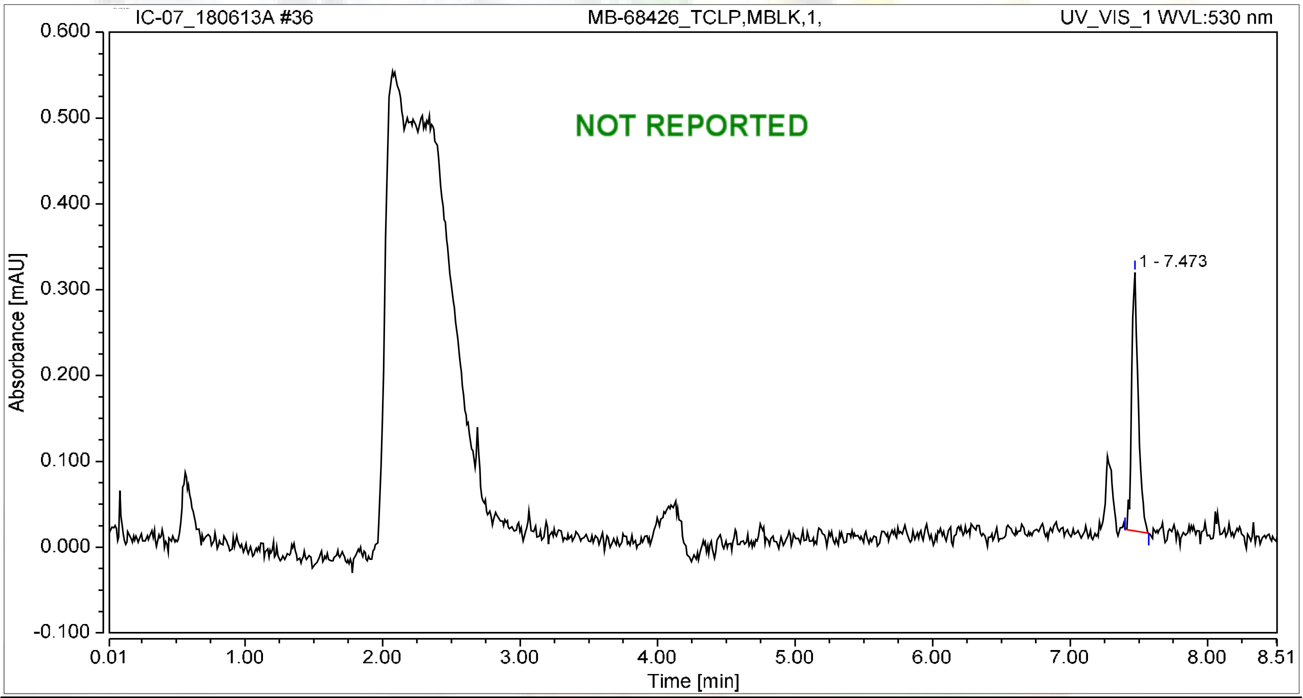
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.598	0.008	0.149	100.00	100.00	n.a.
Total:			**0.008**	**0.149**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-68426_TCLP,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 13:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

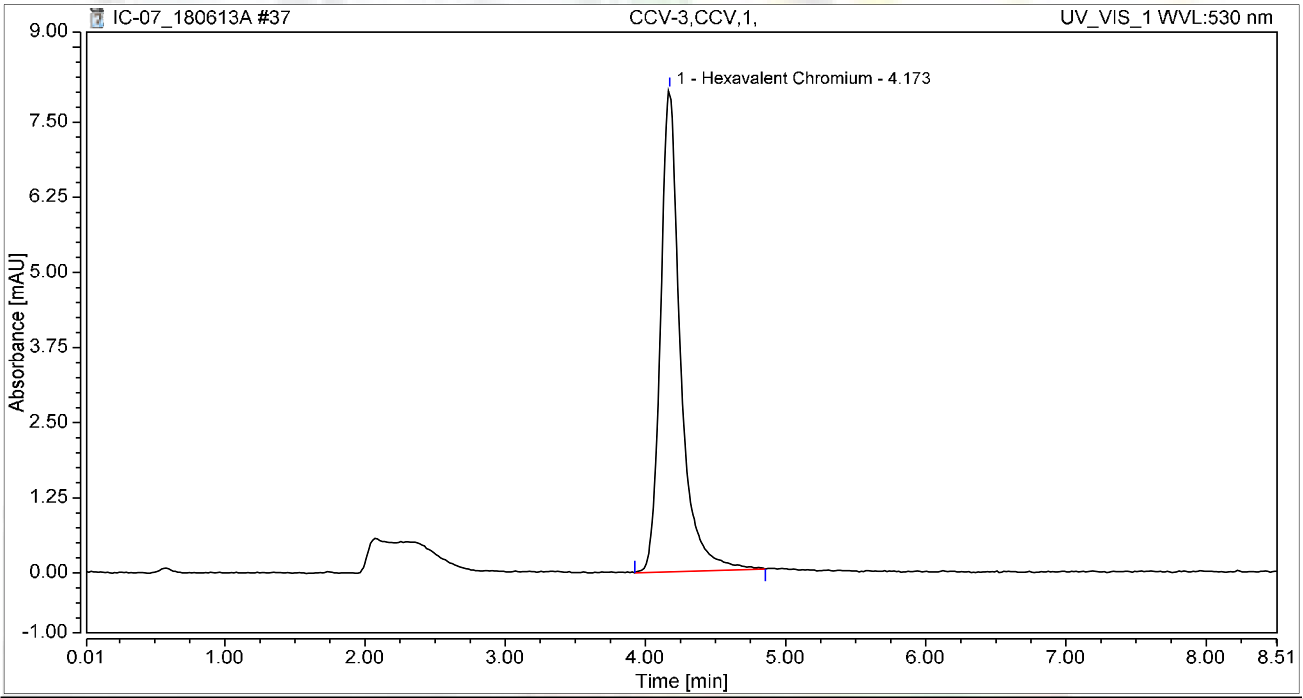
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.473	0.017	0.301	100.00	100.00	n.a.
Total:			**0.017**	**0.301**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 13:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

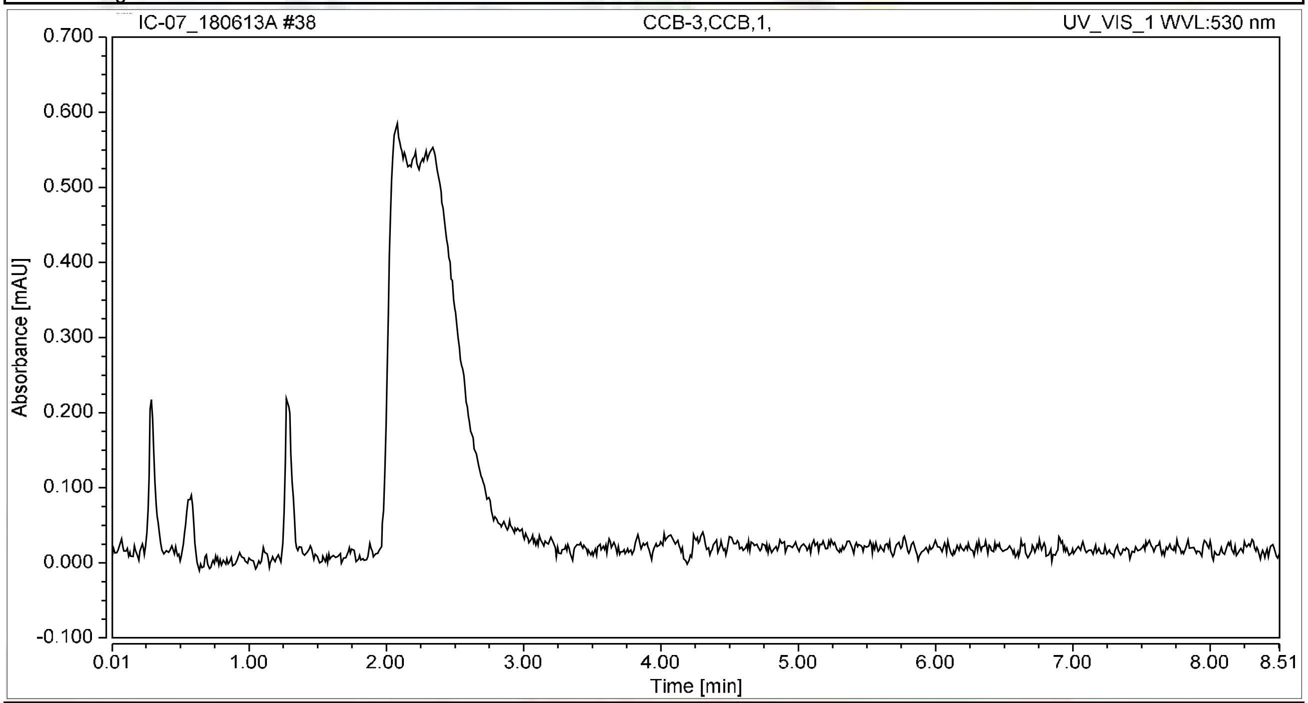
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.325	8.023	100.00	100.00	5.0931
Total:			**1.325**	**8.023**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 14:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

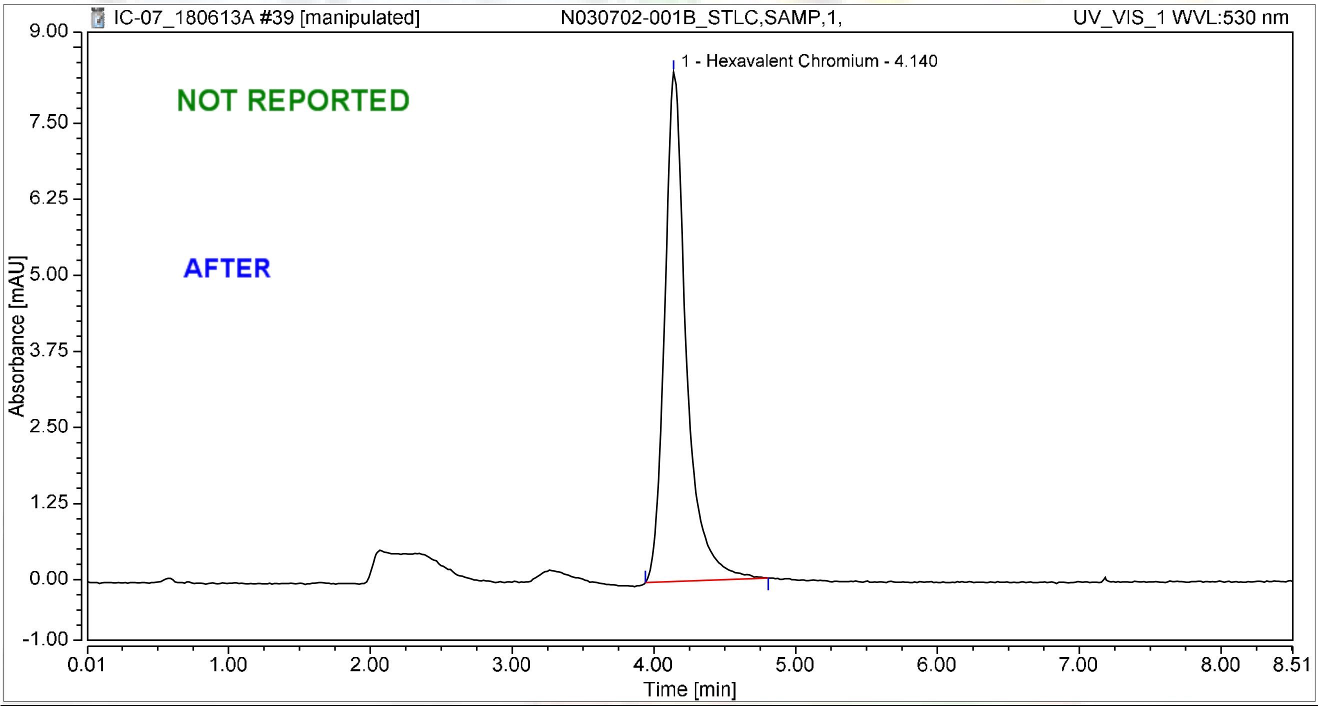
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030702-001B_STLC,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 14:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.493	8.376	100.00	100.00	5.7381
Total:			**1.493**	**8.376**	**100.00**	**100.00**	

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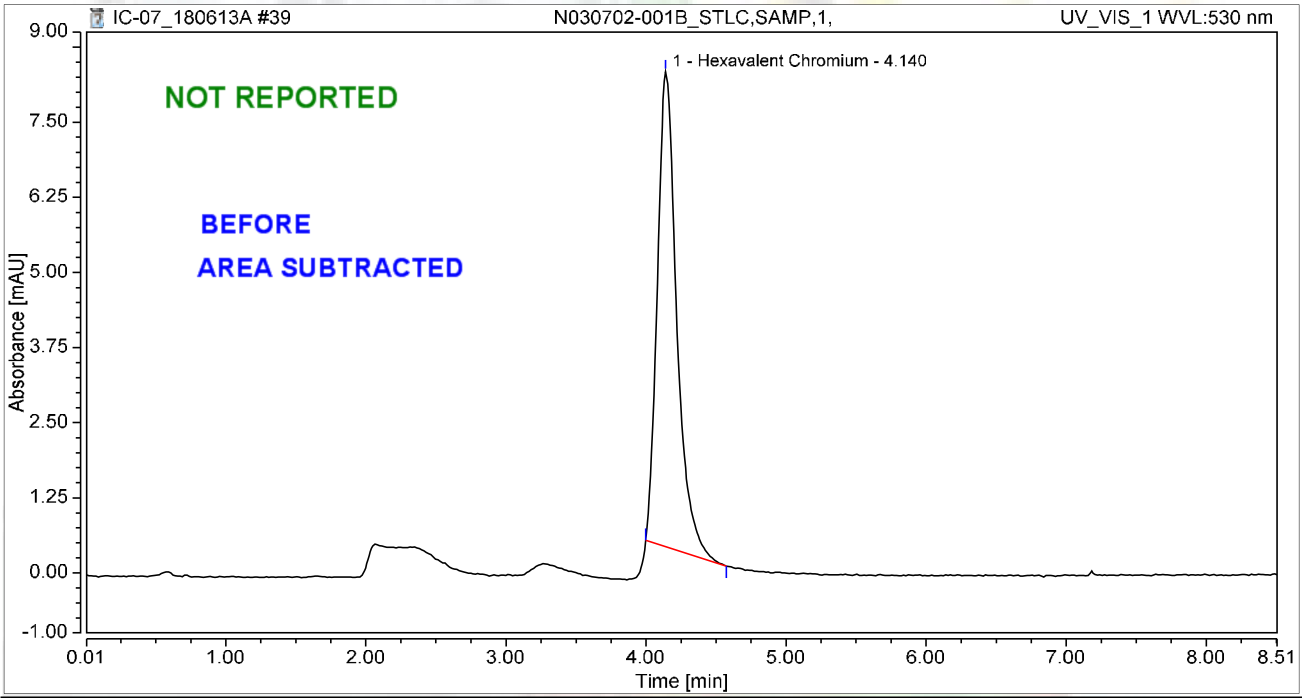
Chromatogram and Results

Injection Details

Injection Name:	**N030702-001B_STLC,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 14:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.268	7.904	100.00	100.00	4.8732
Total:			**1.268**	**7.904**	**100.00**	**100.00**	

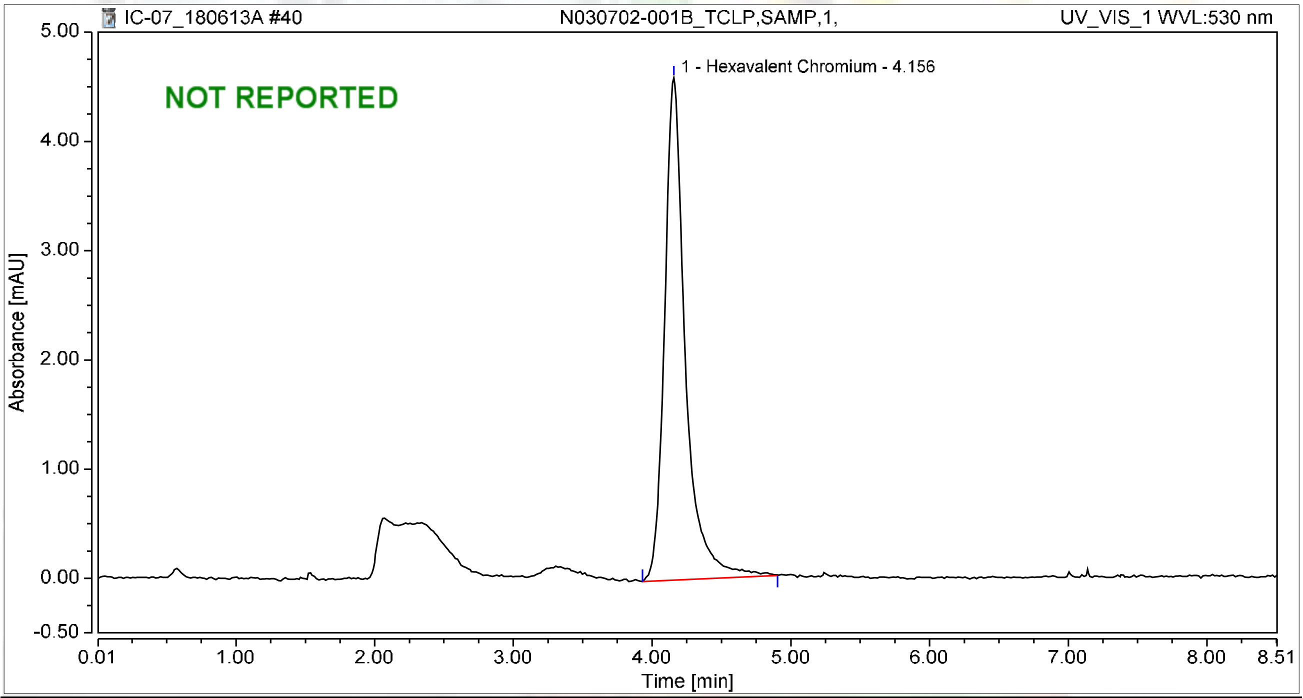
rba 6/20/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030702-001B_TCLP,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 14:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

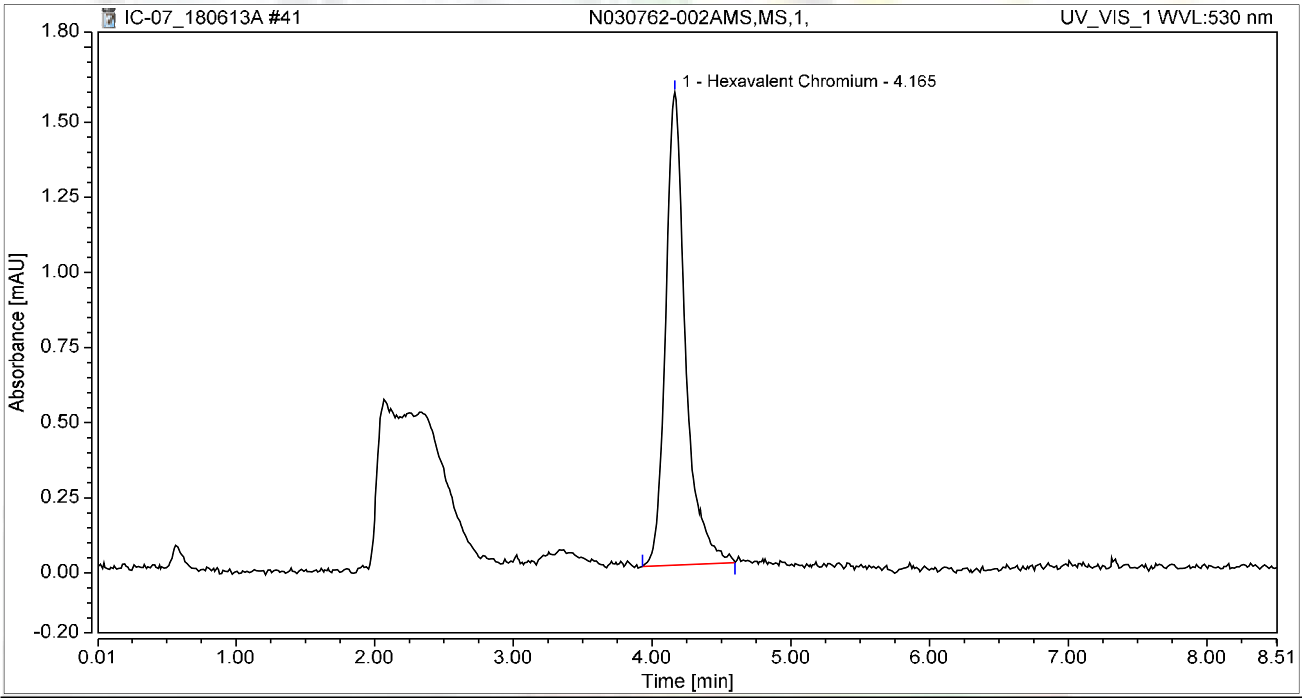
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.800	4.596	100.00	100.00	3.0736
Total:			**0.800**	**4.596**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 14:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

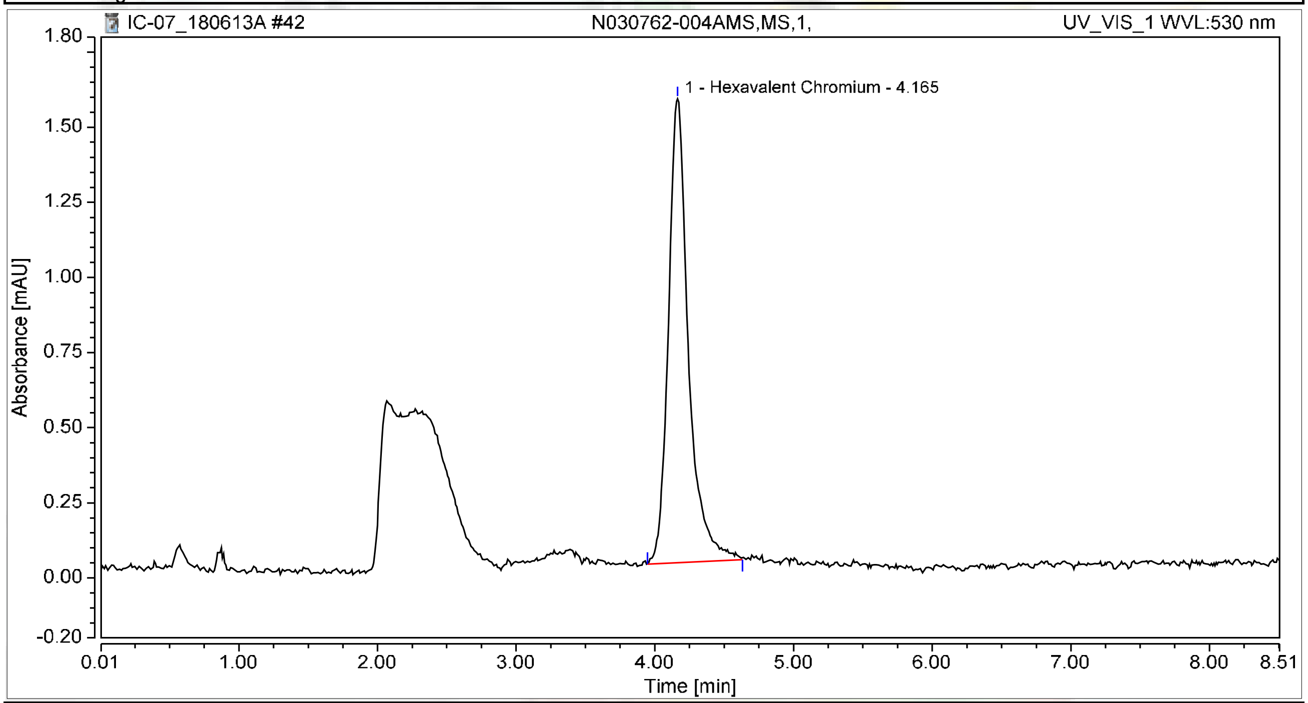
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.262	1.574	100.00	100.00	1.0073
Total:			**0.262**	**1.574**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 14:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

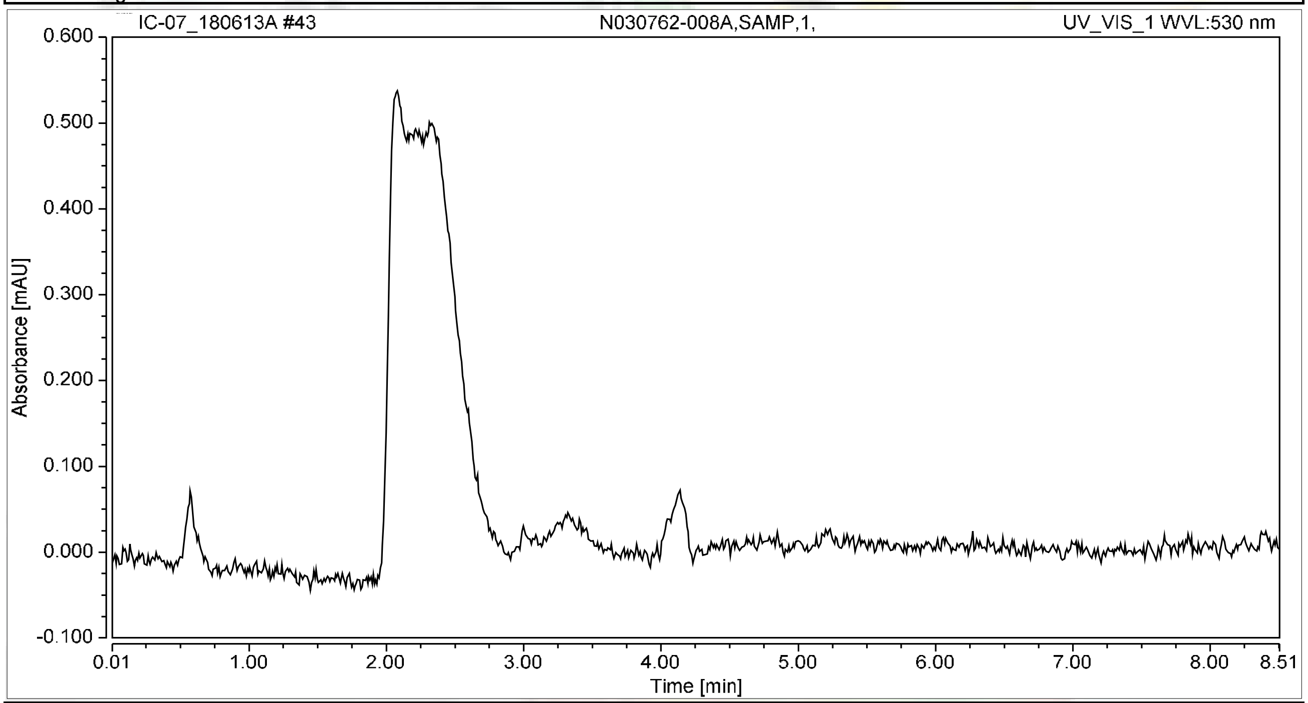
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.258	1.545	100.00	100.00	0.9929
Total:			**0.258**	**1.545**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 14:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

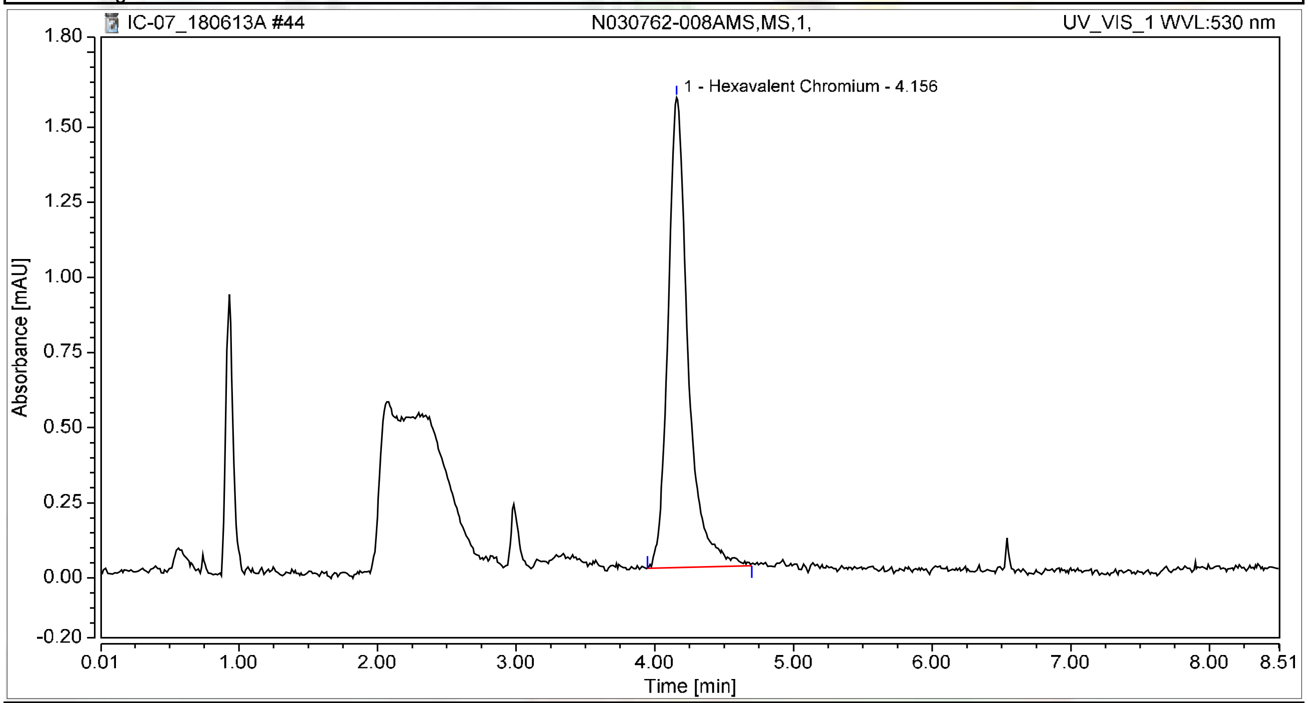
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 14:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

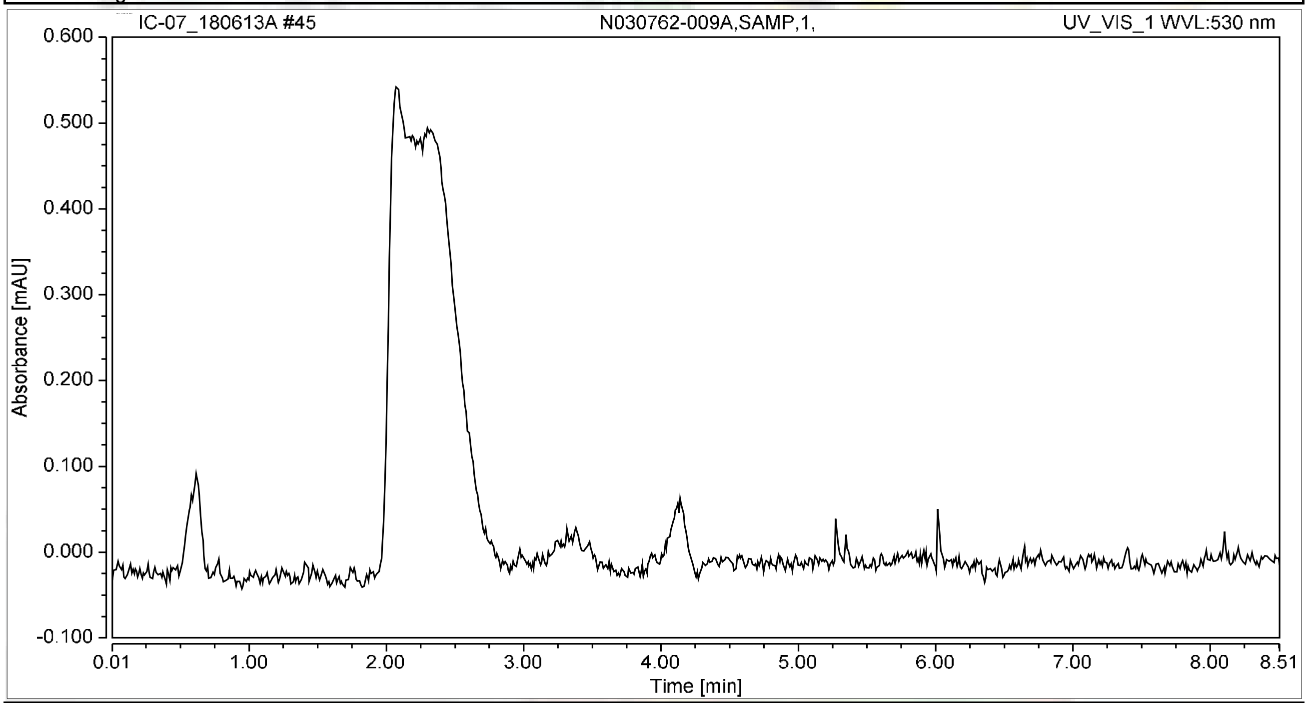
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.263	1.564	100.00	100.00	1.0101
Total:			**0.263**	**1.564**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 15:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

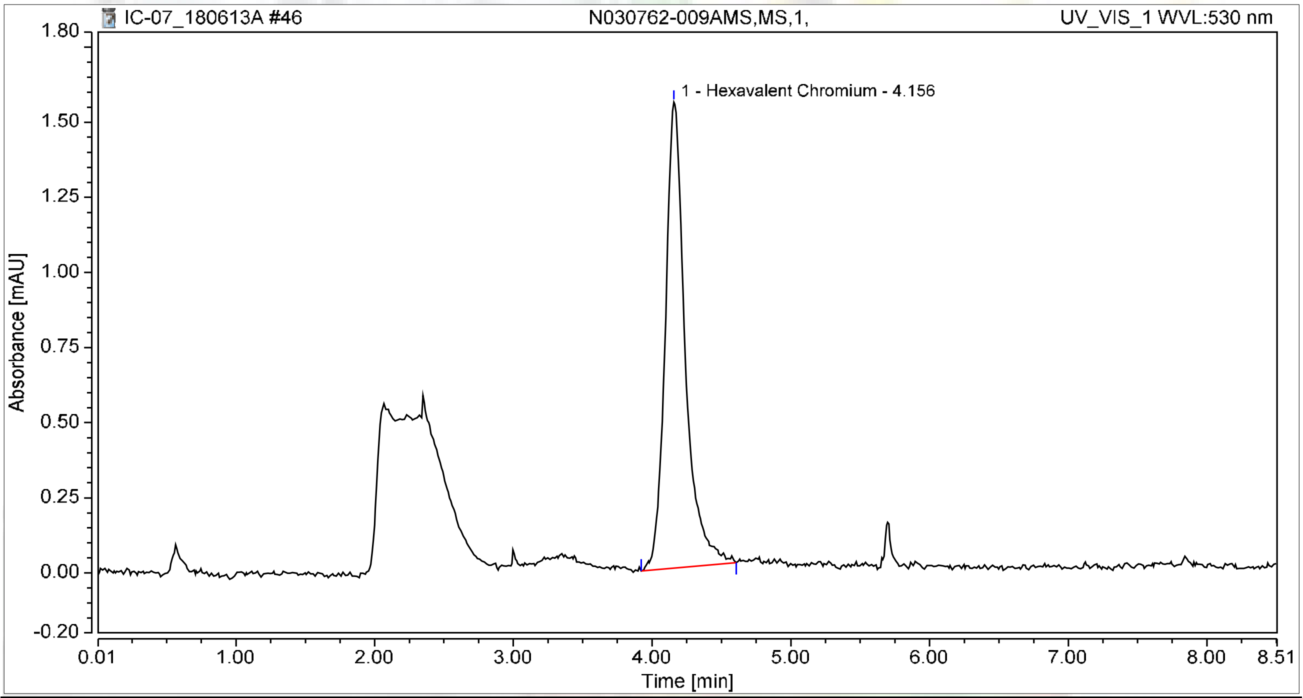
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 15:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

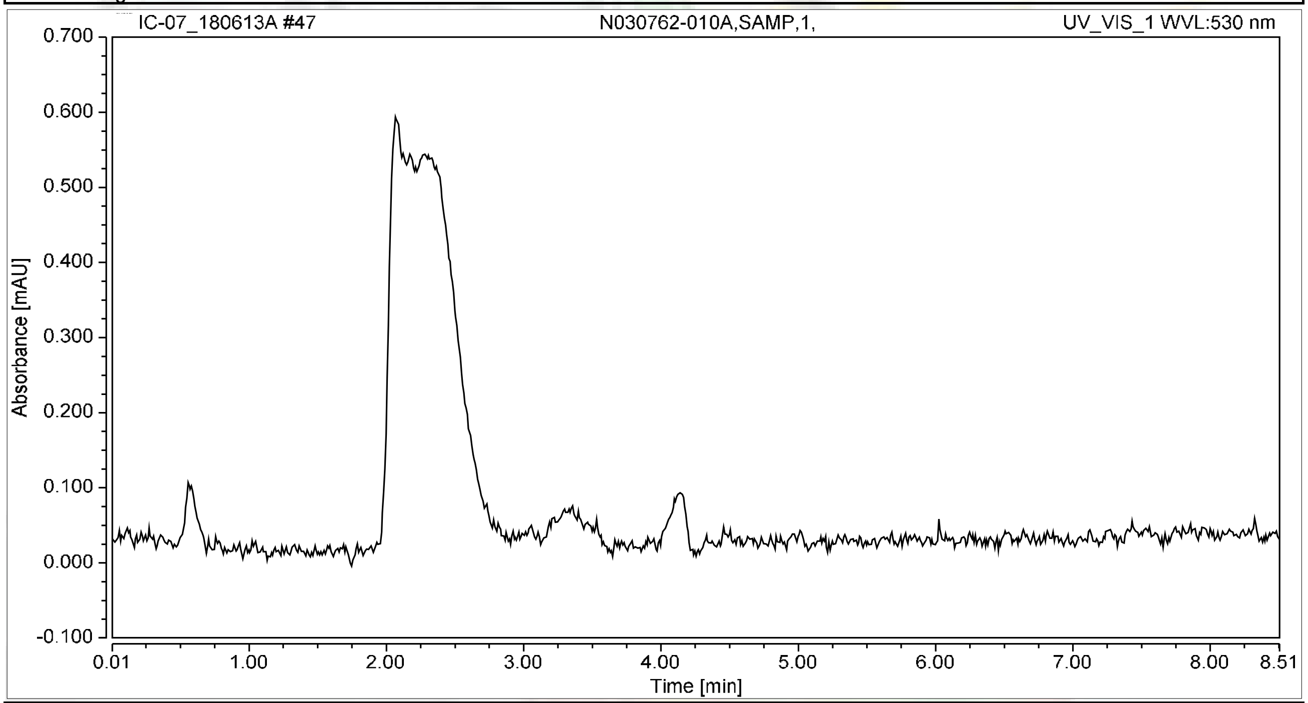
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.259	1.551	100.00	100.00	0.9959
Total:			**0.259**	**1.551**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 15:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

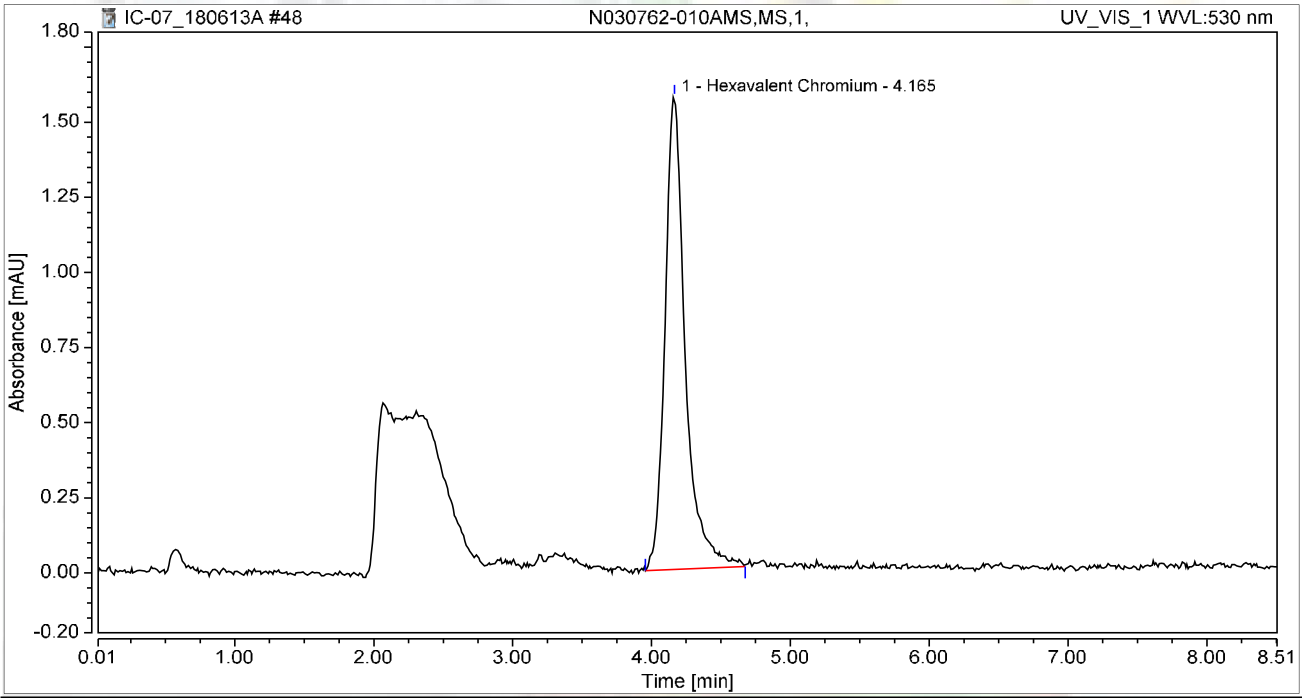
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-010AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 15:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

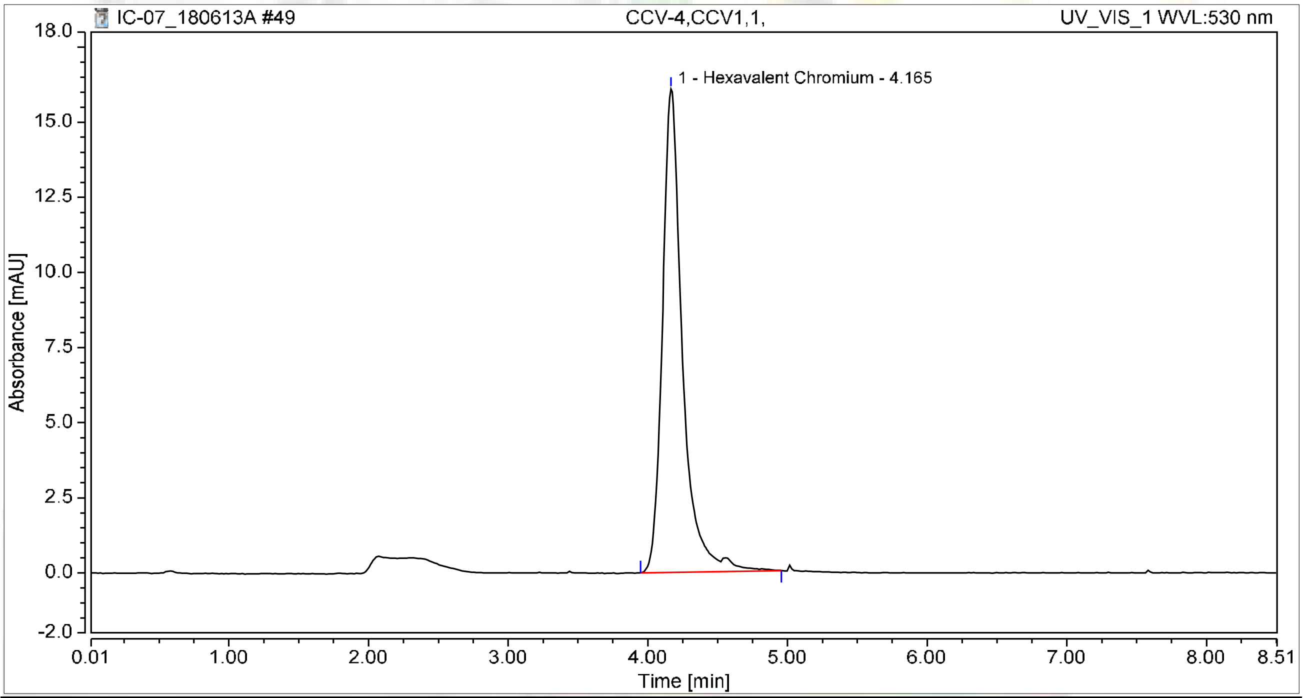
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.267	1.573	100.00	100.00	1.0248
Total:			**0.267**	**1.573**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 15:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

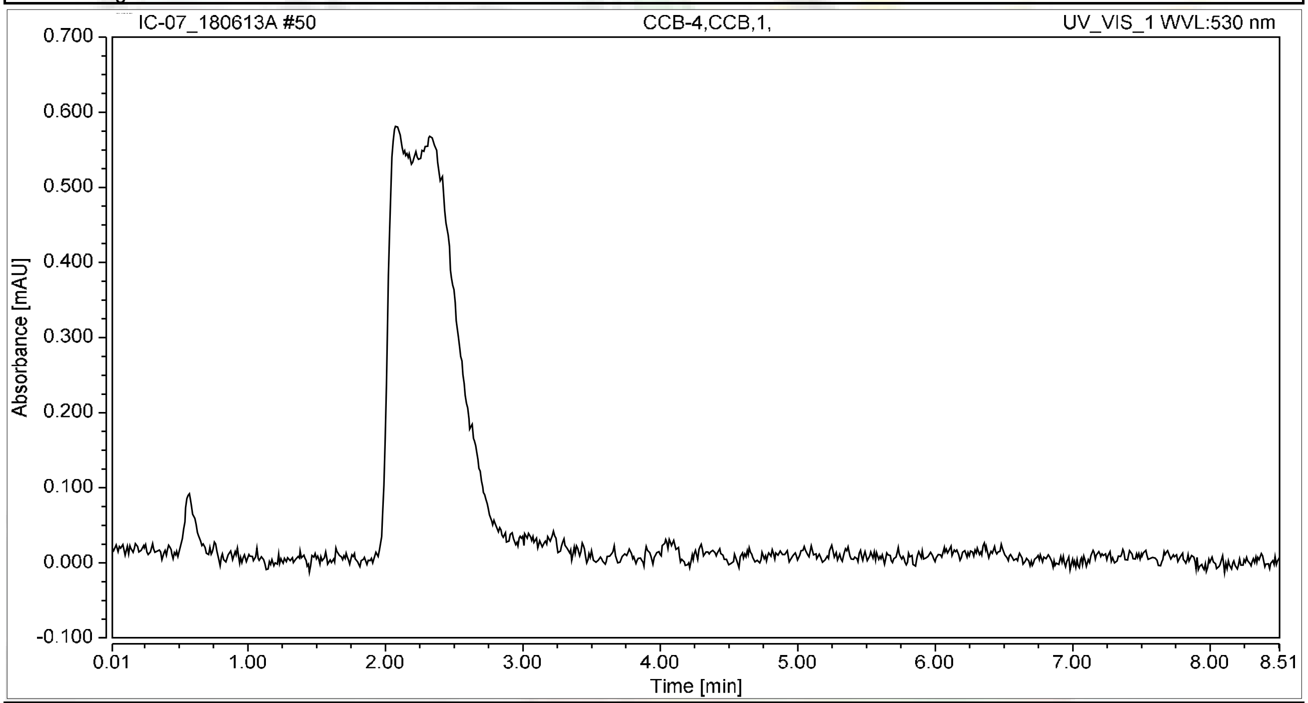
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.670	16.079	100.00	100.00	10.2607
Total:			**2.670**	**16.079**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 15:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

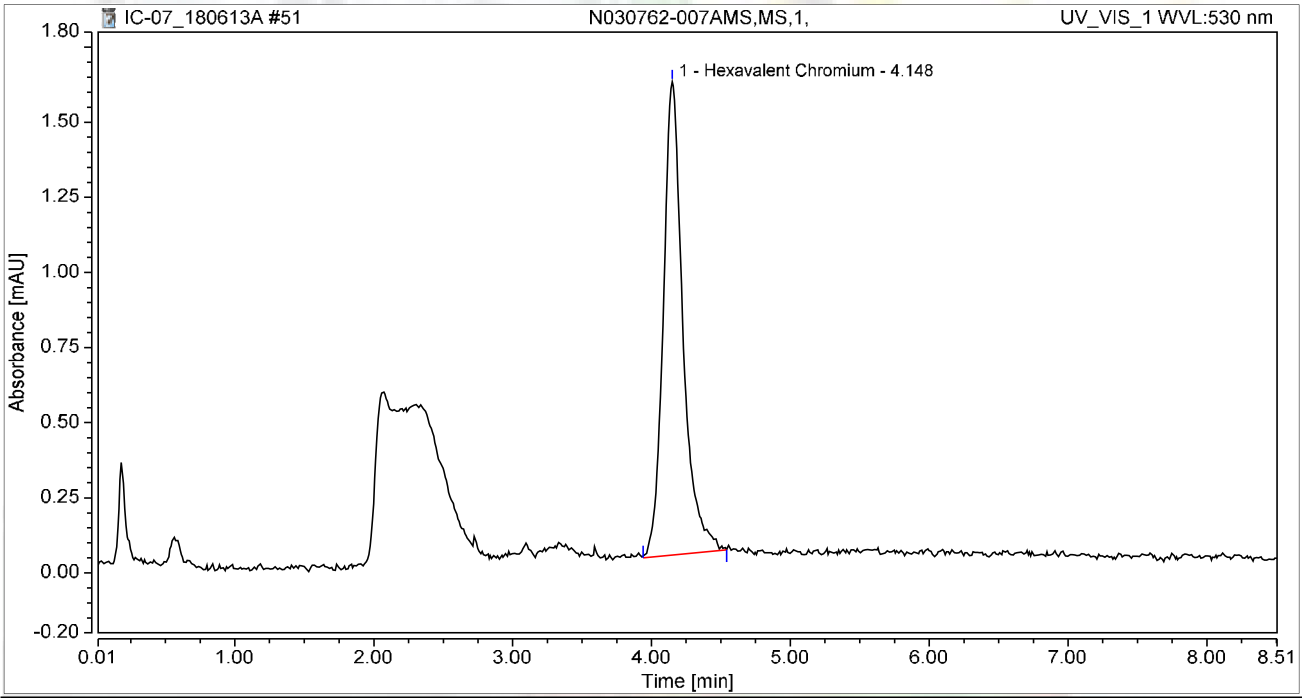
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-007AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 16:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

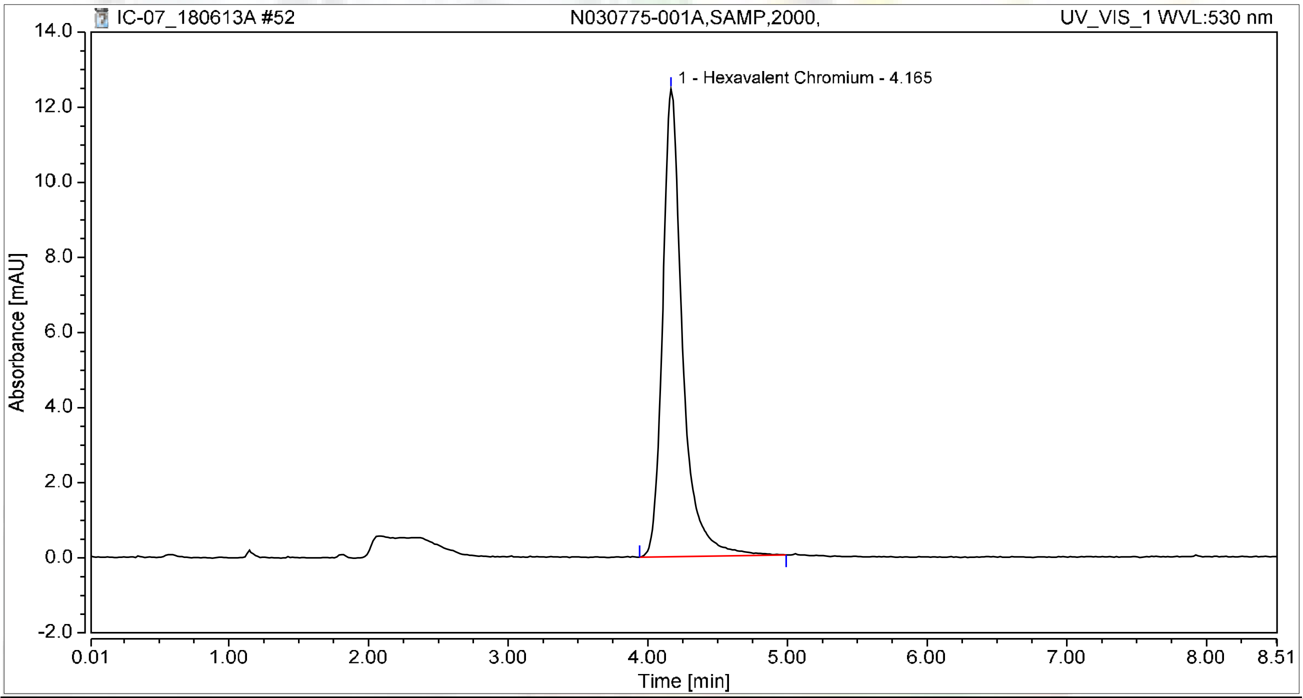
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.258	1.576	100.00	100.00	0.9935
Total:			**0.258**	**1.576**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030775-001A,SAMP,2000,**	*Run Time (min):*	**8.49**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 16:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

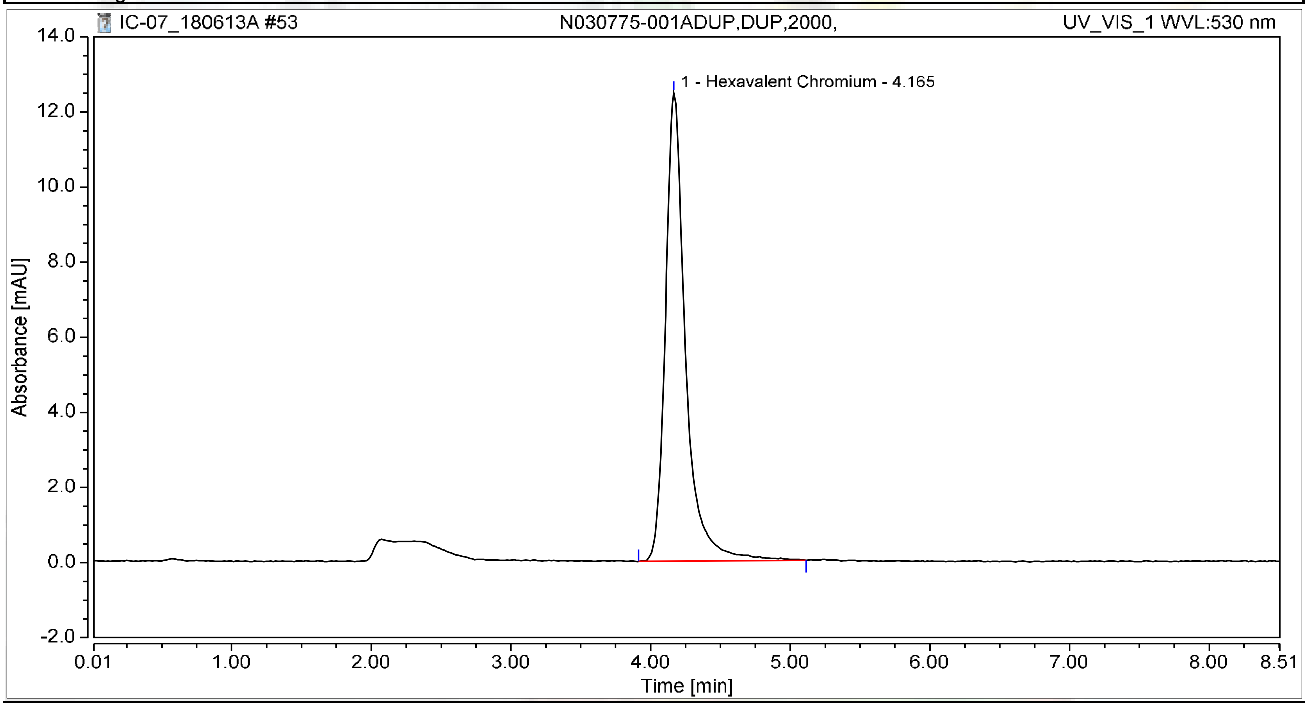
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.065	12.456	100.00	100.00	7.9383
Total:			**2.065**	**12.456**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030775-001ADUP,DUP,2000,**	*Run Time (min):*	**8.49**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 16:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

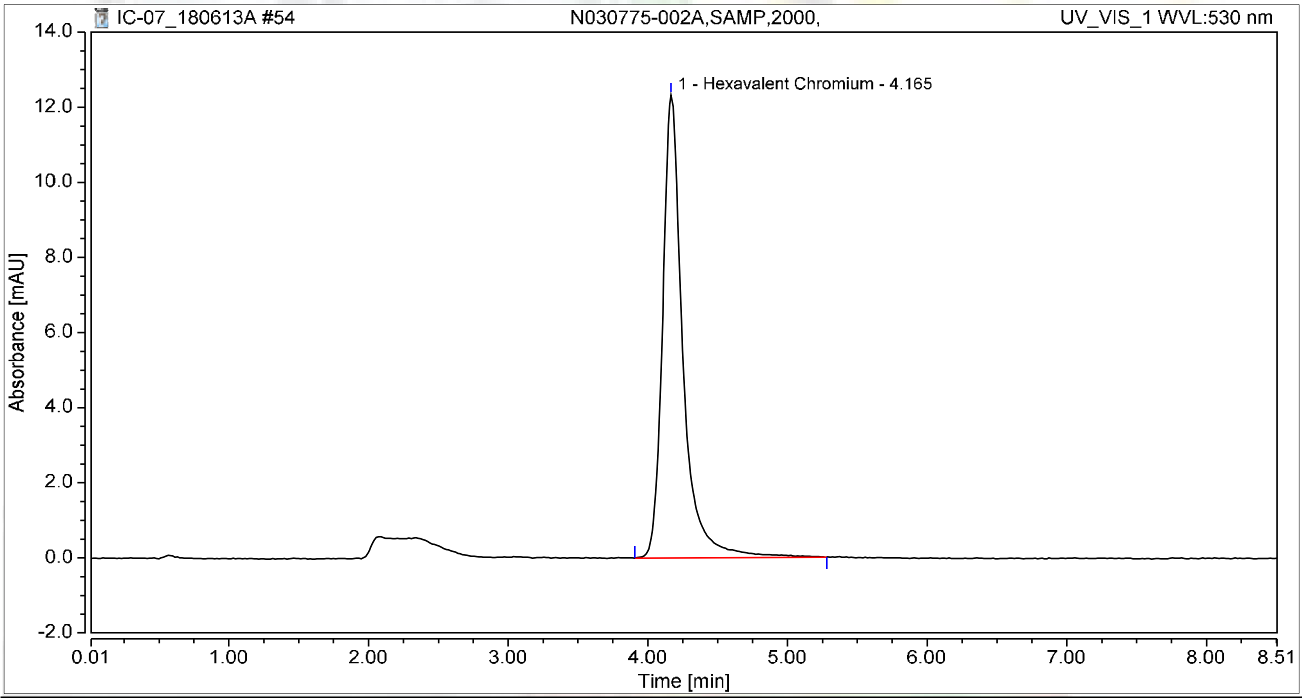
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.087	12.465	100.00	100.00	8.0198
Total:			**2.087**	**12.465**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030775-002A,SAMP,2000,**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 16:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

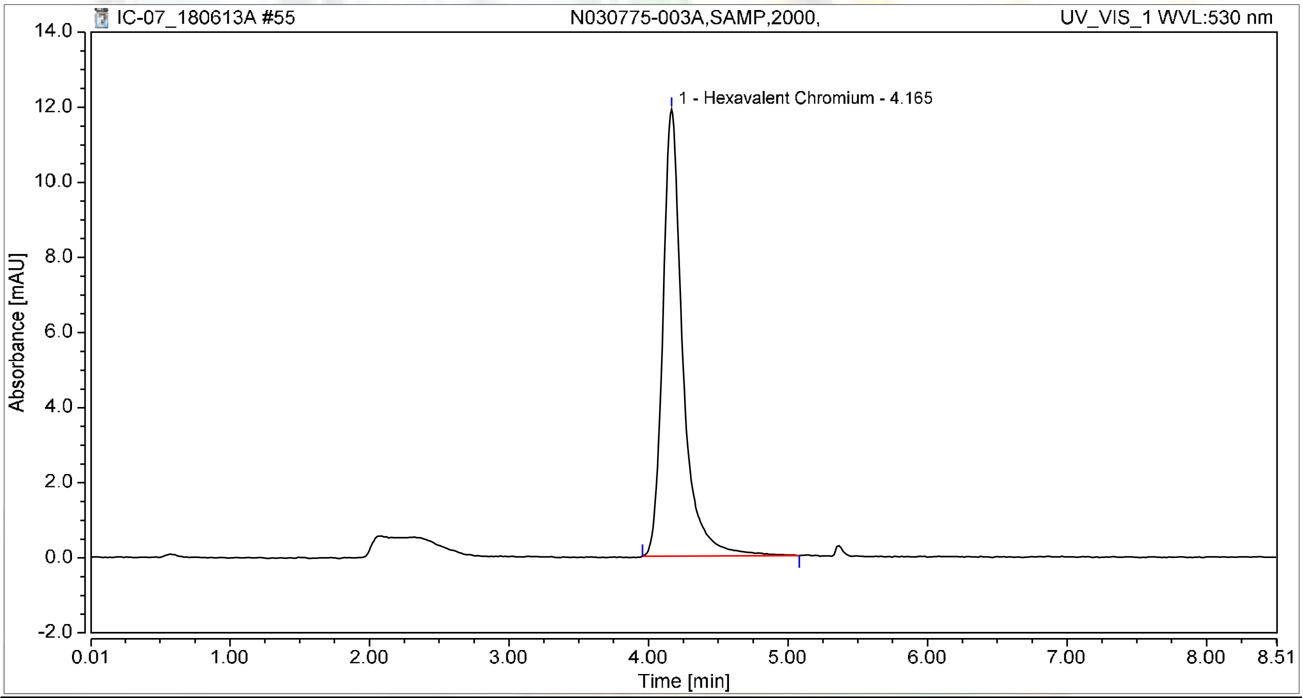
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.077	12.329	100.00	100.00	7.9816
Total:			**2.077**	**12.329**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030775-003A,SAMP,2000,**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 16:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

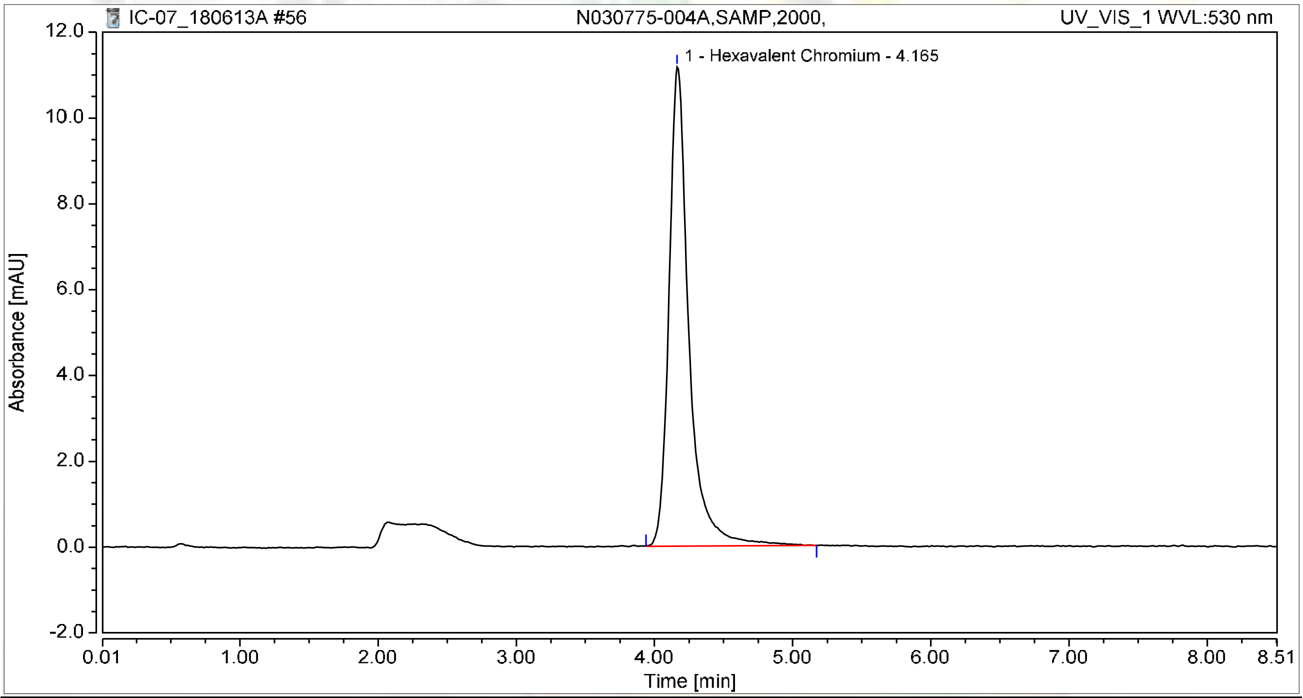
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.971	11.895	100.00	100.00	7.5755
Total:			**1.971**	**11.895**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030775-004A,SAMP,2000,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 16:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

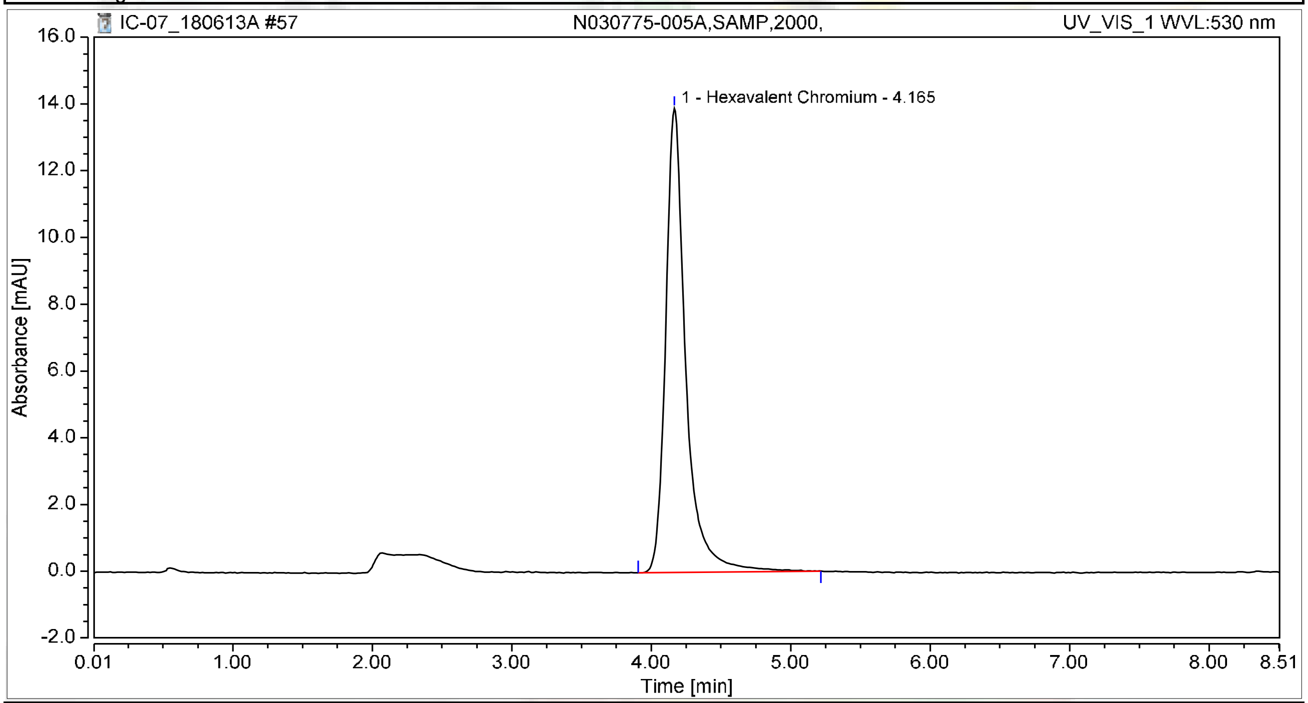
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.865	11.170	100.00	100.00	7.1694
Total:			**1.865**	**11.170**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030775-005A,SAMP,2000,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 17:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

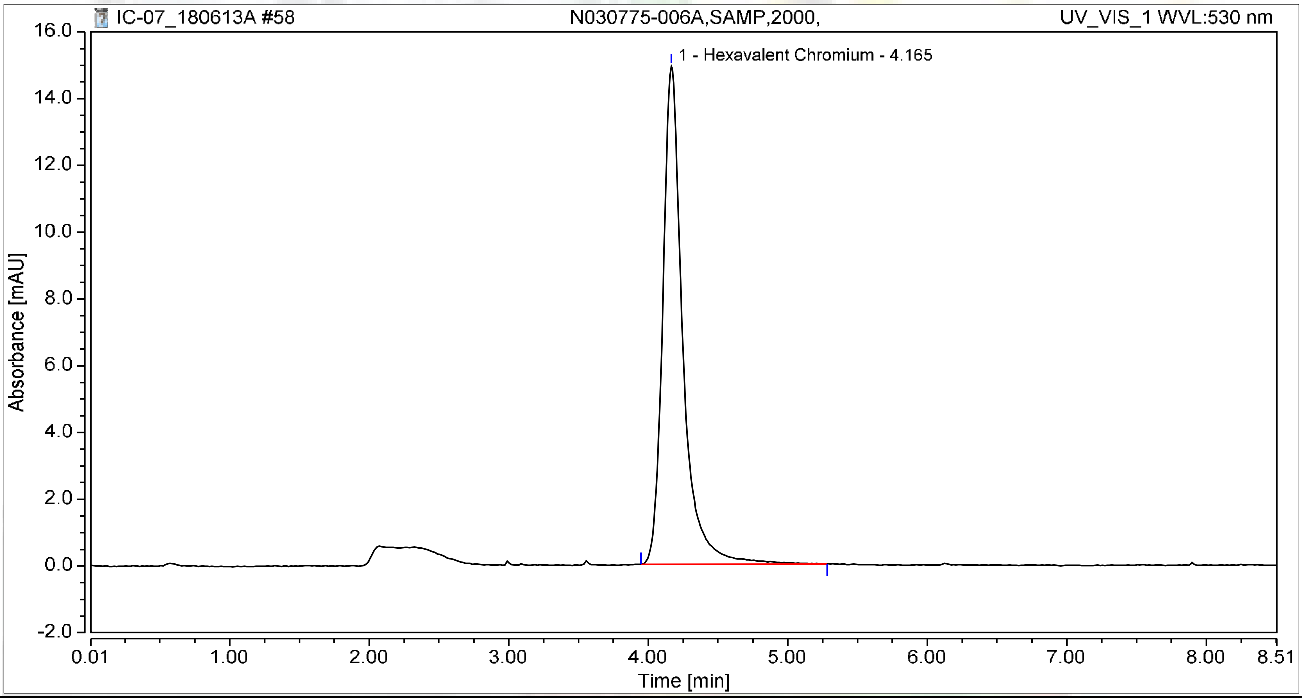
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.324	13.906	100.00	100.00	8.9338
Total:			**2.324**	**13.906**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030775-006A,SAMP,2000,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 17:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

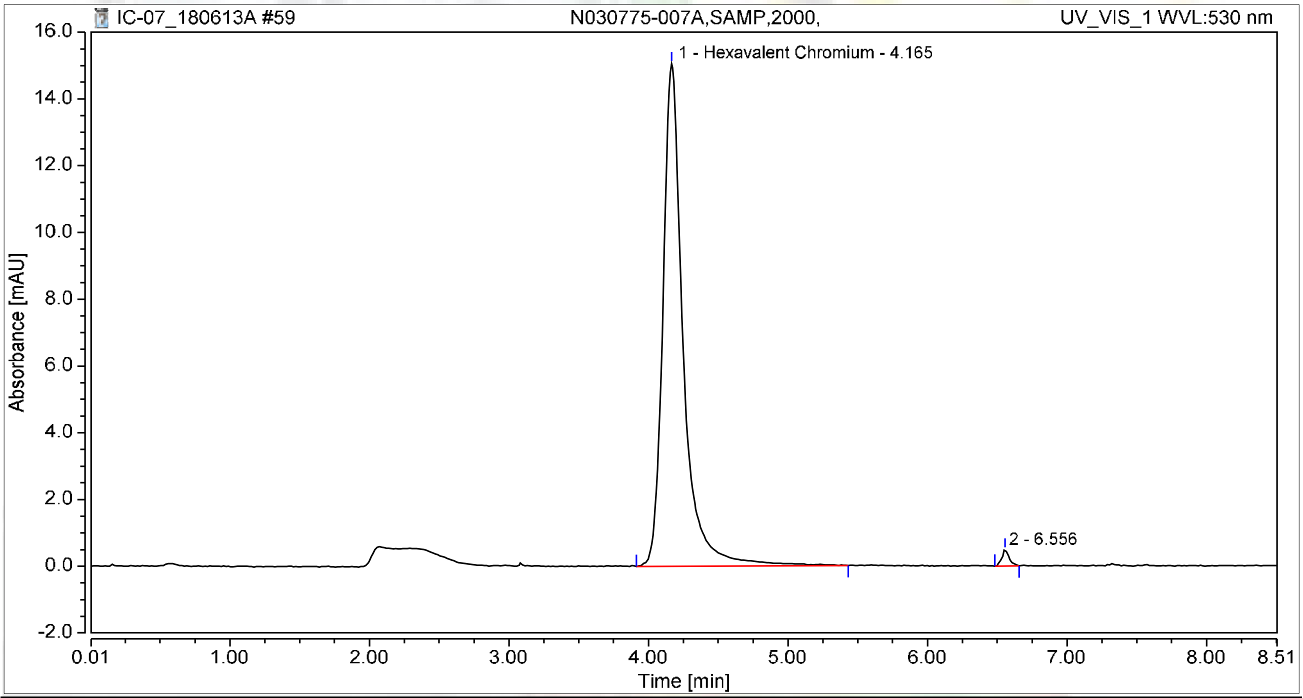
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.491	14.926	100.00	100.00	9.5745
Total:			**2.491**	**14.926**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030775-007A,SAMP,2000,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 17:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

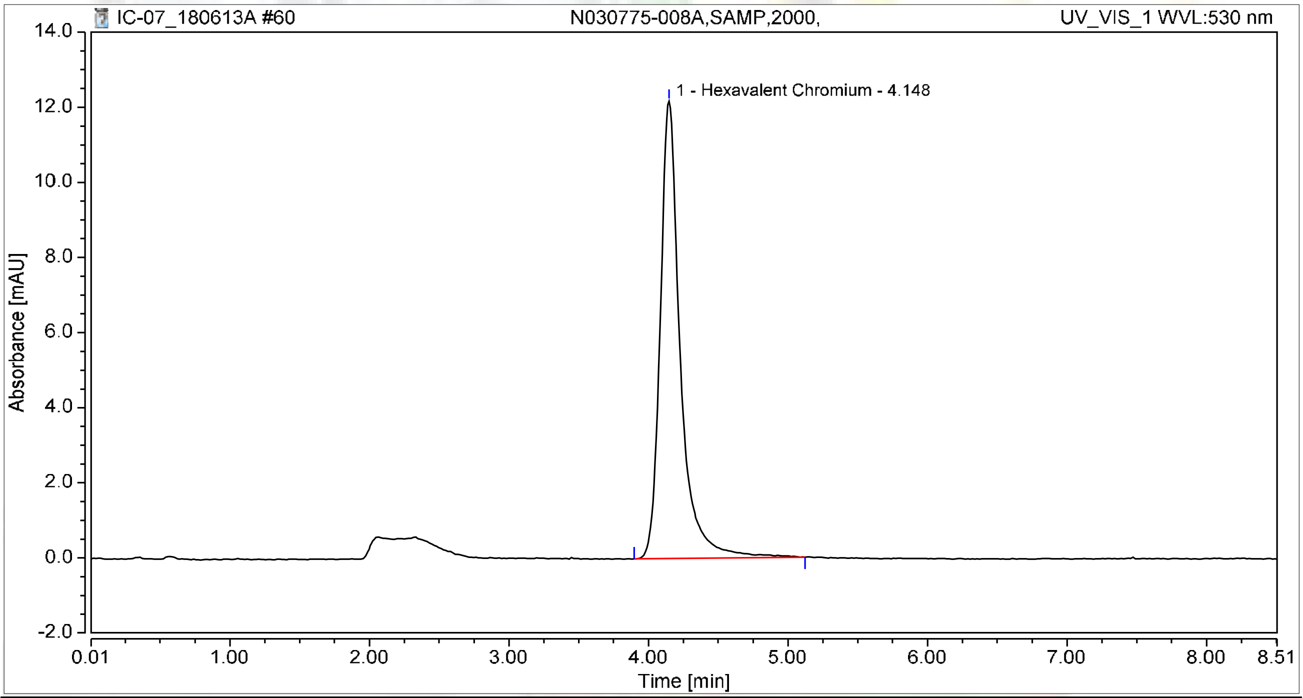
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.531	15.050	98.89	96.96	9.7278
2		6.556	0.028	0.472	1.11	3.04	n.a.
Total:			**2.559**	**15.523**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030775-008A,SAMP,2000,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 17:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

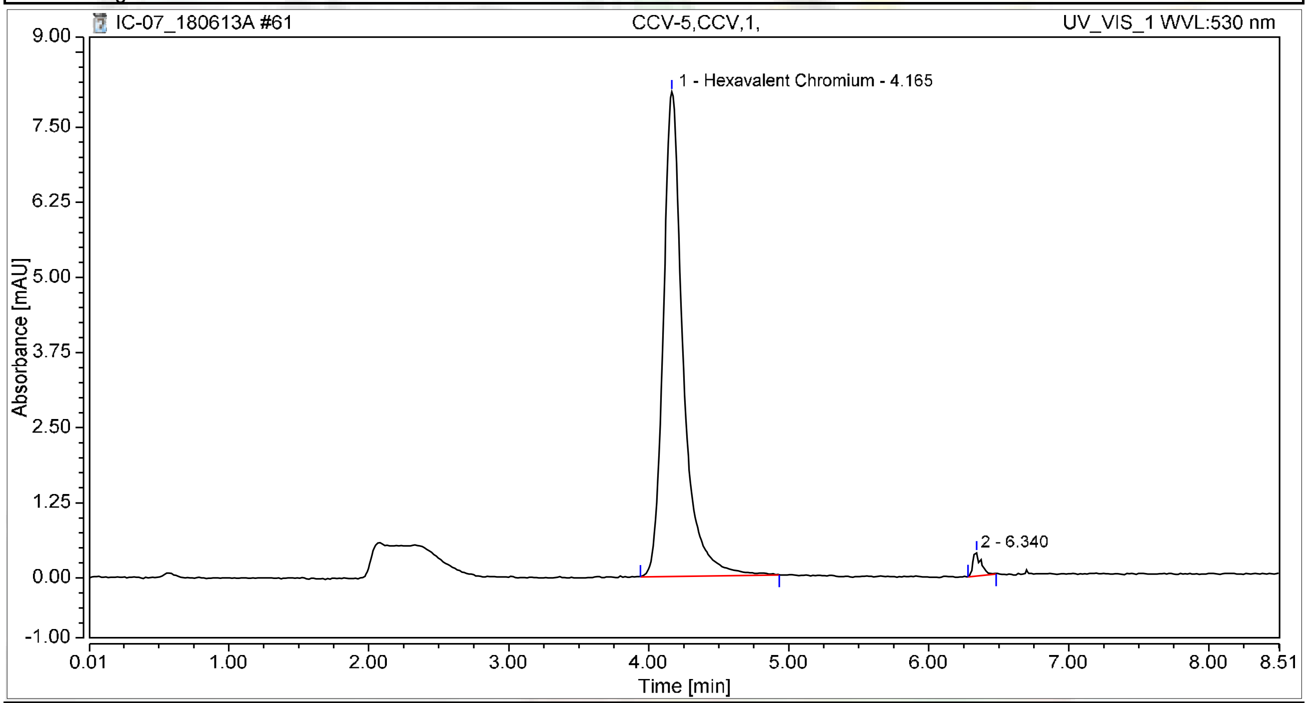
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	2.030	12.174	100.00	100.00	7.8027
Total:			**2.030**	**12.174**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 17:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

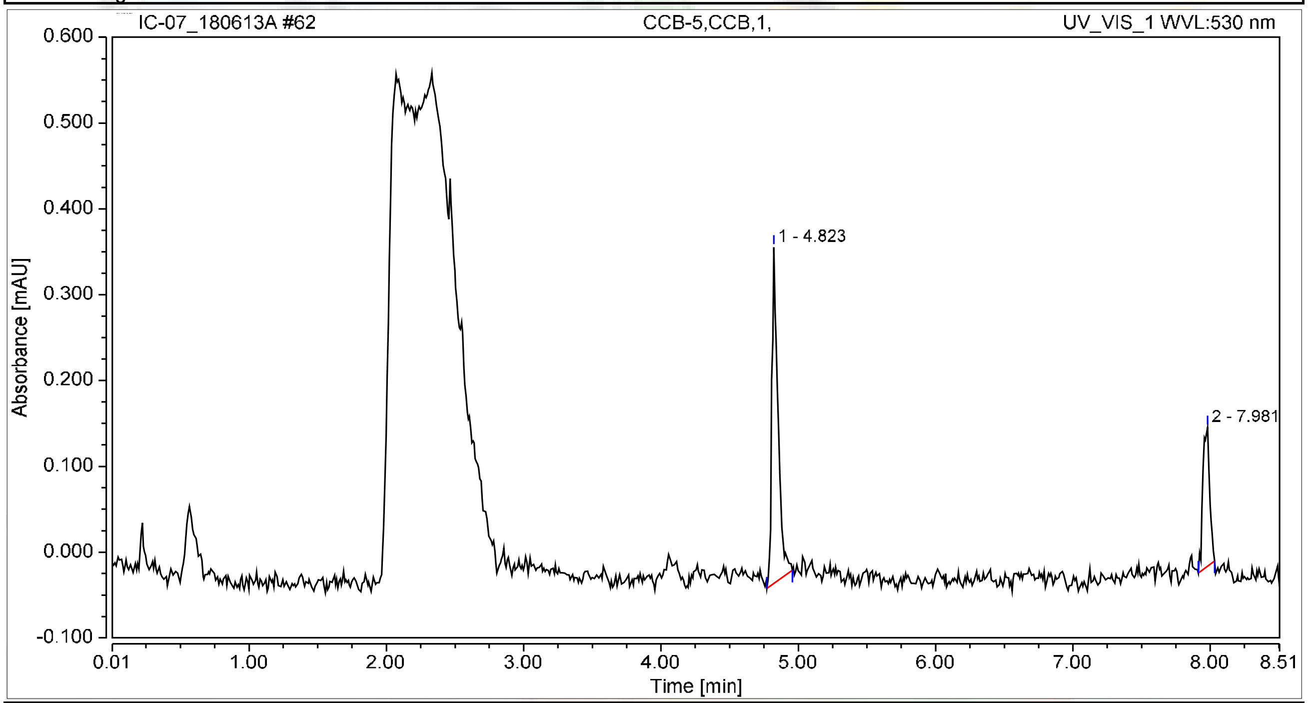
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.329	8.067	97.98	95.43	5.1084
2		6.340	0.027	0.386	2.02	4.57	n.a.
Total:			**1.357**	**8.453**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 17:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

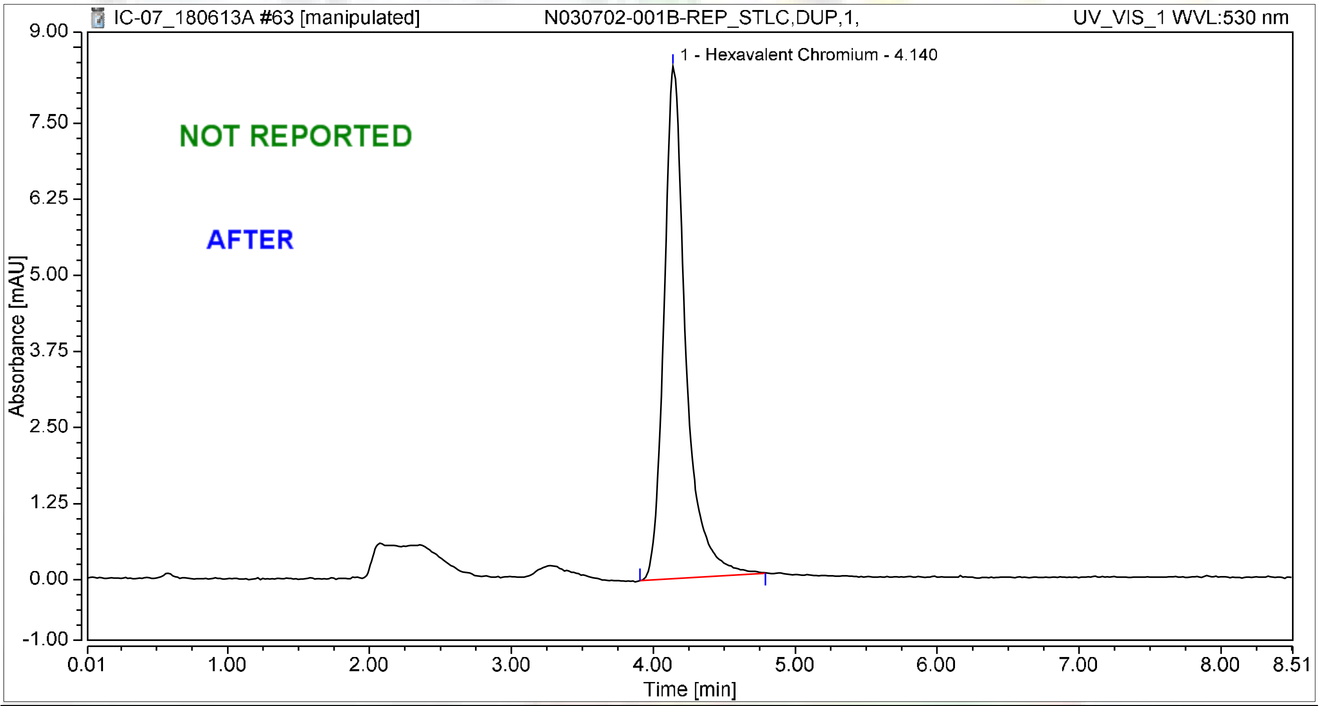
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		4.823	0.021	0.392	68.87	70.82	n.a.
2		7.981	0.009	0.161	31.13	29.18	n.a.
Total:			**0.030**	**0.553**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030702-001B-REP_STLC,DUP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 18:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.508	8.426	100.00	100.00	5.7951
Total:			**1.508**	**8.426**	**100.00**	**100.00**	

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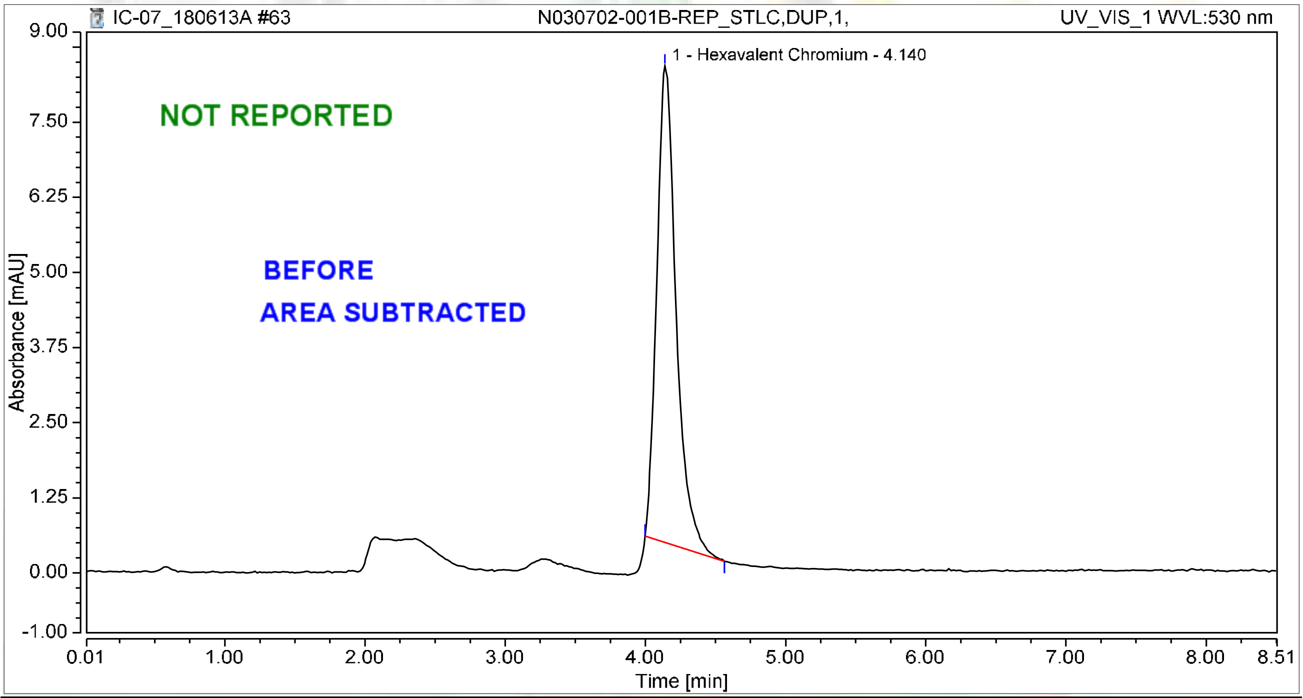
Chromatogram and Results

Injection Details

Injection Name:	**N030702-001B-REP_STLC,DUP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 18:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.272	7.935	100.00	100.00	4.8897
Total:			**1.272**	**7.935**	**100.00**	**100.00**	

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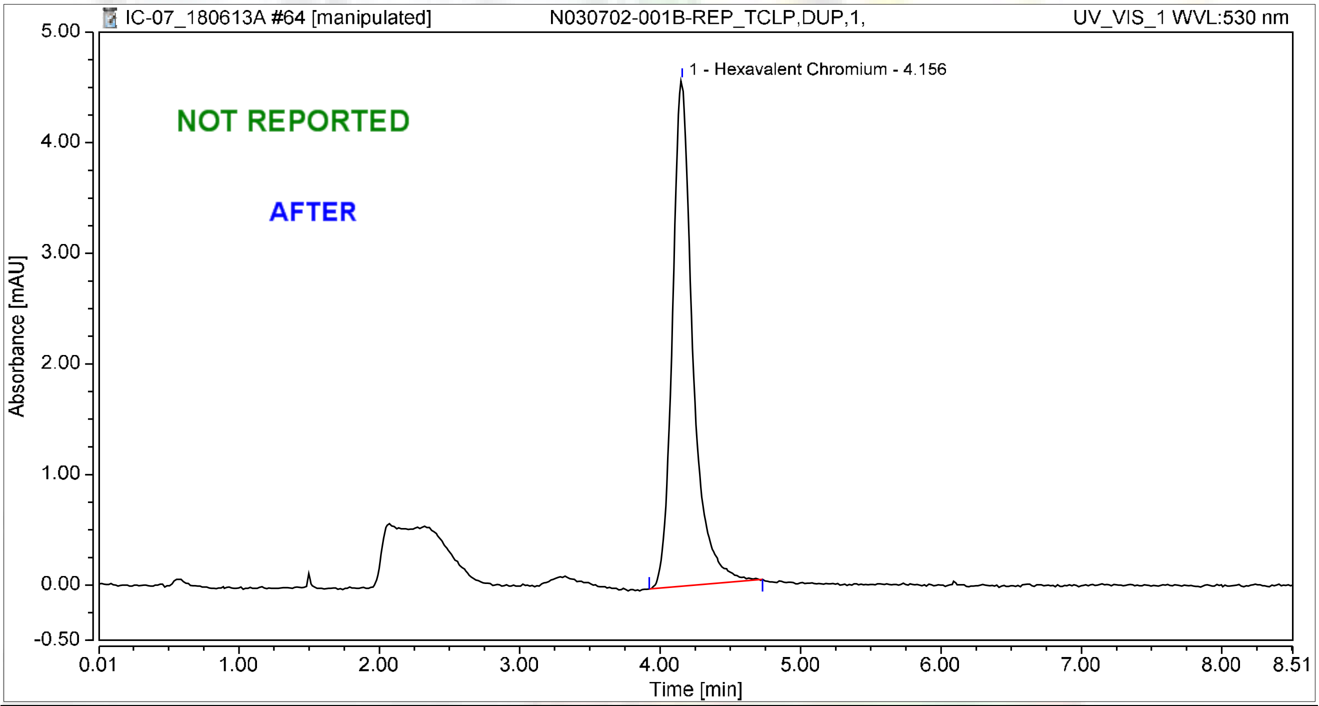
Chromatogram and Results

Injection Details

Injection Name:	**N030702-001B-REP_TCLP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 18:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.772	4.575	100.00	100.00	2.9662
Total:			**0.772**	**4.575**	**100.00**	**100.00**	

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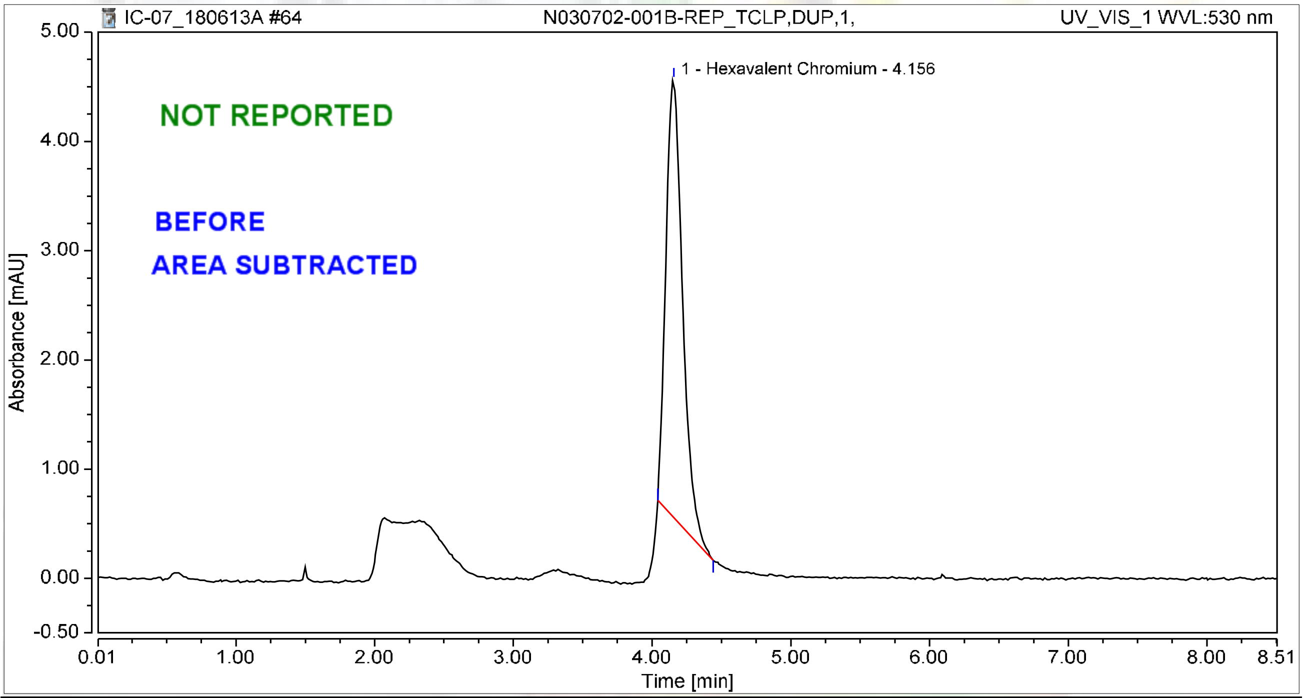
Chromatogram and Results

Injection Details

Injection Name:	**N030702-001B-REP_TCLP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 18:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.560	4.009	100.00	100.00	2.1522
Total:			**0.560**	**4.009**	**100.00**	**100.00**	

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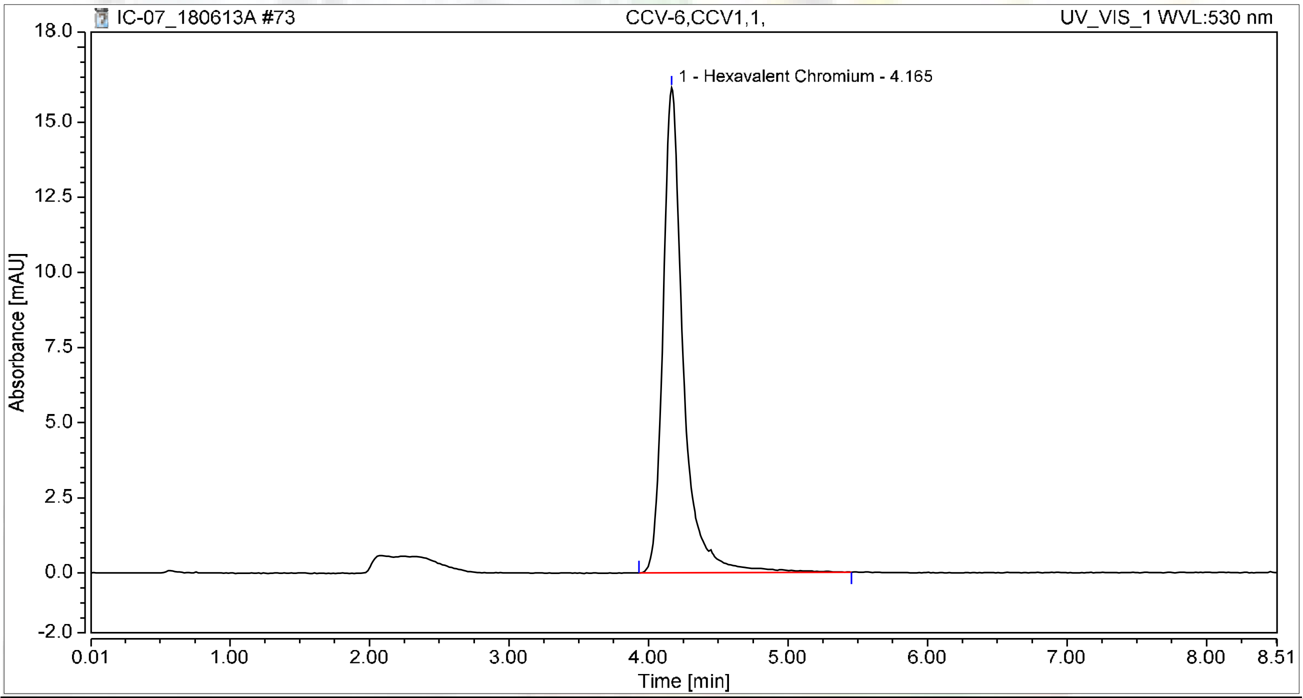
Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 19:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

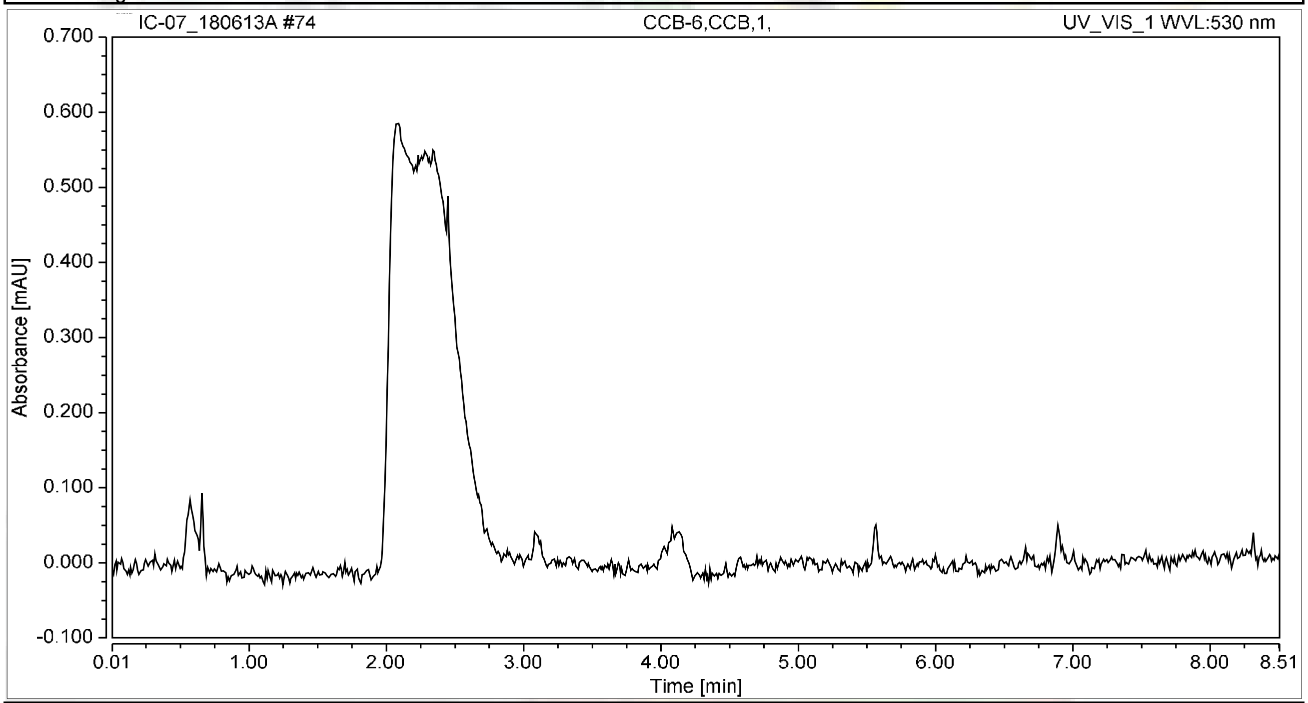
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.716	16.145	100.00	100.00	10.4381
Total:			**2.716**	**16.145**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 19:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

IC-07 RBA 6/14/2018 1:26:52 PM

RAW DATA

INJECTION LOG: 180613A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/21/18 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/21/18 9:52 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:11 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:30 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	06/13/18 9:17 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	06/13/18 9:28 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	06/13/18 9:38 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	06/13/18 9:47 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	06/13/18 9:57 AM	Reported
15	MB-R124635	MBLK	1	Hexavalent Chromium	06/13/18 10:06 AM	Reported
16	LCS-R124635	LCS	1	Hexavalent Chromium	06/13/18 10:16 AM	Reported
17	LCS-~~H2O~~ R124635	LCS	1	Hexavalent Chromium	06/13/18 10:40 AM	Not Reported
18	N030762-001A	SAMP	1	Hexavalent Chromium	06/13/18 10:52 AM	Reported
19	N030762-001AMS	MS	1	Hexavalent Chromium	06/13/18 11:01 AM	Reported
20	N030762-002A	SAMP	1	Hexavalent Chromium	06/13/18 11:11 AM	Reported
21	N030762-002AMS	MS	1	Hexavalent Chromium	06/13/18 11:20 AM	Not Reported
22	N030762-003A	SAMP	1	Hexavalent Chromium	06/13/18 11:30 AM	Reported
23	N030762-003AMS	MS	1	Hexavalent Chromium	06/13/18 11:39 AM	Reported
24	N030762-003AMSD	MSD	1	Hexavalent Chromium	06/13/18 11:49 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	06/13/18 11:58 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	06/13/18 12:07 PM	Reported
27	N030762-004A	SAMP	1	Hexavalent Chromium	06/13/18 12:17 PM	Reported
28	N030762-004AMS	MS	1	Hexavalent Chromium	06/13/18 12:26 PM	Not Reported
29	N030762-005A	SAMP	1	Hexavalent Chromium	06/13/18 12:36 PM	Reported
30	N030762-005AMS	MS	1	Hexavalent Chromium	06/13/18 12:45 PM	Reported
31	N030762-006A	SAMP	1	Hexavalent Chromium	06/13/18 12:55 PM	Reported
32	N030762-006AMS	MS	1	Hexavalent Chromium	06/13/18 1:04 PM	Reported
33	N030762-007A	SAMP	1	Hexavalent Chromium	06/13/18 1:14 PM	Reported
34	N030762-007AMS	MS	1	Hexavalent Chromium	06/13/18 1:23 PM	Not Reported
35	MB-68409_STLC	MBLK	1	Hexavalent Chromium	06/13/18 1:33 PM	Not Reported
36	MB-68426_TCLP	MBLK	1	Hexavalent Chromium	06/13/18 1:42 PM	Not Reported
37	CCV-3	CCV	1	Hexavalent Chromium	06/13/18 1:52 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	06/13/18 2:01 PM	Reported
39	N030702-001B_STLC	SAMP	1	Hexavalent Chromium	06/13/18 2:10 PM	Not Reported
40	N030702-001B_TCLP	SAMP	1	Hexavalent Chromium	06/13/18 2:20 PM	Not Reported
41	N030762-002AMS	MS	1	Hexavalent Chromium	06/13/18 2:29 PM	Reported
42	N030762-004AMS	MS	1	Hexavalent Chromium	06/13/18 2:39 PM	Reported
43	N030762-008A	SAMP	1	Hexavalent Chromium	06/13/18 2:48 PM	Reported
44	N030762-008AMS	MS	1	Hexavalent Chromium	06/13/18 2:58 PM	Reported
45	N030762-009A	SAMP	1	Hexavalent Chromium	06/13/18 3:07 PM	Reported
46	N030762-009AMS	MS	1	Hexavalent Chromium	06/13/18 3:17 PM	Reported

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INJECTION LOG: 180613A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
47	N030762-010A	SAMP	1	Hexavalent Chromium	06/13/18 3:26 PM	Reported
48	N030762-010AMS	MS	1	Hexavalent Chromium	06/13/18 3:36 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	06/13/18 3:45 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	06/13/18 3:55 PM	Reported
51	N030762-007AMS	MS	1	Hexavalent Chromium	06/13/18 4:04 PM	Reported
52	N030775-001A	SAMP	2000	Hexavalent Chromium	06/13/18 4:13 PM	Reported
53	N030775-001ADUP	DUP	2000	Hexavalent Chromium	06/13/18 4:23 PM	Reported
54	N030775-002A	SAMP	2000	Hexavalent Chromium	06/13/18 4:34 PM	Reported
55	N030775-003A	SAMP	2000	Hexavalent Chromium	06/13/18 4:45 PM	Reported
56	N030775-004A	SAMP	2000	Hexavalent Chromium	06/13/18 4:54 PM	Reported
57	N030775-005A	SAMP	2000	Hexavalent Chromium	06/13/18 5:04 PM	Reported
58	N030775-006A	SAMP	2000	Hexavalent Chromium	06/13/18 5:13 PM	Reported
59	N030775-007A	SAMP	2000	Hexavalent Chromium	06/13/18 5:23 PM	Reported
60	N030775-008A	SAMP	2000	Hexavalent Chromium	06/13/18 5:32 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	06/13/18 5:42 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	06/13/18 5:51 PM	Reported
63	N030702-001B-REP_STLC	DUP	1	Hexavalent Chromium	06/13/18 6:01 PM	Not Reported
64	N030702-001B-REP_TCLP	DUP	1	Hexavalent Chromium	06/13/18 6:10 PM	Not Reported
65	LCS-R124636	LCS	1	Hexavalent Chromium	06/13/18 6:20 PM	Reported
66	MB-R124636	MBLK	1	Hexavalent Chromium	06/13/18 6:29 PM	Reported
67	N030762-012A	SAMP	1	Hexavalent Chromium	06/13/18 6:38 PM	Reported
68	N030762-012AMS	MS	1	Hexavalent Chromium	06/13/18 6:48 PM	Reported
69	N030762-012AMSD	MSD	1	Hexavalent Chromium	06/13/18 6:57 PM	Reported
70	N030762-013A	SAMP	1	Hexavalent Chromium	06/13/18 7:07 PM	Reported
71	N030762-013ADUP	DUP	1	Hexavalent Chromium	06/13/18 7:16 PM	Reported
72	N030762-013AMS	MS	1	Hexavalent Chromium	06/13/18 7:26 PM	Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	06/13/18 7:35 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	06/13/18 7:45 PM	Reported
75	N030762-011A	SAMP	1	Hexavalent Chromium	06/13/18 7:54 PM	Reported
76	N030762-011AMS	MS	1	Hexavalent Chromium	06/13/18 8:04 PM	Reported
77	N030762-014A	SAMP	1	Hexavalent Chromium	06/13/18 8:13 PM	Reported
78	N030762-014AMS	MS	1	Hexavalent Chromium	06/13/18 8:23 PM	Reported
79	N030762-015A	SAMP	1	Hexavalent Chromium	06/13/18 8:32 PM	Reported
80	N030762-015AMS	MS	1	Hexavalent Chromium	06/13/18 8:41 PM	Reported
81	N030762-016A	SAMP	1	Hexavalent Chromium	06/13/18 8:51 PM	Reported
82	N030762-016AMS	MS	1	Hexavalent Chromium	06/13/18 9:00 PM	Reported
83	N030762-017A	SAMP	1	Hexavalent Chromium	06/13/18 9:10 PM	Reported
84	N030762-017AMS	MS	1	Hexavalent Chromium	06/13/18 9:19 PM	Reported
85	CCV-7	CCV	1	Hexavalent Chromium	06/13/18 9:29 PM	Reported
86	CCB-7	CCB	1	Hexavalent Chromium	06/13/18 9:38 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180613A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**13/Jun/18 22:09:00**
No. of Injections:	**89**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/21/2018 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		05/21/2018 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/21/2018 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/21/2018 09:52	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/21/2018 10:01	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/21/2018 10:11	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/21/2018 10:20	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/21/2018 10:30	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/21/2018 10:39	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		06/13/2018 09:17	Finished	20 ppb, IWST-180129A
11	BLANK	2	1000	Unknown		06/13/2018 09:28	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		06/13/2018 09:38	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		06/13/2018 09:47	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		06/13/2018 09:57	Finished	CCB R180531A
15	MB-H2O,MBLK,1,	6	1000	Unknown		06/13/2018 10:06	Finished	MB R180531A
16	LCS-H2O,LCS,1,	7	1000	Unknown		06/13/2018 10:16	Finished	LCS, IWST-180129B
17	LCS-H2O,LCS,1,	9	1000	Unknown		06/13/2018 10:40	Finished	LCS, IWST-180129B
18	N030762-001A,SAMF	10	1000	Unknown		06/13/2018 10:52	Finished	SAMP,10mL
19	N030762-001AMS,MS	11	1000	Unknown		06/13/2018 11:01	Finished	MS (1ppb), IWST-180129B,10
20	N030762-002A,SAMF	12	1000	Unknown		06/13/2018 11:11	Finished	SAMP,10mL
21	N030762-002AMS,MS	13	1000	Unknown		06/13/2018 11:20	Finished	MS (1ppb), IWST-180129B,10
22	N030762-003A,SAMF	14	1000	Unknown		06/13/2018 11:30	Finished	SAMP,10mL
23	N030762-003AMS,MS	15	1000	Unknown		06/13/2018 11:39	Finished	MS (1ppb), IWST-180129B,10
24	N030762-003AMSD,M	16	1000	Unknown		06/13/2018 11:49	Finished	MSD (1ppb), IWST-180129B,1(
25	CCV-2,CCV1,1,	17	1000	Unknown		06/13/2018 11:58	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	18	1000	Unknown		06/13/2018 12:07	Finished	CCB R180531A
27	N030762-004A,SAMF	19	1000	Unknown		06/13/2018 12:17	Finished	SAMP,10mL
28	N030762-004AMS,MS	20	1000	Unknown		06/13/2018 12:26	Finished	MS (1ppb), IWST-180129B,10
29	N030762-005A,SAMF	21	1000	Unknown		06/13/2018 12:36	Finished	SAMP,10mL
30	N030762-005AMS,MS	22	1000	Unknown		06/13/2018 12:45	Finished	MS (1ppb), IWST-180129B,10
31	N030762-006A,SAMF	23	1000	Unknown		06/13/2018 12:55	Finished	SAMP,10mL
32	N030762-006AMS,MS	24	1000	Unknown		06/13/2018 13:04	Finished	MS (1ppb), IWST-180129B,10
33	N030762-007A,SAMF	25	1000	Unknown		06/13/2018 13:14	Finished	SAMP,10mL
34	N030762-007AMS,MS	26	1000	Unknown		06/13/2018 13:23	Finished	MS (1ppb), IWST-180129B,10
35	MB-68409_STLC,MB	27	1000	Unknown		06/13/2018 13:33	Finished	MB_STLC R180531A
36	MB-68426_TCLP,MB	28	1000	Unknown		06/13/2018 13:42	Finished	MB_TCLP R180531A
37	CCV-3,CCV,1,	29	1000	Unknown		06/13/2018 13:52	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	30	1000	Unknown		06/13/2018 14:01	Finished	CCB R180531A
39	N030702-001B_STLC	31	1000	Unknown		06/13/2018 14:10	Finished	SAMP_STLC,10mL
40	N030702-001B_TCLF	32	1000	Unknown		06/13/2018 14:20	Finished	SAMP_TCLP,10mL
41	N030762-002AMS,MS	33	1000	Unknown		06/13/2018 14:29	Finished	MS (1ppb), IWST-180129B,10
42	N030762-004AMS,MS	34	1000	Unknown		06/13/2018 14:39	Finished	MS (1ppb), IWST-180129B,10
43	N030762-008A,SAMF	35	1000	Unknown		06/13/2018 14:48	Finished	SAMP,10mL
44	N030762-008AMS,MS	36	1000	Unknown		06/13/2018 14:58	Finished	MS (1ppb), IWST-180129B,10
45	N030762-009A,SAMF	37	1000	Unknown		06/13/2018 15:07	Finished	SAMP,10mL
46	N030762-009AMS,MS	38	1000	Unknown		06/13/2018 15:17	Finished	MS (1ppb), IWST-180129B,10
47	N030762-010A,SAMF	39	1000	Unknown		06/13/2018 15:26	Finished	SAMP,10mL
48	N030762-010AMS,MS	40	1000	Unknown		06/13/2018 15:36	Finished	MS (1ppb), IWST-180129B,10
49	CCV-4,CCV1,1,	41	1000	Unknown		06/13/2018 15:45	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	42	1000	Unknown		06/13/2018 15:55	Finished	CCB R180531A
51	N030762-007AMS,MS	43	1000	Unknown		06/13/2018 16:04	Finished	MS (1ppb), IWST-180129B,10
52	N030775-001A,SAMF	44	1000	Unknown		06/13/2018 16:13	Finished	SAMP,0.005>10mL
53	N030775-001ADUP,D	45	1000	Unknown		06/13/2018 16:23	Finished	DUP,0.005>10mL
54	N030775-002A,SAMF	1	1000	Unknown		06/13/2018 16:34	Finished	SAMP,0.005>10mL
55	N030775-003A,SAMF	2	1000	Unknown		06/13/2018 16:45	Finished	SAMP,0.005>10mL
56	N030775-004A,SAMF	3	1000	Unknown		06/13/2018 16:54	Finished	SAMP,0.005>10mL
57	N030775-005A,SAMF	4	1000	Unknown		06/13/2018 17:04	Finished	SAMP,0.005>10mL
58	N030775-006A,SAMF	5	1000	Unknown		06/13/2018 17:13	Finished	SAMP,0.005>10mL
59	N030775-007A,SAMF	6	1000	Unknown		06/13/2018 17:23	Finished	SAMP,0.005>10mL
60	N030775-008A,SAMF	7	1000	Unknown		06/13/2018 17:32	Finished	SAMP,0.005>10mL

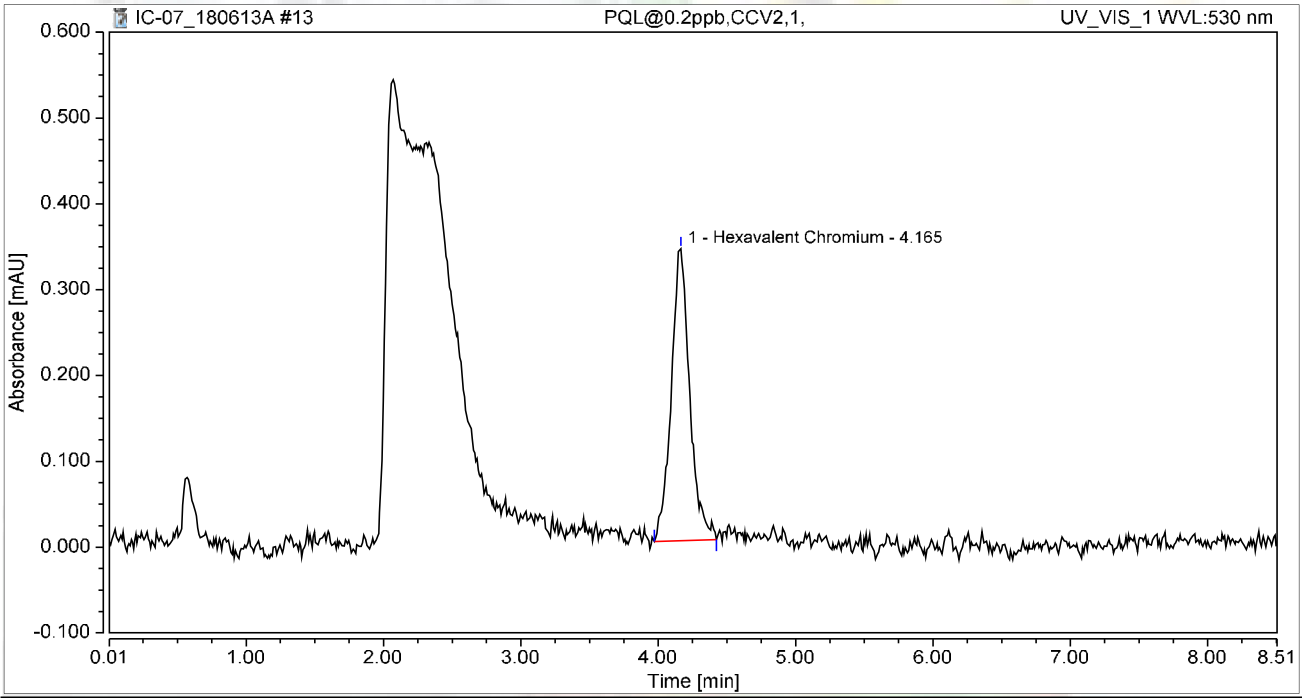
61	CCV-5,CCV,1,	8	1000	Unknown		06/13/2018 17:42	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	9	1000	Unknown		06/13/2018 17:51	Finished	CCB R180531A
63	N030702-001B-REP	10	1000	Unknown		06/13/2018 18:01	Finished	REP STLC,10mL
64	N030702-001B-REP	11	1000	Unknown		06/13/2018 18:10	Finished	REP TCLP,10mL
65	LCS-2,LCS,1,	12	1000	Unknown		06/13/2018 18:20	Finished	LCS, IWST-180129B
66	MB-2,MBLK,1,	13	1000	Unknown		06/13/2018 18:29	Finished	MB R180531A
67	N030762-012A,SAMP	14	1000	Unknown		06/13/2018 18:38	Finished	SAMP,10mL
68	N030762-012AMS,MS	15	1000	Unknown		06/13/2018 18:48	Finished	MS (1ppb), IWST-180129B,10
69	N030762-012AMSD,M	16	1000	Unknown		06/13/2018 18:57	Finished	MSD (1ppb), IWST-180129B,1
70	N030762-013A,SAMP	17	1000	Unknown		06/13/2018 19:07	Finished	SAMP,10mL
71	N030762-013ADUP,D	18	1000	Unknown		06/13/2018 19:16	Finished	DUP,10mL
72	N030762-013AMS,MS	19	1000	Unknown		06/13/2018 19:26	Finished	MS (1ppb), IWST-180129B,10
73	CCV-6,CCV1,1,	20	1000	Unknown		06/13/2018 19:35	Finished	CCV @10ppb, IWST-180129A
74	CCB-6,CCB,1,	21	1000	Unknown		06/13/2018 19:45	Finished	CCB R180531A
75	N030762-011A,SAMP	22	1000	Unknown		06/13/2018 19:54	Finished	SAMP,10mL
76	N030762-011AMS,MS	23	1000	Unknown		06/13/2018 20:04	Finished	MS (1ppb), IWST-180129B,10
77	N030762-014A,SAMP	24	1000	Unknown		06/13/2018 20:13	Finished	SAMP,10mL
78	N030762-014AMS,MS	25	1000	Unknown		06/13/2018 20:23	Finished	MS (1ppb), IWST-180129B,10
79	N030762-015A,SAMP	26	1000	Unknown		06/13/2018 20:32	Finished	SAMP,10mL
80	N030762-015AMS,MS	27	1000	Unknown		06/13/2018 20:41	Finished	MS (1ppb), IWST-180129B,10
81	N030762-016A,SAMP	28	1000	Unknown		06/13/2018 20:51	Finished	SAMP,10mL
82	N030762-016AMS,MS	29	1000	Unknown		06/13/2018 21:00	Finished	MS (1ppb), IWST-180129B,10
83	N030762-017A,SAMP	30	1000	Unknown		06/13/2018 21:10	Finished	SAMP,10mL
84	N030762-017AMS,MS	31	1000	Unknown		06/13/2018 21:19	Finished	MS (1ppb), IWST-180129B,10
85	CCV-7,CCV,1,	32	1000	Unknown		06/13/2018 21:29	Finished	CCV @5ppb, IWST-180129A
86	CCB-7,CCB,1,	33	1000	Unknown		06/13/2018 21:38	Finished	CCB R180531A
87	SHUTDOWN	34	1000	Unknown		06/13/2018 21:48	Finished	
88	Eluent: R180612A	35	1000	Unknown		n.a.	Finished	Eluent
89	PCR: R180611A	36	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 09:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

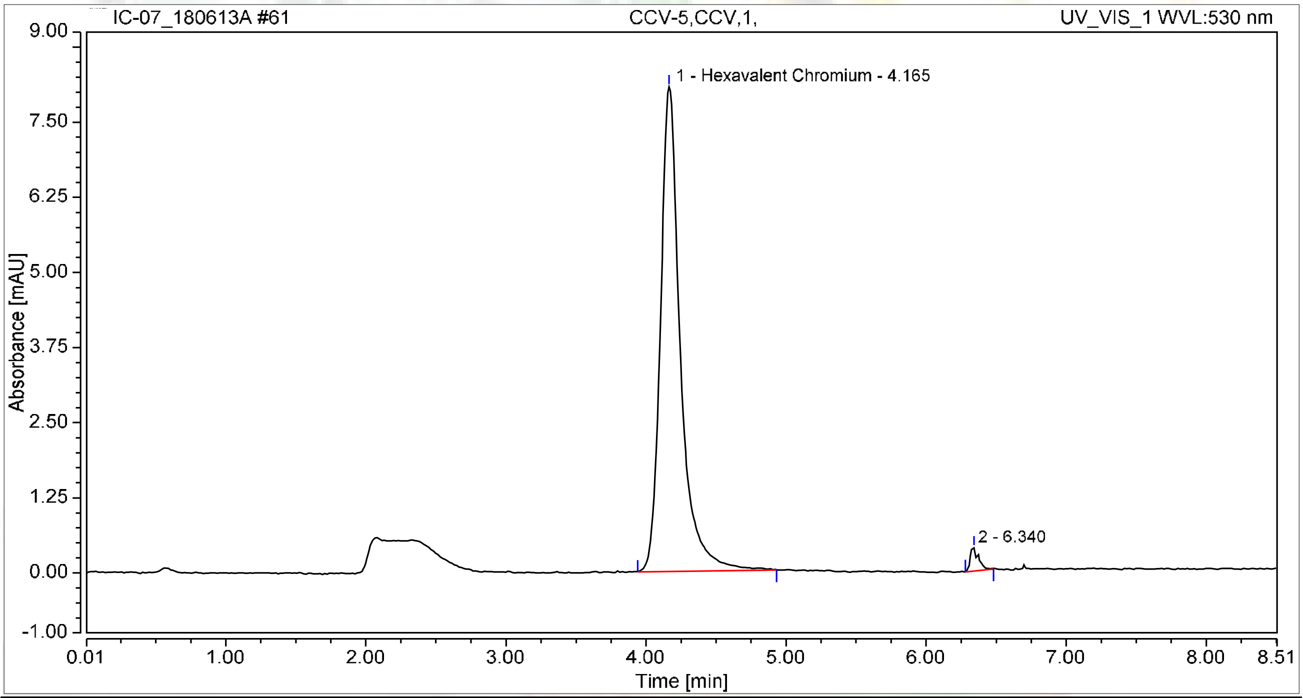
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.053	0.340	100.00	100.00	0.2040
Total:			**0.053**	**0.340**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 17:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

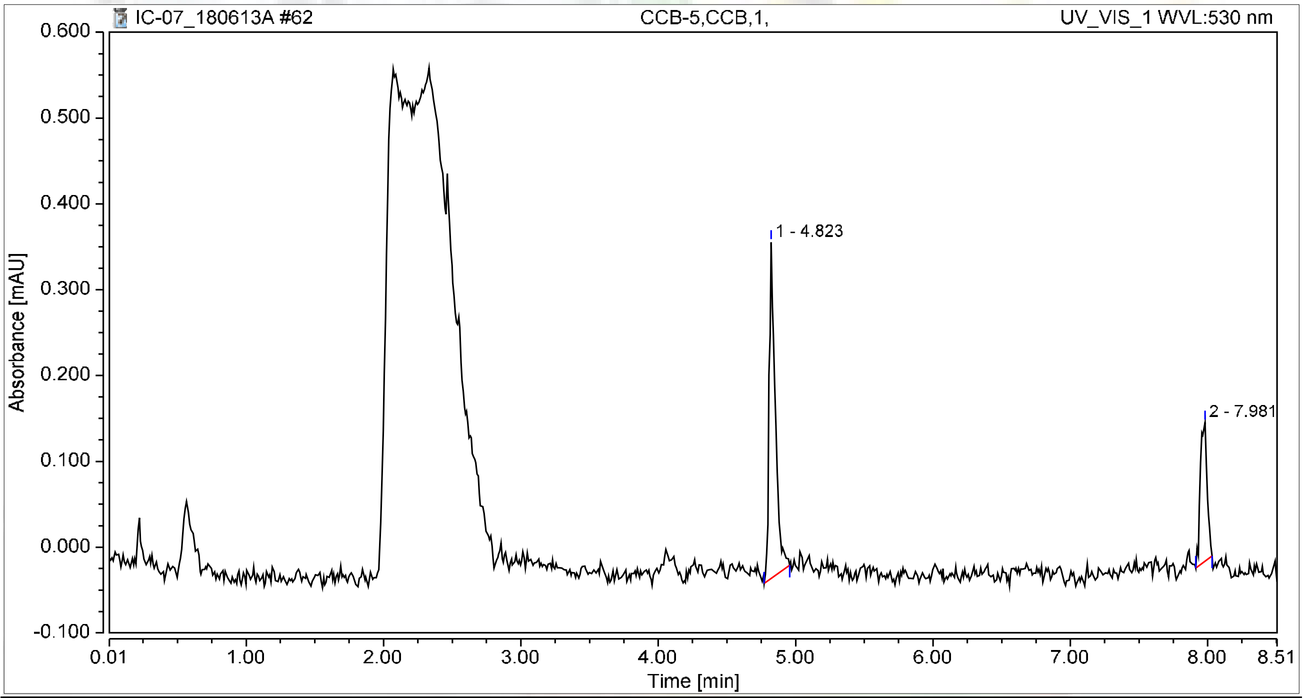
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.329	8.067	97.98	95.43	5.1084
2		6.340	0.027	0.386	2.02	4.57	n.a.
Total:			**1.357**	**8.453**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 17:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

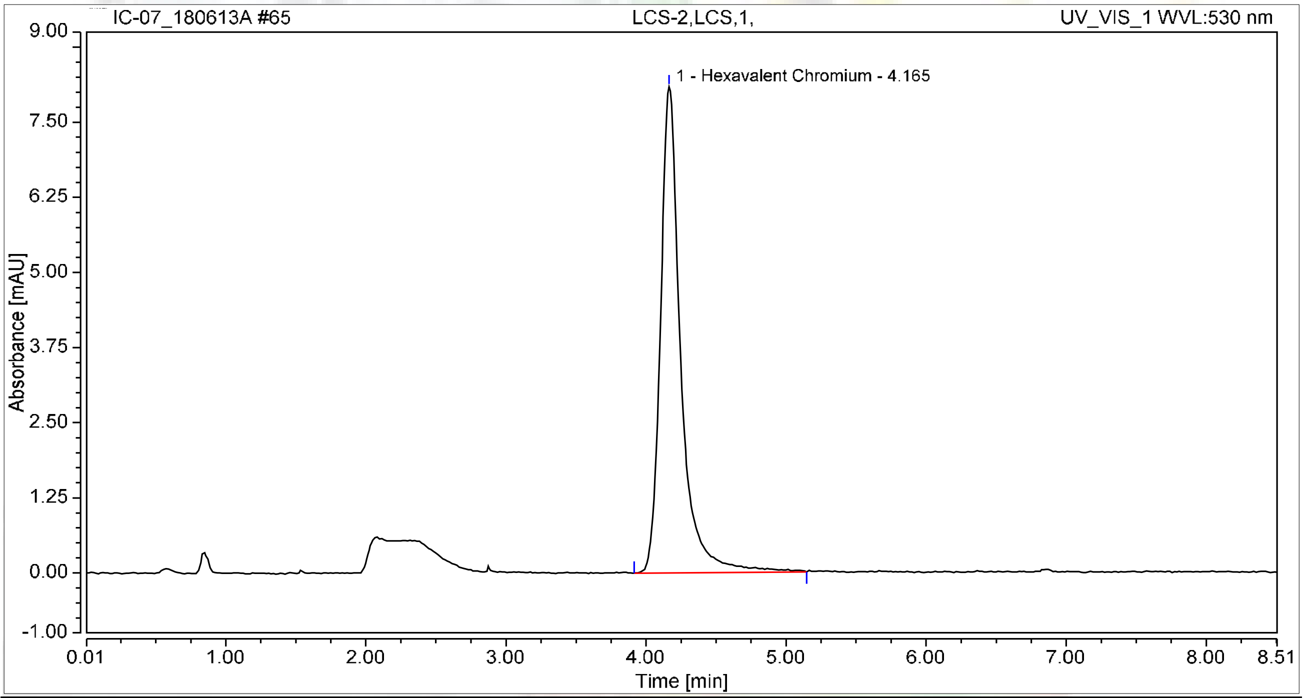
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		4.823	0.021	0.392	68.87	70.82	n.a.
2		7.981	0.009	0.161	31.13	29.18	n.a.
Total:			**0.030**	**0.553**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-2,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 18:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

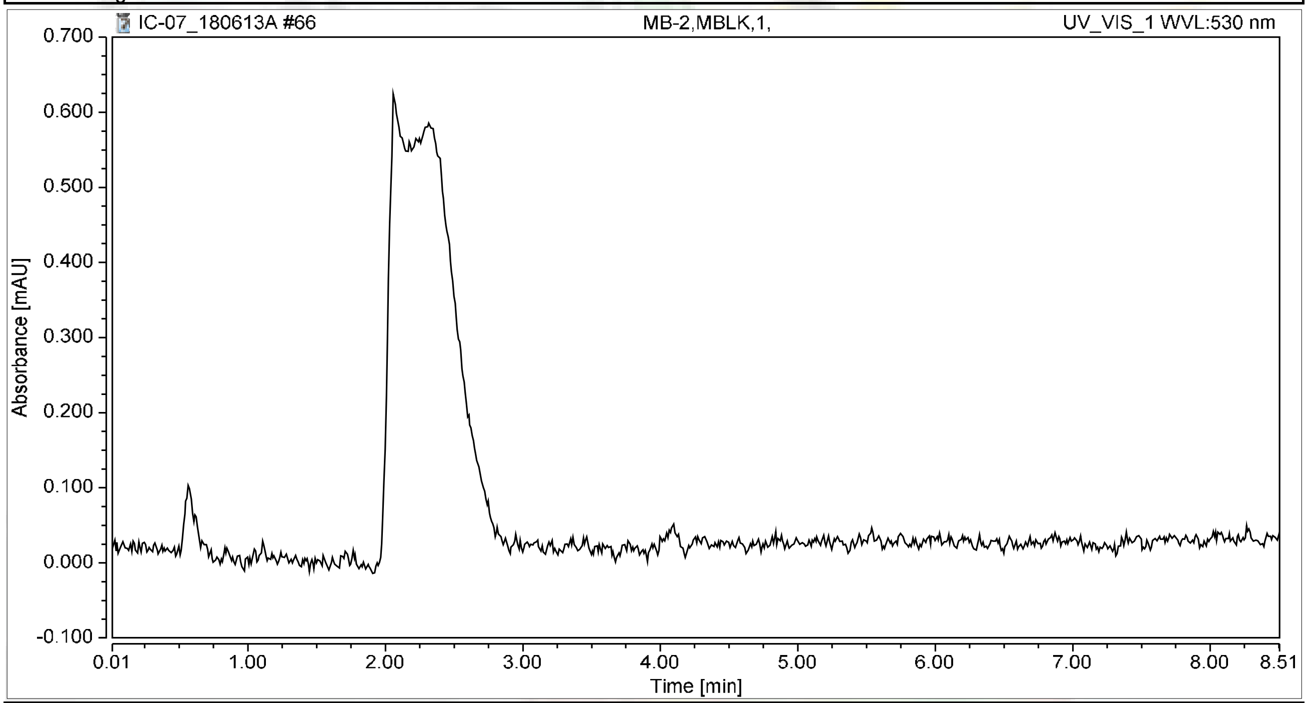
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.362	8.089	100.00	100.00	5.2333
Total:			**1.362**	**8.089**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-2,MBLK,1,**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 18:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

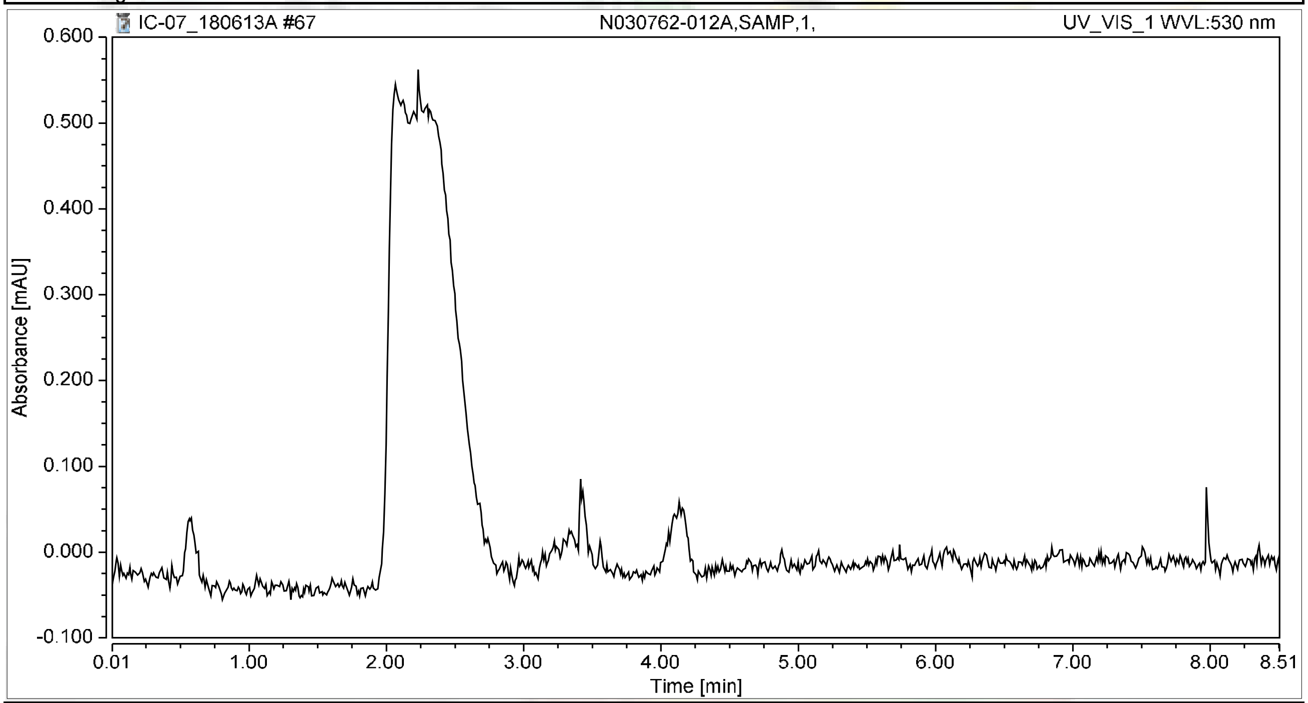
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-012A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 18:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

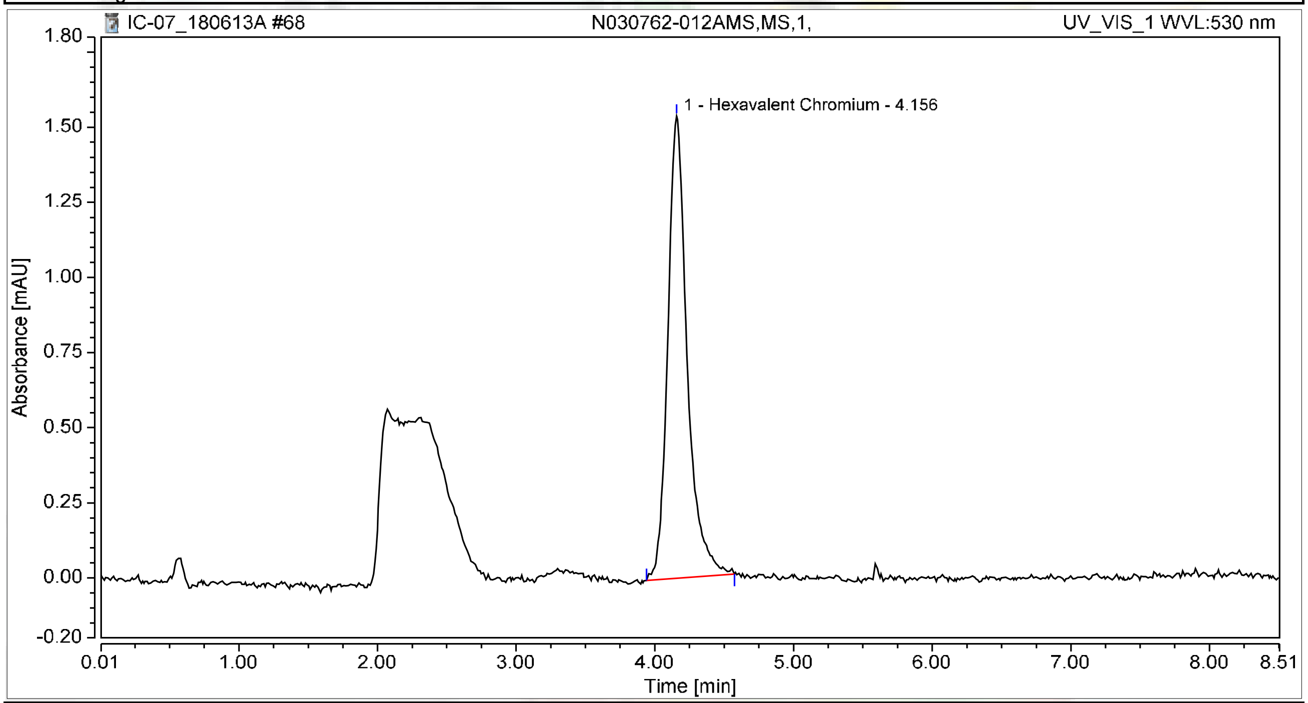
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 18:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

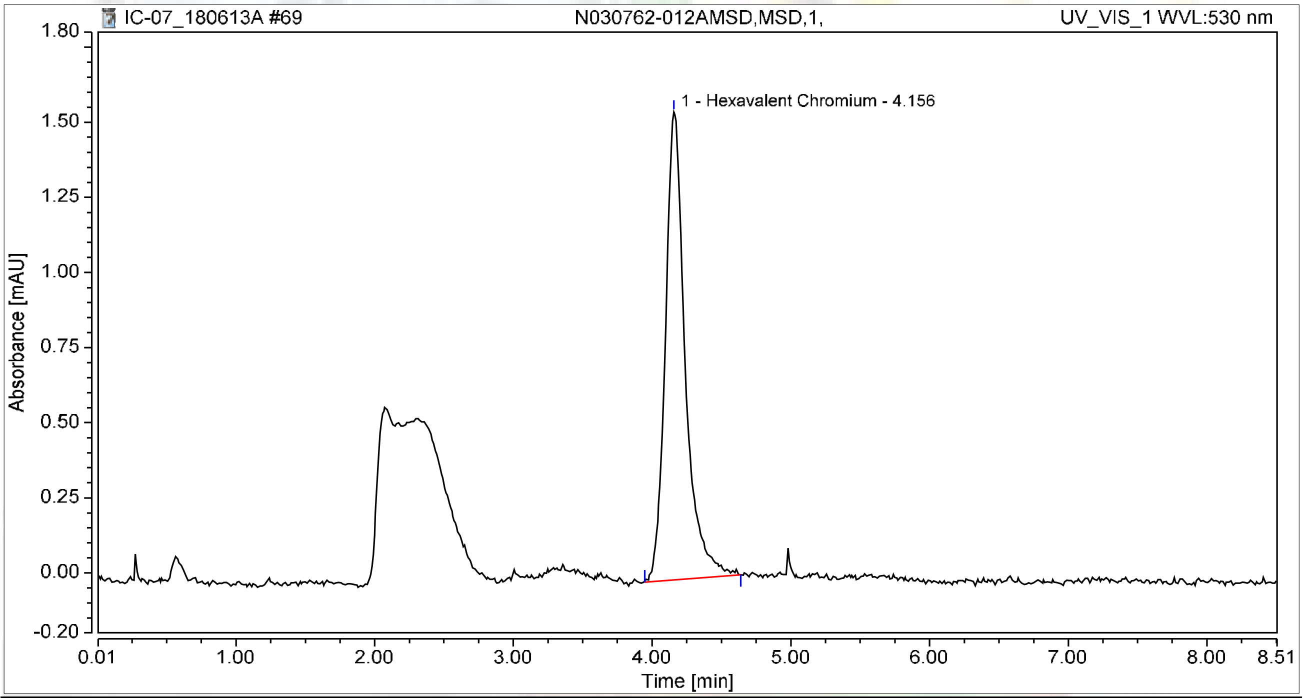
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.250	1.538	100.00	100.00	0.9597
Total:			**0.250**	**1.538**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-012AMSD,MSD,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 18:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

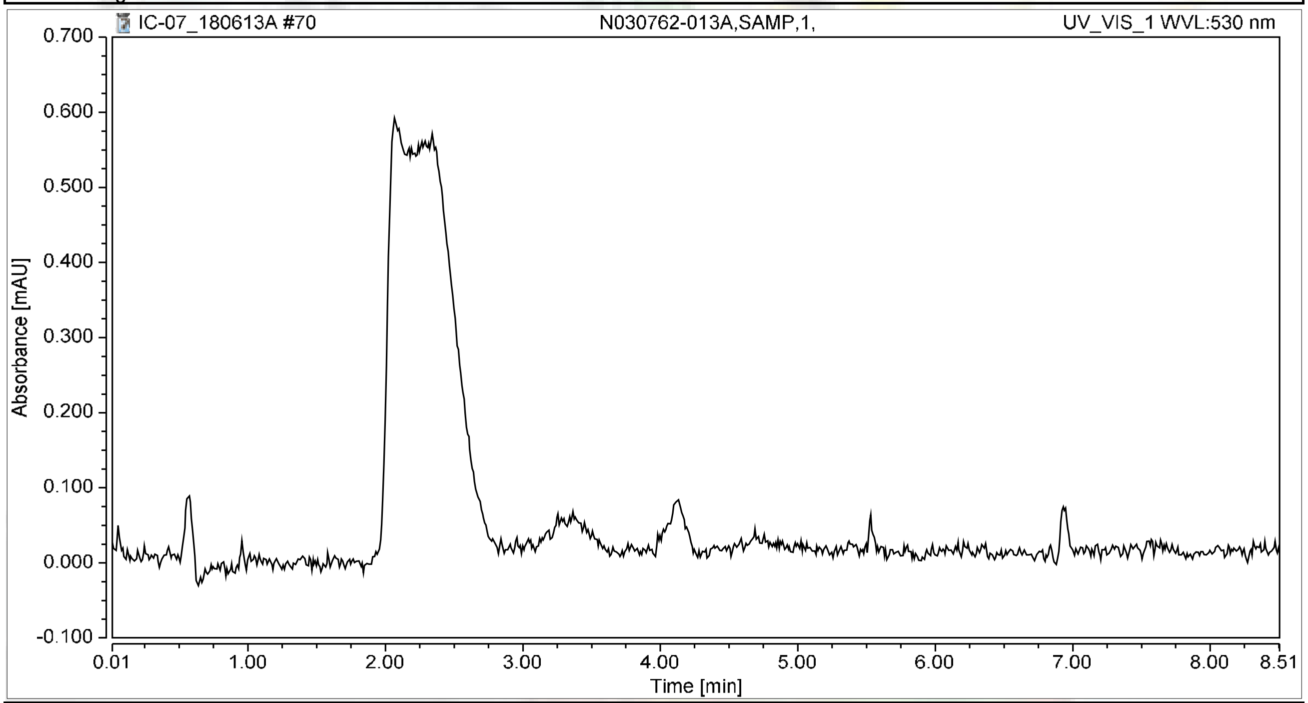
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.258	1.557	100.00	100.00	0.9922
Total:			**0.258**	**1.557**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-013A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 19:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

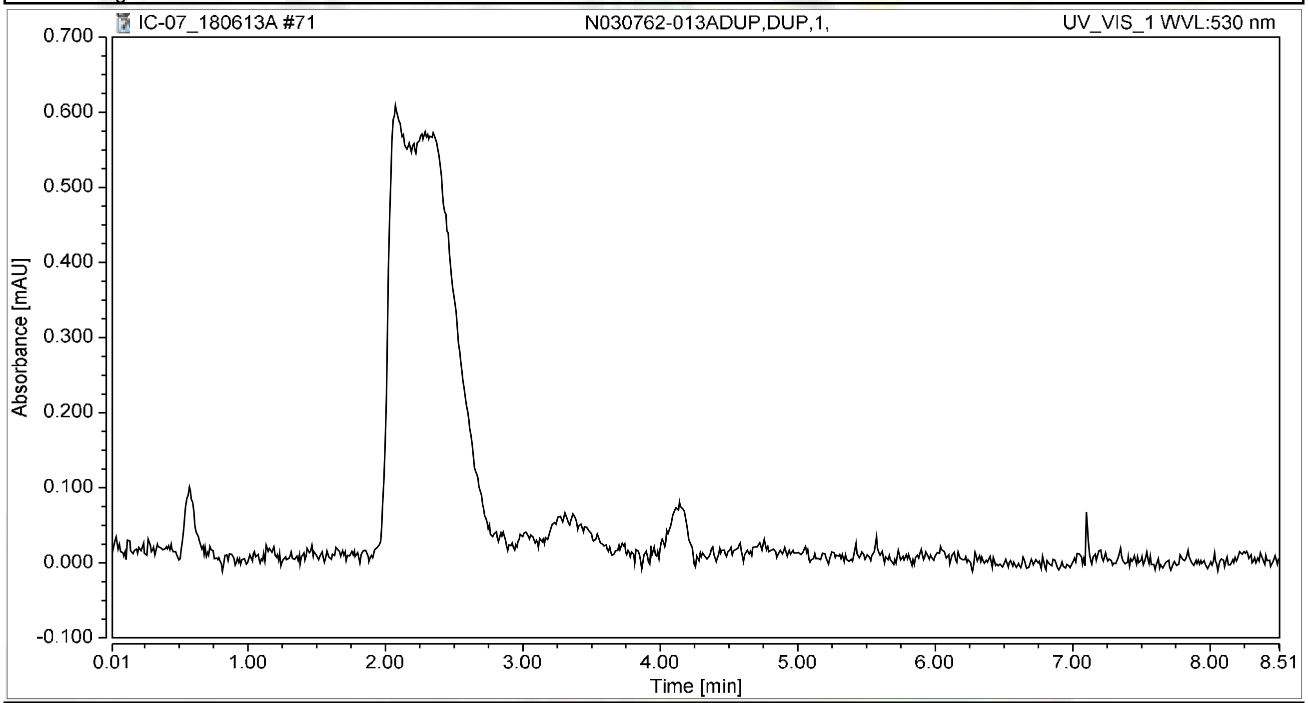
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-013ADUP,DUP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 19:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

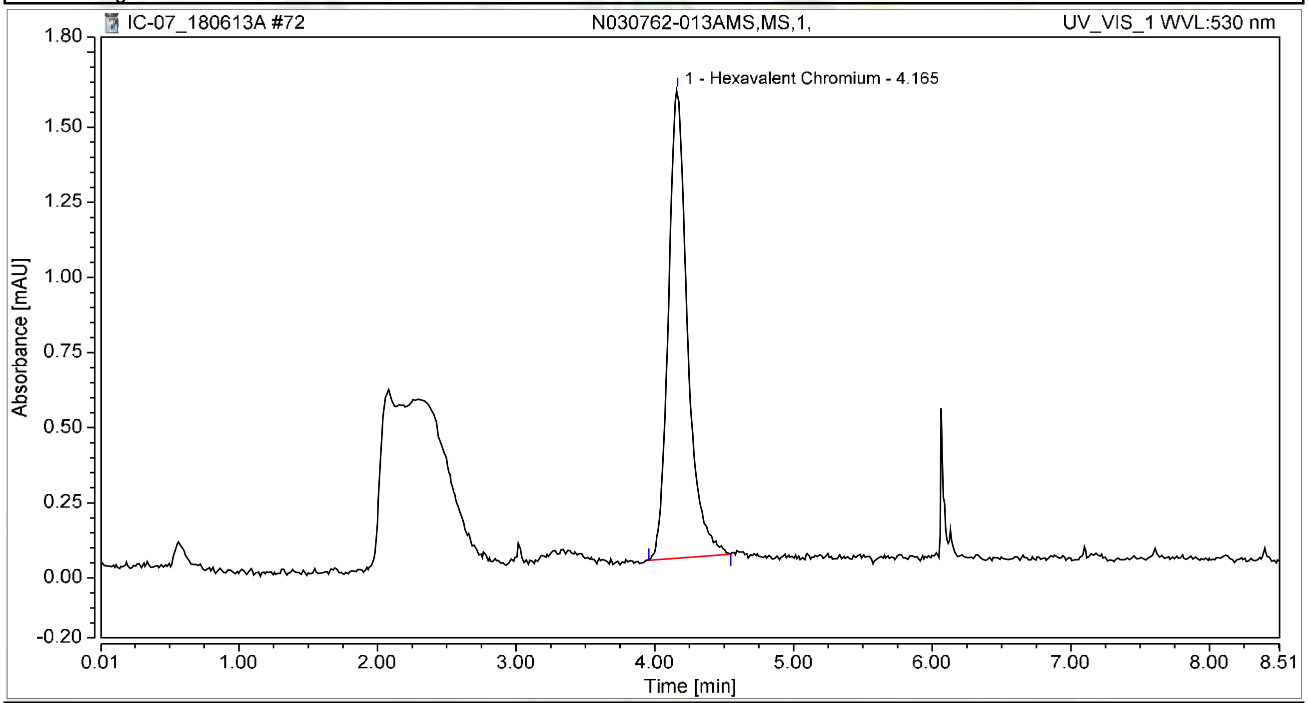
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 19:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

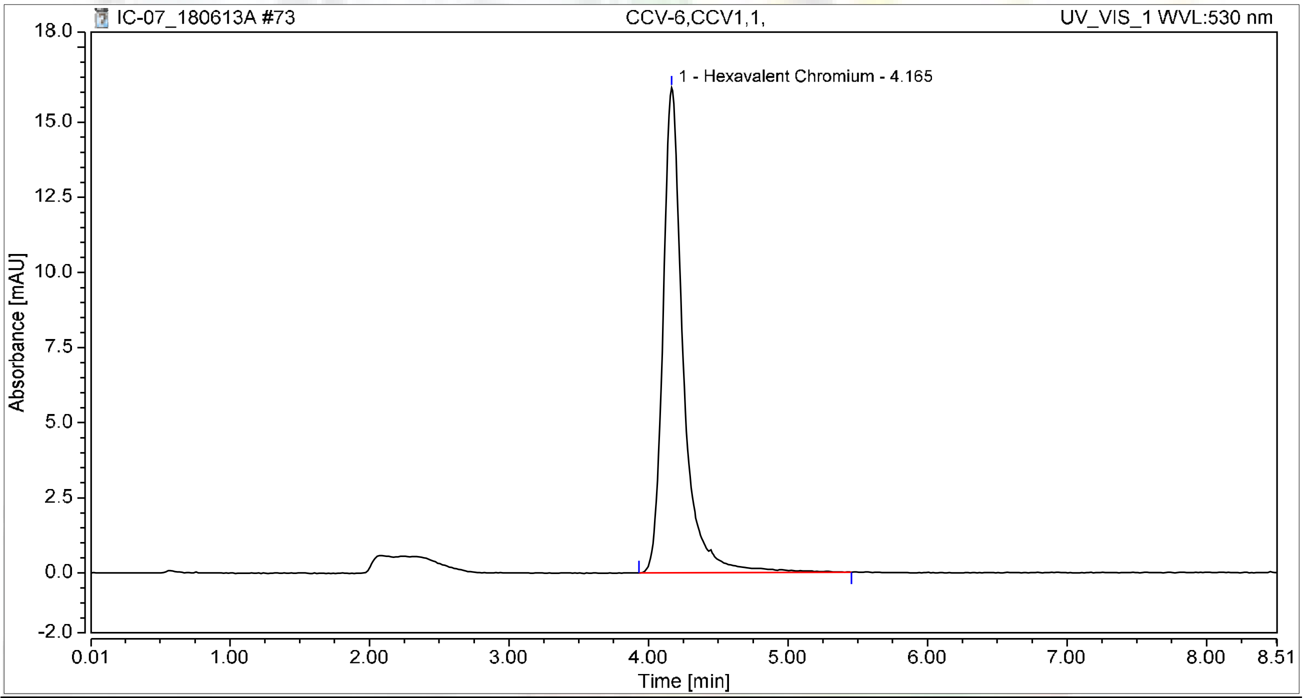
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.250	1.560	100.00	100.00	0.9623
Total:			**0.250**	**1.560**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 19:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

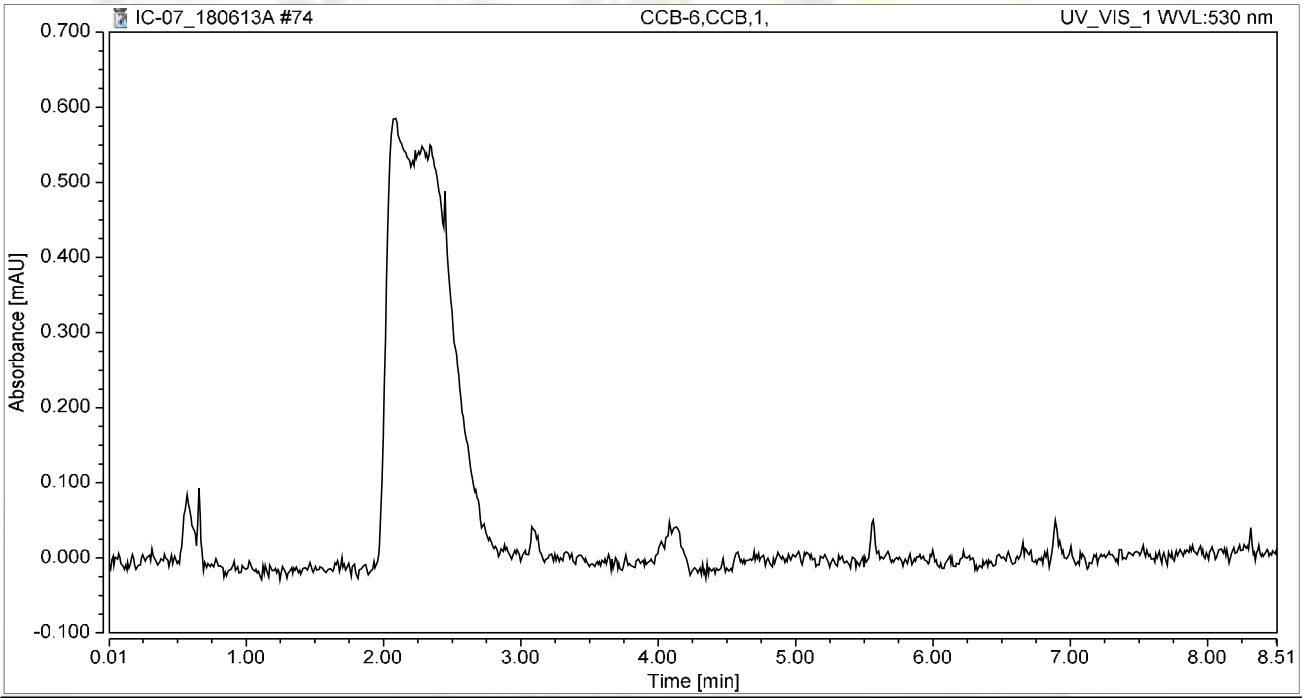
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.716	16.145	100.00	100.00	10.4381
Total:			**2.716**	**16.145**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 19:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

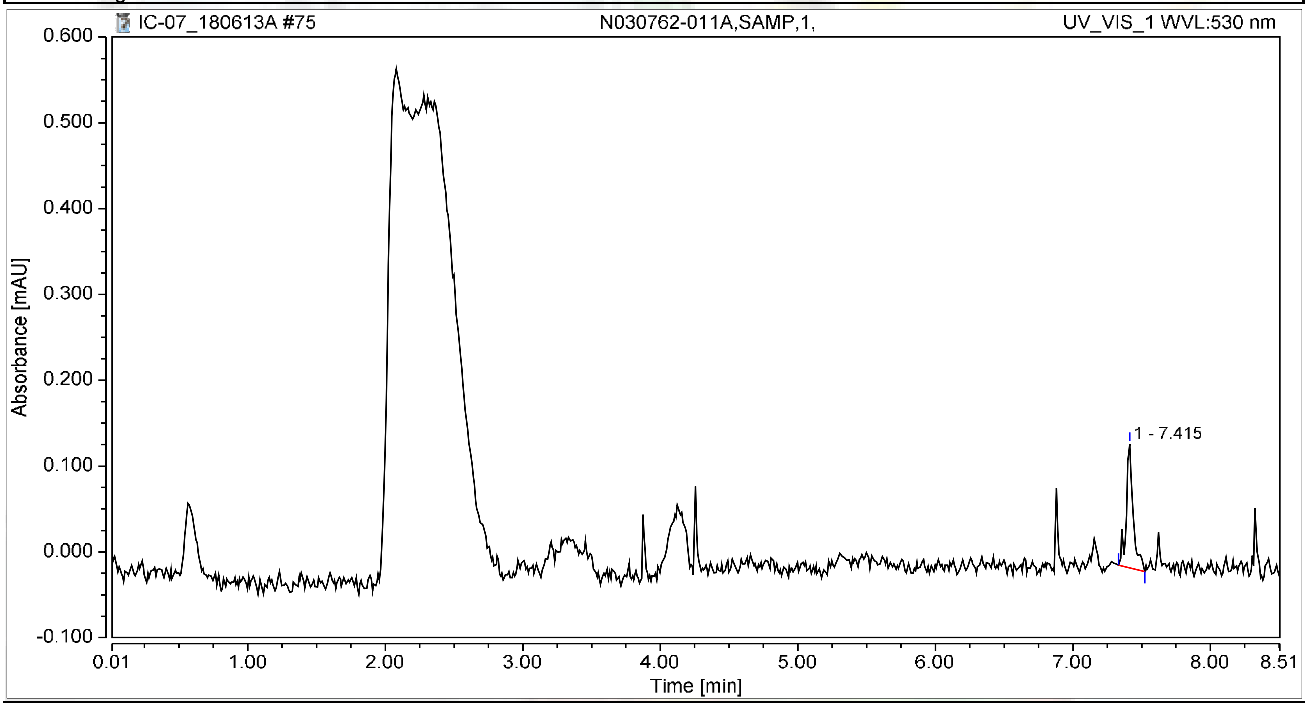
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-011A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 19:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

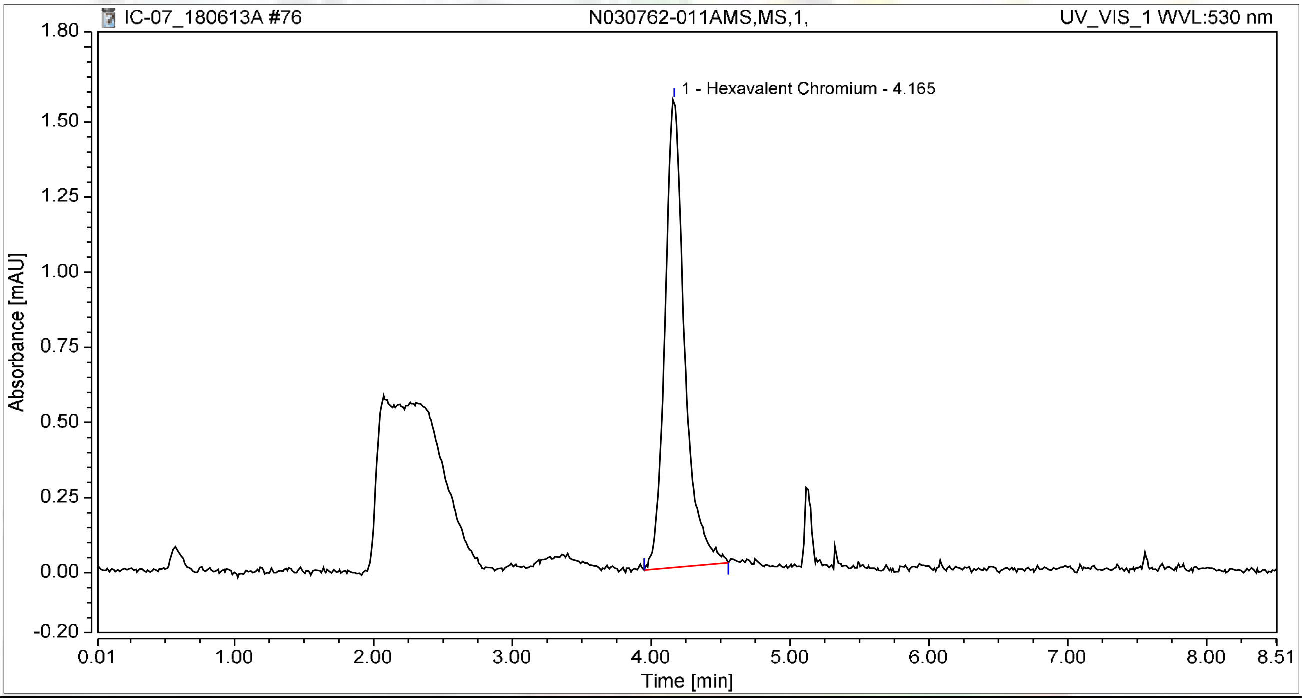
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		7.415	0.008	0.144	100.00	100.00	n.a.
Total:			**0.008**	**0.144**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-011AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 20:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

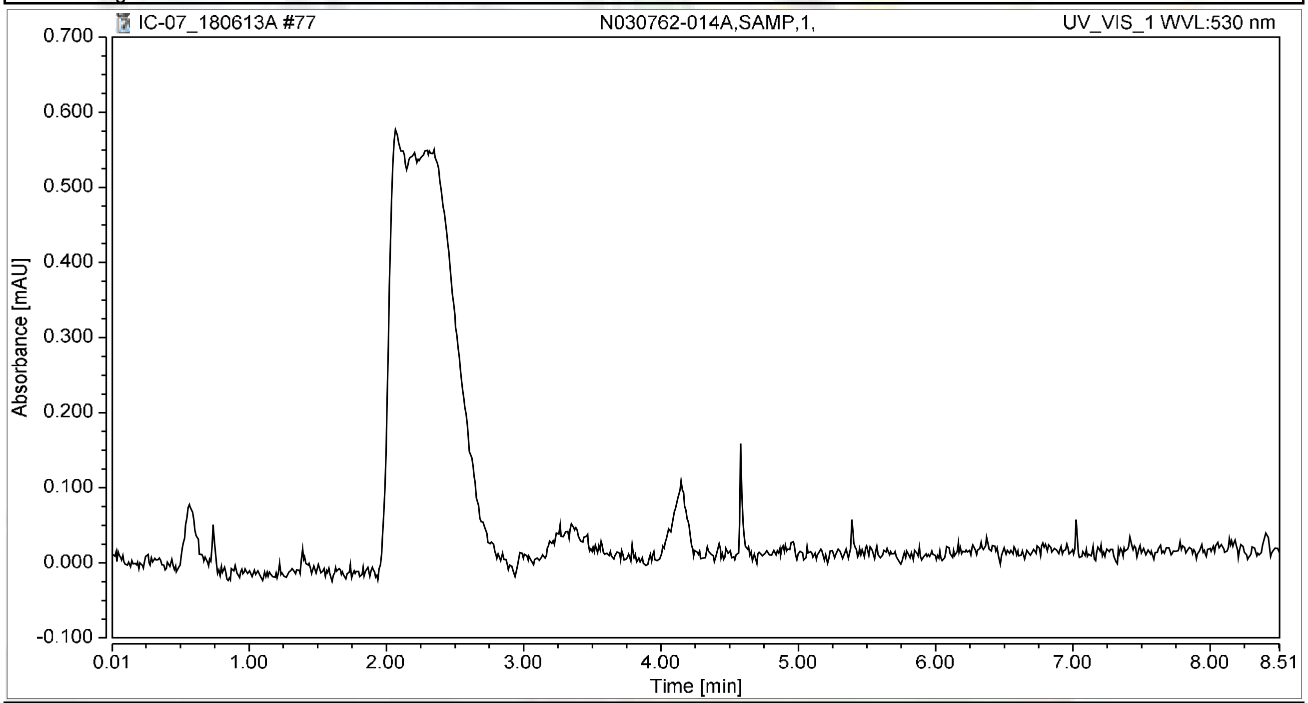
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.258	1.556	100.00	100.00	0.9897
Total:			**0.258**	**1.556**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 20:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

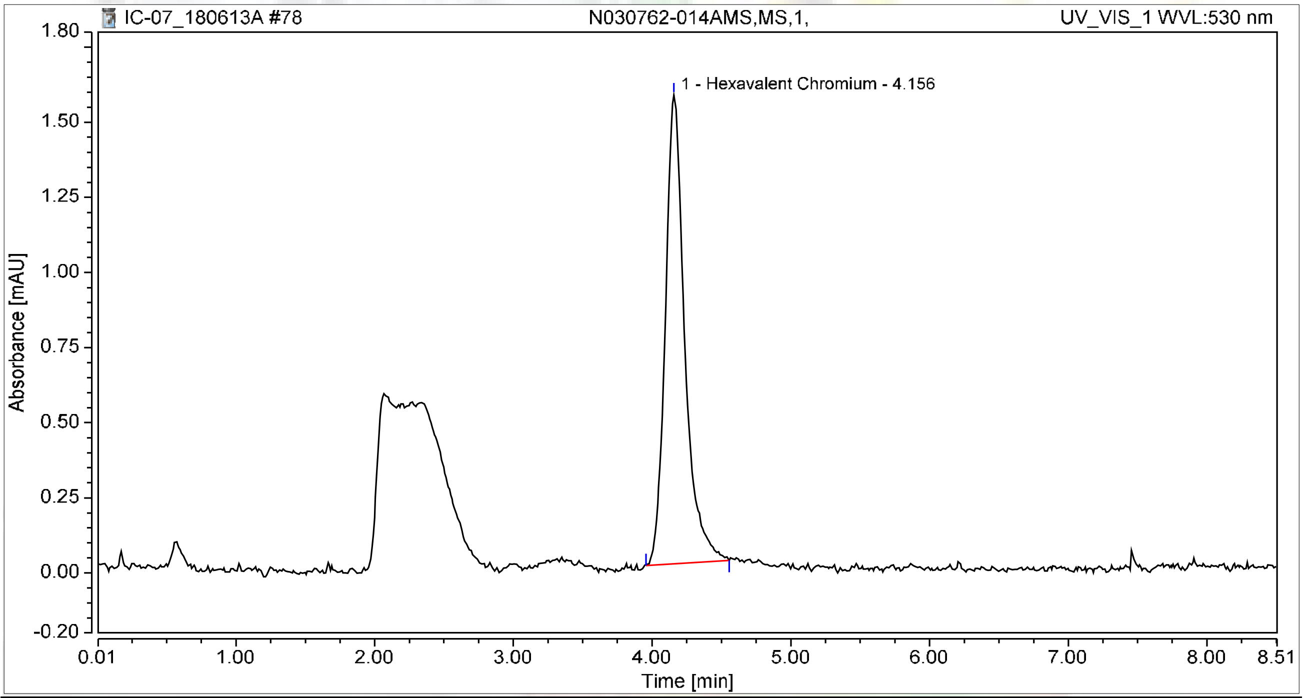
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 20:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

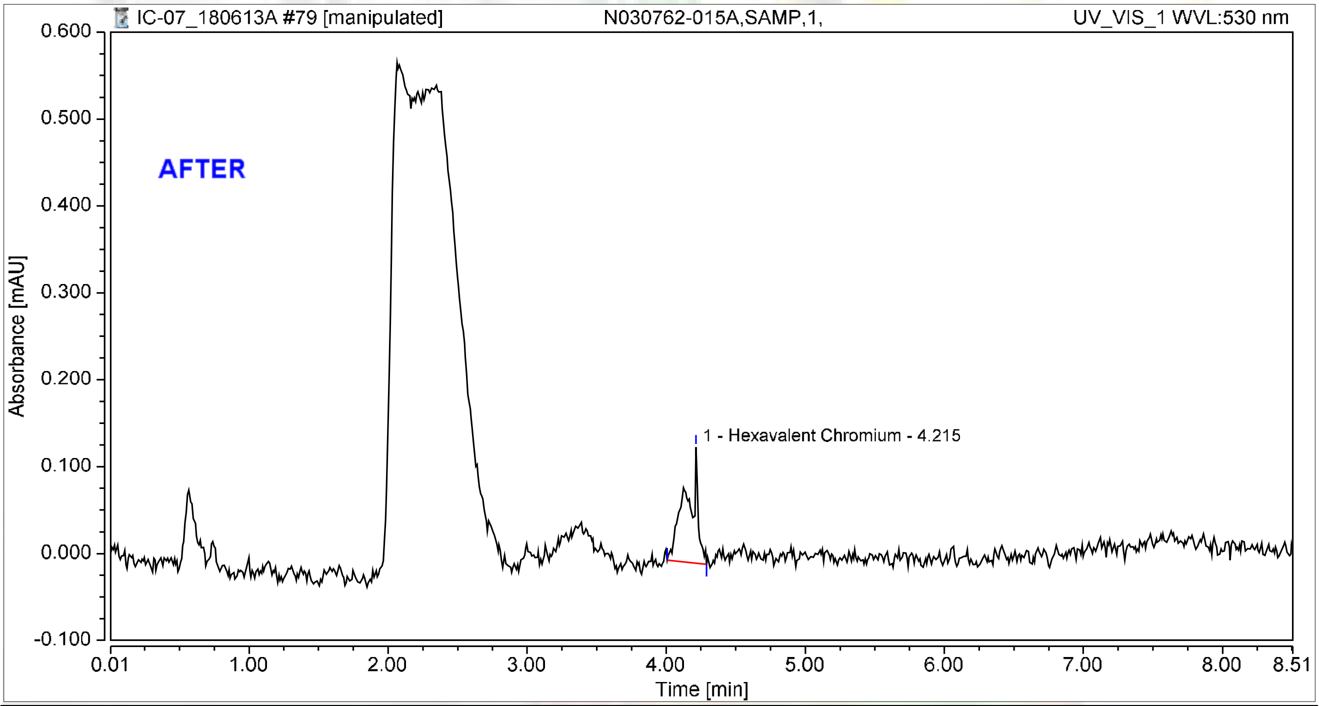
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.253	1.561	100.00	100.00	0.9732
Total:			**0.253**	**1.561**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 20:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.215	0.013	0.134	100.00	100.00	0.0509
Total:			**0.013**	**0.134**	**100.00**	**100.00**	

rba 6/20/2018

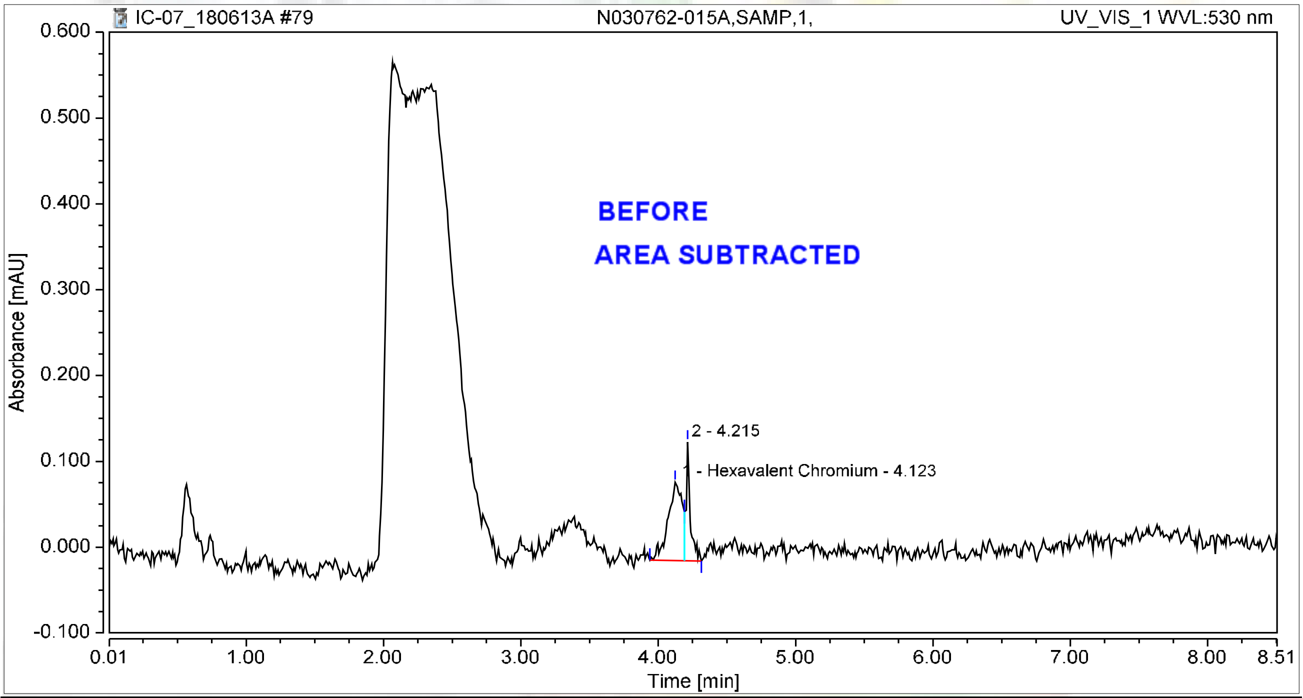
Reviewed by:
Nancy 6/26/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030762-015A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 20:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.011	0.091	68.26	39.71	0.0409
2		4.215	0.005	0.139	31.74	60.29	n.a.
Total:			**0.016**	**0.230**	**100.00**	**100.00**	

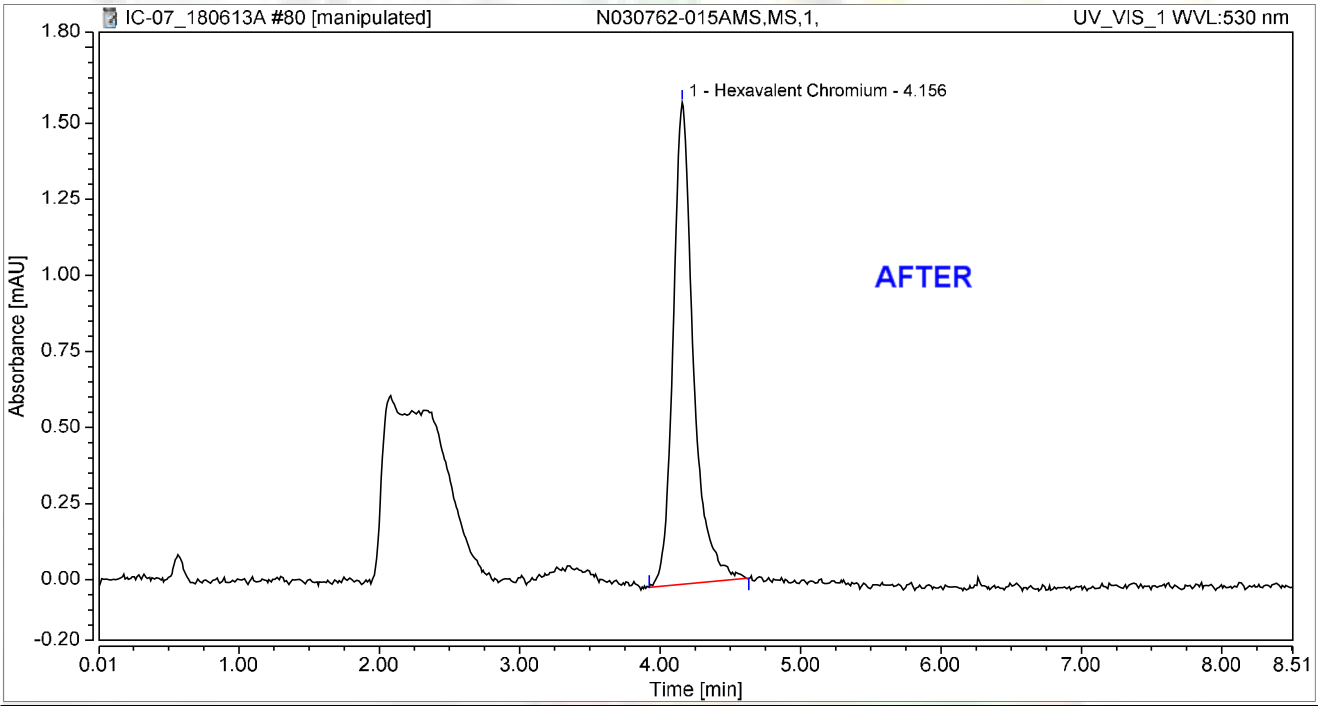
rba 6/20/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030762-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 20:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.265	1.586	100.00	100.00	1.0182
Total:			**0.265**	**1.586**	**100.00**	**100.00**	

rba 6/20/2018

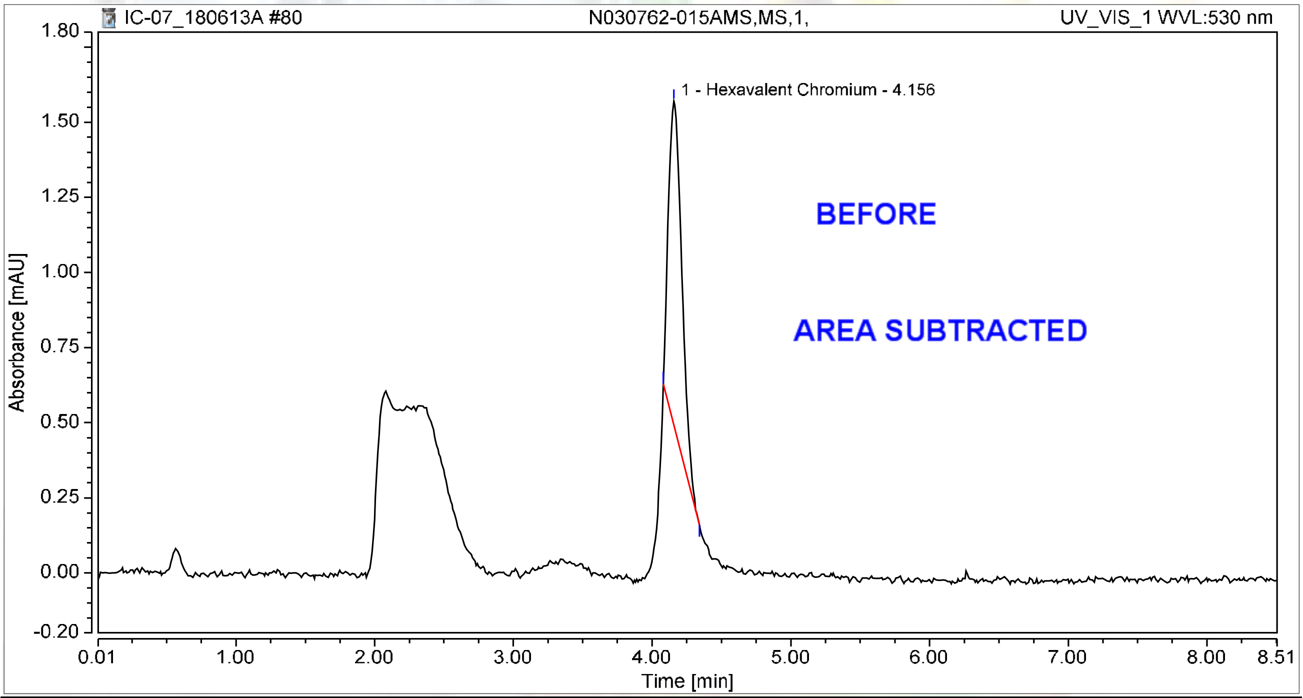
Reviewed by:
Nancy 6/26/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030762-015AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 20:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.121	1.077	100.00	100.00	0.4648
Total:			**0.121**	**1.077**	**100.00**	**100.00**	

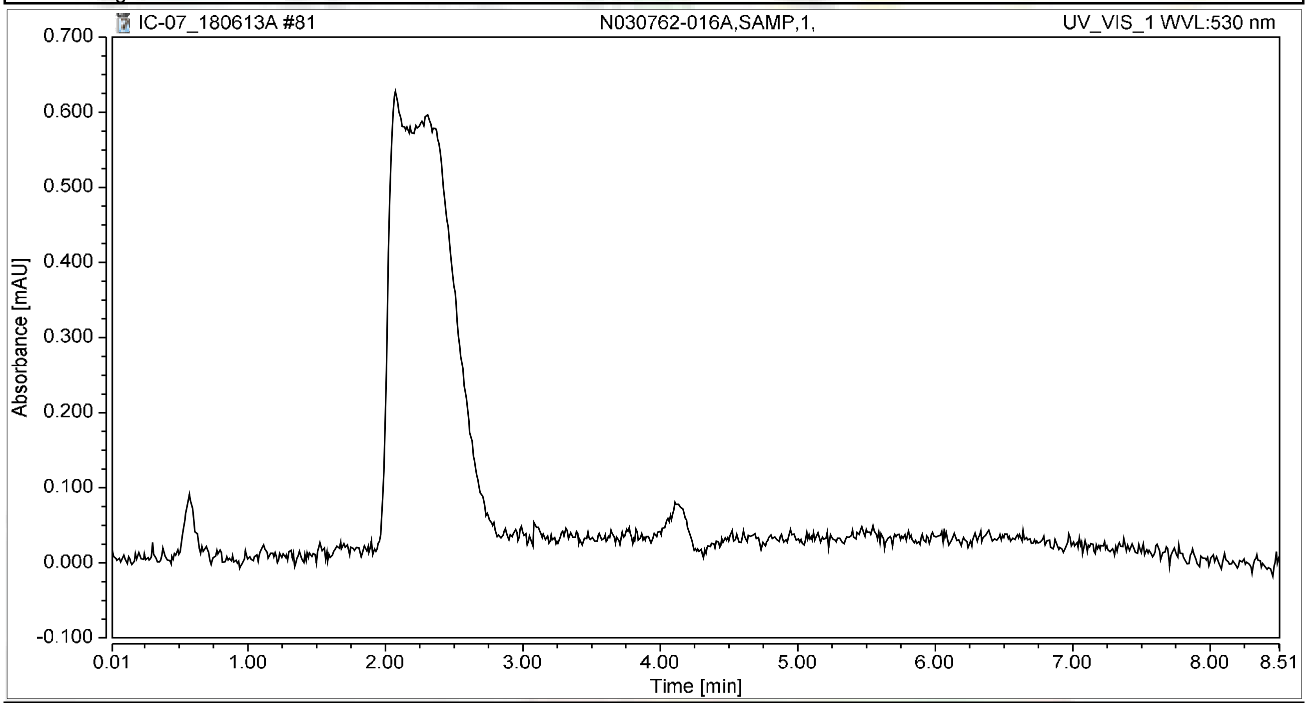
rba 6/20/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030762-016A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 20:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

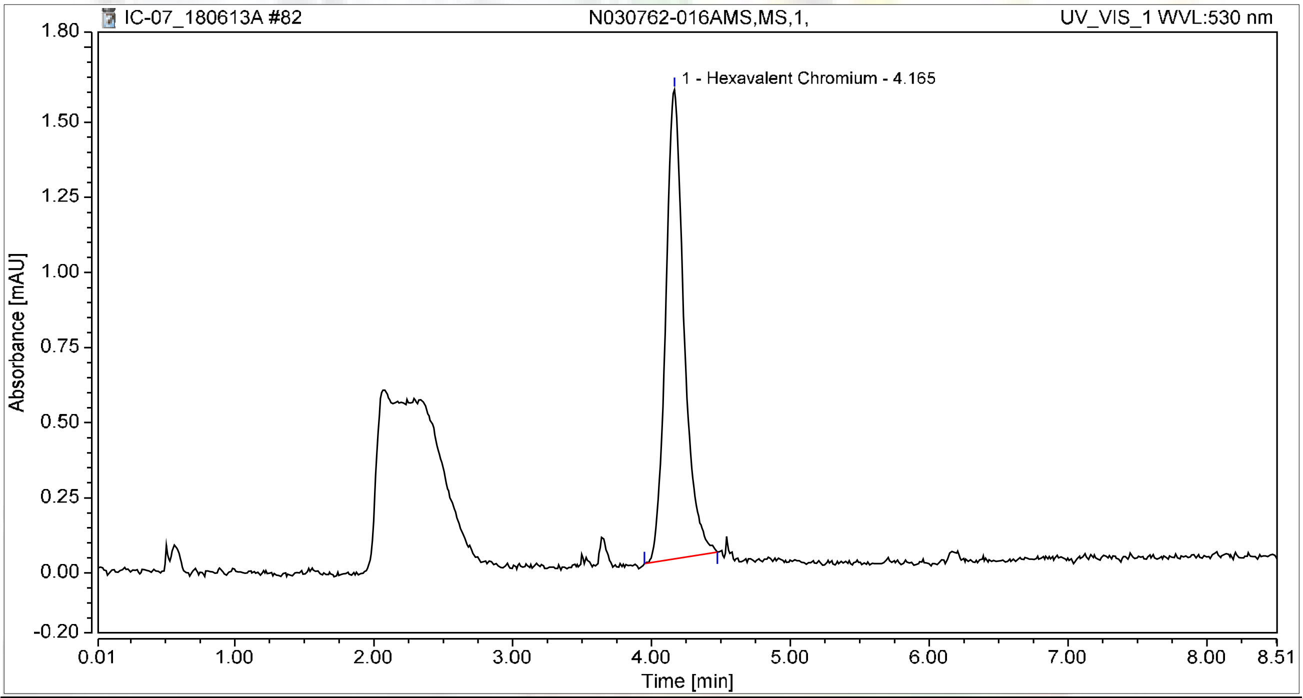
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-016AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 21:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

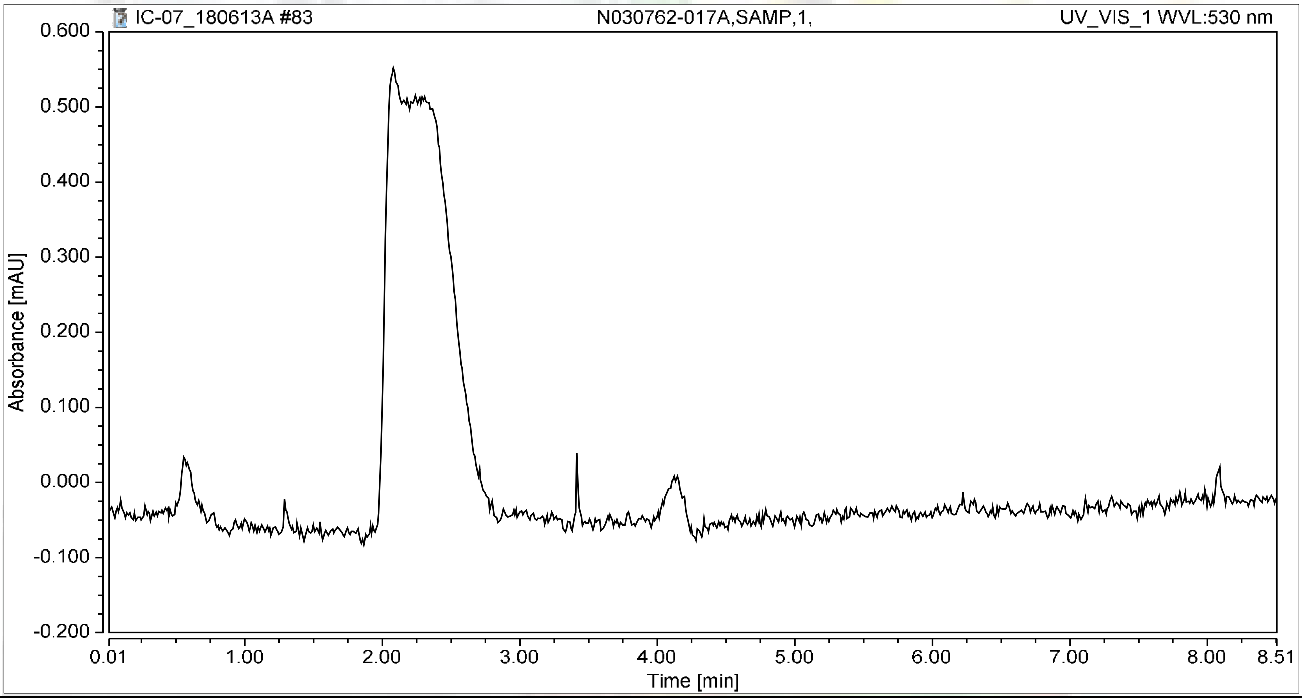
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.240	1.562	100.00	100.00	0.9233
Total:			**0.240**	**1.562**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-017A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 21:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

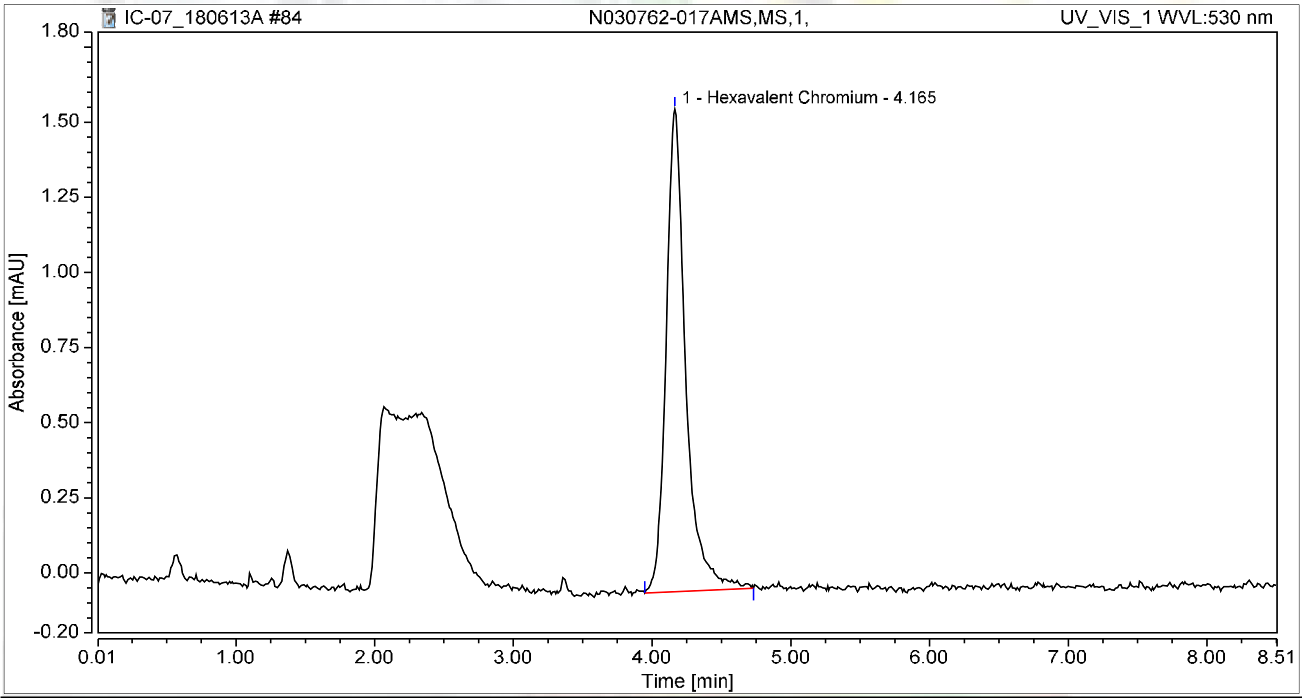
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030762-017AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 21:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

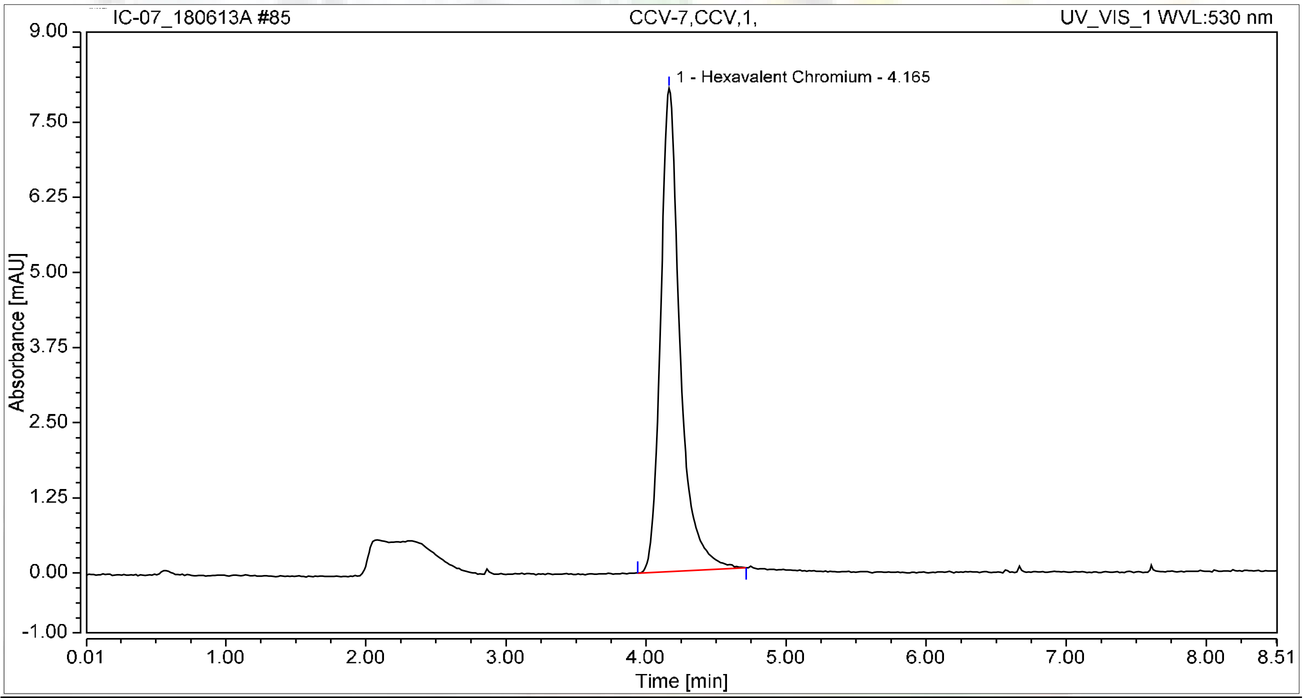
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.264	1.607	100.00	100.00	1.0136
Total:			**0.264**	**1.607**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 21:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

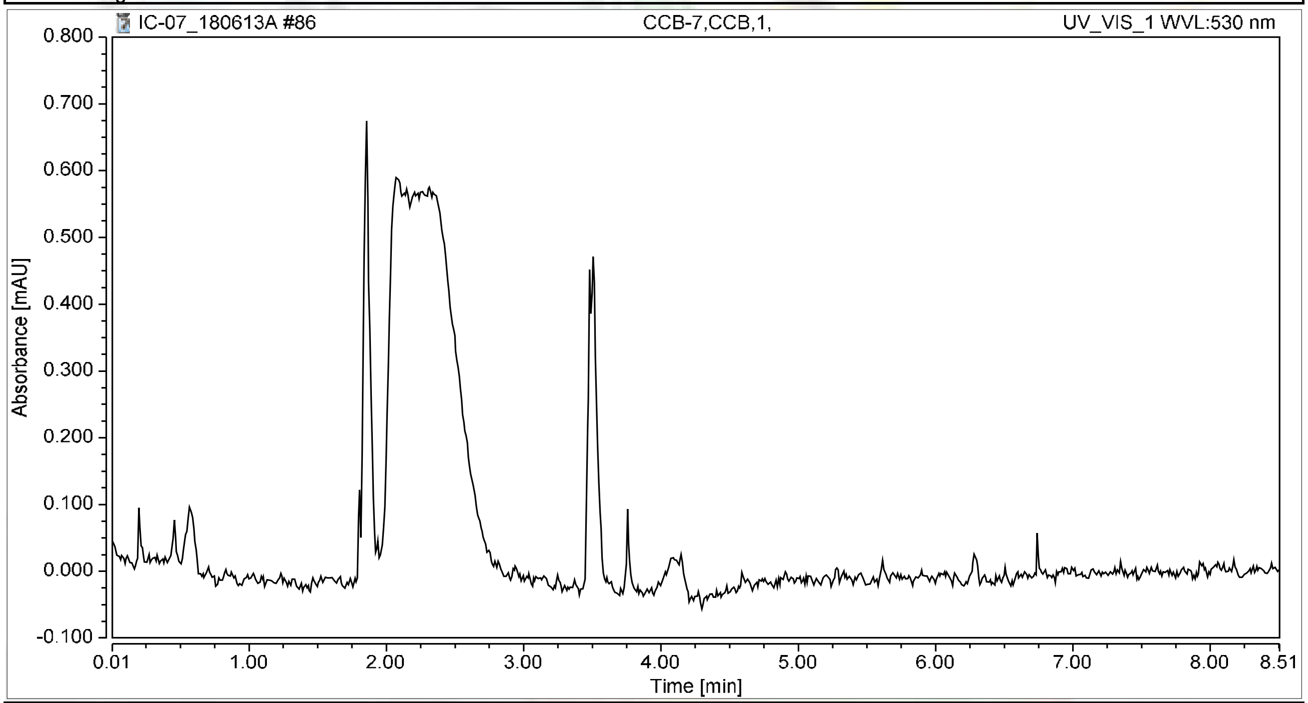
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.300	8.043	100.00	100.00	4.9962
Total:			**1.300**	**8.043**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**13/Jun/18 21:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R124671 **Analyst:** QBM

ASSET #: N030668, N030686, N030762 **Date Analyzed:** 6/16/2018

Method: **4500_NO3**

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.		X				
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec of Nitrate/Nitrite as N in CCV-3 failed, low bias. Affected samples were not reported.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 06/26/2018

2nd Level Reviewer 06/26/2018 Date:

WC ARCUS
REV 0
101215

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R124703 **Analyst:** QBM

ASSET #: N030762 **Date Analyzed:** 6/18/2018

Method: **4500_NO3**

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 06/26/2018

2nd Level Reviewer RB 06/26/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD:	EPA 4500N03F
TEST NAME:	Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX:	Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N030762-003E**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.4339	*	1
	=	0.4339	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.43 mg/L

RB 06/26/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

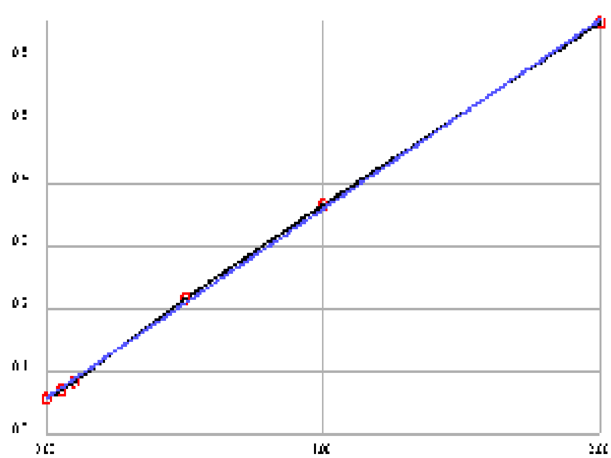
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.3011x + 0.0574
Correlation	.999762

Calibrant	Energy	Set	Conc
1	0.0556	0.0000	-0.0060
2	0.0701	0.0500	0.0421
3	0.0832	0.1000	0.0857
4	0.2150	0.5000	0.5234
5	0.3644	1.0000	1.0195
6	0.6552	2.0000	1.9853



Notes:

RJB 06/26/2018

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

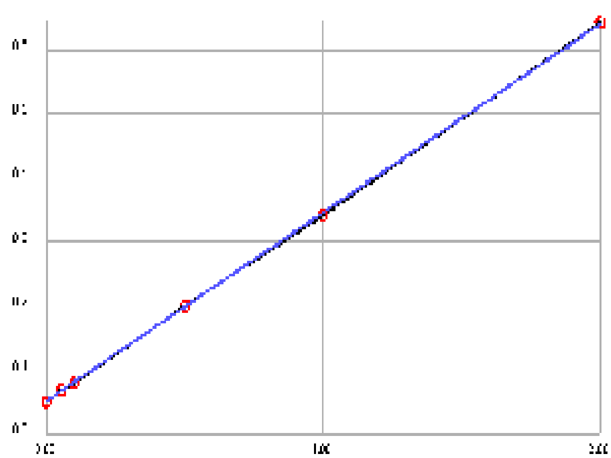
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2943x + 0.0513
Correlation	.999926

Calibrant	Energy	Set	Conc
1	0.0506	0.0000	-0.0024
2	0.0688	0.0500	0.0594
3	0.0801	0.1000	0.0978
4	0.1999	0.5000	0.5049
5	0.3407	1.0000	0.9833
6	0.6420	2.0000	2.0070



Notes:

06/26/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

ASSET Laboratories

Date: *18-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **124671**						
Client ID: **ICV**	Batch ID: **R124671**	TestNo: **SM4500-NO3**		Analysis Date: **6/16/2018**		SeqNo: **3055399**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrate/Nitrite as N	0.488	0.050	0.5000	0	97.6	90	110					

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **124671**						
Client ID: **CCV**	Batch ID: **R124671**	TestNo: **SM4500-NO3**		Analysis Date: **6/16/2018**		SeqNo: **3055410**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrate/Nitrite as N	0.476	0.050	0.5000	0	95.2	90	110					

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:		RunNo: **124671**						
Client ID: **CCV**	Batch ID: **R124671**	TestNo: **SM4500-NO3**		Analysis Date: **6/16/2018**		SeqNo: **3055421**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrate/Nitrite as N	0.508	0.050	0.5000	0	102	90	110					

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124703**
Client ID: **ICV** Batch ID: **R124703** TestNo: **SM4500-NO3** Analysis Date: **6/18/2018** SeqNo: **3056912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.454	0.050	0.5000	0	90.8	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124703**
Client ID: **CCV** Batch ID: **R124703** TestNo: **SM4500-NO3** Analysis Date: **6/18/2018** SeqNo: **3056923**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.505	0.050	0.5000	0	101	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124703**
Client ID: **CCV** Batch ID: **R124703** TestNo: **SM4500-NO3** Analysis Date: **6/18/2018** SeqNo: **3056931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.526	0.050	0.5000	0	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **ICB** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **CCB** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124671**
Client ID: **CCB** Batch ID: **R124671** TestNo: **SM4500-NO3** Analysis Date: **6/16/2018** SeqNo: **3055422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124703**
Client ID: **ICB** Batch ID: **R124703** TestNo: **SM4500-NO3** Analysis Date: **6/18/2018** SeqNo: **3056913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124703**
Client ID: **CCB** Batch ID: **R124703** TestNo: **SM4500-NO3** Analysis Date: **6/18/2018** SeqNo: **3056924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124703**
Client ID: **CCB** Batch ID: **R124703** TestNo: **SM4500-NO3** Analysis Date: **6/18/2018** SeqNo: **3056932**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 06-16-2018 11:23
Time end: 06-16-2018 14:15

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	13:35:29	-0.0266		0.0494
2	<BLANK>	13:36:22	-0.0103		0.0543
3	<CAL1>	13:37:24	-0.0060	[0]	0.0556
4	<CAL2>	13:38:19	0.0421	[0.05]	0.0701
5	<CAL3>	13:39:21	0.0857	[0.1]	0.0832
6	<CAL4>	13:40:15	0.5234	[0.5]	0.2150
7	<CAL5>	13:41:10	1.0195	[1]	0.3644
8	<CAL6>	13:42:06	1.9853	[2]	0.6552
9	,BLANK,BLANK,1, NOT REPORTED	13:43:06	0.0634		0.0765
10	,ICV,ICV,1,	13:44:01	0.4878		0.2043
11	,ICB,ICB,1,	13:44:57	0.0196		0.0633
12	,MB-H2O,MBLK,1,	13:45:58	-0.0030		0.0565
13	,LCS-H2O,LCS,1,	13:46:52	0.4606		0.1961
14	,N030668-003E,SAMP,5,	13:47:54	0.5446		0.2214
15	,N030668-004E,SAMP,5,	13:48:49	0.5141		0.2122
16	,N030668-001D,SAMP,5,	13:49:44	0.6652		0.2577
17	,N030668-001DDUP,DUP,5,	13:50:45	0.5901		0.2351
18	,N030668-002D,SAMP,5,	13:51:41	0.5742		0.2303
19	,N030668-002DMS,MS,5,	13:52:36	1.1222		0.3953
20	,N030668-002DMSD,MSD,5,	13:53:37	1.0936		0.3867
21	,BLANK, NOT REPORTED	13:54:32	0.0332		0.0674
22	,CCV-1,CCV,1,	13:55:28	0.4762		0.2008
23	,CCB-1,CCB,1,	13:56:28	0.0139		0.0616
24	,N030686-001D,SAMP,1,	13:57:23	0.0116		0.0609
25	,N030686-002D,SAMP,5,	13:58:19	0.5436		0.2211
26	,N030668-005E,SAMP,5,	13:59:21	0.5489		0.2227

RB 06/26/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	**,N030668-006E,SAMP,5,**	14:00:03	0.5572		0.2252
28	**,N030668-009E,SAMP,5,**	14:00:52	0.4945		0.2063
29	**,N030668-010E,SAMP,5,**	14:01:34	0.5722		0.2297
30	**,N030668-011E,SAMP,5,**	14:02:24	0.5526		0.2238
31	**,N030762-001E,SAMP,1,**	14:03:06	0.4071		0.1800
32	**,N030762-002E,SAMP,1,**	14:03:49	0.4158		0.1826
33	**,BLANK,** NOT REPORTED	14:04:39	0.0059		0.0592
34	**,CCV-2,CCV,1,**	14:05:21	0.5081		0.2104
35	**,CCB-2,CCB,1,**	14:06:04	-0.0027		0.0566
36	**,N030762-003E,SAMP,1,** NOT REPORTED	14:06:52	0.3796		0.1717
37	**,N030762-005E,SAMP,1,**	14:07:36	0.3483		0.1623
38	**,N030762-006E,SAMP,1,**	14:08:18	0.4058		0.1796
39	**,N030762-007E,SAMP,1,**	14:09:07	0.3567		0.1648
40	**,N030762-008E,SAMP,1,**	14:09:51	0.3759		0.1706
41	**,N030762-009E,SAMP,1,**	14:10:33	0.3832		0.1728
42	**,N030762-010E,SAMP,1,**	14:11:23	0.3796		0.1717
43	**,BLANK,**	14:12:05	-0.0007		0.0572
44	**,CCV-3,CCV,1,**	14:12:48	0.4360		0.1887
45	**,CCB-3,CCB,1,**	14:13:36	0.0010		0.0577

RJB 06/26/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 6/16/2018
Time Analyzed: 11:23 AM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180604D
Color reagent: R180604E
2% Copper Sulfate: R180604C
Ammonium Hydroxide: CINV-180521C

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N030668-001D		8.79							
N030668-002D		8.26							
N030668-003E		7.19							
N030668-004E		7.55							
N030668-005E		7.67							
N030668-006E		7.73							
N030668-009E		7.91							
N030668-010E		7.11							
N030668-011E		6.93							
N030686-001D		7.76							
N030686-002D		7.93							
N030762-001E		6.75							
N030762-002E		7.24							
N030762-003E		7.89							
N030762-005E		8.00							
N030762-006E		6.99							
N030762-007E		8.18							
N030762-008E		8.64							
N030762-009E		7.84							
N030762-010E		8.52							

Advanced Technology Laboratories, Inc.
Book # 1

RB 06/26/2018

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Time start: 06-18-2018 14:22
Time end: 06-18-2018 16:28

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	16:00:31	-0.0102		0.0483
2	<BLANK>	16:01:26	0.0000		0.0513
3	<CAL1>	16:02:26	-0.0024	[0]	0.0506
4	<CAL2>	16:03:21	0.0594	[0.05]	0.0688
5	<CAL3>	16:04:17	0.0978	[0.1]	0.0801
6	<CAL4>	16:05:18	0.5049	[0.5]	0.1999
7	<CAL5>	16:06:12	0.9833	[1]	0.3407
8	<CAL6>	16:07:07	2.0070	[2]	0.6420
9	,BLANK,BLANK,1, NOT REPORTED	16:08:09	0.0791		0.0746
10	,ICV,ICV,1,	16:09:03	0.4542		0.1850
11	,ICB,ICB,1,	16:10:04	0.0207		0.0574
12	,MB-H2O,MBLK,1,	16:11:00	0.0163		0.0561
13	,LCS-H2O,LCS,1,	16:11:55	0.5253		0.2059
14	,N030762-003E,SAMP,1,	16:12:43	0.4339		0.1790
15	,N030762-005E,SAMP,1,	16:13:27	0.4111		0.1723
16	,N030762-006E,SAMP,1,	16:14:15	0.3995		0.1689
17	,N030762-006EDUP,DUP,1,	16:14:58	0.3829		0.1640
18	,N030762-007E,SAMP,1,	16:15:46	0.3812		0.1635
19	,N030762-007EMS,MS,1,	16:16:30	0.9078		0.3185
20	,N030762-007EMSD,MSD,1,	16:17:13	0.8392		0.2983
21	,BLANK, NOT REPORTED	16:18:01	0.0414		0.0635
22	,CCV-1,CCV,1,	16:18:44	0.5049		0.1999
23	,CCB-1,CCB,1,	16:19:26	0.0238		0.0583
24	,N030762-008E,SAMP,1,	16:20:16	0.3615		0.1577
25	,N030762-009E,SAMP,1,	16:20:58	0.4148		0.1734
26	,N030762-010E,SAMP,1,	16:21:41	0.3608		0.1575

RJB 06/26/2018

			EPA 353.2 NO3 as N		
			ppm	**Flags**	**OD**
27	**,N030762-011E,SAMP,1,**	16:22:31	0.4298		0.1778
28	**,N030762-012E,SAMP,1,**	16:23:13	0.3649		0.1587
29	**,N030762-013E,SAMP,1,**	16:23:56	0.4311		0.1782
30	**,BLANK,** NOT REPORTED	16:24:44	0.0224		0.0579
31	**,CCV-2,CCV,1,**	16:25:27	0.5263		0.2062
32	**,CCB-2,CCB,1,**	16:26:09	0.0268		0.0592

RB 06/26/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 6/18/2018
Time Analyzed: 2:22 PM
Analyzed By: QBM

Reagent ID #
Ammonium Chloride reagent/Buffer: R180604D
Color reagent: R180604E
2% Copper Sulfate: R180604C
Ammonium Hydroxide: CINV-180521C

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N030762-003E		7.89							
N030762-005E		8.00							
N030762-006E		6.99							
N030762-007E		8.18							
N030762-008E		8.64							
N030762-009E		7.84							
N030762-010E		8.52							
N030762-011E		8.69							
N030762-012E		8.72							
N030762-013E		8.15							

Advanced Technology Laboratories, Inc.
Book # 1

RLB 06/26/2018

MDL STUDY

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6010B Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68438 **Instrument ID:** ICP-02
ASSET #: N030762 **Analyst:** CEI
Method: **Date Analyzed:** 6/20/2018

[X] EPA 6010B / 200.7 Dissolved [ ] EPA 7470A / 7471A/245.1
[ ] EPA 6020 / 200.8 [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 6/26/18
2nd Level Reviewer 6/26/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N030762-001B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.00055 * 1 * (25/25) * 1000

Iron , ug/L = 0.55

Reporting results in two significant figures,

Iron , ug/L = 1

Since PQL of Iron , in ug/L = 20

Iron , ug/L = ND

% RSD SUMMARY

RSD SUMMARY: 180620D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	21.85	15	<PQL
Standard1	ICAL	1	Fe	0.02	0.45	15	PASS
Standard2	ICAL	1	Fe	0.05	0.28	15	PASS
Standard3	ICAL	1	Fe	2	0.27	15	PASS
Standard4	ICAL	1	Fe	5	0.64	15	PASS
Standard5	ICAL	1	Fe	7.5	0.14	15	PASS
Standard6	ICAL	1	Fe	10	0.1	15	PASS
Standard7	ICAL	1	Fe	20	0.17	15	PASS
ICV	ICV	1	Fe	10.16	0.049	15	PASS
ICB	ICB	1	Fe	0.00034	106.96	15	<PQL
LLICV1	CCV1	1	Fe	0.021	1.37	20	PASS
ICSA1	ICSA	1	Fe	185.18	0.3	15	PASS
ICSAB1	ICSAB	1	Fe	184.65	0.28	15	PASS
MB-68438	MBLK	1	Fe	0.0025	45.25	15	<PQL
LCS-68438	LCS	1	Fe	0.11	0.28	15	PASS
N030687-002B	SAMP	1	Fe	0.0045	8.74	15	PASS
N030687-002B	SAMP	5	Fe	0.0014	22.92	15	<PQL
N030687-002B-PS	PS	1	Fe	0.1	0.29	15	PASS
N030687-002B-MS	MS	1	Fe	0.1	1.41	15	PASS
N030687-002B-MSD	MSD	1	Fe	0.1	0.36	15	PASS
N030687-003B	SAMP	1	Fe	0.0095	1.17	15	PASS
N030687-004B	SAMP	1	Fe	-0.00014	98.86	15	<PQL
N030687-005B	SAMP	1	Fe	0.013	4.25	15	PASS
CCV1	CCV	1	Fe	9.79	0.12	15	PASS
CCB1	CCB	1	Fe	0.00015	242.92	15	<PQL
N030687-006B	SAMP	1	Fe	0.0049	1.029	15	PASS
N030703-001B	SAMP	1	Fe	0.0043	7.75	15	PASS
N030703-002B	SAMP	1	Fe	0.0045	8.72	15	PASS
N030762-001B	SAMP	1	Fe	0.00055	74.43	15	<PQL
N030762-002B	SAMP	1	Fe	-0.00067	54.67	15	<PQL
N030762-003B	SAMP	1	Fe	0.00031	326.5	15	<PQL
N030762-005B	SAMP	1	Fe	-0.00004	1779.93	15	<PQL
N030762-006B	SAMP	1	Fe	0.00058	50.8	15	<PQL
N030762-007B	SAMP	1	Fe	-0.00032	54.74	15	<PQL
N030762-008B	SAMP	1	Fe	-0.00017	390.85	15	<PQL
CCV2	CCV	1	Fe	9.8	0.22	15	PASS
CCB2	CCB	1	Fe	0.00088	146.36	15	<PQL
N030762-009B	SAMP	1	Fe	-0.00069	73.88	15	<PQL
N030762-010B	SAMP	1	Fe	0.00067	44.53	15	<PQL
N030762-011B	SAMP	1	Fe	-0.00038	238.73	15	<PQL
N030762-012B	SAMP	1	Fe	0.00041	99.088	15	<PQL
N030762-013B	SAMP	1	Fe	0.014	3.3	15	PASS

RSD SUMMARY: 180620D

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV3	CCV	1	Fe	9.95	0.14	15	PASS
CCB3	CCB	1	Fe	0.0011	85.19	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	0.43	20	PASS
ICSA2	ICSA	1	Fe	185.24	0.27	15	PASS
ICSAB2	ICSAB	1	Fe	182.36	0.68	15	PASS
CCV4	CCV	1	Fe	9.77	0.25	15	PASS
CCB4	CCB	1	Fe	0.0011	87.5	15	<PQL
LLCCV2	CCV2	1	Fe	0.02	3.8	20	PASS
ICSA3	ICSA	1	Fe	182.93	0.54	15	PASS
ICSAB3	ICSAB	1	Fe	181.18	0.27	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180620D

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-180420A,0.5<50mL
Standard2	MWST-180420C
Standard3	MWST-180420E,5<50mL
Standard4	MWST-180420E,12.5<50mL
Standard5	MWST-180420E,15<40mL
Standard6	MWST-180420E,25<50mL
Standard7	MWST-180420E
ICV	MWST-180430E
CCV	MWST-180420E,25<50mL
ICSA/ICSAB	MWST-180430F/G
Int. Std. (Y)	MSST-180420B/A
PS Spike	MWST-180108A/ -180430G/ -180601A/ -180517A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	06/20/2018	10:14:07 PM
2	Standard1	ICAL	1	06/20/2018	10:19:00 PM
3	Standard2	ICAL	1	06/20/2018	10:24:18 PM
11	Standard3	ICAL	1	06/20/2018	10:29:37 PM
12	Standard4	ICAL	1	06/20/2018	10:34:58 PM
6	Standard5	ICAL	1	06/20/2018	10:40:20 PM
7	Standard6	ICAL	1	06/20/2018	10:45:13 PM
8	Standard7	ICAL	1	06/20/2018	10:50:06 PM
9	ICV	ICV	1	06/20/2018	10:56:59 PM
1	ICB	ICB	1	06/20/2018	11:03:53 PM
2	LLICV1	CCV1	1	06/20/2018	11:08:42 PM
4	ICSA1	ICSA	1	06/20/2018	11:15:27 PM
5	ICSAB1	ICSAB	1	06/20/2018	11:23:01 PM
38	MB-68438	MBLK	1	06/20/2018	11:40:11 PM
39	LCS-68438	LCS	1	06/20/2018	11:45:00 PM
40	N030687-002B	SAMP	1	06/20/2018	11:50:20 PM
41	N030687-002B	SAMP	5	06/20/2018	11:55:41 PM
42	N030687-002B-PS	PS	1	06/21/2018	12:01:01 AM
43	N030687-002B-MS	MS	1	06/21/2018	12:08:36 AM
44	N030687-002B-MSD	MSD	1	06/21/2018	12:13:57 AM
45	N030687-003B	SAMP	1	06/21/2018	12:19:18 AM
46	N030687-004B	SAMP	1	06/21/2018	12:24:39 AM
47	N030687-005B	SAMP	1	06/21/2018	12:32:01 AM
7	CCV1	CCV	1	06/21/2018	12:37:22 AM
1	CCB1	CCB	1	06/21/2018	12:42:15 AM
48	N030687-006B	SAMP	1	06/21/2018	12:47:03 AM
49	N030703-001B	SAMP	1	06/21/2018	12:52:25 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
50	N030703-002B	SAMP	1	06/21/2018	12:57:47 AM
51	N030762-001B	SAMP	1	06/21/2018	01:03:28 AM
52	N030762-002B	SAMP	1	06/21/2018	01:08:49 AM
53	N030762-003B	SAMP	1	06/21/2018	01:14:11 AM
54	N030762-005B	SAMP	1	06/21/2018	01:19:32 AM
55	N030762-006B	SAMP	1	06/21/2018	01:24:53 AM
56	N030762-007B	SAMP	1	06/21/2018	01:30:14 AM
57	N030762-008B	SAMP	1	06/21/2018	01:35:35 AM
7	CCV2	CCV	1	06/21/2018	01:40:57 AM
1	CCB2	CCB	1	06/21/2018	01:45:50 AM
58	N030762-009B	SAMP	1	06/21/2018	01:50:39 AM
59	N030762-010B	SAMP	1	06/21/2018	01:56:00 AM
60	N030762-011B	SAMP	1	06/21/2018	02:01:22 AM
61	N030762-012B	SAMP	1	06/21/2018	02:06:44 AM
62	N030762-013B	SAMP	1	06/21/2018	02:12:07 AM
63	MB-68496	MBLK	1	06/21/2018	02:17:29 AM
64	LCS1-68496	LCS	1	06/21/2018	02:22:20 AM
65	N030686-001B	SAMP	1	06/21/2018	02:27:41 AM
66	N030686-001B	SAMP	5	06/21/2018	02:35:03 AM
67	N030686-001B-PS	PS	1	06/21/2018	02:40:24 AM
7	CCV3	CCV	1	06/21/2018	02:47:47 AM
1	CCB3	CCB	1	06/21/2018	02:52:40 AM
2	LLCCV1	CCV2	1	06/21/2018	02:57:29 AM
4	ICSA2	ICSA	1	06/21/2018	03:02:18 AM
5	ICSAB2	ICSAB	1	06/21/2018	03:09:52 AM
68	N030686-001B-MS1	MS	1	06/21/2018	03:16:55 AM
69	N030686-001B-MSD1	MSD	1	06/21/2018	03:24:55 AM
70	N030686-002B	SAMP	1	06/21/2018	03:32:19 AM
7	CCV4	CCV	1	06/21/2018	03:39:41 AM
1	CCB4	CCB	1	06/21/2018	03:44:35 AM
2	LLCCV2	CCV2	1	06/21/2018	03:49:24 AM
4	ICSA3	ICSA	1	06/21/2018	03:54:13 AM
5	ICSAB3	ICSAB	1	06/21/2018	04:01:48 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/13/2018 3:00:00**
Prep End Date: **6/13/2018 7:15:00**
Prep Batch **68438** Prep Code: **3010_W_DISS**

Reviewed/ Date: 6/26/2018
Initials/ Date: 6/26/2018
Technician **Claire Ignacio**

Prep Factor Units **mL / mL** Temp. (°C): **94.6** Location: **02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68438	Aqueous		25	☐	0	0	25	1.000		
MB-68438	Aqueous		25	☐	0	0	25	1.000		
N030687-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N030687-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030687-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030687-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N030687-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N030687-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N030687-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N030703-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N030703-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-003B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9884	HYDROCHLORIC ACID
10019	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-180430F	ICP Solution B	LCS,MS,MSD	0.5
MWST-180517E	ICP Solution A	LCS,MS,MSD	0.5
MWST-180601B	ICP Solution C	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/13/2018 3:00:00**
Prep End Date: **6/13/2018 7:15:00**

Reviewed/ Date: 6/26/2018
Initials/ Date: 6/26/2018

Prep Batch **68438** Prep Code: **3010_W_DISS** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	94.6	02-17

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N030762-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-013B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9884	HYDROCHLORIC ACID
10019	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-180430F	ICP Solution B	LCS,MS,MSD	0.5
MWST-180517E	ICP Solution A	LCS,MS,MSD	0.5
MWST-180601B	ICP Solution C	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180620D

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	06/20/2018	10:14:07 PM	Fe	273.953	-106	0.00	mg/L	
Standard1	06/20/2018	10:19:00 PM	Fe	273.953	777	0.0200	mg/L	
Standard2	06/20/2018	10:24:18 PM	Fe	273.953	2436	0.050	mg/L	
Standard3	06/20/2018	10:29:37 PM	Fe	273.953	79359	2.000	mg/L	
Standard4	06/20/2018	10:34:58 PM	Fe	273.953	200747	5.000	mg/L	
Standard5	06/20/2018	10:40:20 PM	Fe	273.953	290947	7.500	mg/L	
Standard6	06/20/2018	10:45:13 PM	Fe	273.953	387228	10.000	mg/L	
Standard7	06/20/2018	10:50:06 PM	Fe	273.953	770000	20.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

ASSET Laboratories

Date: *21-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **ICV** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/20/2018** SeqNo: **3060617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10160.768	20	10000	0	102	90	110				

Sample ID **LLICV1** SampType: **CCV1** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **ZZZZZZ** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/20/2018** SeqNo: **3060619**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.558	20	20.00	0	103	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **CCV** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9789.351	20	10000	0	97.9	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **CCV** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9797.350	20	10000	0	98.0	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **CCV** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060656**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9950.073	20	10000	0	99.5	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **ZZZZZZ** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.343	20	20.00	0	102	70	130				

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **CCV** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060664**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9774.562	20	10000	0	97.7	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **ZZZZZZ** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060666**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.283	20	20.00	0	101	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **ICB** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/20/2018** SeqNo: **3060618**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.342	20									

Sample ID **CCB1** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **CCB** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.154	20									

Sample ID **CCB2** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **CCB** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.883	20									

Sample ID **CCB3** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **CCB** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060657**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.094	20									

Sample ID **CCB4** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **CCB** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	1.140	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **ICSA** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/20/2018** SeqNo: **3060620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	449727.337	50	500000	0	89.9	80	120				
Calcium	459106.615	500	500000	0	91.8	80	120				
Iron	185179.728	20	200000	0	92.6	80	120				
Magnesium	423681.536	100	500000	0	84.7	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **ICSAB** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/20/2018** SeqNo: **3060621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	542146.581	50	500000	0	108	80	120				
Calcium	537672.194	500	500000	0	108	80	120				
Iron	184645.434	20	200000	0	92.3	80	120				
Magnesium	520578.963	100	500000	0	104	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **ICSA** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	438619.234	50	500000	0	87.7	80	120				
Calcium	446456.783	500	500000	0	89.3	80	120				
Iron	185241.802	20	200000	0	92.6	80	120				
Magnesium	420534.542	100	500000	0	84.1	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **ICSAB** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	541392.444	50	500000	0	108	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **ICSAB** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	523465.371	500	500000	0	105	80	120				
Iron	182363.731	20	200000	0	91.2	80	120				
Magnesium	509360.931	100	500000	0	102	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **ICSA** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060667**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	435319.299	50	500000	0	87.1	80	120				
Calcium	446398.538	500	500000	0	89.3	80	120				
Iron	182930.189	20	200000	0	91.5	80	120				
Magnesium	413887.872	100	500000	0	82.8	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **ICSAB** Batch ID: **R125758** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060668**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	538180.221	50	500000	0	108	80	120				
Calcium	521532.938	500	500000	0	104	80	120				
Iron	181177.280	20	200000	0	90.6	80	120				
Magnesium	504602.052	100	500000	0	101	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180620D

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.039	103.86	65-125	PASS
Standard2	ICAL	1	1.044	104.35	65-125	PASS
Standard3	ICAL	1	1.01	101.02	65-125	PASS
Standard4	ICAL	1	1.007	100.7	65-125	PASS
Standard5	ICAL	1	1.018	101.84	65-125	PASS
Standard6	ICAL	1	0.99	98.91	65-125	PASS
Standard7	ICAL	1	0.97	97.11	65-125	PASS
ICV	ICV	1	0.98	97.73	65-125	PASS
ICB	ICB	1	0.98	98.39	65-125	PASS
LLICV1	CCV1	1	1.031	103.11	65-125	PASS
ICSA1	ICSA	1	1.15	114.94	65-125	PASS
ICSAB1	ICSAB	1	0.82	81.93	65-125	PASS
MB-68438	MBLK	1	0.99	99.44	65-125	PASS
LCS-68438	LCS	1	1.011	101.1	65-125	PASS
N030687-002B	SAMP	1	1.022	102.24	65-125	PASS
N030687-002B	SAMP	5	0.98	98.38	65-125	PASS
N030687-002B-PS	PS	1	1.0037	100.37	65-125	PASS
N030687-002B-MS	MS	1	0.85	85.26	65-125	PASS
N030687-002B-MSD	MSD	1	0.86	86.47	65-125	PASS
N030687-003B	SAMP	1	0.84	84.24	65-125	PASS
N030687-004B	SAMP	1	0.83	83.091	65-125	PASS
N030687-005B	SAMP	1	0.85	84.64	65-125	PASS
CCV1	CCV	1	0.81	81.23	65-125	PASS
CCB1	CCB	1	0.83	82.71	65-125	PASS
N030687-006B	SAMP	1	0.84	83.69	65-125	PASS
N030703-001B	SAMP	1	0.85	84.99	65-125	PASS
N030703-002B	SAMP	1	0.85	85.45	65-125	PASS
N030762-001B	SAMP	1	0.84	84.44	65-125	PASS
N030762-002B	SAMP	1	0.84	84.37	65-125	PASS
N030762-003B	SAMP	1	0.87	87.26	65-125	PASS
N030762-005B	SAMP	1	0.87	87.45	65-125	PASS
N030762-006B	SAMP	1	0.86	86.44	65-125	PASS
N030762-007B	SAMP	1	0.89	88.57	65-125	PASS
N030762-008B	SAMP	1	0.86	86.3	65-125	PASS
CCV2	CCV	1	0.81	81.44	65-125	PASS
CCB2	CCB	1	0.83	82.84	65-125	PASS
N030762-009B	SAMP	1	0.88	87.99	65-125	PASS
N030762-010B	SAMP	1	0.84	83.73	65-125	PASS
N030762-011B	SAMP	1	0.82	82.42	65-125	PASS
N030762-012B	SAMP	1	0.87	87.022	65-125	PASS

INTERNAL STANDARD: 180620D

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N030762-013B	SAMP	1	0.84	84.35	65-125	PASS
CCV3	CCV	1	0.81	81.002	65-125	PASS
CCB3	CCB	1	0.82	82.41	65-125	PASS
LLCCV1	CCV2	1	0.86	85.96	65-125	PASS
ICSA2	ICSA	1	0.95	95.18	65-125	PASS
ICSAB2	ICSAB	1	0.68	68.11	65-125	PASS
CCV4	CCV	1	0.8	80.43	65-125	PASS
CCB4	CCB	1	0.82	81.55	65-125	PASS
LLCCV2	CCV2	1	0.85	85.28	65-125	PASS
ICSA3	ICSA	1	0.94	94.089	65-125	PASS
ICSAB3	ICSAB	1	0.67	67.43	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water **Dilution Test Summary**

Work Order No.: N030762
Test Method: EPA 6010B
Analysis Date: 6/20/2018

Matrix: Groundwater
Batch No.: 68438

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030687-002B DT 5X	Iron	ug/L	0	NA	0		10

Note: NA - Not applicable

ASSET Laboratories **Date:** *21-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N030687-002B-PS** SampType: **PS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125758**
Client ID: **ZZZZZZ** Batch ID: **68438** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3060626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	103.023	20	100.0	0	103	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68437

ASSET #: N030762

Instrument ID: ICP-02

Analyst: CEI

Date Analyzed: 6/21/2018

Method: TOTAL

- [X] EPA 6010B / 200.7
- [ ] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct	|		
3. Does batch meet QC requirements?	|		
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)	|		
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 6/27/18

2nd Level Reviewer Nancy 6/27/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N030762-001C** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.0436 * 1 * (25/25) * 1000

Iron , ug/L = 43.6

Reporting results in two significant figures,

Iron , ug/L = 44

% RSD SUMMARY

RSD SUMMARY: 180621A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	12.24	15	PASS
Standard1	ICAL	1	Fe	0.02	2.8	15	PASS
Standard2	ICAL	1	Fe	0.05	2.6	15	PASS
Standard3	ICAL	1	Fe	2	0.78	15	PASS
Standard4	ICAL	1	Fe	5	1.13	15	PASS
Standard5	ICAL	1	Fe	7.5	0.079	15	PASS
Standard6	ICAL	1	Fe	10	0.031	15	PASS
Standard7	ICAL	1	Fe	20	0.16	15	PASS
ICV	ICV	1	Fe	10.028	0.3	15	PASS
ICB	ICB	1	Fe	0.00097	60.6	15	<PQL
LLICV1	CCV1	1	Fe	0.02	5.15	20	PASS
ICSA1	ICSA	1	Fe	189.31	0.56	15	PASS
ICSAB1	ICSAB	1	Fe	187.01	1.0072	15	PASS
MB-68437	MBLK	1	Fe	0.0051	35.63	15	<PQL
LCS-68437	LCS	1	Fe	0.11	0.53	15	PASS
N030762-001C	SAMP	1	Fe	0.044	0.72	15	PASS
N030762-001C	SAMP	5	Fe	0.0087	5.59	15	PASS
N030762-001C-PS	PS	1	Fe	0.15	0.22	15	PASS
N030762-001C-MS	MS	1	Fe	0.13	1.0078	15	PASS
N030762-001C-MSD	MSD	1	Fe	0.13	1	15	PASS
N030762-002C	SAMP	1	Fe	0.042	0.58	15	PASS
N030762-003C	SAMP	1	Fe	0.063	1.41	15	PASS
N030762-005C	SAMP	1	Fe	0.034	1.58	15	PASS
CCV1	CCV	1	Fe	7.22	18.66	15	NR!
CCB1	CCB	1	Fe	-0.0005	96.74	15	<PQL
CCV1	CCV	1	Fe	10.19	0.2	15	PASS
CCB1	CCB	1	Fe	-0.00049	145.61	15	<PQL
N030762-006C	SAMP	1	Fe	0.044	0.96	15	PASS
N030762-007C	SAMP	1	Fe	0.045	0.93	15	PASS
N030762-008C	SAMP	1	Fe	0.038	0.76	15	PASS
N030762-009C	SAMP	1	Fe	0.025	3.28	15	PASS
N030762-010C	SAMP	1	Fe	0.03	1.73	15	PASS
N030762-011C	SAMP	1	Fe	0.02	3.96	15	PASS
N030762-012C	SAMP	1	Fe	0.076	7.12	15	PASS
N030762-013C	SAMP	1	Fe	0.057	0.61	15	PASS
CCV2	CCV	1	Fe	10.21	0.19	15	PASS
CCB2	CCB	1	Fe	0.00007	1275.87	15	<PQL
CCV3	CCV	1	Fe	10.25	0.21	15	PASS
CCB3	CCB	1	Fe	-0.00007	653.23	15	<PQL
CCV4	CCV	1	Fe	10.27	0.13	15	PASS
CCB4	CCB	1	Fe	-0.00041	104.028	15	<PQL
CCV5	CCV	1	Fe	10.28	0.26	15	PASS

RSD SUMMARY: 180621A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB5	CCB	1	Fe	-0.00047	84.73	15	<PQL
CCV6	CCV	1	Fe	10.29	0.097	15	PASS
CCB6	CCB	1	Fe	-0.00088	222.18	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	0.32	20	PASS
ICSA2	ICSA	1	Fe	193.06	0.78	15	PASS
ICSAB2	ICSAB	1	Fe	189.4	0.59	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180621A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-180420A,0.5<50mL
Standard2	MWST-180420C
Standard3	MWST-180420E,5<50mL
Standard4	MWST-180420E,12.5<50mL
Standard5	MWST-180420E,15<40mL
Standard6	MWST-180420E,25<50mL
Standard7	MWST-180420E
ICV	MWST-180430E
CCV	MWST-180420E,25<50mL
ICSA/ICSAB	MWST-180430F/G
Int. Std. (Y)	MSST-180420B/A
PS Spike	MWST-180108A/ -180430G/ -180601A/ -180517A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	06/21/2018	07:50:49 AM
2	Standard1	ICAL	1	06/21/2018	07:55:39 AM
3	Standard2	ICAL	1	06/21/2018	08:00:27 AM
11	Standard3	ICAL	1	06/21/2018	08:05:45 AM
12	Standard4	ICAL	1	06/21/2018	08:11:07 AM
6	Standard5	ICAL	1	06/21/2018	08:16:30 AM
7	Standard6	ICAL	1	06/21/2018	08:21:22 AM
8	Standard7	ICAL	1	06/21/2018	08:26:15 AM
9	ICV	ICV	1	06/21/2018	08:30:32 AM
1	ICB	ICB	1	06/21/2018	08:37:27 AM
2	LLICV1	CCV1	1	06/21/2018	08:42:17 AM
4	ICSA1	ICSA	1	06/21/2018	08:47:05 AM
5	ICSAB1	ICSAB	1	06/21/2018	08:54:38 AM
38	MB-68437	MBLK	1	06/21/2018	09:01:41 AM
39	LCS-68437	LCS	1	06/21/2018	09:06:30 AM
40	N030762-001C	SAMP	1	06/21/2018	09:11:51 AM
41	N030762-001C	SAMP	5	06/21/2018	09:17:12 AM
42	N030762-001C-PS	PS	1	06/21/2018	09:22:31 AM
43	N030762-001C-MS	MS	1	06/21/2018	09:27:51 AM
44	N030762-001C-MSD	MSD	1	06/21/2018	09:33:13 AM
45	N030762-002C	SAMP	1	06/21/2018	09:38:33 AM
46	N030762-003C	SAMP	1	06/21/2018	09:43:54 AM
47	N030762-005C	SAMP	1	06/21/2018	09:49:16 AM
7	CCV1	CCV	1	06/21/2018	09:54:37 AM
1	CCB1	CCB	1	06/21/2018	10:01:26 AM
7	CCV1	CCV	1	06/21/2018	10:11:11 AM
1	CCB1	CCB	1	06/21/2018	10:18:05 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
48	N030762-006C	SAMP	1	06/21/2018	10:22:52 AM
49	N030762-007C	SAMP	1	06/21/2018	10:28:15 AM
50	N030762-008C	SAMP	1	06/21/2018	10:33:37 AM
51	N030762-009C	SAMP	1	06/21/2018	10:38:58 AM
52	N030762-010C	SAMP	1	06/21/2018	10:44:19 AM
53	N030762-011C	SAMP	1	06/21/2018	10:49:39 AM
54	N030762-012C	SAMP	1	06/21/2018	10:55:00 AM
55	N030762-013C	SAMP	1	06/21/2018	11:00:21 AM
56	MB-68462	MBLK	1	06/21/2018	11:05:42 AM
57	LCS-68462	LCS	1	06/21/2018	11:10:33 AM
7	CCV2	CCV	1	06/21/2018	11:15:53 AM
1	CCB2	CCB	1	06/21/2018	11:22:47 AM
58	N030781-002C	SAMP	1	06/21/2018	11:27:36 AM
59	N030781-002C	SAMP	5	06/21/2018	11:32:57 AM
60	N030781-002C-PS	PS	1	06/21/2018	11:38:18 AM
61	N030781-002C-MS	MS	1	06/21/2018	11:43:40 AM
62	N030781-002C-MSD	MSD	1	06/21/2018	11:49:02 AM
63	N030781-003C	SAMP	1	06/21/2018	11:53:44 AM
64	N030781-004C	SAMP	1	06/21/2018	11:59:06 AM
65	N030781-005C	SAMP	1	06/21/2018	12:04:27 PM
66	N030781-006C	SAMP	1	06/21/2018	12:09:49 PM
67	N030781-007C	SAMP	1	06/21/2018	12:15:10 PM
7	CCV3	CCV	1	06/21/2018	12:20:31 PM
1	CCB3	CCB	1	06/21/2018	12:27:24 PM
68	N030781-008C	SAMP	1	06/21/2018	12:32:11 PM
69	N030781-009C	SAMP	1	06/21/2018	12:37:33 PM
70	N030781-010C	SAMP	1	06/21/2018	12:42:54 PM
71	N030781-011C	SAMP	1	06/21/2018	12:48:16 PM
72	N030781-012C	SAMP	1	06/21/2018	12:53:37 PM
73	N030781-013C	SAMP	1	06/21/2018	12:58:59 PM
74	N030781-014C	SAMP	1	06/21/2018	01:04:22 PM
75	MB-68463	MBLK	1	06/21/2018	01:09:44 PM
76	LCS-68463	LCS	1	06/21/2018	01:14:34 PM
77	N030781-002B	SAMP	1	06/21/2018	01:19:55 PM
7	CCV4	CCV	1	06/21/2018	01:25:17 PM
1	CCB4	CCB	1	06/21/2018	01:32:11 PM
78	N030781-002B	SAMP	5	06/21/2018	01:37:00 PM
79	N030781-002B-PS	PS	1	06/21/2018	01:42:21 PM
80	N030781-002B-MS	MS	1	06/21/2018	01:47:43 PM
81	N030781-002B-MSD	MSD	1	06/21/2018	01:53:05 PM
82	N030781-003B	SAMP	1	06/21/2018	01:58:28 PM
83	N030781-004B	SAMP	1	06/21/2018	02:03:50 PM
84	N030781-005B	SAMP	1	06/21/2018	02:09:12 PM
85	N030781-006B	SAMP	1	06/21/2018	02:14:34 PM
86	N030781-007B	SAMP	1	06/21/2018	02:19:57 PM
87	N030781-008B	SAMP	1	06/21/2018	02:25:19 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV5	CCV	1	06/21/2018	02:30:41 PM
1	CCB5	CCB	1	06/21/2018	02:37:34 PM
88	N030781-009B	SAMP	1	06/21/2018	02:42:21 PM
89	N030781-010B	SAMP	1	06/21/2018	02:47:43 PM
90	N030781-011B	SAMP	1	06/21/2018	02:53:05 PM
91	N030781-012B	SAMP	1	06/21/2018	02:58:27 PM
92	N030781-013B	SAMP	1	06/21/2018	03:03:49 PM
93	N030781-014B	SAMP	1	06/21/2018	03:09:12 PM
76	LCS-68463	LCS	1	06/21/2018	03:14:34 PM
7	CCV6	CCV	1	06/21/2018	03:19:56 PM
1	CCB6	CCB	1	06/21/2018	03:26:50 PM
2	LLCCV1	CCV2	1	06/21/2018	03:31:39 PM
4	ICSA2	ICSA	1	06/21/2018	03:36:27 PM
5	ICSAB2	ICSAB	1	06/21/2018	03:44:01 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/13/2018 3:00:00**
Prep End Date: **6/13/2018 7:15:00**
Prep Batch **68437** Prep Code: **3010_W**

Reviewed/ Date: 6/27/2018
Initials/ Date: 6/27/2018
Technician **Claire Ignacio**

Prep Factor Units **mL / mL** Temp. (°C): **94.6** Location: **02-19**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68437	Aqueous		25	☐	0	0	25	1.000		
MB-68437	Aqueous		25	☐	0	0	25	1.000		
N030762-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-010C	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-011C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9884	HYDROCHLORIC ACID
10019	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-180430F	ICP Solution B	LCS,MS,MSD	0.5
MWST-180517E	ICP Solution A	LCS,MS,MSD	0.5
MWST-180601B	ICP Solution C	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/13/2018 3:00:00**
Prep End Date: **6/13/2018 7:15:00**
Prep Batch **68437** Prep Code: **3010_W**

Reviewed/ Date: 6/27/2018
Initials/ Date: 6/27/2018
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.6**	**02-19**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N030762-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-013C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9884	HYDROCHLORIC ACID
10019	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-180430F	ICP Solution B	LCS,MS,MSD	0.5
MWST-180517E	ICP Solution A	LCS,MS,MSD	0.5
MWST-180601B	ICP Solution C	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180621A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	06/21/2018	07:50:49 AM	Fe	273.953	-84	0.00	mg/L	
Standard1	06/21/2018	07:55:39 AM	Fe	273.953	623	0.0200	mg/L	
Standard2	06/21/2018	08:00:27 AM	Fe	273.953	1922	0.050	mg/L	
Standard3	06/21/2018	08:05:45 AM	Fe	273.953	61622	2.000	mg/L	
Standard4	06/21/2018	08:11:07 AM	Fe	273.953	157143	5.000	mg/L	
Standard5	06/21/2018	08:16:30 AM	Fe	273.953	228060	7.500	mg/L	
Standard6	06/21/2018	08:21:22 AM	Fe	273.953	303391	10.000	mg/L	
Standard7	06/21/2018	08:26:15 AM	Fe	273.953	601412	20.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

ASSET Laboratories

Date: *26-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10027.722	20	10000	0	100	90	110				

Sample ID **LLICV1** SampType: **CCV1** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.937	20	20.00	0	99.7	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10184.597	20	10000	0	102	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10206.070	20	10000	0	102	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10251.284	20	10000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10273.202	20	10000	0	103	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10284.394	20	10000	0	103	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10288.254	20	10000	0	103	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.230	20	20.00	0	101	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF
INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.974	20									

Sample ID **CCB1** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.48647	20									

Sample ID **CCB2** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.072	20									

Sample ID **CCB3** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.074258	20									

Sample ID **CCB4** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.409123	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB5** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.474911	20									

Sample ID **CCB6** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.879433	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

ASSET Laboratories

Date: *26-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICSA** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	451904.283	50	500000	0	90.4	80	120				
Calcium	449598.883	500	500000	0	89.9	80	120				
Iron	189305.942	20	200000	0	94.7	80	120				
Magnesium	429657.143	100	500000	0	85.9	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICSAB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	557988.502	50	500000	0	112	80	120				
Calcium	526744.498	500	500000	0	105	80	120				
Iron	187008.492	20	200000	0	93.5	80	120				
Magnesium	523968.811	100	500000	0	105	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICSA** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	460715.703	50	500000	0	92.1	80	120				
Calcium	454645.907	500	500000	0	90.9	80	120				
Iron	193063.036	20	200000	0	96.5	80	120				
Magnesium	437664.587	100	500000	0	87.5	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICSAB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	567664.628	50	500000	0	114	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICSAB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	530707.516	500	500000	0	106	80	120				
Iron	189402.125	20	200000	0	94.7	80	120				
Magnesium	529015.944	100	500000	0	106	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180621A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.003	100.3	65-125	PASS
Standard2	ICAL	1	1.079	107.85	65-125	PASS
Standard3	ICAL	1	1.036	103.6	65-125	PASS
Standard4	ICAL	1	1.031	103.14	65-125	PASS
Standard5	ICAL	1	1.062	106.19	65-125	PASS
Standard6	ICAL	1	1.021	102.11	65-125	PASS
Standard7	ICAL	1	1.0039	100.39	65-125	PASS
ICV	ICV	1	1.03	103.03	65-125	PASS
ICB	ICB	1	1.0035	100.35	65-125	PASS
LLICV1	CCV1	1	1.0056	100.56	65-125	PASS
ICSA1	ICSA	1	1.19	119.45	65-125	PASS
ICSAB1	ICSAB	1	0.86	85.51	65-125	PASS
MB-68437	MBLK	1	1.01	101.02	65-125	PASS
LCS-68437	LCS	1	1.042	104.22	65-125	PASS
N030762-001C	SAMP	1	1	99.93	65-125	PASS
N030762-001C	SAMP	5	0.99	99.15	65-125	PASS
N030762-001C-PS	PS	1	1.0056	100.56	65-125	PASS
N030762-001C-MS	MS	1	1.01	101	65-125	PASS
N030762-001C-MSD	MSD	1	1.0064	100.64	65-125	PASS
N030762-002C	SAMP	1	1.03	103.02	65-125	PASS
N030762-003C	SAMP	1	1.0091	100.91	65-125	PASS
N030762-005C	SAMP	1	1.018	101.83	65-125	PASS
CCV1	CCV	1	0.025	2.53	65-125	NR!
CCB1	CCB	1	1	99.51	65-125	PASS
CCV1	CCV	1	1	99.97	65-125	PASS
CCB1	CCB	1	1	99.94	65-125	PASS
N030762-006C	SAMP	1	1.018	101.75	65-125	PASS
N030762-007C	SAMP	1	1.0023	100.23	65-125	PASS
N030762-008C	SAMP	1	1.039	103.93	65-125	PASS
N030762-009C	SAMP	1	1.037	103.7	65-125	PASS
N030762-010C	SAMP	1	1.035	103.5	65-125	PASS
N030762-011C	SAMP	1	1.043	104.32	65-125	PASS
N030762-012C	SAMP	1	1.052	105.18	65-125	PASS
N030762-013C	SAMP	1	1.019	101.89	65-125	PASS
CCV2	CCV	1	0.99	99.49	65-125	PASS
CCB2	CCB	1	1	99.78	65-125	PASS
CCV3	CCV	1	0.99	98.97	65-125	PASS
CCB3	CCB	1	1	99.52	65-125	PASS
CCV4	CCV	1	0.99	99.1	65-125	PASS
CCB4	CCB	1	1	99.53	65-125	PASS

INTERNAL STANDARD: 180621A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCV5	CCV	1	0.99	99.31	65-125	PASS
CCB5	CCB	1	1	99.71	65-125	PASS
CCV6	CCV	1	1	99.81	65-125	PASS
CCB6	CCB	1	0.89	89.016	65-125	PASS
LLCCV1	CCV2	1	1	99.78	65-125	PASS
ICSA2	ICSA	1	1.2	120.26	65-125	PASS
ICSAB2	ICSAB	1	0.86	86.45	65-125	PASS

SERIAL DILUTION/ POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water **Dilution Test Summary**

Work Order No.: N030762
Test Method: EPA 6010B
Analysis Date: 6/21/2018

Matrix: Groundwater
Batch No.: 68437

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030762-001C DT 5X	Iron	ug/L	0	NA	43.59669	100.00%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N030762-001C-PS**	SampType:	**PS**	TestCode:	**6010_WPGE**	Units:	**ug/L**	Prep Date:		RunNo:	**125775**
Client ID:	**ZZZZZZ**	Batch ID:	**68437**	TestNo:	**EPA 6010B**	**EPA 3010A**		Analysis Date:	**6/21/2018**	SeqNo:	**3060984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	153.493	20	100.0	43.60	110	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68436 **Instrument ID:** ICPMS-02
ASSET #: N030762 **Analyst:** CEI
Method: **Date Analyzed:** 6/15/2018

[ ] EPA 6010B / 200.7 [ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8 [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)		X			X	
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X			X	
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%RSD of Se in N030762-004B/7B/11B failed. For rerun.
%Rec of Ba in N030703-001B PS failed. However, LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 6/26/18

2nd Level Reviewer [signature] 6/26/2018 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68436
ASSET #: N030762
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 6/18/2018

Method:

- [ ] EPA 6010B / 200.7
- [X] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			~~X~~		X
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			~~X~~		X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits			X			X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Se rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 6/26/18

2nd Level Reviewer 6/26/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N030762-015B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 0.10968 * 1 * (25/25)

Chromium , ug/L = 0.10968

Reporting results in two significant figures,

Chromium , ug/L = 0.1

Since PQL of Chromium , in ug/L = 1.0

Chromium , ug/L = ND

% RSD SUMMARY

PERCENT RSD SUMMARY: 180615B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	5.79	15	PASS	0.11	9.65	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	5.74	15	PASS	0.51	5.81	15	PASS
Std3-5/50 ppb	ICAL	1	5.085	0.58	15	PASS	4.97	1.76	15	PASS
Std4-10/100 ppb	ICAL	1	10.08	1.23	15	PASS	10.089	2.13	15	PASS
Std5-20/200 ppb	ICAL	1	20.0021	0.7	15	PASS	20.016	1.91	15	PASS
Std6-40/400 ppb	ICAL	1	39.76	0.8	15	PASS	39.73	0.31	15	PASS
Std7-100/1000 ppb	ICAL	1	97.85	0.96	15	PASS	98.06	0.58	15	PASS
Std8-200/2000 ppb	ICAL	1	201.12	1.19	15	PASS	201.02	0.77	15	PASS
ICV	ICV	1	10.53	0.52	15	PASS	10.7	1.68	15	PASS
ICB	ICB	1	0.01	32.33	15	<PQL	0.013	37.93	15	<PQL
LLICV	CCV1	1	1.023	2.23	20	PASS	1.05	2.21	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.047	13.5	15	PASS
ICSAB1	ICSAB	1	18.93	1.057	15	PASS	20.041	0.3	15	PASS
LLICV	CCV1	1	1.0067	3.81	20	PASS	1.015	1.46	20	PASS
CCV1	CCV	1	20.22	0.96	15	PASS	19.7	0.4	15	PASS
CCB1	CCB	1	0.0063	38.67	15	<PQL	0.024	49.7	15	<PQL
CCV2	CCV	1	20.45	0.55	15	PASS	19.52	0.69	15	PASS
CCB2	CCB	1	0.012	23.59	15	<PQL	0.019	14.5	15	PASS
MB-68436	MBLK	1	0.078	2.69	15	PASS	0.029	14.52	15	PASS
LCS-68436	LCS	1	10.7	0.68	15	PASS	10.42	1.11	15	PASS
N030703-001B	SAMP	1	123.87	0.93	15	PASS	2.38	2.1	15	PASS
N030703-001B	SAMP	5	25.8	0.75	15	PASS	0.51	5.58	15	PASS
N030703-001B-PS	PS	1	129.32	0.47	15	PASS	12.27	0.34	15	PASS
N030703-001B-MS	MS	1	131.61	0.52	15	PASS	12.2	1.11	15	PASS
N030703-001B-MSD	MSD	1	131.6	0.26	15	PASS	12.13	1.16	15	PASS
CCV3	CCV	1	20.34	0.75	15	PASS	19.63	0.77	15	PASS
CCB3	CCB	1	0.031	22.37	15	<PQL	0.0074	122.11	15	<PQL
LLCCV1	CCV2	1	1.0067	1.047	20	PASS	1.019	3.0015	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.046	17.9	15	<PQL
ICSAB2	ICSAB	1	19.5	0.51	15	PASS	20.26	0.93	15	PASS
N030703-002B	SAMP	1	97.34	0.85	15	PASS	330.86	1.75	15	PASS
N030704-001B	SAMP	1	138.37	0.37	15	PASS	2.27	2.41	15	PASS
N030704-002B	SAMP	1	35.25	0.4	15	PASS	4.56	2.88	15	PASS
N030762-001B	SAMP	1	113.37	0.22	15	PASS	0.061	33.86	15	<PQL
N030762-002B	SAMP	1	109.16	0.28	15	PASS	0.053	19.81	15	<PQL
N030762-003B	SAMP	1	110.86	0.79	15	PASS	0.022	32.37	15	<PQL
N030762-004B	SAMP	1	111	0.19	15	PASS	0.059	14.71	15	PASS
N030762-005B	SAMP	1	115.015	0.39	15	PASS	0.031	20.75	15	<PQL
N030762-006B	SAMP	1	112.89	0.8	15	PASS	0.035	31.79	15	<PQL
N030762-007B	SAMP	1	113.84	0.42	15	PASS	0.022	34.17	15	<PQL

PERCENT RSD SUMMARY: 180615B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV4	CCV	1	20.4	0.56	15	PASS	19.59	0.97	15	PASS
CCB4	CCB	1	0.021	36.61	15	<PQL	0.013	10.92	15	PASS
N030762-008B	SAMP	1	110.94	0.27	15	PASS	0.058	11.95	15	PASS
N030762-009B	SAMP	1	111.77	0.5	15	PASS	0.061	15.31	15	<PQL
N030762-010B	SAMP	1	115.51	0.44	15	PASS	0.053	12.99	15	PASS
N030762-011B	SAMP	1	118.47	0.53	15	PASS	0.054	34.66	15	<PQL
N030762-012B	SAMP	1	109.37	0.92	15	PASS	0.04	8.4	15	PASS
N030762-013B	SAMP	1	113.49	0.38	15	PASS	0.075	20.81	15	<PQL
N030762-014B	SAMP	1	101.83	0.64	15	PASS	0.05	6.99	15	PASS
N030762-015B	SAMP	1	109.87	0.51	15	PASS	0.11	12.99	15	PASS
CCV5	CCV	1	20.46	1.24	15	PASS	19.49	0.16	15	PASS
CCB5	CCB	1	0.01	58.37	15	<PQL	0.0021	131.36	15	<PQL
LLCCV2	CCV2	1	1.00085	2.24	20	PASS	1.036	1.65	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.036	17.17	15	<PQL
ICSAB3	ICSAB	1	19.88	0.4	15	PASS	19.76	0.87	15	PASS

PERCENT RSD SUMMARY: 180615B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.094	21.24	15	<PQL	0.12	10.54	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	4.96	15	PASS	0.58	3.8	15	PASS
Std3-5/50 ppb	ICAL	1	5.075	1.22	15	PASS	5.29	1.83	15	PASS
Std4-10/100 ppb	ICAL	1	10.45	2.039	15	PASS	10.32	1.53	15	PASS
Std5-20/200 ppb	ICAL	1	20.41	1.19	15	PASS	20.48	0.43	15	PASS
Std6-40/400 ppb	ICAL	1	40.65	1.4	15	PASS	41.1	1.22	15	PASS
Std7-100/1000 ppb	ICAL	1	100.21	0.32	15	PASS	100.49	0.76	15	PASS
Std8-200/2000 ppb	ICAL	1	199.7	0.84	15	PASS	199.46	0.79	15	PASS
ICV	ICV	1	107.52	0.76	15	PASS	10.78	1.68	15	PASS
ICB	ICB	1	0.014	101.69	15	<PQL	0.023	38.72	15	<PQL
LLICV	CCV1	1	0.53	1.22	20	PASS	0.2	11.14	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.61	1.68	15	PASS	21.98	2.61	15	PASS
LLICV	CCV1	1	0.57	4.0043	20	PASS	0.11	6.79	20	PASS
CCV1	CCV	1	20.26	1.37	15	PASS	20.045	1.88	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.014	82.91	15	<PQL
CCV2	CCV	1	20.071	0.26	15	PASS	20.2	3.15	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.019	42.0089	15	<PQL
MB-68436	MBLK	1	0.11	9.51	15	PASS	0.0069	67.48	15	<PQL
LCS-68436	LCS	1	106.27	0.25	15	PASS	10.73	1.64	15	PASS
N030703-001B	SAMP	1	3.4	3.99	15	PASS	1.18	3.61	15	PASS
N030703-001B	SAMP	5	0.73	6.51	15	PASS	0.24	7.86	15	PASS
N030703-001B-PS	PS	1	104.15	0.63	15	PASS	11.98	1.82	15	PASS
N030703-001B-MS	MS	1	103.88	0.74	15	PASS	11.83	0.8	15	PASS
N030703-001B-MSD	MSD	1	103.15	0.42	15	PASS	11.87	0.49	15	PASS
CCV3	CCV	1	20.32	0.22	15	PASS	20.23	0.53	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.014	21.46	15	<PQL
LLCCV1	CCV2	1	0.52	9.67	20	PASS	0.12	31.45	20	NR!
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.54	0.75	15	PASS	21.99	1.17	15	PASS
N030703-002B	SAMP	1	18.041	1.35	15	PASS	1.26	2.89	15	PASS
N030704-001B	SAMP	1	0.57	16.27	15	NR!	1.68	1.9	15	PASS
N030704-002B	SAMP	1	50.69	2.19	15	PASS	1.27	3.23	15	PASS
N030762-001B	SAMP	1	<0.000	N/A	15	<PQL	2.37	3.42	15	PASS
N030762-002B	SAMP	1	<0.000	N/A	15	<PQL	2.26	6.39	15	PASS
N030762-003B	SAMP	1	<0.000	N/A	15	<PQL	2.25	2.5	15	PASS
N030762-004B	SAMP	1	7.95	0.97	15	PASS	2.26	1.59	15	PASS
N030762-005B	SAMP	1	<0.000	N/A	15	<PQL	2.43	1.57	15	PASS
N030762-006B	SAMP	1	<0.000	N/A	15	<PQL	2.37	1.93	15	PASS
N030762-007B	SAMP	1	<0.000	N/A	15	<PQL	2.42	1.049	15	PASS

PERCENT RSD SUMMARY: 180615B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV4	CCV	1	20.11	1.1	15	PASS	20.11	0.8	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.034	10.62	15	PASS
N030762-008B	SAMP	1	<0.000	N/A	15	<PQL	2.35	3.93	15	PASS
N030762-009B	SAMP	1	<0.000	N/A	15	<PQL	2.28	3.56	15	PASS
N030762-010B	SAMP	1	<0.000	N/A	15	<PQL	2.44	1.33	15	PASS
N030762-011B	SAMP	1	<0.000	N/A	15	<PQL	2.53	6.48	15	PASS
N030762-012B	SAMP	1	<0.000	N/A	15	<PQL	2.39	3.08	15	PASS
N030762-013B	SAMP	1	<0.000	N/A	15	<PQL	2.4	1.084	15	PASS
N030762-014B	SAMP	1	3.24	2.066	15	PASS	2.2	2.83	15	PASS
N030762-015B	SAMP	1	7.73	1.14	15	PASS	2.19	3.015	15	PASS
CCV5	CCV	1	20.27	2.29	15	PASS	20.26	1.38	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.023	11.82	15	PASS
LLCCV2	CCV2	1	0.52	1.63	20	PASS	0.09	8.88	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	19.64	1.39	15	PASS	21.71	0.89	15	PASS

PERCENT RSD SUMMARY: 180615B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	18.4	15	<PQL	0.095	14.44	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.6	17.55	15	NR!	0.53	2.42	15	PASS
Std3-5/50 ppb	ICAL	1	4.93	11.21	15	PASS	4.96	1.42	15	PASS
Std4-10/100 ppb	ICAL	1	10.12	1.37	15	PASS	10	1.6	15	PASS
Std5-20/200 ppb	ICAL	1	19.81	2.72	15	PASS	20.065	0.68	15	PASS
Std6-40/400 ppb	ICAL	1	40.08	1.94	15	PASS	39.6	1.81	15	PASS
Std7-100/1000 ppb	ICAL	1	101.89	2.01	15	PASS	100.15	0.57	15	PASS
Std8-200/2000 ppb	ICAL	1	199.054	0.79	15	PASS	200	1.29	15	PASS
ICV	ICV	1	10.96	7.33	15	PASS	10.97	1.11	15	PASS
ICB	ICB	1	0.0055	1.36	15	PASS	0.19	8.28	15	PASS
LLICV	CCV1	1	0.57	13.82	20	PASS	0.59	4.32	20	PASS
ICSA1	ICSA	1	0.0087	204.66	15	<PQL	0.11	15.76	15	<PQL
ICSAB1	ICSAB	1	21.53	3.99	15	PASS	22.36	0.7	15	PASS
LLICV	CCV1	1	0.45	51.26	20	<PQL	0.49	1.75	20	PASS
CCV1	CCV	1	20.71	3.96	15	PASS	20.048	1.35	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.07	10.19	15	PASS
CCV2	CCV	1	20.26	2.61	15	PASS	20.052	0.37	15	PASS
CCB2	CCB	1	0.034	59.7	15	<PQL	0.066	10.038	15	PASS
MB-68436	MBLK	1	<0.000	N/A	15	<PQL	0.01	22.56	15	<PQL
LCS-68436	LCS	1	10.74	9.017	15	PASS	10.73	0.2	15	PASS
N030703-001B	SAMP	1	0.2	0.47	15	PASS	1.28	3.9	15	PASS
N030703-001B	SAMP	5	0.0057	3.41	15	PASS	0.25	2.36	15	PASS
N030703-001B-PS	PS	1	10.54	6.58	15	PASS	12.63	0.55	15	PASS
N030703-001B-MS	MS	1	11.57	4.7	15	PASS	12.58	0.91	15	PASS
N030703-001B-MSD	MSD	1	11.088	5.17	15	PASS	12.69	2.23	15	PASS
CCV3	CCV	1	20.15	0.99	15	PASS	19.91	0.21	15	PASS
CCB3	CCB	1	0.054	18.35	15	<PQL	0.065	12.42	15	PASS
LLCCV1	CCV2	1	0.5	15.43	20	PASS	0.48	3.71	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.063	29.91	15	<PQL
ICSAB2	ICSAB	1	21.8	2.58	15	PASS	22.3	0.81	15	PASS
N030703-002B	SAMP	1	0.24	24.45	15	<PQL	2.22	0.52	15	PASS
N030704-001B	SAMP	1	0.3	26.82	15	<PQL	1.46	7.89	15	PASS
N030704-002B	SAMP	1	0.62	4.87	15	PASS	3.87	1.75	15	PASS
N030762-001B	SAMP	1	1.83	12.37	15	PASS	4.76	1.69	15	PASS
N030762-002B	SAMP	1	1.68	11.63	15	PASS	4.62	0.84	15	PASS
N030762-003B	SAMP	1	1.65	14.11	15	PASS	4.61	1.97	15	PASS
N030762-004B	SAMP	1	1.27	19.97	15	NR!	4.64	0.71	15	PASS
N030762-005B	SAMP	1	1.97	6.57	15	PASS	5.018	1.72	15	PASS
N030762-006B	SAMP	1	1.66	3.49	15	PASS	4.77	0.81	15	PASS
N030762-007B	SAMP	1	1.74	20.22	15	NR!	4.78	1.53	15	PASS

PERCENT RSD SUMMARY: 180615B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
CCV4	CCV	1	20.84	2.2	15	PASS	19.75	1.038	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.065	12.22	15	PASS
N030762-008B	SAMP	1	1.7	8.04	15	PASS	4.67	2.56	15	PASS
N030762-009B	SAMP	1	1.81	11.11	15	PASS	4.69	2.044	15	PASS
N030762-010B	SAMP	1	1.74	11.78	15	PASS	4.87	4.41	15	PASS
N030762-011B	SAMP	1	1.82	18.41	15	NR!	5.09	0.49	15	PASS
N030762-012B	SAMP	1	1.51	3.96	15	PASS	4.57	4.69	15	PASS
N030762-013B	SAMP	1	1.59	9.29	15	PASS	4.83	0.92	15	PASS
N030762-014B	SAMP	1	1.23	6.61	15	PASS	4.65	2.51	15	PASS
N030762-015B	SAMP	1	1.4	11.1	15	PASS	4.64	1.71	15	PASS
CCV5	CCV	1	19.92	4.6	15	PASS	20.072	1.56	15	PASS
CCB5	CCB	1	0.017	153.044	15	<PQL	0.06	11.3	15	PASS
LLCCV2	CCV2	1	0.49	10.79	20	PASS	0.51	4.12	20	PASS
ICSA3	ICSA	1	0.016	59.32	15	<PQL	0.071	27.48	15	<PQL
ICSAB3	ICSAB	1	21.15	2.48	15	PASS	22.39	0.98	15	PASS

PERCENT RSD SUMMARY: 180618A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.14	33.32	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.48	43.52	15	<PQL
Std3-5/50 ppb	ICAL	1	4.56	2.85	15	PASS
Std4-10/100 ppb	ICAL	1	9.86	6.76	15	PASS
Std5-20/200 ppb	ICAL	1	19.77	2.56	15	PASS
Std6-40/400 ppb	ICAL	1	38.98	4.65	15	PASS
Std7-100/1000 ppb	ICAL	1	99.63	1.15	15	PASS
Std8-200/2000 ppb	ICAL	1	200.43	2.24	15	PASS
ICV	ICV	1	10.68	1.64	15	PASS
ICB	ICB	1	0.028	40.77	15	<PQL
LLICV	CCV1	1	0.49	34.7	20	<PQL
ICSA1	ICSA	1	0.026	83.84	15	<PQL
ICSAB1	ICSAB	1	20.28	0.81	15	PASS
N030762-004B	SAMP	1	1.34	2.2	15	PASS
N030762-007B	SAMP	1	1.9	3.1	15	PASS
CCV1	CCV	1	19.46	0.91	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
N030762-011B	SAMP	1	1.74	13.46	15	PASS
CCV2	CCV	1	19.84	2.63	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.4	12.59	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	21.061	1.53	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180615B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0615001.D	RINSE	RINSE	1	06/15/18 4:00 PM
B0615002.D	Cal Blank	IBLK	1	06/15/18 4:06 PM
B0615003.D	Std1-0.1/1 ppb	ICAL	1	06/15/18 4:11 PM
B0615004.D	Std2-0.5/5 ppb	ICAL	1	06/15/18 4:17 PM
B0615005.D	Std3-5/50 ppb	ICAL	1	06/15/18 4:23 PM
B0615006.D	Std4-10/100 ppb	ICAL	1	06/15/18 4:28 PM
B0615007.D	Std5-20/200 ppb	ICAL	1	06/15/18 4:34 PM
B0615008.D	Std6-40/400 ppb	ICAL	1	06/15/18 4:39 PM
B0615009.D	Std7-100/1000 ppb	ICAL	1	06/15/18 4:45 PM
B0615010.D	Std8-200/2000 ppb	ICAL	1	06/15/18 4:51 PM
B0615011.D	ICV	ICV	1	06/15/18 4:56 PM
B0615012.D	ICB	ICB	1	06/15/18 5:02 PM
B0615013.D	LLICV	CCV1	1	06/15/18 5:07 PM
B0615014.D	ICSA1	ICSA	1	06/15/18 5:13 PM
B0615015.D	ICSAB1	ICSAB	1	06/15/18 5:18 PM
B0615016.D	LLICV	CCV1	1	06/15/18 5:24 PM
B0615017.D	MB-68368	MBLK	1	06/15/18 5:30 PM
B0615018.D	LCS-68368	LCS	1	06/15/18 5:36 PM
B0615019.D	N030674-001B	SAMP	1	06/15/18 5:41 PM
B0615020.D	N030674-001B	SAMP	5	06/15/18 5:47 PM
B0615021.D	N030674-001B-PS	PS	1	06/15/18 5:52 PM
B0615022.D	N030674-001B-MS	MS	1	06/15/18 5:58 PM
B0615023.D	N030674-001B-MSD	MSD	1	06/15/18 6:04 PM
B0615024.D	N030674-006B	SAMP	1	06/15/18 6:09 PM
B0615025.D	N030675-001B	SAMP	1	06/15/18 6:15 PM
B0615026.D	N030687-002B	SAMP	1	06/15/18 6:20 PM
B0615027.D	CCV1	CCV	1	06/15/18 6:26 PM
B0615028.D	CCB1	CCB	1	06/15/18 6:32 PM
B0615029.D	N030687-003B	SAMP	1	06/15/18 6:38 PM
B0615030.D	N030687-004B	SAMP	1	06/15/18 6:46 PM
B0615031.D	N030687-005B	SAMP	1	06/15/18 6:52 PM
B0615032.D	N030687-006B	SAMP	1	06/15/18 6:57 PM
B0615033.D	N030688-001B	SAMP	1	06/15/18 7:03 PM
B0615034.D	N030689-001B	SAMP	1	06/15/18 7:09 PM
B0615035.D	N030689-002B	SAMP	1	06/15/18 7:14 PM
B0615036.D	N030689-003B	SAMP	1	06/15/18 7:20 PM
B0615037.D	N030689-004B	SAMP	1	06/15/18 7:25 PM
B0615038.D	N030689-005B	SAMP	1	06/15/18 7:31 PM
B0615039.D	CCV2	CCV	1	06/15/18 7:36 PM
B0615040.D	CCB2	CCB	1	06/15/18 7:42 PM
B0615041.D	N030689-006B	SAMP	1	06/15/18 7:47 PM
B0615042.D	N030689-007B	SAMP	1	06/15/18 7:53 PM

INJECTION LOG: 180615B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0615043.D	N030689-008B	SAMP	1	06/15/18 7:59 PM
B0615044.D	MB-68436	MBLK	1	06/15/18 8:04 PM
B0615045.D	LCS-68436	LCS	1	06/15/18 8:10 PM
B0615046.D	N030703-001B	SAMP	1	06/15/18 8:15 PM
B0615047.D	N030703-001B	SAMP	5	06/15/18 8:21 PM
B0615048.D	N030703-001B-PS	PS	1	06/15/18 8:26 PM
B0615049.D	N030703-001B-MS	MS	1	06/15/18 8:32 PM
B0615050.D	N030703-001B-MSD	MSD	1	06/15/18 8:38 PM
B0615051.D	CCV3	CCV	1	06/15/18 8:43 PM
B0615052.D	CCB3	CCB	1	06/15/18 8:49 PM
B0615053.D	LLCCV1	CCV2	1	06/15/18 8:55 PM
B0615054.D	ICSA2	ICSA	1	06/15/18 9:00 PM
B0615055.D	ICSAB2	ICSAB	1	06/15/18 9:06 PM
B0615056.D	N030703-002B	SAMP	1	06/15/18 9:11 PM
B0615057.D	N030704-001B	SAMP	1	06/15/18 9:17 PM
B0615058.D	N030704-002B	SAMP	1	06/15/18 9:22 PM
B0615059.D	N030762-001B	SAMP	1	06/15/18 9:28 PM
B0615060.D	N030762-002B	SAMP	1	06/15/18 9:33 PM
B0615061.D	N030762-003B	SAMP	1	06/15/18 9:39 PM
B0615062.D	N030762-004B	SAMP	1	06/15/18 9:45 PM
B0615063.D	N030762-005B	SAMP	1	06/15/18 9:50 PM
B0615064.D	N030762-006B	SAMP	1	06/15/18 9:56 PM
B0615065.D	N030762-007B	SAMP	1	06/15/18 10:01 PM
B0615066.D	CCV4	CCV	1	06/15/18 10:07 PM
B0615067.D	CCB4	CCB	1	06/15/18 10:13 PM
B0615068.D	N030762-008B	SAMP	1	06/15/18 10:18 PM
B0615069.D	N030762-009B	SAMP	1	06/15/18 10:24 PM
B0615070.D	N030762-010B	SAMP	1	06/15/18 10:29 PM
B0615071.D	N030762-011B	SAMP	1	06/15/18 10:35 PM
B0615072.D	N030762-012B	SAMP	1	06/15/18 10:41 PM
B0615073.D	N030762-013B	SAMP	1	06/15/18 10:46 PM
B0615074.D	N030762-014B	SAMP	1	06/15/18 10:52 PM
B0615075.D	N030762-015B	SAMP	1	06/15/18 10:57 PM
B0615076.D	CCV5	CCV	1	06/15/18 11:03 PM
B0615077.D	CCB5	CCB	1	06/15/18 11:09 PM
B0615078.D	LLCCV2	CCV2	1	06/15/18 11:15 PM
B0615079.D	ICSA3	ICSA	1	06/15/18 11:20 PM
B0615080.D	ICSAB3	ICSAB	1	06/15/18 11:25 PM

INJECTION LOG: 180618A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0618001.D	RINSE	RINSE	1	06/18/18 1:49 PM
A0618002.D	Cal Blank	IBLK	1	06/18/18 1:55 PM
A0618003.D	Std1-0.1/1 ppb	ICAL	1	06/18/18 2:00 PM
A0618004.D	Std2-0.5/5 ppb	ICAL	1	06/18/18 2:06 PM
A0618005.D	Std3-5/50 ppb	ICAL	1	06/18/18 2:11 PM
A0618006.D	Std4-10/100 ppb	ICAL	1	06/18/18 2:17 PM
A0618007.D	Std5-20/200 ppb	ICAL	1	06/18/18 2:22 PM
A0618008.D	Std6-40/400 ppb	ICAL	1	06/18/18 2:28 PM
A0618009.D	Std7-100/1000 ppb	ICAL	1	06/18/18 2:33 PM
A0618010.D	Std8-200/2000 ppb	ICAL	1	06/18/18 2:39 PM
A0618011.D	ICV	ICV	1	06/18/18 2:45 PM
A0618012.D	ICB	ICB	1	06/18/18 2:50 PM
A0618013.D	LLICV	CCV1	1	06/18/18 2:56 PM
A0618014.D	ICSA1	ICSA	1	06/18/18 3:01 PM
A0618015.D	ICSAB1	ICSAB	1	06/18/18 3:07 PM
A0618016.D	N030627-001C	SAMP	1	06/18/18 3:12 PM
A0618017.D	N030627-002C	SAMP	1	06/18/18 3:18 PM
A0618018.D	N030687-002B	SAMP	5	06/18/18 3:23 PM
A0618019.D	N030687-004B	SAMP	25	06/18/18 3:29 PM
A0618020.D	N030687-005B	SAMP	5	06/18/18 3:35 PM
A0618021.D	N030687-006B	SAMP	5	06/18/18 3:40 PM
A0618022.D	N030688-001B	SAMP	5	06/18/18 3:46 PM
A0618023.D	N030703-002B	SAMP	5	06/18/18 3:51 PM
A0618024.D	N030762-004B	SAMP	1	06/18/18 3:57 PM
A0618025.D	N030762-007B	SAMP	1	06/18/18 4:02 PM
A0618026.D	CCV1	CCV	1	06/18/18 4:08 PM
A0618027.D	CCB1	CCB	1	06/18/18 4:13 PM
A0618028.D	N030762-011B	SAMP	1	06/18/18 4:19 PM
A0618029.D	N030627-002C	SAMP	1	06/18/18 4:25 PM
A0618030.D	CCV2	CCV	1	06/18/18 4:30 PM
A0618031.D	CCB2	CCB	1	06/18/18 4:36 PM
A0618032.D	LLCCV1	CCV2	1	06/18/18 4:41 PM
A0618033.D	ICSA2	ICSA	1	06/18/18 4:47 PM
A0618034.D	ICSAB2	ICSAB	1	06/18/18 4:52 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/13/2018 4:00:00**
Prep End Date: **6/13/2018 8:05:00**

Reviewed/ Date: 6/26/2018

Initials/ Date: 6/26/2018

Prep Batch **68436** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units **mL / mL** Temp. (°C): **94.8** Location: **02-19**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68436	Aqueous		25	☐	0	0	25	1.000		
MB-68436	Aqueous		25	☐	0	0	25	1.000		
N030703-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N030703-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030703-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030703-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N030704-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N030704-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-180517	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/13/2018 4:00:00**
Prep End Date: **6/13/2018 8:05:00**
Prep Batch **68436** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 6/26/2018
Initials/ Date: 6/26/2018
Technician **Claire Ignacio**

Prep Factor Units **mL / mL** Temp. (°C): **94.8** Location: **02-19**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N030762-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N030762-015B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-180517	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 15 Jun 2018 09:40:38 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	145920.00	0.00	
24	Mg	481285.00	0.00	
25	Mg	63199.10	0.00	
26	Mg	74077.70	0.00	
59	Co	526515.00	0.00	
115	In	834621.00	0.00	
206	Pb	233316.00	0.00	
207	Pb	202257.00	0.00	
208	Pb	495920.00	0.00	

RSD (%)

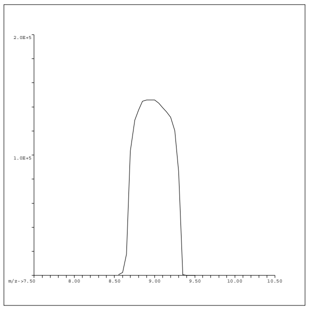
Element		Actual	Required	Flag
9	Be	1.33	5.00	
24	Mg	0.99	5.00	
25	Mg	0.73	5.00	
26	Mg	1.57	5.00	
59	Co	0.62	5.00	
115	In	0.56	5.00	
206	Pb	0.73	5.00	
207	Pb	0.97	5.00	
208	Pb	0.79	5.00	

Ion Ratio

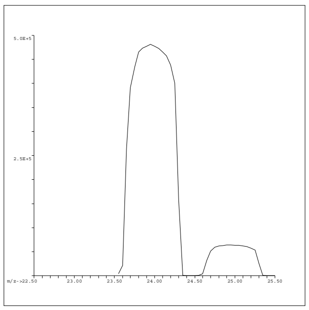
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

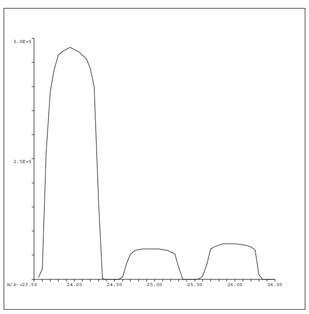
Element	Actual	Required	Flag



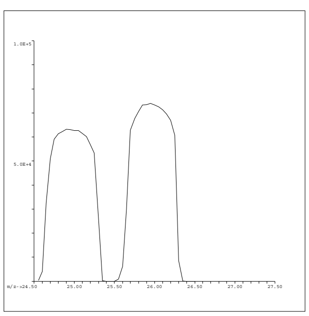
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



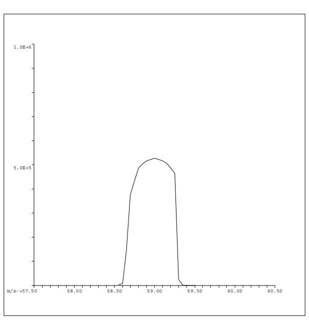
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



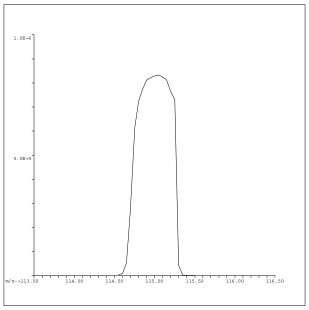
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



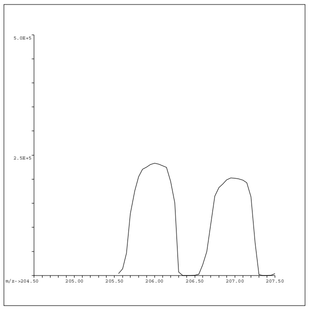
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



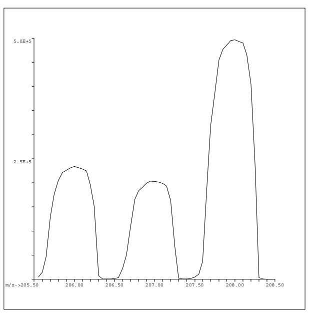
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



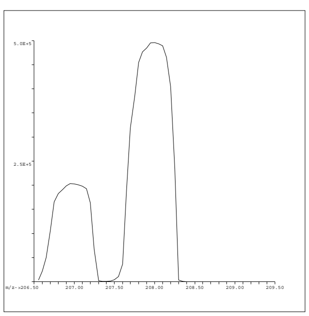
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 18 Jun 2018 11:44:07 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	94133.80	0.00	
24	Mg	371152.00	0.00	
25	Mg	48684.80	0.00	
26	Mg	56008.30	0.00	
59	Co	391946.00	0.00	
115	In	714677.00	0.00	
206	Pb	211727.00	0.00	
207	Pb	185821.00	0.00	
208	Pb	452561.00	0.00	

RSD (%)

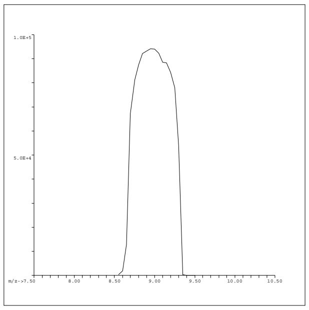
Element		Actual	Required	Flag
9	Be	0.77	5.00	
24	Mg	0.72	5.00	
25	Mg	1.37	5.00	
26	Mg	1.28	5.00	
59	Co	0.69	5.00	
115	In	0.81	5.00	
206	Pb	0.76	5.00	
207	Pb	0.57	5.00	
208	Pb	0.62	5.00	

Ion Ratio

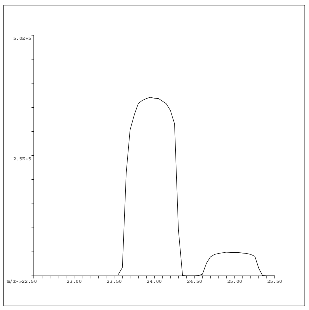
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

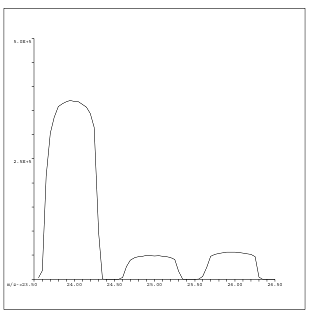
Element	Actual	Required	Flag



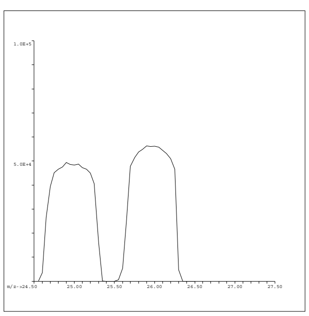
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



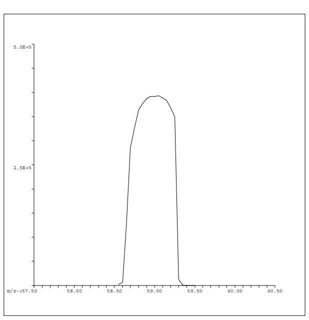
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



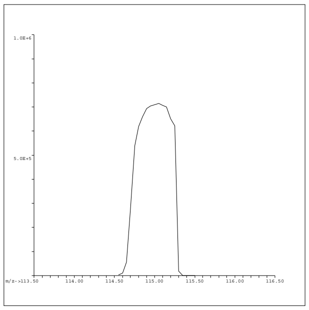
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



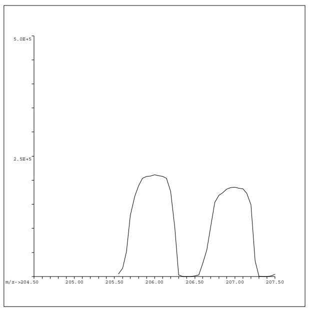
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



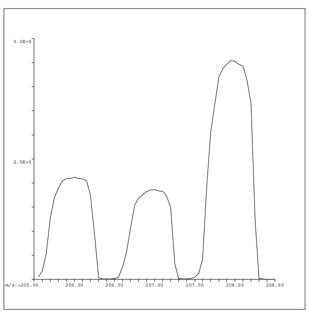
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



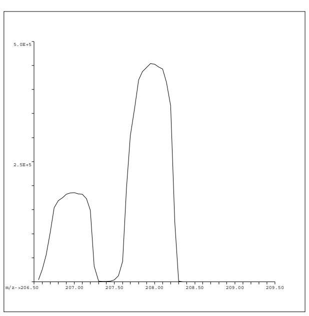
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180615B

Instrument ID: ICPMS-02

Analyte	Data File	B0615002.D	B0615003.D	B0615004.D	B0615005.D	B0615006.D	B0615007.D	B0615008.D	B0615009.D	B0615010.D	
	Acq. Date-Time	06/15/2018 04:06 PM	06/15/2018 04:11 PM	06/15/2018 04:17 PM	06/15/2018 04:23 PM	06/15/2018 04:28 PM	06/15/2018 04:34 PM	06/15/2018 04:39 PM	06/15/2018 04:45 PM	06/15/2018 04:51 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	74623.8		81563.5	81763.9	82068.2	81502.3	83026.6	80943.1	80308.8	
55 Mn [2]	CPS	155.4		1717.4	15686.7	32224.2	62367	126360.5	303469.2	599836.3	1.0000
52 Cr [2]	CPS	138.8		3499.3	33012.2	67087.3	132052.9	266848.9	641945.3	1305578	0.9999
72 Ge (ISTD) [1]	CPS	51727.1		56742.3	57455	57449.4	57508.5	57411.3	56125.9	57194.1	
78 Se [1]	CPS	2.2		127.8	1041.2	2133.5	4178.5	8435.8	20961.9	41732.2	0.9999
72 Ge (ISTD) [2]	CPS	50567.8	56438.1	56353.3	55773.5	56785	55939.7	56417.9	55150.5	55678.9	
75 As [2]	CPS	7.1	98.7	455.1	4020.1	7968.7	15575.1	31519.7	75323.5	150933.2	1.0000
103 Rh (ISTD) [2]	CPS	1544254.6		1679454.3	1685778.1	1719986.7	1665054.4	1706414.5	1640064.5	1635897.5	
95 Mo [2]	CPS	33.3		2185.8	20135.4	41358.5	80316.2	162405.9	394710.9	786140.3	1.0000
159 Tb (ISTD) [3]	CPS	4544046.5		5024371.1	5001763.4	5057372.4	4920240.2	5027331.8	4918048	4903425.3	
137 Ba [3]	CPS	64.7		4169.7	40330.6	80762.5	155853.6	316438.2	761850.7	1561140.7	0.9999

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MSST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180618A

Instrument ID: ICPMS-02

Analyte	Data File	A0618002.D	A0618004.D	A0618005.D	A0618006.D	A0618007.D	A0618008.D	A0618009.D	A0618010.D	
	Acq. Date-Time	06/18/2018 01:55 PM	06/18/2018 02:06 PM	06/18/2018 02:11 PM	06/18/2018 02:17 PM	06/18/2018 02:22 PM	06/18/2018 02:28 PM	06/18/2018 02:33 PM	06/18/2018 02:39 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	51054	48953.1	47463.3	46676.4	46615.2	45573.3	45333.8	44578.4	
78 Se [1]	CPS	3.3	91.1	817.8	1734.6	3473.8	6693.9	17011.7	33641.2	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MSST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ICV** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.779	0.10	10.00	0	108	90	110				
Barium	10.529	1.0	10.00	0	105	90	110				
Manganese	107.520	0.50	100.0	0	108	90	110				
Molybdenum	10.971	0.50	10.00	0	110	90	110				
Selenium	10.958	0.50	10.00	0	110	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.023	1.0	1.000	0	102	80	120				
Manganese	0.530	0.50	0.5000	0	106	80	120				
Molybdenum	0.594	0.50	0.5000	0	119	80	120				
Selenium	0.566	0.50	0.5000	0	113	80	120				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055534**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.110	0.10	0.1000	0	110	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCV** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.045	0.10	20.00	0	100	90	110				
Barium	20.220	1.0	20.00	0	101	90	110				
Manganese	20.265	0.50	20.00	0	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCV** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	20.048	0.50	20.00	0	100	90	110				
Selenium	20.710	0.50	20.00	0	104	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCV** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055557**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.198	0.10	20.00	0	101	90	110				
Barium	20.452	1.0	20.00	0	102	90	110				
Manganese	20.071	0.50	20.00	0	100	90	110				
Molybdenum	20.052	0.50	20.00	0	100	90	110				
Selenium	20.259	0.50	20.00	0	101	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCV** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.232	0.10	20.00	0	101	90	110				
Barium	20.343	1.0	20.00	0	102	90	110				
Manganese	20.324	0.50	20.00	0	102	90	110				
Molybdenum	19.907	0.50	20.00	0	99.5	90	110				
Selenium	20.152	0.50	20.00	0	101	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.116	0.10	0.1000	0	116	70	130				
Barium	1.007	1.0	1.000	0	101	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.518	0.50	0.5000	0	104	70	130				
Molybdenum	0.481	0.50	0.5000	0	96.1	70	130				
Selenium	0.498	0.50	0.5000	0	99.7	70	130				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCV** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.108	0.10	20.00	0	101	90	110				
Barium	20.400	1.0	20.00	0	102	90	110				
Manganese	20.111	0.50	20.00	0	101	90	110				
Molybdenum	19.749	0.50	20.00	0	98.7	90	110				
Selenium	20.839	0.50	20.00	0	104	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCV** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.263	0.10	20.00	0	101	90	110				
Barium	20.460	1.0	20.00	0	102	90	110				
Manganese	20.266	0.50	20.00	0	101	90	110				
Molybdenum	20.072	0.50	20.00	0	100	90	110				
Selenium	19.923	0.50	20.00	0	99.6	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.090	0.10	0.1000	0	90.0	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055596**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.001	1.0	1.000	0	100	70	130				
Manganese	0.521	0.50	0.5000	0	104	70	130				
Molybdenum	0.510	0.50	0.5000	0	102	70	130				
Selenium	0.491	0.50	0.5000	0	98.2	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124711**
Client ID: **ICV** Batch ID: **R124711** TestNo: **EPA 6020** Analysis Date: **6/18/2018** SeqNo: **3057617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.683	0.50	10.00	0	107	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124711**
Client ID: **ZZZZZZ** Batch ID: **R124711** TestNo: **EPA 6020** Analysis Date: **6/18/2018** SeqNo: **3057619**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.487	0.50	0.5000	0	97.4	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124711**
Client ID: **CCV** Batch ID: **R124711** TestNo: **EPA 6020** Analysis Date: **6/18/2018** SeqNo: **3057632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.459	0.50	20.00	0	97.3	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124711**
Client ID: **CCV** Batch ID: **R124711** TestNo: **EPA 6020** Analysis Date: **6/18/2018** SeqNo: **3057636**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.838	0.50	20.00	0	99.2	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124711**
Client ID: **ZZZZZZ** Batch ID: **R124711** TestNo: **EPA 6020** Analysis Date: **6/18/2018** SeqNo: **3057638**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.404	0.50	0.5000	0	80.8	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ICV** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.698	1.0	10.00	0	107	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.050	1.0	1.000	0	105	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCV** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.699	1.0	20.00	0	98.5	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCV** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055634**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.522	1.0	20.00	0	97.6	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCV** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.634	1.0	20.00	0	98.2	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055648**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.019	1.0	1.000	0	102	70	130				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCV** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055661**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.587	1.0	20.00	0	97.9	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCV** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.493	1.0	20.00	0	97.5	90	110				

Sample ID **LLCCV2** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055673**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.036	1.0	1.000	0	104	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ICB** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCB** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCB** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCB** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCB** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB5** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCB** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124711**
Client ID: **ICB** Batch ID: **R124711** TestNo: **EPA 6020** Analysis Date: **6/18/2018** SeqNo: **3057618**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124711**
Client ID: **CCB** Batch ID: **R124711** TestNo: **EPA 6020** Analysis Date: **6/18/2018** SeqNo: **3057633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124711**
Client ID: **CCB** Batch ID: **R124711** TestNo: **EPA 6020** Analysis Date: **6/18/2018** SeqNo: **3057637**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ICB** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCB** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055623**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCB** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055635**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCB** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **CCB** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055662**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP** Units: **µg/L**	Prep Date:	RunNo: **124675**
Client ID: **CCB**	Batch ID: **R124675**	TestNo: **EPA 6020**	Analysis Date: **6/15/2018**	SeqNo: **3055672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

ASSET Laboratories

Date: *19-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ICSA** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ICSAB** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055533**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.976	0.10	20.00	0	110	80	120				
Barium	18.931	1.0	20.00	0	94.7	80	120				
Manganese	19.607	0.50	20.00	0	98.0	80	120				
Molybdenum	22.360	0.50	20.00	0	112	80	120				
Selenium	21.534	0.50	20.00	0	108	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ICSA** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ICSAB** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.991	0.10	20.00	0	110	80	120				
Barium	19.495	1.0	20.00	0	97.5	80	120				
Manganese	19.540	0.50	20.00	0	97.7	80	120				
Molybdenum	22.297	0.50	20.00	0	111	80	120				
Selenium	21.796	0.50	20.00	0	109	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ICSA** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055597**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ICSAB** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055598**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.711	0.10	20.00	0	109	80	120				
Barium	19.876	1.0	20.00	0	99.4	80	120				
Manganese	19.639	0.50	20.00	0	98.2	80	120				
Molybdenum	22.385	0.50	20.00	0	112	80	120				
Selenium	21.153	0.50	20.00	0	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124711**
Client ID: **ICSA**	Batch ID: **R124711**	TestNo: **EPA 6020**		Analysis Date: **6/18/2018**	SeqNo: **3057620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124711**
Client ID: **ICSAB**	Batch ID: **R124711**	TestNo: **EPA 6020**		Analysis Date: **6/18/2018**	SeqNo: **3057621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.284	0.50	20.00	0	101	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124711**
Client ID: **ICSA**	Batch ID: **R124711**	TestNo: **EPA 6020**		Analysis Date: **6/18/2018**	SeqNo: **3057639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **124711**
Client ID: **ICSAB**	Batch ID: **R124711**	TestNo: **EPA 6020**		Analysis Date: **6/18/2018**	SeqNo: **3057640**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	21.061	0.50	20.00	0	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ICSA** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055609**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ICSAB** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.041	1.0	20.00	0	100	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ICSA** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055649**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ICSAB** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055650**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.260	1.0	20.00	0	101	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ICSA** Batch ID: **R124675** TestNo: **EPA 6020** Analysis Date: **6/15/2018** SeqNo: **3055674**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP** Units: **µg/L**	Prep Date:	RunNo: **124675**
Client ID: **ICSAB**	Batch ID: **R124675**	TestNo: **EPA 6020**	Analysis Date: **6/15/2018**	SeqNo: **3055675**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.761	1.0	20.00	0	98.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180615B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	4544046.5	4544046.5	100	PASS	70-125	74623.8	74623.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	5117147.1	4544046.5	112.61	PASS	70-125	82337.4	74623.8	110.34	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	5024371.1	4544046.5	110.57	PASS	70-125	81563.5	74623.8	109.3	PASS	70-125
Std3-5/50 ppb	ICAL	1	5001763.4	4544046.5	110.07	PASS	70-125	81763.9	74623.8	109.57	PASS	70-125
Std4-10/100 ppb	ICAL	1	5057372.4	4544046.5	111.3	PASS	70-125	82068.2	74623.8	109.98	PASS	70-125
Std5-20/200 ppb	ICAL	1	4920240.2	4544046.5	108.28	PASS	70-125	81502.3	74623.8	109.22	PASS	70-125
Std6-40/400 ppb	ICAL	1	5027331.8	4544046.5	110.64	PASS	70-125	83026.6	74623.8	111.26	PASS	70-125
Std7-100/1000 ppb	ICAL	1	4918048	4544046.5	108.23	PASS	70-125	80943.1	74623.8	108.47	PASS	70-125
Std8-200/2000 ppb	ICAL	1	4903425.3	4544046.5	107.91	PASS	70-125	80308.8	74623.8	107.62	PASS	70-125
ICV	ICV	1	4774164.8	4544046.5	105.06	PASS	70-125	76736.5	74623.8	102.83	PASS	70-125
ICB	ICB	1	4525075.4	4544046.5	99.58	PASS	70-125	73573.7	74623.8	98.59	PASS	70-125
LLICV	CCV1	1	4701592.7	4544046.5	103.47	PASS	70-125	76419.8	74623.8	102.41	PASS	70-125
ICSA1	ICSA	1	4626837.9	4544046.5	101.82	PASS	70-125	84697.9	74623.8	113.5	PASS	70-125
ICSAB1	ICSAB	1	4724659.4	4544046.5	103.97	PASS	70-125	90111.8	74623.8	120.75	PASS	70-125
LLICV	CCV1	1	4678419	4544046.5	102.96	PASS	70-125	68264.3	74623.8	91.48	PASS	70-125
CCV1	CCV	1	4951832.2	4544046.5	108.97	PASS	70-125	87327.3	74623.8	117.02	PASS	70-125
CCB1	CCB	1	4520128.9	4544046.5	99.47	PASS	70-125	76474.3	74623.8	102.48	PASS	70-125
CCV2	CCV	1	4976235.8	4544046.5	109.51	PASS	70-125	92530.8	74623.8	124	PASS	70-125
CCB2	CCB	1	4557531.4	4544046.5	100.3	PASS	70-125	80403.7	74623.8	107.75	PASS	70-125
MB-68436	MBLK	1	4689726.3	4544046.5	103.21	PASS	70-125	78521.3	74623.8	105.22	PASS	70-125
LCS-68436	LCS	1	4790507.1	4544046.5	105.42	PASS	70-125	81005.4	74623.8	108.55	PASS	70-125
N030703-001B	SAMP	1	4466075.4	4544046.5	98.28	PASS	70-125	76775.7	74623.8	102.88	PASS	70-125
N030703-001B	SAMP	5	4424375.2	4544046.5	97.37	PASS	70-125	77945.7	74623.8	104.45	PASS	70-125
N030703-001B-PS	PS	1	4449205.4	4544046.5	97.91	PASS	70-125	76766.5	74623.8	102.87	PASS	70-125
N030703-001B-MS	MS	1	4486053.5	4544046.5	98.72	PASS	70-125	78873.6	74623.8	105.69	PASS	70-125
N030703-001B-MSD	MSD	1	4544210.4	4544046.5	100	PASS	70-125	80871.7	74623.8	108.37	PASS	70-125
CCV3	CCV	1	4862166.2	4544046.5	107	PASS	70-125	84947.1	74623.8	113.83	PASS	70-125
CCB3	CCB	1	4473532.7	4544046.5	98.45	PASS	70-125	75379.5	74623.8	101.01	PASS	70-125
LLCCV1	CCV2	1	4812647.5	4544046.5	105.91	PASS	70-125	69144.9	74623.8	92.66	PASS	70-125
ICSA2	ICSA	1	4554225.6	4544046.5	100.22	PASS	70-125	79923.6	74623.8	107.1	PASS	70-125
ICSAB2	ICSAB	1	4607640.8	4544046.5	101.4	PASS	70-125	84634.9	74623.8	113.42	PASS	70-125
N030703-002B	SAMP	1	4312022.3	4544046.5	94.89	PASS	70-125	71101.8	74623.8	95.28	PASS	70-125
N030704-001B	SAMP	1	4472581.5	4544046.5	98.43	PASS	70-125	75324.8	74623.8	100.94	PASS	70-125
N030704-002B	SAMP	1	4299340	4544046.5	94.61	PASS	70-125	74726.4	74623.8	100.14	PASS	70-125
N030762-001B	SAMP	1	4562451	4544046.5	100.41	PASS	70-125	78574.1	74623.8	105.29	PASS	70-125
N030762-002B	SAMP	1	4510678.7	4544046.5	99.27	PASS	70-125	78672.1	74623.8	105.42	PASS	70-125
N030762-003B	SAMP	1	4560438.5	4544046.5	100.36	PASS	70-125	79976.1	74623.8	107.17	PASS	70-125
N030762-004B	SAMP	1	4532426.8	4544046.5	99.74	PASS	70-125	79261.9	74623.8	106.22	PASS	70-125
N030762-005B	SAMP	1	4505965.7	4544046.5	99.16	PASS	70-125	80227.4	74623.8	107.51	PASS	70-125
N030762-006B	SAMP	1	4642264.7	4544046.5	102.16	PASS	70-125	82571.9	74623.8	110.65	PASS	70-125
N030762-007B	SAMP	1	4484924.3	4544046.5	98.7	PASS	70-125	78847.7	74623.8	105.66	PASS	70-125

INTERNAL STANDARD: 180615B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV4	CCV	1	4838660.7	4544046.5	106.48	PASS	70-125	85895.5	74623.8	115.1	PASS	70-125
CCB4	CCB	1	4449529.4	4544046.5	97.92	PASS	70-125	75785.6	74623.8	101.56	PASS	70-125
N030762-008B	SAMP	1	4498655.3	4544046.5	99.001	PASS	70-125	74966.5	74623.8	100.46	PASS	70-125
N030762-009B	SAMP	1	4526784.6	4544046.5	99.62	PASS	70-125	76289.1	74623.8	102.23	PASS	70-125
N030762-010B	SAMP	1	4405091.1	4544046.5	96.94	PASS	70-125	75194.1	74623.8	100.76	PASS	70-125
N030762-011B	SAMP	1	4399801	4544046.5	96.83	PASS	70-125	76395.1	74623.8	102.37	PASS	70-125
N030762-012B	SAMP	1	4426508.9	4544046.5	97.41	PASS	70-125	77359.2	74623.8	103.67	PASS	70-125
N030762-013B	SAMP	1	4549918.1	4544046.5	100.13	PASS	70-125	79955	74623.8	107.14	PASS	70-125
N030762-014B	SAMP	1	4411492.7	4544046.5	97.083	PASS	70-125	77291.2	74623.8	103.57	PASS	70-125
N030762-015B	SAMP	1	4465910	4544046.5	98.28	PASS	70-125	77064	74623.8	103.27	PASS	70-125
CCV5	CCV	1	4817043.2	4544046.5	106.01	PASS	70-125	85380.4	74623.8	114.41	PASS	70-125
CCB5	CCB	1	4461657.6	4544046.5	98.19	PASS	70-125	75504.4	74623.8	101.18	PASS	70-125
LLCCV2	CCV2	1	4154911.9	4544046.5	91.44	PASS	70-125	70560.5	74623.8	94.55	PASS	70-125
ICSA3	ICSA	1	4595810.9	4544046.5	101.14	PASS	70-125	82588.7	74623.8	110.67	PASS	70-125
ICSAB3	ICSAB	1	4622780.9	4544046.5	101.73	PASS	70-125	88020.8	74623.8	117.95	PASS	70-125

INTERNAL STANDARD: 180615B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	50567.8	50567.8	100	PASS	70-125	51727.1	51727.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	56438.1	50567.8	111.61	PASS	70-125	57874	51727.1	111.88	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	56353.3	50567.8	111.44	PASS	70-125	56742.3	51727.1	109.7	PASS	70-125
Std3-5/50 ppb	ICAL	1	55773.5	50567.8	110.29	PASS	70-125	57455	51727.1	111.07	PASS	70-125
Std4-10/100 ppb	ICAL	1	56785	50567.8	112.29	PASS	70-125	57449.4	51727.1	111.06	PASS	70-125
Std5-20/200 ppb	ICAL	1	55939.7	50567.8	110.62	PASS	70-125	57508.5	51727.1	111.18	PASS	70-125
Std6-40/400 ppb	ICAL	1	56417.9	50567.8	111.57	PASS	70-125	57411.3	51727.1	110.99	PASS	70-125
Std7-100/1000 ppb	ICAL	1	55150.5	50567.8	109.06	PASS	70-125	56125.9	51727.1	108.5	PASS	70-125
Std8-200/2000 ppb	ICAL	1	55678.9	50567.8	110.11	PASS	70-125	57194.1	51727.1	110.57	PASS	70-125
ICV	ICV	1	53593	50567.8	105.98	PASS	70-125	53635.3	51727.1	103.69	PASS	70-125
ICB	ICB	1	50453.1	50567.8	99.77	PASS	70-125	52522.8	51727.1	101.54	PASS	70-125
LLICV	CCV1	1	52827.3	50567.8	104.47	PASS	70-125	54016.6	51727.1	104.43	PASS	70-125
ICSA1	ICSA	1	56233.8	50567.8	111.2	PASS	70-125	59210.3	51727.1	114.47	PASS	70-125
ICSAB1	ICSAB	1	58452.8	50567.8	115.59	PASS	70-125	60505.7	51727.1	116.97	PASS	70-125
LLICV	CCV1	1	47496.7	50567.8	93.93	PASS	70-125	46897.1	51727.1	90.66	PASS	70-125
CCV1	CCV	1	59375.3	50567.8	117.42	PASS	70-125	59081.8	51727.1	114.22	PASS	70-125
CCB1	CCB	1	51882.1	50567.8	102.6	PASS	70-125	52696	51727.1	101.87	PASS	70-125
CCV2	CCV	1	61104.9	50567.8	120.84	PASS	70-125	61468.5	51727.1	118.83	PASS	70-125
CCB2	CCB	1	53772.5	50567.8	106.34	PASS	70-125	53555.2	51727.1	103.53	PASS	70-125
MB-68436	MBLK	1	53218.5	50567.8	105.24	PASS	70-125	52775.8	51727.1	102.03	PASS	70-125
LCS-68436	LCS	1	54176	50567.8	107.14	PASS	70-125	55124.9	51727.1	106.57	PASS	70-125
N030703-001B	SAMP	1	51704.7	50567.8	102.25	PASS	70-125	52053.5	51727.1	100.63	PASS	70-125
N030703-001B	SAMP	5	52254.5	50567.8	103.34	PASS	70-125	52019.1	51727.1	100.56	PASS	70-125
N030703-001B-PS	PS	1	51478.8	50567.8	101.8	PASS	70-125	50826.5	51727.1	98.26	PASS	70-125
N030703-001B-MS	MS	1	53008.8	50567.8	104.83	PASS	70-125	52460.6	51727.1	101.42	PASS	70-125
N030703-001B-MSD	MSD	1	53612.1	50567.8	106.02	PASS	70-125	52905.3	51727.1	102.28	PASS	70-125
CCV3	CCV	1	57253.2	50567.8	113.22	PASS	70-125	56939.8	51727.1	110.08	PASS	70-125
CCB3	CCB	1	51140.7	50567.8	101.13	PASS	70-125	50417.4	51727.1	97.47	PASS	70-125
LLCCV1	CCV2	1	47902.1	50567.8	94.73	PASS	70-125	46232.9	51727.1	89.38	PASS	70-125
ICSA2	ICSA	1	52997.6	50567.8	104.81	PASS	70-125	52069.1	51727.1	100.66	PASS	70-125
ICSAB2	ICSAB	1	55680	50567.8	110.11	PASS	70-125	55976.7	51727.1	108.22	PASS	70-125
N030703-002B	SAMP	1	48089.2	50567.8	95.098	PASS	70-125	50112.2	51727.1	96.88	PASS	70-125
N030704-001B	SAMP	1	51024.9	50567.8	100.9	PASS	70-125	52267.6	51727.1	101.05	PASS	70-125
N030704-002B	SAMP	1	50416.3	50567.8	99.7	PASS	70-125	50719.4	51727.1	98.052	PASS	70-125
N030762-001B	SAMP	1	53743.5	50567.8	106.28	PASS	70-125	54182.9	51727.1	104.75	PASS	70-125
N030762-002B	SAMP	1	52822.8	50567.8	104.46	PASS	70-125	54187.1	51727.1	104.76	PASS	70-125
N030762-003B	SAMP	1	53583	50567.8	105.96	PASS	70-125	54532.9	51727.1	105.42	PASS	70-125
N030762-004B	SAMP	1	53753.5	50567.8	106.3	PASS	70-125	55206.1	51727.1	106.73	PASS	70-125
N030762-005B	SAMP	1	53100.2	50567.8	105.01	PASS	70-125	55026.8	51727.1	106.38	PASS	70-125
N030762-006B	SAMP	1	54702.2	50567.8	108.18	PASS	70-125	57104.8	51727.1	110.4	PASS	70-125
N030762-007B	SAMP	1	53445.8	50567.8	105.69	PASS	70-125	54693.3	51727.1	105.73	PASS	70-125

INTERNAL STANDARD: 180615B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
CCV4	CCV	1	57065.8	50567.8	112.85	PASS	70-125	58415.1	51727.1	112.93	PASS	70-125
CCB4	CCB	1	51293.6	50567.8	101.44	PASS	70-125	51825.1	51727.1	100.19	PASS	70-125
N030762-008B	SAMP	1	51234.3	50567.8	101.32	PASS	70-125	52778.2	51727.1	102.03	PASS	70-125
N030762-009B	SAMP	1	52669	50567.8	104.16	PASS	70-125	53031.1	51727.1	102.52	PASS	70-125
N030762-010B	SAMP	1	51684.8	50567.8	102.21	PASS	70-125	52562	51727.1	101.61	PASS	70-125
N030762-011B	SAMP	1	51550.9	50567.8	101.94	PASS	70-125	52224.1	51727.1	100.96	PASS	70-125
N030762-012B	SAMP	1	52192.9	50567.8	103.21	PASS	70-125	53324.3	51727.1	103.09	PASS	70-125
N030762-013B	SAMP	1	53060.3	50567.8	104.93	PASS	70-125	54518.4	51727.1	105.4	PASS	70-125
N030762-014B	SAMP	1	52664.6	50567.8	104.15	PASS	70-125	53395.8	51727.1	103.23	PASS	70-125
N030762-015B	SAMP	1	52790.6	50567.8	104.4	PASS	70-125	54204.9	51727.1	104.79	PASS	70-125
CCV5	CCV	1	56920.8	50567.8	112.56	PASS	70-125	57743.7	51727.1	111.63	PASS	70-125
CCB5	CCB	1	51323.5	50567.8	101.49	PASS	70-125	51756.1	51727.1	100.06	PASS	70-125
LLCCV2	CCV2	1	49849	50567.8	98.58	PASS	70-125	45175.4	51727.1	87.33	PASS	70-125
ICSA3	ICSA	1	55037.9	50567.8	108.84	PASS	70-125	54461.4	51727.1	105.29	PASS	70-125
ICSAB3	ICSAB	1	57401.5	50567.8	113.51	PASS	70-125	58465.4	51727.1	113.03	PASS	70-125

INTERNAL STANDARD: 180615B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	1544254.6	1544254.6	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	1718497.5	1544254.6	111.28	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	1679454.3	1544254.6	108.76	PASS	70-125
Std3-5/50 ppb	ICAL	1	1685778.1	1544254.6	109.16	PASS	70-125
Std4-10/100 ppb	ICAL	1	1719986.7	1544254.6	111.38	PASS	70-125
Std5-20/200 ppb	ICAL	1	1665054.4	1544254.6	107.82	PASS	70-125
Std6-40/400 ppb	ICAL	1	1706414.5	1544254.6	110.5	PASS	70-125
Std7-100/1000 ppb	ICAL	1	1640064.5	1544254.6	106.2	PASS	70-125
Std8-200/2000 ppb	ICAL	1	1635897.5	1544254.6	105.93	PASS	70-125
ICV	ICV	1	1609702.9	1544254.6	104.24	PASS	70-125
ICB	ICB	1	1540958.8	1544254.6	99.79	PASS	70-125
LLICV	CCV1	1	1591380	1544254.6	103.05	PASS	70-125
ICSA1	ICSA	1	1560767.8	1544254.6	101.07	PASS	70-125
ICSAB1	ICSAB	1	1612306	1544254.6	104.41	PASS	70-125
LLICV	CCV1	1	1503752.7	1544254.6	97.38	PASS	70-125
CCV1	CCV	1	1708447.8	1544254.6	110.63	PASS	70-125
CCB1	CCB	1	1548636.6	1544254.6	100.28	PASS	70-125
CCV2	CCV	1	1754439.7	1544254.6	113.61	PASS	70-125
CCB2	CCB	1	1579565.6	1544254.6	102.29	PASS	70-125
MB-68436	MBLK	1	1566705.3	1544254.6	101.45	PASS	70-125
LCS-68436	LCS	1	1604437.3	1544254.6	103.9	PASS	70-125
N030703-001B	SAMP	1	1446137.3	1544254.6	93.65	PASS	70-125
N030703-001B	SAMP	5	1477376	1544254.6	95.67	PASS	70-125
N030703-001B-PS	PS	1	1424899.9	1544254.6	92.27	PASS	70-125
N030703-001B-MS	MS	1	1447342.8	1544254.6	93.72	PASS	70-125
N030703-001B-MSD	MSD	1	1456298.1	1544254.6	94.3	PASS	70-125
CCV3	CCV	1	1671176.3	1544254.6	108.22	PASS	70-125
CCB3	CCB	1	1522449	1544254.6	98.59	PASS	70-125
LLCCV1	CCV2	1	1506791.9	1544254.6	97.57	PASS	70-125
ICSA2	ICSA	1	1459368.9	1544254.6	94.5	PASS	70-125
ICSAB2	ICSAB	1	1531036.7	1544254.6	99.14	PASS	70-125
N030703-002B	SAMP	1	1358739.4	1544254.6	87.99	PASS	70-125
N030704-001B	SAMP	1	1404833.1	1544254.6	90.97	PASS	70-125
N030704-002B	SAMP	1	1363060.4	1544254.6	88.27	PASS	70-125
N030762-001B	SAMP	1	1446500.1	1544254.6	93.67	PASS	70-125
N030762-002B	SAMP	1	1448710.1	1544254.6	93.81	PASS	70-125
N030762-003B	SAMP	1	1453478.4	1544254.6	94.12	PASS	70-125
N030762-004B	SAMP	1	1456685.8	1544254.6	94.33	PASS	70-125
N030762-005B	SAMP	1	1449428	1544254.6	93.86	PASS	70-125
N030762-006B	SAMP	1	1506142.9	1544254.6	97.53	PASS	70-125
N030762-007B	SAMP	1	1444341.1	1544254.6	93.53	PASS	70-125

INTERNAL STANDARD: 180615B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
CCV4	CCV	1	1664870.3	1544254.6	107.81	PASS	70-125
CCB4	CCB	1	1507747.2	1544254.6	97.64	PASS	70-125
N030762-008B	SAMP	1	1424425	1544254.6	92.24	PASS	70-125
N030762-009B	SAMP	1	1437984.9	1544254.6	93.12	PASS	70-125
N030762-010B	SAMP	1	1401925.6	1544254.6	90.78	PASS	70-125
N030762-011B	SAMP	1	1399110.8	1544254.6	90.6	PASS	70-125
N030762-012B	SAMP	1	1414384.3	1544254.6	91.59	PASS	70-125
N030762-013B	SAMP	1	1452414.1	1544254.6	94.053	PASS	70-125
N030762-014B	SAMP	1	1426389.1	1544254.6	92.37	PASS	70-125
N030762-015B	SAMP	1	1416593.2	1544254.6	91.73	PASS	70-125
CCV5	CCV	1	1640610.7	1544254.6	106.24	PASS	70-125
CCB5	CCB	1	1517653.2	1544254.6	98.28	PASS	70-125
LLCCV2	CCV2	1	1529682.6	1544254.6	99.056	PASS	70-125
ICSA3	ICSA	1	1493586.8	1544254.6	96.72	PASS	70-125
ICSAB3	ICSAB	1	1563044.6	1544254.6	101.22	PASS	70-125

INTERNAL STANDARD: 180618A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	51054	51054	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	50065.3	51054	98.063	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	48953.1	51054	95.88	PASS	70-125
Std3-5/50 ppb	ICAL	1	47463.3	51054	92.97	PASS	70-125
Std4-10/100 ppb	ICAL	1	46676.4	51054	91.43	PASS	70-125
Std5-20/200 ppb	ICAL	1	46615.2	51054	91.31	PASS	70-125
Std6-40/400 ppb	ICAL	1	45573.3	51054	89.26	PASS	70-125
Std7-100/1000 ppb	ICAL	1	45333.8	51054	88.8	PASS	70-125
Std8-200/2000 ppb	ICAL	1	44578.4	51054	87.32	PASS	70-125
ICV	ICV	1	49006.5	51054	95.99	PASS	70-125
ICB	ICB	1	45630.3	51054	89.38	PASS	70-125
LLICV	CCV1	1	46411.3	51054	90.91	PASS	70-125
ICSA1	ICSA	1	47909.9	51054	93.84	PASS	70-125
ICSAB1	ICSAB	1	46127	51054	90.35	PASS	70-125
N030762-004B	SAMP	1	48853.9	51054	95.69	PASS	70-125
N030762-007B	SAMP	1	49920.5	51054	97.78	PASS	70-125
CCV1	CCV	1	47907.8	51054	93.84	PASS	70-125
CCB1	CCB	1	46882.5	51054	91.83	PASS	70-125
N030762-011B	SAMP	1	48456	51054	94.91	PASS	70-125
CCV2	CCV	1	48800.3	51054	95.59	PASS	70-125
CCB2	CCB	1	46651.9	51054	91.38	PASS	70-125
LLCCV1	CCV2	1	46998.5	51054	92.056	PASS	70-125
ICSA2	ICSA	1	48900.6	51054	95.78	PASS	70-125
ICSAB2	ICSAB	1	47464.1	51054	92.97	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water **Dilution Test Summary**

Work Order No.: N030762
Test Method: EPA 6020
Analysis Date: 6/15/2018

Matrix: Groundwater
Batch No.: 68436

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to several analytes. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030703-001B DT 5X	Arsenic	ug/L	1.187274	NA	1.175676	0.99%	10
N030703-001B DT 5X	Barium	ug/L	128.9845	PASS	123.8718	4.13%	10
N030703-001B DT 5X	Chromium	ug/L	2.562242	NA	2.383905	7.48%	10
N030703-001B DT 5X	Manganese	ug/L	3.644397	NA	3.399673	7.20%	10
N030703-001B DT 5X	Molybdenum	ug/L	1.257253	NA	1.276734	1.53%	10
N030703-001B DT 5X	Selenium	ug/L	0	NA	0		10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030703-001B-PS** SampType: **PS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **68436** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2018** SeqNo: **3055566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.979	0.10	10.00	1.176	108	80	120				
Barium	129.322	1.0	10.00	123.9	54.5	80	120				S
Manganese	104.149	0.50	100.0	3.400	101	80	120				
Molybdenum	12.627	0.50	10.00	1.277	114	80	120				
Selenium	10.540	0.50	10.00	0	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030762
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N030703-001B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **124675**
Client ID: **ZZZZZZ** Batch ID: **68436** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/15/2018** SeqNo: **3055643**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12.271	1.0	10.00	2.384	98.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Units: ug/L

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00

June 27, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030781

RE: PG&E Topock - RMP, RC000753.801D

Attention: Dan Bush

Enclosed are the results for sample(s) received on June 13, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Libucao for

Quennie Manimtim
Laboratory Director

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - RMP, RC000753.801D
Lab Order:	N030781

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Sample N030781-001 (AB3-Q218) was not analyzed for Hexavalent Chromium as per COC.

Analytical Comments for SM 2540D:

RPD for Sample Duplicate (N030759-001ADUP) is outside criteria ; however, the associated Laboratory Control Sample (LCS) recovery was acceptable.

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.801D
Lab Order: N030781
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030781-001A	AB3-Q218	Groundwater	6/13/2018 1:00:00 PM	6/13/2018	6/27/2018
N030781-002A	C-NR4-S-Q218	Groundwater	6/13/2018 12:50:00 PM	6/13/2018	6/27/2018
N030781-002B	C-NR4-S-Q218	Groundwater	6/13/2018 12:50:00 PM	6/13/2018	6/27/2018
N030781-002C	C-NR4-S-Q218	Groundwater	6/13/2018 12:50:00 PM	6/13/2018	6/27/2018
N030781-002D	C-NR4-S-Q218	Groundwater	6/13/2018 12:50:00 PM	6/13/2018	6/27/2018
N030781-002E	C-NR4-S-Q218	Groundwater	6/13/2018 12:50:00 PM	6/13/2018	6/27/2018
N030781-003A	R-19-Q218	Groundwater	6/13/2018 9:15:00 AM	6/13/2018	6/27/2018
N030781-003B	R-19-Q218	Groundwater	6/13/2018 9:15:00 AM	6/13/2018	6/27/2018
N030781-003C	R-19-Q218	Groundwater	6/13/2018 9:15:00 AM	6/13/2018	6/27/2018
N030781-003D	R-19-Q218	Groundwater	6/13/2018 9:15:00 AM	6/13/2018	6/27/2018
N030781-003E	R-19-Q218	Groundwater	6/13/2018 9:15:00 AM	6/13/2018	6/27/2018
N030781-004A	RRB-Q218	Groundwater	6/13/2018 9:40:00 AM	6/13/2018	6/27/2018
N030781-004B	RRB-Q218	Groundwater	6/13/2018 9:40:00 AM	6/13/2018	6/27/2018
N030781-004C	RRB-Q218	Groundwater	6/13/2018 9:40:00 AM	6/13/2018	6/27/2018
N030781-004D	RRB-Q218	Groundwater	6/13/2018 9:40:00 AM	6/13/2018	6/27/2018
N030781-004E	RRB-Q218	Groundwater	6/13/2018 9:40:00 AM	6/13/2018	6/27/2018
N030781-005A	C-CON-D-Q218	Groundwater	6/13/2018 10:10:00 AM	6/13/2018	6/27/2018
N030781-005B	C-CON-D-Q218	Groundwater	6/13/2018 10:10:00 AM	6/13/2018	6/27/2018
N030781-005C	C-CON-D-Q218	Groundwater	6/13/2018 10:10:00 AM	6/13/2018	6/27/2018
N030781-005D	C-CON-D-Q218	Groundwater	6/13/2018 10:10:00 AM	6/13/2018	6/27/2018
N030781-005E	C-CON-D-Q218	Groundwater	6/13/2018 10:10:00 AM	6/13/2018	6/27/2018
N030781-006A	C-CON-S-Q218	Groundwater	6/13/2018 10:25:00 AM	6/13/2018	6/27/2018
N030781-006B	C-CON-S-Q218	Groundwater	6/13/2018 10:25:00 AM	6/13/2018	6/27/2018
N030781-006C	C-CON-S-Q218	Groundwater	6/13/2018 10:25:00 AM	6/13/2018	6/27/2018
N030781-006D	C-CON-S-Q218	Groundwater	6/13/2018 10:25:00 AM	6/13/2018	6/27/2018
N030781-006E	C-CON-S-Q218	Groundwater	6/13/2018 10:25:00 AM	6/13/2018	6/27/2018
N030781-007A	MW-914-Q218	Groundwater	6/13/2018 8:35:00 AM	6/13/2018	6/27/2018
N030781-007B	MW-914-Q218	Groundwater	6/13/2018 8:35:00 AM	6/13/2018	6/27/2018
N030781-007C	MW-914-Q218	Groundwater	6/13/2018 8:35:00 AM	6/13/2018	6/27/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.801D
Lab Order: N030781
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030781-007D	MW-914-Q218	Groundwater	6/13/2018 8:35:00 AM	6/13/2018	6/27/2018
N030781-007E	MW-914-Q218	Groundwater	6/13/2018 8:35:00 AM	6/13/2018	6/27/2018
N030781-008A	C-MAR-D-Q218	Groundwater	6/13/2018 8:25:00 AM	6/13/2018	6/27/2018
N030781-008B	C-MAR-D-Q218	Groundwater	6/13/2018 8:25:00 AM	6/13/2018	6/27/2018
N030781-008C	C-MAR-D-Q218	Groundwater	6/13/2018 8:25:00 AM	6/13/2018	6/27/2018
N030781-008D	C-MAR-D-Q218	Groundwater	6/13/2018 8:25:00 AM	6/13/2018	6/27/2018
N030781-008E	C-MAR-D-Q218	Groundwater	6/13/2018 8:25:00 AM	6/13/2018	6/27/2018
N030781-009A	C-MAR-S-Q218	Groundwater	6/13/2018 8:50:00 AM	6/13/2018	6/27/2018
N030781-009B	C-MAR-S-Q218	Groundwater	6/13/2018 8:50:00 AM	6/13/2018	6/27/2018
N030781-009C	C-MAR-S-Q218	Groundwater	6/13/2018 8:50:00 AM	6/13/2018	6/27/2018
N030781-009D	C-MAR-S-Q218	Groundwater	6/13/2018 8:50:00 AM	6/13/2018	6/27/2018
N030781-009E	C-MAR-S-Q218	Groundwater	6/13/2018 8:50:00 AM	6/13/2018	6/27/2018
N030781-010A	C-NR1-D-Q218	Groundwater	6/13/2018 10:50:00 AM	6/13/2018	6/27/2018
N030781-010B	C-NR1-D-Q218	Groundwater	6/13/2018 10:50:00 AM	6/13/2018	6/27/2018
N030781-010C	C-NR1-D-Q218	Groundwater	6/13/2018 10:50:00 AM	6/13/2018	6/27/2018
N030781-010D	C-NR1-D-Q218	Groundwater	6/13/2018 10:50:00 AM	6/13/2018	6/27/2018
N030781-010E	C-NR1-D-Q218	Groundwater	6/13/2018 10:50:00 AM	6/13/2018	6/27/2018
N030781-011A	C-NR1-S-Q218	Groundwater	6/13/2018 11:05:00 AM	6/13/2018	6/27/2018
N030781-011B	C-NR1-S-Q218	Groundwater	6/13/2018 11:05:00 AM	6/13/2018	6/27/2018
N030781-011C	C-NR1-S-Q218	Groundwater	6/13/2018 11:05:00 AM	6/13/2018	6/27/2018
N030781-011D	C-NR1-S-Q218	Groundwater	6/13/2018 11:05:00 AM	6/13/2018	6/27/2018
N030781-011E	C-NR1-S-Q218	Groundwater	6/13/2018 11:05:00 AM	6/13/2018	6/27/2018
N030781-012A	C-NR3-D-Q218	Groundwater	6/13/2018 11:50:00 AM	6/13/2018	6/27/2018
N030781-012B	C-NR3-D-Q218	Groundwater	6/13/2018 11:50:00 AM	6/13/2018	6/27/2018
N030781-012C	C-NR3-D-Q218	Groundwater	6/13/2018 11:50:00 AM	6/13/2018	6/27/2018
N030781-012D	C-NR3-D-Q218	Groundwater	6/13/2018 11:50:00 AM	6/13/2018	6/27/2018
N030781-012E	C-NR3-D-Q218	Groundwater	6/13/2018 11:50:00 AM	6/13/2018	6/27/2018
N030781-013A	C-NR3-S-Q218	Groundwater	6/13/2018 12:05:00 PM	6/13/2018	6/27/2018
N030781-013B	C-NR3-S-Q218	Groundwater	6/13/2018 12:05:00 PM	6/13/2018	6/27/2018
N030781-013C	C-NR3-S-Q218	Groundwater	6/13/2018 12:05:00 PM	6/13/2018	6/27/2018

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.801D
Lab Order: N030781
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030781-013D	C-NR3-S-Q218	Groundwater	6/13/2018 12:05:00 PM	6/13/2018	6/27/2018
N030781-013E	C-NR3-S-Q218	Groundwater	6/13/2018 12:05:00 PM	6/13/2018	6/27/2018
N030781-014A	C-NR4-D-Q218	Groundwater	6/13/2018 12:35:00 PM	6/13/2018	6/27/2018
N030781-014B	C-NR4-D-Q218	Groundwater	6/13/2018 12:35:00 PM	6/13/2018	6/27/2018
N030781-014C	C-NR4-D-Q218	Groundwater	6/13/2018 12:35:00 PM	6/13/2018	6/27/2018
N030781-014D	C-NR4-D-Q218	Groundwater	6/13/2018 12:35:00 PM	6/13/2018	6/27/2018
N030781-014E	C-NR4-D-Q218	Groundwater	6/13/2018 12:35:00 PM	6/13/2018	6/27/2018

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180614B** QC Batch: **R124640** PrepDate							Analyst: **LR**
Specific Conductance	900	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180614B**	QC Batch: **R124640**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180614B** QC Batch: **R124640** PrepDate Analyst: **LR**							
Specific Conductance	890	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180614B**	QC Batch: **R124640**			PrepDate			Analyst: **LR**
Specific Conductance	900	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180614B**	QC Batch: **R124640**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180614B** QC Batch: **R124640** PrepDate							Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180614B**	QC Batch: **R124640**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180614B**	QC Batch: **R124640**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-010		

SPECIFIC CONDUCTANCE

EPA 120.1

RunID: **NV00922-WC_180614B** QC Batch: **R124640** PrepDate Analyst: **LR**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Specific Conductance	900	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180614B**	QC Batch: **R124640**			PrepDate			Analyst: **LR**
Specific Conductance	900	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180614B** QC Batch: **R124640** PrepDate Analyst: **LR**							
Specific Conductance	890	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180614B** QC Batch: **R124640** PrepDate							Analyst: **LR**
Specific Conductance	900	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180614B**	QC Batch: **R124640**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030781-002DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **124640**
Client ID: **ZZZZZZ** Batch ID: **R124640** TestNo: **EPA 120.1** Analysis Date: **6/14/2018** SeqNo: **3054131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	905.000	0.10						900.0	0.554	2	

Sample ID **N030781-014DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **124640**
Client ID: **ZZZZZZ** Batch ID: **R124640** TestNo: **EPA 120.1** Analysis Date: **6/14/2018** SeqNo: **3054162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	918.000	0.10						915.0	0.327	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-003		

PH

SM4500-H+B

RunID: **NV00922-WC_180614A** QC Batch: **R124639** PrepDate Analyst: **LR**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
pH	8.3	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-006		

PH

SM4500-H+B

RunID: **NV00922-WC_180614A** QC Batch: **R124639** PrepDate Analyst: **LR**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
pH	8.3	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A** QC Batch: **R124639**				PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-011		

PH

SM4500-H+B

RunID: **NV00922-WC_180614A** QC Batch: **R124639** PrepDate Analyst: **LR**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
pH	8.2	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030781
Project: PG&E Topock - RMP, RC000753.801D
Lab ID: N030781-012

Client Sample ID: C-NR3-D-Q218
Collection Date: 6/13/2018 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030781
Project: PG&E Topock - RMP, RC000753.801D
Lab ID: N030781-013

Client Sample ID: C-NR3-S-Q218
Collection Date: 6/13/2018 12:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N030781-002DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **124639**
Client ID: **ZZZZZZ** Batch ID: **R124639** TestNo: **SM4500-H+B** Analysis Date: **6/14/2018** SeqNo: **3054116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.250	0.10						8.240	0.121	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N030781-012DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **124639**
Client ID: **ZZZZZZ** Batch ID: **R124639** TestNo: **SM4500-H+B** Analysis Date: **6/14/2018** SeqNo: **3054127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.240	0.10						8.200	0.487	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B Analyte detected in the associated Method Blank
E Value above quantitation range
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike/Surrogate outside of limits due to matrix interference
Calculations are based on raw values

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_180614E** QC Batch: **68446** PrepDate **6/14/2018** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614E**	QC Batch: **68446**			PrepDate		**6/14/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614E**	QC Batch: **68446**			PrepDate	**6/14/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_180614E** QC Batch: **68446** PrepDate **6/14/2018** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_180614E** QC Batch: **68446** PrepDate **6/14/2018** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614E**	QC Batch: **68446**			PrepDate	**6/14/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614F** QC Batch: **68448**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_180614F** QC Batch: **68448**					PrepDate **6/14/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_180614F** QC Batch: **68448** PrepDate **6/14/2018** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614F**	QC Batch: **68448**			PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_180614F** QC Batch: **68448**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614F**	QC Batch: **68448**			PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-014		

TOTAL NON-FILTERABLE RESIDUE

SM2540D

RunID: **NV00922-WC_180614F** QC Batch: **68448** PrepDate **6/14/2018** Analyst: **LR**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-68446** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124652**
Client ID: **LCSW** Batch ID: **68446** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	979.000	10	1000	0	97.9	80	120				

Sample ID **MB-68446** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124652**
Client ID: **PBW** Batch ID: **68446** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N030759-001ADUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124652**
Client ID: **ZZZZZZ** Batch ID: **68446** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054717**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	16.000	10						15.00	6.45	5	R

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-68448**	SampType: **LCS**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **6/14/2018**	RunNo: **124653**
Client ID: **LCSW**	Batch ID: **68448**	TestNo: **SM2540D**		Analysis Date: **6/14/2018**	SeqNo: **3054727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	953.000	10	1000	0	95.3	80	120				

Sample ID **MB-68448**	SampType: **MBLK**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **6/14/2018**	RunNo: **124653**
Client ID: **PBW**	Batch ID: **68448**	TestNo: **SM2540D**		Analysis Date: **6/14/2018**	SeqNo: **3054728**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N030781-008DDUP**	SampType: **DUP**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **6/14/2018**	RunNo: **124653**
Client ID: **ZZZZZZ**	Batch ID: **68448**	TestNo: **SM2540D**		Analysis Date: **6/14/2018**	SeqNo: **3054730**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180614A**	QC Batch: **R124656**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 10:11 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate	**6/14/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/25/2018 09:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180614A**	QC Batch: **R124656**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 10:30 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate	**6/14/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/25/2018 10:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180614A** QC Batch: **R124656** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 10:49 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018** Analyst: **CEI**							
Chromium	ND	0.13	1.0		µg/L	1	6/25/2018 10:50 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180614A**	QC Batch: **R124656**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 11:27 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate	**6/14/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/25/2018 11:01 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180614A**	QC Batch: **R124656**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 11:46 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate		**6/14/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/25/2018 11:12 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180614A** QC Batch: **R124656**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 12:05 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180625E** QC Batch: **68461**				PrepDate		**6/14/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/25/2018 11:23 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180614A**	QC Batch: **R124656**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 12:24 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate		**6/14/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/25/2018 11:46 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC — **EPA 218.6**							
RunID: **NV00922-IC7_180614A** QC Batch: **R124656** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 12:43 PM
DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**							
RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/25/2018 11:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180614A** QC Batch: **R124656**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 01:21 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180625E** QC Batch: **68461**				PrepDate		**6/14/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/26/2018 12:08 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180614A** QC Batch: **R124656** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 01:39 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/26/2018 12:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180614A**	QC Batch: **R124656**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 01:58 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate		**6/14/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/26/2018 12:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180614A** QC Batch: **R124656**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 02:17 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180625E** QC Batch: **68461**				PrepDate	**6/14/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/26/2018 12:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180614A**	QC Batch: **R124656**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 02:36 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate	**6/14/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/26/2018 01:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R124656** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **PBW** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R124656** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **LCSW** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.147	0.20	5.000	0	103	90	110				

Sample ID **N030781-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.951	0.20	1.000	0	95.1	90	110				

Sample ID **N030781-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054761**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.992	0.20	1.000	0	99.2	90	110				

Sample ID **N030781-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.002	0.20	1.000	0	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030781-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.999	0.20	1.000	0.05230	94.7	90	110				

Sample ID **N030781-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.015	0.20	1.000	0.04990	96.5	90	110				

Sample ID **N030781-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.011	0.20	1.000	0	101	90	110				

Sample ID **N030781-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.986	0.20	1.000	0	98.6	90	110				

Sample ID **N030781-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054775**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.991	0.20	1.000	0	99.1	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030781-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.990	0.20	1.000	0.05260	93.7	90	110				

Sample ID **N030781-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.984	0.20	1.000	0.04760	93.6	90	110				

Sample ID **N030781-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054783**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.980	0.20	1.000	0	98.0	90	110				

Sample ID **N030781-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054785**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.970	0.20	1.000	0.04890	92.1	90	110				

Sample ID **N030781-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.984	0.20	1.000	0.04930	93.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030781-007AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.995	0.20	1.000	0	99.5	90	110	1.011	1.67	20	

Sample ID **N030781-012ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-68461**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**		Prep Date: **6/14/2018**		RunNo: **125863**				
Client ID: **PBW**	Batch ID: **68461**	TestNo: **EPA 6020**	**EPA 3010A**		Analysis Date: **6/25/2018**		SeqNo: **3064808**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-68461**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**		Prep Date: **6/14/2018**		RunNo: **125863**				
Client ID: **LCSW**	Batch ID: **68461**	TestNo: **EPA 6020**	**EPA 3010A**		Analysis Date: **6/25/2018**		SeqNo: **3064809**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.674	1.0	10.00	0	96.7	85	115				

Sample ID **N030781-002B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**		Prep Date: **6/14/2018**		RunNo: **125863**				
Client ID: **ZZZZZZ**	Batch ID: **68461**	TestNo: **EPA 6020**	**EPA 3010A**		Analysis Date: **6/25/2018**		SeqNo: **3064815**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.374	1.0	10.00	0	104	75	125				

Sample ID **N030781-002B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**		Prep Date: **6/14/2018**		RunNo: **125863**				
Client ID: **ZZZZZZ**	Batch ID: **68461**	TestNo: **EPA 6020**	**EPA 3010A**		Analysis Date: **6/25/2018**		SeqNo: **3064817**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.407	1.0	10.00	0	104	75	125	10.37	0.318	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030781
Project: PG&E Topock - RMP, RC000753.801D
Lab ID: N030781-002

Client Sample ID: C-NR4-S-Q218
Collection Date: 6/13/2018 12:50:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180619B** QC Batch: **R124721** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.42	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
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ORELAP/NELAP Cert 4046

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180619B**	QC Batch: **R124721**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.41	0.032	0.050		mg/L	1	6/19/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180619B** QC Batch: **R124721** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.42	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030781
Project: PG&E Topock - RMP, RC000753.801D
Lab ID: N030781-005

Client Sample ID: C-CON-D-Q218
Collection Date: 6/13/2018 10:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180619B**	QC Batch: **R124721**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.38	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180619B**	QC Batch: **R124721**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.37	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180619B**	QC Batch: **R124721**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.39	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180619B** QC Batch: **R124721** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.37	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180619B** QC Batch: **R124721** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.40	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180619B** QC Batch: **R124721** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-011		

NITRATE/NITRITE-N BY CADMIUM REDUCTION

SM4500-NO3F

RunID: **NV00922-WC_180619B** QC Batch: **R124721** PrepDate Analyst: **QBM**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Nitrate/Nitrite as N	0.36	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180619B** QC Batch: **R124721** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.40	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180619B**	QC Batch: **R124721**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.35	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180619B** QC Batch: **R124721** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.41	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124721** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124721**
Client ID: **PBW** Batch ID: **R124721** TestNo: **SM4500-NO3** Analysis Date: **6/19/2018** SeqNo: **3057772**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124721** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124721**
Client ID: **LCSW** Batch ID: **R124721** TestNo: **SM4500-NO3** Analysis Date: **6/19/2018** SeqNo: **3057773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.521	0.050	0.5000	0	104	85	115				

Sample ID **N030781-004EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124721**
Client ID: **ZZZZZZ** Batch ID: **R124721** TestNo: **SM4500-NO3** Analysis Date: **6/19/2018** SeqNo: **3057777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.381	0.050						0.4222	10.2	20	

Sample ID **N030781-005EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124721**
Client ID: **ZZZZZZ** Batch ID: **R124721** TestNo: **SM4500-NO3** Analysis Date: **6/19/2018** SeqNo: **3057779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.853	0.050	0.5000	0.3753	95.5	75	125				

Sample ID **N030781-005EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124721**
Client ID: **ZZZZZZ** Batch ID: **R124721** TestNo: **SM4500-NO3** Analysis Date: **6/19/2018** SeqNo: **3057780**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.011	0.050	0.5000	0.3753	127	75	125	0.8528	17.0	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

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ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68463** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 01:19 PM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68462** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	27	18	20		ug/L	1	6/21/2018 11:27 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68463** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 01:58 PM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68462** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	24	18	20		ug/L	1	6/21/2018 11:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68463**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 02:03 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68462**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	23	18	20		ug/L	1	6/21/2018 11:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68463**			PrepDate		**6/14/2018**	Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 02:09 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68462**			PrepDate		**6/14/2018**	Analyst: **CEI**
Iron	22	18	20		ug/L	1	6/21/2018 12:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68463** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 02:14 PM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68462** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 12:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68463** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 02:19 PM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68462** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	200	18	20		ug/L	1	6/21/2018 12:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

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Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68463**			PrepDate		**6/14/2018**	Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 02:25 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68462**			PrepDate		**6/14/2018**	Analyst: **CEI**
Iron	170	18	20		ug/L	1	6/21/2018 12:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68463** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 02:42 PM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68462** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	190	18	20		ug/L	1	6/21/2018 12:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180621A**	QC Batch: **68463**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 02:47 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180621A**	QC Batch: **68462**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	22	18	20		ug/L	1	6/21/2018 12:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180621A**	QC Batch: **68463**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 02:53 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180621A**	QC Batch: **68462**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 12:48 PM

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ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68463**				PrepDate **6/14/2018**			Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 02:58 PM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68462**				PrepDate **6/14/2018**			Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 12:53 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180621A** QC Batch: **68463**				PrepDate **6/14/2018**			Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 03:03 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180621A** QC Batch: **68462**				PrepDate **6/14/2018**			Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 12:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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EPA ID CA01638

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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68463**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 03:09 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68462**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	24	18	20		ug/L	1	6/21/2018 01:04 PM

ASSET Laboratories

Date: *27-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-68463** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/14/2018** RunNo: **125775**
Client ID: **PBW** Batch ID: **68463** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3061183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **N030781-002B-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/14/2018** RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **68463** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3061190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.346	20	100.0	0	120	75	125				

Sample ID **N030781-002B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/14/2018** RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **68463** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3061191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.220	20	100.0	0	120	75	125	120.3	0.104	20	

Sample ID **LCS-68463** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/14/2018** RunNo: **125775**
Client ID: **LCSW** Batch ID: **68463** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3061206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	107.808	20	100.0	0	108	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **MB-68462** SampType: **MBLK** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/14/2018** RunNo: **125775**
Client ID: **PBW** Batch ID: **68462** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3061002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-68462** SampType: **LCS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/14/2018** RunNo: **125775**
Client ID: **LCSW** Batch ID: **68462** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3061003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	106.540	20	100.0	0	107	85	115				

Sample ID **N030781-002C-MS** SampType: **MS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/14/2018** RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **68462** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3061009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	127.073	20	100.0	26.76	100	75	125				

Sample ID **N030781-002C-MSD** SampType: **MSD** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/14/2018** RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **68462** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3061010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	128.653	20	100.0	26.76	102	75	125	127.1	1.24	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate	**6/14/2018**		Analyst: **CEI**
Arsenic	2.3	0.081	0.10		µg/L	1	6/25/2018 09:37 PM
Barium	110	0.15	1.0		µg/L	1	6/25/2018 09:37 PM
Manganese	ND	0.26	0.50		µg/L	1	6/25/2018 09:37 PM
Molybdenum	4.8	0.21	0.50		µg/L	1	6/25/2018 09:37 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/25/2018 09:37 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-003		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.5	0.081	0.10		µg/L	1	6/25/2018 10:39 PM
Barium	120	0.15	1.0		µg/L	1	6/25/2018 10:39 PM
Manganese	ND	0.26	0.50		µg/L	1	6/25/2018 10:39 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	6/25/2018 10:39 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/26/2018 05:23 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-004		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.2	0.081	0.10		µg/L	1	6/25/2018 10:50 PM
Barium	110	0.15	1.0		µg/L	1	6/25/2018 10:50 PM
Manganese	ND	0.26	0.50		µg/L	1	6/25/2018 10:50 PM
Molybdenum	4.7	0.21	0.50		µg/L	1	6/25/2018 10:50 PM
Selenium	1.6	0.36	0.50		µg/L	1	6/25/2018 10:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-005		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.4	0.081	0.10		µg/L	1	6/25/2018 11:01 PM
Barium	110	0.15	1.0		µg/L	1	6/25/2018 11:01 PM
Manganese	ND	0.26	0.50		µg/L	1	6/25/2018 11:01 PM
Molybdenum	4.8	0.21	0.50		µg/L	1	6/25/2018 11:01 PM
Selenium	1.8	0.36	0.50		µg/L	1	6/25/2018 11:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-006		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.4	0.081	0.10		µg/L	1	6/25/2018 11:12 PM
Barium	110	0.15	1.0		µg/L	1	6/25/2018 11:12 PM
Manganese	ND	0.26	0.50		µg/L	1	6/25/2018 11:12 PM
Molybdenum	4.7	0.21	0.50		µg/L	1	6/25/2018 11:12 PM
Selenium	1.8	0.36	0.50		µg/L	1	6/26/2018 04:50 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-007		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.3	0.081	0.10		µg/L	1	6/25/2018 11:23 PM
Barium	110	0.15	1.0		µg/L	1	6/25/2018 11:23 PM
Manganese	ND	0.26	0.50		µg/L	1	6/25/2018 11:23 PM
Molybdenum	4.7	0.21	0.50		µg/L	1	6/25/2018 11:23 PM
Selenium	1.5	0.36	0.50		µg/L	1	6/25/2018 11:23 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-008		

DISSOLVED METALS BY ICP-MS **EPA 3010A** **EPA 6020**

RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.5	0.081	0.10		µg/L	1	6/25/2018 11:46 PM
Barium	120	0.15	1.0		µg/L	1	6/25/2018 11:46 PM
Manganese	ND	0.26	0.50		µg/L	1	6/25/2018 11:46 PM
Molybdenum	5.1	0.21	0.50		µg/L	1	6/25/2018 11:46 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/26/2018 04:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-009		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.4	0.081	0.10		µg/L	1	6/25/2018 11:57 PM
Barium	120	0.15	1.0		µg/L	1	6/25/2018 11:57 PM
Manganese	ND	0.26	0.50		µg/L	1	6/25/2018 11:57 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	6/25/2018 11:57 PM
Selenium	1.8	0.36	0.50		µg/L	1	6/26/2018 05:01 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate **6/14/2018**			Analyst: **CEI**
Arsenic	2.3	0.081	0.10		µg/L	1	6/26/2018 12:08 AM
Barium	110	0.15	1.0		µg/L	1	6/26/2018 12:08 AM
Manganese	ND	0.26	0.50		µg/L	1	6/26/2018 12:08 AM
Molybdenum	4.8	0.21	0.50		µg/L	1	6/26/2018 12:08 AM
Selenium	1.7	0.36	0.50		µg/L	1	6/26/2018 12:08 AM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-011		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.3	0.081	0.10		µg/L	1	6/26/2018 12:19 AM
Barium	110	0.15	1.0		µg/L	1	6/26/2018 12:19 AM
Manganese	ND	0.26	0.50		µg/L	1	6/26/2018 12:19 AM
Molybdenum	4.7	0.21	0.50		µg/L	1	6/26/2018 12:19 AM
Selenium	1.7	0.36	0.50		µg/L	1	6/26/2018 12:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate		**6/14/2018**	Analyst: **CEI**
Arsenic	2.1	0.081	0.10		µg/L	1	6/26/2018 12:30 AM
Barium	110	0.15	1.0		µg/L	1	6/26/2018 12:30 AM
Manganese	ND	0.26	0.50		µg/L	1	6/26/2018 12:30 AM
Molybdenum	4.6	0.21	0.50		µg/L	1	6/26/2018 12:30 AM
Selenium	1.7	0.36	0.50		µg/L	1	6/26/2018 05:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate	**6/14/2018**		Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	6/26/2018 12:53 AM
Barium	110	0.15	1.0		µg/L	1	6/26/2018 12:53 AM
Manganese	ND	0.26	0.50		µg/L	1	6/26/2018 12:53 AM
Molybdenum	4.7	0.21	0.50		µg/L	1	6/26/2018 12:53 AM
Selenium	1.6	0.36	0.50		µg/L	1	6/26/2018 05:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate		**6/14/2018**	Analyst: **CEI**
Arsenic	2.3	0.081	0.10		µg/L	1	6/26/2018 01:04 AM
Barium	110	0.15	1.0		µg/L	1	6/26/2018 01:04 AM
Manganese	ND	0.26	0.50		µg/L	1	6/26/2018 01:04 AM
Molybdenum	4.7	0.21	0.50		µg/L	1	6/26/2018 01:04 AM
Selenium	1.6	0.36	0.50		µg/L	1	6/26/2018 05:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories **Date:** *27-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-68461** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/14/2018** RunNo: **125863**
Client ID: **PBW** Batch ID: **68461** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/25/2018** SeqNo: **3065130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-68461** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/14/2018** RunNo: **125863**
Client ID: **LCSW** Batch ID: **68461** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/25/2018** SeqNo: **3065131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.685	0.10	10.00	0	96.9	85	115				
Barium	9.572	1.0	10.00	0	95.7	85	115				
Manganese	96.912	0.50	100.0	0	96.9	85	115				
Molybdenum	9.564	0.50	10.00	0	95.6	85	115				
Selenium	10.264	0.50	10.00	0	103	85	115				

Sample ID **N030781-002B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/14/2018** RunNo: **125863**
Client ID: **ZZZZZZ** Batch ID: **68461** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/25/2018** SeqNo: **3065137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.216	0.10	10.00	2.258	110	75	125				
Barium	119.827	1.0	10.00	110.1	97.5	75	125				
Manganese	102.448	0.50	100.0	0	102	75	125				
Molybdenum	16.232	0.50	10.00	4.762	115	75	125				
Selenium	12.103	0.50	10.00	1.677	104	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030781-002B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/14/2018** RunNo: **125863**
Client ID: **ZZZZZZ** Batch ID: **68461** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/25/2018** SeqNo: **3065139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.999	0.10	10.00	2.258	107	75	125	13.22	1.66	20	
Barium	119.862	1.0	10.00	110.1	97.8	75	125	119.8	0.0291	20	
Manganese	103.302	0.50	100.0	0	103	75	125	102.4	0.831	20	
Molybdenum	16.165	0.50	10.00	4.762	114	75	125	16.23	0.412	20	
Selenium	11.926	0.50	10.00	1.677	102	75	125	12.10	1.47	20	

Qualifiers:

B Analyte detected in the associated Method Blank
E Value above quantitation range
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike/Surrogate outside of limits due to matrix interference
Calculations are based on raw values

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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Nara Tep		Phone: 949-727-1400, ext 200 Fax:
Title: sample tech	Phone: 916-786-3302 Fax:	
Signature: Date: 6/13/18	Sampled By: Nara Tep	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for	
Project Name: PG&E Topock - RMP	Signature: Date: 6/13/18	
Project Number: RC000753.0801		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
Global ID:		Regulatory	
		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		
6. Method of Cooling: Ice		
Sample Temp: 2.9°C		
Courier:		
Tracking No.:		

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 3x250 mL poly	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 250 ml Poly	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr — 3x500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B — 3x500mL poly	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba — 3x500mL poly	Total metals (SW6010B); HNO3 Fe — 500 mL poly	Anions (E300.0); Br, Cl, SO4 — 1 liter poly	Specific Conductance (E120.1) — 1 liter poly	pH (SM4500HB) — 1 liter poly	TDS (SM2540C) — 1 liter poly	Alkalinity (Total, reported as CaCO3) (SM2320B) — 1 liter poly	TSS (SM2540) — 1 liter poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 — 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
		~~AB1-Q218~~					~~x~~												~~E~~	~~1~~	~~P~~	~~BN~~	Hold
		~~AB2-Q218~~					~~x~~												~~E~~	~~1~~	~~P~~	~~BN~~	Hold
	N030781-01	AB3-Q218	6/13/18	13:00			x												E	1	P	BN	Hold

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tep	6/13/18 15:10	[signature]	6/13/18 1518
[signature]	6/13/18 1725	[signature]	6/13/18 1725

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
x	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

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Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Nara Tep	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:
Title: sample tech	Sampled By: Nara Tep	
Signature: [signature] Date: 6/13/18	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for	
I hereby authorize ASSET Labs to perform the tests indicated below.	Signature: [signature] Date: 6/13/18	
Project Name: PG&E Topock - RMP		
Project Number: RC000753.0801		

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
Global ID:		Regulatory	
		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		
6. Method of Cooling: Ice		
Sample Temp: 2.4 / 2.2 / 3.1 / 3.2 / 2.6 / 2.8		
Courier:		
Tracking No.:		

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Analyses / containers:
1. Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH — 3x250 mL poly
2. Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH
3. Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 — 3x500mL poly
4. Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 — 3x500mL poly
5. Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 — 3x500mL poly
6. Total metals (SW6010B); HNO3 Fe — 500 mL poly
7. Anions (E300.0); Br, Cl, SO4 — 1 liter poly
8. Specific Conductance (E120.1) — 1 liter poly
9. pH (SM4500HB) — 1 liter poly
10. TDS (SM2540C) — 1 liter poly
11. Alkalinity (Total, reported as CaCO3) (SM2320B) — 1 liter poly
12. TSS (SM2540) — 1 liter poly
13. Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 — 125 mL poly
14. Oxygen and deuterium stable isotopes (CFIRM) — 1 250 mL poly

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030781-02	C-NR4-S-Q218	6/13/18	12:50		X		X		X	X		X	X			X	X		E	7	P	BNS	
2		~~C-R22A-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
3		~~C-R22A-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
4		~~C-R27-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
5		~~C-R27-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
		~~C-TAZ-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
7		~~MW-915-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
8		~~C-TAZ-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
9	-03	R-19-Q218	6/13/18	09:15		X		X		X	X		X	X			X	X		E	7	P	BNS	
10		~~R-28-Q218~~				~~X~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	
11		~~R63-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
12	-04	RRB-Q218	6/13/18	09:40		X		X		X	X		X	X			X	X		E	7	P	BNS	
13		~~SW1-Q218~~				~~X~~		~~X~~					~~X~~	~~X~~						~~E~~	~~3~~	~~P~~	~~BNS~~	
14		~~SW2-Q218~~				~~X~~		~~X~~					~~X~~	~~X~~						~~E~~	~~3~~	~~P~~	~~BNS~~	

Relinquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
[signature] Nara Tep	6/13/18 15:10	[signature]	6/13/18 1510
[signature]	6/13/18 1728	[signature]	6/13/18 1728

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
x	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

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Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#:
Submitted By: Nara Tep		Phone: 949-727-1400, ext 200	Fax:
Title: sample tech	Phone: 916-786-3302 Fax:		
Signature: Date: 6/13/18	Sampled By: Nara Tep		
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - RMP	Signature: Date: 6/13/18		
Project Number: RC000753.801D			

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling: Ice		
Sample Temp: 2.9 / 3.1 / 2.6		
Courier:		
Tracking No.:		

Matrix

Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Analyses (container): A = Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH (3x250 mL poly); B = Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH; C = Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr (3x500mL poly); D = Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B (3x500mL poly); E = Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba (3x500mL poly); F = Total metals (SW6010B); HNO3 Fe (500 mL poly); G = Anions (E300.0); Br, Cl, SO4 (1 liter poly); H = Specific Conductance (E120.1) (1 liter poly); I = pH (SM4500HB) (1 liter poly); J = TDS (SM2540C) (1 liter poly); K = Alkalinity (Total, reported as CaCO3) (SM2320B) (1 liter poly); L = TSS (SM2540) (1 liter poly); M = Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4 (125 mL poly)

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	A	B	C	D	E	F	G	H	I	J	K	L	M	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1		~~C-BNS-Q218~~				X		X		X	X		X	X			X	X	E	5	P	BNS	M
2	N030781-05	C-CON-D-Q218	6/13/18	10:10		X		X		X	X		X	X			X	X	E	~~6~~ 7	P	BNS	
3	-06	C-CON-S-Q218	6/13/18	10:25		X		X		X	X		X	X			X	X	E	~~6~~ 7	P	BNS	
4		~~C-I-3-D-Q218~~				X		X		X	X		X	X			X	X	E	5	P	BNS	M
5	-07	MW-914-Q218	6/13/18	08:35		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
6		~~C-I-3-S-Q218~~				X		X		X	X		X	X			X	X	E	5	P	BNS	M
7	-08	C-MAR-D-Q218	6/13/18	08:25		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
8	-09	C-MAR-S-Q218	6/13/18	08:50		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
9	-10	C-NR1-D-Q218	6/13/18	10:50		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
10	-11	C-NR1-S-Q218	6/13/18	11:05		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
11	-12	C-NR3-D-Q218	6/13/18	11:50		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
12	-13	C-NR3-S-Q218	6/13/18	12:05		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
13		~~MW-916-Q218~~				X		X					X	X					E	3	P	BNS	M
14	-14	C-NR4-D-Q218	6/13/18	12:35		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tep	6/13/18 16:10	P. Magalong	6/13/18 1510
P. Magalong	6/13/18 1728	P. Magalong	6/13/18 1728

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
x	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 6/13/2018 — Workorder: N030781

Rep sample Temp (Deg C): 2.9/3.1/2.6 — IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA — Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

	Yes	No	Not Present / NA
1. Shipping container/cooler in good condition?	☑	☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	☐	☐	Not Present ☑
3. Custody seals intact on sample bottles?	☐	☐	Not Present ☑
4. Chain of custody present?	☑	☐	
5. Sampler's name present in COC?	☑	☐	
6. Chain of custody signed when relinquished and received?	☑	☐	
7. Chain of custody agrees with sample labels?	☑	☐	
8. Samples in proper container/bottle?	☑	☐	
9. Sample containers intact?	☑	☐	
10. Sufficient sample volume for indicated test?	☑	☐	
11. All samples received within holding time?	☐	☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	☑	☐	NA ☐
13. Water - VOA vials have zero headspace?	☐	☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	☑	☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	☑	☐	NA ☐
16. Were there Non-Conformance issues at login?	☑	☐	NA ☐
Was Client notified?	☐	☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 6/14/2018

Reviewed By: LR 061518

Subject: RE: PG&E Topock - RMP (Asset Labs No. N030762 and N030781)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 6/14/2018 9:18 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

Hi Yoandra,
Please use RC00753.801D

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Thursday, June 14, 2018 11:28 AM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; maryann.balilu@assetlaboratoriesph.com
Subject: PG&E Topock - RMP (Asset Labs No. N030762 and N030781)
Importance: High

Hi Laura,

Please kindly check the attached COCs and confirm which project # to use: RC000753.801 or RC000753.801D.

Or must we report 801 apart from 801D?

Please advise.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

Subject: Re: N030781 for EPA 6010B
From: Nancy Sibucao <nancy@assetlaboratories.com>
Date: 6/26/2018 8:40 AM
To: Daniel Moore <Daniel.Moore@critigen.com>
CC: "'Marlon B. Cartin'" <marlon@assetlaboratories.com>

Hi Dan,

Noted, we will include a corrective action with the report. As for the nebulizer, I don't think we have any problem with it. I am just assuming that it was not reanalyzed as the RSD is within 15%.

Thanks,
Nancy

From: Daniel Moore
Sent: Monday, June 25, 2018 6:50PM
To: Nancy Sibucao
Cc: Marlon B. Cartin
Subject: RE: N030781 for EPA 6010B

> Proceed with including a corrective action. Are you having issues with the nebulizer?
>
> ---
>
> From: Nancy Sibucao <nancy@assetlaboratories.com>
> Sent: Monday, June 25, 2018 7:56 PM
> To: Daniel Moore <Daniel.Moore@critigen.com>

Cc: 'Marlon B. Cartin' <marlon@assetlaboratories.com>
Subject: N030781 for EPA 6010B
Importance: High

Hi Dan,

We are having issues on the RSD of Iron in sample N030781-010 as the RSD failed the 15% criteria. The reporting limit (RL) of Iron is 20 ug/L. Here's the breakdown of the reading:

	On-column reading	% RSD	% Internal Standard
reading @ 1x	22.31 ug/L	15.35	104.9

Can we report sample? Please advise.

Thanks,
Nancy

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-001A	AB3-Q218	6/13/2018 1:00:00 PM	6/27/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N030781-002A	C-NR4-S-Q218	6/13/2018 12:50:00 PM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-002B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-002C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-002D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-002E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-003A	R-19-Q218	6/13/2018 9:15:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-003B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-003C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-003D	R-19-Q218	6/13/2018 9:15:00 AM	6/27/2018	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-003E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-004A	RRB-Q218	6/13/2018 9:40:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-004B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-004C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-004D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-004E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-005A	C-CON-D-Q218	6/13/2018 10:10:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-005B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-005B	C-CON-D-Q218	6/13/2018 10:10:00 AM	6/27/2018	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-005C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-005D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-005E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-006A	C-CON-S-Q218	6/13/2018 10:25:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-006B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-006C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-006D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-006E	C-CON-S-Q218	6/13/2018 10:25:00 AM	6/27/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-007A	MW-914-Q218	6/13/2018 8:35:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-007B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-007C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-007D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-007E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-008A	C-MAR-D-Q218	6/13/2018 8:25:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-008B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-008C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-008C	C-MAR-D-Q218	6/13/2018 8:25:00 AM	6/27/2018	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-008D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-008E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-009A	C-MAR-S-Q218	6/13/2018 8:50:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-009B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-009C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-009D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-009E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-010A	C-NR1-D-Q218	6/13/2018 10:50:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-010B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-010B	C-NR1-D-Q218	6/13/2018 10:50:00 AM	6/27/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-010C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-010D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-010E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-011A	C-NR1-S-Q218	6/13/2018 11:05:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-011B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-011C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-011D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-011D	C-NR1-S-Q218	6/13/2018 11:05:00 AM	6/27/2018	Groundwater		Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-011E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-012A	C-NR3-D-Q218	6/13/2018 11:50:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-012B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-012C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-012D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-012E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-013A	C-NR3-S-Q218	6/13/2018 12:05:00 PM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-013B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-013C	C-NR3-S-Q218	6/13/2018 12:05:00 PM	6/27/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-013D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-013E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-014A	C-NR4-D-Q218	6/13/2018 12:35:00 PM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-014B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-014C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-014D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-014E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-015A	FOLDER	6/27/2018	6/27/2018		EDD	RWQCB	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-015A	FOLDER	6/27/2018	6/27/2018		Folder	Folder	☐	☐	☐	LAB
			6/27/2018		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - RMP

Project No.: RC000753.801D

ASSET Laboratories Work Order:

N030781

ANALYTICAL and QC RESULTS SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

Table of Contents

ASSET Laboratories Work Order: N030781

June 27, 2018

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N030781

RE: PG&E Topock - RMP, RC000753.801D

Attention: Dan Bush

Enclosed are the results for sample(s) received on June 13, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Libucao for

Quennie Manimtim
Laboratory Director

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CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - RMP, RC000753.801D
Lab Order:	N030781

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Sample N030781-001 (AB3-Q218) was not analyzed for Hexavalent Chromium as per COC.

Analytical Comments for SM 2540D:

RPD for Sample Duplicate (N030759-001ADUP) is outside criteria ; however, the associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET Laboratories **Date:** *27-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.801D
Lab Order: N030781
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030781-001A	AB3-Q218	Groundwater	6/13/2018 1:00:00 PM	6/13/2018	6/27/2018
N030781-002A	C-NR4-S-Q218	Groundwater	6/13/2018 12:50:00 PM	6/13/2018	6/27/2018
N030781-002B	C-NR4-S-Q218	Groundwater	6/13/2018 12:50:00 PM	6/13/2018	6/27/2018
N030781-002C	C-NR4-S-Q218	Groundwater	6/13/2018 12:50:00 PM	6/13/2018	6/27/2018
N030781-002D	C-NR4-S-Q218	Groundwater	6/13/2018 12:50:00 PM	6/13/2018	6/27/2018
N030781-002E	C-NR4-S-Q218	Groundwater	6/13/2018 12:50:00 PM	6/13/2018	6/27/2018
N030781-003A	R-19-Q218	Groundwater	6/13/2018 9:15:00 AM	6/13/2018	6/27/2018
N030781-003B	R-19-Q218	Groundwater	6/13/2018 9:15:00 AM	6/13/2018	6/27/2018
N030781-003C	R-19-Q218	Groundwater	6/13/2018 9:15:00 AM	6/13/2018	6/27/2018
N030781-003D	R-19-Q218	Groundwater	6/13/2018 9:15:00 AM	6/13/2018	6/27/2018
N030781-003E	R-19-Q218	Groundwater	6/13/2018 9:15:00 AM	6/13/2018	6/27/2018
N030781-004A	RRB-Q218	Groundwater	6/13/2018 9:40:00 AM	6/13/2018	6/27/2018
N030781-004B	RRB-Q218	Groundwater	6/13/2018 9:40:00 AM	6/13/2018	6/27/2018
N030781-004C	RRB-Q218	Groundwater	6/13/2018 9:40:00 AM	6/13/2018	6/27/2018
N030781-004D	RRB-Q218	Groundwater	6/13/2018 9:40:00 AM	6/13/2018	6/27/2018
N030781-004E	RRB-Q218	Groundwater	6/13/2018 9:40:00 AM	6/13/2018	6/27/2018
N030781-005A	C-CON-D-Q218	Groundwater	6/13/2018 10:10:00 AM	6/13/2018	6/27/2018
N030781-005B	C-CON-D-Q218	Groundwater	6/13/2018 10:10:00 AM	6/13/2018	6/27/2018
N030781-005C	C-CON-D-Q218	Groundwater	6/13/2018 10:10:00 AM	6/13/2018	6/27/2018
N030781-005D	C-CON-D-Q218	Groundwater	6/13/2018 10:10:00 AM	6/13/2018	6/27/2018
N030781-005E	C-CON-D-Q218	Groundwater	6/13/2018 10:10:00 AM	6/13/2018	6/27/2018
N030781-006A	C-CON-S-Q218	Groundwater	6/13/2018 10:25:00 AM	6/13/2018	6/27/2018
N030781-006B	C-CON-S-Q218	Groundwater	6/13/2018 10:25:00 AM	6/13/2018	6/27/2018
N030781-006C	C-CON-S-Q218	Groundwater	6/13/2018 10:25:00 AM	6/13/2018	6/27/2018
N030781-006D	C-CON-S-Q218	Groundwater	6/13/2018 10:25:00 AM	6/13/2018	6/27/2018
N030781-006E	C-CON-S-Q218	Groundwater	6/13/2018 10:25:00 AM	6/13/2018	6/27/2018
N030781-007A	MW-914-Q218	Groundwater	6/13/2018 8:35:00 AM	6/13/2018	6/27/2018
N030781-007B	MW-914-Q218	Groundwater	6/13/2018 8:35:00 AM	6/13/2018	6/27/2018
N030781-007C	MW-914-Q218	Groundwater	6/13/2018 8:35:00 AM	6/13/2018	6/27/2018

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - RMP, RC000753.801D
Lab Order:	N030781
Contract No:	

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030781-007D	MW-914-Q218	Groundwater	6/13/2018 8:35:00 AM	6/13/2018	6/27/2018
N030781-007E	MW-914-Q218	Groundwater	6/13/2018 8:35:00 AM	6/13/2018	6/27/2018
N030781-008A	C-MAR-D-Q218	Groundwater	6/13/2018 8:25:00 AM	6/13/2018	6/27/2018
N030781-008B	C-MAR-D-Q218	Groundwater	6/13/2018 8:25:00 AM	6/13/2018	6/27/2018
N030781-008C	C-MAR-D-Q218	Groundwater	6/13/2018 8:25:00 AM	6/13/2018	6/27/2018
N030781-008D	C-MAR-D-Q218	Groundwater	6/13/2018 8:25:00 AM	6/13/2018	6/27/2018
N030781-008E	C-MAR-D-Q218	Groundwater	6/13/2018 8:25:00 AM	6/13/2018	6/27/2018
N030781-009A	C-MAR-S-Q218	Groundwater	6/13/2018 8:50:00 AM	6/13/2018	6/27/2018
N030781-009B	C-MAR-S-Q218	Groundwater	6/13/2018 8:50:00 AM	6/13/2018	6/27/2018
N030781-009C	C-MAR-S-Q218	Groundwater	6/13/2018 8:50:00 AM	6/13/2018	6/27/2018
N030781-009D	C-MAR-S-Q218	Groundwater	6/13/2018 8:50:00 AM	6/13/2018	6/27/2018
N030781-009E	C-MAR-S-Q218	Groundwater	6/13/2018 8:50:00 AM	6/13/2018	6/27/2018
N030781-010A	C-NR1-D-Q218	Groundwater	6/13/2018 10:50:00 AM	6/13/2018	6/27/2018
N030781-010B	C-NR1-D-Q218	Groundwater	6/13/2018 10:50:00 AM	6/13/2018	6/27/2018
N030781-010C	C-NR1-D-Q218	Groundwater	6/13/2018 10:50:00 AM	6/13/2018	6/27/2018
N030781-010D	C-NR1-D-Q218	Groundwater	6/13/2018 10:50:00 AM	6/13/2018	6/27/2018
N030781-010E	C-NR1-D-Q218	Groundwater	6/13/2018 10:50:00 AM	6/13/2018	6/27/2018
N030781-011A	C-NR1-S-Q218	Groundwater	6/13/2018 11:05:00 AM	6/13/2018	6/27/2018
N030781-011B	C-NR1-S-Q218	Groundwater	6/13/2018 11:05:00 AM	6/13/2018	6/27/2018
N030781-011C	C-NR1-S-Q218	Groundwater	6/13/2018 11:05:00 AM	6/13/2018	6/27/2018
N030781-011D	C-NR1-S-Q218	Groundwater	6/13/2018 11:05:00 AM	6/13/2018	6/27/2018
N030781-011E	C-NR1-S-Q218	Groundwater	6/13/2018 11:05:00 AM	6/13/2018	6/27/2018
N030781-012A	C-NR3-D-Q218	Groundwater	6/13/2018 11:50:00 AM	6/13/2018	6/27/2018
N030781-012B	C-NR3-D-Q218	Groundwater	6/13/2018 11:50:00 AM	6/13/2018	6/27/2018
N030781-012C	C-NR3-D-Q218	Groundwater	6/13/2018 11:50:00 AM	6/13/2018	6/27/2018
N030781-012D	C-NR3-D-Q218	Groundwater	6/13/2018 11:50:00 AM	6/13/2018	6/27/2018
N030781-012E	C-NR3-D-Q218	Groundwater	6/13/2018 11:50:00 AM	6/13/2018	6/27/2018
N030781-013A	C-NR3-S-Q218	Groundwater	6/13/2018 12:05:00 PM	6/13/2018	6/27/2018
N030781-013B	C-NR3-S-Q218	Groundwater	6/13/2018 12:05:00 PM	6/13/2018	6/27/2018
N030781-013C	C-NR3-S-Q218	Groundwater	6/13/2018 12:05:00 PM	6/13/2018	6/27/2018

CLIENT:	ARCADIS U.S., Inc. - California
Project:	PG&E Topock - RMP, RC000753.801D
Lab Order:	N030781
Contract No:	

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N030781-013D	C-NR3-S-Q218	Groundwater	6/13/2018 12:05:00 PM	6/13/2018	6/27/2018
N030781-013E	C-NR3-S-Q218	Groundwater	6/13/2018 12:05:00 PM	6/13/2018	6/27/2018
N030781-014A	C-NR4-D-Q218	Groundwater	6/13/2018 12:35:00 PM	6/13/2018	6/27/2018
N030781-014B	C-NR4-D-Q218	Groundwater	6/13/2018 12:35:00 PM	6/13/2018	6/27/2018
N030781-014C	C-NR4-D-Q218	Groundwater	6/13/2018 12:35:00 PM	6/13/2018	6/27/2018
N030781-014D	C-NR4-D-Q218	Groundwater	6/13/2018 12:35:00 PM	6/13/2018	6/27/2018
N030781-014E	C-NR4-D-Q218	Groundwater	6/13/2018 12:35:00 PM	6/13/2018	6/27/2018

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180614B**	QC Batch: **R124640**			PrepDate			Analyst: **LR**
Specific Conductance	900	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180614B** QC Batch: **R124640**				PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180614B** QC Batch: **R124640** PrepDate							Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180614B** QC Batch: **R124640**				PrepDate			Analyst: **LR**
Specific Conductance	900	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180614B**	QC Batch: **R124640**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180614B**	QC Batch: **R124640**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180614B**	QC Batch: **R124640**			PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180614B** QC Batch: **R124640** PrepDate							Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180614B**	QC Batch: **R124640**			PrepDate			Analyst: **LR**
Specific Conductance	900	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180614B** QC Batch: **R124640** PrepDate							Analyst: **LR**
Specific Conductance	900	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_180614B** QC Batch: **R124640**				PrepDate			Analyst: **LR**
Specific Conductance	890	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180614B** QC Batch: **R124640** PrepDate							Analyst: **LR**
Specific Conductance	900	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
EPA 120.1							
RunID: **NV00922-WC_180614B** QC Batch: **R124640** PrepDate							Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	6/14/2018 01:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N030781-002DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **124640**
Client ID: **ZZZZZZ** Batch ID: **R124640** TestNo: **EPA 120.1** Analysis Date: **6/14/2018** SeqNo: **3054131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	905.000	0.10						900.0	0.554	2	

Sample ID **N030781-014DDUP** SampType: **DUP** TestCode: **120.1_WPGE** Units: **umhos/cm** Prep Date: RunNo: **124640**
Client ID: **ZZZZZZ** Batch ID: **R124640** TestNo: **EPA 120.1** Analysis Date: **6/14/2018** SeqNo: **3054162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	918.000	0.10						915.0	0.327	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
SM4500-H+B							
RunID: **NV00922-WC_180614A** QC Batch: **R124639** PrepDate Analyst: **LR**							
pH	8.3	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
SM4500-H+B							
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A** QC Batch: **R124639**				PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N030781
Project: PG&E Topock - RMP, RC000753.801D
Lab ID: N030781-014

Client Sample ID: C-NR4-D-Q218
Collection Date: 6/13/2018 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_180614A**	QC Batch: **R124639**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	6/14/2018 10:25 AM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	6/14/2018 10:25 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N030781-002DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **124639**
Client ID: **ZZZZZZ** Batch ID: **R124639** TestNo: **SM4500-H+B** Analysis Date: **6/14/2018** SeqNo: **3054116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.250	0.10						8.240	0.121	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Sample ID **N030781-012DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **124639**
Client ID: **ZZZZZZ** Batch ID: **R124639** TestNo: **SM4500-H+B** Analysis Date: **6/14/2018** SeqNo: **3054127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.240	0.10						8.200	0.487	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_180614E** QC Batch: **68446** PrepDate **6/14/2018** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614E** QC Batch: **68446**			PrepDate **6/14/2018**				Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614E** QC Batch: **68446**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614E** QC Batch: **68446**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614E** QC Batch: **68446**				PrepDate		**6/14/2018**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614E**	QC Batch: **68446**			PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_180614F** QC Batch: **68448** PrepDate **6/14/2018** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614F** QC Batch: **68448**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614F** QC Batch: **68448**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614F** QC Batch: **68448**				PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_180614F** QC Batch: **68448** PrepDate **6/14/2018** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_180614F**	QC Batch: **68448**			PrepDate **6/14/2018**			Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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3151 W. Post Rd., Las Vegas, NV 89118
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ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
SM2540D							
RunID: **NV00922-WC_180614F** QC Batch: **68448** PrepDate **6/14/2018** Analyst: **LR**							
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	6/14/2018 08:13 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-68446** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124652**
Client ID: **LCSW** Batch ID: **68446** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054714**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	979.000	10	1000	0	97.9	80	120				

Sample ID **MB-68446** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124652**
Client ID: **PBW** Batch ID: **68446** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N030759-001ADUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124652**
Client ID: **ZZZZZZ** Batch ID: **68446** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054717**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	16.000	10						15.00	6.45	5	R

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-68448** SampType: **LCS** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124653**
Client ID: **LCSW** Batch ID: **68448** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	953.000	10	1000	0	95.3	80	120				

Sample ID **MB-68448** SampType: **MBLK** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124653**
Client ID: **PBW** Batch ID: **68448** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054728**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID **N030781-008DDUP** SampType: **DUP** TestCode: **160.2_2540D** Units: **mg/L** Prep Date: **6/14/2018** RunNo: **124653**
Client ID: **ZZZZZZ** Batch ID: **68448** TestNo: **SM2540D** Analysis Date: **6/14/2018** SeqNo: **3054730**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180614A**	QC Batch: **R124656**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 10:11 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate	**6/14/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/25/2018 09:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180614A** QC Batch: **R124656** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 10:30 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/25/2018 10:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180614A**	QC Batch: **R124656**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 10:49 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate	**6/14/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/25/2018 10:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180614A** QC Batch: **R124656** PrepDate Analyst: **RAB**							
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 11:27 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018** Analyst: **CEI**							
Chromium	ND	0.13	1.0		µg/L	1	6/25/2018 11:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180614A** QC Batch: **R124656** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 11:46 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/25/2018 11:12 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180614A**	QC Batch: **R124656**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 12:05 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate	**6/14/2018**		Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/25/2018 11:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180614A** QC Batch: **R124656** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 12:24 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/25/2018 11:46 PM

ANALYTICAL RESULTS

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Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180614A** QC Batch: **R124656**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 12:43 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180625E** QC Batch: **68461**				PrepDate		**6/14/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/25/2018 11:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

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Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC			**EPA 218.6**				
RunID: **NV00922-IC7_180614A** QC Batch: **R124656**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 01:21 PM
DISSOLVED METALS BY ICP-MS	**EPA 3010A**		**EPA 6020**				
RunID: **NV00922-ICP7_180625E** QC Batch: **68461**				PrepDate		**6/14/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/26/2018 12:08 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_180614A**	QC Batch: **R124656**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 01:39 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate		**6/14/2018**	Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/26/2018 12:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180614A** QC Batch: **R124656** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 01:58 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/26/2018 12:30 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180614A** QC Batch: **R124656** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 02:17 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/26/2018 12:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_180614A** QC Batch: **R124656** PrepDate							Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	6/14/2018 02:36 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018**							Analyst: **CEI**
Chromium	ND	0.13	1.0		µg/L	1	6/26/2018 01:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R124656** SampType: **MBLK** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **PBW** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R124656** SampType: **LCS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **LCSW** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.147	0.20	5.000	0	103	90	110				

Sample ID **N030781-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.951	0.20	1.000	0	95.1	90	110				

Sample ID **N030781-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054761**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.992	0.20	1.000	0	99.2	90	110				

Sample ID **N030781-004AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.002	0.20	1.000	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030781-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.999	0.20	1.000	0.05230	94.7	90	110				

Sample ID **N030781-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.015	0.20	1.000	0.04990	96.5	90	110				

Sample ID **N030781-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.011	0.20	1.000	0	101	90	110				

Sample ID **N030781-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.986	0.20	1.000	0	98.6	90	110				

Sample ID **N030781-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054775**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.991	0.20	1.000	0	99.1	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030781-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.990	0.20	1.000	0.05260	93.7	90	110				

Sample ID **N030781-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.984	0.20	1.000	0.04760	93.6	90	110				

Sample ID **N030781-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054783**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.980	0.20	1.000	0	98.0	90	110				

Sample ID **N030781-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054785**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.970	0.20	1.000	0.04890	92.1	90	110				

Sample ID **N030781-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.984	0.20	1.000	0.04930	93.5	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N030781-007AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.995	0.20	1.000	0	99.5	90	110	1.011	1.67	20	

Sample ID **N030781-012ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Qualifiers:

B Analyte detected in the associated Method Blank
E Value above quantitation range
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike/Surrogate outside of limits due to matrix interference
Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-68461**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **6/14/2018**	RunNo: **125863**
Client ID: **PBW**	Batch ID: **68461**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/25/2018**	SeqNo: **3064808**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-68461**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **6/14/2018**	RunNo: **125863**
Client ID: **LCSW**	Batch ID: **68461**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/25/2018**	SeqNo: **3064809**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.674	1.0	10.00	0	96.7	85	115				

Sample ID **N030781-002B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **6/14/2018**	RunNo: **125863**
Client ID: **ZZZZZZ**	Batch ID: **68461**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/25/2018**	SeqNo: **3064815**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.374	1.0	10.00	0	104	75	125				

Sample ID **N030781-002B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **6/14/2018**	RunNo: **125863**
Client ID: **ZZZZZZ**	Batch ID: **68461**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/25/2018**	SeqNo: **3064817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.407	1.0	10.00	0	104	75	125	10.37	0.318	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- Calculations are based on raw values
- E Value above quantitation range
- R RPD outside accepted recovery limits
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180619B** QC Batch: **R124721** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.42	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180619B** QC Batch: **R124721**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.41	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180619B** QC Batch: **R124721** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.42	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Client Sample ID: C-CON-D-Q218
Lab Order: N030781
Collection Date: 6/13/2018 10:10:00 AM
Project: PG&E Topock - RMP, RC000753.801D
Matrix: GROUNDWATER
Lab ID: N030781-005

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180619B** QC Batch: **R124721** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.38	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180619B**	QC Batch: **R124721**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.37	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180619B**	QC Batch: **R124721**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.39	0.032	0.050		mg/L	1	6/19/2018

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180619B** QC Batch: **R124721** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.37	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180619B** QC Batch: **R124721** PrepDate							Analyst: **QBM**
Nitrate/Nitrite as N	0.40	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180619B** QC Batch: **R124721**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180619B** QC Batch: **R124721**				PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.36	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_180619B**	QC Batch: **R124721**			PrepDate			Analyst: **QBM**
Nitrate/Nitrite as N	0.40	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180619B** QC Batch: **R124721** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.35	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: **NV00922-WC_180619B** QC Batch: **R124721** PrepDate Analyst: **QBM**							
Nitrate/Nitrite as N	0.41	0.032	0.050		mg/L	1	6/19/2018

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R124721** SampType: **MBLK** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124721**
Client ID: **PBW** Batch ID: **R124721** TestNo: **SM4500-NO3** Analysis Date: **6/19/2018** SeqNo: **3057772**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R124721** SampType: **LCS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124721**
Client ID: **LCSW** Batch ID: **R124721** TestNo: **SM4500-NO3** Analysis Date: **6/19/2018** SeqNo: **3057773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.521	0.050	0.5000	0	104	85	115				

Sample ID **N030781-004EDUP** SampType: **DUP** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124721**
Client ID: **ZZZZZZ** Batch ID: **R124721** TestNo: **SM4500-NO3** Analysis Date: **6/19/2018** SeqNo: **3057777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.381	0.050						0.4222	10.2	20	

Sample ID **N030781-005EMS** SampType: **MS** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124721**
Client ID: **ZZZZZZ** Batch ID: **R124721** TestNo: **SM4500-NO3** Analysis Date: **6/19/2018** SeqNo: **3057779**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.853	0.050	0.5000	0.3753	95.5	75	125				

Sample ID **N030781-005EMSD** SampType: **MSD** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124721**
Client ID: **ZZZZZZ** Batch ID: **R124721** TestNo: **SM4500-NO3** Analysis Date: **6/19/2018** SeqNo: **3057780**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.011	0.050	0.5000	0.3753	127	75	125	0.8528	17.0	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68463**				PrepDate **6/14/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 01:19 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68462**				PrepDate **6/14/2018**		Analyst: **CEI**
Iron	27	18	20		ug/L	1	6/21/2018 11:27 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68463** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 01:58 PM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68462** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	24	18	20		ug/L	1	6/21/2018 11:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68463**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 02:03 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68462**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	23	18	20		ug/L	1	6/21/2018 11:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68463**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 02:09 PM
TOTAL METALS BY ICP							
EPA 3010A			**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68462**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	22	18	20		ug/L	1	6/21/2018 12:04 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180621A**	QC Batch: **68463**				PrepDate **6/14/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 02:14 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_180621A**	QC Batch: **68462**				PrepDate **6/14/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 12:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68463**				PrepDate **6/14/2018**			Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 02:19 PM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68462**				PrepDate **6/14/2018**			Analyst: **CEI**
Iron	200	18	20		ug/L	1	6/21/2018 12:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68463**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 02:25 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68462**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	170	18	20		ug/L	1	6/21/2018 12:32 PM

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68463** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 02:42 PM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68462** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	190	18	20		ug/L	1	6/21/2018 12:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68463**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 02:47 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68462**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	22	18	20		ug/L	1	6/21/2018 12:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A				**EPA 6010B**			
RunID: **NV00922-ICP2_180621A**	QC Batch: **68463**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 02:53 PM
TOTAL METALS BY ICP							
EPA 3010A				**EPA 6010B**			
RunID: **NV00922-ICP2_180621A**	QC Batch: **68462**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 12:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68463** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 02:58 PM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68462** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 12:53 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68463**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 03:03 PM
TOTAL METALS BY ICP							
	EPA 3010A		**EPA 6010B**				
RunID: **NV00922-ICP2_180621A**	QC Batch: **68462**			PrepDate	**6/14/2018**		Analyst: **CEI**
Iron	ND	18	20		ug/L	1	6/21/2018 12:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68463** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	ND	18	20		ug/L	1	6/21/2018 03:09 PM
TOTAL METALS BY ICP							
EPA 3010A / **EPA 6010B**							
RunID: **NV00922-ICP2_180621A** QC Batch: **68462** PrepDate **6/14/2018** Analyst: **CEI**							
Iron	24	18	20		ug/L	1	6/21/2018 01:04 PM

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-68463** SampType: **MBLK** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/14/2018** RunNo: **125775**
Client ID: **PBW** Batch ID: **68463** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3061183**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **N030781-002B-MS** SampType: **MS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/14/2018** RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **68463** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3061190**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.346	20	100.0	0	120	75	125				

Sample ID **N030781-002B-MSD** SampType: **MSD** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/14/2018** RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **68463** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3061191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	120.220	20	100.0	0	120	75	125	120.3	0.104	20	

Sample ID **LCS-68463** SampType: **LCS** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: **6/14/2018** RunNo: **125775**
Client ID: **LCSW** Batch ID: **68463** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3061206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	107.808	20	100.0	0	108	85	115				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **MB-68462** SampType: **MBLK** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/14/2018** RunNo: **125775**
Client ID: **PBW** Batch ID: **68462** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3061002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-68462** SampType: **LCS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/14/2018** RunNo: **125775**
Client ID: **LCSW** Batch ID: **68462** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3061003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	106.540	20	100.0	0	107	85	115				

Sample ID **N030781-002C-MS** SampType: **MS** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/14/2018** RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **68462** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3061009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	127.073	20	100.0	26.76	100	75	125				

Sample ID **N030781-002C-MSD** SampType: **MSD** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: **6/14/2018** RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **68462** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **6/21/2018** SeqNo: **3061010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	128.653	20	100.0	26.76	102	75	125	127.1	1.24	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:50:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-002		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.3	0.081	0.10		µg/L	1	6/25/2018 09:37 PM
Barium	110	0.15	1.0		µg/L	1	6/25/2018 09:37 PM
Manganese	ND	0.26	0.50		µg/L	1	6/25/2018 09:37 PM
Molybdenum	4.8	0.21	0.50		µg/L	1	6/25/2018 09:37 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/25/2018 09:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:15:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-003		

DISSOLVED METALS BY ICP-MS **EPA 3010A** **EPA 6020**

RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.5	0.081	0.10		µg/L	1	6/25/2018 10:39 PM
Barium	120	0.15	1.0		µg/L	1	6/25/2018 10:39 PM
Manganese	ND	0.26	0.50		µg/L	1	6/25/2018 10:39 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	6/25/2018 10:39 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/26/2018 05:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate		**6/14/2018**	Analyst: **CEI**
Arsenic	2.2	0.081	0.10		µg/L	1	6/25/2018 10:50 PM
Barium	110	0.15	1.0		µg/L	1	6/25/2018 10:50 PM
Manganese	ND	0.26	0.50		µg/L	1	6/25/2018 10:50 PM
Molybdenum	4.7	0.21	0.50		µg/L	1	6/25/2018 10:50 PM
Selenium	1.6	0.36	0.50		µg/L	1	6/25/2018 10:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:10:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-005		

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.4	0.081	0.10		µg/L	1	6/25/2018 11:01 PM
Barium	110	0.15	1.0		µg/L	1	6/25/2018 11:01 PM
Manganese	ND	0.26	0.50		µg/L	1	6/25/2018 11:01 PM
Molybdenum	4.8	0.21	0.50		µg/L	1	6/25/2018 11:01 PM
Selenium	1.8	0.36	0.50		µg/L	1	6/25/2018 11:01 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate **6/14/2018**			Analyst: **CEI**
Arsenic	2.4	0.081	0.10		µg/L	1	6/25/2018 11:12 PM
Barium	110	0.15	1.0		µg/L	1	6/25/2018 11:12 PM
Manganese	ND	0.26	0.50		µg/L	1	6/25/2018 11:12 PM
Molybdenum	4.7	0.21	0.50		µg/L	1	6/25/2018 11:12 PM
Selenium	1.8	0.36	0.50		µg/L	1	6/26/2018 04:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-914-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:35:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate		**6/14/2018**	Analyst: **CEI**
Arsenic	2.3	0.081	0.10		µg/L	1	6/25/2018 11:23 PM
Barium	110	0.15	1.0		µg/L	1	6/25/2018 11:23 PM
Manganese	ND	0.26	0.50		µg/L	1	6/25/2018 11:23 PM
Molybdenum	4.7	0.21	0.50		µg/L	1	6/25/2018 11:23 PM
Selenium	1.5	0.36	0.50		µg/L	1	6/25/2018 11:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate		**6/14/2018**	Analyst: **CEI**
Arsenic	2.5	0.081	0.10		µg/L	1	6/25/2018 11:46 PM
Barium	120	0.15	1.0		µg/L	1	6/25/2018 11:46 PM
Manganese	ND	0.26	0.50		µg/L	1	6/25/2018 11:46 PM
Molybdenum	5.1	0.21	0.50		µg/L	1	6/25/2018 11:46 PM
Selenium	1.7	0.36	0.50		µg/L	1	6/26/2018 04:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 8:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate **6/14/2018**			Analyst: **CEI**
Arsenic	2.4	0.081	0.10		µg/L	1	6/25/2018 11:57 PM
Barium	120	0.15	1.0		µg/L	1	6/25/2018 11:57 PM
Manganese	ND	0.26	0.50		µg/L	1	6/25/2018 11:57 PM
Molybdenum	5.0	0.21	0.50		µg/L	1	6/25/2018 11:57 PM
Selenium	1.8	0.36	0.50		µg/L	1	6/26/2018 05:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ANALYTICAL RESULTS

ASSET Laboratories

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-010		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.3	0.081	0.10		µg/L	1	6/26/2018 12:08 AM
Barium	110	0.15	1.0		µg/L	1	6/26/2018 12:08 AM
Manganese	ND	0.26	0.50		µg/L	1	6/26/2018 12:08 AM
Molybdenum	4.8	0.21	0.50		µg/L	1	6/26/2018 12:08 AM
Selenium	1.7	0.36	0.50		µg/L	1	6/26/2018 12:08 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:05:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate		**6/14/2018**	Analyst: **CEI**
Arsenic	2.3	0.081	0.10		µg/L	1	6/26/2018 12:19 AM
Barium	110	0.15	1.0		µg/L	1	6/26/2018 12:19 AM
Manganese	ND	0.26	0.50		µg/L	1	6/26/2018 12:19 AM
Molybdenum	4.7	0.21	0.50		µg/L	1	6/26/2018 12:19 AM
Selenium	1.7	0.36	0.50		µg/L	1	6/26/2018 12:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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EPA ID CA01638

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate **6/14/2018**			Analyst: **CEI**
Arsenic	2.1	0.081	0.10		µg/L	1	6/26/2018 12:30 AM
Barium	110	0.15	1.0		µg/L	1	6/26/2018 12:30 AM
Manganese	ND	0.26	0.50		µg/L	1	6/26/2018 12:30 AM
Molybdenum	4.6	0.21	0.50		µg/L	1	6/26/2018 12:30 AM
Selenium	1.7	0.36	0.50		µg/L	1	6/26/2018 05:06 PM

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *27-Jun-18*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-013		

DISSOLVED METALS BY ICP-MS — **EPA 3010A** — **EPA 6020**

RunID: **NV00922-ICP7_180625E** QC Batch: **68461** PrepDate **6/14/2018** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.2	0.081	0.10		µg/L	1	6/26/2018 12:53 AM
Barium	110	0.15	1.0		µg/L	1	6/26/2018 12:53 AM
Manganese	ND	0.26	0.50		µg/L	1	6/26/2018 12:53 AM
Molybdenum	4.7	0.21	0.50		µg/L	1	6/26/2018 12:53 AM
Selenium	1.6	0.36	0.50		µg/L	1	6/26/2018 05:12 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q218
Lab Order:	N030781	**Collection Date:**	6/13/2018 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.801D	**Matrix:**	GROUNDWATER
Lab ID:	N030781-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_180625E**	QC Batch: **68461**			PrepDate **6/14/2018**			Analyst: **CEI**
Arsenic	2.3	0.081	0.10		µg/L	1	6/26/2018 01:04 AM
Barium	110	0.15	1.0		µg/L	1	6/26/2018 01:04 AM
Manganese	ND	0.26	0.50		µg/L	1	6/26/2018 01:04 AM
Molybdenum	4.7	0.21	0.50		µg/L	1	6/26/2018 01:04 AM
Selenium	1.6	0.36	0.50		µg/L	1	6/26/2018 05:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-68461** SampType: **MBLK** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/14/2018** RunNo: **125863**
Client ID: **PBW** Batch ID: **68461** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/25/2018** SeqNo: **3065130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-68461** SampType: **LCS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/14/2018** RunNo: **125863**
Client ID: **LCSW** Batch ID: **68461** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/25/2018** SeqNo: **3065131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.685	0.10	10.00	0	96.9	85	115				
Barium	9.572	1.0	10.00	0	95.7	85	115				
Manganese	96.912	0.50	100.0	0	96.9	85	115				
Molybdenum	9.564	0.50	10.00	0	95.6	85	115				
Selenium	10.264	0.50	10.00	0	103	85	115				

Sample ID **N030781-002B-MS** SampType: **MS** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/14/2018** RunNo: **125863**
Client ID: **ZZZZZZ** Batch ID: **68461** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/25/2018** SeqNo: **3065137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.216	0.10	10.00	2.258	110	75	125				
Barium	119.827	1.0	10.00	110.1	97.5	75	125				
Manganese	102.448	0.50	100.0	0	102	75	125				
Molybdenum	16.232	0.50	10.00	4.762	115	75	125				
Selenium	12.103	0.50	10.00	1.677	104	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030781-002B-MSD** SampType: **MSD** TestCode: **6020_DIS** Units: **µg/L** Prep Date: **6/14/2018** RunNo: **125863**
Client ID: **ZZZZZZ** Batch ID: **68461** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/25/2018** SeqNo: **3065139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.999	0.10	10.00	2.258	107	75	125	13.22	1.66	20	
Barium	119.862	1.0	10.00	110.1	97.8	75	125	119.8	0.0291	20	
Manganese	103.302	0.50	100.0	0	103	75	125	102.4	0.831	20	
Molybdenum	16.165	0.50	10.00	4.762	114	75	125	16.23	0.412	20	
Selenium	11.926	0.50	10.00	1.677	102	75	125	12.10	1.47	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

SAMPLE RECEIVING ITEMS

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis
Address: 1410 Rocky Ridge Dr # 330
Address: Roseville, CA 95661
Phone: 916-786-3302 Fax:
Submitted By: Nara Tep
Title: sample tech
Signature: [signature] Date: 6/13/18
I hereby authorize ASSET Labs to perform the tests indicated below.
Project Name: PG&E Topock - RMP
Project Number: RC000753.0801

Report to: Dan Bush
Company: Arcadis
Email: dan.bush@arcadis.com daniel.moore@critigen.com
Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661
Phone: 916-786-3302 Fax:
Sampled By: Nara Tep
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for
Signature: [signature] Date: 6/13/18

Bill to: Marty Bloes
Address:
Address:
Email to: mbloes@pivox.com P.O.#
Phone: 949-727-1400, ext 200 Fax:

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	2	
6. Method of Cooling: Ice		
Sample Temp: 2.9°C		

Courier:
Tracking No.:

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Analyses (container / method):
1. 3x250 mL poly — Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH
2. 250 ml Poly — Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH
3. 3x500mL poly — Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr
4. 3x500mL poly — Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B
5. 3x500mL poly — Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba
6. 500 mL poly — Total metals (SW6010B); HNO3 Fe
7. 1 liter poly — Anions (E300.0); Br, Cl, SO4
8. 1 liter poly — Specific Conductance (E120.1)
9. 1 liter poly — pH (SM4500HB)
10. 1 liter poly — TDS (SM2540C)
11. 1 liter poly — Alkalinity (Total, reported as CaCO3) (SM2320B)
12. 1 liter poly — TSS (SM2540)
13. 125 mL poly — Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF	Field QC Cr(VI) FF	Diss. metals Cr	Diss. metals Ca, Mg, K, Na, B	Diss. metals As, Mn, Fe, Se, Mo, Ba	Total metals Fe	Anions	Spec. Cond.	pH	TDS	Alkalinity	TSS	Nitrate/Nitrite	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
		~~AB1-Q218~~					~~X~~												~~E~~	~~1~~	~~P~~	~~BN~~	~~Hold~~
		~~AB2-Q218~~					~~X~~												~~E~~	~~1~~	~~P~~	~~BN~~	~~Hold~~
	N030781-01	AB3-Q218	6/13/18	13:00			X												E	1	P	BN	Hold

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
[signature] Nara Tep	6/13/18 15:10	[signature]	6/13/18 1518
[signature]	6/13/18 1728	[signature]	6/13/18 1728

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
x	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:			
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:		
T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy Yellow=Customer's Copy

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P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Nara Tep		Phone: 949-727-1400, ext 200 Fax:
Title: sample tech	Phone: 916-786-3302 Fax:	
Signature: Date: 6/13/18	Sampled By: Nara Tep	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for	
Project Name: PG&E Topock - RMP	Signature: Date: 6/13/18	
Project Number: RC000753.0801		

EDD Requirement	
Excel EDD	
Geotracker	
Labspec	
Others	✓
Specify: RWQCB	
Global ID:	

QA/QC	
RTNE	
RWQCB	✓
CalTrans	
LEVEL III	
LEVEL IV	
Regulatory	
Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number	✓	
6. Method of Cooling: Ice		
Sample Temp: 2.2 / 3.1 / 2.6		
Courier:		
Tracking No.:		

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Containers: Cr(VI) FF – 3x250 mL poly; Dissolved metals – 3x500mL poly (each of three columns); Total metals – 500 mL poly; Anions, Specific Conductance, pH, TDS, Alkalinity, TSS – 1 liter poly each; Nitrate/Nitrite – 125 mL poly; Oxygen and deuterium stable isotopes – 1 250 mL poly

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3	Total metals (SW6010B); HNO3 Fe	Anions (E300.0); Br, Cl, SO4	Specific Conductance (E120.1)	pH (SM4500HB)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500NO3) Nitrogen; H2SO4	Oxygen and deuterium stable isotopes (CFIRM)	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N030781-02	C-NR4-S-Q218	6/13/18	12:50		X		X		X	X		X	X			X	X		E	7/8	P	BNS	
2		~~C-R22A-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
3		~~C-R22A-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
4		~~C-R27-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
5		~~C-R27-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
		~~C-TAZ-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
7		~~MW-915-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
8		~~C-TAZ-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
9	-03	R-19-Q218	6/13/18	09:15		X		X		X	X		X	X			X	X		E	7/8	P	BNS	
10		~~R-28-Q218~~				~~X~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	
11		~~R63-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~		~~E~~	~~5~~	~~P~~	~~BNS~~	
12	-04	RRB-Q218	6/13/18	09:40		X		X		X	X		X	X			X	X		E	7/8	P	BNS	
13		~~SW1-Q218~~				~~X~~		~~X~~					~~X~~	~~X~~						~~E~~	~~3~~	~~P~~	~~BNS~~	
14		~~SW2-Q218~~				~~X~~		~~X~~					~~X~~	~~X~~						~~E~~	~~3~~	~~P~~	~~BNS~~	

Relinquished by (Signature and Printed Name):	Date/Time:	Received by (Signature and Printed Name):	Date/Time:
Nara Tep	6/13/18 15:10		6/13/18 1510
	6/13/18 1728		6/13/18 1728

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

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Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Nara Tep		Phone: 949-727-1400, ext 200	Fax:
Title: sample tech	Phone: 916-786-3302 Fax:		
Signature: Date: 6/13/18	Sampled By: Nara Tep		
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - RMP	Signature: Date: 6/13/18		
Project Number: RC000753.801D			

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
		Regulatory	
Global ID:		Specify State:	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		✓
6. Method of Cooling: Ice		
Sample Temp: 2.9/2-12/2.6		
Courier:		
Tracking No.:		

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

Containers: Cr(VI) FF 3x250 mL poly; Dissolved metals Cr 3x500mL poly; Dissolved metals Ca, Mg, K, Na, B 3x500mL poly; Dissolved metals As, Mn, Fe, Se, Mo, Ba 3x500mL poly; Total metals Fe 500 mL poly; Anions 1 liter poly; Specific Conductance 1 liter poly; pH 1 liter poly; TDS 1 liter poly; Alkalinity 1 liter poly; TSS 1 liter poly; Nitrate/Nitrite 125 mL poly

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Field QC Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Cr	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, K, Na, B	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba	Total metals (SW6010B); HNO3 Fe	Anions (E300.0); Br, Cl, SO4	Specific Conductance (E120.1)	pH (SM4500HB)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500N03) Nitrogen; H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1		~~C-BNS-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	M
2	N030781-05	C-CON-D-Q218	6/13/18	10:10		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
3	-06	C-CON-S-Q218	6/13/18	10:25		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
4		~~C-I-3-D-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	M
5	-07	MW-914-Q218	6/13/18	08:35		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
6		~~C-I-3-S-Q218~~				~~X~~		~~X~~		~~X~~	~~X~~		~~X~~	~~X~~			~~X~~	~~X~~	~~E~~	~~5~~	~~P~~	~~BNS~~	M
7	-08	C-MAR-D-Q218	6/13/18	08:25		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
8	-09	C-MAR-S-Q218	6/13/18	08:50		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
9	-10	C-NR1-D-Q218	6/13/18	10:50		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
10	-11	C-NR1-S-Q218	6/13/18	11:05		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
11	-12	C-NR3-D-Q218	6/13/18	11:50		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
12	-13	C-NR3-S-Q218	6/13/18	12:05		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	
13		~~MW-916-Q218~~				~~X~~		~~X~~					~~X~~	~~X~~					~~E~~	~~3~~	~~P~~	~~BNS~~	M
14	-14	C-NR4-D-Q218	6/13/18	12:35		X		X		X	X		X	X			X	X	E	~~5~~ 7	P	BNS	

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
Nara Tep	6/13/18 16:10	[illegible]	6/13/18 1510
[illegible]	6/13/18 1728	[illegible]	6/13/18 1728

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
x	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 6/13/2018 Workorder: N030781

Rep sample Temp (Deg C): 2.9/3.1/2.6 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 6/14/2018

Reviewed By: LR 061518

Subject: Re: N030781 for EPA 6010B
From: Nancy Sibucao <nancy@assetlaboratories.com>
Date: 6/26/2018 8:40 AM
To: Daniel Moore <Daniel.Moore@critigen.com>
CC: "'Marlon B. Cartin'" <marlon@assetlaboratories.com>

Hi Dan,

Noted, we will include a corrective action with the report. As for the nebulizer, I don't think we have any problem with it. I am just assuming that it was not reanalyzed as the RSD is within 15%.

Thanks,
Nancy

From: Daniel Moore
Sent: Monday, June 25, 2018 6:50PM
To: Nancy Sibucao
Cc: Marlon B. Cartin
Subject: RE: N030781 for EPA 6010B

> Proceed with including a corrective action. Are you having issues with the nebulizer?
>
> ---
>
> From: Nancy Sibucao <nancy@assetlaboratories.com>
> Sent: Monday, June 25, 2018 7:56 PM
> To: Daniel Moore <Daniel.Moore@critigen.com>

Cc: 'Marlon B. Cartin' <marlon@assetlaboratories.com>
Subject: N030781 for EPA 6010B
Importance: High

Hi Dan,

We are having issues on the RSD of Iron in sample N030781-010 as the RSD failed the 15% criteria. The reporting limit (RL) of Iron is 20 ug/L. Here's the breakdown of the reading:

	On-column reading	% RSD	% Internal Standard
reading @ 1x	22.31 ug/L	15.35	104.9

Can we report sample? Please advise.

Thanks,
Nancy

Subject: RE: PG&E Topock - RMP (Asset Labs No. N030762 and N030781)
From: "Madsen, Laura" <Laura.Madsen@arcadis.com>
Date: 6/14/2018 9:18 AM
To: Yoandra Rodriguez <yoandra@assetlaboratories.com>
CC: "'Andreafe. Gallardo'" <andrea.gallardo@assetlaboratories.com>, "'Sonny. Lorenzo'" <sonny.lorenzo@assetlaboratories.com>, "maryann.balilu@assetlaboratoriesph.com" <maryann.balilu@assetlaboratoriesph.com>

Hi Yoandra,
Please use RC00753.801D

Thanks,
Laura

-----Original Message-----
From: Yoandra Rodriguez <yoandra@assetlaboratories.com>
Sent: Thursday, June 14, 2018 11:28 AM
To: Madsen, Laura <Laura.Madsen@arcadis.com>
Cc: 'Andreafe. Gallardo' <andrea.gallardo@assetlaboratories.com>; 'Sonny. Lorenzo' <sonny.lorenzo@assetlaboratories.com>; maryann.balilu@assetlaboratoriesph.com
Subject: PG&E Topock - RMP (Asset Labs No. N030762 and N030781)
Importance: High

Hi Laura,

Please kindly check the attached COCs and confirm which project # to use: RC000753.801 or RC000753.801D.

Or must we report 801 apart from 801D?

Please advise.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-001A	AB3-Q218	6/13/2018 1:00:00 PM	6/27/2018	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☑	☐	☐	WW
N030781-002A	C-NR4-S-Q218	6/13/2018 12:50:00 PM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-002B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-002C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-002D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-002E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-003A	R-19-Q218	6/13/2018 9:15:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-003B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-003C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-003D	R-19-Q218	6/13/2018 9:15:00 AM	6/27/2018	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-003E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-004A	RRB-Q218	6/13/2018 9:40:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-004B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-004C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-004D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-004E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-005A	C-CON-D-Q218	6/13/2018 10:10:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-005B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-005B	C-CON-D-Q218	6/13/2018 10:10:00 AM	6/27/2018	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-005C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-005D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-005E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-006A	C-CON-S-Q218	6/13/2018 10:25:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-006B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-006C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-006D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-006E	C-CON-S-Q218	6/13/2018 10:25:00 AM	6/27/2018	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-007A	MW-914-Q218	6/13/2018 8:35:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-007B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-007C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-007D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-007E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-008A	C-MAR-D-Q218	6/13/2018 8:25:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-008B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-008C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-008C	C-MAR-D-Q218	6/13/2018 8:25:00 AM	6/27/2018	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-008D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-008E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-009A	C-MAR-S-Q218	6/13/2018 8:50:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-009B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-009C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-009D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-009E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-010A	C-NR1-D-Q218	6/13/2018 10:50:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-010B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-010B	C-NR1-D-Q218	6/13/2018 10:50:00 AM	6/27/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-010C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-010D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-010E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-011A	C-NR1-S-Q218	6/13/2018 11:05:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-011B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-011C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-011D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-011D	C-NR1-S-Q218	6/13/2018 11:05:00 AM	6/27/2018	Groundwater		Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-011E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-012A	C-NR3-D-Q218	6/13/2018 11:50:00 AM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-012B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-012C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-012D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-012E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-013A	C-NR3-S-Q218	6/13/2018 12:05:00 PM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-013B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-013C	C-NR3-S-Q218	6/13/2018 12:05:00 PM	6/27/2018	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-013D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-013E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-014A	C-NR4-D-Q218	6/13/2018 12:35:00 PM	6/27/2018		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N030781-014B			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/27/2018		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N030781-014C			6/27/2018		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/27/2018		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N030781-014D			6/27/2018		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	LSR
			6/27/2018		SM4500-H+B	pH	☐	☐	☐	LSR
			6/27/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			6/27/2018			Total Suspended Solids Prep	☐	☐	☐	LSR
N030781-014E			6/27/2018		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N030781-015A	FOLDER	6/27/2018	6/27/2018		EDD	RWQCB	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

14-Jun-18

WorkOrder: N030781

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.801D **QC Level:** Level IV **Date Received:** 6/13/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N030781-015A	FOLDER	6/27/2018	6/27/2018		Folder	Folder	☐	☐	☐	LAB
			6/27/2018		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: N030781

NAME	TEST METHOD
Quennie Manimtim	SM 4500-NO3F
Claire Ignacio	EPA 6010B_Dissolved, EPA 6010B, EPA 6020_Dissolved
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540D

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R124640 **Analyst:** LSR

ASSET #: N030781 **Date Analyzed:** 6/14/2018

Method: EPA 120.1

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 6/15/2018

2nd Level Reviewer [signature] 6/27/2018 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 6/13/18 1345
Analyst: BSR
CONT'D

Standard	Std ID	Reading	Comments
9.70 uS/cm	CNV-180417A	9.82 @ 25.5°C	% Rec: (90-110%)
1412	180131A	1424 @ 24.9°C	
10020	180417C	10320 @ 25.0°C	
99601	180201A	99400 @ 25.3°C	

	Sample ID	Matrix	Reading	Comments
1	N030762-011D	H2O	924 @ 24.4°C	
2	11D DUP		925 @ 24.1°C	
3	12D		923 @ 24.3°C	
4	13D		924 @ 24.4°C	
5	14C		956 @ 24.3°C	
6	15C		981 @ 24.3°C	
7				
8				
9	1413 uS/cm	CNV-171121C	1465 @ 24.7°C	
10	10000	180108C	10320 @ 25.0°C	2% 6/13/18
Dup	99672	171215A	101200 @ 25.0°C	Accept: ~~10% water, 20% soil~~
Std Chk:				% Rec: (90-110%)

Date: 6/14/18 1330
Analyst: LSR

Standard	Std ID	Reading	Comments
9.70 uS/cm	CNV-180417A	9.81 @ 25.8°C	% Rec: (90-110%)
1412	180131A	1424 @ 25.8°C	
10020	180417C	9940 @ 25.8°C	
99601	180201A	99200 @ 25.9°C	

	Sample ID	Matrix	Reading	Comments
1	N030781-002D	H2O	900 @ 25.5°C	
2	2D DUP		905 @ 25.1°C	STD CHECK:
3	3D		894 @ 25.3°C	1413 CNV180417B
4	4D		889 @ 25.1°C	= 1407 @ 25.5°C
5	5D		895 @ 24.6°C	10000 CNV180108C
6	6D		888 @ 24.9°C	= 10200 @ 25.3°C
7	7D		892 @ 25.0°C	99672 CNV171215A
8	8D		890 @ 25.1°C	= 99400 @ 25.6°C
9	9D		893 @ 25.2°C	
10	10D		896 @ 25.0°C	2% 6/14/18 LSR
~~Dup~~	11D		896 @ 25.1°C	Accept: ~~10% water, 20% soil~~
Std Chk:				% Rec: (90-110%)

Julia Ramit 6/15/2018 Logbook # 6

Conductivity Logbook

Date: 6/14/18 1330

Analyst: KR

Cont'd

Standard	Std ID	Reading	Comments
KR 1412 9.70 uS/cm	CIW-180417A	9.81 @25.8°C	% Rec: (90-110%)
1412	180131A	1424 @25.8°C	
10020	180417C	9940 @25.8°C	
99601	180201A	99200 @25.4°C	

	Sample ID	Matrix	Reading	Comments
1	W030781-012D	H2O	890 @25.4°C	
2	13D		900 @25.3°C	
3	14D		915 @25.4°C	
4	14D DUP		918 @25.1°C	
5				
6				Julia Ramit 6/15/2018
7				
8	1413 uS/cm	CIW-180417B	1422 @25.2°C	
9	10000	180108C	10220 @25.5°C	
10	99672	171215A	99600 @25.6°C	2% 6/14/18 KR
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: ____________________

Analyst: ____________________

Standard	Std ID	Reading	Comments
			% Rec: (90-110%)

	Sample ID	Matrix	Reading	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 6

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number:	**R124639**	**Instrument ID:**	**pH meter**
ASSET #:	**N030781**	**Analyst:**	**LSR**
		Date Analyzed:	**14-Jun**
Method:	**EPA 150.1**		

	Ist Level Review			2nd Level Review		
pH Meter Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?	X					
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit — Date: 6/15/2018

2nd Level Reviewer: [signature] 6/27/2018 — Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 6/13/18 1535
Analyst: KR

Standard	Std ID	pH	Comments
Buffer 7	CIW-171215D	7.00 @ 25.0°C	
Buffer 4	171208A	4.03 @ 25.0°C	
Buffer 10	180119A	10.02 @ 25.0°C	
Slope		97.4%	Acceptance Criteria: 95%-105%

	Sample ID	Matrix	pH	Comments
1	N030764-002D	AW	7.06 @ 25.0°C	
2	2D DUP		7.10 @ 25.0°C	
3	N030765-002D		7.18 @ 25.0°C	
4	N030766-002D		7.11 @ 25.0°C	
5	N030776-002A		12.05 @ 25.0°C	
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CIW-180320C	6.95 @ 25.0°C	Accept: +/-~~0.1~~ 0.05 pH units from expected value

MSH 6/15/18

Date: 6/14/18 1025
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CIW-171215D	7.00 @ 25.0°C	
Buffer 4	171208A	4.01 @ 25.0°C	
Buffer 10	180119A	9.99 @ 25.0°C	
Slope		97.6%	Acceptance Criteria: 95%-105%

	Sample ID	Matrix	pH	Comments
1	N030781-002D	H2O	8.24 @ 25.0°C	
2	2D DUP		8.25 @ 25.0°C	
3	3D		8.30 @ 25.0°C	
4	4D		8.28 @ 25.0°C	
5	5D		8.26 @ 25.0°C	
6	6D		8.27 @ 25.0°C	Julia Ramit
7	7D		8.29 @ 25.0°C	6/15/2018
8	8D		8.29 @ 25.0°C	
9	9D		8.30 @ 25.0°C	
10	10D		8.21 @ 25.0°C	
~~Dup~~	11D		8.25 @ 25.0°C	Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CIW-180320C	7.01 @ 25.0°C	Accept: +/-~~0.1~~ 0.05 pH units from expected value

MSH 6/15/18

pH Logbook

Date: 6/14/18 1025
Analyst: LSR

Cont'd

Standard	Std ID	pH	Comments
Buffer 7	C1NV-171215D	7.00 @25.0°C	
Buffer 4	171208A	4.01 @25.0°C	
Buffer 10	180119A	9.99 @25.0°C	
Slope		97.6%	Acceptance Criteria: 95%-105%

	Sample ID	Matrix	pH	Comments
1	N030781-0120	H_2O	8.20 @25.0°C	
2	120DUP		8.24 @25.0°C	
3	130		8.16 @25.0°C	
4	140		8.20 @25.0°C	
5				
6				
7				
8			Julia Ramit	6/15/2018
9				
10				
Dup				Accept: 10% water, 20% soil
Buffer 7, 4, 10 (Circle one)	C1NV-180320C	7.00 @25.0°C		Accept: +/-~~0.1~~ 0.05 pH units from expected value

LSR 6/15/18

Date: 6/14/18 1635
Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	C1NV-171215D	7.00 @25.0°C	
Buffer 4	171208A	4.01 @25.0°C	
Buffer 10	180119A	9.99 @25.0°C	
Slope		97.6%	Acceptance Criteria: 95%-105%

	Sample ID	Matrix	pH	Comments
1	N030796-001D	H_2O	7.99 @25.0°C	
2	1DDUP		8.00 @25.0°C	
3	2D		7.62 @25.0°C	
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
Buffer 7, 4, 10 (Circle one)	C1NV-180320C	6.99 @25.0°C		Accept: +/-~~0.1~~ 0.05 pH units from expected value

LSR 6/15/18

SM 2540D

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68446/68448 **Analyst:** LSR

ASSET #: N030781 **Date Analyzed:** 6/14/2018

Method: EPA 160.2

	Ist Level Review			2nd Level Review		
Initial Calibration	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 6/15/2018

2nd Level Reviewer: Nancy 6/27/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: Water

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N030781-002D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4006- 1.4002) *1000000}{100}$$

$$= 4 \text{ mg/L}$$

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Julia Ramit 6/15/2018

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Page:*1 of 1*

Prep Start Date: **6/14/2018 8:13:20 A**
Prep End Date: **6/14/2018 2:50:00 P**
Prep Batch **68446** Prep Code: **160.2_W_PRE**

Reviewed/ Date: Nancy 6/27/2018
Initials/ Date: Lilia Ramit 6/15/2018
Technician: **Lilia Ramit**

Prep Factor Units **mL / mL**
Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68446	Water		100	☐	0	0	100	1.000		
MB-68446	Water		100	☐	0	0	100	1.000		
N030759-001A	Water		100	☐	0	0	100	1.000		
N030759-001A-DU	Water		100	☐	0	0	100	1.000		
N030759-002A	Water		100	☐	0	0	100	1.000		
N030762-012D	Groundwater		100	☐	0	0	100	1.000		
N030762-013D	Groundwater		100	☐	0	0	100	1.000		
N030781-002D	Groundwater		100	☐	0	0	100	1.000		
N030781-003D	Groundwater		100	☐	0	0	100	1.000		
N030781-004D	Groundwater		100	☐	0	0	100	1.000		
N030781-005D	Groundwater		100	☐	0	0	100	1.000		
N030781-006D	Groundwater		100	☐	0	0	100	1.000		
N030781-007D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
10009	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180521A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/14/2018 8:13:20 A**
Prep End Date:

Reviewed/ Date: ____________

Initials/ Date: Lilia Ramit 6/15/2018

Prep Batch **68446** Prep Code: **160.2_W_PRE**

Technician: **Lilia Ramit**

Prep Factor Units mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68446	Water	AWST180514	100	☐	0	0	100	1.000		
MB-68446	Water		100	☐	0	0	100	1.000		
N030759-001A	Water		100	☐	0	0	100	1.000		
N030759-001A-DU	Water		100	☐	0	0	100	1.000		
N030759-002A	Water		100	☐	0	0	100	1.000		
N030762-012D	Groundwater		100	☐	0	0	100	1.000		
N030762-013D	Groundwater		100	☐	0	0	100	1.000		
N030781-002D	Groundwater		100	☐	0	0	100	1.000		
N030781-003D	Groundwater		100	☐	0	0	100	1.000		
N030781-004D	Groundwater		100	☐	0	0	100	1.000		
N030781-005D	Groundwater		100	☐	0	0	100	1.000		
N030781-006D	Groundwater		100	☐	0	0	100	1.000		
N030781-007D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

100.9

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/14/2018 8:13:25 A**
Prep End Date: **6/14/2018 2:50:00 P**

Reviewed/ Date: Nancy 6/27/2018
Initials/ Date: Julia Ramit 6/15/2018

Prep Factor Units **mL / mL**
Temp. (°C): **105**

Prep Batch **68448** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68448	Water		100	☐	0	0	100	1.000		
MB-68448	Water		100	☐	0	0	100	1.000		
N030781-008D	Groundwater		100	☐	0	0	100	1.000		
N030781-008D-DU	Groundwater		100	☐	0	0	100	1.000		
N030781-009D	Groundwater		100	☐	0	0	100	1.000		
N030781-010D	Groundwater		100	☐	0	0	100	1.000		
N030781-011D	Groundwater		100	☐	0	0	100	1.000		
N030781-012D	Groundwater		100	☐	0	0	100	1.000		
N030781-013D	Groundwater		100	☐	0	0	100	1.000		
N030781-014D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
10009	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST180614A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/14/2018 8:13:25 A**
Prep End Date:
Prep Batch **68448** Prep Code: **160.2_W_PRE**

Reviewed/ Date: ____________
Initials/ Date: Lilia Ramit 6/15/2018
Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68448	Water	IWST 1806144	100	☐	0	0	100	1.000		
MB-68448	Water		100	☐	0	0	100	1.000		
N030781-008D	Groundwater		100	☐	0	0	100	1.000		
N030781-008D-DU	Groundwater		100	☐	0	0	100	1.000		
N030781-009D	Groundwater		100	☐	0	0	100	1.000		
N030781-010D	Groundwater		100	☐	0	0	100	1.000		
N030781-011D	Groundwater		100	☐	0	0	100	1.000		
N030781-012D	Groundwater		100	☐	0	0	100	1.000		
N030781-013D	Groundwater		100	☐	0	0	100	1.000		
N030781-014D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

10009

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST (TSS) TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
6/14/18 813	MB2 68446	100	1.4025 1.4026	1.4024 1.4025	
	LCS2 68446	100	1.4057 1.4056	1.5034 1.5035	
11	N030759-001A	100	1.4104 1.4104	1.4118 1.4119	
D2	1A DUP	100	1.4046 1.4045	1.4060 1.4061	
12	2A	100	1.3968 1.3971	1.3981 1.3987	
13	N030762-012D	100	1.4076 1.4077	1.4079 1.4078	
14	13D	100	1.3990 1.3990	1.3989 1.3989	
15	N030751-002D	100	1.4003 1.4002	1.4004 1.4006	
16	3D	100	1.4023 1.4022	1.4021 1.4023	
17	4D	100	1.4109 1.4108	1.4109 1.4110	

Julia Ramit 6/15/2018 ASSET Laboratories Logbook#11

SOLIDS RAW DATA

TEST TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
6/14/18 18	N030781-005D	100	1.4041 1.4042	1.4040 1.4042	
19	6D	100	1.3939 1.3941	1.3943 1.3943	
20	7D	100	1.4059 1.4063	1.4064 1.4066	
	Julia Ramit	6/15/2018			

ASSET LABORATORIES
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

	A =	**weight in g of aluminum dish + filter disc + residue after drying**
	B =	**weight in g of aluminum dish + filter disc**
	PF =	**100/volume of sample used in mL**

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
6/14/2018							
MB-68446	100	1.4026	1.4025	-1.0000	1.00	-1	MBLK
LCS-68446	100	1.4056	1.5035	979.0000	1.00	979	LCS
N030759-001A	100	1.4104	1.4119	15.0000	1.00	15	SAMP
N030759-001ADUP	100	1.4045	1.4061	16.0000	1.00	16	DUP
N030759-002A	100	1.3971	1.3981	10.0000	1.00	10	SAMP
N030762-012D	100	1.4077	1.4078	1.0000	1.00	1	SAMP
N030762-013D	100	1.399	1.3989	-1.0000	1.00	-1	SAMP
N030781-002D	100	1.4002	1.4006	4.0000	1.00	4	SAMP
N030781-003D	100	1.4022	1.4023	1.0000	1.00	1	SAMP
N030781-004D	100	1.4108	1.411	2.0000	1.00	2	SAMP
N030781-005D	100	1.4042	1.4042	0.0000	1.00	0	SAMP
N030781-006D	100	1.3941	1.3943	2.0000	1.00	2	SAMP
N030781-007D	100	1.4063	1.4066	3.0000	1.00	3	SAMP

Julia Ramit 6/15/2018

SOLIDS RAW DATA

TEST: TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
6/14/18 813	MB3 68448	100	1.4098 1.4101	1.4103 1.4103	
	LCS3 68448	100	1.4051 1.4054	1.5004 1.5007	
21	N030781-0030	100	1.4042 1.4042	1.4047 1.4048	
28	8D DUP	100	1.4035 1.4033	1.4038 1.4038	
22	9D	100	1.3916 1.3918	1.3924 1.3924	
23	10D	100	1.4049 1.4050	1.4051 1.4051	
24	11D	100	1.3985 1.3982	1.3983 1.3982	
25	12D	100	1.4175 1.4175	1.4174 1.4174	
26	13D	100	1.4059 1.4059	1.4061 1.4060	
27	14D	100	1.4048 1.4047	1.4051 1.4049	

Closing wt: 0.9999 @ 1450 6/14/18

ASSET Laboratories Julia Ramit 6/15/2018 Logbook#11

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where: **A =** **weight in g of aluminum dish + filter disc + residue after drying**
B = **weight in g of aluminum dish + filter disc**
PF = **100/volume of sample used in mL**

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
6/14/2018							
MB-68448	100	1.4101	1.4103	2.0000	1.00	2	MBLK
LCS-68448	100	1.4054	1.5007	953.0000	1.00	953	LCS
N030781-008D	100	1.4042	1.4048	6.0000	1.00	6	SAMP
N030781-008DDUP	100	1.4033	1.4038	5.0000	1.00	5	DUP
N030781-009D	100	1.3918	1.3924	6.0000	1.00	6	SAMP
N030781-010D	100	1.405	1.4051	1.0000	1.00	1	SAMP
N030781-011D	100	1.3982	1.3982	0.0000	1.00	0	SAMP
N030781-012D	100	1.4175	1.4174	-1.0000	1.00	-1	SAMP
N030781-013D	100	1.4059	1.406	1.0000	1.00	1	SAMP
N030781-014D	100	1.4047	1.4049	2.0000	1.00	2	SAMP

Julia Ramit 6/15/2018

EPA 218.6

IC ARCUS
REV 2.0
011416

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R124656
ASSET #: N030781

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 6/14/2018

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others ___________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 6/20/2018

2nd Level Reviewer: [signature] 6/26/2018 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}\text{ ,µg/L} = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N030781-005A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}\text{ ,µg/L} = 0.0523 * 1$$

$$Cr^{+6}\text{ ,µg/L} = 0.0523$$

Since PQL is 0.2 µg/L,

$$\mathbf{Cr^{+6}\text{ ,µg/L} = ND}$$

rba 6/20/2018

ANALYSIS RUN LOG

INJECTION LOG: 180521A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/21/18 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/21/18 9:52 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:11 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:30 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/21/18 10:49 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/21/18 10:58 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/21/18 11:08 AM	Reported
13	MB-R124155	MBLK	1	Hexavalent Chromium	05/21/18 11:17 AM	Reported
14	LCS-R124155	LCS	1	Hexavalent Chromium	05/21/18 11:27 AM	Reported
15	N030123-015A	SAMP	5	Hexavalent Chromium	05/21/18 11:36 AM	Not Reported
16	N030123-015AMS	MS	5	Hexavalent Chromium	05/21/18 11:45 AM	Not Reported
17	N030189-011A	SAMP	1	Hexavalent Chromium	05/21/18 11:55 AM	Not Reported
18	N030189-011AMS	MS	1	Hexavalent Chromium	05/21/18 12:04 PM	Not Reported
19	N030189-012A	SAMP	1	Hexavalent Chromium	05/21/18 12:14 PM	Not Reported
20	N030189-012AMS	MS	1	Hexavalent Chromium	05/21/18 12:23 PM	Not Reported
21	N030402-001A	SAMP	20	Hexavalent Chromium	05/21/18 12:33 PM	Not Reported
22	N030402-001A	SAMP	1	Hexavalent Chromium	05/21/18 1:26 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	05/21/18 1:38 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	05/21/18 1:47 PM	Reported
25	N030402-001ADUP	DUP	1	Hexavalent Chromium	05/21/18 1:57 PM	Reported
26	N030402-001AMS	MS	1	Hexavalent Chromium	05/21/18 2:06 PM	Reported
27	N030402-001AMSD	MSD	1	Hexavalent Chromium	05/21/18 2:15 PM	Reported
28	CCV-2	CCV	1	Hexavalent Chromium	05/21/18 2:25 PM	Reported
29	CCB-2	CCB	1	Hexavalent Chromium	05/21/18 2:34 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180521A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**21/May/18 15:44:36**
No. of Injections:	**32**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/21/2018 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		05/21/2018 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/21/2018 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/21/2018 09:52	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/21/2018 10:01	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/21/2018 10:11	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/21/2018 10:20	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/21/2018 10:30	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/21/2018 10:39	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		05/21/2018 10:49	Finished	CCV @5ppb, IWST-180129A
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		05/21/2018 10:58	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		05/21/2018 11:08	Finished	CCB R180409B
13	MB-H2O,MBLK,1,	13	1000	Unknown		05/21/2018 11:17	Finished	MB R180409B
14	LCS-H2O,LCS,1,	14	1000	Unknown		05/21/2018 11:27	Finished	LCS, IWST-180129B
15	N030123-015A,SAMP	15	1000	Unknown		05/21/2018 11:36	Finished	SAMP,2>10mL
16	N030123-015AMS,MS	16	1000	Unknown		05/21/2018 11:45	Finished	MS (1ppb), IWST-180129B,2>1
17	N030189-011A,SAMP	17	1000	Unknown		05/21/2018 11:55	Finished	SAMP,10mL
18	N030189-011AMS,MS	18	1000	Unknown		05/21/2018 12:04	Finished	MS (1ppb), IWST-180129B,10
19	N030189-012A,SAMP	19	1000	Unknown		05/21/2018 12:14	Finished	SAMP,10mL
20	N030189-012AMS,MS	20	1000	Unknown		05/21/2018 12:23	Finished	MS (5ppb), IWST-180129B,10
21	N030402-001A,SAMP	21	1000	Unknown		05/21/2018 12:33	Finished	SAMP,0.5>10mL
22	N030402-001A,SAMP	23	1000	Unknown		05/21/2018 13:26	Finished	SAMP,10mL
23	CCV-1,CCV1,1,	24	1000	Unknown		05/21/2018 13:38	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	25	1000	Unknown		05/21/2018 13:47	Finished	CCB R180409B
25	N030402-001ADUP,D	26	1000	Unknown		05/21/2018 13:57	Finished	DUP,10mL
26	N030402-001AMS,MS	27	1000	Unknown		05/21/2018 14:06	Finished	MS (5ppb), IWST-180129B,10
27	N030402-001AMSD,M	28	1000	Unknown		05/21/2018 14:15	Finished	MSD (5ppb), IWST-180129B,1(
28	CCV-2,CCV,1,	29	1000	Unknown		05/21/2018 14:25	Finished	CCV @5ppb, IWST-180129A
29	CCB-2,CCB,1,	30	1000	Unknown		05/21/2018 14:34	Finished	CCB R180409B
30	SHUTDOWN	31	1000	Unknown		05/21/2018 14:44	Finished	
31	Eluent: R180518A	32	1000	Unknown		n.a.	Finished	Eluent
32	PCR: R180516B	33	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 180614A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/21/18 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/21/18 9:52 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:11 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:30 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	06/14/18 8:37 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	06/14/18 8:48 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	06/14/18 8:57 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	06/14/18 9:07 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	06/14/18 9:16 AM	Reported
15	MB-R124656	MBLK	1	Hexavalent Chromium	06/14/18 9:26 AM	Reported
16	LCS-R124656	LCS	1	Hexavalent Chromium	06/14/18 9:35 AM	Reported
17	N030781-001A	SAMP	1	Hexavalent Chromium	06/14/18 9:50 AM	Reported
18	N030781-001AMS	MS	1	Hexavalent Chromium	06/14/18 10:02 AM	Reported
19	N030781-002A	SAMP	1	Hexavalent Chromium	06/14/18 10:11 AM	Reported
20	N030781-002AMS	MS	1	Hexavalent Chromium	06/14/18 10:21 AM	Reported
21	N030781-003A	SAMP	1	Hexavalent Chromium	06/14/18 10:30 AM	Reported
22	N030781-003AMS	MS	1	Hexavalent Chromium	06/14/18 10:40 AM	Reported
23	N030781-004A	SAMP	1	Hexavalent Chromium	06/14/18 10:49 AM	Reported
24	N030781-004AMS	MS	1	Hexavalent Chromium	06/14/18 10:59 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	06/14/18 11:08 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	06/14/18 11:18 AM	Reported
27	N030781-005A	SAMP	1	Hexavalent Chromium	06/14/18 11:27 AM	Reported
28	N030781-005AMS	MS	1	Hexavalent Chromium	06/14/18 11:36 AM	Reported
29	N030781-006A	SAMP	1	Hexavalent Chromium	06/14/18 11:46 AM	Reported
30	N030781-006AMS	MS	1	Hexavalent Chromium	06/14/18 11:55 AM	Reported
31	N030781-007A	SAMP	1	Hexavalent Chromium	06/14/18 12:05 PM	Reported
32	N030781-007AMS	MS	1	Hexavalent Chromium	06/14/18 12:14 PM	Reported
33	N030781-008A	SAMP	1	Hexavalent Chromium	06/14/18 12:24 PM	Reported
34	N030781-008AMS	MS	1	Hexavalent Chromium	06/14/18 12:33 PM	Reported
35	N030781-009A	SAMP	1	Hexavalent Chromium	06/14/18 12:43 PM	Reported
36	N030781-009AMS	MS	1	Hexavalent Chromium	06/14/18 12:52 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	06/14/18 1:02 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	06/14/18 1:11 PM	Reported
39	N030781-010A	SAMP	1	Hexavalent Chromium	06/14/18 1:21 PM	Reported
40	N030781-010AMS	MS	1	Hexavalent Chromium	06/14/18 1:30 PM	Reported
41	N030781-011A	SAMP	1	Hexavalent Chromium	06/14/18 1:39 PM	Reported
42	N030781-011AMS	MS	1	Hexavalent Chromium	06/14/18 1:49 PM	Reported

INJECTION LOG: 180614A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030781-012A	SAMP	1	Hexavalent Chromium	06/14/18 1:58 PM	Reported
44	N030781-012AMS	MS	1	Hexavalent Chromium	06/14/18 2:08 PM	Reported
45	N030781-013A	SAMP	1	Hexavalent Chromium	06/14/18 2:17 PM	Reported
46	N030781-013AMS	MS	1	Hexavalent Chromium	06/14/18 2:27 PM	Reported
47	N030781-014A	SAMP	1	Hexavalent Chromium	06/14/18 2:36 PM	Reported
48	N030781-014AMS	MS	1	Hexavalent Chromium	06/14/18 2:46 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	06/14/18 2:55 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	06/14/18 3:05 PM	Reported
51	N030781-007AMSD	MSD	1	Hexavalent Chromium	06/14/18 3:14 PM	Reported
52	N030781-012ADUP	DUP	1	Hexavalent Chromium	06/14/18 3:24 PM	Reported
53	LCS-R124657	LCS	1	Hexavalent Chromium	06/14/18 3:35 PM	Reported
54	MB-R124657	MBLK	1	Hexavalent Chromium	06/14/18 3:46 PM	Reported
55	N030786-010A	SAMP	1	Hexavalent Chromium	06/14/18 3:55 PM	Reported
56	N030786-004A	SAMP	5	Hexavalent Chromium	06/14/18 4:05 PM	Reported
57	N030786-004AMS	MS	5	Hexavalent Chromium	06/14/18 4:14 PM	Reported
58	N030786-004AMSD	MSD	5	Hexavalent Chromium	06/14/18 4:24 PM	Reported
59	N030786-002A	SAMP	10	Hexavalent Chromium	06/14/18 4:33 PM	Reported
60	N030786-002ADUP	DUP	10	Hexavalent Chromium	06/14/18 4:43 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	06/14/18 4:52 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	06/14/18 5:02 PM	Reported
63	N030786-001A	SAMP	5	Hexavalent Chromium	06/14/18 5:11 PM	Reported
64	N030786-003A	SAMP	20	Hexavalent Chromium	06/14/18 5:21 PM	Reported
65	N030786-005A	SAMP	5	Hexavalent Chromium	06/14/18 5:30 PM	Reported
66	N030786-006A	SAMP	5	Hexavalent Chromium	06/14/18 5:40 PM	Reported
67	N030786-007A	SAMP	5	Hexavalent Chromium	06/14/18 5:49 PM	Reported
68	N030786-008A	SAMP	5	Hexavalent Chromium	06/14/18 5:58 PM	Not Reported
69	N030786-009A	SAMP	5	Hexavalent Chromium	06/14/18 6:08 PM	Reported
70	N030786-003A	SAMP	20	Hexavalent Chromium	06/14/18 6:17 PM	Not Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	06/14/18 6:27 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	06/14/18 6:36 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180614A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**14/Jun/18 19:07:06**
No. of Injections:	**75**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/21/2018 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		05/21/2018 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/21/2018 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/21/2018 09:52	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/21/2018 10:01	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/21/2018 10:11	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/21/2018 10:20	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/21/2018 10:30	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/21/2018 10:39	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		06/14/2018 08:37	Finished	20 ppb, IWST-180129A
11	BLANK	2	1000	Unknown		06/14/2018 08:48	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		06/14/2018 08:57	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		06/14/2018 09:07	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		06/14/2018 09:16	Finished	CCB R180531A
15	MB-H2O,MBLK,1,	6	1000	Unknown		06/14/2018 09:26	Finished	MB R180531A
16	LCS-H2O,LCS,1,	7	1000	Unknown		06/14/2018 09:35	Finished	LCS, IWST-180129B
17	N030781-001A,SAMF	9	1000	Unknown		06/14/2018 09:50	Finished	SAMP,10mL
18	N030781-001AMS,M$	10	1000	Unknown		06/14/2018 10:02	Finished	MS (1ppb), IWST-180129B,10
19	N030781-002A,SAMF	11	1000	Unknown		06/14/2018 10:11	Finished	SAMP,10mL
20	N030781-002AMS,M$	12	1000	Unknown		06/14/2018 10:21	Finished	MS (1ppb), IWST-180129B,10
21	N030781-003A,SAMF	13	1000	Unknown		06/14/2018 10:30	Finished	SAMP,10mL
22	N030781-003AMS,M$	14	1000	Unknown		06/14/2018 10:40	Finished	MS (1ppb), IWST-180129B,10
23	N030781-004A,SAMF	15	1000	Unknown		06/14/2018 10:49	Finished	SAMP,10mL
24	N030781-004AMS,M$	16	1000	Unknown		06/14/2018 10:59	Finished	MS (1ppb), IWST-180129B,10
25	CCV-2,CCV1,1,	17	1000	Unknown		06/14/2018 11:08	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	18	1000	Unknown		06/14/2018 11:18	Finished	CCB R180531A
27	N030781-005A,SAMF	19	1000	Unknown		06/14/2018 11:27	Finished	SAMP,10mL
28	N030781-005AMS,M$	20	1000	Unknown		06/14/2018 11:36	Finished	MS (1ppb), IWST-180129B,10
29	N030781-006A,SAMF	21	1000	Unknown		06/14/2018 11:46	Finished	SAMP,10mL
30	N030781-006AMS,M$	22	1000	Unknown		06/14/2018 11:55	Finished	MS (1ppb), IWST-180129B,10
31	N030781-007A,SAMF	23	1000	Unknown		06/14/2018 12:05	Finished	SAMP,10mL
32	N030781-007AMS,M$	24	1000	Unknown		06/14/2018 12:14	Finished	MS (1ppb), IWST-180129B,10
33	N030781-008A,SAMF	25	1000	Unknown		06/14/2018 12:24	Finished	SAMP,10mL
34	N030781-008AMS,M$	26	1000	Unknown		06/14/2018 12:33	Finished	MS (1ppb), IWST-180129B,10
35	N030781-009A,SAMF	27	1000	Unknown		06/14/2018 12:43	Finished	SAMP,10mL
36	N030781-009AMS,M$	28	1000	Unknown		06/14/2018 12:52	Finished	MS (1ppb), IWST-180129B,10
37	CCV-3,CCV,1,	29	1000	Unknown		06/14/2018 13:02	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	30	1000	Unknown		06/14/2018 13:11	Finished	CCB R180531A
39	N030781-010A,SAMF	31	1000	Unknown		06/14/2018 13:21	Finished	SAMP,10mL
40	N030781-010AMS,M$	32	1000	Unknown		06/14/2018 13:30	Finished	MS (1ppb), IWST-180129B,10
41	N030781-011A,SAMF	33	1000	Unknown		06/14/2018 13:39	Finished	SAMP,10mL
42	N030781-011AMS,M$	34	1000	Unknown		06/14/2018 13:49	Finished	MS (1ppb), IWST-180129B,10
43	N030781-012A,SAMF	35	1000	Unknown		06/14/2018 13:58	Finished	SAMP,10mL
44	N030781-012AMS,M$	36	1000	Unknown		06/14/2018 14:08	Finished	MS (1ppb), IWST-180129B,10
45	N030781-013A,SAMF	37	1000	Unknown		06/14/2018 14:17	Finished	SAMP,10mL
46	N030781-013AMS,M$	38	1000	Unknown		06/14/2018 14:27	Finished	MS (1ppb), IWST-180129B,10
47	N030781-014A,SAMF	39	1000	Unknown		06/14/2018 14:36	Finished	SAMP,10mL
48	N030781-014AMS,M$	40	1000	Unknown		06/14/2018 14:46	Finished	MS (1ppb), IWST-180129B,10
49	CCV-4,CCV1,1,	41	1000	Unknown		06/14/2018 14:55	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	42	1000	Unknown		06/14/2018 15:05	Finished	CCB R180523C
51	N030781-007AMSD,M	43	1000	Unknown		06/14/2018 15:14	Finished	MSD (1ppb), IWST-180129B,1(
52	N030781-012ADUP,D	44	1000	Unknown		06/14/2018 15:24	Finished	DUP,10mL
53	LCS-2,LCS,1,	1	1000	Unknown		06/14/2018 15:35	Finished	LCS, IWST-180129B
54	MB-2,MBLK,1,	2	1000	Unknown		06/14/2018 15:46	Finished	MB R180523C
55	N030786-010A,SAMF	3	1000	Unknown		06/14/2018 15:55	Finished	SAMP,10mL
56	N030786-004A,SAMF	4	1000	Unknown		06/14/2018 16:05	Finished	SAMP,2>10mL
57	N030786-004AMS,M$	5	1000	Unknown		06/14/2018 16:14	Finished	MS (5ppb), IWST-180129B,2>1
58	N030786-004AMSD,M	6	1000	Unknown		06/14/2018 16:24	Finished	MSD (5ppb), IWST-180129B,2>
59	N030786-002A,SAMF	7	1000	Unknown		06/14/2018 16:33	Finished	SAMP,1>10mL
60	N030786-002ADUP,D	8	1000	Unknown		06/14/2018 16:43	Finished	DUP,1>10mL

61	CCV-5,CCV,1,	9	1000	Unknown		06/14/2018 16:52	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	10	1000	Unknown		06/14/2018 17:02	Finished	CCB R180523CA
63	N030786-001A,SAMF	11	1000	Unknown		06/14/2018 17:11	Finished	SAMP,2>10mL
64	N030786-003A,SAMF	12	1000	Unknown		06/14/2018 17:21	Finished	SAMP,0.5>10mL
65	N030786-005A,SAMF	13	1000	Unknown		06/14/2018 17:30	Finished	SAMP,2>10mL
66	N030786-006A,SAMF	14	1000	Unknown		06/14/2018 17:40	Finished	SAMP,2>10mL
67	N030786-007A,SAMF	15	1000	Unknown		06/14/2018 17:49	Finished	SAMP,2>10mL
68	N030786-008A,SAMF	16	1000	Unknown		06/14/2018 17:58	Finished	SAMP,2>10mL
69	N030786-009A,SAMF	17	1000	Unknown		06/14/2018 18:08	Finished	SAMP,2>10mL
70	N030786-003A,SAMF	18	1000	Unknown		06/14/2018 18:17	Finished	SAMP,2>10mL
71	CCV-6,CCV1,1,	19	1000	Unknown		06/14/2018 18:27	Finished	CCV @10ppb, IWST-180129A
72	CCB-6,CCB,1,	20	1000	Unknown		06/14/2018 18:36	Finished	CCB R180523C
73	SHUTDOWN	21	1000	Unknown		06/14/2018 18:46	Finished	
74	Eluent: R180612A	22	1000	Unknown		n.a.	Finished	Eluent
75	PCR: R180611A	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Sample Preparation

Date Prepared: 6/13/18
Time Prepared: 1328H
Prepared By: MA

Reagent ID:
Sulfuric Acid: 10017
Diphenylcarbazide: CINV - 171116A
NH4OH + NH4SO4 eluent: R180612A
NH4OH + NH4SO4 buffer: M180524C

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030775-001A	7.18		~250 ml	~250 ml		
2)	2A	7.45					
3)	3A	7.38					
4)	4A	7.11					
5)	5A	6.95					
6)	6A	6.97					
7)	7A	7.02					
8)	8A	7.45					
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 6/14/18
Time Prepared: 0913H
Prepared By: MA

Slope: 97.62
pH 4: 4.01 @ 25.0°C
7: 7.00 @ 25.0°C
10: 9.99 @ 25.0°C
LCS: 7.01 @ 25.0°C

Reagent ID:
Sulfuric Acid: 10017
Diphenylcarbazide: CINV - 171116A
NH4OH + NH4SO4 eluent: R180612A
NH4OH + NH4SO4 buffer: R180531A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030781-001A	9.44	-	~250 ml	~250 ml		1/1
2)	2A	9.47	-				1/3
3)	2A	9.44	-				2/3
4)	2A	9.43	-				3/3
5)	3A	9.51	-				1/3
6)	3A	9.48	-				2/3
7)	3A	9.46	-				3/3
8)	4A	9.44	-				1/3
9)	4A	9.43	-				2/3
10)	4A	9.42	-				3/3
11)	5A	9.38	-				1/3
12)	5A	9.38	-				2/3
13)	5A	9.37	-				3/3
14)	6A	9.46	-				1/3
15)	6A	9.49	-				2/3
	6A	9.50	-				3/3

Logbook No. 14

nba 6/20/2018

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 6/14/18
Time Prepared: 0913 H
Prepared By: MSA

Reagent ID:
Sulfuric Acid: 10017
Diphenylcarbazide: CAN-171116A
NH4OH + NH4SO4 eluent: M806012A
NH4OH + NH4SO4 buffer: M180531A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030781-07A	9.51	-	~250ml	~250ml		1/3
2)	7A	9.50	-				2/3
3)	7A	9.49	-				3/3
4)	8A	9.44	-				1/3
5)	8A	9.43	-				2/3
6)	8A	9.42	-				3/3
7)	9A	9.37	-				1/3
8)	9A	9.33	-				2/3
9)	9A	9.39	-				3/3
10)	10A	9.38	-				1/3
11)	10A	9.43	-				2/3
12)	10A	9.40	-				3/3
13)	11A	9.50	-				1/3
14)	11A	9.46	-				2/3
15)	11A	9.51	-				3/3
	12A	9.37	-				1/3

Sample Preparation

Date Prepared: 6/14/18
Time Prepared: 0913H
Prepared By: MSA

Reagent ID:
Sulfuric Acid: 10017
Diphenylcarbazide: CAN-171116A
NH4OH + NH4SO4 eluent: M806012A
NH4OH + NH4SO4 buffer: M180531A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N030781-12A	9.40	-	~250ml	~250ml		2/3
2)	12A	9.42	-				3/3
3)	13A	9.41	-				1/3
4)	13A	9.44	-				2/3
5)	13A	9.45	-				3/3
6)	14A	9.38	-				1/3
7)	14A	9.39	-				2/3
8)	14A	9.38	-				3/3
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 14

rba 6/20/2018

INITIAL CALIBRATION
DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 5/21/2018

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0627	0.2668	1.3224	2.6085	3.9312	5.1733	0.9999

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST-170814H	IWST-180129A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV** SampType: **ICV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ICV** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **5/21/2018** SeqNo: **3054748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.175	0.20	5.000	0	103	90	110				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **5/21/2018** SeqNo: **3054749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.211	0.20	0.2000	0	106	80	120				

Sample ID **CCV-1** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **CCV** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.141	0.20	5.000	0	103	95	105				

Sample ID **PQL@0.2ppb** SampType: **CCV2** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054752**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.198	0.20	0.2000	0	99.0	80	120				

Sample ID **CCV-2** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054764**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.357	0.20	10.00	0	104	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
	Calculations are based on raw values				

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **CCV** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.134	0.20	5.000	0	103	95	105				

Sample ID **CCV-4** SampType: **CCV1** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ZZZZZZ** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.475	0.20	10.00	0	105	95	105				

Sample ID **CCV-5** SampType: **CCV** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **CCV** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.166	0.20	5.000	0	103	95	105				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB** SampType: **ICB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **ICB** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **5/21/2018** SeqNo: **3054750**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **CCB** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **CCB** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **CCB** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **CCB** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **124656**
Client ID: **CCB** Batch ID: **R124656** TestNo: **EPA 218.6** Analysis Date: **6/14/2018** SeqNo: **3054793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
Calculations are based on raw values
E Value above quantitation range
R RPD outside accepted recovery limits
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 6/14/2018

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.131	
CCV-6	4.065	

Average	4.143	
Actual RT Window	4.063 -	4.223
Applied RT Window	3.943 -	4.343

MB-R124656	N.A.	N.A.
LCS-R124656	4.165	PASS
N030781-001A	N.A.	N.A.
N030781-001AMS	4.165	PASS
N030781-002A	N.A.	N.A.
N030781-002AMS	4.156	PASS
N030781-003A	N.A.	N.A.
N030781-003AMS	4.165	PASS
N030781-004A	N.A.	N.A.
N030781-004AMS	4.156	PASS
N030781-005A	4.123	PASS
N030781-005AMS	4.156	PASS
N030781-006A	4.173	PASS
N030781-006AMS	4.156	PASS
N030781-007A	N.A.	N.A.
N030781-007AMS	4.156	PASS
N030781-008A	N.A.	N.A.
N030781-008AMS	4.156	PASS
N030781-009A	N.A.	N.A.
N030781-009AMS	4.156	PASS
N030781-010A	4.140	PASS
N030781-010AMS	4.156	PASS
N030781-011A	4.140	PASS

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RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 6/14/2018

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.131	
CCV-6	4.065	

Average	4.143	
Actual RT Window	4.063 -	4.223
Applied RT Window	3.943 -	4.343

Sample Name	Retention Time	Evaluation
N030781-011AMS	4.156	PASS
N030781-012A	N.A.	N.A.
N030781-012AMS	4.156	PASS
N030781-013A	4.123	PASS
N030781-013AMS	4.156	PASS
N030781-014A	4.140	PASS
N030781-014AMS	4.156	PASS
N030781-007AMSD	4.156	PASS
N030781-012ADUP	N.A.	N.A.
LCS-R124657	4.165	PASS
MB-R124657	N.A.	N.A.
N030786-010A	4.148	PASS
N030786-004A	4.148	PASS
N030786-004AMS	4.148	PASS
N030786-004AMSD	4.148	PASS
N030786-002A	4.140	PASS
N030786-002ADUP	4.131	PASS
N030786-001A	4.115	PASS
N030786-003A	4.115	PASS
N030786-005A	4.106	PASS
N030786-006A	4.090	PASS
N030786-007A	4.090	PASS
N030786-008A	4.073	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 6/14/2018

Sample Name	Retention Time	Evaluation
CCV-1	4.165	
CCV-2	4.165	
CCV-3	4.165	
CCV-4	4.165	
CCV-5	4.131	
CCV-6	4.065	
Average	4.143	
Actual RT Window	4.063 - 4.223	
Applied RT Window	3.943 - 4.343	
N030786-009A	4.056	PASS
N030786-003A	4.065	PASS

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name:	**HEXAVALENT CHROMIUM by Ion Chromatography**	Matrix:	**WATER**
Method Number:	EPA 218.6	Unit:	ug/L
Analysis Date(s):	5/5/2017, 5/8/2017, 5/9/2017, 5/10/2017, 5/11/2017, 5/12/2017, 5/15/2017		
Analyst:	Ria Abes		

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile	170505	170508	170509	170510	170511	170512	170515						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
Hexavalent Chromium	0.1949	0.2135	0.1840	0.1828	0.2011	0.1936	0.1911	0.20	0.0105	3.143	**0.0331**	**0.20**	OK,meets criteria

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2018 (1st Quarter)

Method Name:	**Hexavalent Chromium by IC**	Matrix:	**WATER**
Method Number:	EPA Method 218.6/7199	Unit:	µg/L
Analysis Date(s):	3/21/2018		
Analyst:	Ria Abes		

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.0331	0.100	0.116

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.200	0.200	0.201	100

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 180521A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/21/18 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/21/18 9:52 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:11 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:30 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:39 AM	Reported
10	ICV	ICV	1	Hexavalent Chromium	05/21/18 10:49 AM	Reported
11	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/21/18 10:58 AM	Reported
12	ICB	ICB	1	Hexavalent Chromium	05/21/18 11:08 AM	Reported
13	MB-R124155	MBLK	1	Hexavalent Chromium	05/21/18 11:17 AM	Reported
14	LCS-R124155	LCS	1	Hexavalent Chromium	05/21/18 11:27 AM	Reported
15	N030123-015A	SAMP	5	Hexavalent Chromium	05/21/18 11:36 AM	Not Reported
16	N030123-015AMS	MS	5	Hexavalent Chromium	05/21/18 11:45 AM	Not Reported
17	N030189-011A	SAMP	1	Hexavalent Chromium	05/21/18 11:55 AM	Not Reported
18	N030189-011AMS	MS	1	Hexavalent Chromium	05/21/18 12:04 PM	Not Reported
19	N030189-012A	SAMP	1	Hexavalent Chromium	05/21/18 12:14 PM	Not Reported
20	N030189-012AMS	MS	1	Hexavalent Chromium	05/21/18 12:23 PM	Not Reported
21	N030402-001A	SAMP	20	Hexavalent Chromium	05/21/18 12:33 PM	Not Reported
22	N030402-001A	SAMP	1	Hexavalent Chromium	05/21/18 1:26 PM	Reported
23	CCV-1	CCV1	1	Hexavalent Chromium	05/21/18 1:38 PM	Reported
24	CCB-1	CCB	1	Hexavalent Chromium	05/21/18 1:47 PM	Reported
25	N030402-001ADUP	DUP	1	Hexavalent Chromium	05/21/18 1:57 PM	Reported
26	N030402-001AMS	MS	1	Hexavalent Chromium	05/21/18 2:06 PM	Reported
27	N030402-001AMSD	MSD	1	Hexavalent Chromium	05/21/18 2:15 PM	Reported
28	CCV-2	CCV	1	Hexavalent Chromium	05/21/18 2:25 PM	Reported
29	CCB-2	CCB	1	Hexavalent Chromium	05/21/18 2:34 PM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_180521A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**21/May/18 15:44:36**
No. of Injections:	**32**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/21/2018 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		05/21/2018 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/21/2018 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/21/2018 09:52	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/21/2018 10:01	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/21/2018 10:11	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/21/2018 10:20	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/21/2018 10:30	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/21/2018 10:39	Finished	20 ppb, IWST-180129A
10	ICV,ICV,1,	10	1000	Unknown		05/21/2018 10:49	Finished	CCV @5ppb, IWST-180129A
11	PQL@0.2ppb,CCV2,1	11	1000	Unknown		05/21/2018 10:58	Finished	PQL @ 0.2ppb
12	ICB,ICB,1,	12	1000	Unknown		05/21/2018 11:08	Finished	CCB R180409B
13	MB-H2O,MBLK,1,	13	1000	Unknown		05/21/2018 11:17	Finished	MB R180409B
14	LCS-H2O,LCS,1,	14	1000	Unknown		05/21/2018 11:27	Finished	LCS, IWST-180129B
15	N030123-015A,SAMF	15	1000	Unknown		05/21/2018 11:36	Finished	SAMP,2>10mL
16	N030123-015AMS,MS	16	1000	Unknown		05/21/2018 11:45	Finished	MS (1ppb), IWST-180129B,2>1
17	N030189-011A,SAMF	17	1000	Unknown		05/21/2018 11:55	Finished	SAMP,10mL
18	N030189-011AMS,MS	18	1000	Unknown		05/21/2018 12:04	Finished	MS (1ppb), IWST-180129B,10
19	N030189-012A,SAMF	19	1000	Unknown		05/21/2018 12:14	Finished	SAMP,10mL
20	N030189-012AMS,MS	20	1000	Unknown		05/21/2018 12:23	Finished	MS (5ppb), IWST-180129B,10
21	N030402-001A,SAMF	21	1000	Unknown		05/21/2018 12:33	Finished	SAMP,0.5>10mL
22	N030402-001A,SAMF	23	1000	Unknown		05/21/2018 13:26	Finished	SAMP,10mL
23	CCV-1,CCV1,1,	24	1000	Unknown		05/21/2018 13:38	Finished	CCV @10ppb, IWST-180129A
24	CCB-1,CCB,1,	25	1000	Unknown		05/21/2018 13:47	Finished	CCB R180409B
25	N030402-001ADUP,D	26	1000	Unknown		05/21/2018 13:57	Finished	DUP,10mL
26	N030402-001AMS,MS	27	1000	Unknown		05/21/2018 14:06	Finished	MS (5ppb), IWST-180129B,10
27	N030402-001AMSD,M	28	1000	Unknown		05/21/2018 14:15	Finished	MSD (5ppb), IWST-180129B,1(
28	CCV-2,CCV,1,	29	1000	Unknown		05/21/2018 14:25	Finished	CCV @5ppb, IWST-180129A
29	CCB-2,CCB,1,	30	1000	Unknown		05/21/2018 14:34	Finished	CCB R180409B
30	SHUTDOWN	31	1000	Unknown		05/21/2018 14:44	Finished	
31	Eluent: R180518A	32	1000	Unknown		n.a.	Finished	Eluent
32	PCR: R180516B	33	1000	Unknown		n.a.	Finished	Post-Column Reagent

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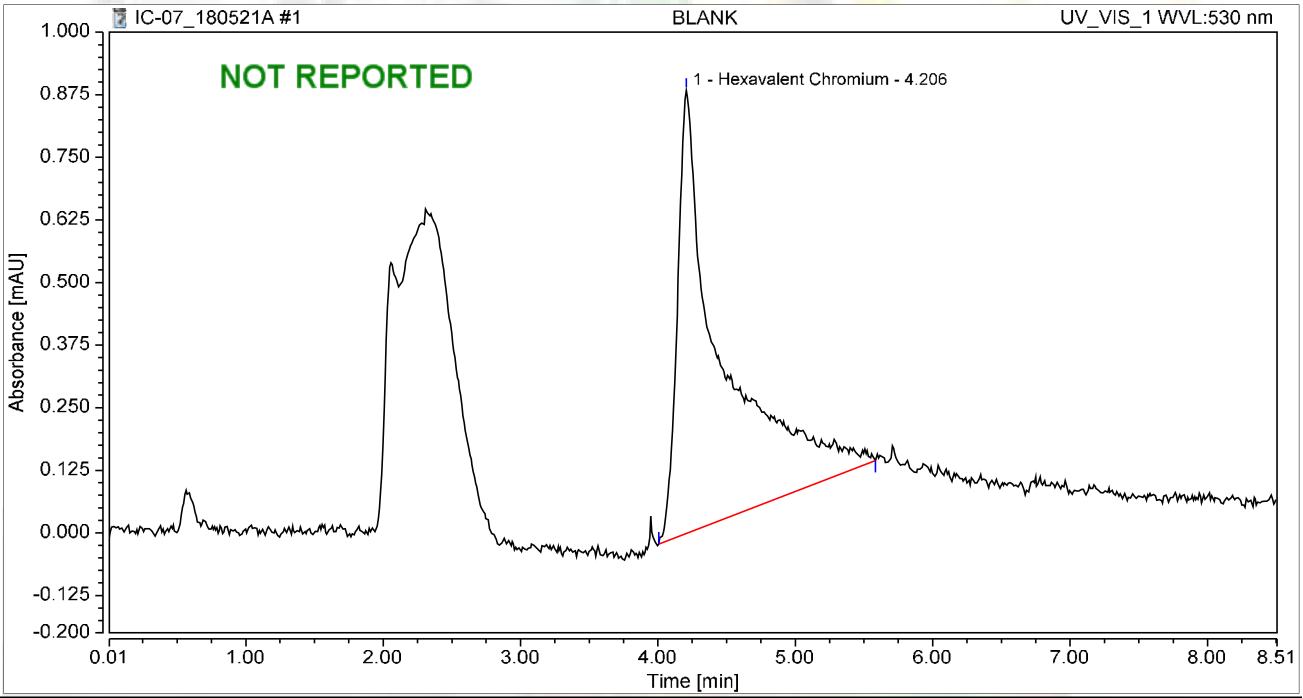
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 09:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

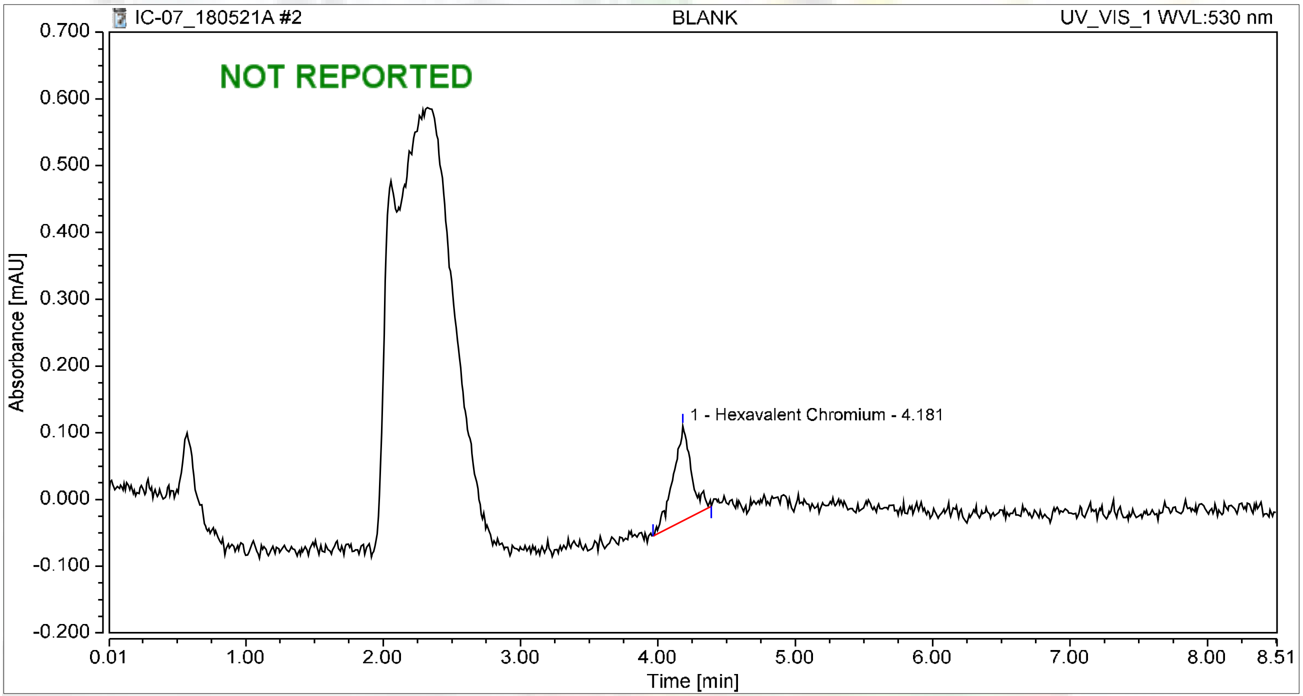
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.206	0.337	0.885	100.00	100.00	1.2960
Total:			**0.337**	**0.885**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 09:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

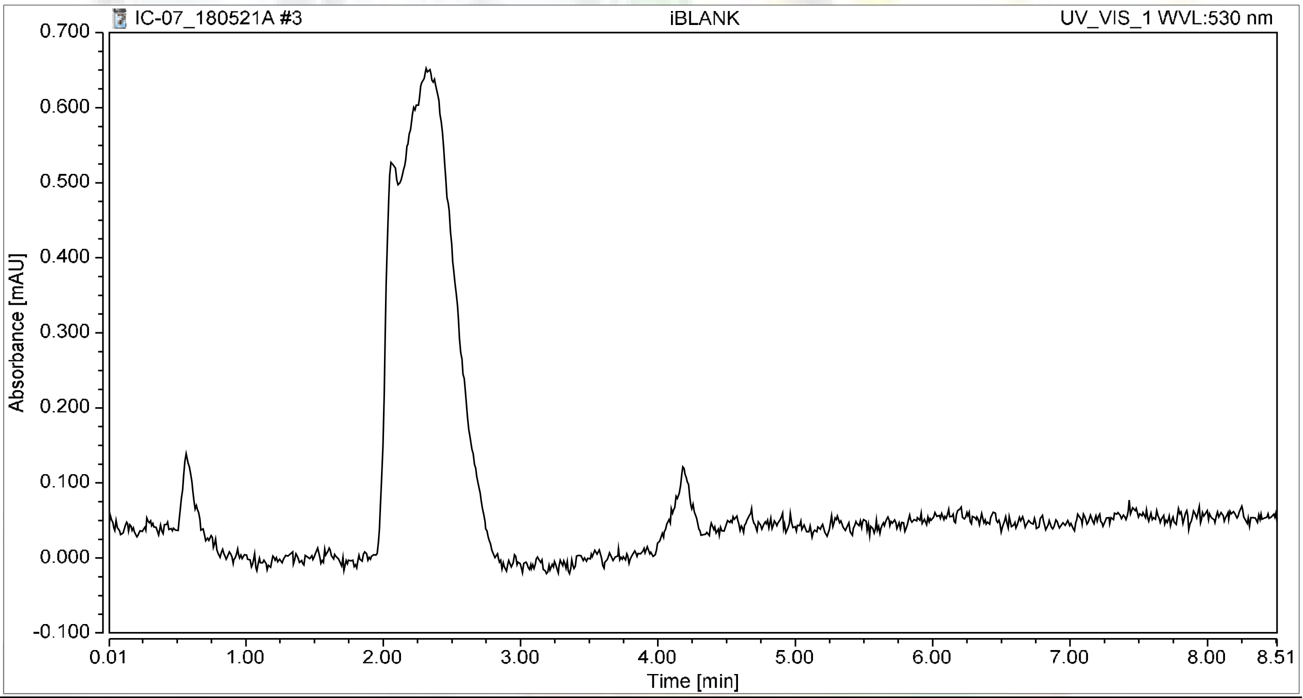
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.022	0.142	100.00	100.00	0.0836
Total:			**0.022**	**0.142**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 09:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

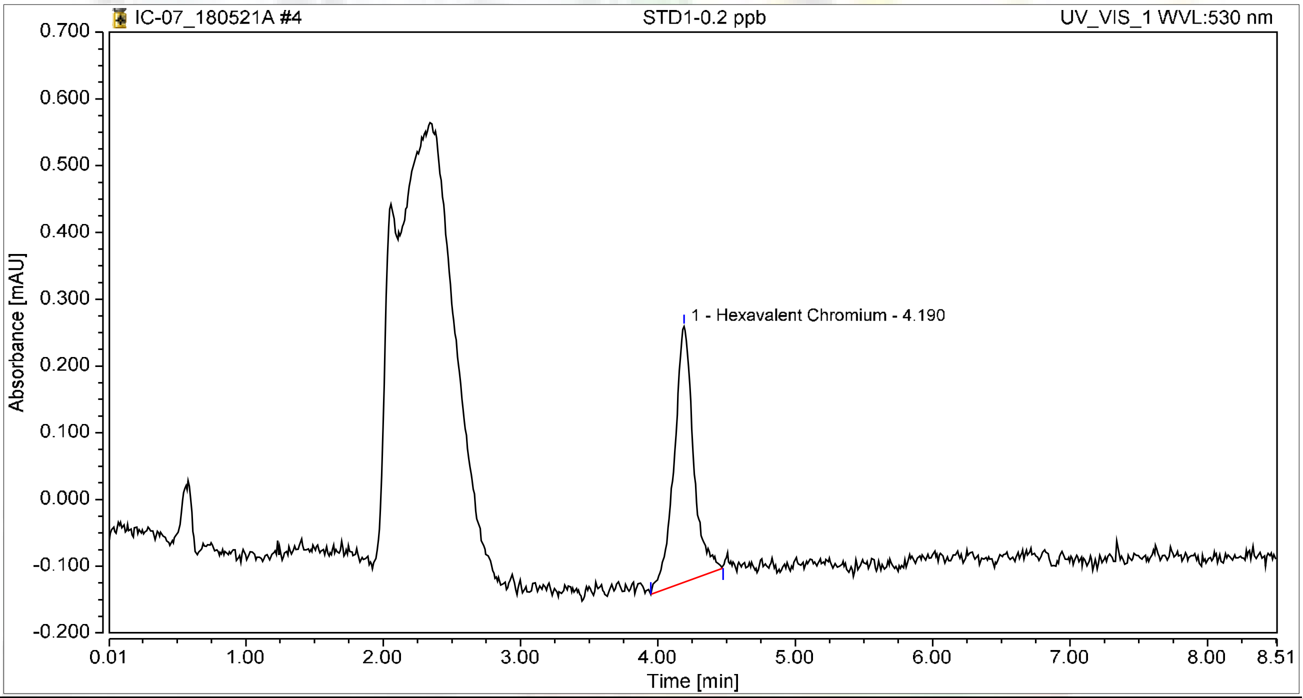
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 09:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

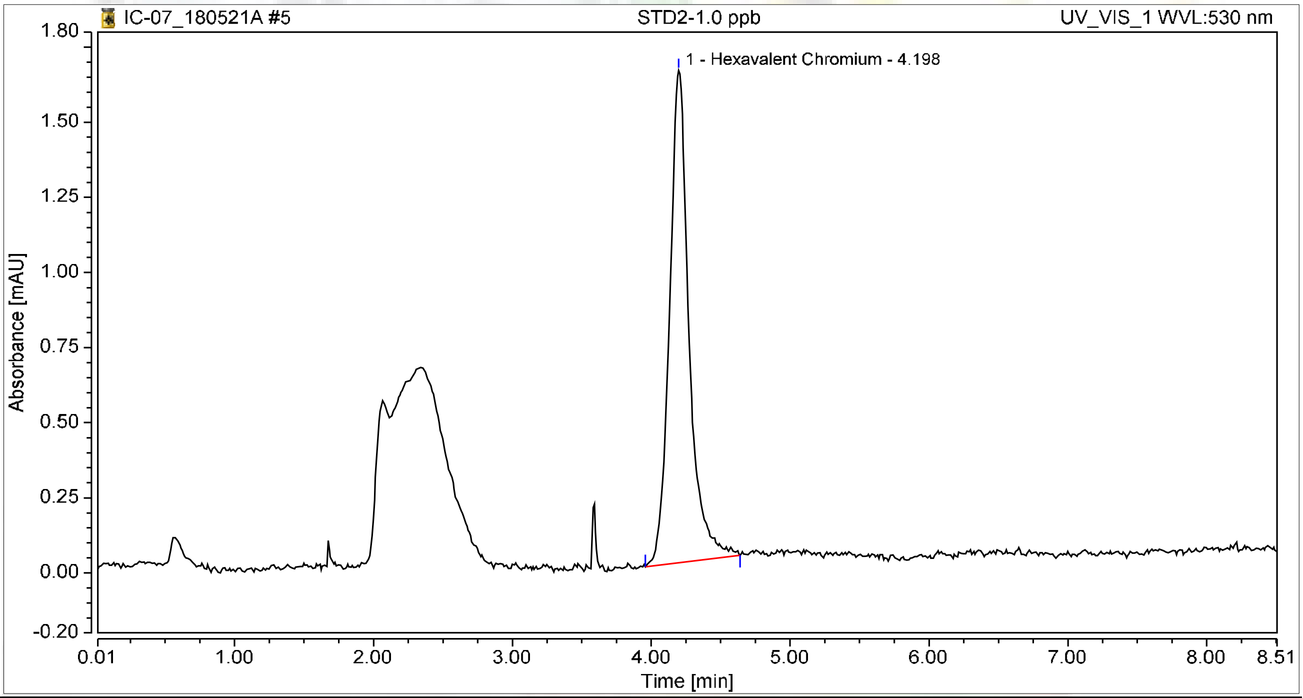
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.190	0.063	0.383	100.00	100.00	0.2408
Total:			**0.063**	**0.383**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

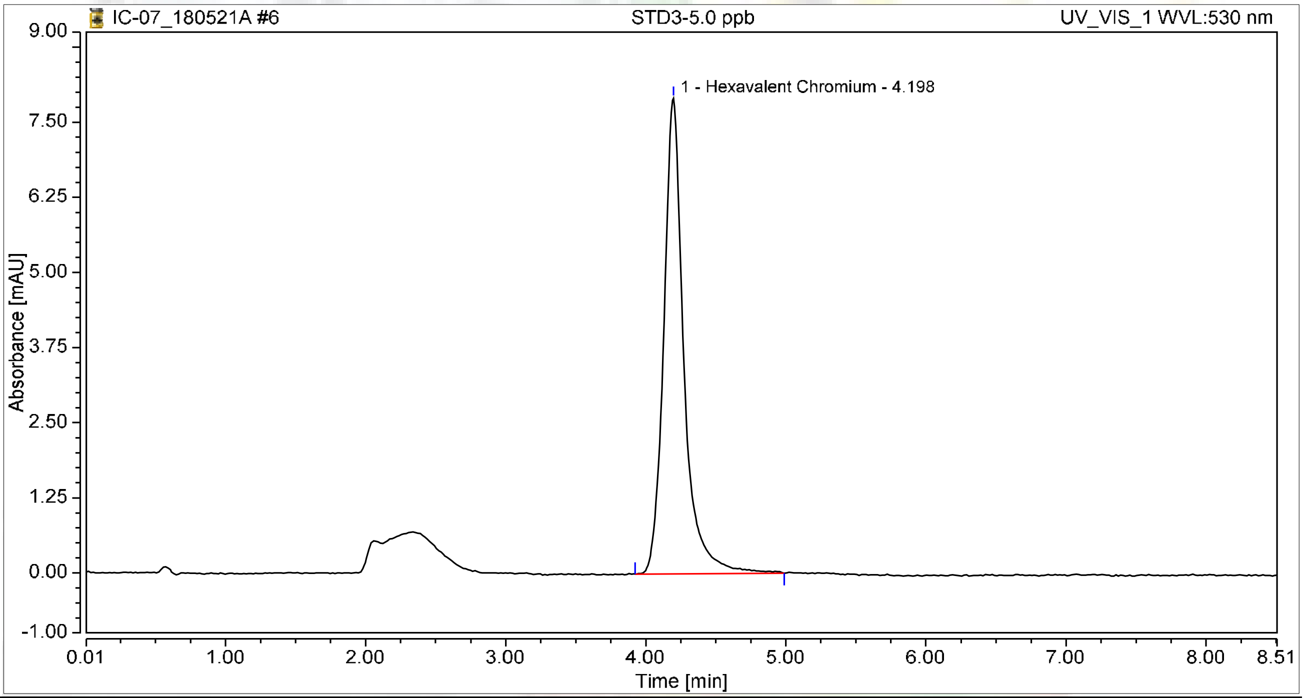
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.267	1.639	100.00	100.00	1.0254
Total:			**0.267**	**1.639**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

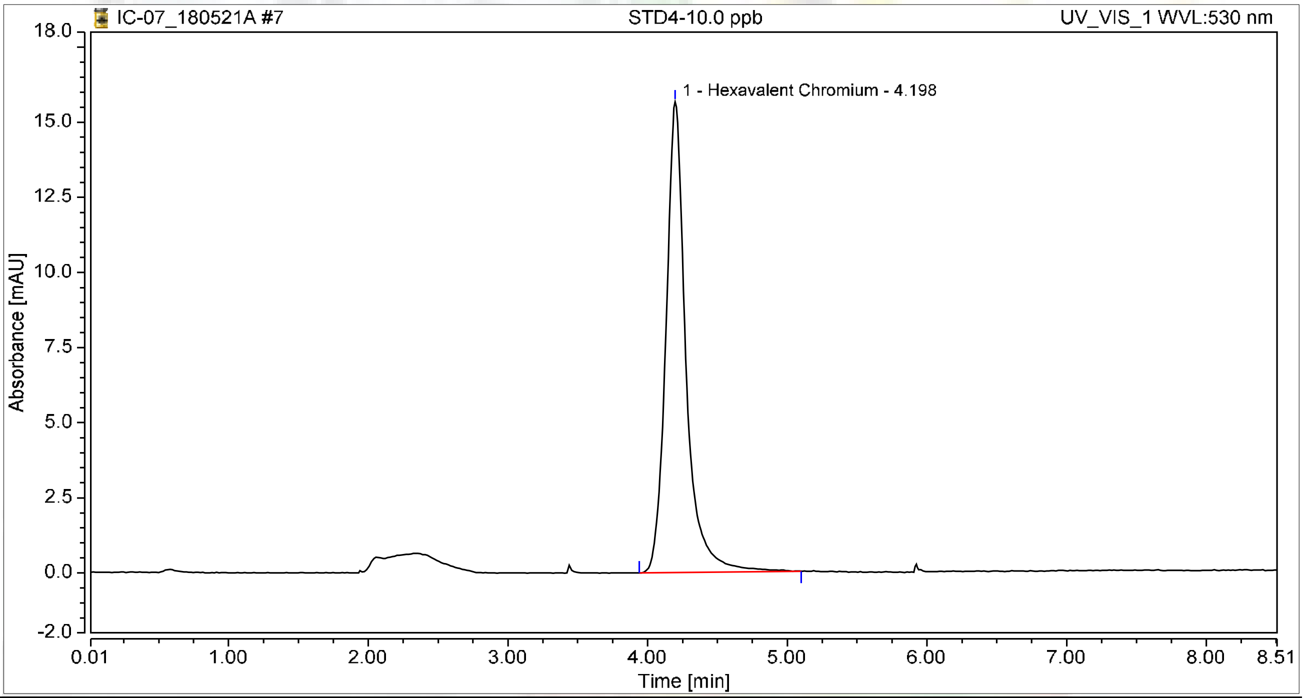
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.322	7.919	100.00	100.00	5.0827
Total:			**1.322**	**7.919**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

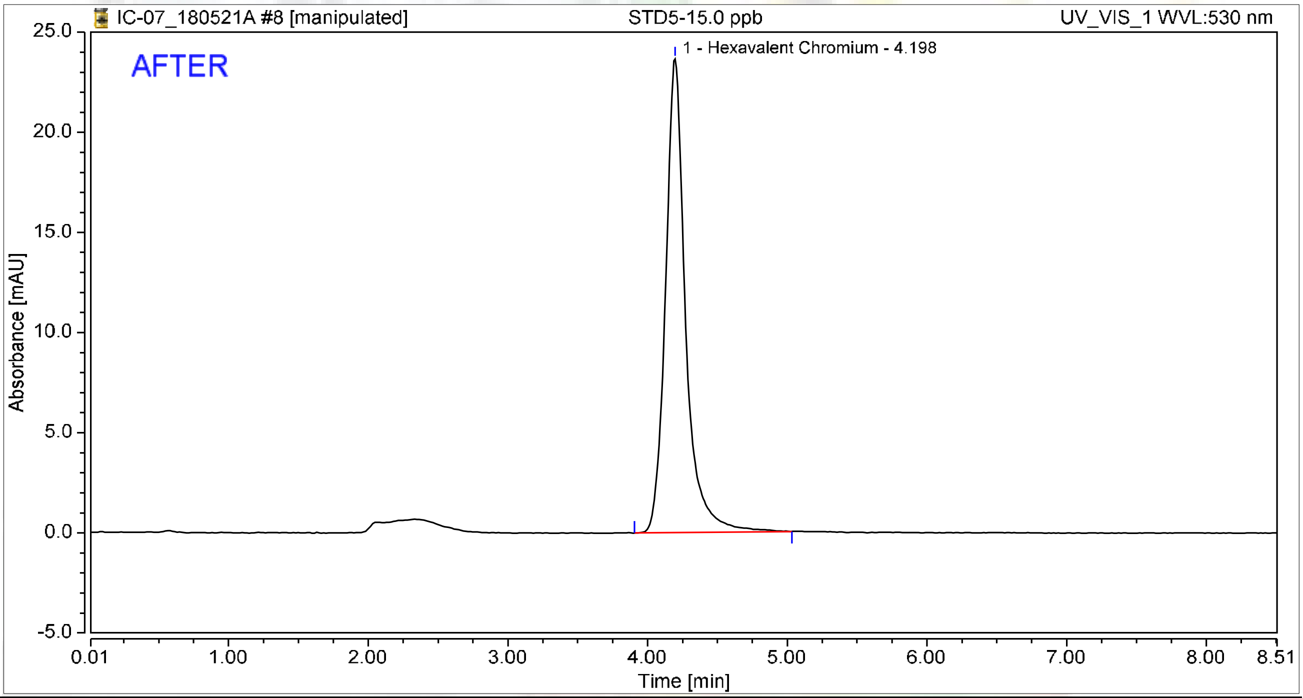
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	2.608	15.671	100.00	100.00	10.0254
Total:			**2.608**	**15.671**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	3.931	23.650	100.00	100.00	15.1090
Total:			**3.931**	**23.650**	**100.00**	**100.00**	

rba 5/28/2018

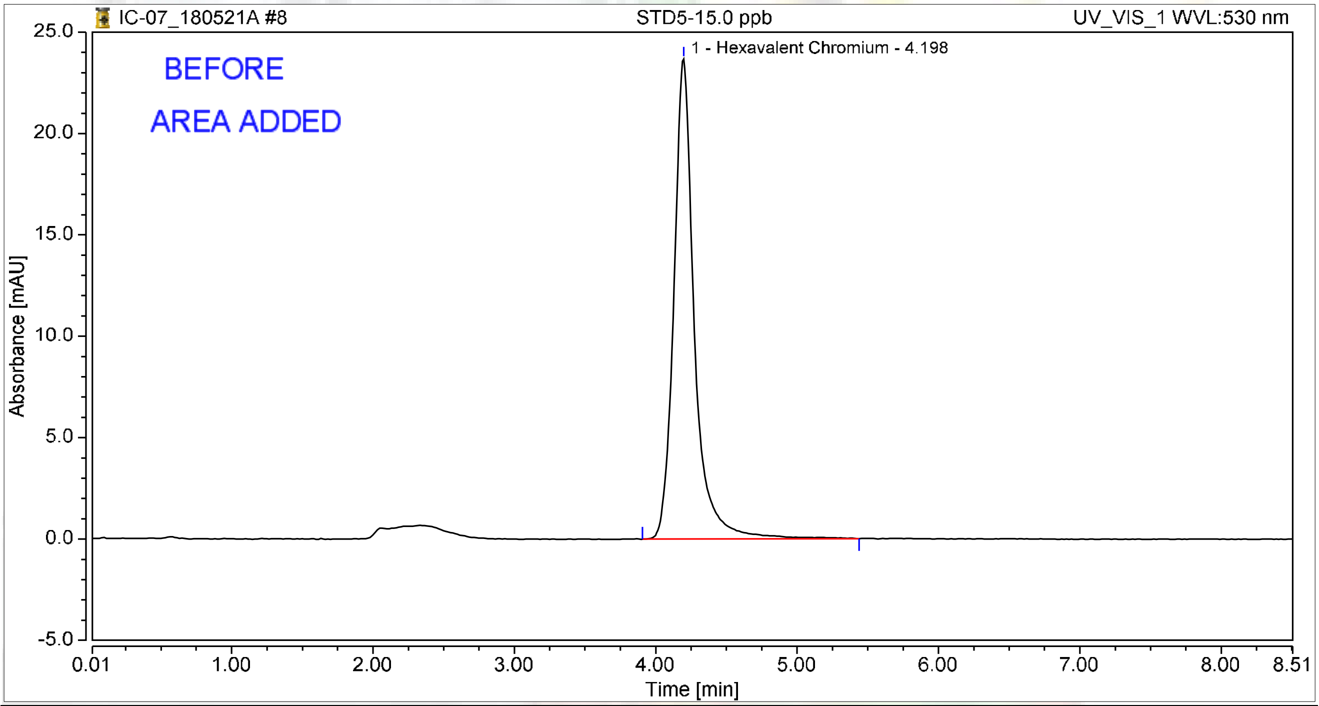
Reviewed by:
Nancy 5/30/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	3.988	23.668	100.00	100.00	15.1521
Total:			**3.988**	**23.668**	**100.00**	**100.00**	

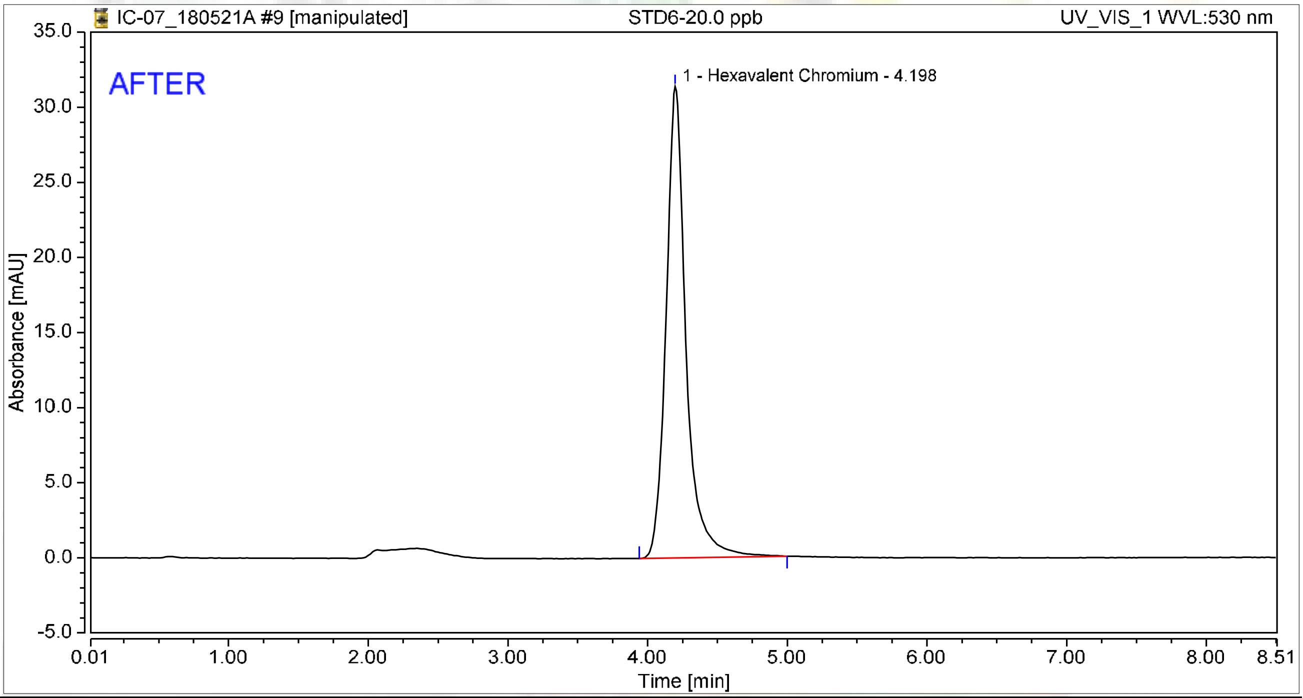
rba 5/28/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	5.173	31.358	100.00	100.00	19.8832
Total:			**5.173**	**31.358**	**100.00**	**100.00**	

rba 5/28/2018

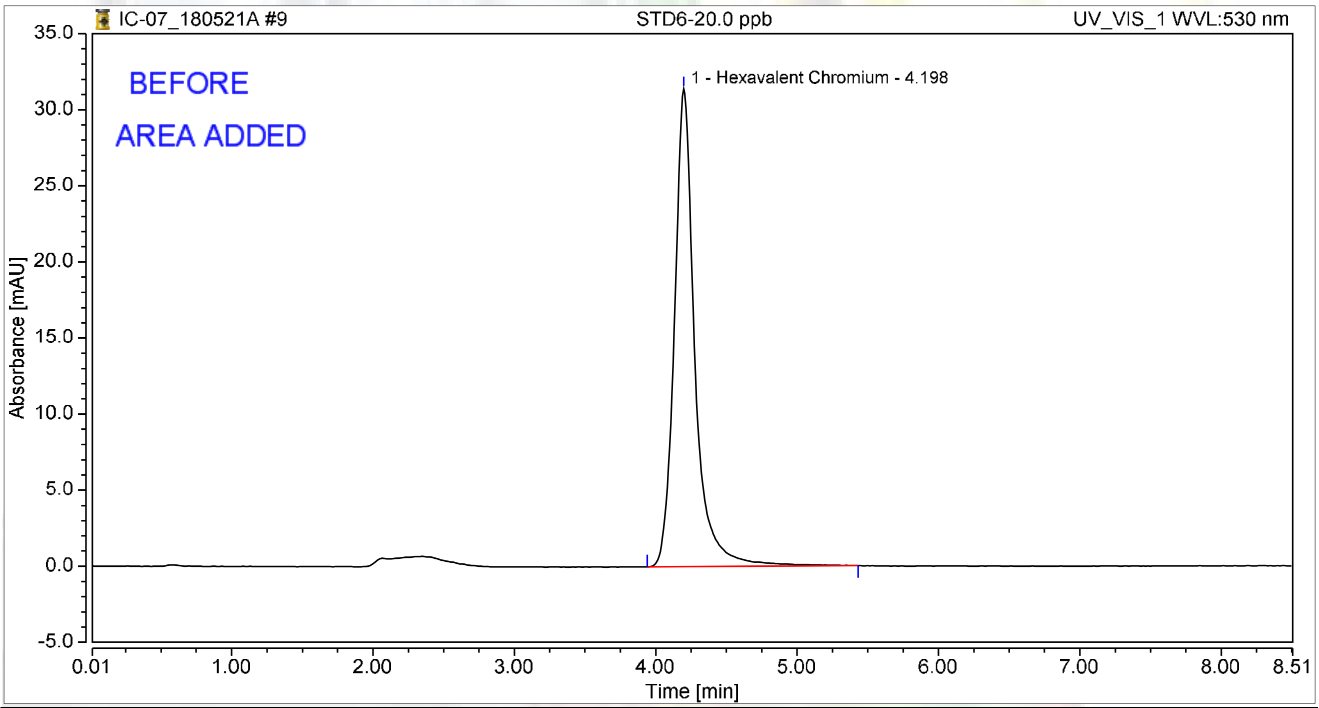
Reviewed by:
Nancy 5/30/2018

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

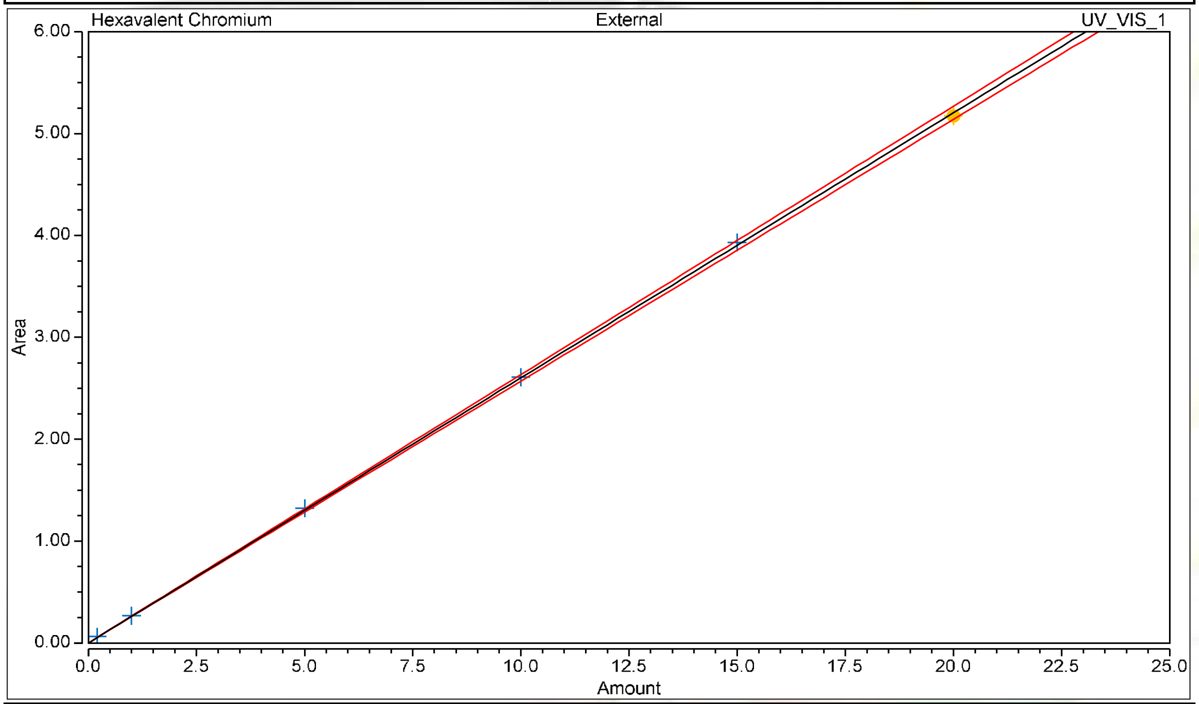
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	5.243	31.381	100.00	100.00	19.9231
Total:			**5.243**	**31.381**	**100.00**	**100.00**	

rba 5/28/2018

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2602
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99989

Calibration Plot   Hexavalent Chromium



Calibration Results   Hexavalent Chromium

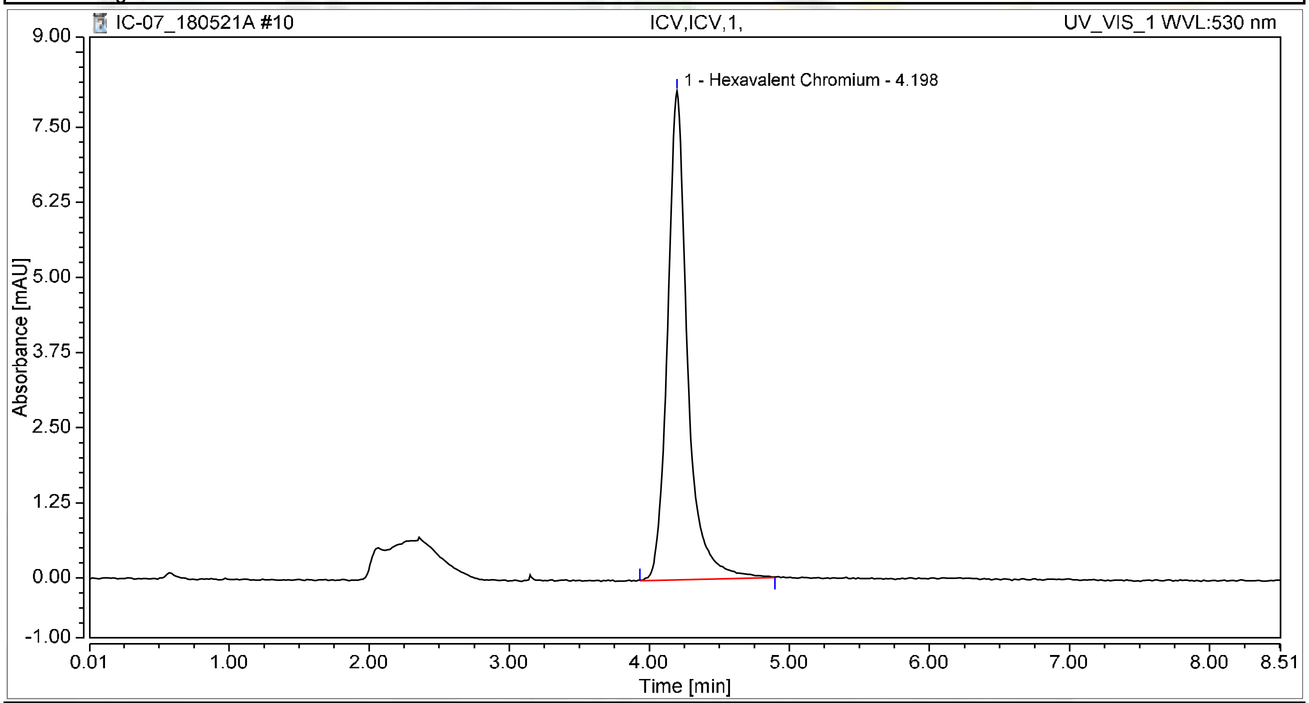
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
4	STD1-0.2 ppb	01	0.2000	0.0627	0.063	0.383
5	STD2-1.0 ppb	02	1.0000	0.2668	0.267	1.639
6	STD3-5.0 ppb	03	5.0000	1.3224	1.322	7.919
7	STD4-10.0 ppb	04	10.0000	2.6085	2.608	15.671
8	STD5-15.0 ppb	05	15.0000	3.9312	3.931	23.650
9	STD6-20.0 ppb	06	20.0000	5.1733	5.173	31.358

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

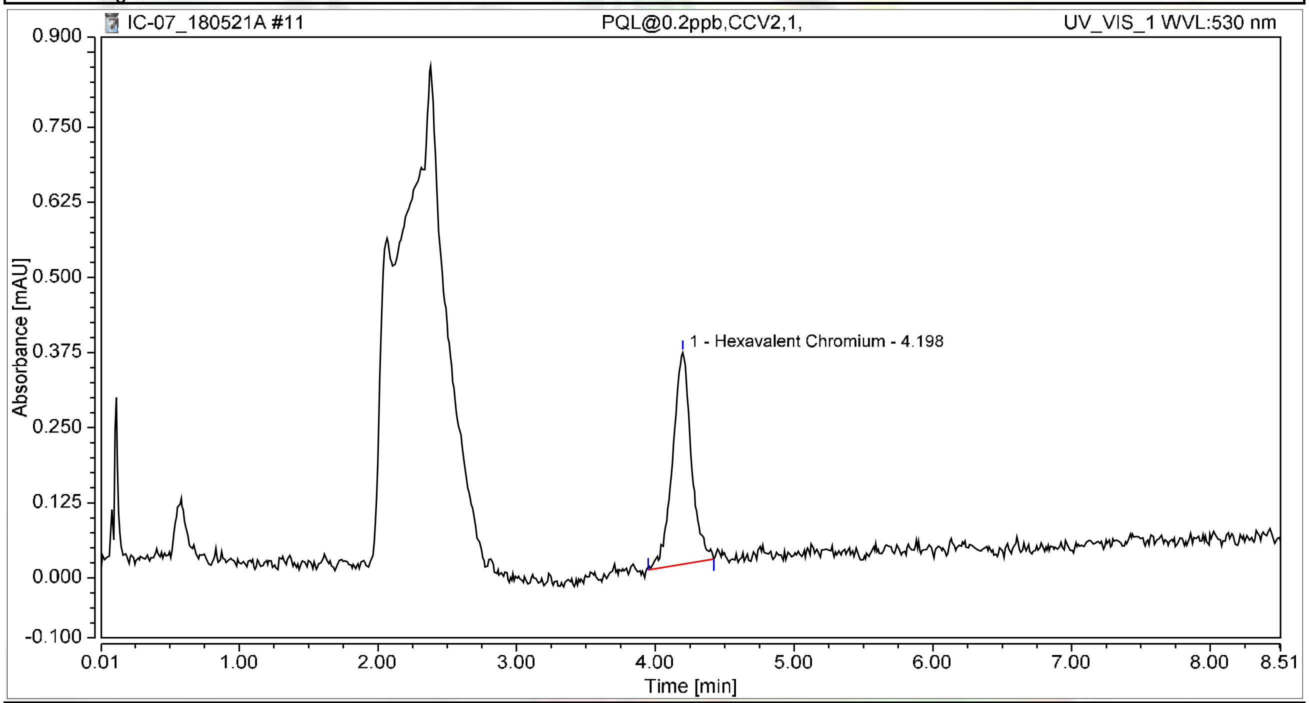
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	1.346	8.133	100.00	100.00	5.1749
Total:			**1.346**	**8.133**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 10:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

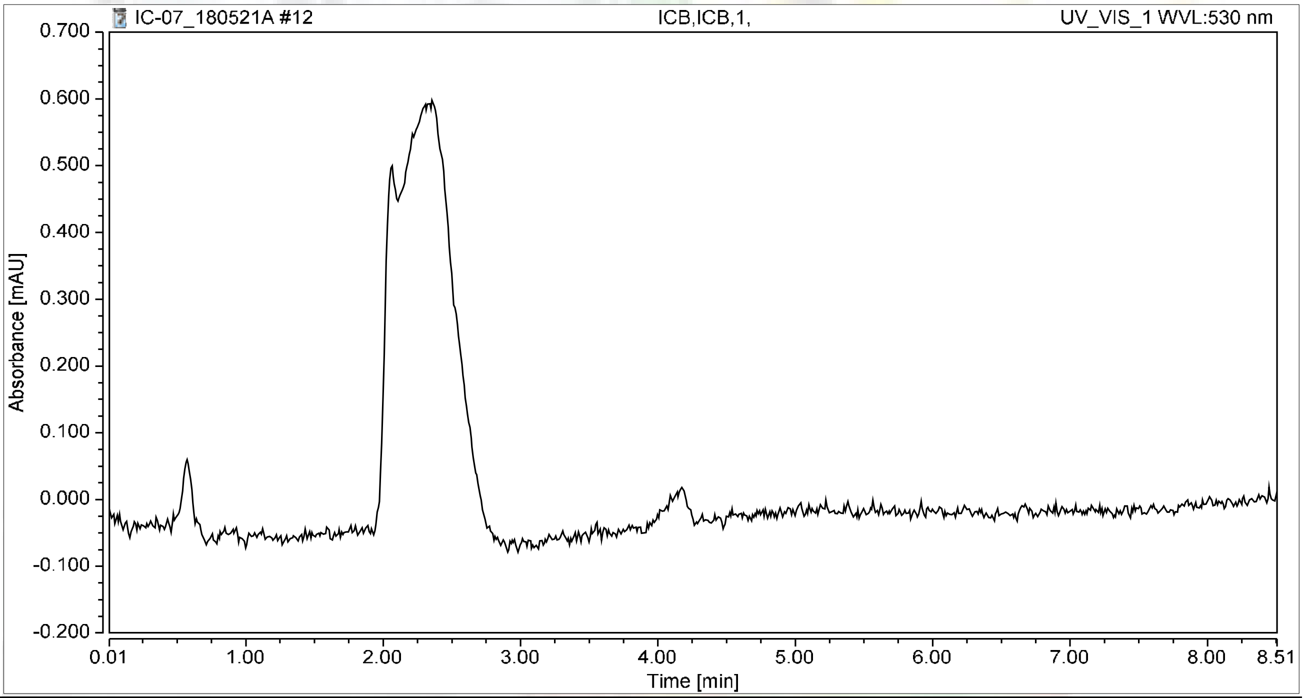
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.198	0.055	0.352	100.00	100.00	0.2113
Total:			**0.055**	**0.352**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**21/May/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 180614A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:22 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/21/18 9:33 AM	Not Reported
3	iBLANK	iBLANK	1	Hexavalent Chromium	05/21/18 9:42 AM	Reported
4	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/21/18 9:52 AM	Reported
5	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:01 AM	Reported
6	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:11 AM	Reported
7	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:20 AM	Reported
8	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:30 AM	Reported
9	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/21/18 10:39 AM	Reported
10	BLANK	BLANK	1	Hexavalent Chromium	06/14/18 8:37 AM	Not Reported
11	BLANK	BLANK	1	Hexavalent Chromium	06/14/18 8:48 AM	Not Reported
12	CCV-1	CCV	1	Hexavalent Chromium	06/14/18 8:57 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	06/14/18 9:07 AM	Reported
14	CCB-1	CCB	1	Hexavalent Chromium	06/14/18 9:16 AM	Reported
15	MB-R124656	MBLK	1	Hexavalent Chromium	06/14/18 9:26 AM	Reported
16	LCS-R124656	LCS	1	Hexavalent Chromium	06/14/18 9:35 AM	Reported
17	N030781-001A	SAMP	1	Hexavalent Chromium	06/14/18 9:50 AM	Reported
18	N030781-001AMS	MS	1	Hexavalent Chromium	06/14/18 10:02 AM	Reported
19	N030781-002A	SAMP	1	Hexavalent Chromium	06/14/18 10:11 AM	Reported
20	N030781-002AMS	MS	1	Hexavalent Chromium	06/14/18 10:21 AM	Reported
21	N030781-003A	SAMP	1	Hexavalent Chromium	06/14/18 10:30 AM	Reported
22	N030781-003AMS	MS	1	Hexavalent Chromium	06/14/18 10:40 AM	Reported
23	N030781-004A	SAMP	1	Hexavalent Chromium	06/14/18 10:49 AM	Reported
24	N030781-004AMS	MS	1	Hexavalent Chromium	06/14/18 10:59 AM	Reported
25	CCV-2	CCV1	1	Hexavalent Chromium	06/14/18 11:08 AM	Reported
26	CCB-2	CCB	1	Hexavalent Chromium	06/14/18 11:18 AM	Reported
27	N030781-005A	SAMP	1	Hexavalent Chromium	06/14/18 11:27 AM	Reported
28	N030781-005AMS	MS	1	Hexavalent Chromium	06/14/18 11:36 AM	Reported
29	N030781-006A	SAMP	1	Hexavalent Chromium	06/14/18 11:46 AM	Reported
30	N030781-006AMS	MS	1	Hexavalent Chromium	06/14/18 11:55 AM	Reported
31	N030781-007A	SAMP	1	Hexavalent Chromium	06/14/18 12:05 PM	Reported
32	N030781-007AMS	MS	1	Hexavalent Chromium	06/14/18 12:14 PM	Reported
33	N030781-008A	SAMP	1	Hexavalent Chromium	06/14/18 12:24 PM	Reported
34	N030781-008AMS	MS	1	Hexavalent Chromium	06/14/18 12:33 PM	Reported
35	N030781-009A	SAMP	1	Hexavalent Chromium	06/14/18 12:43 PM	Reported
36	N030781-009AMS	MS	1	Hexavalent Chromium	06/14/18 12:52 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	06/14/18 1:02 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	06/14/18 1:11 PM	Reported
39	N030781-010A	SAMP	1	Hexavalent Chromium	06/14/18 1:21 PM	Reported
40	N030781-010AMS	MS	1	Hexavalent Chromium	06/14/18 1:30 PM	Reported
41	N030781-011A	SAMP	1	Hexavalent Chromium	06/14/18 1:39 PM	Reported
42	N030781-011AMS	MS	1	Hexavalent Chromium	06/14/18 1:49 PM	Reported

INJECTION LOG: 180614A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N030781-012A	SAMP	1	Hexavalent Chromium	06/14/18 1:58 PM	Reported
44	N030781-012AMS	MS	1	Hexavalent Chromium	06/14/18 2:08 PM	Reported
45	N030781-013A	SAMP	1	Hexavalent Chromium	06/14/18 2:17 PM	Reported
46	N030781-013AMS	MS	1	Hexavalent Chromium	06/14/18 2:27 PM	Reported
47	N030781-014A	SAMP	1	Hexavalent Chromium	06/14/18 2:36 PM	Reported
48	N030781-014AMS	MS	1	Hexavalent Chromium	06/14/18 2:46 PM	Reported
49	CCV-4	CCV1	1	Hexavalent Chromium	06/14/18 2:55 PM	Reported
50	CCB-4	CCB	1	Hexavalent Chromium	06/14/18 3:05 PM	Reported
51	N030781-007AMSD	MSD	1	Hexavalent Chromium	06/14/18 3:14 PM	Reported
52	N030781-012ADUP	DUP	1	Hexavalent Chromium	06/14/18 3:24 PM	Reported
53	LCS-R124657	LCS	1	Hexavalent Chromium	06/14/18 3:35 PM	Reported
54	MB-R124657	MBLK	1	Hexavalent Chromium	06/14/18 3:46 PM	Reported
55	N030786-010A	SAMP	1	Hexavalent Chromium	06/14/18 3:55 PM	Reported
56	N030786-004A	SAMP	5	Hexavalent Chromium	06/14/18 4:05 PM	Reported
57	N030786-004AMS	MS	5	Hexavalent Chromium	06/14/18 4:14 PM	Reported
58	N030786-004AMSD	MSD	5	Hexavalent Chromium	06/14/18 4:24 PM	Reported
59	N030786-002A	SAMP	10	Hexavalent Chromium	06/14/18 4:33 PM	Reported
60	N030786-002ADUP	DUP	10	Hexavalent Chromium	06/14/18 4:43 PM	Reported
61	CCV-5	CCV	1	Hexavalent Chromium	06/14/18 4:52 PM	Reported
62	CCB-5	CCB	1	Hexavalent Chromium	06/14/18 5:02 PM	Reported
63	N030786-001A	SAMP	5	Hexavalent Chromium	06/14/18 5:11 PM	Reported
64	N030786-003A	SAMP	20	Hexavalent Chromium	06/14/18 5:21 PM	Reported
65	N030786-005A	SAMP	5	Hexavalent Chromium	06/14/18 5:30 PM	Reported
66	N030786-006A	SAMP	5	Hexavalent Chromium	06/14/18 5:40 PM	Reported
67	N030786-007A	SAMP	5	Hexavalent Chromium	06/14/18 5:49 PM	Reported
68	N030786-008A	SAMP	5	Hexavalent Chromium	06/14/18 5:58 PM	Not Reported
69	N030786-009A	SAMP	5	Hexavalent Chromium	06/14/18 6:08 PM	Reported
70	N030786-003A	SAMP	20	Hexavalent Chromium	06/14/18 6:17 PM	Not Reported
71	CCV-6	CCV1	1	Hexavalent Chromium	06/14/18 6:27 PM	Reported
72	CCB-6	CCB	1	Hexavalent Chromium	06/14/18 6:36 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_180614A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2018**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**14/Jun/18 19:07:06**
No. of Injections:	**75**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/21/2018 09:22	Finished	BLANK
2	BLANK	2	1000	Unknown		05/21/2018 09:33	Finished	BLANK
3	iBLANK	3	1000	Unknown		05/21/2018 09:42	Finished	INSTRUMENT BLANK
4	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/21/2018 09:52	Finished	0.2 ppb, IWST-180129A
5	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/21/2018 10:01	Finished	1.0 ppb, IWST-180129A
6	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/21/2018 10:11	Finished	5.0 ppb, IWST-180129A
7	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/21/2018 10:20	Finished	10 ppb, IWST-180129A
8	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/21/2018 10:30	Finished	15 ppb, IWST-180129A
9	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/21/2018 10:39	Finished	20 ppb, IWST-180129A
10	BLANK	1	1000	Unknown		06/14/2018 08:37	Finished	20 ppb, IWST-180129A
11	BLANK	2	1000	Unknown		06/14/2018 08:48	Finished	BLANK
12	CCV-1,CCV,1,	3	1000	Unknown		06/14/2018 08:57	Finished	CCV @5ppb, IWST-180129A
13	PQL@0.2ppb,CCV2,1	4	1000	Unknown		06/14/2018 09:07	Finished	PQL @ 0.2ppb
14	CCB-1,CCB,1,	5	1000	Unknown		06/14/2018 09:16	Finished	CCB R180531A
15	MB-H2O,MBLK,1,	6	1000	Unknown		06/14/2018 09:26	Finished	MB R180531A
16	LCS-H2O,LCS,1,	7	1000	Unknown		06/14/2018 09:35	Finished	LCS, IWST-180129B
17	N030781-001A,SAMF	9	1000	Unknown		06/14/2018 09:50	Finished	SAMP,10mL
18	N030781-001AMS,MS	10	1000	Unknown		06/14/2018 10:02	Finished	MS (1ppb), IWST-180129B,10
19	N030781-002A,SAMF	11	1000	Unknown		06/14/2018 10:11	Finished	SAMP,10mL
20	N030781-002AMS,MS	12	1000	Unknown		06/14/2018 10:21	Finished	MS (1ppb), IWST-180129B,10
21	N030781-003A,SAMF	13	1000	Unknown		06/14/2018 10:30	Finished	SAMP,10mL
22	N030781-003AMS,MS	14	1000	Unknown		06/14/2018 10:40	Finished	MS (1ppb), IWST-180129B,10
23	N030781-004A,SAMF	15	1000	Unknown		06/14/2018 10:49	Finished	SAMP,10mL
24	N030781-004AMS,MS	16	1000	Unknown		06/14/2018 10:59	Finished	MS (1ppb), IWST-180129B,10
25	CCV-2,CCV1,1,	17	1000	Unknown		06/14/2018 11:08	Finished	CCV @10ppb, IWST-180129A
26	CCB-2,CCB,1,	18	1000	Unknown		06/14/2018 11:18	Finished	CCB R180531A
27	N030781-005A,SAMF	19	1000	Unknown		06/14/2018 11:27	Finished	SAMP,10mL
28	N030781-005AMS,MS	20	1000	Unknown		06/14/2018 11:36	Finished	MS (1ppb), IWST-180129B,10
29	N030781-006A,SAMF	21	1000	Unknown		06/14/2018 11:46	Finished	SAMP,10mL
30	N030781-006AMS,MS	22	1000	Unknown		06/14/2018 11:55	Finished	MS (1ppb), IWST-180129B,10
31	N030781-007A,SAMF	23	1000	Unknown		06/14/2018 12:05	Finished	SAMP,10mL
32	N030781-007AMS,MS	24	1000	Unknown		06/14/2018 12:14	Finished	MS (1ppb), IWST-180129B,10
33	N030781-008A,SAMF	25	1000	Unknown		06/14/2018 12:24	Finished	SAMP,10mL
34	N030781-008AMS,MS	26	1000	Unknown		06/14/2018 12:33	Finished	MS (1ppb), IWST-180129B,10
35	N030781-009A,SAMF	27	1000	Unknown		06/14/2018 12:43	Finished	SAMP,10mL
36	N030781-009AMS,MS	28	1000	Unknown		06/14/2018 12:52	Finished	MS (1ppb), IWST-180129B,10
37	CCV-3,CCV,1,	29	1000	Unknown		06/14/2018 13:02	Finished	CCV @5ppb, IWST-180129A
38	CCB-3,CCB,1,	30	1000	Unknown		06/14/2018 13:11	Finished	CCB R180531A
39	N030781-010A,SAMF	31	1000	Unknown		06/14/2018 13:21	Finished	SAMP,10mL
40	N030781-010AMS,MS	32	1000	Unknown		06/14/2018 13:30	Finished	MS (1ppb), IWST-180129B,10
41	N030781-011A,SAMF	33	1000	Unknown		06/14/2018 13:39	Finished	SAMP,10mL
42	N030781-011AMS,MS	34	1000	Unknown		06/14/2018 13:49	Finished	MS (1ppb), IWST-180129B,10
43	N030781-012A,SAMF	35	1000	Unknown		06/14/2018 13:58	Finished	SAMP,10mL
44	N030781-012AMS,MS	36	1000	Unknown		06/14/2018 14:08	Finished	MS (1ppb), IWST-180129B,10
45	N030781-013A,SAMF	37	1000	Unknown		06/14/2018 14:17	Finished	SAMP,10mL
46	N030781-013AMS,MS	38	1000	Unknown		06/14/2018 14:27	Finished	MS (1ppb), IWST-180129B,10
47	N030781-014A,SAMF	39	1000	Unknown		06/14/2018 14:36	Finished	SAMP,10mL
48	N030781-014AMS,MS	40	1000	Unknown		06/14/2018 14:46	Finished	MS (1ppb), IWST-180129B,10
49	CCV-4,CCV1,1,	41	1000	Unknown		06/14/2018 14:55	Finished	CCV @10ppb, IWST-180129A
50	CCB-4,CCB,1,	42	1000	Unknown		06/14/2018 15:05	Finished	CCB R180523C
51	N030781-007AMSD,M	43	1000	Unknown		06/14/2018 15:14	Finished	MSD (1ppb), IWST-180129B,1(
52	N030781-012ADUP,D	44	1000	Unknown		06/14/2018 15:24	Finished	DUP,10mL
53	LCS-2,LCS,1,	1	1000	Unknown		06/14/2018 15:35	Finished	LCS, IWST-180129B
54	MB-2,MBLK,1,	2	1000	Unknown		06/14/2018 15:46	Finished	MB R180523C
55	N030786-010A,SAMF	3	1000	Unknown		06/14/2018 15:55	Finished	SAMP,10mL
56	N030786-004A,SAMF	4	1000	Unknown		06/14/2018 16:05	Finished	SAMP,2>10mL
57	N030786-004AMS,MS	5	1000	Unknown		06/14/2018 16:14	Finished	MS (5ppb), IWST-180129B,2>1
58	N030786-004AMSD,M	6	1000	Unknown		06/14/2018 16:24	Finished	MSD (5ppb), IWST-180129B,2>
59	N030786-002A,SAMF	7	1000	Unknown		06/14/2018 16:33	Finished	SAMP,1>10mL
60	N030786-002ADUP,D	8	1000	Unknown		06/14/2018 16:43	Finished	DUP,1>10mL

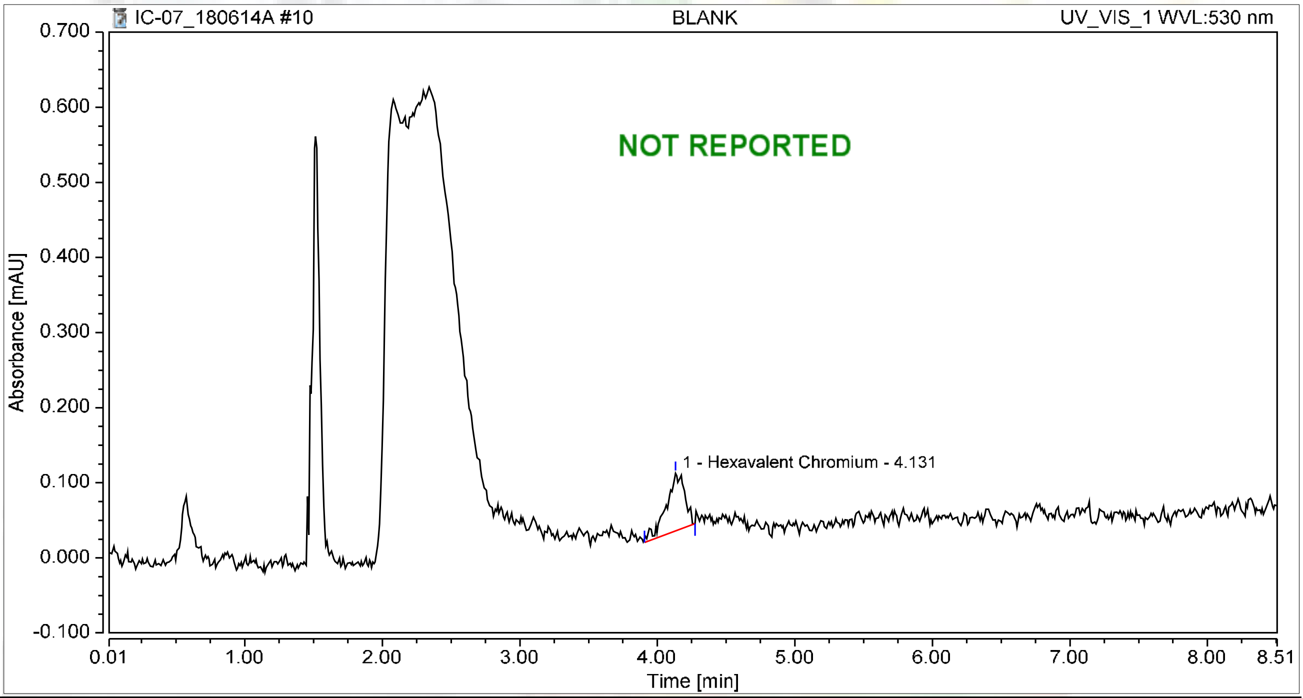
61	CCV-5,CCV,1,	9	1000	Unknown		06/14/2018 16:52	Finished	CCV @5ppb, IWST-180129A
62	CCB-5,CCB,1,	10	1000	Unknown		06/14/2018 17:02	Finished	CCB R180523CA
63	N030786-001A,SAMF	11	1000	Unknown		06/14/2018 17:11	Finished	SAMP,2>10mL
64	N030786-003A,SAMF	12	1000	Unknown		06/14/2018 17:21	Finished	SAMP,0.5>10mL
65	N030786-005A,SAMF	13	1000	Unknown		06/14/2018 17:30	Finished	SAMP,2>10mL
66	N030786-006A,SAMF	14	1000	Unknown		06/14/2018 17:40	Finished	SAMP,2>10mL
67	N030786-007A,SAMF	15	1000	Unknown		06/14/2018 17:49	Finished	SAMP,2>10mL
68	N030786-008A,SAMF	16	1000	Unknown		06/14/2018 17:58	Finished	SAMP,2>10mL
69	N030786-009A,SAMF	17	1000	Unknown		06/14/2018 18:08	Finished	SAMP,2>10mL
70	N030786-003A,SAMF	18	1000	Unknown		06/14/2018 18:17	Finished	SAMP,2>10mL
71	CCV-6,CCV1,1,	19	1000	Unknown		06/14/2018 18:27	Finished	CCV @10ppb, IWST-180129A
72	CCB-6,CCB,1,	20	1000	Unknown		06/14/2018 18:36	Finished	CCB R180523C
73	SHUTDOWN	21	1000	Unknown		06/14/2018 18:46	Finished	
74	Eluent: R180612A	22	1000	Unknown		n.a.	Finished	Eluent
75	PCR: R180611A	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 08:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

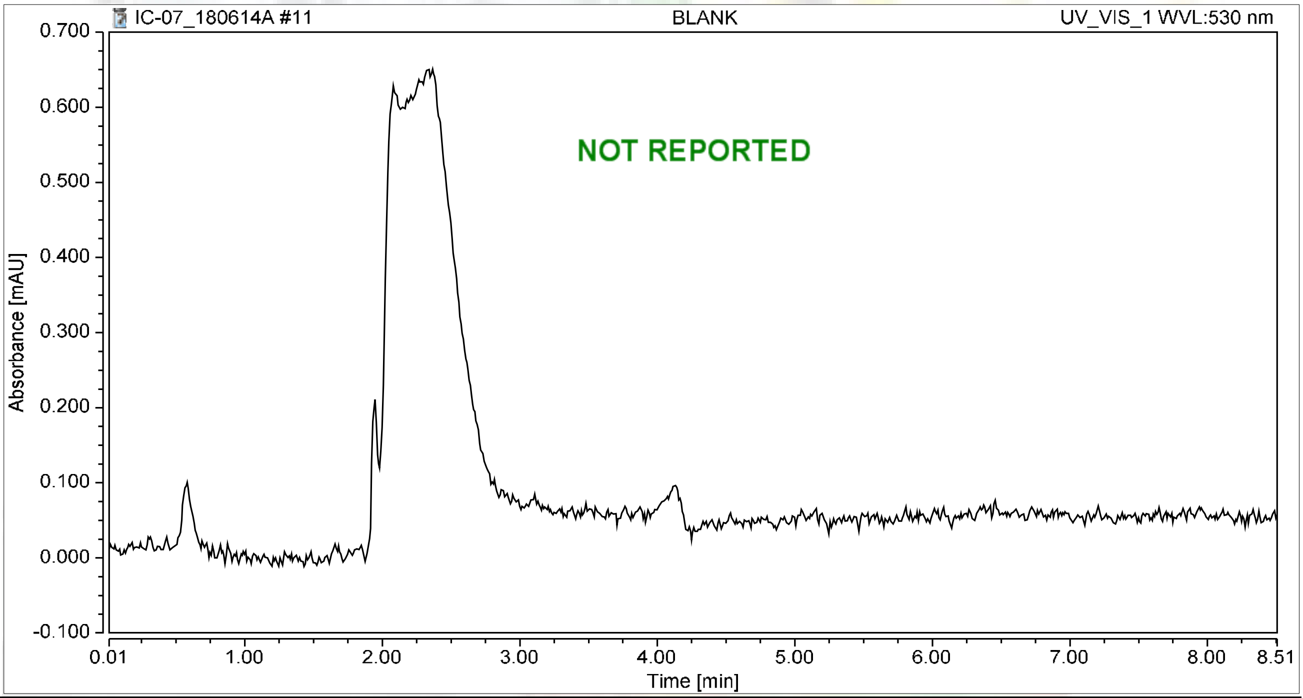
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.012	0.076	100.00	100.00	0.0452
Total:			**0.012**	**0.076**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 08:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

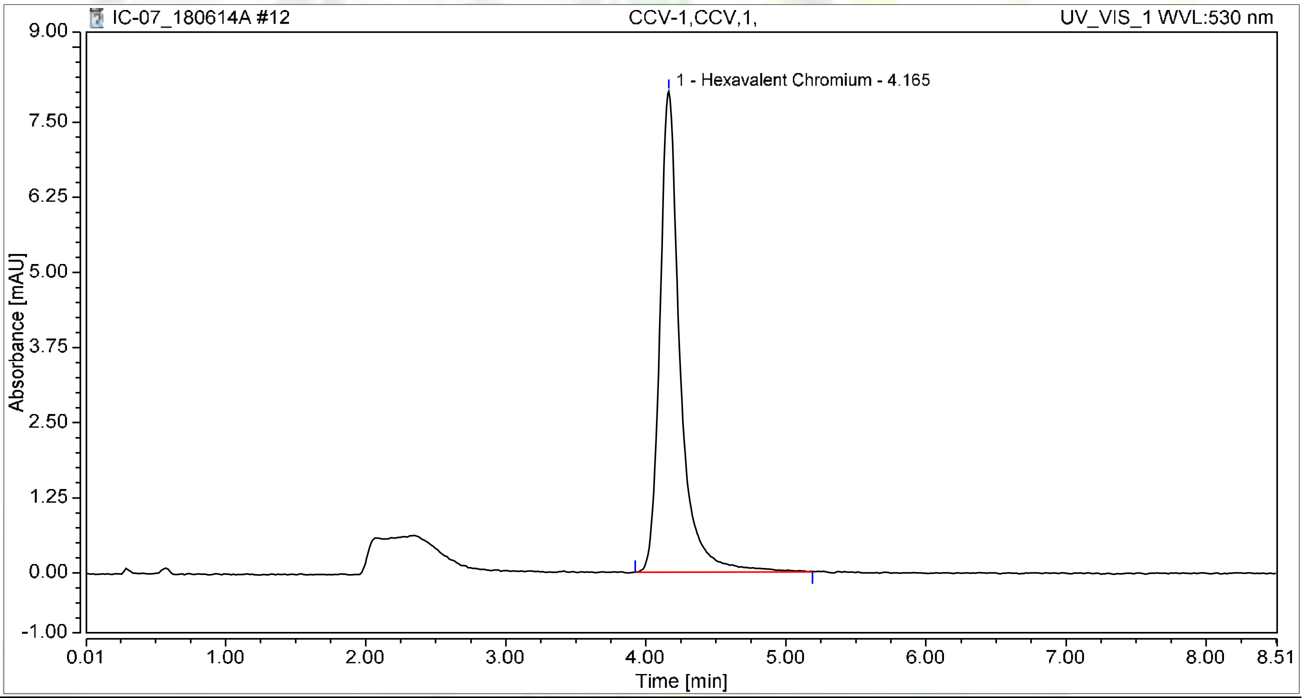
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 08:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

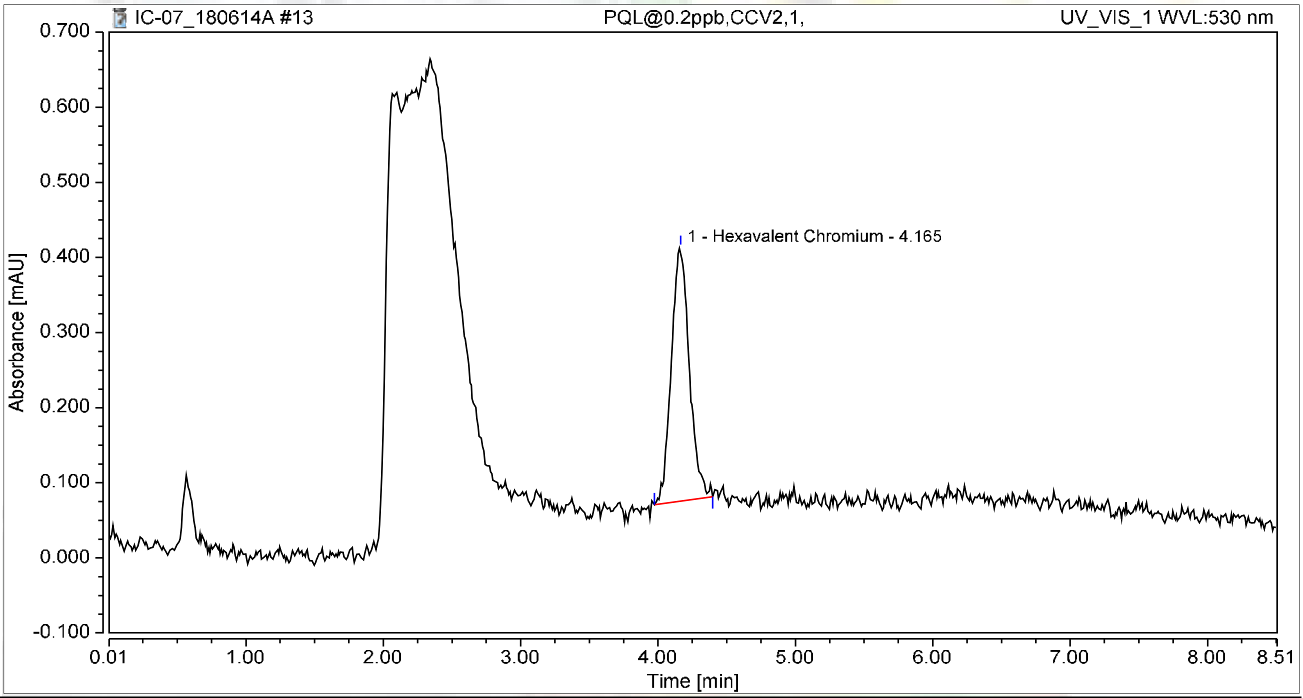
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.338	8.002	100.00	100.00	5.1412
Total:			**1.338**	**8.002**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 09:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

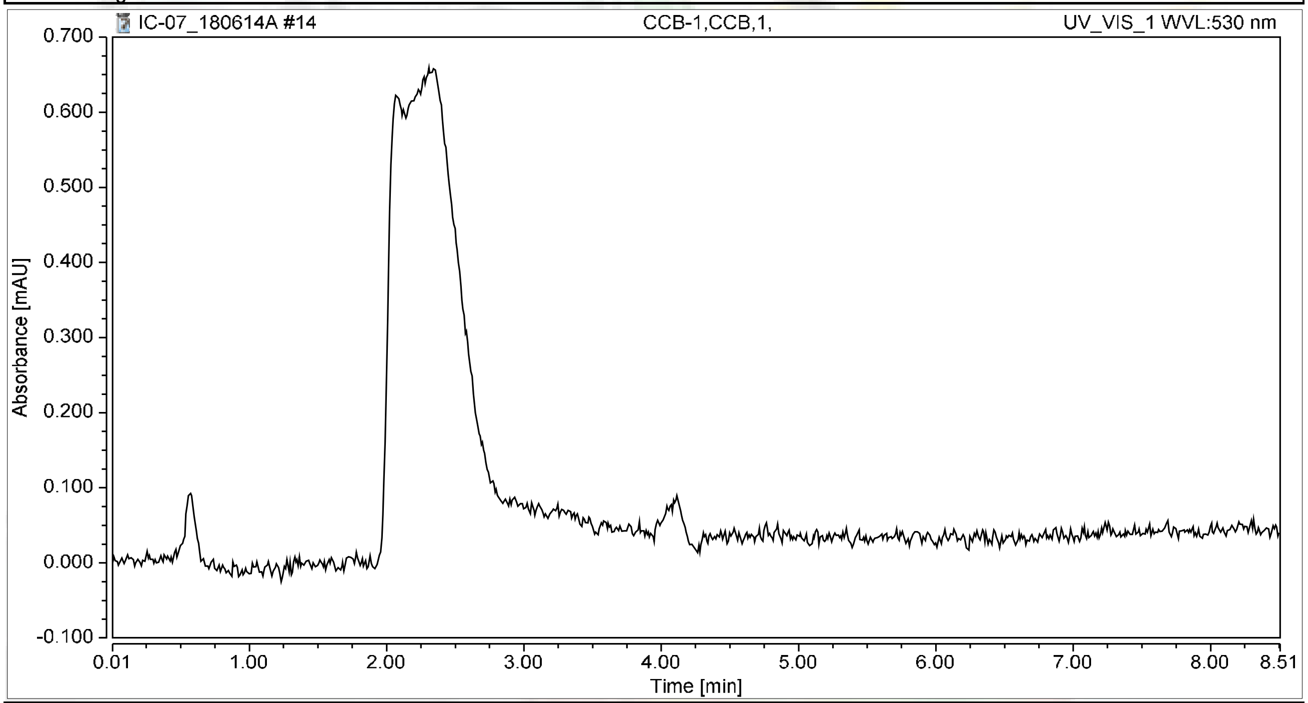
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.052	0.338	100.00	100.00	0.1980
Total:			**0.052**	**0.338**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 09:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

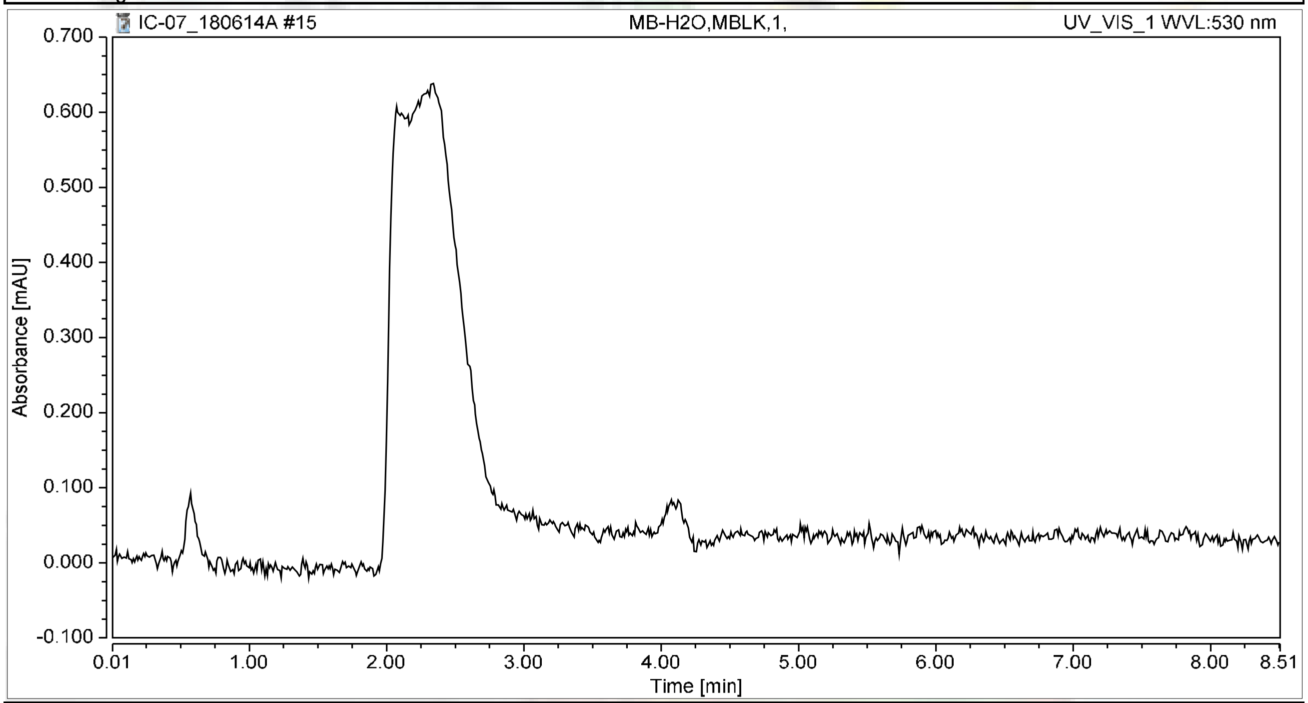
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1,**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 09:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

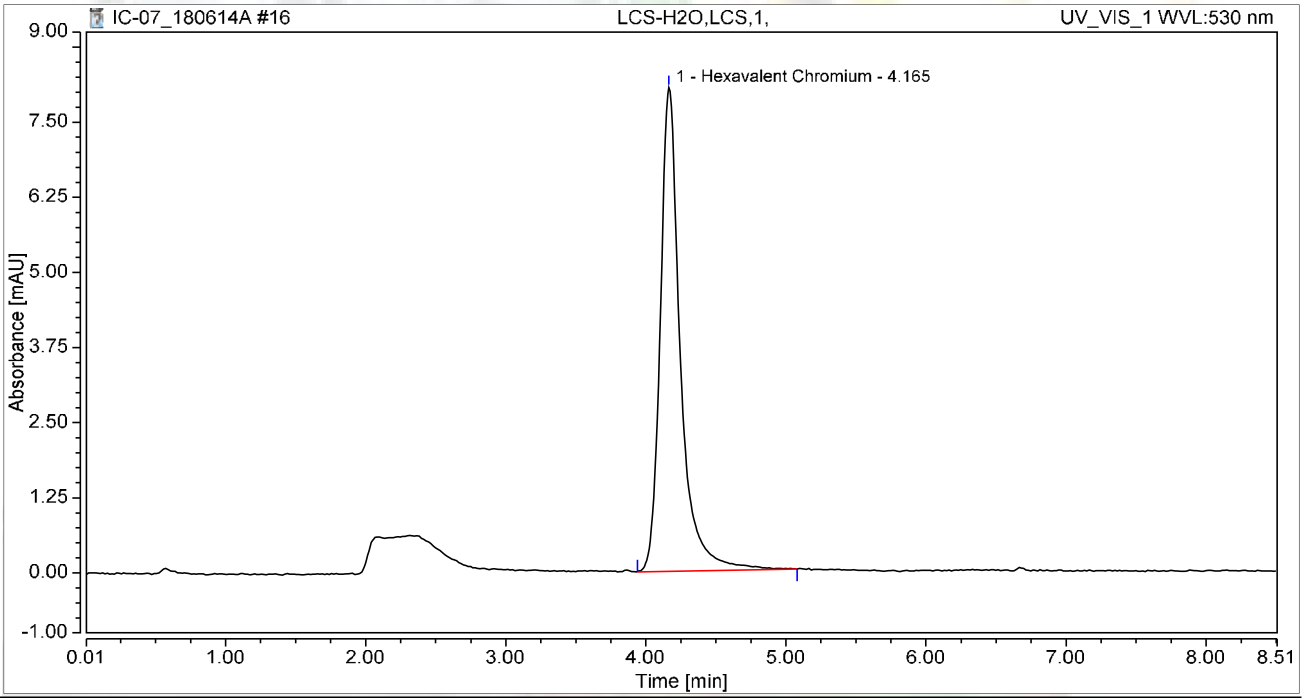
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 09:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

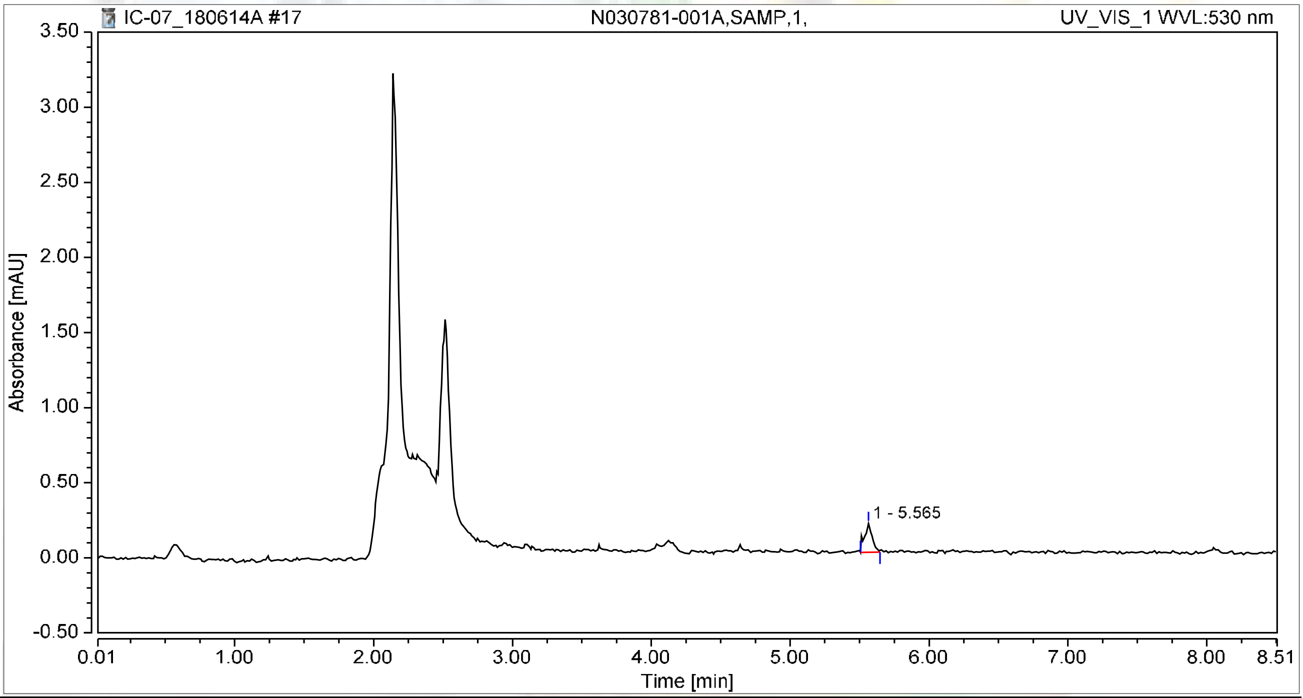
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.339	8.053	100.00	100.00	5.1468
Total:			**1.339**	**8.053**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 09:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

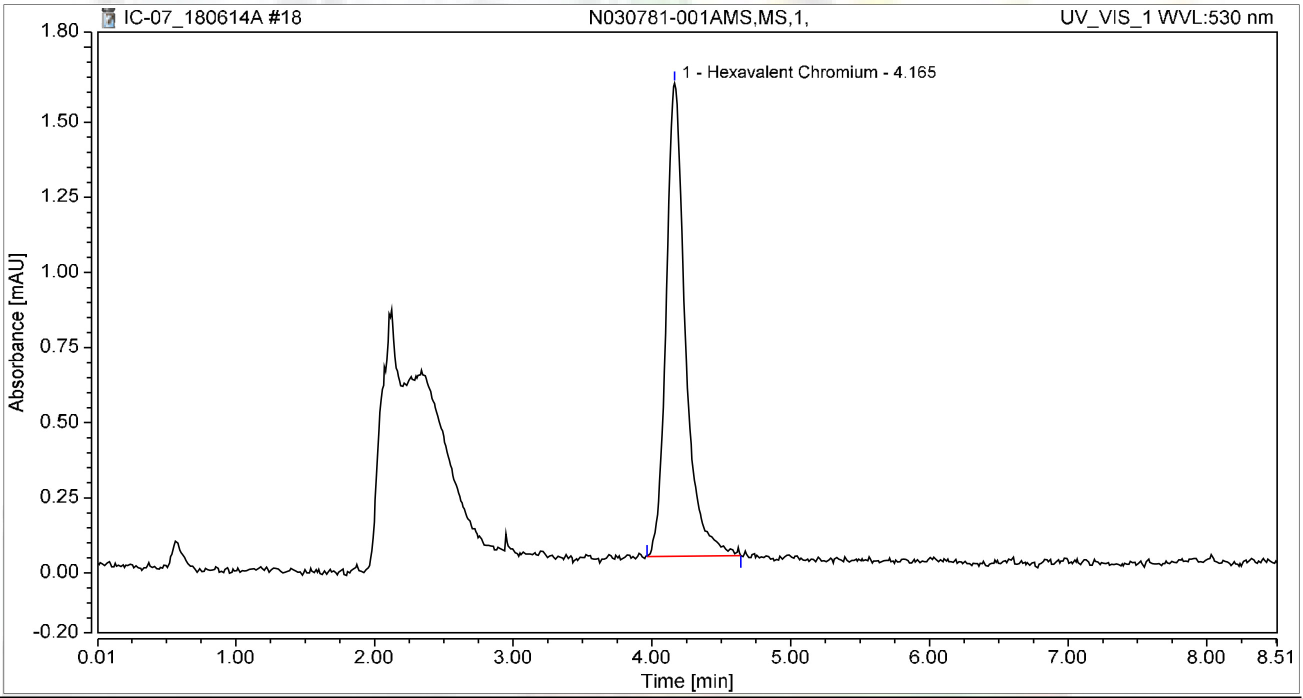
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.565	0.012	0.190	100.00	100.00	n.a.
Total:			**0.012**	**0.190**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 10:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

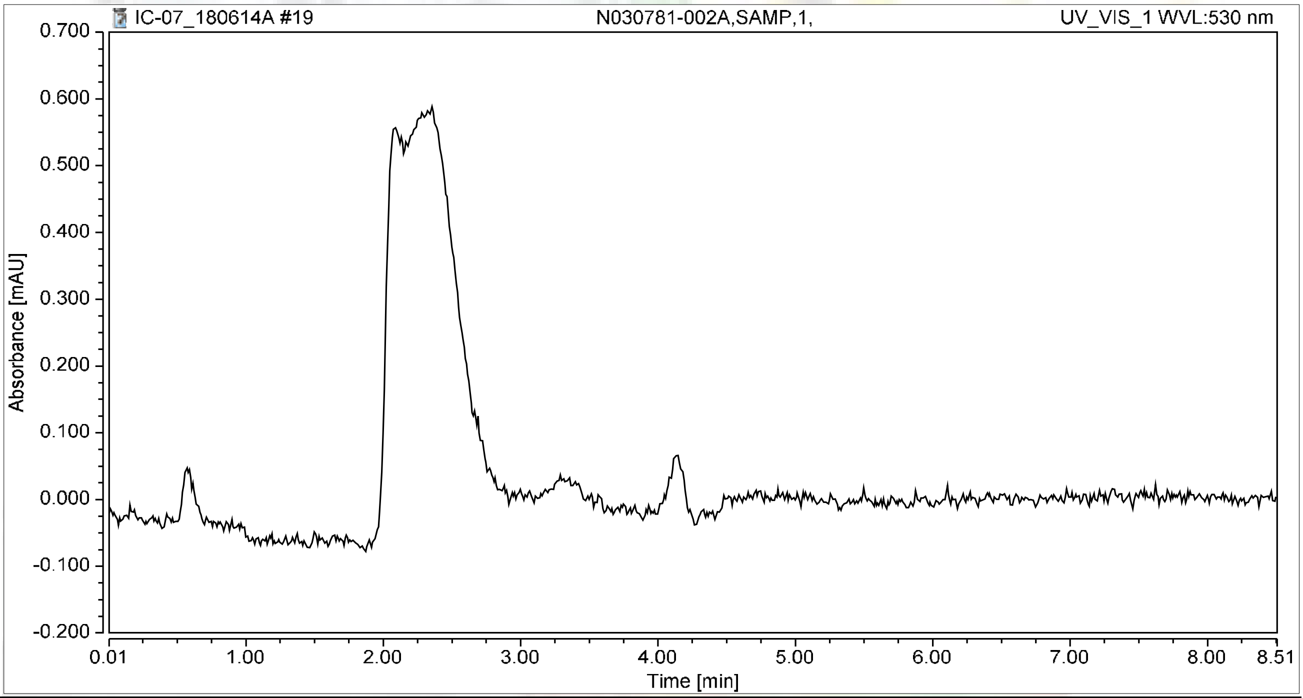
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.254	1.575	100.00	100.00	0.9764
Total:			**0.254**	**1.575**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 10:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

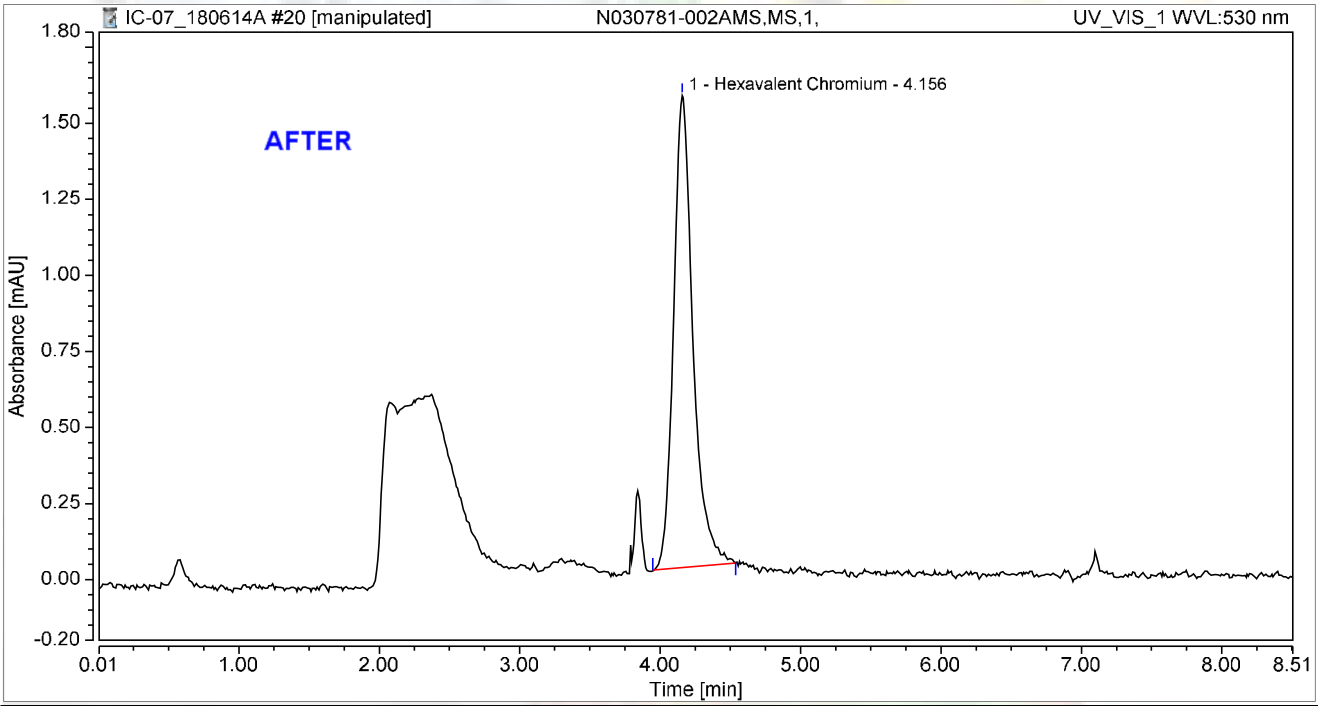
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 10:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.247	1.553	100.00	100.00	0.9507
Total:			**0.247**	**1.553**	**100.00**	**100.00**	

rba 6/20/2018

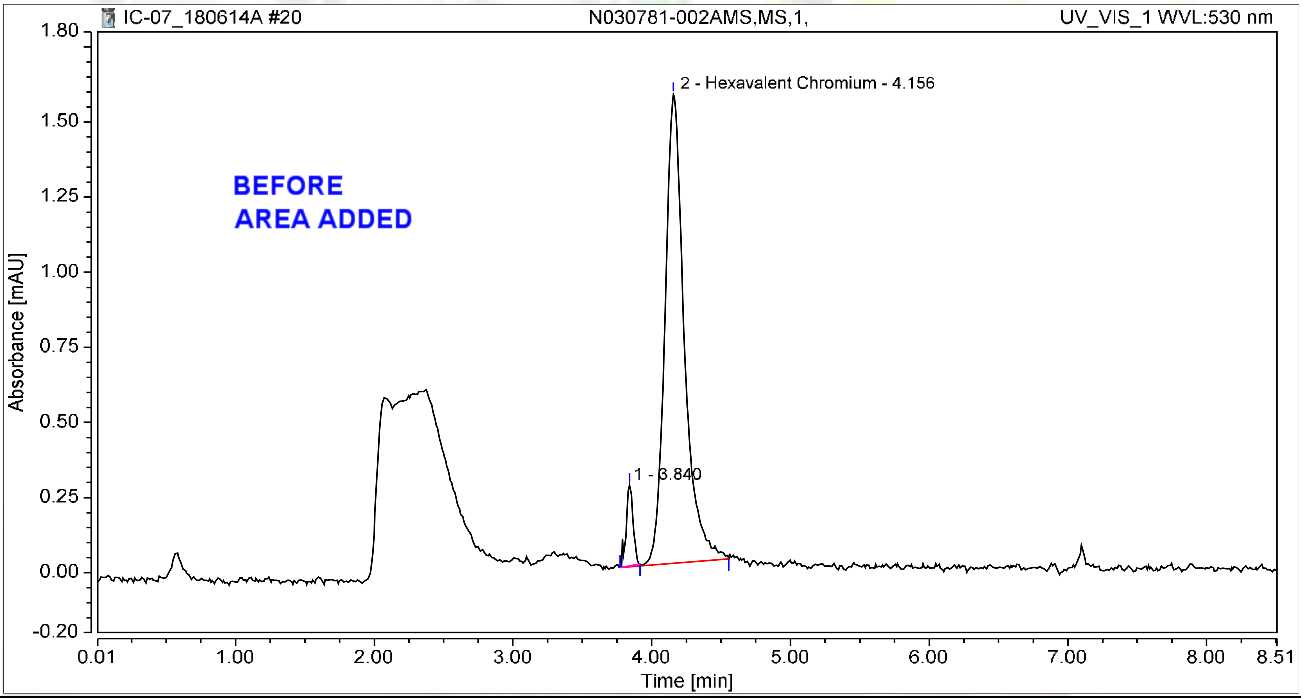
Reviewed by:
Nancy 6/26/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030781-002AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 10:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.840	0.016	0.268	5.87	14.67	n.a.
2	Hexavalent Chromium	4.156	0.253	1.561	94.13	85.33	0.9736
Total:			**0.269**	**1.829**	**100.00**	**100.00**	

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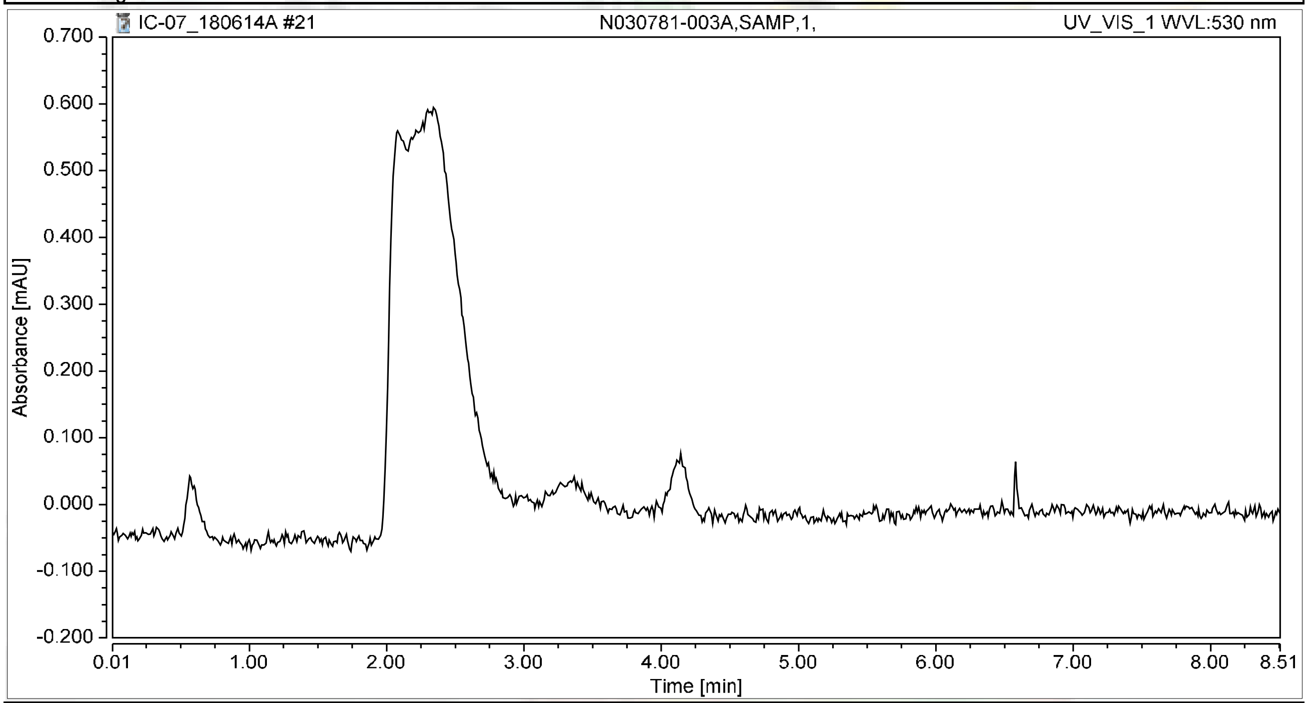
Chromatogram and Results

Injection Details

Injection Name:	**N030781-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 10:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

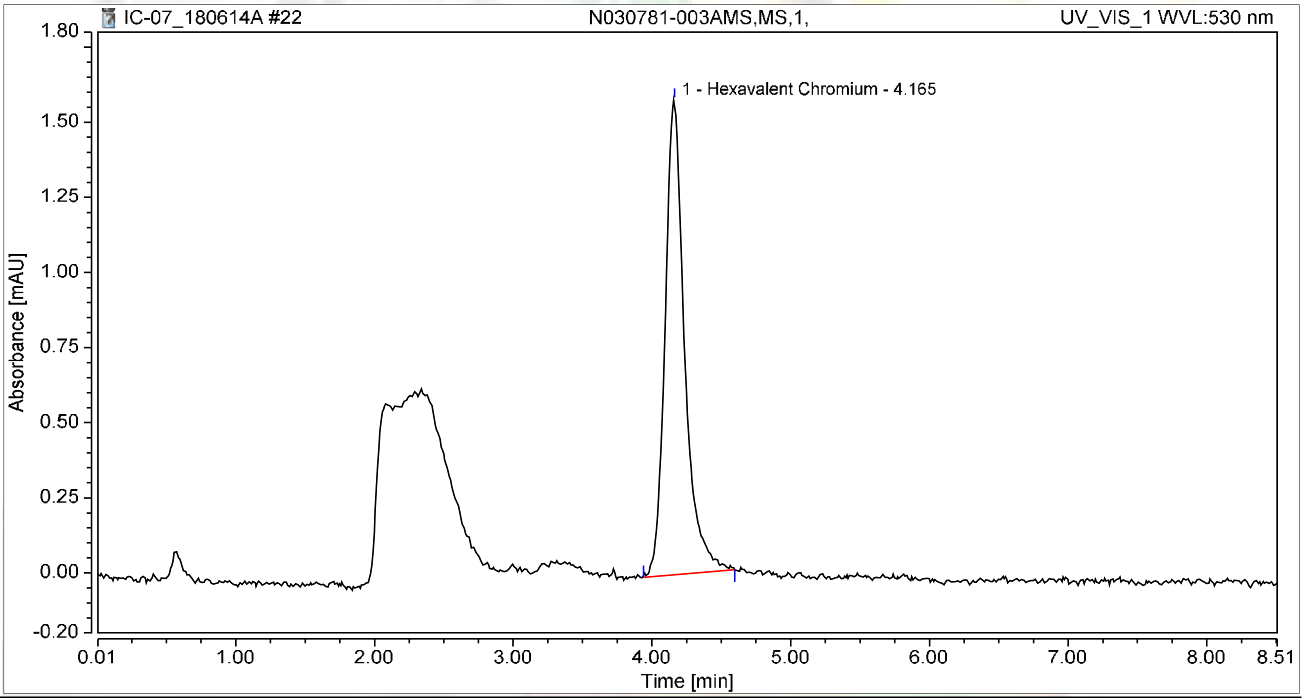
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-003AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 10:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

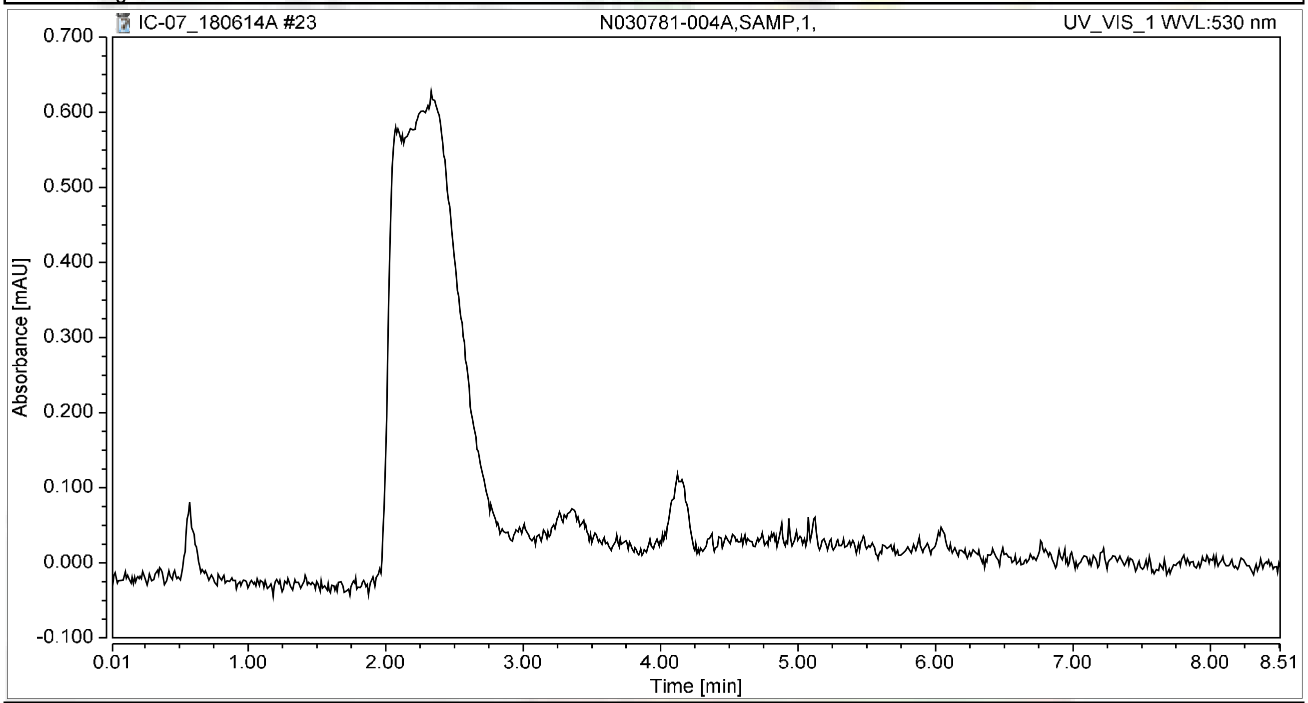
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.258	1.580	100.00	100.00	0.9923
Total:			**0.258**	**1.580**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-004A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 10:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

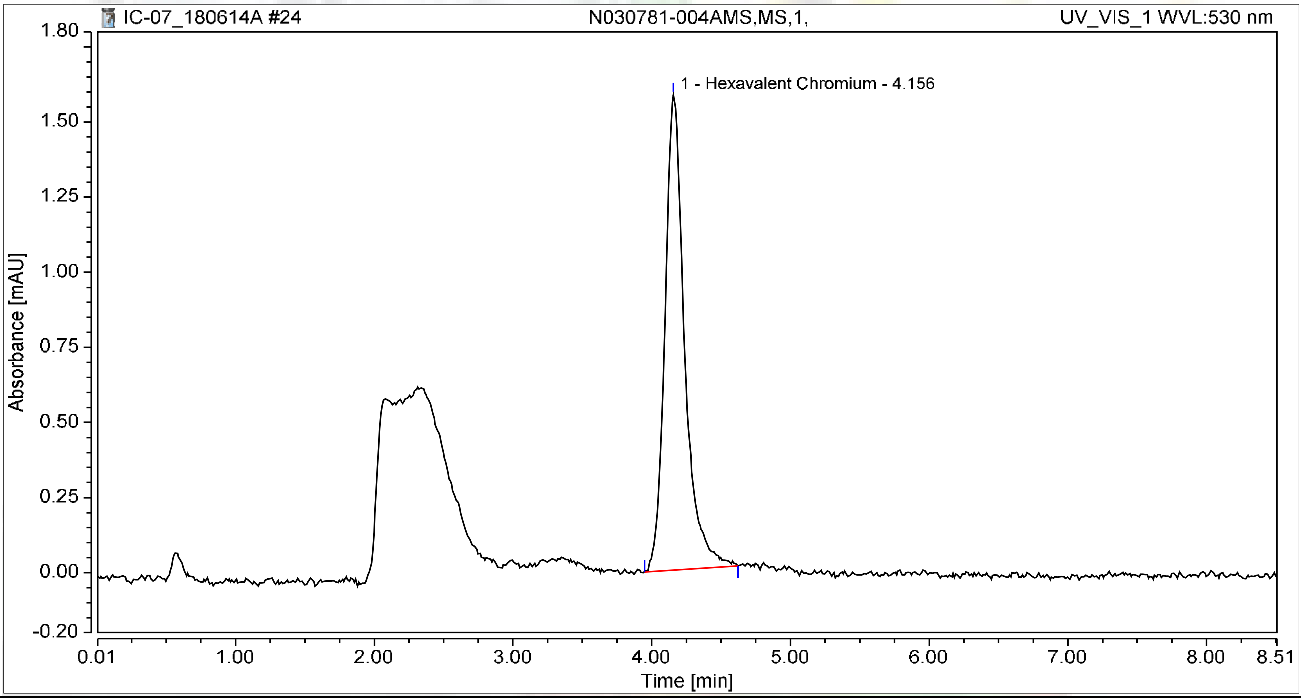
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-004AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

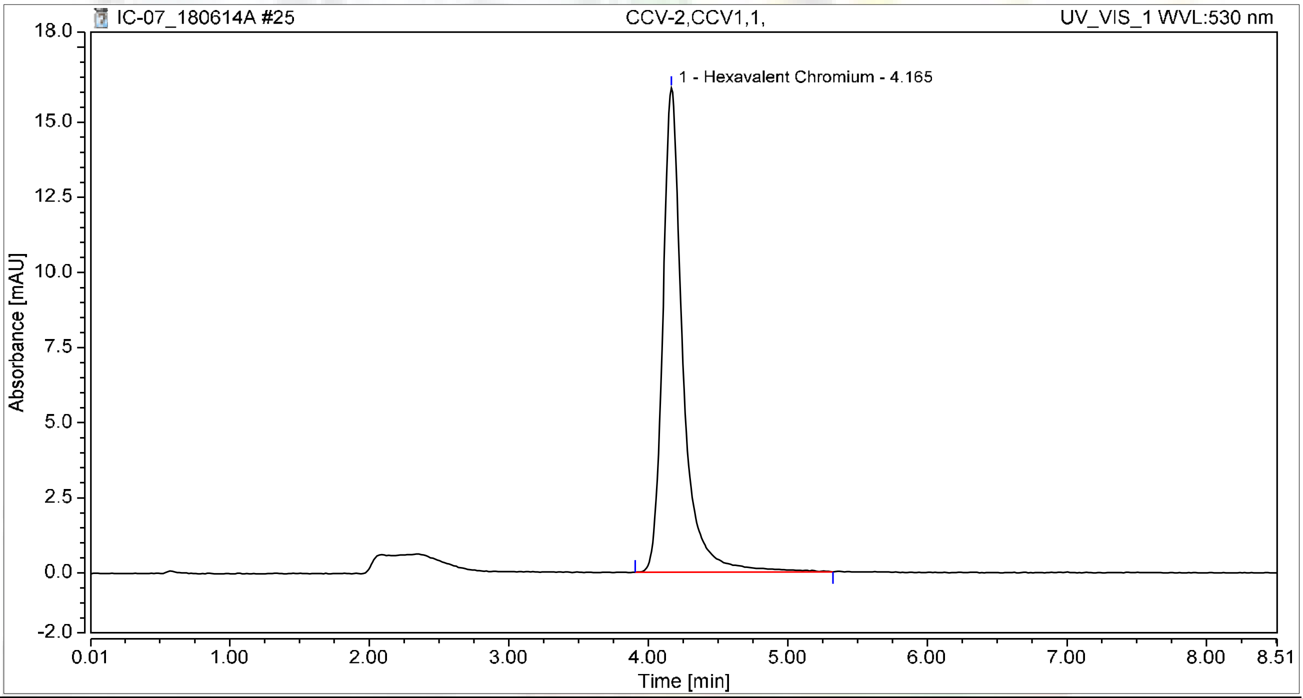
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.261	1.582	100.00	100.00	1.0017
Total:			**0.261**	**1.582**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 11:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

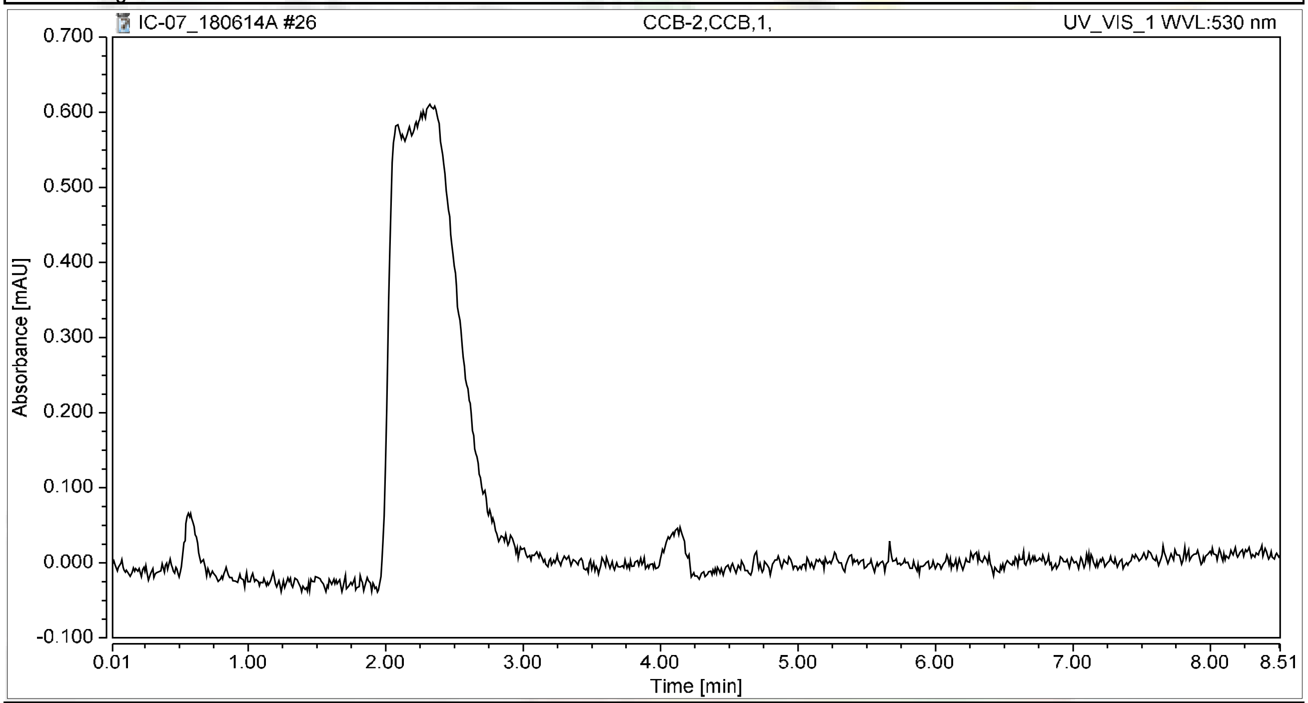
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.695	16.109	100.00	100.00	10.3574
Total:			**2.695**	**16.109**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 11:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

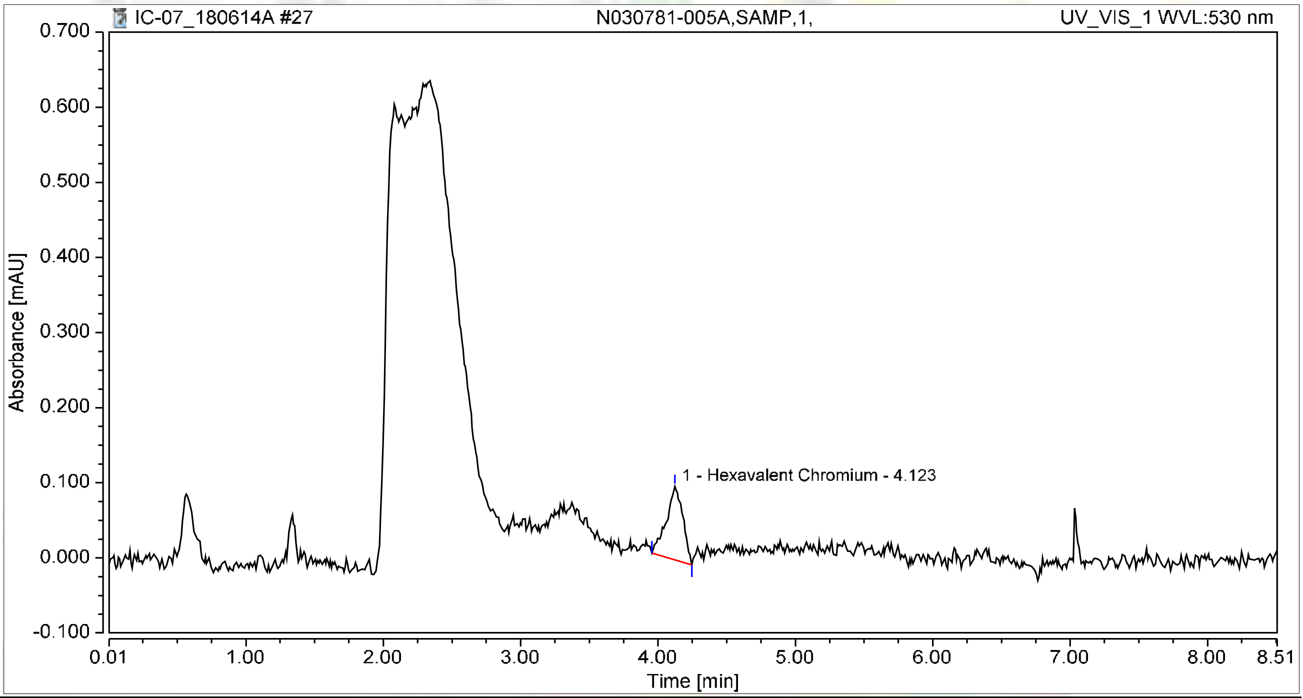
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 11:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

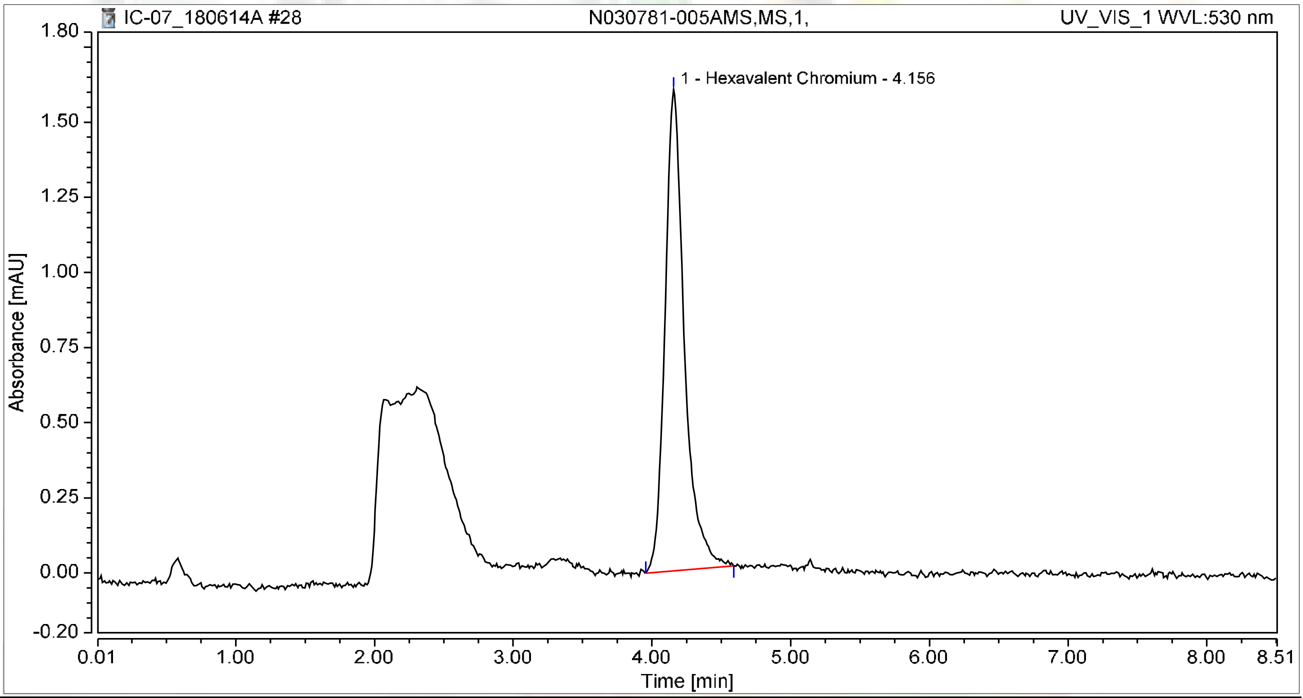
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.014	0.098	100.00	100.00	0.0523
Total:			**0.014**	**0.098**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-005AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 11:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

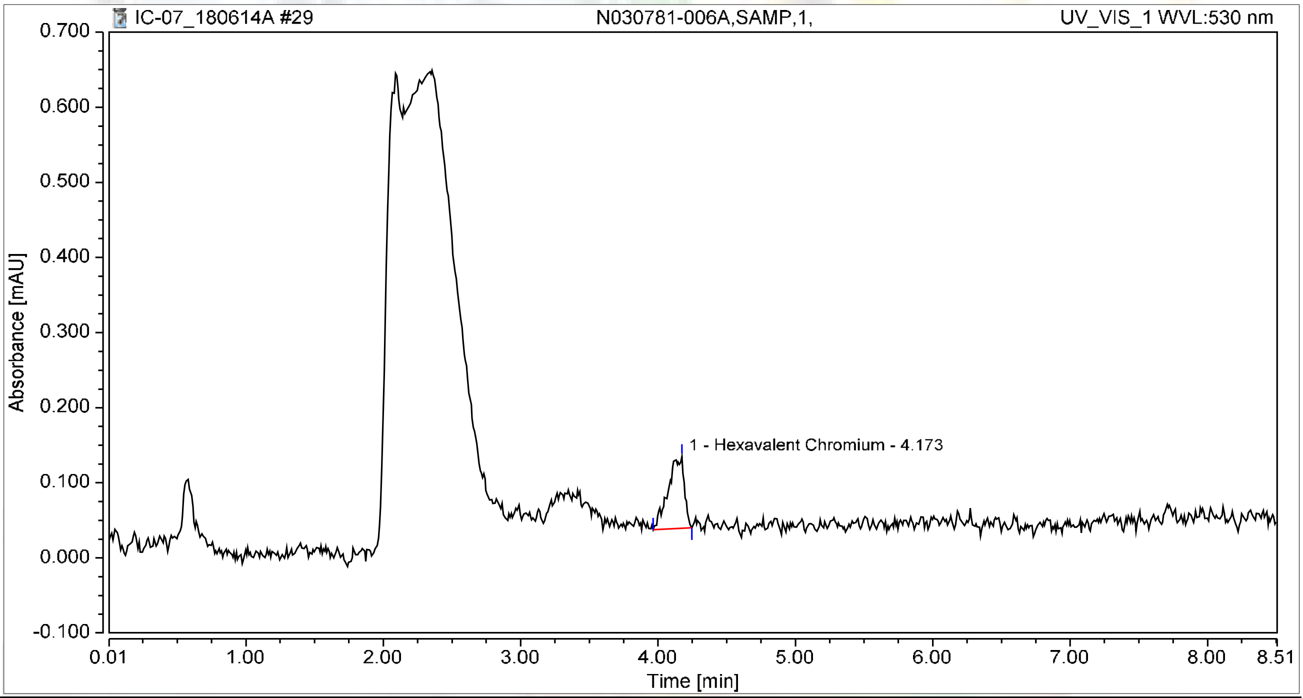
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.260	1.603	100.00	100.00	0.9993
Total:			**0.260**	**1.603**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-006A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 11:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

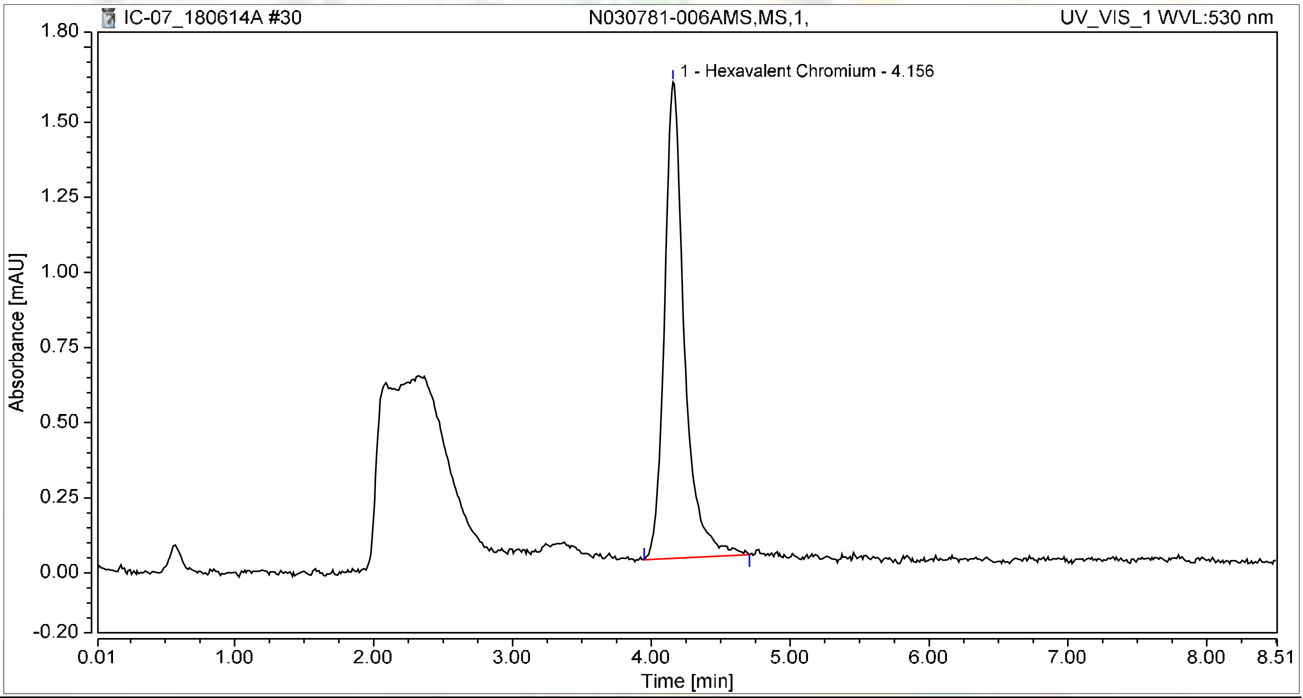
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.013	0.096	100.00	100.00	0.0499
Total:			**0.013**	**0.096**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-006AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 11:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

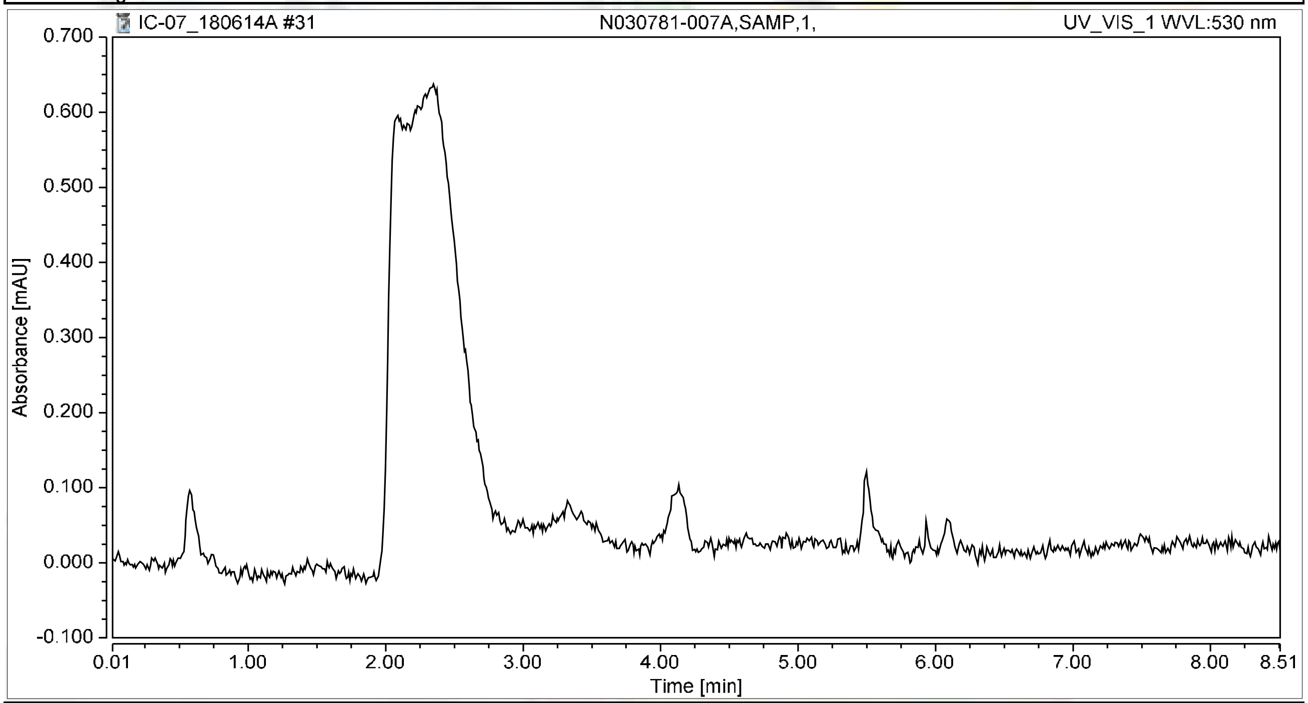
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.264	1.585	100.00	100.00	1.0153
Total:			**0.264**	**1.585**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-007A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 12:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

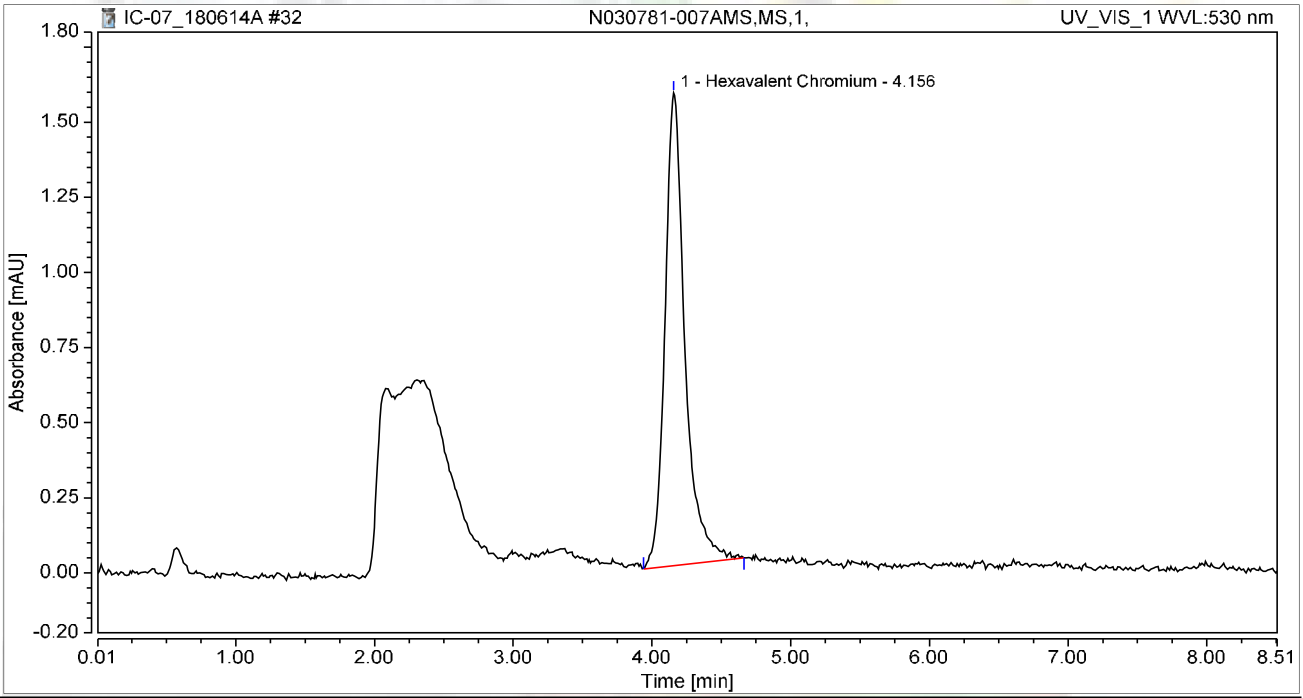
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-007AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 12:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

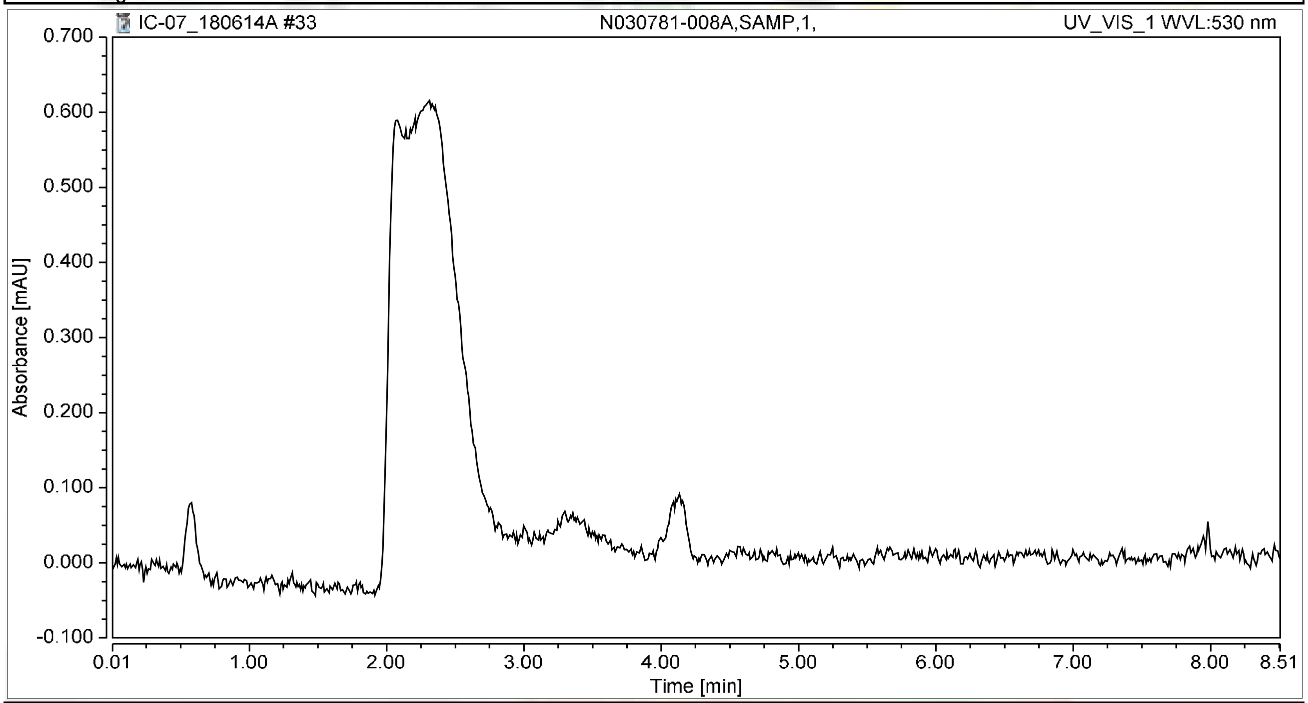
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.263	1.575	100.00	100.00	1.0113
Total:			**0.263**	**1.575**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-008A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 12:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

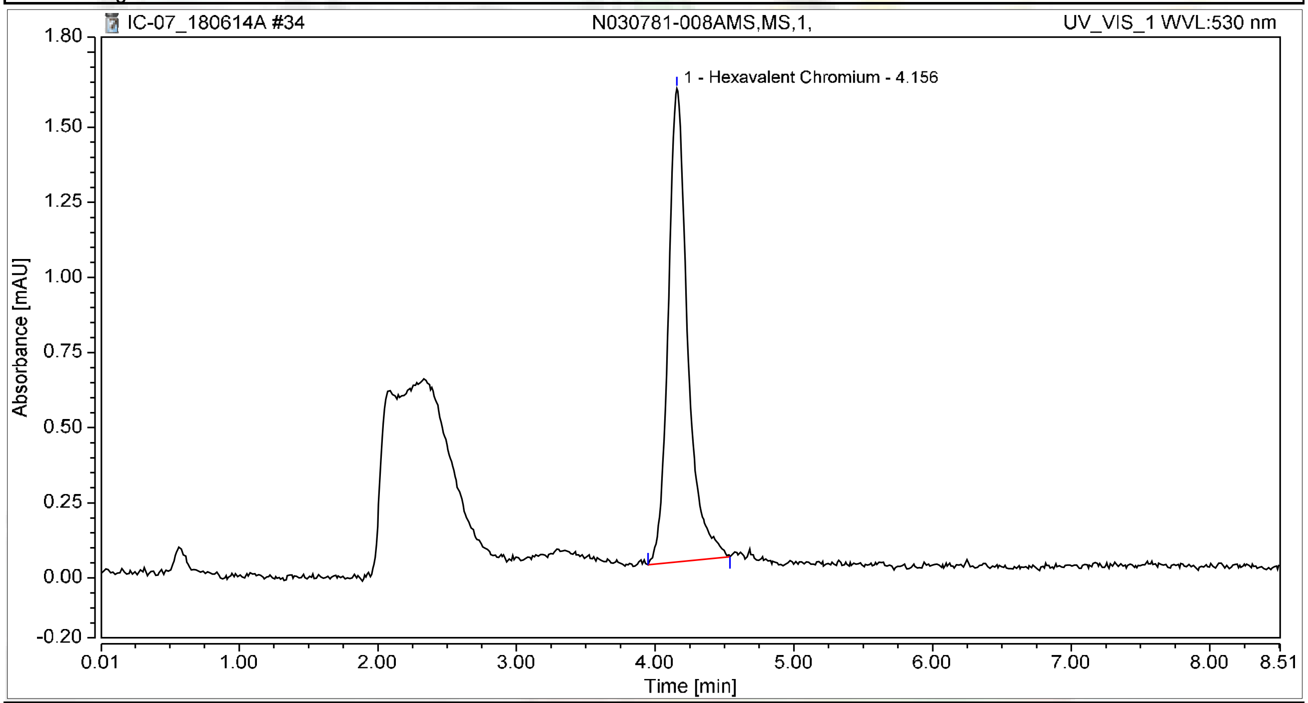
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-008AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 12:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

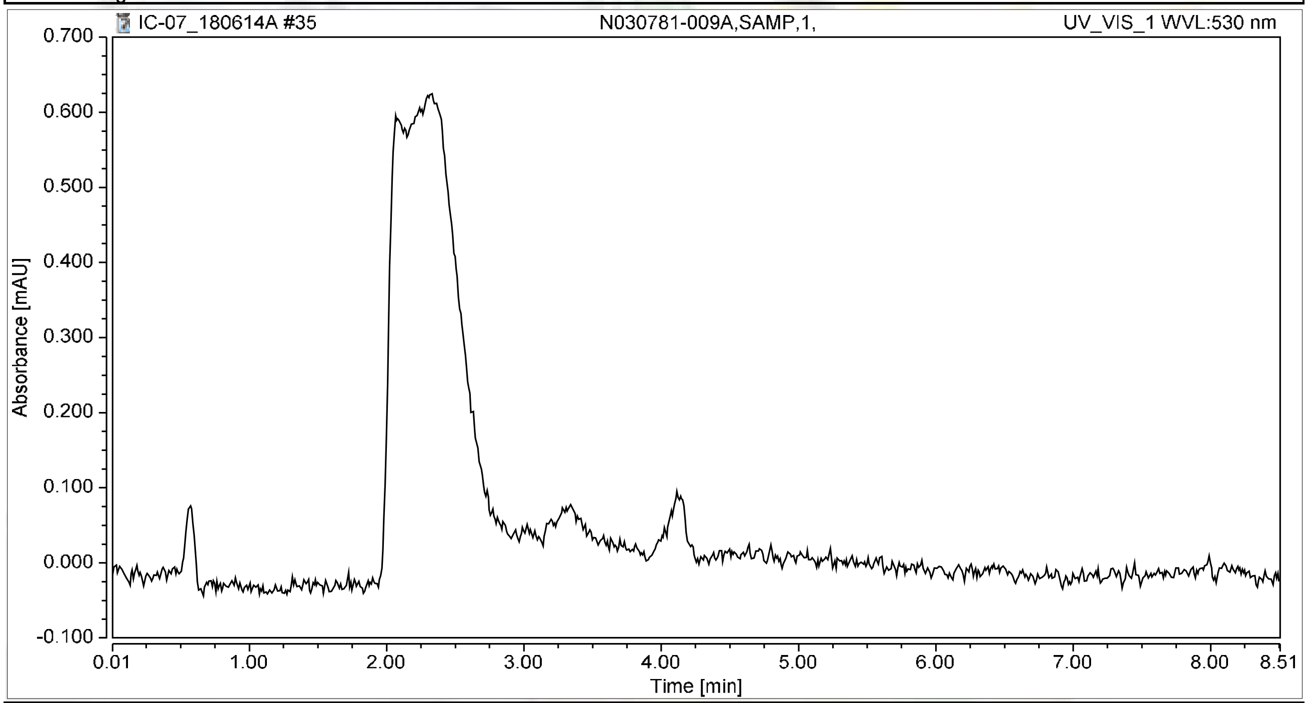
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.256	1.576	100.00	100.00	0.9857
Total:			**0.256**	**1.576**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-009A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

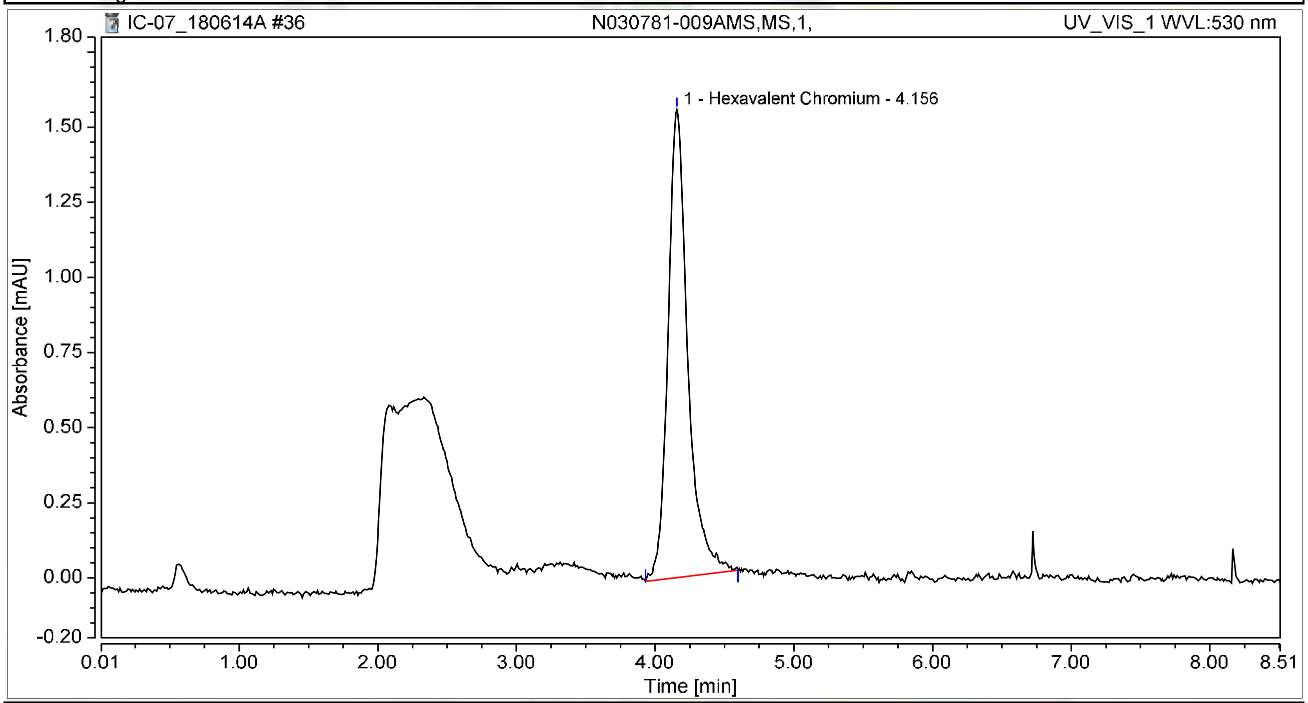
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-009AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 12:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

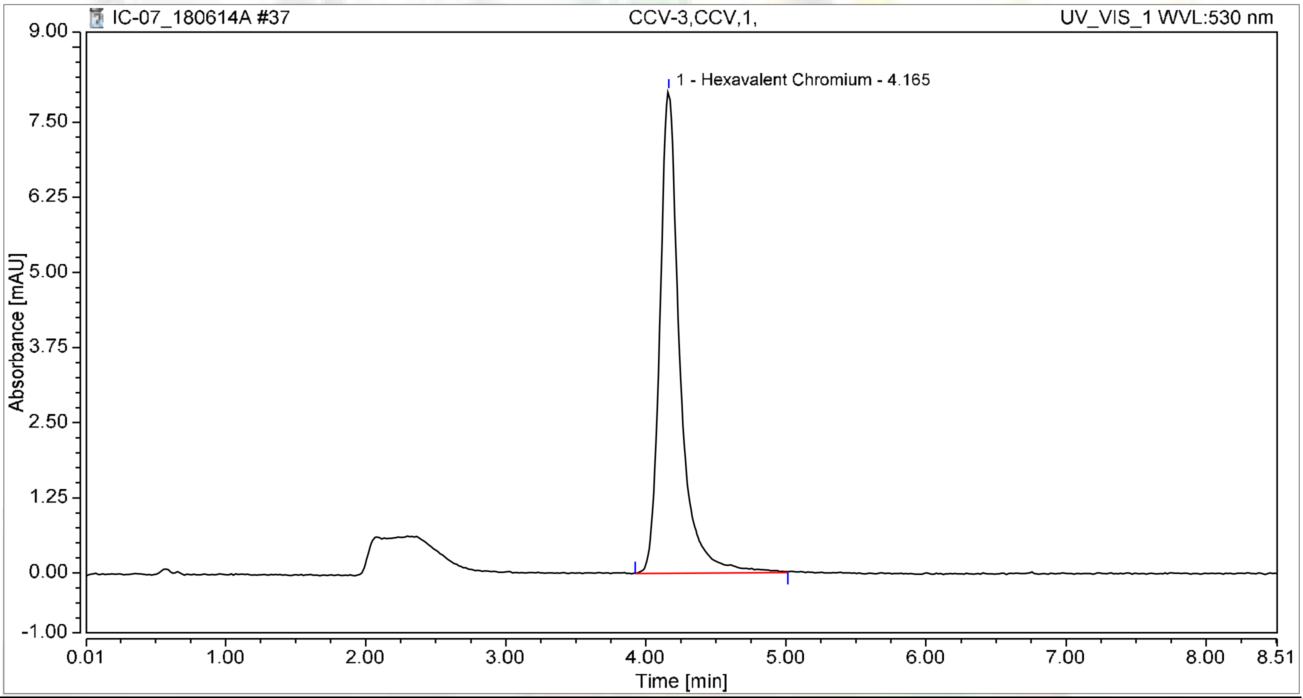
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.258	1.558	100.00	100.00	0.9911
Total:			**0.258**	**1.558**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 13:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

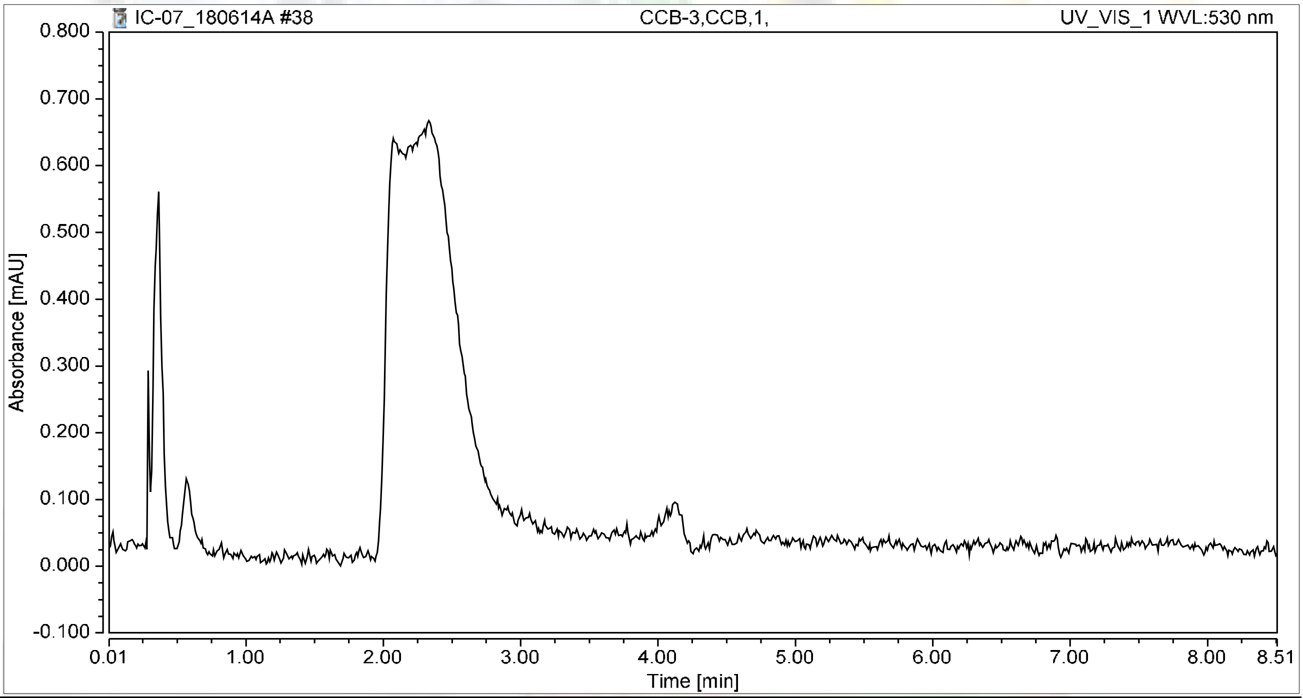
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.336	8.028	100.00	100.00	5.1339
Total:			**1.336**	**8.028**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 13:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

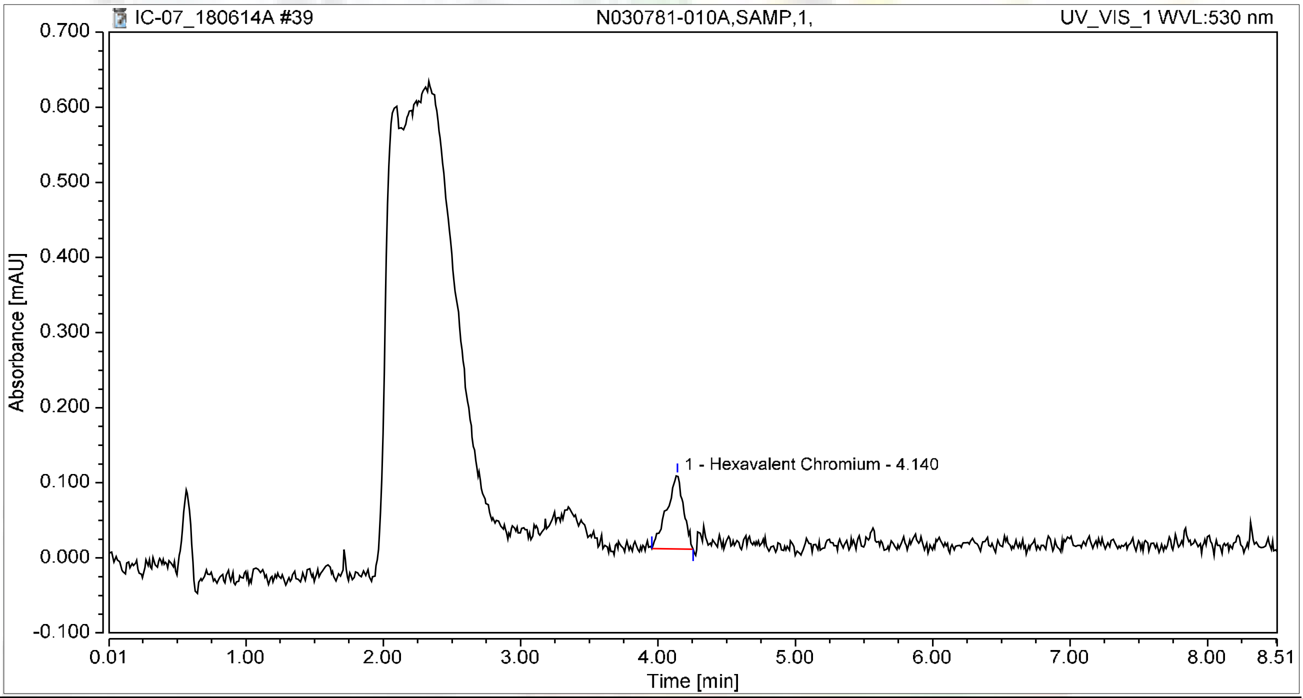
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-010A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 13:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

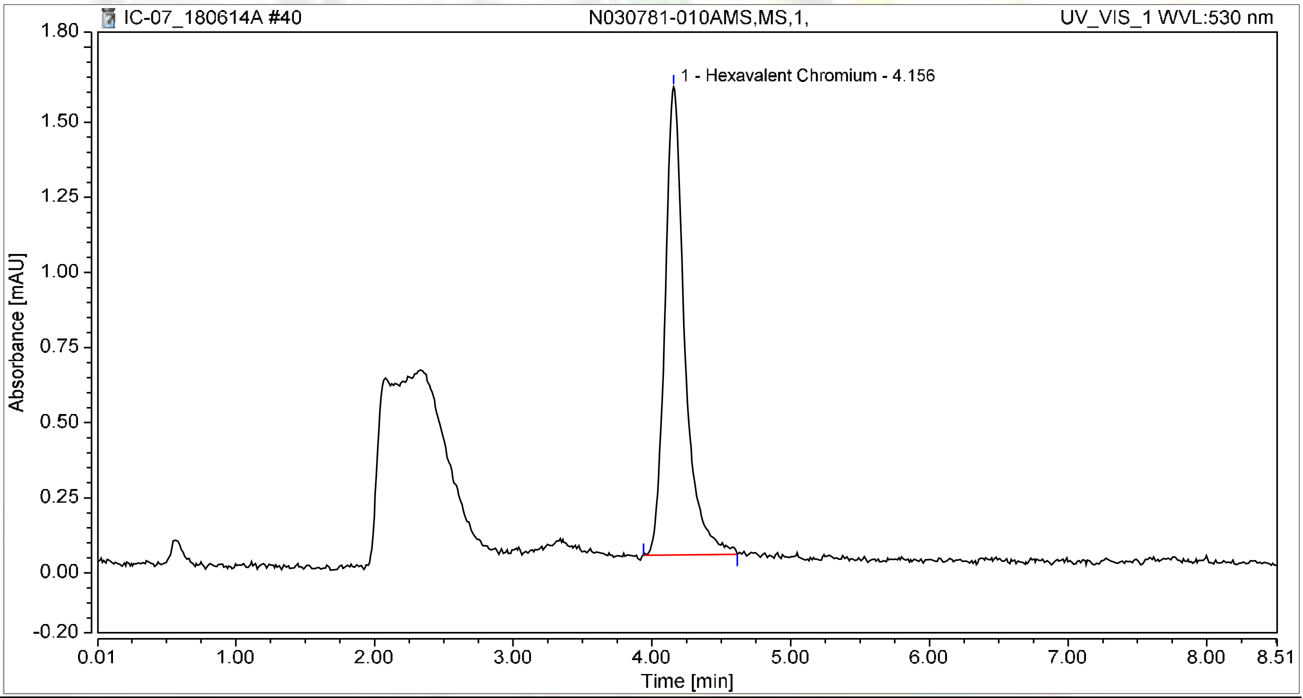
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.014	0.098	100.00	100.00	0.0526
Total:			**0.014**	**0.098**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-010AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 13:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

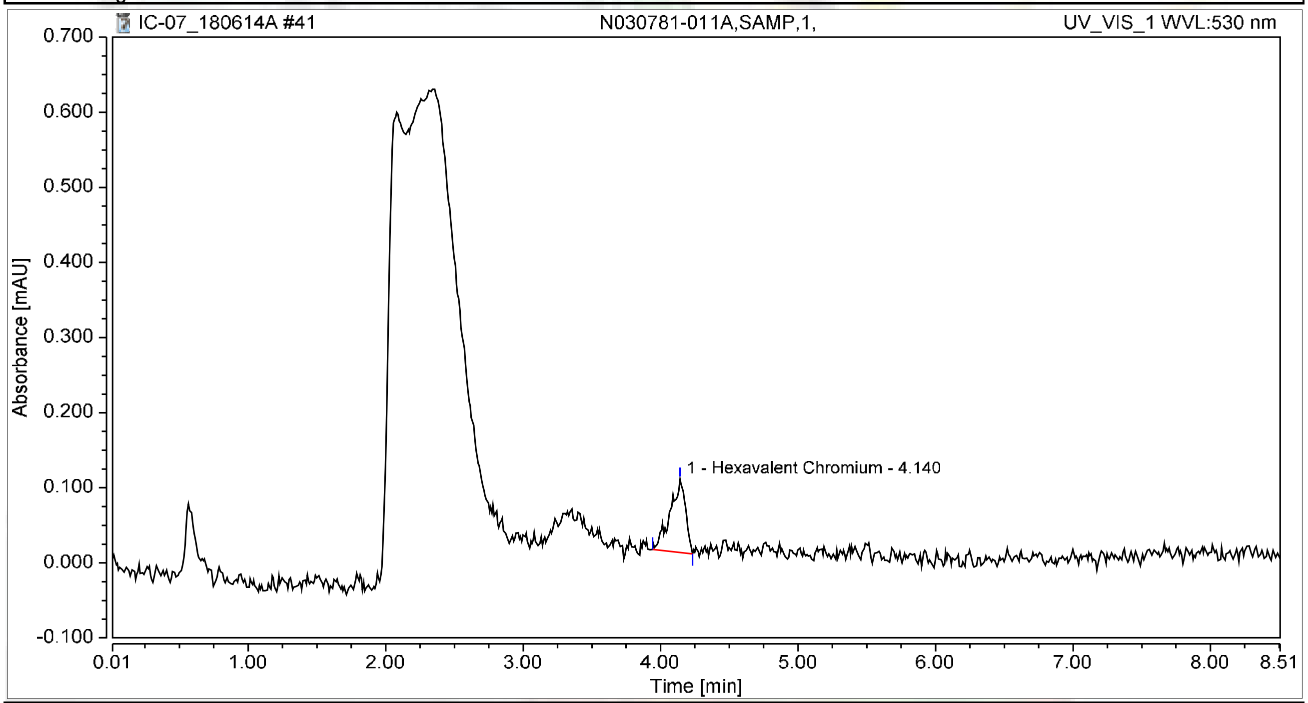
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.257	1.559	100.00	100.00	0.9896
Total:			**0.257**	**1.559**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-011A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 13:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

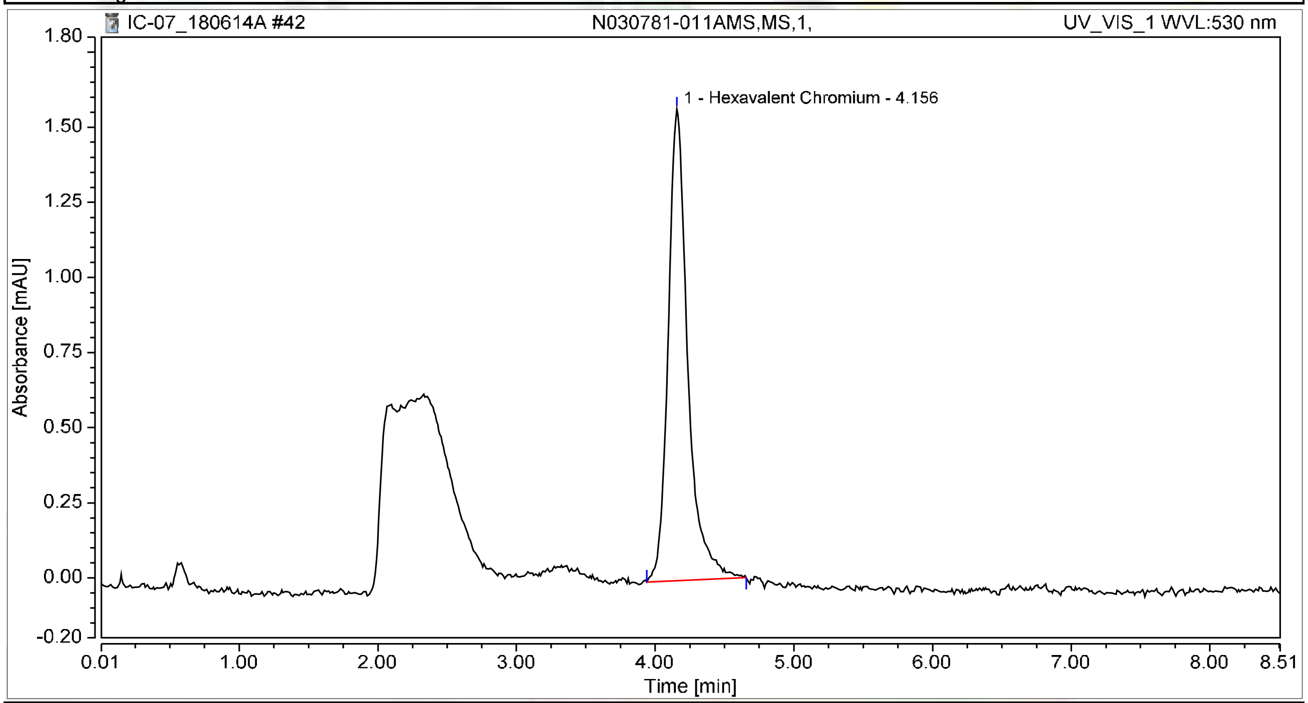
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.012	0.097	100.00	100.00	0.0476
Total:			**0.012**	**0.097**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-011AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 13:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

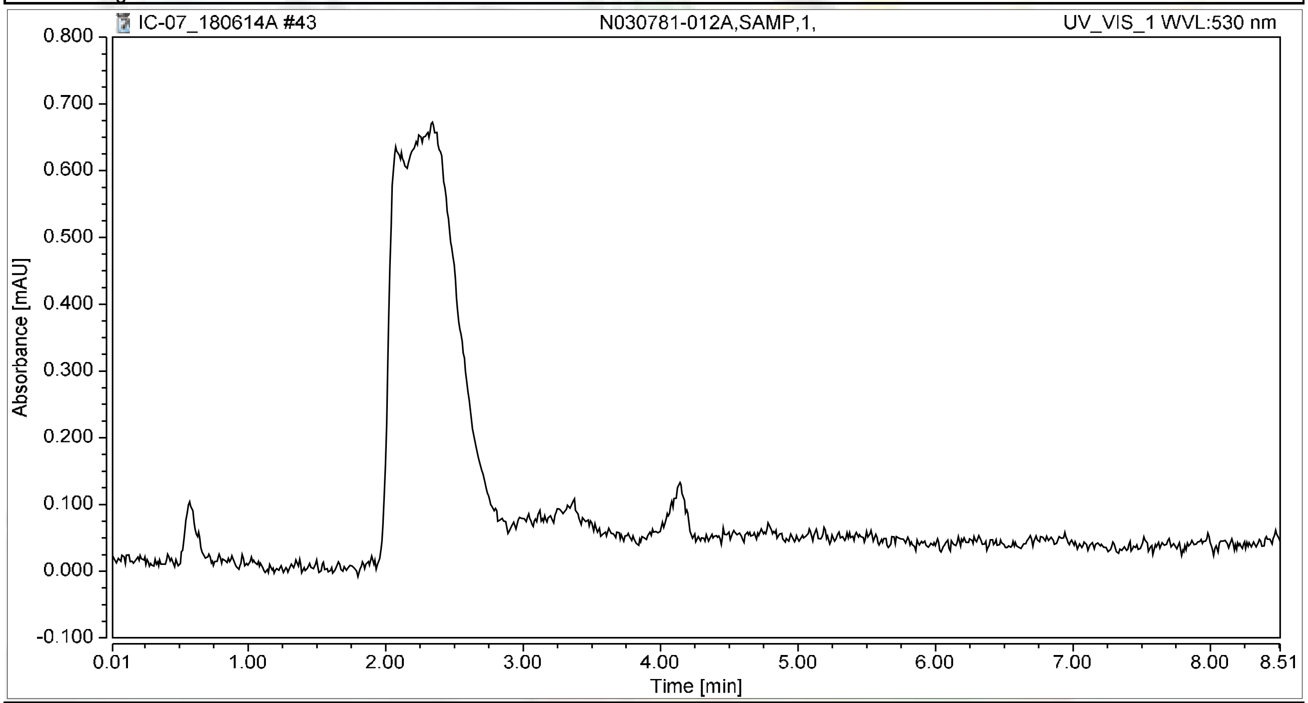
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.256	1.570	100.00	100.00	0.9839
Total:			**0.256**	**1.570**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-012A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 13:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

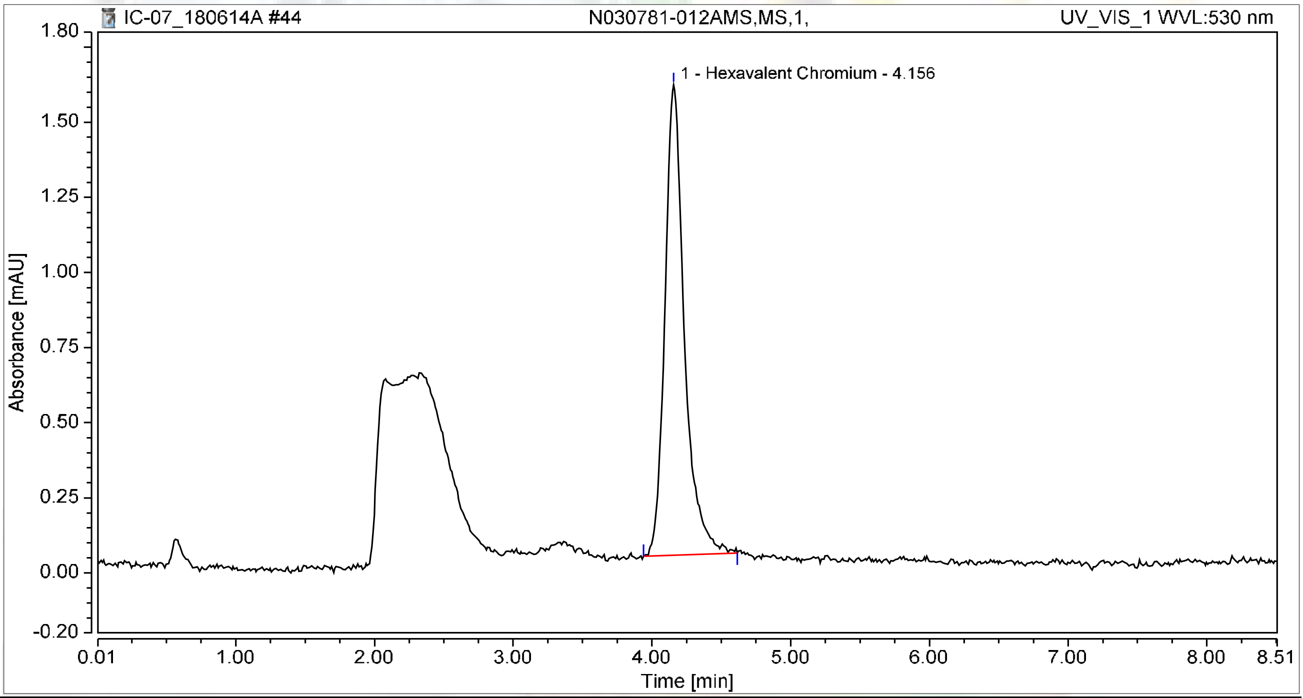
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-012AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 14:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

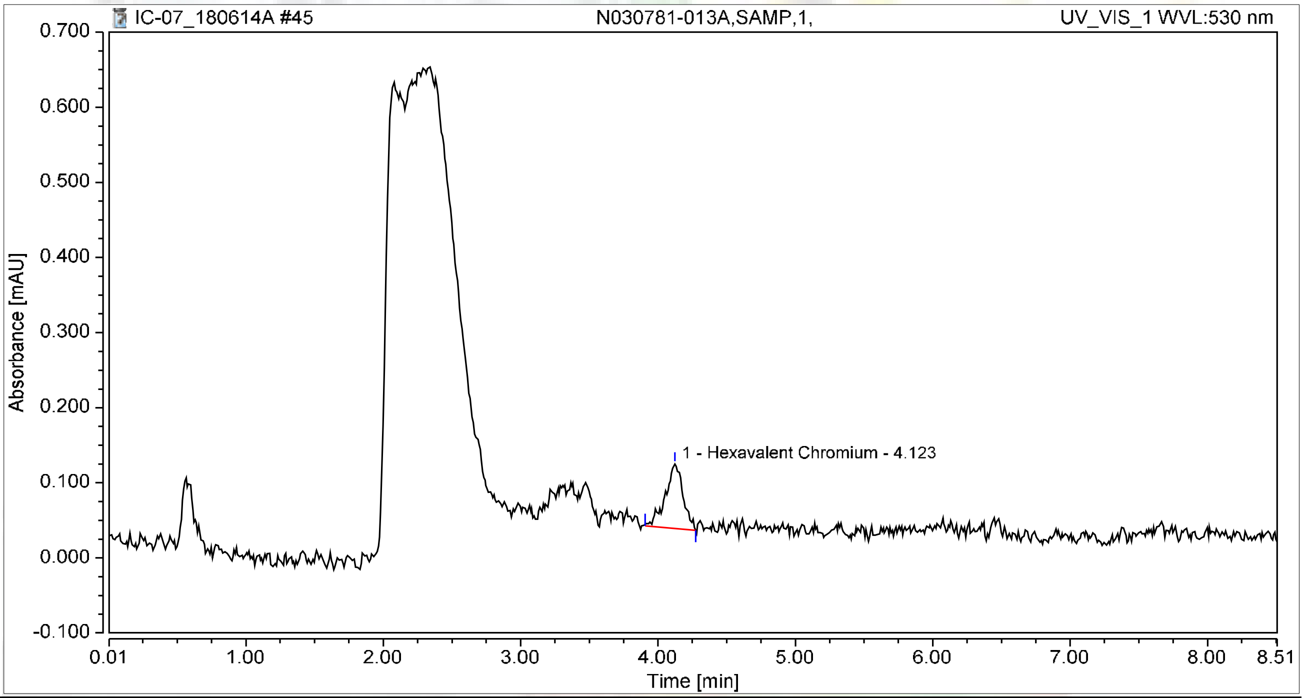
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.255	1.566	100.00	100.00	0.9802
Total:			**0.255**	**1.566**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-013A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 14:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

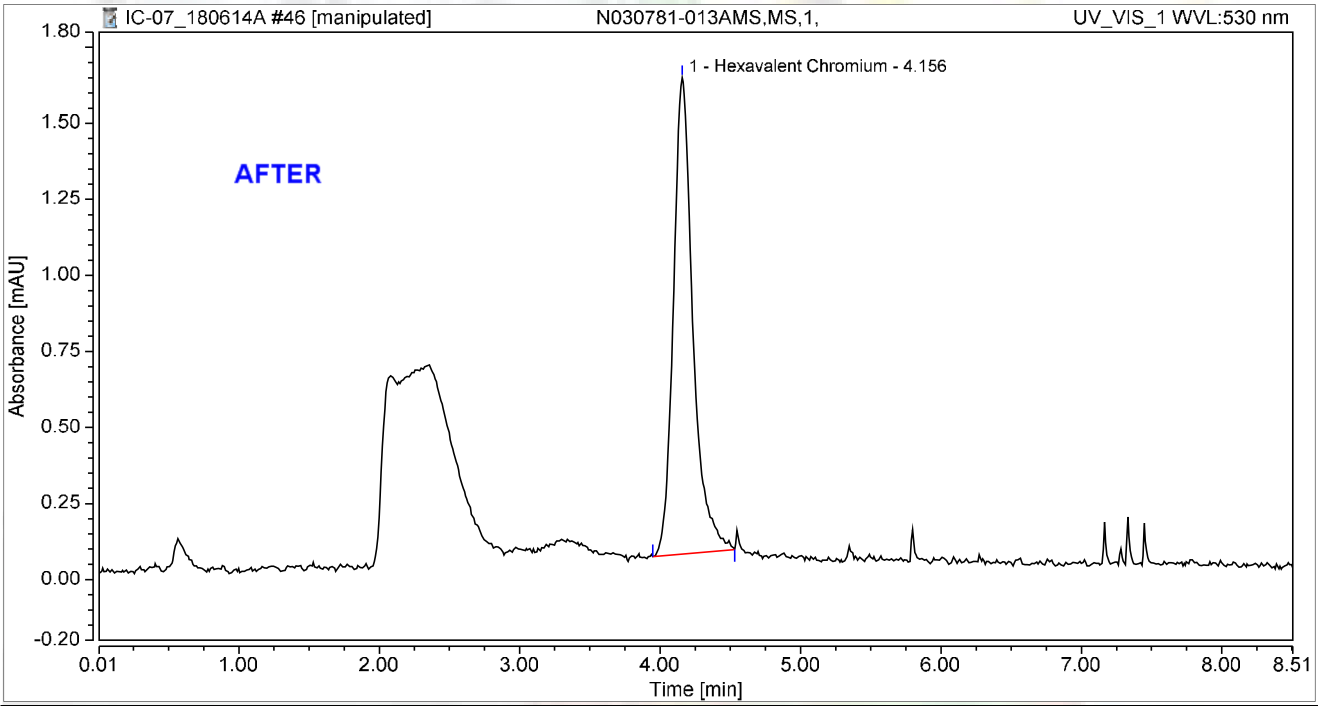
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.013	0.086	100.00	100.00	0.0489
Total:			**0.013**	**0.086**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 14:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.252	1.567	100.00	100.00	0.9700
Total:			**0.252**	**1.567**	**100.00**	**100.00**	

rba 6/20/2018

Reviewed by:
Nancy 6/26/2018

My first report Integration

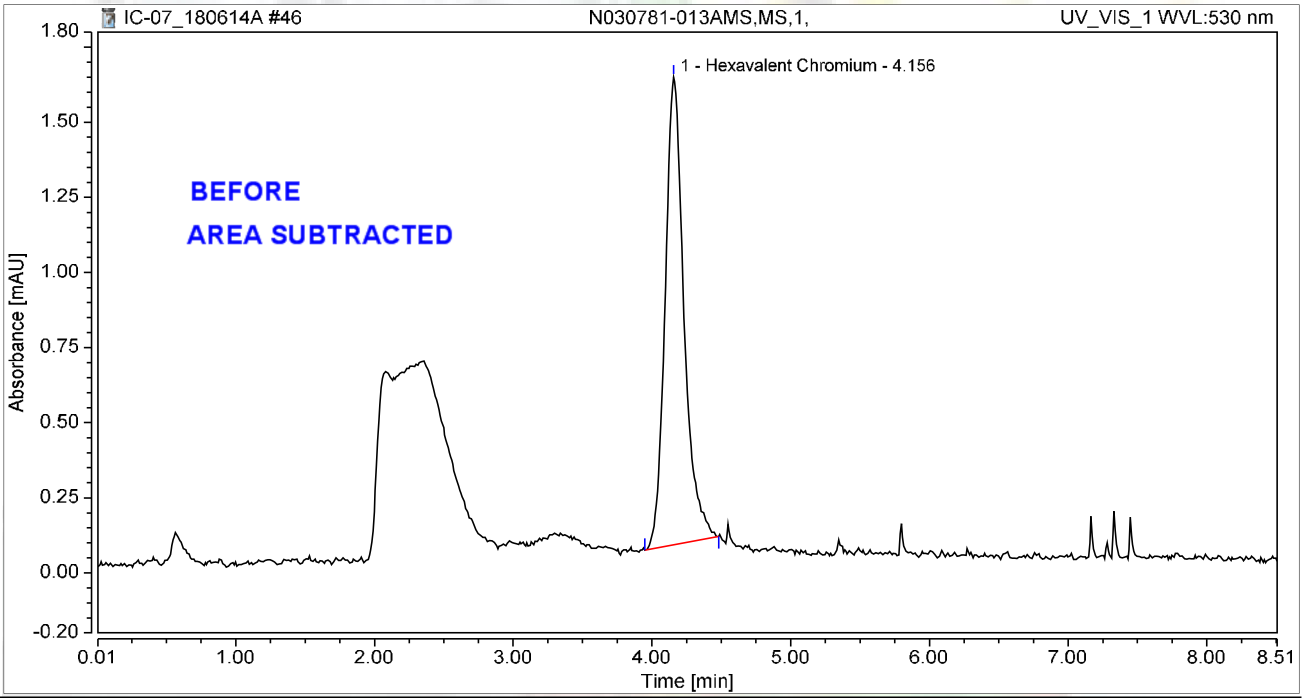
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N030781-013AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 14:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.245	1.558	100.00	100.00	0.9413
Total:			**0.245**	**1.558**	**100.00**	**100.00**	

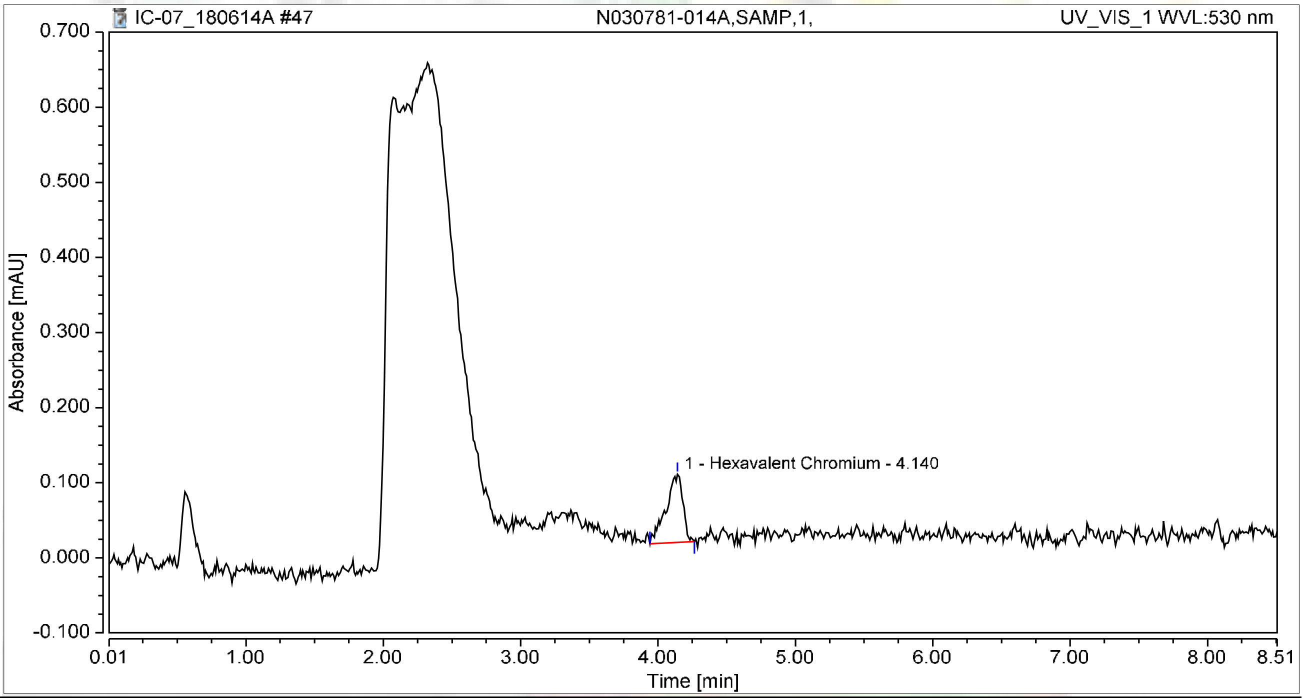
rba 6/20/2018

Chromatogram and Results

Injection Details

Injection Name:	**N030781-014A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 14:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

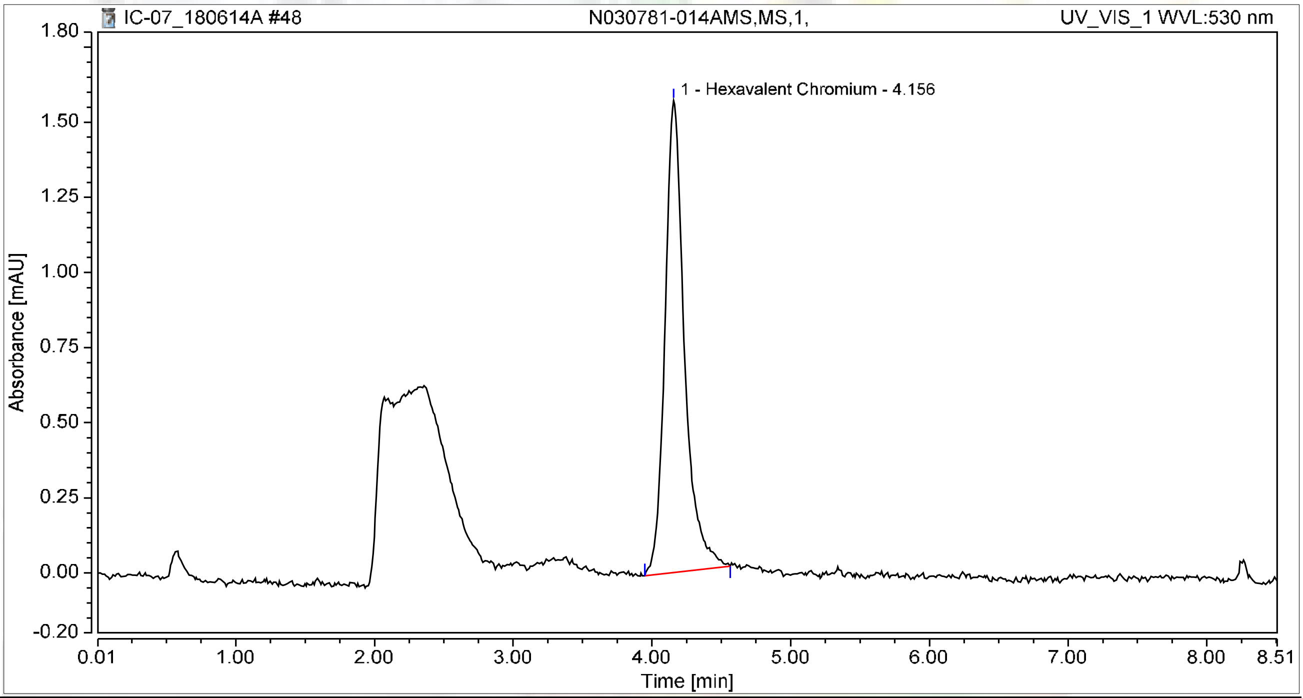
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.013	0.091	100.00	100.00	0.0493
Total:			**0.013**	**0.091**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-014AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 14:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

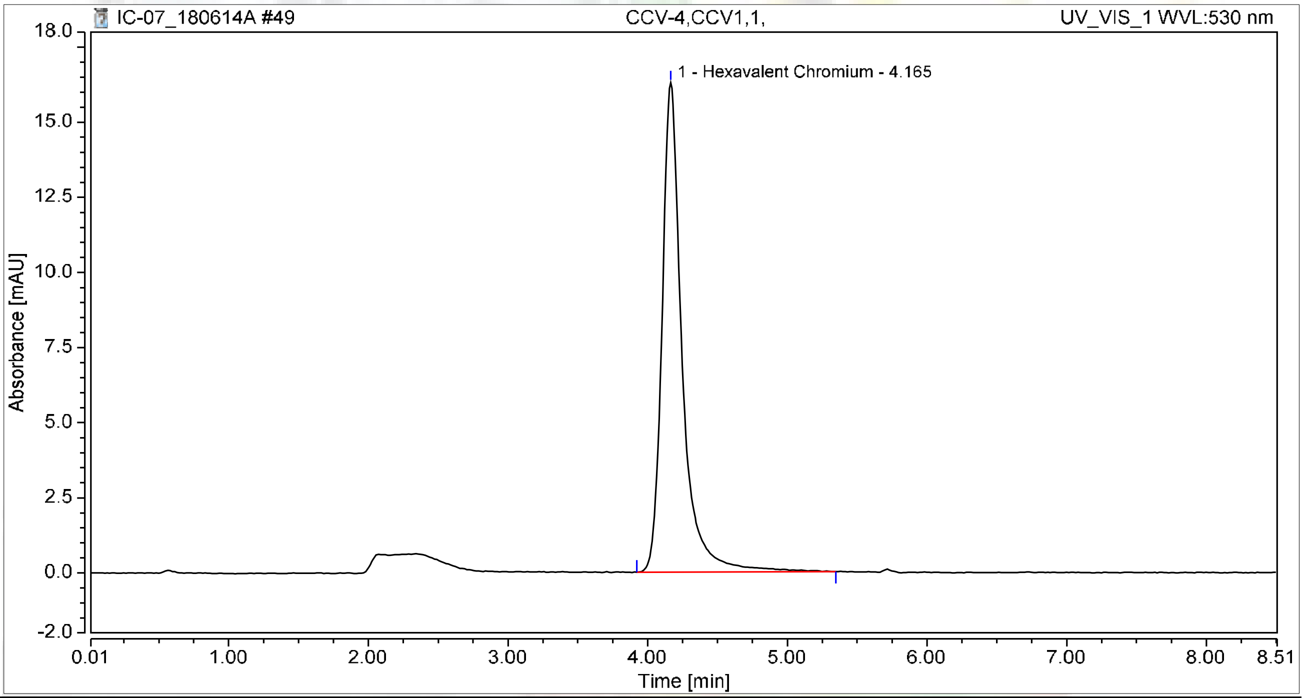
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.256	1.570	100.00	100.00	0.9841
Total:			**0.256**	**1.570**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 14:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

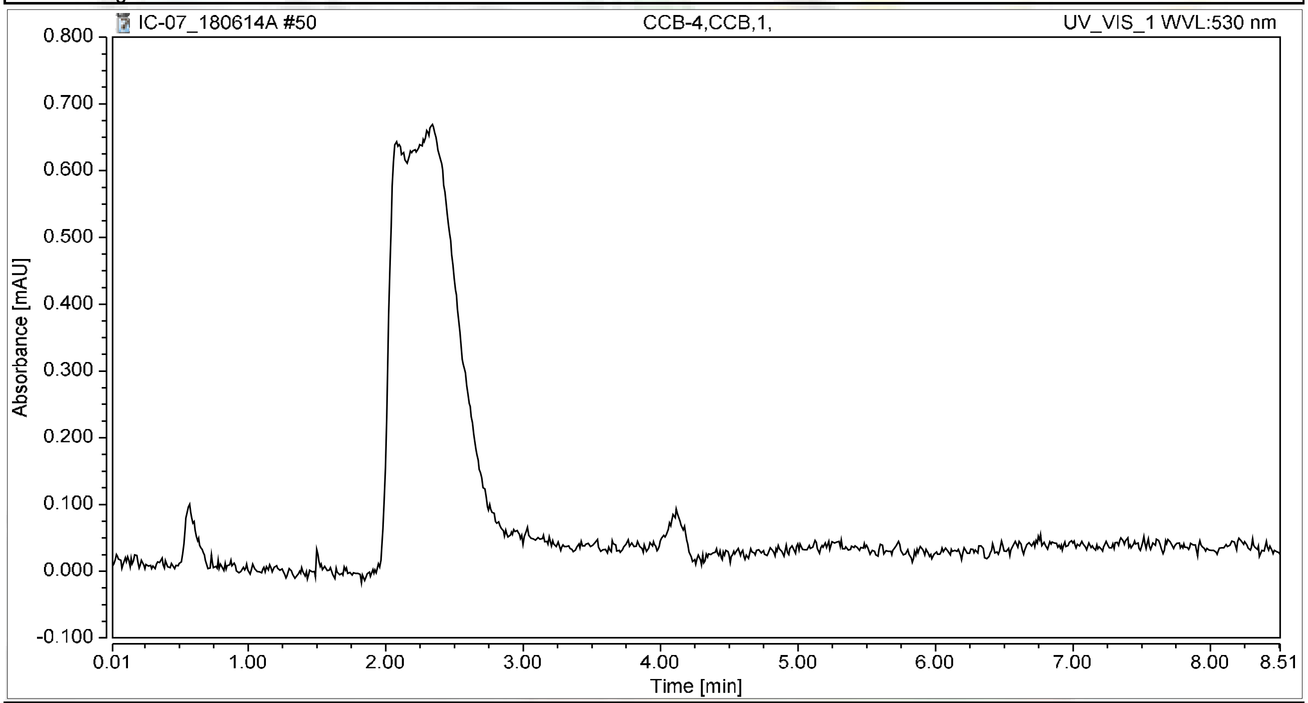
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	2.725	16.285	100.00	100.00	10.4747
Total:			**2.725**	**16.285**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 15:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

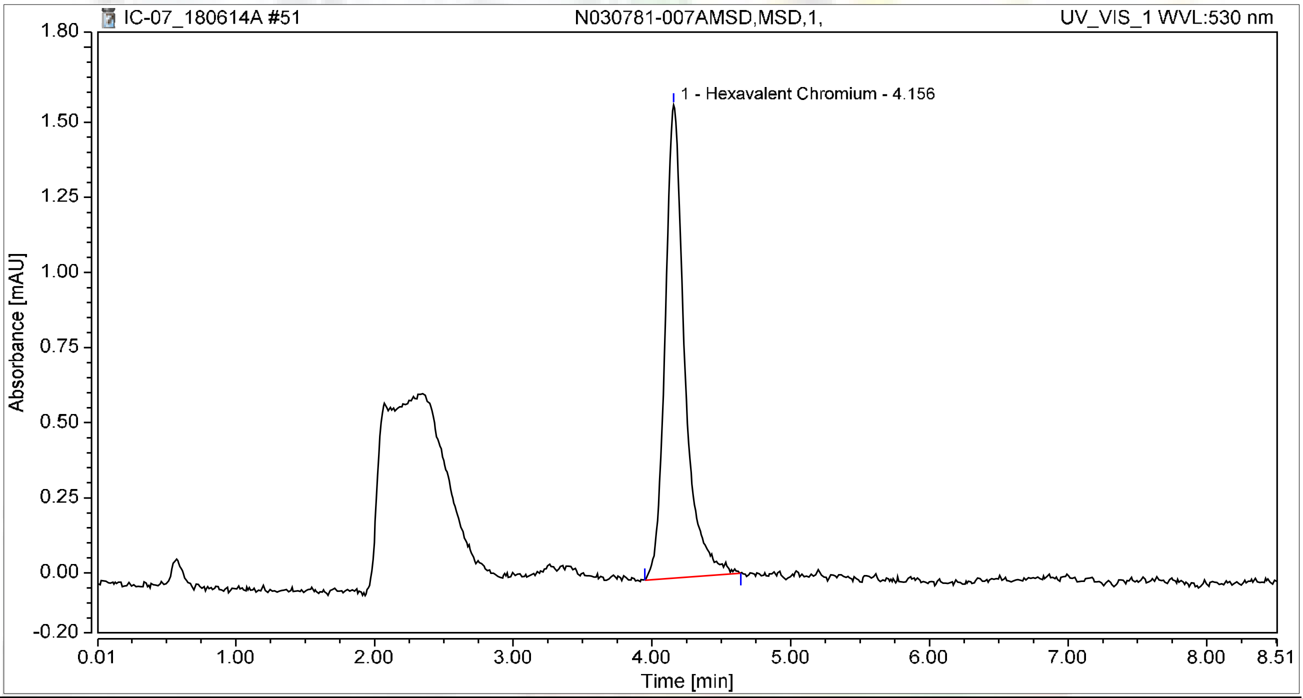
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-007AMSD,MSD,1,**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 15:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

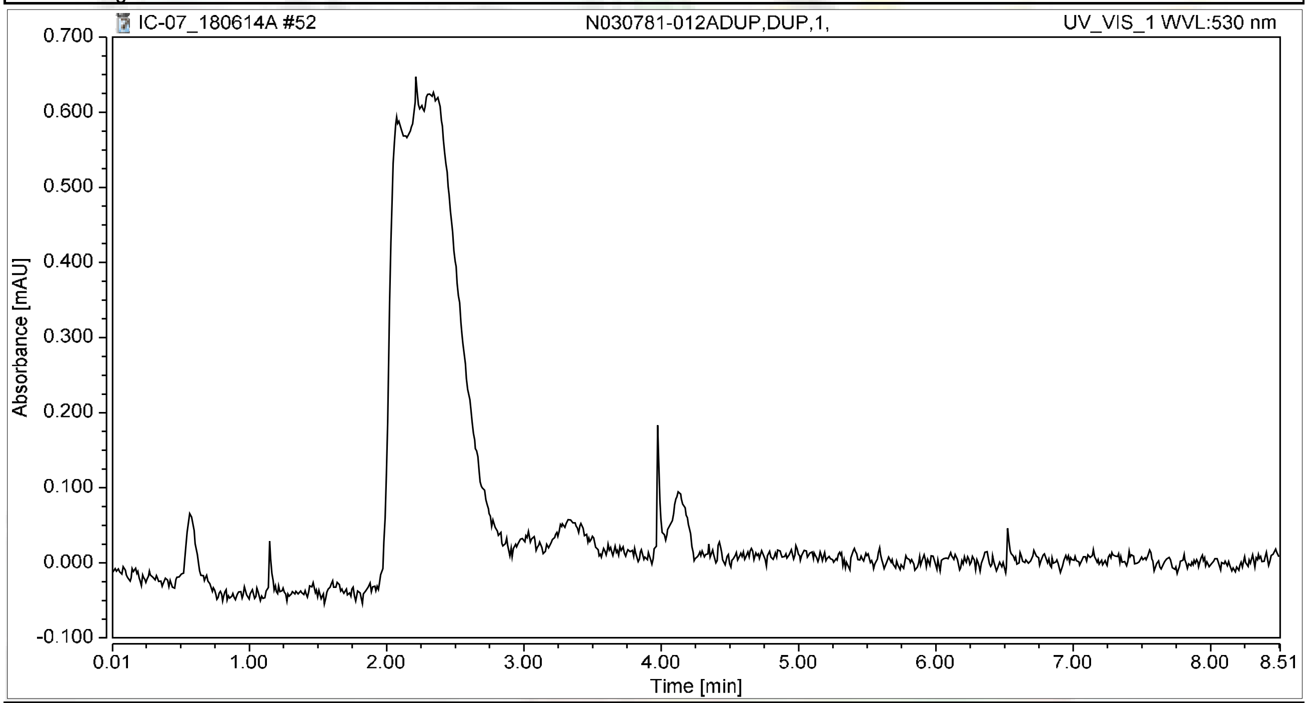
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.259	1.575	100.00	100.00	0.9946
Total:			**0.259**	**1.575**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N030781-012ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 15:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

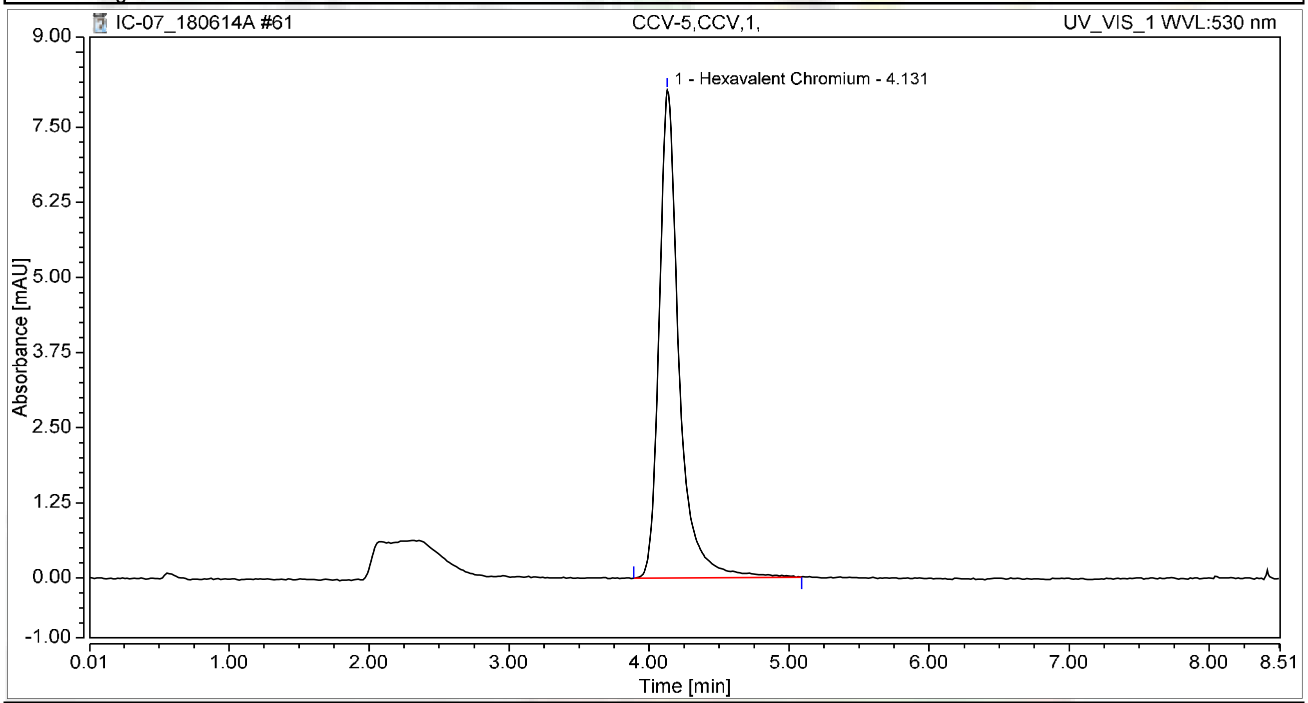
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 16:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

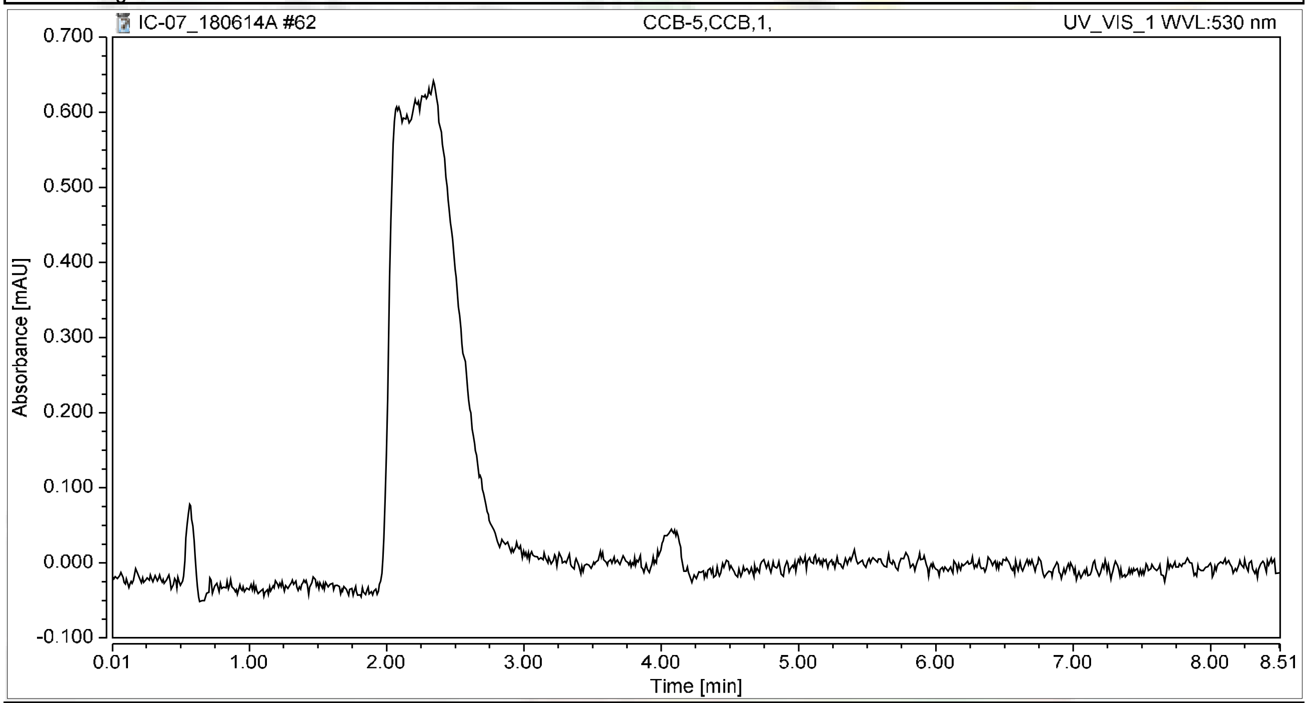
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.344	8.124	100.00	100.00	5.1656
Total:			**1.344**	**8.124**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**180521_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**14/Jun/18 17:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

WC ARCUS
REV 0
101215

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R124721 **Analyst:** QBM

ASSET #: N030781 **Date Analyzed:** 6/19/2018

Method: **4500_NO3**

	Ist Level Review			2nd Level Review		
Initial Calibration	**Y**	**N**	**N/A**	**Y**	**N**	**N/A**
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented		X				
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

%Rec of Nitrate/Nitrite as N in MSD failed, high bias. Possibly due to matrix interference.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer QBM Date: 06/27/2018

2nd Level Reviewer RJB 06/27/2018 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500N03F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, instrument calculated concentration
DF = dilution factor

For: **N030781-002E**

The concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N	=	0.4215	*	1
	=	0.4215	mg/L	

Reporting result in two significant figures,

Nitrate/Nitrite-N = 0.42 mg/L

RJB 06/27/2018

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	**Volume (µl)**	**Incubation time (sec)**
1	200	102
2	300	663
3	0	0

QC

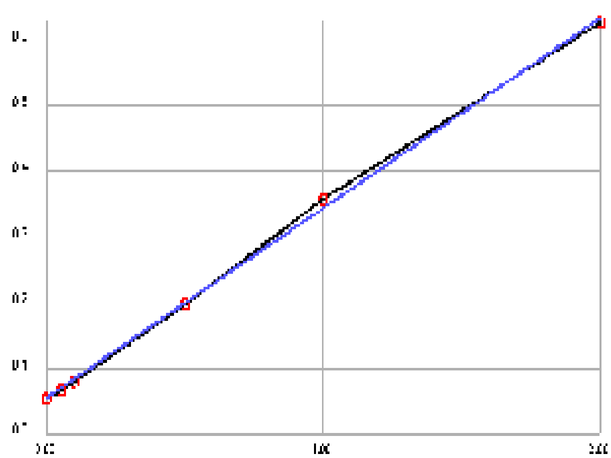
N.	**Value**	**Tolerance**
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2898x + 0.0542
Correlation	.999534

Calibrant	**Energy**	**Set**	**Conc**
1	0.0533	0.0000	-0.0032
2	0.0671	0.0500	0.0444
3	0.0798	0.1000	0.0882
4	0.1978	0.5000	0.4953
5	0.3576	1.0000	1.0467
6	0.6277	2.0000	1.9786



Notes:

06/27/2018

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV** SampType: **ICV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124721**
Client ID: **ICV** Batch ID: **R124721** TestNo: **SM4500-NO3** Analysis Date: **6/19/2018** SeqNo: **3057770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.469	0.050	0.5000	0	93.8	90	110				

Sample ID **CCV-1** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124721**
Client ID: **CCV** Batch ID: **R124721** TestNo: **SM4500-NO3** Analysis Date: **6/19/2018** SeqNo: **3057781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.497	0.050	0.5000	0	99.5	90	110				

Sample ID **CCV-2** SampType: **CCV** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124721**
Client ID: **CCV** Batch ID: **R124721** TestNo: **SM4500-NO3** Analysis Date: **6/19/2018** SeqNo: **3057792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.482	0.050	0.5000	0	96.3	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

INITIAL CALIBRATION AND CONTINUING CALIBRATION BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB** SampType: **ICB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124721**
Client ID: **ICB** Batch ID: **R124721** TestNo: **SM4500-NO3** Analysis Date: **6/19/2018** SeqNo: **3057771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124721**
Client ID: **CCB** Batch ID: **R124721** TestNo: **SM4500-NO3** Analysis Date: **6/19/2018** SeqNo: **3057782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2** SampType: **CCB** TestCode: **4500N03F_W** Units: **mg/L** Prep Date: RunNo: **124721**
Client ID: **CCB** Batch ID: **R124721** TestNo: **SM4500-NO3** Analysis Date: **6/19/2018** SeqNo: **3057793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 06-19-2018 12:54
Time end: 06-19-2018 15:10

			EPA 353.2 NO3 as N ppm	Flags	OD
1	<BLANK>	14:40:13	-0.0215		0.0480
2	<BLANK>	14:41:10	-0.0029		0.0534
3	<CAL1>	14:42:07	-0.0032	[0]	0.0533
4	<CAL2>	14:43:05	0.0444	[0.05]	0.0671
5	<CAL3>	14:44:03	0.0882	[0.1]	0.0798
6	<CAL4>	14:44:59	0.4953	[0.5]	0.1978
7	<CAL5>	14:45:57	1.0467	[1]	0.3576
8	<CAL6>	14:46:56	1.9786	[2]	0.6277
9	,BLANK,BLANK,1, NOT REPORTED	14:47:54	0.0458		0.0675
10	,ICV,ICV,1,	14:48:50	0.4691		0.1902
11	,ICB,ICB,1,	14:49:48	0.0130		0.0580
12	,MB-H2O,MBLK,1,	14:50:46	0.0013		0.0546
13	,LCS-H2O,LCS,1,	14:51:43	0.5205		0.2051
14	,N030781-002E,SAMP,1,	14:52:40	0.4215		0.1764
15	,N030781-003E,SAMP,1,	14:53:35	0.4105		0.1732
16	,N030781-004E,SAMP,1,	14:54:35	0.4222		0.1766
17	,N030781-004EDUP,DUP,1,	14:55:19	0.3811		0.1647
18	,N030781-005E,SAMP,1,	14:56:02	0.3753		0.1630
19	,N030781-005EMS,MS,1,	14:56:50	0.8528		0.3014
20	,N030781-005EMSD,MSD,1,	14:57:34	1.0108		0.3472
21	,BLANK, NOT REPORTED	14:58:22	0.0254		0.0616
22	,CCV-1,CCV,1,	14:59:05	0.4974		0.1984
23	,CCB-1,CCB,1,	14:59:53	0.0168		0.0591
24	,N030781-006E,SAMP,1,	15:00:36	0.3729		0.1623
25	,N030781-007E,SAMP,1,	15:01:20	0.3870		0.1664
26	,N030781-008E,SAMP,1,	15:02:08	0.3742		0.1627

RxB 06/27/2018

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N030781-009E,SAMP,1,	15:02:51	0.4015		0.1706
28	,N030781-010E,SAMP,1,	15:03:33	0.3573		0.1578
29	,N030781-011E,SAMP,1,	15:04:23	0.3566		0.1576
30	,N030781-012E,SAMP,1,	15:05:05	0.4015		0.1706
31	,N030781-013E,SAMP,1,	15:05:48	0.3491		0.1554
32	,N030781-014E,SAMP,1,	15:06:38	0.4063		0.1720
33	,BLANK, NOT REPORTED	15:07:20	0.0099		0.0571
34	,CCV-2,CCV,1,	15:08:03	0.4815		0.1938
35	,CCB-2,CCB,1,	15:08:51	0.0109		0.0574

RB 06/27/2018

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Reagent ID #
Ammonium Chloride reagent/Buffer: R180604D
Color reagent: R180604E
2% Copper Sulfate: R180604C
Ammonium Hydroxide: CINV-180521C

Date Analyzed: 6/19/2018
Time Analyzed: 12:54 PM
Analyzed By: QBM

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)	Comments
N030781-002E		8.14							
N030781-003E		7.52							
N030781-004E		7.48							
N030781-005E		7.78							
N030781-006E		8.61							
N030781-007E		7.13							
N030781-008E		7.92							
N030781-009E		7.62							
N030781-010E		6.23							
N030781-011E		8.45							
N030781-012E		7.24							
N030781-013E		8.04							
N030781-014E		7.53							

Advanced Technology Laboratories, Inc.
Book # 1

RB 06/27/2018

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Nitrate/Nitrite by Cadmium Reduction**
Method Number: SM4500NO3F
Analysis Date(s): 10/25,2017, 10/26/2017, 10/27/2017
Analyst/Technician: Quennie B. Manimtim

Matrix: **Water**
Unit: mg/L
Spike Conc: 0.05 mg/L

Analyte	#1	#2	#3	#4	#5	#6	#7	Ave	SD	$t_{(n-1)}$ value	MDL	PQL
Nitrate/Nitrite as N	0.0573	0.0562	0.0500	0.0730	0.0698	0.0637	0.0564	0.0609	0.0082	3.143	0.0259	0.05
Method Blank												
Nitrate/Nitrite as N	0.0160	0.0067	0.0064	0.0204	0.0173	0.0036	0.0083	0.0112	0.0065	3.143	0.0317	0.05

MDL: **0.0317** **mg/L**

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68463
ASSET #: N030781

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 6/21/2018

Method:

[X] EPA 6010B / 200.7 DISSOLVED
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 6/26/18

2nd Level Reviewer Nancy 6/26/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N030781-002B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.00111 * 1 * (25/25) * 1000

Iron , ug/L = 1.11

Reporting results in two significant figures,

Iron , ug/L = 1

Since PQL of Iron , in ug/L = 20

Iron , ug/L = ND

% RSD SUMMARY

RSD SUMMARY: 180621A

Instrument ID: ICP-02

	Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
	CalBlk	IBLK	1	Fe	0	12.24	15	PASS
	Standard1	ICAL	1	Fe	0.02	2.8	15	PASS
	Standard2	ICAL	1	Fe	0.05	2.6	15	PASS
	Standard3	ICAL	1	Fe	2	0.78	15	PASS
	Standard4	ICAL	1	Fe	5	1.13	15	PASS
	Standard5	ICAL	1	Fe	7.5	0.079	15	PASS
	Standard6	ICAL	1	Fe	10	0.031	15	PASS
	Standard7	ICAL	1	Fe	20	0.16	15	PASS
	ICV	ICV	1	Fe	10.028	0.3	15	PASS
	ICB	ICB	1	Fe	0.00097	60.6	15	<PQL
	LLICV1	CCV1	1	Fe	0.02	5.15	20	PASS
	ICSA1	ICSA	1	Fe	189.31	0.56	15	PASS
	ICSAB1	ICSAB	1	Fe	187.01	1.0072	15	PASS
	CCV1	CCV	1	Fe	7.22	18.66	15	NR!
	CCB1	CCB	1	Fe	-0.0005	96.74	15	<PQL
	CCV1	CCV	1	Fe	10.19	0.2	15	PASS
	CCB1	CCB	1	Fe	-0.00049	145.61	15	<PQL
	CCV2	CCV	1	Fe	10.21	0.19	15	PASS
	CCB2	CCB	1	Fe	0.00007	1275.87	15	<PQL
	CCV3	CCV	1	Fe	10.25	0.21	15	PASS
	CCB3	CCB	1	Fe	-0.00007	653.23	15	<PQL
	MB-68463	MBLK	1	Fe	-0.0019	16.46	15	<PQL
NR	LCS-68463	LCS	1	Fe	0.12	1.6	15	PASS
	N030781-002B	SAMP	1	Fe	0.0011	55.13	15	<PQL
	CCV4	CCV	1	Fe	10.27	0.13	15	PASS
	CCB4	CCB	1	Fe	-0.00041	104.028	15	<PQL
	N030781-002B	SAMP	5	Fe	-0.00074	39.94	15	<PQL
	N030781-002B-PS	PS	1	Fe	0.11	1.2	15	PASS
	N030781-002B-MS	MS	1	Fe	0.12	0.25	15	PASS
	N030781-002B-MSD	MSD	1	Fe	0.12	0.79	15	PASS
	N030781-003B	SAMP	1	Fe	0.0046	5.91	15	PASS
	N030781-004B	SAMP	1	Fe	0.0061	1.58	15	PASS
	N030781-005B	SAMP	1	Fe	0.002	19.089	15	<PQL
	N030781-006B	SAMP	1	Fe	0.0026	18.99	15	<PQL
	N030781-007B	SAMP	1	Fe	0.015	3.58	15	PASS
	N030781-008B	SAMP	1	Fe	0.0069	9.75	15	PASS
	CCV5	CCV	1	Fe	10.28	0.26	15	PASS
	CCB5	CCB	1	Fe	-0.00047	84.73	15	<PQL
	N030781-009B	SAMP	1	Fe	0.012	3.17	15	PASS
	N030781-010B	SAMP	1	Fe	0.0064	6.12	15	PASS
	N030781-011B	SAMP	1	Fe	0.0074	6.33	15	PASS
	N030781-012B	SAMP	1	Fe	0.0016	28.41	15	<PQL

RSD SUMMARY: 180621A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N030781-013B	SAMP	1	Fe	0.0015	29.85	15	<PQL
N030781-014B	SAMP	1	Fe	0.00081	169.29	15	<PQL
LCS-68463	LCS	1	Fe	0.11	0.49	15	PASS
CCV6	CCV	1	Fe	10.29	0.097	15	PASS
CCB6	CCB	1	Fe	-0.00088	222.18	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	0.32	20	PASS
ICSA2	ICSA	1	Fe	193.06	0.78	15	PASS
ICSAB2	ICSAB	1	Fe	189.4	0.59	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180621A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-180420A,0.5<50mL
Standard2	MWST-180420C
Standard3	MWST-180420E,5<50mL
Standard4	MWST-180420E,12.5<50mL
Standard5	MWST-180420E,15<40mL
Standard6	MWST-180420E,25<50mL
Standard7	MWST-180420E
ICV	MWST-180430E
CCV	MWST-180420E,25<50mL
ICSA/ICSAB	MWST-180430F/G
Int. Std. (Y)	MSST-180420B/A
PS Spike	MWST-180108A/ -180430G/ -180601A/ -180517A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	06/21/2018	07:50:49 AM
2	Standard1	ICAL	1	06/21/2018	07:55:39 AM
3	Standard2	ICAL	1	06/21/2018	08:00:27 AM
11	Standard3	ICAL	1	06/21/2018	08:05:45 AM
12	Standard4	ICAL	1	06/21/2018	08:11:07 AM
6	Standard5	ICAL	1	06/21/2018	08:16:30 AM
7	Standard6	ICAL	1	06/21/2018	08:21:22 AM
8	Standard7	ICAL	1	06/21/2018	08:26:15 AM
9	ICV	ICV	1	06/21/2018	08:30:32 AM
1	ICB	ICB	1	06/21/2018	08:37:27 AM
2	LLICV1	CCV1	1	06/21/2018	08:42:17 AM
4	ICSA1	ICSA	1	06/21/2018	08:47:05 AM
5	ICSAB1	ICSAB	1	06/21/2018	08:54:38 AM
38	MB-68437	MBLK	1	06/21/2018	09:01:41 AM
39	LCS-68437	LCS	1	06/21/2018	09:06:30 AM
40	N030762-001C	SAMP	1	06/21/2018	09:11:51 AM
41	N030762-001C	SAMP	5	06/21/2018	09:17:12 AM
42	N030762-001C-PS	PS	1	06/21/2018	09:22:31 AM
43	N030762-001C-MS	MS	1	06/21/2018	09:27:51 AM
44	N030762-001C-MSD	MSD	1	06/21/2018	09:33:13 AM
45	N030762-002C	SAMP	1	06/21/2018	09:38:33 AM
46	N030762-003C	SAMP	1	06/21/2018	09:43:54 AM
47	N030762-005C	SAMP	1	06/21/2018	09:49:16 AM
7	CCV1	CCV	1	06/21/2018	09:54:37 AM
1	CCB1	CCB	1	06/21/2018	10:01:26 AM
7	CCV1	CCV	1	06/21/2018	10:11:11 AM
1	CCB1	CCB	1	06/21/2018	10:18:05 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
48	N030762-006C	SAMP	1	06/21/2018	10:22:52 AM
49	N030762-007C	SAMP	1	06/21/2018	10:28:15 AM
50	N030762-008C	SAMP	1	06/21/2018	10:33:37 AM
51	N030762-009C	SAMP	1	06/21/2018	10:38:58 AM
52	N030762-010C	SAMP	1	06/21/2018	10:44:19 AM
53	N030762-011C	SAMP	1	06/21/2018	10:49:39 AM
54	N030762-012C	SAMP	1	06/21/2018	10:55:00 AM
55	N030762-013C	SAMP	1	06/21/2018	11:00:21 AM
56	MB-68462	MBLK	1	06/21/2018	11:05:42 AM
57	LCS-68462	LCS	1	06/21/2018	11:10:33 AM
7	CCV2	CCV	1	06/21/2018	11:15:53 AM
1	CCB2	CCB	1	06/21/2018	11:22:47 AM
58	N030781-002C	SAMP	1	06/21/2018	11:27:36 AM
59	N030781-002C	SAMP	5	06/21/2018	11:32:57 AM
60	N030781-002C-PS	PS	1	06/21/2018	11:38:18 AM
61	N030781-002C-MS	MS	1	06/21/2018	11:43:40 AM
62	N030781-002C-MSD	MSD	1	06/21/2018	11:49:02 AM
63	N030781-003C	SAMP	1	06/21/2018	11:53:44 AM
64	N030781-004C	SAMP	1	06/21/2018	11:59:06 AM
65	N030781-005C	SAMP	1	06/21/2018	12:04:27 PM
66	N030781-006C	SAMP	1	06/21/2018	12:09:49 PM
67	N030781-007C	SAMP	1	06/21/2018	12:15:10 PM
7	CCV3	CCV	1	06/21/2018	12:20:31 PM
1	CCB3	CCB	1	06/21/2018	12:27:24 PM
68	N030781-008C	SAMP	1	06/21/2018	12:32:11 PM
69	N030781-009C	SAMP	1	06/21/2018	12:37:33 PM
70	N030781-010C	SAMP	1	06/21/2018	12:42:54 PM
71	N030781-011C	SAMP	1	06/21/2018	12:48:16 PM
72	N030781-012C	SAMP	1	06/21/2018	12:53:37 PM
73	N030781-013C	SAMP	1	06/21/2018	12:58:59 PM
74	N030781-014C	SAMP	1	06/21/2018	01:04:22 PM
75	MB-68463	MBLK	1	06/21/2018	01:09:44 PM
76	LCS-68463	LCS	1	06/21/2018	01:14:34 PM
77	N030781-002B	SAMP	1	06/21/2018	01:19:55 PM
7	CCV4	CCV	1	06/21/2018	01:25:17 PM
1	CCB4	CCB	1	06/21/2018	01:32:11 PM
78	N030781-002B	SAMP	5	06/21/2018	01:37:00 PM
79	N030781-002B-PS	PS	1	06/21/2018	01:42:21 PM
80	N030781-002B-MS	MS	1	06/21/2018	01:47:43 PM
81	N030781-002B-MSD	MSD	1	06/21/2018	01:53:05 PM
82	N030781-003B	SAMP	1	06/21/2018	01:58:28 PM
83	N030781-004B	SAMP	1	06/21/2018	02:03:50 PM
84	N030781-005B	SAMP	1	06/21/2018	02:09:12 PM
85	N030781-006B	SAMP	1	06/21/2018	02:14:34 PM
86	N030781-007B	SAMP	1	06/21/2018	02:19:57 PM
87	N030781-008B	SAMP	1	06/21/2018	02:25:19 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV5	CCV	1	06/21/2018	02:30:41 PM
1	CCB5	CCB	1	06/21/2018	02:37:34 PM
88	N030781-009B	SAMP	1	06/21/2018	02:42:21 PM
89	N030781-010B	SAMP	1	06/21/2018	02:47:43 PM
90	N030781-011B	SAMP	1	06/21/2018	02:53:05 PM
91	N030781-012B	SAMP	1	06/21/2018	02:58:27 PM
92	N030781-013B	SAMP	1	06/21/2018	03:03:49 PM
93	N030781-014B	SAMP	1	06/21/2018	03:09:12 PM
76	LCS-68463	LCS	1	06/21/2018	03:14:34 PM
7	CCV6	CCV	1	06/21/2018	03:19:56 PM
1	CCB6	CCB	1	06/21/2018	03:26:50 PM
2	LLCCV1	CCV2	1	06/21/2018	03:31:39 PM
4	ICSA2	ICSA	1	06/21/2018	03:36:27 PM
5	ICSAB2	ICSAB	1	06/21/2018	03:44:01 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/14/2018 12:50:07**
Prep End Date: **6/14/2018 5:00:00 P**
Prep Batch **68463** Prep Code: **3010_W_DISS**

Reviewed/ Date: 6/26/2018
Initials/ Date: 6/26/2018
Technician: **Claire Ignacio**

Prep Factor Units: **mL / mL** Temp. (°C): **94.8** Location: **02-1**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68463	Aqueous		25	☐	0	0	25	1.000		
MB-68463	Aqueous		25	☐	0	0	25	1.000		
N030781-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-011B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9884	HYDROCHLORIC ACID
10019	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-180430F	ICP Solution B	LCS,MS,MSD	0.5
MWST-180517E	ICP Solution A	LCS,MS,MSD	0.5
MWST-180601B	ICP Solution C	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/14/2018 12:50:07**
Prep End Date: **6/14/2018 5:00:00 P**
Prep Batch **68463** Prep Code: **3010_W_DISS**

Reviewed/ Date: 6/26/2018
Initials/ Date: 6/26/2018
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-1**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N030781-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-014B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9884	HYDROCHLORIC ACID
10019	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-180430F	ICP Solution B	LCS,MS,MSD	0.5
MWST-180517E	ICP Solution A	LCS,MS,MSD	0.5
MWST-180601B	ICP Solution C	LCS,MS,MSD	0.5

INITIAL CALIBRATION
DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180621A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	06/21/2018	07:50:49 AM	Fe	273.953	-84	0.00	mg/L	
Standard1	06/21/2018	07:55:39 AM	Fe	273.953	623	0.0200	mg/L	
Standard2	06/21/2018	08:00:27 AM	Fe	273.953	1922	0.050	mg/L	
Standard3	06/21/2018	08:05:45 AM	Fe	273.953	61622	2.000	mg/L	
Standard4	06/21/2018	08:11:07 AM	Fe	273.953	157143	5.000	mg/L	
Standard5	06/21/2018	08:16:30 AM	Fe	273.953	228060	7.500	mg/L	
Standard6	06/21/2018	08:21:22 AM	Fe	273.953	303391	10.000	mg/L	
Standard7	06/21/2018	08:26:15 AM	Fe	273.953	601412	20.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10027.722	20	10000	0	100	90	110				

Sample ID **LLICV1** SampType: **CCV1** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.937	20	20.00	0	99.7	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10184.597	20	10000	0	102	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10206.070	20	10000	0	102	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10251.284	20	10000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061186**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10273.202	20	10000	0	103	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061198**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10284.394	20	10000	0	103	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10288.254	20	10000	0	103	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.230	20	20.00	0	101	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF
INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.974	20									

Sample ID **CCB1** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.48647	20									

Sample ID **CCB2** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.072	20									

Sample ID **CCB3** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.074258	20									

Sample ID **CCB4** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061187**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.409123	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061199**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.474911	20									

Sample ID **CCB6** SampType: **CCB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.879433	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

ASSET Laboratories

Date: *21-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICSA** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	451904.283	50	500000	0	90.4	80	120				
Calcium	449598.883	500	500000	0	89.9	80	120				
Iron	189305.942	20	200000	0	94.7	80	120				
Magnesium	429657.143	100	500000	0	85.9	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICSAB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	557988.502	50	500000	0	112	80	120				
Calcium	526744.498	500	500000	0	105	80	120				
Iron	187008.492	20	200000	0	93.5	80	120				
Magnesium	523968.811	100	500000	0	105	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICSA** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061210**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	460715.703	50	500000	0	92.1	80	120				
Calcium	454645.907	500	500000	0	90.9	80	120				
Iron	193063.036	20	200000	0	96.5	80	120				
Magnesium	437664.587	100	500000	0	87.5	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICSAB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061211**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	567664.628	50	500000	0	114	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICSAB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061211**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	530707.516	500	500000	0	106	80	120				
Iron	189402.125	20	200000	0	94.7	80	120				
Magnesium	529015.944	100	500000	0	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180621A

Instrument ID: ICP-02

	Sample Name	Type	DF	Yttrium, 1.0 mg/L			
				Reported Conc	%REC	Criteria	Comment
	CalBlk	IBLK	1	1	100	65-125	PASS
	Standard1	ICAL	1	1.003	100.3	65-125	PASS
	Standard2	ICAL	1	1.079	107.85	65-125	PASS
	Standard3	ICAL	1	1.036	103.6	65-125	PASS
	Standard4	ICAL	1	1.031	103.14	65-125	PASS
	Standard5	ICAL	1	1.062	106.19	65-125	PASS
	Standard6	ICAL	1	1.021	102.11	65-125	PASS
	Standard7	ICAL	1	1.0039	100.39	65-125	PASS
	ICV	ICV	1	1.03	103.03	65-125	PASS
	ICB	ICB	1	1.0035	100.35	65-125	PASS
	LLICV1	CCV1	1	1.0056	100.56	65-125	PASS
	ICSA1	ICSA	1	1.19	119.45	65-125	PASS
	ICSAB1	ICSAB	1	0.86	85.51	65-125	PASS
	CCV1	CCV	1	0.025	2.53	65-125	NR!
	CCB1	CCB	1	1	99.51	65-125	PASS
	CCV1	CCV	1	1	99.97	65-125	PASS
	CCB1	CCB	1	1	99.94	65-125	PASS
	CCV2	CCV	1	0.99	99.49	65-125	PASS
	CCB2	CCB	1	1	99.78	65-125	PASS
	CCV3	CCV	1	0.99	98.97	65-125	PASS
	CCB3	CCB	1	1	99.52	65-125	PASS
	MB-68463	MBLK	1	0.99	99.11	65-125	PASS
NR	LCS-68463	LCS	1	1.043	104.29	65-125	PASS
	N030781-002B	SAMP	1	1.019	101.87	65-125	PASS
	CCV4	CCV	1	0.99	99.1	65-125	PASS
	CCB4	CCB	1	1	99.53	65-125	PASS
	N030781-002B	SAMP	5	0.99	99.12	65-125	PASS
	N030781-002B-PS	PS	1	1.018	101.79	65-125	PASS
	N030781-002B-MS	MS	1	1.03	103.01	65-125	PASS
	N030781-002B-MSD	MSD	1	1.028	102.76	65-125	PASS
	N030781-003B	SAMP	1	1.03	102.99	65-125	PASS
	N030781-004B	SAMP	1	1.038	103.8	65-125	PASS
	N030781-005B	SAMP	1	1.051	105.14	65-125	PASS
	N030781-006B	SAMP	1	1.034	103.4	65-125	PASS
	N030781-007B	SAMP	1	1.033	103.31	65-125	PASS
	N030781-008B	SAMP	1	1.055	105.49	65-125	PASS
	CCV5	CCV	1	0.99	99.31	65-125	PASS
	CCB5	CCB	1	1	99.71	65-125	PASS
	N030781-009B	SAMP	1	1.022	102.19	65-125	PASS
	N030781-010B	SAMP	1	1.021	102.11	65-125	PASS
	N030781-011B	SAMP	1	1.047	104.67	65-125	PASS

INTERNAL STANDARD: 180621A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N030781-012B	SAMP	1	1.037	103.69	65-125	PASS
N030781-013B	SAMP	1	1.042	104.22	65-125	PASS
N030781-014B	SAMP	1	1.056	105.58	65-125	PASS
LCS-68463	LCS	1	1.041	104.12	65-125	PASS
CCV6	CCV	1	1	99.81	65-125	PASS
CCB6	CCB	1	0.89	89.016	65-125	PASS
LLCCV1	CCV2	1	1	99.78	65-125	PASS
ICSA2	ICSA	1	1.2	120.26	65-125	PASS
ICSAB2	ICSAB	1	0.86	86.45	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water **Dilution Test Summary**

Work Order No.: N030781
Test Method: EPA 6010B
Analysis Date: 6/21/2018

Matrix: Groundwater
Batch No.: 68463

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030781-002B DT 5X	Iron	ug/L	0	NA	0		10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N030781-002B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**		Prep Date:			RunNo: **125775**		
Client ID: **ZZZZZZ**	Batch ID: **68463**	TestNo: **EPA 6010B**	**EPA 3010A**		Analysis Date: **6/21/2018**			SeqNo: **3061189**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	105.937	20	100.0	0	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68462
ASSET #: N030781
Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 6/21/2018

Method:
[X] EPA 6010B / 200.7 TOTAL
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other ________________

	Ist Level Review			2nd Level Review		
Initial Calibration and Initial Calibration Verification	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			X
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			~~X~~	X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X	X		~~X~~
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

RSD of Fe in sample N030781-010C failed at 15.35%. CAR 2420

	Yes	No	N/A
1. All assigned sample(s) analyzed	|		
2. Matrix / units correct	|		
3. Does batch meet QC requirements?	|		
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)	|		
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 6/26/18

2nd Level Reviewer [signature] 6/26/2018 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N030781-002C** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.02676 * 1 * (25/25) * 1000

Iron , ug/L = 26.76

Reporting results in two significant figures,

Iron , ug/L = 27

% RSD SUMMARY

RSD SUMMARY: 180621A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	12.24	15	PASS
Standard1	ICAL	1	Fe	0.02	2.8	15	PASS
Standard2	ICAL	1	Fe	0.05	2.6	15	PASS
Standard3	ICAL	1	Fe	2	0.78	15	PASS
Standard4	ICAL	1	Fe	5	1.13	15	PASS
Standard5	ICAL	1	Fe	7.5	0.079	15	PASS
Standard6	ICAL	1	Fe	10	0.031	15	PASS
Standard7	ICAL	1	Fe	20	0.16	15	PASS
ICV	ICV	1	Fe	10.028	0.3	15	PASS
ICB	ICB	1	Fe	0.00097	60.6	15	<PQL
LLICV1	CCV1	1	Fe	0.02	5.15	20	PASS
ICSA1	ICSA	1	Fe	189.31	0.56	15	PASS
ICSAB1	ICSAB	1	Fe	187.01	1.0072	15	PASS
CCV1	CCV	1	Fe	7.22	18.66	15	NR!
CCB1	CCB	1	Fe	-0.0005	96.74	15	<PQL
CCV1	CCV	1	Fe	10.19	0.2	15	PASS
CCB1	CCB	1	Fe	-0.00049	145.61	15	<PQL
MB-68462	MBLK	1	Fe	-0.001	47.88	15	<PQL
LCS-68462	LCS	1	Fe	0.11	1.34	15	PASS
CCV2	CCV	1	Fe	10.21	0.19	15	PASS
CCB2	CCB	1	Fe	0.00007	1275.87	15	<PQL
N030781-002C	SAMP	1	Fe	0.027	5.77	15	PASS
N030781-002C	SAMP	5	Fe	0.0046	9.23	15	PASS
N030781-002C-PS	PS	1	Fe	0.12	1.19	15	PASS
N030781-002C-MS	MS	1	Fe	0.13	0.28	15	PASS
N030781-002C-MSD	MSD	1	Fe	0.13	0.2	15	PASS
N030781-003C	SAMP	1	Fe	0.024	1.39	15	PASS
N030781-004C	SAMP	1	Fe	0.023	3.089	15	PASS
N030781-005C	SAMP	1	Fe	0.022	2.69	15	PASS
N030781-006C	SAMP	1	Fe	0.019	3.52	15	PASS
N030781-007C	SAMP	1	Fe	0.2	0.85	15	PASS
CCV3	CCV	1	Fe	10.25	0.21	15	PASS
CCB3	CCB	1	Fe	-0.00007	653.23	15	<PQL
N030781-008C	SAMP	1	Fe	0.17	4.039	15	PASS
N030781-009C	SAMP	1	Fe	0.19	0.79	15	PASS
N030781-010C	SAMP	1	Fe	0.022	15.35	15	NR!
N030781-011C	SAMP	1	Fe	0.017	4.76	15	PASS
N030781-012C	SAMP	1	Fe	0.019	3.22	15	PASS
N030781-013C	SAMP	1	Fe	0.019	1.21	15	PASS
N030781-014C	SAMP	1	Fe	0.024	4.68	15	PASS
CCV4	CCV	1	Fe	10.27	0.13	15	PASS
CCB4	CCB	1	Fe	-0.00041	104.028	15	<PQL

RSD SUMMARY: 180621A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV5	CCV	1	Fe	10.28	0.26	15	PASS
CCB5	CCB	1	Fe	-0.00047	84.73	15	<PQL
CCV6	CCV	1	Fe	10.29	0.097	15	PASS
CCB6	CCB	1	Fe	-0.00088	222.18	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	0.32	20	PASS
ICSA2	ICSA	1	Fe	193.06	0.78	15	PASS
ICSAB2	ICSAB	1	Fe	189.4	0.59	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 180621A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-180420A,0.5<50mL
Standard2	MWST-180420C
Standard3	MWST-180420E,5<50mL
Standard4	MWST-180420E,12.5<50mL
Standard5	MWST-180420E,15<40mL
Standard6	MWST-180420E,25<50mL
Standard7	MWST-180420E
ICV	MWST-180430E
CCV	MWST-180420E,25<50mL
ICSA/ICSAB	MWST-180430F/G
Int. Std. (Y)	MSST-180420B/A
PS Spike	MWST-180108A/ -180430G/ -180601A/ -180517A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	06/21/2018	07:50:49 AM
2	Standard1	ICAL	1	06/21/2018	07:55:39 AM
3	Standard2	ICAL	1	06/21/2018	08:00:27 AM
11	Standard3	ICAL	1	06/21/2018	08:05:45 AM
12	Standard4	ICAL	1	06/21/2018	08:11:07 AM
6	Standard5	ICAL	1	06/21/2018	08:16:30 AM
7	Standard6	ICAL	1	06/21/2018	08:21:22 AM
8	Standard7	ICAL	1	06/21/2018	08:26:15 AM
9	ICV	ICV	1	06/21/2018	08:30:32 AM
1	ICB	ICB	1	06/21/2018	08:37:27 AM
2	LLICV1	CCV1	1	06/21/2018	08:42:17 AM
4	ICSA1	ICSA	1	06/21/2018	08:47:05 AM
5	ICSAB1	ICSAB	1	06/21/2018	08:54:38 AM
38	MB-68437	MBLK	1	06/21/2018	09:01:41 AM
39	LCS-68437	LCS	1	06/21/2018	09:06:30 AM
40	N030762-001C	SAMP	1	06/21/2018	09:11:51 AM
41	N030762-001C	SAMP	5	06/21/2018	09:17:12 AM
42	N030762-001C-PS	PS	1	06/21/2018	09:22:31 AM
43	N030762-001C-MS	MS	1	06/21/2018	09:27:51 AM
44	N030762-001C-MSD	MSD	1	06/21/2018	09:33:13 AM
45	N030762-002C	SAMP	1	06/21/2018	09:38:33 AM
46	N030762-003C	SAMP	1	06/21/2018	09:43:54 AM
47	N030762-005C	SAMP	1	06/21/2018	09:49:16 AM
7	CCV1	CCV	1	06/21/2018	09:54:37 AM
1	CCB1	CCB	1	06/21/2018	10:01:26 AM
7	CCV1	CCV	1	06/21/2018	10:11:11 AM
1	CCB1	CCB	1	06/21/2018	10:18:05 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
48	N030762-006C	SAMP	1	06/21/2018	10:22:52 AM
49	N030762-007C	SAMP	1	06/21/2018	10:28:15 AM
50	N030762-008C	SAMP	1	06/21/2018	10:33:37 AM
51	N030762-009C	SAMP	1	06/21/2018	10:38:58 AM
52	N030762-010C	SAMP	1	06/21/2018	10:44:19 AM
53	N030762-011C	SAMP	1	06/21/2018	10:49:39 AM
54	N030762-012C	SAMP	1	06/21/2018	10:55:00 AM
55	N030762-013C	SAMP	1	06/21/2018	11:00:21 AM
56	MB-68462	MBLK	1	06/21/2018	11:05:42 AM
57	LCS-68462	LCS	1	06/21/2018	11:10:33 AM
7	CCV2	CCV	1	06/21/2018	11:15:53 AM
1	CCB2	CCB	1	06/21/2018	11:22:47 AM
58	N030781-002C	SAMP	1	06/21/2018	11:27:36 AM
59	N030781-002C	SAMP	5	06/21/2018	11:32:57 AM
60	N030781-002C-PS	PS	1	06/21/2018	11:38:18 AM
61	N030781-002C-MS	MS	1	06/21/2018	11:43:40 AM
62	N030781-002C-MSD	MSD	1	06/21/2018	11:49:02 AM
63	N030781-003C	SAMP	1	06/21/2018	11:53:44 AM
64	N030781-004C	SAMP	1	06/21/2018	11:59:06 AM
65	N030781-005C	SAMP	1	06/21/2018	12:04:27 PM
66	N030781-006C	SAMP	1	06/21/2018	12:09:49 PM
67	N030781-007C	SAMP	1	06/21/2018	12:15:10 PM
7	CCV3	CCV	1	06/21/2018	12:20:31 PM
1	CCB3	CCB	1	06/21/2018	12:27:24 PM
68	N030781-008C	SAMP	1	06/21/2018	12:32:11 PM
69	N030781-009C	SAMP	1	06/21/2018	12:37:33 PM
70	N030781-010C	SAMP	1	06/21/2018	12:42:54 PM
71	N030781-011C	SAMP	1	06/21/2018	12:48:16 PM
72	N030781-012C	SAMP	1	06/21/2018	12:53:37 PM
73	N030781-013C	SAMP	1	06/21/2018	12:58:59 PM
74	N030781-014C	SAMP	1	06/21/2018	01:04:22 PM
75	MB-68463	MBLK	1	06/21/2018	01:09:44 PM
76	LCS-68463	LCS	1	06/21/2018	01:14:34 PM
77	N030781-002B	SAMP	1	06/21/2018	01:19:55 PM
7	CCV4	CCV	1	06/21/2018	01:25:17 PM
1	CCB4	CCB	1	06/21/2018	01:32:11 PM
78	N030781-002B	SAMP	5	06/21/2018	01:37:00 PM
79	N030781-002B-PS	PS	1	06/21/2018	01:42:21 PM
80	N030781-002B-MS	MS	1	06/21/2018	01:47:43 PM
81	N030781-002B-MSD	MSD	1	06/21/2018	01:53:05 PM
82	N030781-003B	SAMP	1	06/21/2018	01:58:28 PM
83	N030781-004B	SAMP	1	06/21/2018	02:03:50 PM
84	N030781-005B	SAMP	1	06/21/2018	02:09:12 PM
85	N030781-006B	SAMP	1	06/21/2018	02:14:34 PM
86	N030781-007B	SAMP	1	06/21/2018	02:19:57 PM
87	N030781-008B	SAMP	1	06/21/2018	02:25:19 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
7	CCV5	CCV	1	06/21/2018	02:30:41 PM
1	CCB5	CCB	1	06/21/2018	02:37:34 PM
88	N030781-009B	SAMP	1	06/21/2018	02:42:21 PM
89	N030781-010B	SAMP	1	06/21/2018	02:47:43 PM
90	N030781-011B	SAMP	1	06/21/2018	02:53:05 PM
91	N030781-012B	SAMP	1	06/21/2018	02:58:27 PM
92	N030781-013B	SAMP	1	06/21/2018	03:03:49 PM
93	N030781-014B	SAMP	1	06/21/2018	03:09:12 PM
76	LCS-68463	LCS	1	06/21/2018	03:14:34 PM
7	CCV6	CCV	1	06/21/2018	03:19:56 PM
1	CCB6	CCB	1	06/21/2018	03:26:50 PM
2	LLCCV1	CCV2	1	06/21/2018	03:31:39 PM
4	ICSA2	ICSA	1	06/21/2018	03:36:27 PM
5	ICSAB2	ICSAB	1	06/21/2018	03:44:01 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/14/2018 12:49:35**
Prep End Date: **6/14/2018 5:00:00 P**
Prep Batch **68462** Prep Code: **3010_W**

Reviewed/ Date: 6/26/2018
Initials/ Date: 6/26/2018
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.7**	**02-20**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68462	Aqueous		25	☐	0	0	25	1.000		
MB-68462	Aqueous		25	☐	0	0	25	1.000		
N030781-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-010C	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-011C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9884	HYDROCHLORIC ACID
10019	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-180430F	ICP Solution B	LCS,MS,MSD	0.5
MWST-180517E	ICP Solution A	LCS,MS,MSD	0.5
MWST-180601B	ICP Solution C	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/14/2018 12:49:35**
Prep End Date: **6/14/2018 5:00:00 P**
Prep Batch **68462** Prep Code: **3010_W**

Reviewed/ Date: 6/26/2018
Initials/ Date: 6/26/2018
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	94.7	02-20

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N030781-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-013C	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-014C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9884	HYDROCHLORIC ACID
10019	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-180430F	ICP Solution B	LCS,MS,MSD	0.5
MWST-180517E	ICP Solution A	LCS,MS,MSD	0.5
MWST-180601B	ICP Solution C	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180621A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	06/21/2018	07:50:49 AM	Fe	273.953	-84	0.00	mg/L	
Standard1	06/21/2018	07:55:39 AM	Fe	273.953	623	0.0200	mg/L	
Standard2	06/21/2018	08:00:27 AM	Fe	273.953	1922	0.050	mg/L	
Standard3	06/21/2018	08:05:45 AM	Fe	273.953	61622	2.000	mg/L	
Standard4	06/21/2018	08:11:07 AM	Fe	273.953	157143	5.000	mg/L	
Standard5	06/21/2018	08:16:30 AM	Fe	273.953	228060	7.500	mg/L	
Standard6	06/21/2018	08:21:22 AM	Fe	273.953	303391	10.000	mg/L	
Standard7	06/21/2018	08:26:15 AM	Fe	273.953	601412	20.000	mg/L	1.0000

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10027.722	20	10000	0	100	90	110				

Sample ID **LLICV1** SampType: **CCV1** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.937	20	20.00	0	99.7	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060992**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10184.597	20	10000	0	102	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061004**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10206.070	20	10000	0	102	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10251.284	20	10000	0	103	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV4** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10273.202	20	10000	0	103	90	110				

Sample ID **CCV5** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10284.394	20	10000	0	103	90	110				

Sample ID **CCV6** SampType: **CCV** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCV** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061049**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10288.254	20	10000	0	103	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ZZZZZZ** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061051**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.230	20	20.00	0	101	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB** SampType: **ICB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.974	20									

Sample ID **CCB1** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060993**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.48647	20									

Sample ID **CCB2** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.072	20									

Sample ID **CCB3** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.074258	20									

Sample ID **CCB4** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.409123	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCB5** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061041**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.474911	20									

Sample ID **CCB6** SampType: **CCB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **CCB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.879433	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICSA** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060978**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	451904.283	50	500000	0	90.4	80	120				
Calcium	449598.883	500	500000	0	89.9	80	120				
Iron	189305.942	20	200000	0	94.7	80	120				
Magnesium	429657.143	100	500000	0	85.9	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICSAB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3060979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	557988.502	50	500000	0	112	80	120				
Calcium	526744.498	500	500000	0	105	80	120				
Iron	187008.492	20	200000	0	93.5	80	120				
Magnesium	523968.811	100	500000	0	105	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICSA** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	460715.703	50	500000	0	92.1	80	120				
Calcium	454645.907	500	500000	0	90.9	80	120				
Iron	193063.036	20	200000	0	96.5	80	120				
Magnesium	437664.587	100	500000	0	87.5	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICSAB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	567664.628	50	500000	0	114	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WPGE** Units: **ug/L** Prep Date: RunNo: **125775**
Client ID: **ICSAB** Batch ID: **R125775** TestNo: **EPA 6010B** Analysis Date: **6/21/2018** SeqNo: **3061053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	530707.516	500	500000	0	106	80	120				
Iron	189402.125	20	200000	0	94.7	80	120				
Magnesium	529015.944	100	500000	0	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180621A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.003	100.3	65-125	PASS
Standard2	ICAL	1	1.079	107.85	65-125	PASS
Standard3	ICAL	1	1.036	103.6	65-125	PASS
Standard4	ICAL	1	1.031	103.14	65-125	PASS
Standard5	ICAL	1	1.062	106.19	65-125	PASS
Standard6	ICAL	1	1.021	102.11	65-125	PASS
Standard7	ICAL	1	1.0039	100.39	65-125	PASS
ICV	ICV	1	1.03	103.03	65-125	PASS
ICB	ICB	1	1.0035	100.35	65-125	PASS
LLICV1	CCV1	1	1.0056	100.56	65-125	PASS
ICSA1	ICSA	1	1.19	119.45	65-125	PASS
ICSAB1	ICSAB	1	0.86	85.51	65-125	PASS
CCV1	CCV	1	0.025	2.53	65-125	NR!
CCB1	CCB	1	1	99.51	65-125	PASS
CCV1	CCV	1	1	99.97	65-125	PASS
CCB1	CCB	1	1	99.94	65-125	PASS
MB-68462	MBLK	1	1.0026	100.26	65-125	PASS
LCS-68462	LCS	1	1.044	104.37	65-125	PASS
CCV2	CCV	1	0.99	99.49	65-125	PASS
CCB2	CCB	1	1	99.78	65-125	PASS
N030781-002C	SAMP	1	1.027	102.72	65-125	PASS
N030781-002C	SAMP	5	1.0006	100.06	65-125	PASS
N030781-002C-PS	PS	1	1	99.68	65-125	PASS
N030781-002C-MS	MS	1	1.0025	100.25	65-125	PASS
N030781-002C-MSD	MSD	1	1	100	65-125	PASS
N030781-003C	SAMP	1	1.017	101.73	65-125	PASS
N030781-004C	SAMP	1	1.039	103.91	65-125	PASS
N030781-005C	SAMP	1	1.014	101.45	65-125	PASS
N030781-006C	SAMP	1	1.025	102.54	65-125	PASS
N030781-007C	SAMP	1	1.022	102.2	65-125	PASS
CCV3	CCV	1	0.99	98.97	65-125	PASS
CCB3	CCB	1	1	99.52	65-125	PASS
N030781-008C	SAMP	1	1.03	103.01	65-125	PASS
N030781-009C	SAMP	1	1.05	105.04	65-125	PASS
N030781-010C	SAMP	1	1.049	104.93	65-125	PASS
N030781-011C	SAMP	1	1.038	103.79	65-125	PASS
N030781-012C	SAMP	1	1.066	106.57	65-125	PASS
N030781-013C	SAMP	1	1.034	103.41	65-125	PASS
N030781-014C	SAMP	1	1.033	103.32	65-125	PASS
CCV4	CCV	1	0.99	99.1	65-125	PASS

INTERNAL STANDARD: 180621A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCB4	CCB	1	1	99.53	65-125	PASS
CCV5	CCV	1	0.99	99.31	65-125	PASS
CCB5	CCB	1	1	99.71	65-125	PASS
CCV6	CCV	1	1	99.81	65-125	PASS
CCB6	CCB	1	0.89	89.016	65-125	PASS
LLCCV1	CCV2	1	1	99.78	65-125	PASS
ICSA2	ICSA	1	1.2	120.26	65-125	PASS
ICSAB2	ICSAB	1	0.86	86.45	65-125	PASS

SERIAL DILUTION/ POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water | **Dilution Test Summary**

Work Order No.: N030781

Test Method: EPA 6010B

Analysis Date: 6/21/2018

Matrix: Groundwater

Batch No.: 68462

Instrument ID: ICP-02

Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030781-002C DT 5X	Iron	ug/L	0	NA	26.75505	100.00%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **N030781-002C-PS**	SampType: **PS**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **125775**
Client ID: **ZZZZZZ**	Batch ID: **68462**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/21/2018**	SeqNo: **3061008**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	124.787	20	100.0	26.76	98.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CORRECTIVE ACTION DOCUMENTATION

ASSET Laboratories

Corrective Action Report (CAR)

Date Initiated: 27-Jun-18 **Corrective Action Report ID:** 2420

Initiated By: Claire Ignacio **Department:** ME-2(ICP)

Corrective Action Description

CAR Summary: RSD failed 15% criteria.

Description of Nonconformance: % RSD of Iron for sample N030781-010C failed at 15.35%.

Description of Corrective Action: Informed client. As per Daniel Moore (client), sample can be reported. All QCs passed criteria.

Performed By: Claire Ignacio **Completion Date:** 27-Jun-18

Client Notification

Client Notification Required: ~~No~~ **Notified By:**

Comment:

Quality Assurance Review

Corrective Action: Deficiency

Further Action required by QA: none

Approval and Closure

CAR Closed By: Close Date:

QA Reviewed By: Nancy 6/27/2018 QA Date:

MDL STUDY

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0033	0.0031	0.0033	0.0033	0.0031	0.0030	0.0047	0.003	0.00061604	**0.001936**	0.003
Al	237.312	0.0664	0.0603	0.0656	0.0650	0.0658	0.0660	0.0946	0.050	0.01254823	**0.039439**	0.050
As	188.983	0.0131	0.0089	0.0120	0.0089	0.0060	0.0102	0.0080	0.010	0.00223806	**0.007034**	0.010
B	249.679	0.1491	0.1267	0.1281	0.1467	0.1261	0.1195	0.1015	0.100	0.01801843	**0.056632**	0.100
Ba	233.529	0.0033	0.0031	0.0033	0.0031	0.0032	0.0030	0.0024	0.003	0.00033070	**0.001039**	0.003
Be	313.104	0.0012	0.0011	0.0012	0.0012	0.0011	0.0011	0.0011	0.001	0.00006873	**0.000216**	0.001
Ca	227.546	0.2381	0.2231	0.2559	0.2299	0.2194	0.2473	0.2691	0.200	0.02202408	**0.069222**	0.200
Cd	214.437	0.0031	0.0029	0.0031	0.0032	0.0031	0.0031	0.0025	0.003	0.00027049	**0.000850**	0.003
Co	228.614	0.0030	0.0028	0.0030	0.0031	0.0031	0.0031	0.0027	0.003	0.00014491	**0.000455**	0.003
Cr	267.719	0.0009	0.0008	0.0009	0.0012	0.0012	0.0013	0.0009	0.001	0.00017120	**0.000538**	0.001
Fe	273.953	0.0255	0.0226	0.0242	0.0255	0.0252	0.0248	0.0387	0.020	0.00552308	**0.017359**	0.020
Mg	279.079	0.1124	0.1052	0.1129	0.1315	0.1305	0.1314	0.1435	0.100	0.01532024	**0.048152**	0.100
Mn	257.607	0.0119	0.0111	0.0120	0.0122	0.0121	0.0122	0.0099	0.010	0.00098403	**0.003093**	0.010
Mo	202.03	0.0079	0.0068	0.0067	0.0065	0.0065	0.0062	0.0057	0.005	0.00083918	**0.002638**	0.005
Ni	231.604	0.0061	0.0056	0.0062	0.0060	0.0060	0.0062	0.0045	0.005	0.00062690	**0.001970**	0.005
Pb	220.351	0.0124	0.0117	0.0127	0.0115	0.0120	0.0118	0.0090	0.010	0.00126325	**0.003970**	0.010
Sb	206.836	0.0102	0.0095	0.0104	0.0112	0.0117	0.0111	0.0080	0.010	0.00117407	**0.003690**	0.010
Se	196.025	0.0102	0.0087	0.0114	0.0136	0.0144	0.0136	0.0075	0.010	0.00251341	**0.007900**	0.010
Sn	189.927	0.0095	0.0084	0.0090	0.0124	0.0126	0.0129	0.0099	0.010	0.00175765	**0.005524**	0.010
Ti	334.943	0.0114	0.0106	0.0115	0.0115	0.0115	0.0115	0.0098	0.010	0.00074093	**0.002329**	0.010
Tl	190.794	0.0170	0.0150	0.0165	0.0171	0.0180	0.0168	0.0151	0.015	0.00116288	**0.003655**	0.015
V	292.404	0.0025	0.0024	0.0025	0.0032	0.0032	0.0032	0.0027	0.003	0.00038496	**0.001210**	0.003
Zn	206.201	0.0109	0.0100	0.0107	0.0125	0.0124	0.0124	0.0095	0.010	0.00123731	**0.003889**	0.010

METHOD DETECTION LIMIT 2017

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 10/6, 10/7,11/10/17
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	ICP-02 MDL	MDL Blank	Higher MDL	LOD	PQL
Ag	0.001936	0.002362	0.002362	0.002	0.003
Al	0.039439	0.039859	0.039859	0.04	0.5
As	0.007034	0.007672	0.007672	0.0075	0.01
B	0.056632	0.074419	0.074419	0.075	0.1
Ba	0.001039	0.000433	0.001039	0.001	0.003
Be	0.000216	0.000311	0.000311	0.0005	0.003
Ca	0.069222	0.084832	0.084832	0.1	0.5
Cd	0.000850	0.000592	0.000850	0.001	0.003
Co	0.000455	0.001902	0.001902	0.001	0.003
Cr	0.000538	0.000527	0.000538	0.001	0.003
Fe	0.017359	0.017751	0.017751	0.018	0.1
Mg	0.048152	0.043017	0.048152	0.05	0.1
Mn	0.003093	0.000782	0.003093	0.005	0.5
Mo	0.002638	0.002482	0.002638	0.0025	0.005
Ni	0.001970	0.000822	0.001970	0.0025	0.005
Pb	0.003970	0.002762	0.003970	0.005	0.005
Sb	0.003690	0.004504	0.004504	0.005	0.01
Se	0.007900	0.008549	0.008549	0.008	0.01
Sn	0.005524	0.003415	0.005524	0.0075	0.05
Ti	0.002329	0.001493	0.002329	0.005	0.05
Tl	0.003655	0.005987	0.005987	0.005	0.015
V	0.001210	0.000749	0.001210	0.002	0.003
Zn	0.003889	0.007683	0.007683	0.008	0.01

EPA 6020
Dissolved

METALS ARCUS
REV 1.0
071116

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68461
ASSET #: N030781
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 6/25/2018

Method:

- [ ] EPA 6010B / 200.7
- [X] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X			X	
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			X		
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			X		
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X			X		
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .	X			X		
24. LCS compounds within control limits.	X			X		
25. MS/MSD, RPD's are within control limits		X		X		
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

%RSD of Se in N030781-003B/6B/8B/9B/12B/13B/14B failed>15%. For rerun.
%Rec of Ba in N030781-002B PS failed. However, LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 6/27/18

2nd Level Reviewer [signature] 6/27/2018 Date: ____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 68461
ASSET #: N030781

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 6/26/2018

Method:

- [ ] EPA 6010B / 200.7
- [X] EPA 6020 / 200.8
- [ ] EPA 7470A / 7471A/245.1
- [ ] Other ________________

Initial Calibration and Initial Calibration Verification	Ist Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X			X		
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X			X		
4. % RSD calculated from 3 injections?	X			X		
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X			X		
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X			X		
7. Are ICSA and AB within ± 20% of expected value?	X			X		
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X			X		
9. For CCV, all analytes within ± 10% of expected value?	X			X		
10. Calibration blank after ICVand CCV analysis.	X			X		
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X			X		
Sample Information						
13. All samples are within linear dynamic range.	X			X		
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X			X		
15. Are all samples analyzed/digested within hold time.	X			X		
16. Dilution test performed and within ± 10% of undiluted sample.	X			~~X~~		X
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X			~~X~~		X
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			X
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			X
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X			X		
23. Method blank values are below the PQL .			X			X
24. LCS compounds within control limits.			X			X
25. MS/MSD, RPD's are within control limits			X			X
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			X
27. Runlog complete and included in package.	X			X		
28. Digestion log complete and included in package (if applicable)	X			X		
29. All sample raw data present in package.	X			X		
Preliminary Report						
30. Does the raw data match the preliminary report?	X			X		
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
32. Are special instructions met?	X			X		

Comments:

For Se rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer CEI Date: 6/27/18

2nd Level Reviewer [illegible] 6/27/2018 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N030781-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 0.0358 * 1 * (25/25)

Chromium , ug/L = 0.0358

Reporting results in two significant figures,

Chromium , ug/L = 0.0

Since PQL of Chromium , in ug/L = 1.0

Chromium , ug/L = ND

% RSD SUMMARY

PERCENT RSD SUMMARY: 180625B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.13	3.78	15	PASS	0.11	4.34	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	1.2	15	PASS	0.51	4.21	15	PASS
Std3-5/50 ppb	ICAL	1	4.95	1.38	15	PASS	5.12	0.16	15	PASS
Std4-10/100 ppb	ICAL	1	9.82	1.17	15	PASS	10.15	1.11	15	PASS
Std5-20/200 ppb	ICAL	1	19.54	0.56	15	PASS	20.26	1.18	15	PASS
Std6-40/400 ppb	ICAL	1	38.97	0.13	15	PASS	40.38	1.061	15	PASS
Std7-100/1000 ppb	ICAL	1	97.25	0.78	15	PASS	100.22	0.56	15	PASS
Std8-200/2000 ppb	ICAL	1	201.64	0.82	15	PASS	199.78	1.15	15	PASS
ICV	ICV	1	9.6	1.44	15	PASS	9.79	0.99	15	PASS
ICB	ICB	1	0.018	43.17	15	<PQL	0.0059	77.15	15	<PQL
LLICV	CCV1	1	1.049	3.23	20	PASS	1.073	3.053	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.078	2.16	15	PASS
ICSAB1	ICSAB	1	19.48	0.79	15	PASS	21.7	0.72	15	PASS
MB-68461	MBLK	1	0.0079	88.41	15	<PQL	0.003	132.89	15	<PQL
LCS-68461	LCS	1	9.57	0.53	15	PASS	9.67	1.33	15	PASS
N030781-002B	SAMP	1	110.078	0.36	15	PASS	0.036	36.97	15	<PQL
N030781-002B	SAMP	5	23.06	0.18	15	PASS	0.0023	347.78	15	<PQL
N030781-002B	SAMP	25	4.74	2.034	15	PASS	0.0056	107.24	15	<PQL
N030781-002B-PS	PS	1	115.73	0.35	15	PASS	10.35	1.53	15	PASS
N030781-002B-PS	PS	5	24.36	0.63	15	PASS	2.27	0.81	15	PASS
N030781-002B-MS	MS	1	119.83	0.42	15	PASS	10.37	1.059	15	PASS
N030781-002B-MS	MS	5	24.91	0.92	15	PASS	2.22	2.76	15	PASS
N030781-002B-MSD	MSD	1	119.86	0.27	15	PASS	10.41	1.12	15	PASS
CCV1	CCV	1	19.6	0.43	15	PASS	19.88	1.36	15	PASS
CCB1	CCB	1	0.013	36.44	15	<PQL	0.0035	79.31	15	<PQL
N030781-002B-MSD	MSD	5	24.97	0.57	15	PASS	2.22	1.82	15	PASS
N030781-003B	SAMP	1	116.36	1.14	15	PASS	0.05	12.24	15	PASS
N030781-003B	SAMP	5	24.089	0.87	15	PASS	0.013	57.99	15	<PQL
N030781-004B	SAMP	1	108.96	0.67	15	PASS	0.04	5.71	15	PASS
N030781-004B	SAMP	5	22.52	0.51	15	PASS	0.012	26.25	15	<PQL
N030781-005B	SAMP	1	111.65	0.38	15	PASS	0.07	7.71	15	PASS
N030781-005B	SAMP	5	22.63	0.64	15	PASS	0.011	33.4	15	<PQL
N030781-006B	SAMP	1	111.11	0.96	15	PASS	0.081	10.096	15	PASS
N030781-006B	SAMP	5	23.26	0.66	15	PASS	0.021	34.13	15	<PQL
N030781-007B	SAMP	1	108.85	0.55	15	PASS	0.051	6.96	15	PASS
CCV2	CCV	1	19.56	0.41	15	PASS	20.12	1.21	15	PASS
CCB2	CCB	1	0.0054	14.95	15	PASS	0.0025	225.53	15	<PQL
N030781-007B	SAMP	5	22.26	0.13	15	PASS	0.0085	15.69	15	<PQL
N030781-008B	SAMP	1	116.93	0.82	15	PASS	0.11	11.28	15	PASS
N030781-008B	SAMP	5	24.62	0.35	15	PASS	0.027	50.41	15	<PQL

PERCENT RSD SUMMARY: 180625B

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030781-009B	SAMP	1	116.21	0.36	15	PASS	0.13	69.26	15	<PQL
N030781-009B	SAMP	5	24.13	0.73	15	PASS	0.021	28.97	15	<PQL
N030781-010B	SAMP	1	111.62	0.64	15	PASS	0.05	19.84	15	<PQL
N030781-010B	SAMP	5	23.49	0.47	15	PASS	0.012	53.096	15	<PQL
N030781-011B	SAMP	1	111.9	0.34	15	PASS	0.16	3.74	15	PASS
N030781-011B	SAMP	5	23.39	0.3	15	PASS	0.038	5.97	15	PASS
N030781-012B	SAMP	1	107.59	0.81	15	PASS	0.093	6.18	15	PASS
CCV3	CCV	1	19.64	0.35	15	PASS	20.39	0.64	15	PASS
CCB3	CCB	1	0.012	21.93	15	<PQL	0.0073	28.45	15	<PQL
N030781-012B	SAMP	5	22.13	0.52	15	PASS	0.011	22.84	15	<PQL
N030781-013B	SAMP	1	109.65	0.46	15	PASS	0.43	3.59	15	PASS
N030781-013B	SAMP	5	22.038	1.24	15	PASS	0.097	20.065	15	<PQL
N030781-014B	SAMP	1	109.66	0.51	15	PASS	0.061	5.75	15	PASS
N030781-014B	SAMP	5	22.75	1.035	15	PASS	0.0085	53.38	15	<PQL
CCV4	CCV	1	19.75	0.78	15	PASS	20.39	0.72	15	PASS
CCB4	CCB	1	0.0089	38.77	15	<PQL	0.0073	29.042	15	<PQL
LLCCV1	CCV2	1	1.024	1.23	20	PASS	1.075	4.81	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.074	37.79	15	<PQL
ICSAB2	ICSAB	1	20.12	0.32	15	PASS	20.95	0.36	15	PASS

PERCENT RSD SUMMARY: 180625B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.27	13.19	15	PASS	0.096	19.57	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.51	1.7	15	PASS	0.5	7.16	15	PASS
Std3-5/50 ppb	ICAL	1	5.068	1.76	15	PASS	5.044	3.23	15	PASS
Std4-10/100 ppb	ICAL	1	10.3	2.73	15	PASS	9.86	1.88	15	PASS
Std5-20/200 ppb	ICAL	1	20.27	1.0026	15	PASS	20.17	1.12	15	PASS
Std6-40/400 ppb	ICAL	1	40.49	1.17	15	PASS	39.76	0.6	15	PASS
Std7-100/1000 ppb	ICAL	1	99.9	0.33	15	PASS	99.89	1.8	15	PASS
Std8-200/2000 ppb	ICAL	1	199.91	1.16	15	PASS	200.093	1.34	15	PASS
ICV	ICV	1	96.91	1.32	15	PASS	9.64	2.7	15	PASS
ICB	ICB	1	0.037	72.83	15	<PQL	0.0082	110.86	15	<PQL
LLICV	CCV1	1	0.56	5.29	20	PASS	0.1	14.65	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	20.66	0.98	15	PASS	21.66	0.34	15	PASS
MB-68461	MBLK	1	<0.000	N/A	15	<PQL	0.0086	78.42	15	<PQL
LCS-68461	LCS	1	96.91	0.55	15	PASS	9.69	1.85	15	PASS
N030781-002B	SAMP	1	<0.000	N/A	15	<PQL	2.26	4.41	15	PASS
N030781-002B	SAMP	5	<0.000	N/A	15	<PQL	0.45	6.98	15	PASS
N030781-002B	SAMP	25	<0.000	N/A	15	<PQL	0.075	15	15	PASS
N030781-002B-PS	PS	1	103.097	2.014	15	PASS	12.89	1.75	15	PASS
N030781-002B-PS	PS	5	22.078	1.44	15	PASS	2.67	3.18	15	PASS
N030781-002B-MS	MS	1	102.45	1.02	15	PASS	13.22	0.44	15	PASS
N030781-002B-MS	MS	5	21.39	2.31	15	PASS	2.62	2.46	15	PASS
N030781-002B-MSD	MSD	1	103.3	0.86	15	PASS	13	2.028	15	PASS
CCV1	CCV	1	20.34	1.000034	15	PASS	20.051	0.67	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N030781-002B-MSD	MSD	5	21.38	0.14	15	PASS	2.69	1.27	15	PASS
N030781-003B	SAMP	1	<0.000	N/A	15	<PQL	2.48	0.86	15	PASS
N030781-003B	SAMP	5	<0.000	N/A	15	<PQL	0.48	5.49	15	PASS
N030781-004B	SAMP	1	<0.000	N/A	15	<PQL	2.25	2.17	15	PASS
N030781-004B	SAMP	5	<0.000	N/A	15	<PQL	0.48	11.27	15	PASS
N030781-005B	SAMP	1	<0.000	N/A	15	<PQL	2.44	3.42	15	PASS
N030781-005B	SAMP	5	<0.000	N/A	15	<PQL	0.48	9.36	15	PASS
N030781-006B	SAMP	1	<0.000	N/A	15	<PQL	2.39	2.18	15	PASS
N030781-006B	SAMP	5	<0.000	N/A	15	<PQL	0.47	8.17	15	PASS
N030781-007B	SAMP	1	0.44	19.72	15	<PQL	2.25	5.15	15	PASS
CCV2	CCV	1	20.27	0.87	15	PASS	19.91	1.045	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.015	60.54	15	<PQL
N030781-007B	SAMP	5	0.1	3.58	15	PASS	0.47	7.14	15	PASS
N030781-008B	SAMP	1	0.47	24.78	15	<PQL	2.47	2.17	15	PASS
N030781-008B	SAMP	5	0.076	21.84	15	<PQL	0.51	11.63	15	PASS

PERCENT RSD SUMMARY: 180625B

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030781-009B	SAMP	1	0.18	31.95	15	<PQL	2.43	0.8	15	PASS
N030781-009B	SAMP	5	0.069	20.72	15	<PQL	0.5	8.44	15	PASS
N030781-010B	SAMP	1	<0.000	N/A	15	<PQL	2.29	4.013	15	PASS
N030781-010B	SAMP	5	<0.000	N/A	15	<PQL	0.48	3.38	15	PASS
N030781-011B	SAMP	1	<0.000	N/A	15	<PQL	2.33	2.28	15	PASS
N030781-011B	SAMP	5	<0.000	N/A	15	<PQL	0.47	2.41	15	PASS
N030781-012B	SAMP	1	<0.000	N/A	15	<PQL	2.14	4.24	15	PASS
CCV3	CCV	1	20.44	1.47	15	PASS	19.5	1.96	15	PASS
CCB3	CCB	1	0.0069	206.46	15	<PQL	<0.000	N/A	15	<PQL
N030781-012B	SAMP	5	<0.000	N/A	15	<PQL	0.45	8.12	15	PASS
N030781-013B	SAMP	1	<0.000	N/A	15	<PQL	2.18	1.83	15	PASS
N030781-013B	SAMP	5	<0.000	N/A	15	<PQL	0.46	6.77	15	PASS
N030781-014B	SAMP	1	<0.000	N/A	15	<PQL	2.32	2.94	15	PASS
N030781-014B	SAMP	5	<0.000	N/A	15	<PQL	0.49	9.0033	15	PASS
CCV4	CCV	1	20.36	0.94	15	PASS	20.08	2.58	15	PASS
CCB4	CCB	1	0.0015	292.85	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.56	4.64	20	PASS	0.093	30.11	20	<PQL
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	20.9	1.36	15	PASS	21.83	0.51	15	PASS

PERCENT RSD SUMMARY: 180625B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.081	72.38	15	<PQL	0.078	5.99	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.48	10.62	15	PASS	0.47	8.14	15	PASS
Std3-5/50 ppb	ICAL	1	4.78	2.74	15	PASS	4.82	1.49	15	PASS
Std4-10/100 ppb	ICAL	1	10.54	4.099	15	PASS	9.88	1.12	15	PASS
Std5-20/200 ppb	ICAL	1	20.31	2.007	15	PASS	19.37	2.081	15	PASS
Std6-40/400 ppb	ICAL	1	40.42	2.29	15	PASS	39.52	0.49	15	PASS
Std7-100/1000 ppb	ICAL	1	100.37	2.39	15	PASS	99.8	1.27	15	PASS
Std8-200/2000 ppb	ICAL	1	199.68	1.41	15	PASS	200.27	0.14	15	PASS
ICV	ICV	1	9.23	3.89	15	PASS	10.052	0.92	15	PASS
ICB	ICB	1	0.018	93.17	15	<PQL	0.21	5.45	15	PASS
LLICV	CCV1	1	0.5	11.11	20	PASS	0.57	1.28	20	PASS
ICSA1	ICSA	1	0.0014	2138.027	15	<PQL	0.1	7.94	15	PASS
ICSAB1	ICSAB	1	21.27	2.8	15	PASS	22.2	1.25	15	PASS
MB-68461	MBLK	1	0.014	104.61	15	<PQL	0.083	10.76	15	PASS
LCS-68461	LCS	1	10.26	3.67	15	PASS	9.56	1.4	15	PASS
N030781-002B	SAMP	1	1.68	8.73	15	PASS	4.76	3.71	15	PASS
N030781-002B	SAMP	5	0.41	27	15	<PQL	0.97	2.13	15	PASS
N030781-002B	SAMP	25	0.049	32.82	15	<PQL	0.18	7.31	15	PASS
N030781-002B-PS	PS	1	12.18	1.99	15	PASS	15.89	1.67	15	PASS
N030781-002B-PS	PS	5	2.44	4.075	15	PASS	3.24	3.94	15	PASS
N030781-002B-MS	MS	1	12.1	5.32	15	PASS	16.23	0.42	15	PASS
N030781-002B-MS	MS	5	2.36	14.84	15	PASS	3.29	0.51	15	PASS
N030781-002B-MSD	MSD	1	11.93	4.3	15	PASS	16.17	2.039	15	PASS
CCV1	CCV	1	19.8	1.14	15	PASS	19.66	0.29	15	PASS
CCB1	CCB	1	0.007	281.67	15	<PQL	0.061	11.076	15	PASS
N030781-002B-MSD	MSD	5	2.73	10.87	15	PASS	3.21	2.99	15	PASS
N030781-003B	SAMP	1	1.98	16.98	15	NR!	5.026	1.32	15	PASS
N030781-003B	SAMP	5	0.39	33.56	15	<PQL	0.95	4.79	15	PASS
N030781-004B	SAMP	1	1.57	5.11	15	PASS	4.66	2.51	15	PASS
N030781-004B	SAMP	5	0.3	14.34	15	PASS	0.94	1.38	15	PASS
N030781-005B	SAMP	1	1.77	8.097	15	PASS	4.75	1.68	15	PASS
N030781-005B	SAMP	5	0.36	4.35	15	PASS	0.9	4.91	15	PASS
N030781-006B	SAMP	1	1.75	19.61	15	NR!	4.69	1.0021	15	PASS
N030781-006B	SAMP	5	0.32	8.7	15	PASS	0.92	2.34	15	PASS
N030781-007B	SAMP	1	1.49	2.095	15	PASS	4.69	0.65	15	PASS
CCV2	CCV	1	20.41	6.87	15	PASS	19.47	1.23	15	PASS
CCB2	CCB	1	0.008	129.14	15	<PQL	0.05	20.89	15	<PQL
N030781-007B	SAMP	5	0.36	2.1	15	PASS	0.88	3.62	15	PASS
N030781-008B	SAMP	1	1.71	15.068	15	NR!	5.11	0.21	15	PASS
N030781-008B	SAMP	5	0.29	9.33	15	PASS	0.99	3.077	15	PASS

PERCENT RSD SUMMARY: 180625B

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N030781-009B	SAMP	1	2.051	18.81	15	NR!	5.008	1.77	15	PASS
N030781-009B	SAMP	5	0.44	41.16	15	<PQL	0.95	6.63	15	PASS
N030781-010B	SAMP	1	1.69	6.072	15	PASS	4.79	0.97	15	PASS
N030781-010B	SAMP	5	0.48	16.72	15	<PQL	0.91	3.5	15	PASS
N030781-011B	SAMP	1	1.66	3.79	15	PASS	4.7	0.79	15	PASS
N030781-011B	SAMP	5	0.33	21.0095	15	<PQL	0.96	1.5	15	PASS
N030781-012B	SAMP	1	1.56	18.13	15	NR!	4.61	2.01	15	PASS
CCV3	CCV	1	20.13	2.61	15	PASS	19.73	1.38	15	PASS
CCB3	CCB	1	0.02	235.99	15	<PQL	0.059	4.52	15	PASS
N030781-012B	SAMP	5	0.37	44.51	15	<PQL	0.89	4.66	15	PASS
N030781-013B	SAMP	1	1.65	15.22	15	NR!	4.72	0.11	15	PASS
N030781-013B	SAMP	5	0.3	7.54	15	PASS	0.9	1.058	15	PASS
N030781-014B	SAMP	1	1.68	21.94	15	NR!	4.66	0.29	15	PASS
N030781-014B	SAMP	5	0.38	8.7	15	PASS	0.95	3.075	15	PASS
CCV4	CCV	1	20.091	6.05	15	PASS	19.45	1.32	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.055	14.72	15	PASS
LLCCV1	CCV2	1	0.56	7.019	20	PASS	0.48	6.32	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.017	118.84	15	<PQL
ICSAB2	ICSAB	1	21.47	3.71	15	PASS	22.63	0.3	15	PASS

PERCENT RSD SUMMARY: 180626A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.079	44.44	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.48	9.11	15	PASS
Std3-5/50 ppb	ICAL	1	5.12	5.095	15	PASS
Std4-10/100 ppb	ICAL	1	10.37	3.99	15	PASS
Std5-20/200 ppb	ICAL	1	20	2.46	15	PASS
Std6-40/400 ppb	ICAL	1	39.81	0.9	15	PASS
Std7-100/1000 ppb	ICAL	1	99.67	0.39	15	PASS
Std8-200/2000 ppb	ICAL	1	200.18	1.45	15	PASS
ICV	ICV	1	9.86	1.079	15	PASS
ICB	ICB	1	0.045	58.72	15	<PQL
LLICV	CCV1	1	0.495 ~~0.5~~	28.9	20	<PQL
ICSA1	ICSA	1	0.012	292.31	15	<PQL
ICSAB1	ICSAB	1	21.37	2.068	15	PASS
N030781-003B	SAMP	1	1.95	16.79	15	NR!
N030781-006B	SAMP	1	1.8	6.97	15	PASS
N030781-008B	SAMP	1	1.72	6.12	15	PASS
N030781-009B	SAMP	1	1.82	6.78	15	PASS
N030781-012B	SAMP	1	1.68	7.22	15	PASS
N030781-013B	SAMP	1	1.57	7.62	15	PASS
N030781-014B	SAMP	1	1.6	2.78	15	PASS
N030781-003B	SAMP	1	1.74	6.56	15	PASS
CCV1	CCV	1	19.96	2.14	15	PASS
CCB1	CCB	1	0.016	103.54	15	<PQL
LLCCV1	CCV2	1	0.53	9.53	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	21.16	1.3	15	PASS

Nancy for 6/27/2018

ANALYSIS RUN LOG

INJECTION LOG: 180625B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0625001.D	RINSE	RINSE	1	06/25/18 8:02 PM
B0625002.D	Cal Blank	IBLK	1	06/25/18 8:07 PM
B0625003.D	Std1-0.1/1 ppb	ICAL	1	06/25/18 8:13 PM
B0625004.D	Std2-0.5/5 ppb	ICAL	1	06/25/18 8:18 PM
B0625005.D	Std3-5/50 ppb	ICAL	1	06/25/18 8:24 PM
B0625006.D	Std4-10/100 ppb	ICAL	1	06/25/18 8:29 PM
B0625007.D	Std5-20/200 ppb	ICAL	1	06/25/18 8:35 PM
B0625008.D	Std6-40/400 ppb	ICAL	1	06/25/18 8:41 PM
B0625009.D	Std7-100/1000 ppb	ICAL	1	06/25/18 8:46 PM
B0625010.D	Std8-200/2000 ppb	ICAL	1	06/25/18 8:52 PM
B0625011.D	ICV	ICV	1	06/25/18 8:57 PM
B0625012.D	ICB	ICB	1	06/25/18 9:03 PM
B0625013.D	LLICV	CCV1	1	06/25/18 9:08 PM
B0625014.D	ICSA1	ICSA	1	06/25/18 9:14 PM
B0625015.D	ICSAB1	ICSAB	1	06/25/18 9:20 PM
B0625016.D	MB-68461	MBLK	1	06/25/18 9:26 PM
B0625017.D	LCS-68461	LCS	1	06/25/18 9:32 PM
B0625018.D	N030781-002B	SAMP	1	06/25/18 9:37 PM
B0625019.D	N030781-002B	SAMP	5	06/25/18 9:43 PM
B0625020.D	N030781-002B	SAMP	25	06/25/18 9:48 PM
B0625021.D	N030781-002B-PS	PS	1	06/25/18 9:54 PM
B0625022.D	N030781-002B-PS	PS	5	06/25/18 9:59 PM
B0625023.D	N030781-002B-MS	MS	1	06/25/18 10:05 PM
B0625024.D	N030781-002B-MS	MS	5	06/25/18 10:11 PM
B0625025.D	N030781-002B-MSD	MSD	1	06/25/18 10:16 PM
B0625026.D	CCV1	CCV	1	06/25/18 10:22 PM
B0625027.D	CCB1	CCB	1	06/25/18 10:27 PM
B0625028.D	N030781-002B-MSD	MSD	5	06/25/18 10:33 PM
B0625029.D	N030781-003B	SAMP	1	06/25/18 10:39 PM
B0625030.D	N030781-003B	SAMP	5	06/25/18 10:44 PM
B0625031.D	N030781-004B	SAMP	1	06/25/18 10:50 PM
B0625032.D	N030781-004B	SAMP	5	06/25/18 10:55 PM
B0625033.D	N030781-005B	SAMP	1	06/25/18 11:01 PM
B0625034.D	N030781-005B	SAMP	5	06/25/18 11:07 PM
B0625035.D	N030781-006B	SAMP	1	06/25/18 11:12 PM
B0625036.D	N030781-006B	SAMP	5	06/25/18 11:18 PM
B0625037.D	N030781-007B	SAMP	1	06/25/18 11:23 PM
B0625038.D	CCV2	CCV	1	06/25/18 11:29 PM
B0625039.D	CCB2	CCB	1	06/25/18 11:34 PM
B0625040.D	N030781-007B	SAMP	5	06/25/18 11:40 PM
B0625041.D	N030781-008B	SAMP	1	06/25/18 11:46 PM
B0625042.D	N030781-008B	SAMP	5	06/25/18 11:51 PM

INJECTION LOG: 180625B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0625043.D	N030781-009B	SAMP	1	06/25/18 11:57 PM
B0625044.D	N030781-009B	SAMP	5	06/26/18 12:02 AM
B0625045.D	N030781-010B	SAMP	1	06/26/18 12:08 AM
B0625046.D	N030781-010B	SAMP	5	06/26/18 12:14 AM
B0625047.D	N030781-011B	SAMP	1	06/26/18 12:19 AM
B0625048.D	N030781-011B	SAMP	5	06/26/18 12:25 AM
B0625049.D	N030781-012B	SAMP	1	06/26/18 12:30 AM
B0625050.D	CCV3	CCV	1	06/26/18 12:36 AM
B0625051.D	CCB3	CCB	1	06/26/18 12:42 AM
B0625052.D	N030781-012B	SAMP	5	06/26/18 12:47 AM
B0625053.D	N030781-013B	SAMP	1	06/26/18 12:53 AM
B0625054.D	N030781-013B	SAMP	5	06/26/18 12:58 AM
B0625055.D	N030781-014B	SAMP	1	06/26/18 1:04 AM
B0625056.D	N030781-014B	SAMP	5	06/26/18 1:10 AM
B0625057.D	CCV4	CCV	1	06/26/18 1:15 AM
B0625058.D	CCB4	CCB	1	06/26/18 1:21 AM
B0625059.D	LLCCV1	CCV2	1	06/26/18 1:26 AM
B0625060.D	ICSA2	ICSA	1	06/26/18 1:32 AM
B0625061.D	ICSAB2	ICSAB	1	06/26/18 1:37 AM

INJECTION LOG: 180626A

Instrument ID: ICPMS-02

	Data File	Sample Name	Type	DF	Acq. Date-Time
	A0626001.D	RINSE	RINSE	1	06/26/18 3:20 PM
	A0626002.D	Cal Blank	IBLK	1	06/26/18 3:25 PM
	A0626003.D	Std1-0.1/1 ppb	ICAL	1	06/26/18 3:31 PM
	A0626004.D	Std2-0.5/5 ppb	ICAL	1	06/26/18 3:36 PM
	A0626005.D	Std3-5/50 ppb	ICAL	1	06/26/18 3:42 PM
	A0626006.D	Std4-10/100 ppb	ICAL	1	06/26/18 3:47 PM
	A0626007.D	Std5-20/200 ppb	ICAL	1	06/26/18 3:53 PM
	A0626008.D	Std6-40/400 ppb	ICAL	1	06/26/18 3:58 PM
	A0626009.D	Std7-100/1000 ppb	ICAL	1	06/26/18 4:04 PM
	A0626010.D	Std8-200/2000 ppb	ICAL	1	06/26/18 4:09 PM
	A0626011.D	ICV	ICV	1	06/26/18 4:15 PM
	A0626012.D	ICB	ICB	1	06/26/18 4:20 PM
	A0626013.D	LLICV	CCV1	1	06/26/18 4:26 PM
	A0626014.D	ICSA1	ICSA	1	06/26/18 4:31 PM
	A0626015.D	ICSAB1	ICSAB	1	06/26/18 4:37 PM
NR	A0626016.D	N030781-003B	SAMP	1	06/26/18 4:44 PM
	A0626017.D	N030781-006B	SAMP	1	06/26/18 4:50 PM
	A0626018.D	N030781-008B	SAMP	1	06/26/18 4:55 PM
	A0626019.D	N030781-009B	SAMP	1	06/26/18 5:01 PM
	A0626020.D	N030781-012B	SAMP	1	06/26/18 5:06 PM
	A0626021.D	N030781-013B	SAMP	1	06/26/18 5:12 PM
	A0626022.D	N030781-014B	SAMP	1	06/26/18 5:17 PM
	A0626023.D	N030781-003B	SAMP	1	06/26/18 5:23 PM
	A0626024.D	CCV1	CCV	1	06/26/18 5:28 PM
	A0626025.D	CCB1	CCB	1	06/26/18 5:34 PM
	A0626026.D	LLCCV1	CCV2	1	06/26/18 5:39 PM
	A0626027.D	ICSA2	ICSA	1	06/26/18 5:45 PM
	A0626028.D	ICSAB2	ICSAB	1	06/26/18 5:50 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/14/2018 12:47:09**
Prep End Date: **6/14/2018 5:00:00 P**
Prep Batch **68461** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 6/27/2018
Initials/ Date: 6/27/2018
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**01-26**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-68461	Aqueous		25	☐	0	0	25	1.000		
MB-68461	Aqueous		25	☐	0	0	25	1.000		
N030781-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-011B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-180517	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/14/2018 12:47:09**
Prep End Date: **6/14/2018 5:00:00 P**
Prep Batch **68461** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 6/27/2018
Initials/ Date: 6/27/2018
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**01-26**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N030781-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N030781-014B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
9460	NITRIC ACID
9462	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-180301	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-180409	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-180420	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-180517	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 25 Jun 2018 09:33:45 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	124863.00	0.00	
24	Mg	425190.00	0.00	
25	Mg	56503.80	0.00	
26	Mg	65354.20	0.00	
59	Co	520710.00	0.00	
115	In	882830.00	0.00	
206	Pb	238443.00	0.00	
207	Pb	210292.00	0.00	
208	Pb	513757.00	0.00	

RSD (%)

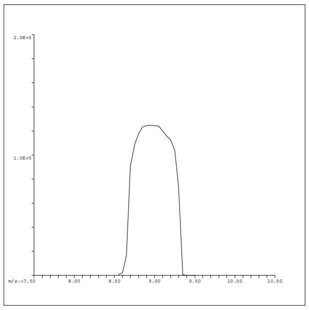
Element		Actual	Required	Flag
9	Be	0.54	5.00	
24	Mg	0.68	5.00	
25	Mg	1.15	5.00	
26	Mg	0.89	5.00	
59	Co	0.65	5.00	
115	In	0.88	5.00	
206	Pb	0.68	5.00	
207	Pb	1.11	5.00	
208	Pb	0.98	5.00	

Ion Ratio

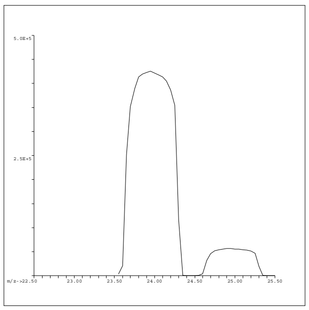
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

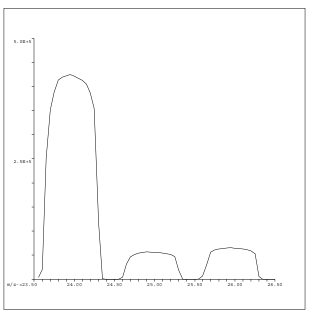
Element	Actual	Required	Flag



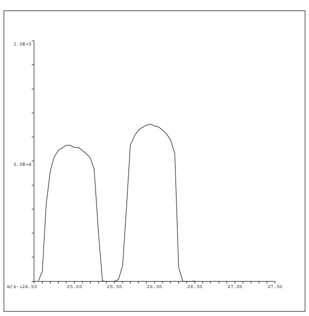
9 Be
Mass Calib.
Actual: 8.95
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



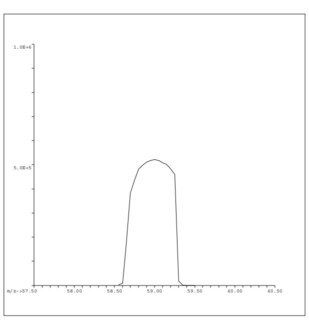
24 Mg
Mass Calib.
Actual: 23.95
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



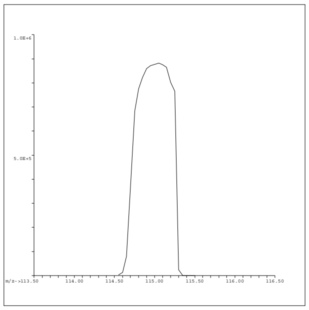
25 Mg
Mass Calib.
Actual: 24.95
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



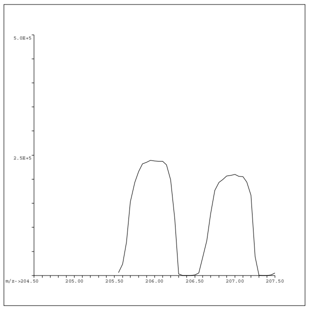
26 Mg
Mass Calib.
Actual: 25.95
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



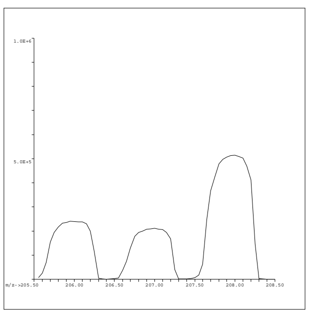
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



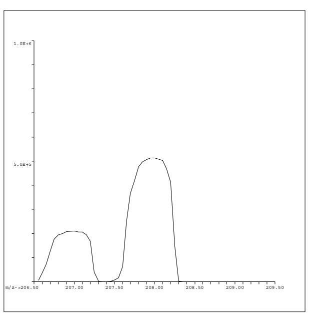
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 26 Jun 2018 02:38:07 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	180324.00	0.00	
24	Mg	692271.00	0.00	
25	Mg	91440.00	0.00	
26	Mg	106645.00	0.00	
59	Co	690931.00	0.00	
115	In	1113510.00	0.00	
206	Pb	306432.00	0.00	
207	Pb	266895.00	0.00	
208	Pb	657180.00	0.00	

RSD (%)

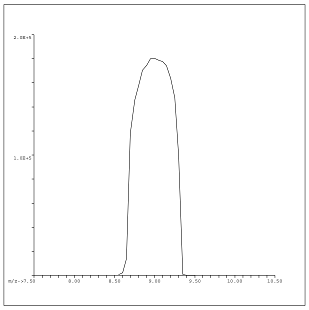
Element		Actual	Required	Flag
9	Be	0.75	5.00	
24	Mg	0.45	5.00	
25	Mg	0.54	5.00	
26	Mg	0.42	5.00	
59	Co	0.38	5.00	
115	In	0.42	5.00	
206	Pb	0.35	5.00	
207	Pb	0.88	5.00	
208	Pb	0.47	5.00	

Ion Ratio

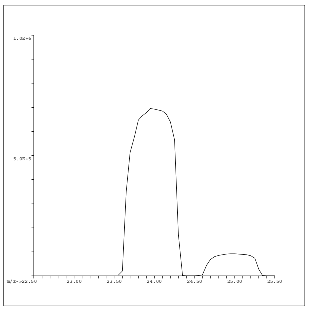
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

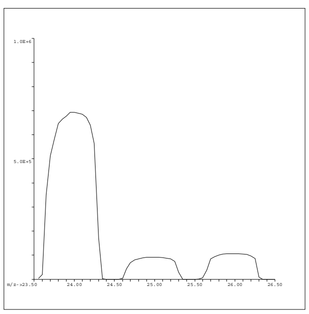
Element	Actual	Required	Flag



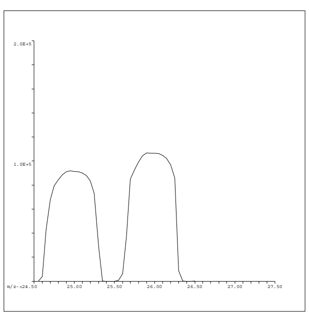
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



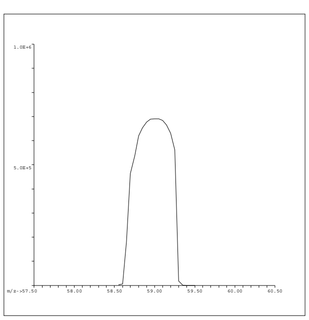
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



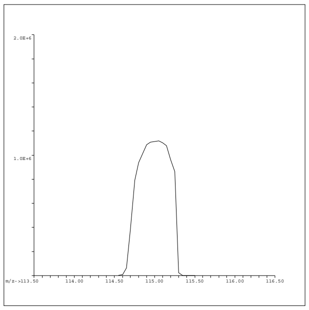
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



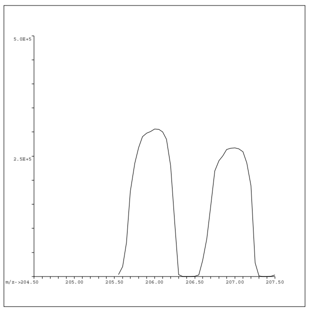
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



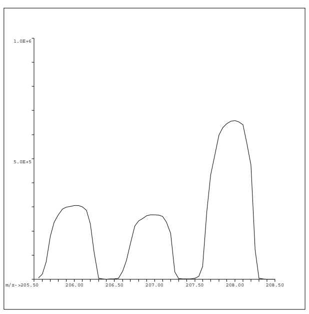
59 Co
Mass Calib.
Actual: 59.00
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



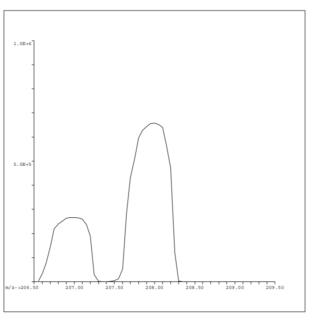
115 In
Mass Calib.
Actual: 115.00
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 180625B

Instrument ID: ICPMS-02

Analyte	Data File	B0625002.D	B0625003.D	B0625004.D	B0625005.D	B0625006.D	B0625007.D	B0625008.D	B0625009.D	B0625010.D	
	Acq. Date-Time	06/25/2018 08:07 PM	06/25/2018 08:13 PM	06/25/2018 08:18 PM	06/25/2018 08:24 PM	06/25/2018 08:29 PM	06/25/2018 08:35 PM	06/25/2018 08:41 PM	06/25/2018 08:46 PM	06/25/2018 08:52 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	76882		74790.2	73832.8	73346.4	73141.1	72628.5	72592.1	71471.5	
55 Mn [2]	CPS	132.8		1546.2	14139.7	28400.2	55640.7	110267	271735.9	535174.6	1.0000
52 Cr [2]	CPS	154.2		3031.4	28921	56749.3	112824.8	223165.8	553349.1	1085726.3	1.0000
72 Ge (ISTD) [1]	CPS	60906.5		58802	57944.7	57233.5	56469.3	56876.5	55779.4	56253.3	
78 Se [1]	CPS	3.3		102.2	967.8	2104.7	3998.4	8013.4	19509	39132.5	1.0000
72 Ge (ISTD) [2]	CPS	51983.5	52371.3	51917.8	51049.5	51217.7	50455.3	49899.3	49732.3	48910.7	
75 As [2]	CPS	28	96.9	381.3	3555.5	6946	13978.1	27221.4	68110.4	134166.5	1.0000
103 Rh (ISTD) [2]	CPS	1519047.8		1497818.5	1492915.6	1476742	1488991	1461715.4	1438161.6	1422525.9	
95 Mo [2]	CPS	186.7		1881.3	17401.1	35126	69250.8	138493.6	343875	682408.2	1.0000
159 Tb (ISTD) [3]	CPS	4560620.6		4573673	4563888.8	4516906.4	4480737.8	4477775.2	4412183.1	4378786.5	
137 Ba [3]	CPS	28.8		3983	38609.7	75745.2	149425.9	297834.4	732190.2	1506704.3	0.9999

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MSST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 180626A

Instrument ID: ICPMS-02

Analyte	Data File	A0626002.D	A0626004.D	A0626005.D	A0626006.D	A0626007.D	A0626008.D	A0626009.D	A0626010.D	
	Acq. Date-Time	06/26/2018 03:25 PM	06/26/2018 03:36 PM	06/26/2018 03:42 PM	06/26/2018 03:47 PM	06/26/2018 03:53 PM	06/26/2018 03:58 PM	06/26/2018 04:04 PM	06/26/2018 04:09 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	116102.2	119122.3	118061.1	117239.8	117661.3	116729.6	115450.5	115579.3	
78 Se [1]	CPS	6.7	206.7	2128	4276.3	8269.1	16323.1	40413.2	81252.7	1.0000

Standard Code
ICAL: 2MSST-170620B
ICAL: 2MSST-170620C
ICAL: 2MWST-180409H
IS Mix: 2MSST-180409F

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ICV** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3065125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.635	0.10	10.00	0	96.4	90	110				
Barium	9.596	1.0	10.00	0	96.0	90	110				
Manganese	96.911	0.50	100.0	0	96.9	90	110				
Molybdenum	10.052	0.50	10.00	0	101	90	110				
Selenium	9.226	0.50	10.00	0	92.3	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ZZZZZZ** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3065127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.102	0.10	0.1000	0	102	80	120				
Barium	1.049	1.0	1.000	0	105	80	120				
Manganese	0.562	0.50	0.5000	0	112	80	120				
Molybdenum	0.570	0.50	0.5000	0	114	80	120				
Selenium	0.499	0.50	0.5000	0	99.7	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **CCV** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3065140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.051	0.10	20.00	0	100	90	110				
Barium	19.604	1.0	20.00	0	98.0	90	110				
Manganese	20.343	0.50	20.00	0	102	90	110				
Molybdenum	19.656	0.50	20.00	0	98.3	90	110				
Selenium	19.804	0.50	20.00	0	99.0	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **CCV** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3065152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.909	0.10	20.00	0	99.5	90	110				
Barium	19.557	1.0	20.00	0	97.8	90	110				
Manganese	20.272	0.50	20.00	0	101	90	110				
Molybdenum	19.468	0.50	20.00	0	97.3	90	110				
Selenium	20.409	0.50	20.00	0	102	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **CCV** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.503	0.10	20.00	0	97.5	90	110				
Barium	19.639	1.0	20.00	0	98.2	90	110				
Manganese	20.443	0.50	20.00	0	102	90	110				
Molybdenum	19.729	0.50	20.00	0	98.6	90	110				
Selenium	20.131	0.50	20.00	0	101	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **CCV** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065171**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.080	0.10	20.00	0	100	90	110				
Barium	19.753	1.0	20.00	0	98.8	90	110				
Manganese	20.364	0.50	20.00	0	102	90	110				
Molybdenum	19.447	0.50	20.00	0	97.2	90	110				
Selenium	20.091	0.50	20.00	0	100	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ZZZZZZ** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065173**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.093	0.10	0.1000	0	93.2	70	130				
Barium	1.024	1.0	1.000	0	102	70	130				
Manganese	0.565	0.50	0.5000	0	113	70	130				
Molybdenum	0.482	0.50	0.5000	0	96.5	70	130				
Selenium	0.555	0.50	0.5000	0	111	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV** SampType: **ICV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125878**
Client ID: **ICV** Batch ID: **R125878** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.858	0.50	10.00	0	98.6	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125878**
Client ID: **ZZZZZZ** Batch ID: **R125878** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.495	0.50	0.5000	0	99.1	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125878**
Client ID: **CCV** Batch ID: **R125878** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.960	0.50	20.00	0	99.8	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125878**
Client ID: **ZZZZZZ** Batch ID: **R125878** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.529	0.50	0.5000	0	106	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV** SampType: **ICV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ICV** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3064803**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.790	1.0	10.00	0	97.9	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ZZZZZZ** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3064805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.073	1.0	1.000	0	107	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **CCV** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3064818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.880	1.0	20.00	0	99.4	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **CCV** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3064830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.120	1.0	20.00	0	101	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **CCV** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3064842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.386	1.0	20.00	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4** SampType: **CCV** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **CCV** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3064849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.386	1.0	20.00	0	102	90	110				

Sample ID **LLCCV1** SampType: **CCV2** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ZZZZZZ** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3064851**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.075	1.0	1.000	0	107	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ICB** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3065126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **CCB** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3065141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **CCB** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3065153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **CCB** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **CCB** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065172**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB** SampType: **ICB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125878**
Client ID: **ICB** Batch ID: **R125878** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125878**
Client ID: **CCB** Batch ID: **R125878** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB** SampType: **ICB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ICB** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3064804**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **CCB** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3064819**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **CCB** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3064831**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **CCB** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3064843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4** SampType: **CCB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **CCB** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3064850**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

ASSET Laboratories

Date: *26-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ICSA** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3065128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ICSAB** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3065129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.658	0.10	20.00	0	108	80	120				
Barium	19.483	1.0	20.00	0	97.4	80	120				
Manganese	20.657	0.50	20.00	0	103	80	120				
Molybdenum	22.201	0.50	20.00	0	111	80	120				
Selenium	21.265	0.50	20.00	0	106	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ICSA** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065174**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ICSAB** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065175**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	21.832	0.10	20.00	0	109	80	120				
Barium	20.121	1.0	20.00	0	101	80	120				
Manganese	20.899	0.50	20.00	0	104	80	120				
Molybdenum	22.631	0.50	20.00	0	113	80	120				
Selenium	21.474	0.50	20.00	0	107	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125878**
Client ID: **ICSA** Batch ID: **R125878** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125878**
Client ID: **ICSAB** Batch ID: **R125878** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	21.366	0.50	20.00	0	107	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125878**
Client ID: **ICSA** Batch ID: **R125878** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **125878**
Client ID: **ICSAB** Batch ID: **R125878** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3065319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	21.162	0.50	20.00	0	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ICSA** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3064806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ICSAB** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/25/2018** SeqNo: **3064807**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.699	1.0	20.00	0	108	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ICSA** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3064852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ICSAB** Batch ID: **R125863** TestNo: **EPA 6020** Analysis Date: **6/26/2018** SeqNo: **3064853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.947	1.0	20.00	0	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 180625B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	4560620.6	4560620.6	100	PASS	70-125	76882	76882	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	4583434.1	4560620.6	100.5	PASS	70-125	75979	76882	98.83	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	4573673	4560620.6	100.29	PASS	70-125	74790.2	76882	97.28	PASS	70-125
Std3-5/50 ppb	ICAL	1	4563888.8	4560620.6	100.07	PASS	70-125	73832.8	76882	96.034	PASS	70-125
Std4-10/100 ppb	ICAL	1	4516906.4	4560620.6	99.041	PASS	70-125	73346.4	76882	95.4	PASS	70-125
Std5-20/200 ppb	ICAL	1	4480737.8	4560620.6	98.25	PASS	70-125	73141.1	76882	95.13	PASS	70-125
Std6-40/400 ppb	ICAL	1	4477775.2	4560620.6	98.18	PASS	70-125	72628.5	76882	94.47	PASS	70-125
Std7-100/1000 ppb	ICAL	1	4412183.1	4560620.6	96.75	PASS	70-125	72592.1	76882	94.42	PASS	70-125
Std8-200/2000 ppb	ICAL	1	4378786.5	4560620.6	96.013	PASS	70-125	71471.5	76882	92.96	PASS	70-125
ICV	ICV	1	4663066.1	4560620.6	102.25	PASS	70-125	75258.3	76882	97.89	PASS	70-125
ICB	ICB	1	4439835.2	4560620.6	97.35	PASS	70-125	71419.8	76882	92.9	PASS	70-125
LLICV	CCV1	1	4400243.5	4560620.6	96.48	PASS	70-125	69943.9	76882	90.98	PASS	70-125
ICSA1	ICSA	1	4132139.9	4560620.6	90.6	PASS	70-125	72759.7	76882	94.64	PASS	70-125
ICSAB1	ICSAB	1	4254806.4	4560620.6	93.29	PASS	70-125	71474.9	76882	92.97	PASS	70-125
MB-68461	MBLK	1	4562405.1	4560620.6	100.04	PASS	70-125	79495	76882	103.4	PASS	70-125
LCS-68461	LCS	1	4684950	4560620.6	102.73	PASS	70-125	77332.7	76882	100.59	PASS	70-125
N030781-002B	SAMP	1	4353791.6	4560620.6	95.46	PASS	70-125	72220.1	76882	93.94	PASS	70-125
N030781-002B	SAMP	5	4424728.9	4560620.6	97.02	PASS	70-125	72529.4	76882	94.34	PASS	70-125
N030781-002B	SAMP	25	4429423.3	4560620.6	97.12	PASS	70-125	71798.2	76882	93.39	PASS	70-125
N030781-002B-PS	PS	1	4368411.7	4560620.6	95.79	PASS	70-125	71178	76882	92.58	PASS	70-125
N030781-002B-PS	PS	5	4395430.1	4560620.6	96.38	PASS	70-125	70501.9	76882	91.7	PASS	70-125
N030781-002B-MS	MS	1	4314843.5	4560620.6	94.61	PASS	70-125	70535	76882	91.74	PASS	70-125
N030781-002B-MS	MS	5	4370491	4560620.6	95.83	PASS	70-125	70644.8	76882	91.89	PASS	70-125
N030781-002B-MSD	MSD	1	4293288.1	4560620.6	94.14	PASS	70-125	69416.1	76882	90.29	PASS	70-125
CCV1	CCV	1	4443602.5	4560620.6	97.43	PASS	70-125	72700.2	76882	94.56	PASS	70-125
CCB1	CCB	1	4375919.1	4560620.6	95.95	PASS	70-125	71730.1	76882	93.3	PASS	70-125
N030781-002B-MSD	MSD	5	4394455.8	4560620.6	96.36	PASS	70-125	70805.3	76882	92.096	PASS	70-125
N030781-003B	SAMP	1	4288569.2	4560620.6	94.035	PASS	70-125	70532.8	76882	91.74	PASS	70-125
N030781-003B	SAMP	5	4385078.3	4560620.6	96.15	PASS	70-125	70546.5	76882	91.76	PASS	70-125
N030781-004B	SAMP	1	4351643.2	4560620.6	95.42	PASS	70-125	69935.8	76882	90.97	PASS	70-125
N030781-004B	SAMP	5	4352496.7	4560620.6	95.44	PASS	70-125	69456.4	76882	90.34	PASS	70-125
N030781-005B	SAMP	1	4239670.4	4560620.6	92.96	PASS	70-125	68704.3	76882	89.36	PASS	70-125
N030781-005B	SAMP	5	4346746	4560620.6	95.31	PASS	70-125	69229.9	76882	90.047	PASS	70-125
N030781-006B	SAMP	1	4326315.3	4560620.6	94.86	PASS	70-125	69057	76882	89.82	PASS	70-125
N030781-006B	SAMP	5	4343772.3	4560620.6	95.25	PASS	70-125	69400.6	76882	90.27	PASS	70-125
N030781-007B	SAMP	1	4234784.7	4560620.6	92.86	PASS	70-125	67434.8	76882	87.71	PASS	70-125
CCV2	CCV	1	4327152.9	4560620.6	94.88	PASS	70-125	69638.1	76882	90.58	PASS	70-125
CCB2	CCB	1	4288729.8	4560620.6	94.038	PASS	70-125	68239	76882	88.76	PASS	70-125
N030781-007B	SAMP	5	4376107.4	4560620.6	95.95	PASS	70-125	69453	76882	90.34	PASS	70-125
N030781-008B	SAMP	1	4266582.3	4560620.6	93.55	PASS	70-125	68786.9	76882	89.47	PASS	70-125
N030781-008B	SAMP	5	4303694	4560620.6	94.37	PASS	70-125	68332.8	76882	88.88	PASS	70-125

INTERNAL STANDARD: 180625B

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030781-009B	SAMP	1	4213389.7	4560620.6	92.39	PASS	70-125	67781.6	76882	88.16	PASS	70-125
N030781-009B	SAMP	5	4311093.4	4560620.6	94.53	PASS	70-125	68300.4	76882	88.84	PASS	70-125
N030781-010B	SAMP	1	4276073	4560620.6	93.76	PASS	70-125	68900.8	76882	89.62	PASS	70-125
N030781-010B	SAMP	5	4305971.4	4560620.6	94.42	PASS	70-125	68715.2	76882	89.38	PASS	70-125
N030781-011B	SAMP	1	4264142.8	4560620.6	93.5	PASS	70-125	67761.7	76882	88.14	PASS	70-125
N030781-011B	SAMP	5	4356582.3	4560620.6	95.53	PASS	70-125	69356.7	76882	90.21	PASS	70-125
N030781-012B	SAMP	1	4250994.5	4560620.6	93.21	PASS	70-125	68042.7	76882	88.5	PASS	70-125
CCV3	CCV	1	4354067.4	4560620.6	95.47	PASS	70-125	69575.8	76882	90.5	PASS	70-125
CCB3	CCB	1	4322417.9	4560620.6	94.78	PASS	70-125	68116.2	76882	88.6	PASS	70-125
N030781-012B	SAMP	5	4374527.1	4560620.6	95.92	PASS	70-125	68830.4	76882	89.53	PASS	70-125
N030781-013B	SAMP	1	4169106.9	4560620.6	91.42	PASS	70-125	66961.6	76882	87.097	PASS	70-125
N030781-013B	SAMP	5	4278596.4	4560620.6	93.82	PASS	70-125	66882.5	76882	86.99	PASS	70-125
N030781-014B	SAMP	1	4170957.1	4560620.6	91.46	PASS	70-125	67418.8	76882	87.69	PASS	70-125
N030781-014B	SAMP	5	4249998.2	4560620.6	93.19	PASS	70-125	67549.6	76882	87.86	PASS	70-125
CCV4	CCV	1	4278231.8	4560620.6	93.81	PASS	70-125	68540.3	76882	89.15	PASS	70-125
CCB4	CCB	1	4233978.5	4560620.6	92.84	PASS	70-125	66663.6	76882	86.71	PASS	70-125
LLCCV1	CCV2	1	4270238.3	4560620.6	93.63	PASS	70-125	67799.3	76882	88.19	PASS	70-125
ICSA2	ICSA	1	4195406.5	4560620.6	91.99	PASS	70-125	73762.4	76882	95.94	PASS	70-125
ICSAB2	ICSAB	1	4239193.4	4560620.6	92.95	PASS	70-125	78440.4	76882	102.03	PASS	70-125

INTERNAL STANDARD: 180625B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	51983.5	51983.5	100	PASS	70-125	60906.5	60906.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	52371.3	51983.5	100.75	PASS	70-125	59319.4	60906.5	97.39	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	51917.8	51983.5	99.87	PASS	70-125	58802	60906.5	96.54	PASS	70-125
Std3-5/50 ppb	ICAL	1	51049.5	51983.5	98.2	PASS	70-125	57944.7	60906.5	95.14	PASS	70-125
Std4-10/100 ppb	ICAL	1	51217.7	51983.5	98.53	PASS	70-125	57233.5	60906.5	93.97	PASS	70-125
Std5-20/200 ppb	ICAL	1	50455.3	51983.5	97.06	PASS	70-125	56469.3	60906.5	92.71	PASS	70-125
Std6-40/400 ppb	ICAL	1	49899.3	51983.5	95.99	PASS	70-125	56876.5	60906.5	93.38	PASS	70-125
Std7-100/1000 ppb	ICAL	1	49732.3	51983.5	95.67	PASS	70-125	55779.4	60906.5	91.58	PASS	70-125
Std8-200/2000 ppb	ICAL	1	48910.7	51983.5	94.089	PASS	70-125	56253.3	60906.5	92.36	PASS	70-125
ICV	ICV	1	52895.2	51983.5	101.75	PASS	70-125	59053.1	60906.5	96.96	PASS	70-125
ICB	ICB	1	49817.9	51983.5	95.83	PASS	70-125	56938.8	60906.5	93.49	PASS	70-125
LLICV	CCV1	1	49526.9	51983.5	95.27	PASS	70-125	56389.2	60906.5	92.58	PASS	70-125
ICSA1	ICSA	1	49258.3	51983.5	94.76	PASS	70-125	55304.4	60906.5	90.8	PASS	70-125
ICSAB1	ICSAB	1	48268.6	51983.5	92.85	PASS	70-125	51639	60906.5	84.78	PASS	70-125
MB-68461	MBLK	1	54885.2	51983.5	105.58	PASS	70-125	64307.2	60906.5	105.58	PASS	70-125
LCS-68461	LCS	1	53120.5	51983.5	102.19	PASS	70-125	61544.3	60906.5	101.05	PASS	70-125
N030781-002B	SAMP	1	50717.2	51983.5	97.56	PASS	70-125	59375.4	60906.5	97.49	PASS	70-125
N030781-002B	SAMP	5	51000.3	51983.5	98.11	PASS	70-125	58252.5	60906.5	95.64	PASS	70-125
N030781-002B	SAMP	25	50667.3	51983.5	97.47	PASS	70-125	59100.9	60906.5	97.035	PASS	70-125
N030781-002B-PS	PS	1	50191.1	51983.5	96.55	PASS	70-125	59173.4	60906.5	97.15	PASS	70-125
N030781-002B-PS	PS	5	49925	51983.5	96.04	PASS	70-125	57339.2	60906.5	94.14	PASS	70-125
N030781-002B-MS	MS	1	49105.8	51983.5	94.46	PASS	70-125	58613.7	60906.5	96.24	PASS	70-125
N030781-002B-MS	MS	5	49821.2	51983.5	95.84	PASS	70-125	57070.6	60906.5	93.7	PASS	70-125
N030781-002B-MSD	MSD	1	49064.2	51983.5	94.38	PASS	70-125	58175.5	60906.5	95.52	PASS	70-125
CCV1	CCV	1	49977.3	51983.5	96.14	PASS	70-125	56376	60906.5	92.56	PASS	70-125
CCB1	CCB	1	49686.4	51983.5	95.58	PASS	70-125	56174	60906.5	92.23	PASS	70-125
N030781-002B-MSD	MSD	5	49962.8	51983.5	96.11	PASS	70-125	57309.1	60906.5	94.094	PASS	70-125
N030781-003B	SAMP	1	49271.8	51983.5	94.78	PASS	70-125	57528.7	60906.5	94.45	PASS	70-125
N030781-003B	SAMP	5	48839.4	51983.5	93.95	PASS	70-125	55774.8	60906.5	91.57	PASS	70-125
N030781-004B	SAMP	1	48978.8	51983.5	94.22	PASS	70-125	57126.1	60906.5	93.79	PASS	70-125
N030781-004B	SAMP	5	48987.5	51983.5	94.24	PASS	70-125	55065.9	60906.5	90.41	PASS	70-125
N030781-005B	SAMP	1	47609.1	51983.5	91.59	PASS	70-125	56478.1	60906.5	92.73	PASS	70-125
N030781-005B	SAMP	5	48447	51983.5	93.2	PASS	70-125	54877.4	60906.5	90.1	PASS	70-125
N030781-006B	SAMP	1	48392.6	51983.5	93.092	PASS	70-125	56759.2	60906.5	93.19	PASS	70-125
N030781-006B	SAMP	5	48922.8	51983.5	94.11	PASS	70-125	55278.6	60906.5	90.76	PASS	70-125
N030781-007B	SAMP	1	48378	51983.5	93.064	PASS	70-125	56036.8	60906.5	92.005	PASS	70-125
CCV2	CCV	1	48110.7	51983.5	92.55	PASS	70-125	54277.7	60906.5	89.12	PASS	70-125
CCB2	CCB	1	47537.7	51983.5	91.45	PASS	70-125	53841.6	60906.5	88.4	PASS	70-125
N030781-007B	SAMP	5	49244.8	51983.5	94.73	PASS	70-125	54810.4	60906.5	89.99	PASS	70-125
N030781-008B	SAMP	1	47781.8	51983.5	91.92	PASS	70-125	56585.1	60906.5	92.9	PASS	70-125
N030781-008B	SAMP	5	47932.2	51983.5	92.21	PASS	70-125	54848.5	60906.5	90.054	PASS	70-125

INTERNAL STANDARD: 180625B

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N030781-009B	SAMP	1	47614.7	51983.5	91.6	PASS	70-125	55382.3	60906.5	90.93	PASS	70-125
N030781-009B	SAMP	5	48371.4	51983.5	93.051	PASS	70-125	54400.2	60906.5	89.32	PASS	70-125
N030781-010B	SAMP	1	48313.3	51983.5	92.94	PASS	70-125	56294.5	60906.5	92.43	PASS	70-125
N030781-010B	SAMP	5	48171.7	51983.5	92.67	PASS	70-125	53828.5	60906.5	88.38	PASS	70-125
N030781-011B	SAMP	1	47974.6	51983.5	92.29	PASS	70-125	56015.6	60906.5	91.97	PASS	70-125
N030781-011B	SAMP	5	48694.4	51983.5	93.67	PASS	70-125	54685.9	60906.5	89.79	PASS	70-125
N030781-012B	SAMP	1	48083.8	51983.5	92.5	PASS	70-125	55337.8	60906.5	90.86	PASS	70-125
CCV3	CCV	1	48446	51983.5	93.19	PASS	70-125	54468.2	60906.5	89.43	PASS	70-125
CCB3	CCB	1	47605.8	51983.5	91.58	PASS	70-125	53972.4	60906.5	88.62	PASS	70-125
N030781-012B	SAMP	5	49039	51983.5	94.34	PASS	70-125	54759.2	60906.5	89.91	PASS	70-125
N030781-013B	SAMP	1	47441.9	51983.5	91.26	PASS	70-125	55121.6	60906.5	90.5	PASS	70-125
N030781-013B	SAMP	5	47481	51983.5	91.34	PASS	70-125	54060.4	60906.5	88.76	PASS	70-125
N030781-014B	SAMP	1	47173.3	51983.5	90.75	PASS	70-125	55010.2	60906.5	90.32	PASS	70-125
N030781-014B	SAMP	5	47670.3	51983.5	91.7	PASS	70-125	53750.5	60906.5	88.25	PASS	70-125
CCV4	CCV	1	47375	51983.5	91.13	PASS	70-125	54901	60906.5	90.14	PASS	70-125
CCB4	CCB	1	47305	51983.5	91	PASS	70-125	53199.6	60906.5	87.35	PASS	70-125
LLCCV1	CCV2	1	47669.2	51983.5	91.7	PASS	70-125	54738.1	60906.5	89.87	PASS	70-125
ICSA2	ICSA	1	49858.1	51983.5	95.91	PASS	70-125	55779.1	60906.5	91.58	PASS	70-125
ICSAB2	ICSAB	1	52411.6	51983.5	100.82	PASS	70-125	60595.3	60906.5	99.49	PASS	70-125

INTERNAL STANDARD: 180625B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	1519047.8	1519047.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	1530606.1	1519047.8	100.76	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	1497818.5	1519047.8	98.6	PASS	70-125
Std3-5/50 ppb	ICAL	1	1492915.6	1519047.8	98.28	PASS	70-125
Std4-10/100 ppb	ICAL	1	1476742	1519047.8	97.21	PASS	70-125
Std5-20/200 ppb	ICAL	1	1488991	1519047.8	98.021	PASS	70-125
Std6-40/400 ppb	ICAL	1	1461715.4	1519047.8	96.23	PASS	70-125
Std7-100/1000 ppb	ICAL	1	1438161.6	1519047.8	94.68	PASS	70-125
Std8-200/2000 ppb	ICAL	1	1422525.9	1519047.8	93.65	PASS	70-125
ICV	ICV	1	1550747.8	1519047.8	102.09	PASS	70-125
ICB	ICB	1	1474280.2	1519047.8	97.053	PASS	70-125
LLICV	CCV1	1	1464810.6	1519047.8	96.43	PASS	70-125
ICSA1	ICSA	1	1335330.4	1519047.8	87.91	PASS	70-125
ICSAB1	ICSAB	1	1339639.1	1519047.8	88.19	PASS	70-125
MB-68461	MBLK	1	1569415.8	1519047.8	103.32	PASS	70-125
LCS-68461	LCS	1	1550217.4	1519047.8	102.05	PASS	70-125
N030781-002B	SAMP	1	1350987	1519047.8	88.94	PASS	70-125
N030781-002B	SAMP	5	1415247.2	1519047.8	93.17	PASS	70-125
N030781-002B	SAMP	25	1440688.2	1519047.8	94.84	PASS	70-125
N030781-002B-PS	PS	1	1352914.9	1519047.8	89.063	PASS	70-125
N030781-002B-PS	PS	5	1386268.5	1519047.8	91.26	PASS	70-125
N030781-002B-MS	MS	1	1325343.2	1519047.8	87.25	PASS	70-125
N030781-002B-MS	MS	5	1362056.5	1519047.8	89.67	PASS	70-125
N030781-002B-MSD	MSD	1	1313034.1	1519047.8	86.44	PASS	70-125
CCV1	CCV	1	1455607.8	1519047.8	95.82	PASS	70-125
CCB1	CCB	1	1450218.2	1519047.8	95.47	PASS	70-125
N030781-002B-MSD	MSD	5	1386449.9	1519047.8	91.27	PASS	70-125
N030781-003B	SAMP	1	1307949.7	1519047.8	86.1	PASS	70-125
N030781-003B	SAMP	5	1379557	1519047.8	90.82	PASS	70-125
N030781-004B	SAMP	1	1332513	1519047.8	87.72	PASS	70-125
N030781-004B	SAMP	5	1365803.8	1519047.8	89.91	PASS	70-125
N030781-005B	SAMP	1	1290582.1	1519047.8	84.96	PASS	70-125
N030781-005B	SAMP	5	1344098.1	1519047.8	88.48	PASS	70-125
N030781-006B	SAMP	1	1305085.2	1519047.8	85.91	PASS	70-125
N030781-006B	SAMP	5	1369111	1519047.8	90.13	PASS	70-125
N030781-007B	SAMP	1	1282378.8	1519047.8	84.42	PASS	70-125
CCV2	CCV	1	1408650	1519047.8	92.73	PASS	70-125
CCB2	CCB	1	1387081.8	1519047.8	91.31	PASS	70-125
N030781-007B	SAMP	5	1359973.6	1519047.8	89.53	PASS	70-125
N030781-008B	SAMP	1	1300812.7	1519047.8	85.63	PASS	70-125
N030781-008B	SAMP	5	1339133.8	1519047.8	88.16	PASS	70-125

INTERNAL STANDARD: 180625B

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N030781-009B	SAMP	1	1292162.9	1519047.8	85.064	PASS	70-125
N030781-009B	SAMP	5	1347482.7	1519047.8	88.71	PASS	70-125
N030781-010B	SAMP	1	1312437.8	1519047.8	86.4	PASS	70-125
N030781-010B	SAMP	5	1365201.7	1519047.8	89.87	PASS	70-125
N030781-011B	SAMP	1	1315162.6	1519047.8	86.58	PASS	70-125
N030781-011B	SAMP	5	1359398.9	1519047.8	89.49	PASS	70-125
N030781-012B	SAMP	1	1292455.9	1519047.8	85.083	PASS	70-125
CCV3	CCV	1	1413810.2	1519047.8	93.072	PASS	70-125
CCB3	CCB	1	1417668.4	1519047.8	93.33	PASS	70-125
N030781-012B	SAMP	5	1372766.6	1519047.8	90.37	PASS	70-125
N030781-013B	SAMP	1	1276839.5	1519047.8	84.055	PASS	70-125
N030781-013B	SAMP	5	1330756.3	1519047.8	87.6	PASS	70-125
N030781-014B	SAMP	1	1270867.8	1519047.8	83.66	PASS	70-125
N030781-014B	SAMP	5	1335140	1519047.8	87.89	PASS	70-125
CCV4	CCV	1	1399078.6	1519047.8	92.1	PASS	70-125
CCB4	CCB	1	1374510.7	1519047.8	90.49	PASS	70-125
LLCCV1	CCV2	1	1398336.5	1519047.8	92.053	PASS	70-125
ICSA2	ICSA	1	1329092.9	1519047.8	87.5	PASS	70-125
ICSAB2	ICSAB	1	1396919.4	1519047.8	91.96	PASS	70-125

INTERNAL STANDARD: 180626A

Instrument ID: ICPMS-02

	Sample Name	Type	DF	72 Ge (ISTD) [1]				
				CPS	REF	%REC	Comment	Criteria
	Cal Blank	IBLK	1	116102.2	116102.2	100	PASS	70-125
	Std1-0.1/1 ppb	ICAL	1	119402.1	116102.2	102.84	PASS	70-125
	Std2-0.5/5 ppb	ICAL	1	119122.3	116102.2	102.6	PASS	70-125
	Std3-5/50 ppb	ICAL	1	118061.1	116102.2	101.69	PASS	70-125
	Std4-10/100 ppb	ICAL	1	117239.8	116102.2	100.98	PASS	70-125
	Std5-20/200 ppb	ICAL	1	117661.3	116102.2	101.34	PASS	70-125
	Std6-40/400 ppb	ICAL	1	116729.6	116102.2	100.54	PASS	70-125
	Std7-100/1000 ppb	ICAL	1	115450.5	116102.2	99.44	PASS	70-125
	Std8-200/2000 ppb	ICAL	1	115579.3	116102.2	99.55	PASS	70-125
	ICV	ICV	1	121877	116102.2	104.97	PASS	70-125
	ICB	ICB	1	112916.4	116102.2	97.26	PASS	70-125
	LLICV	CCV1	1	115503.3	116102.2	99.48	PASS	70-125
	ICSA1	ICSA	1	111478.7	116102.2	96.018	PASS	70-125
	ICSAB1	ICSAB	1	120036.2	116102.2	103.39	PASS	70-125
NR	N030781-003B	SAMP	1	103144.2	116102.2	88.84	PASS	70-125
	N030781-006B	SAMP	1	120234.5	116102.2	103.56	PASS	70-125
	N030781-008B	SAMP	1	120541.4	116102.2	103.82	PASS	70-125
	N030781-009B	SAMP	1	121113.1	116102.2	104.32	PASS	70-125
	N030781-012B	SAMP	1	119140	116102.2	102.62	PASS	70-125
	N030781-013B	SAMP	1	118601.7	116102.2	102.15	PASS	70-125
	N030781-014B	SAMP	1	121566.3	116102.2	104.71	PASS	70-125
	N030781-003B	SAMP	1	120801.2	116102.2	104.05	PASS	70-125
	CCV1	CCV	1	123719.1	116102.2	106.56	PASS	70-125
	CCB1	CCB	1	119499.1	116102.2	102.93	PASS	70-125
	LLCCV1	CCV2	1	119541	116102.2	102.96	PASS	70-125
	ICSA2	ICSA	1	116443.1	116102.2	100.29	PASS	70-125
	ICSAB2	ICSAB	1	122175.3	116102.2	105.23	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

ASSET Laboratories

ICP-MS-Metals in Water | **Dilution Test Summary**

Work Order No.: N030781
Test Method: EPA 6020
Analysis Date: 6/25/2018

Matrix: Groundwater
Batch No.: 68461

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to several analytes. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N030781-002B DT 5X	Arsenic	ug/L	2.265775	NA	2.258156	0.34%	10
N030781-002B DT 5X	Barium	ug/L	115.3021	PASS	110.0785	4.75%	10
N030781-002B DT 5X	Chromium	ug/L	0	NA	0		10
N030781-002B DT 5X	Manganese	ug/L	0	NA	0		10
N030781-002B DT 5X	Molybdenum	ug/L	4.8421	NA	4.762314	1.68%	10
N030781-002B DT 5X	Selenium	ug/L	2.02988	NA	1.676674	21.07%	10

Note: NA - Not applicable

ASSET Laboratories

Date: *26-Jun-18*

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N030781-002B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **125863**
Client ID: **ZZZZZZ**	Batch ID: **68461**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/25/2018**	SeqNo: **3065135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.888	0.10	10.00	2.258	106	80	120				
Barium	115.725	1.0	10.00	110.1	56.5	80	120				S
Manganese	103.097	0.50	100.0	0	103	80	120				
Molybdenum	15.887	0.50	10.00	4.762	111	80	120				
Selenium	12.183	0.50	10.00	1.677	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N030781
Project: PG&E Topock - RMP, RC000753.801D

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **N030781-002B-PS** SampType: **PS** TestCode: **6020DIS_CrP** Units: **µg/L** Prep Date: RunNo: **125863**
Client ID: **ZZZZZZ** Batch ID: **68461** TestNo: **EPA 6020** **EPA 3010A** Analysis Date: **6/25/2018** SeqNo: **3064813**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.349	1.0	10.00	0	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL	LOD	PQL
ANTIMONY	0.50	0.525	0.514	0.473	0.500	0.492	0.486	0.530	0.0210	0.0660	0.100	0.50
ARSENIC	0.10	0.099	0.104	0.087	0.048	0.060	0.069	0.120	0.0259	0.0813	0.080	0.10
BARIUM	1.00	1.041	1.059	1.052	1.011	0.967	0.957	1.023	0.0403	0.1264	0.250	1.00
BERYLLIUM	0.50	0.469	0.476	0.473	0.495	0.480	0.488	0.507	0.0135	0.0424	0.100	0.50
CADMIUM	0.50	0.515	0.513	0.492	0.534	0.499	0.483	0.508	0.0168	0.0527	0.100	0.50
CHROMIUM	1.00	0.979	0.986	0.940	0.990	0.946	0.978	0.977	0.0197	0.0618	0.250	1.00
COBALT	0.50	0.499	0.489	0.486	0.488	0.465	0.502	0.505	0.0135	0.0424	0.100	0.50
COPPER	1.00	1.110	0.667	1.039	1.060	1.006	1.099	1.075	0.1544	0.4850	0.500	1.00
IRON	10.00	10.873	10.802	10.142	9.991	9.846	9.852	10.596	0.4463	1.4014	2.500	10.00
LEAD	1.00	0.928	0.931	0.899	0.996	0.990	0.987	0.997	0.0406	0.1274	0.250	1.00
MANGANESE	0.50	0.577	0.588	0.561	0.566	0.517	0.541	0.520	0.0276	0.0866	0.100	0.50
MOLYBDENUM	0.50	0.514	0.504	0.467	0.478	0.456	0.433	0.527	0.0338	0.1061	0.250	0.50
NICKEL	1.00	0.961	0.965	0.977	0.907	0.914	0.962	1.075	0.0551	0.1731	0.250	1.00
SELENIUM	0.50	0.450	0.478	0.419	0.693	0.707	0.495	0.555	0.1155	0.3628	0.400	0.50
SILVER	0.50	0.558	0.511	0.490	0.542	0.458	0.490	0.684	0.0745	0.2340	0.250	0.50
THALLIUM	0.50	0.437	0.428	0.408	0.538	0.446	0.438	0.525	0.0504	0.1583	0.250	0.50
URANIUM	0.50	0.478	0.467	0.461	0.517	0.510	0.521	0.521	0.0267	0.0838	0.100	0.50
VANADIUM	1.00	0.950	0.969	0.900	0.844	0.829	0.848	1.053	0.0820	0.2574	0.500	1.00
ZINC	10.00	11.259	11.279	10.915	9.620	9.849	9.745	10.241	0.7235	2.2717	2.500	10.00

Method Detection Limit
Analytical Method: EPA 6020 / 200.8 **Matrix: Water**
Digestion Method: EPA 3010A **Units: ug/L**
Date of Analysis: 9/25,10/2,11/3/17
Digestion Date: 9/21, 9/28,10/9/17
Instrument Name: ICPMS2
Analysts: MEI

Analyte	MDLs	MDLb	MDL	LOD	PQL
ANTIMONY	0.0660	0.1564	0.1564	0.300	0.50
ARSENIC	0.0813	0.0387	0.0813	0.080	0.10
BARIUM	0.1264	0.1497	0.1497	0.300	1.00
BERYLLIUM	0.0424	0.0153	0.0424	0.100	0.50
CADMIUM	0.0527	0.0060	0.0527	0.100	0.50
CHROMIUM	0.0618	0.1298	0.1298	0.300	1.00
COBALT	0.0424	0.0339	0.0424	0.100	0.50
COPPER	0.4850	0.5459	0.5459	0.600	1.00
IRON	1.4014	4.3484	4.3484	5.000	10.00
LEAD	0.1274	0.1008	0.1274	0.300	1.00
MANGANESE	0.0866	0.2552	0.2552	0.300	0.50
MOLYBDENUM	0.1061	0.2149	0.2149	0.300	0.50
NICKEL	0.1731	0.2606	0.2606	0.300	1.00
SELENIUM	0.3628	0.0953	0.3628	0.400	0.50
SILVER	0.2340	0.2023	0.2340	0.250	0.50
THALLIUM	0.1583	0.1924	0.1924	0.300	0.50
URANIUM	0.0838	0.0020	0.0838	0.100	0.50
VANADIUM	0.2574	0.2768	0.2768	0.600	1.00
ZINC	2.2717	0.4511	2.2717	3.000	10.00